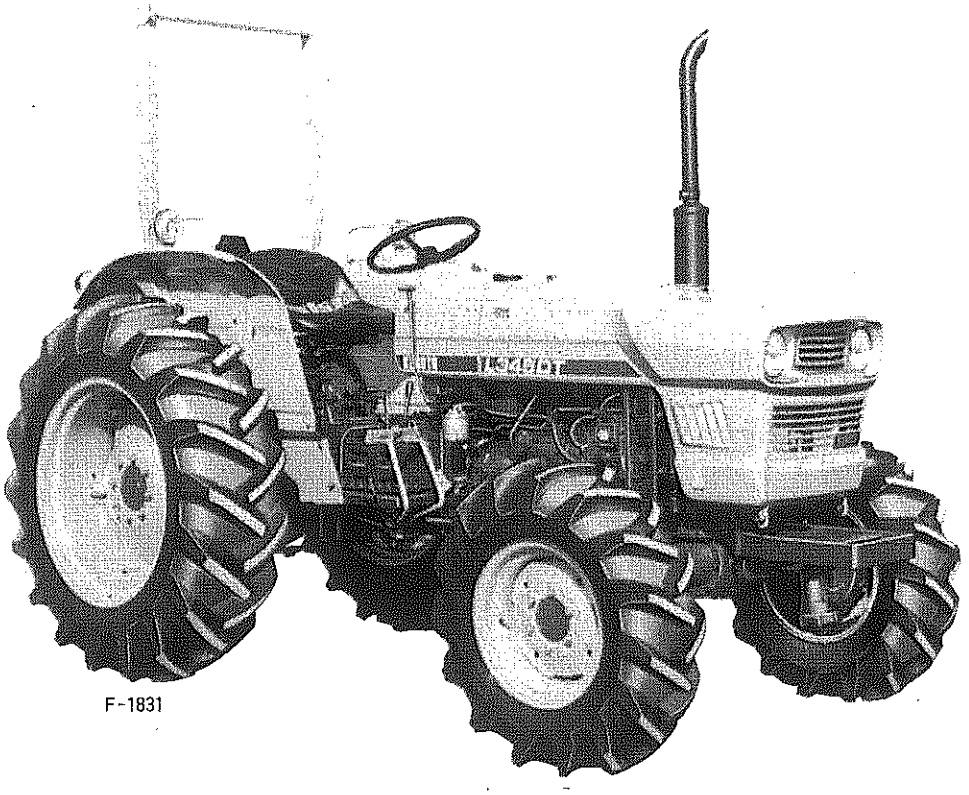
OPERATOR'S MANUAL

KUBOTA TRACTOR

MODELS L305 • L345 • L355SS



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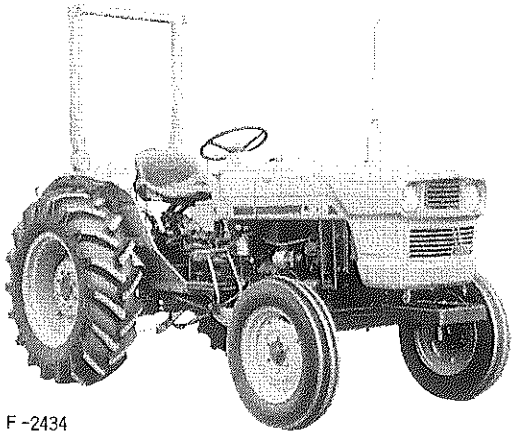
READ AND SAVE THIS MANUAL

Kubota

L305 SERIES

L305 (2WD)



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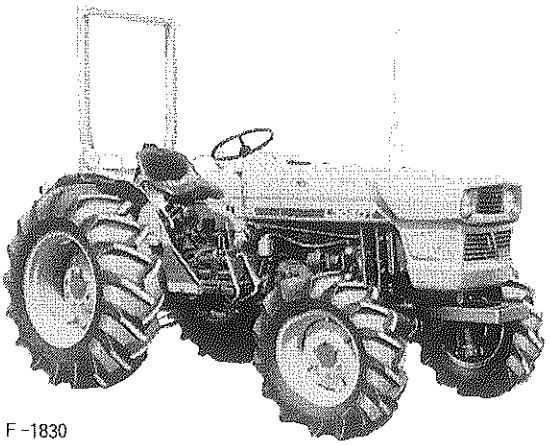
L305DT (4WD)



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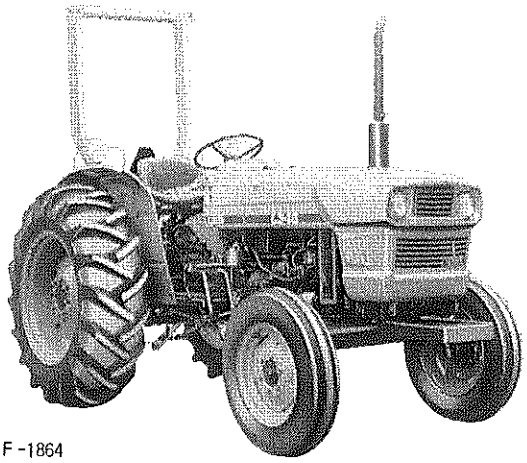
L345 SERIES

L345 (2WD)



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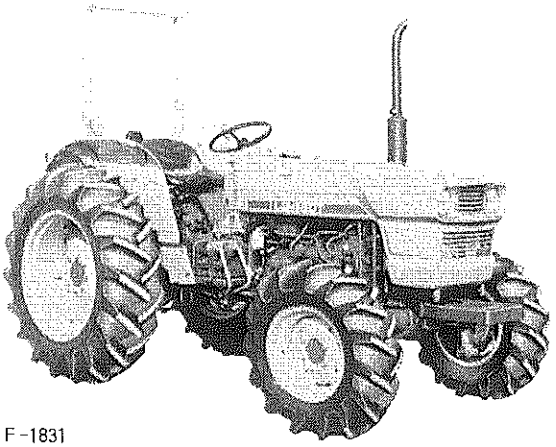
L345DT (4WD)



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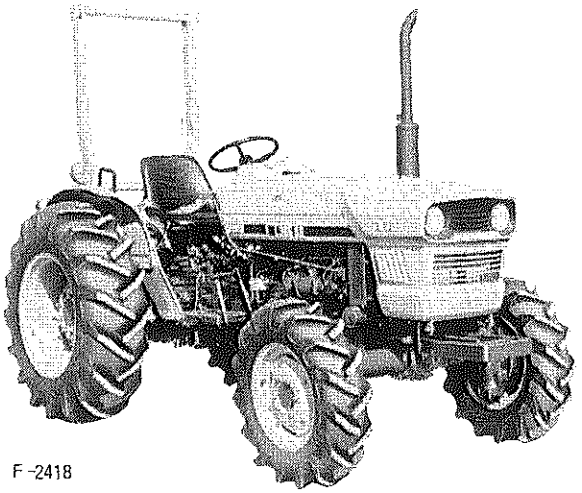
L355SS

(4WD)



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FOREWORD

You are now the proud owner of a KUBOTA Tractor.
This tractor is a product of Kubota quality engineering and manufacturing. It is made of the finest materials and under rigid quality control system. It will give you long, satisfactory service. To obtain the best use of your tractor, please read this manual carefully. It will help you become familiar with the operation of the tractor and contains many helpful hints about tractor maintenance. It is Kubota's policy to utilize as quickly as possible every advance in our research. The immediate use of new techniques in the manufacture of products may cause some small parts of this manual to be outdated. Kubota distributors and dealers will have the most up-to-date information.
Please do not hesitate to consult with them.

SAFETY ALERT SYMBOL

This is the industry "Safety Alert Symbol." This symbol is used to call your attention to items or operations that could be dangerous to you or other persons using this equipment. Please read these messages and follow these instructions carefully.
It is essential that you read the instructions and safety regulations before you attempt to assemble or use this unit.

ABBREVIATIONS LIST

Abbreviations	Definitions
2WD	Two Wheel Drive
4WD	Four Wheel Drive
API	American Petroleum Institute
ASAE	American Society of Agricultural Engineers, USA
ASTM	American Society for Testing and Materials, USA
DIN	Deutsches Institut für Normung, GERMANY
DT	Dual Traction [4WD]
HST	Hydrostatic Transmission
PT	Permanent Type (= Ethylene glycol anti-freeze)
PTO	Power Take Off
ROPS	Roll-Over Protective Structure
RPM	Revolutions Per Minute
SAE	Society of Automotive Engineers
SMV	Slow Moving Vehicle
SPT	Semi-Permanent Type
UDT	KUBOTA UDT fluid (Transmission-hydraulic fluid)

CONTENTS

FOR SAFE OPERATION

1. OPERATING SAFELY

(1) Read this entire manual before attempting to start and operate the tractor.

(2) Pay special attention to the warning and caution labels found on the tractor.

> **⚠ WARNING**
>
> TO AVOID PERSONAL INJURY:
>
> 1. Attach pulled or towed loads to the drawbar only.
> 2. Use the 3-point hitch only with equipment designed for 3-point hitch usage.

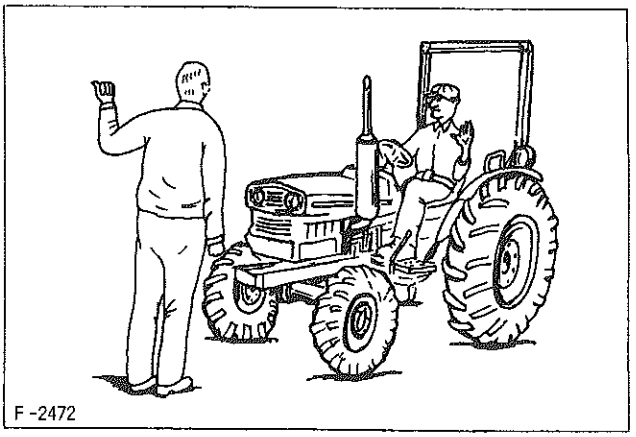
(3) If using an implement or other attachment with the tractor, read the implement Operator's Manual to insure safe operating procedures.

(4) Before allowing other people to use your tractor, explain how to operate and lend this manual beforehand.

(5) Watch where you are going at all times. Watch for and avoid obstacles.

(6) Know your equipment and its limitations.

(7) Never allow passengers on the tractor. Keep bystanders away from the tractor during operation.



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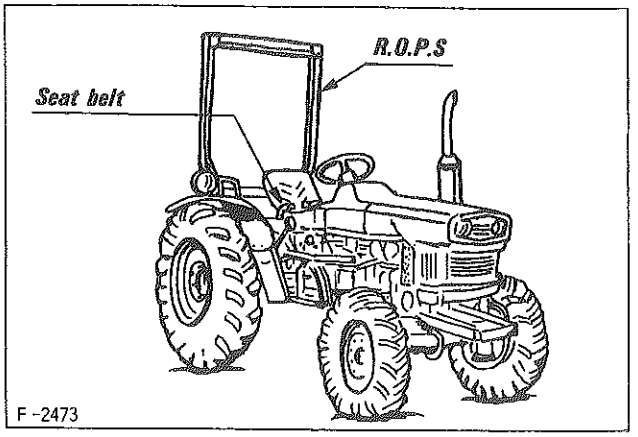
(8) Avoid operating or working around the tractor when wearing loose, bulky clothing.

(9) Never operate the tractor or any agricultural equipment while under the influence of alcohol or other drugs which impair operation, or while fatigued.

(10) When working in cooperation with other tractors, let the other drivers know what you are doing.

(11) Before starting the engine, sit in the seat, disengage the clutch, and place shift levers in the neutral position. Fasten seat belt if equipped with ROPS.



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(12) Do not start engine by shorting across starter terminals. Machine may start in gear and move if normal starting circuitry is bypassed.

(13) NEVER start engine while standing on the ground.

(14) Before getting off the tractor, be sure to stop the engine, set the brake, remove the key and lower the implement to the ground. On L355SS make sure shuttle shift lever is locked in neutral position before dismounting.

2. OPERATE SENSIBLY — AVOID ROLLOVERS

WARNING:

L345·L345DT models only.

- **Depending on the model year, the hand throttle lever of this product is operated into two directions.**
- **Observe the following steps for your safety.**
  - **(1) Check your tractor serial number to know the type of Hand Throttle lever. (See page 17)**
  - **(2) Make sure that your tractor is equipped with any type of Hand Throttle lever by moving a little forward/rearward before operation.**
- **See detailed precautions in page 17.**

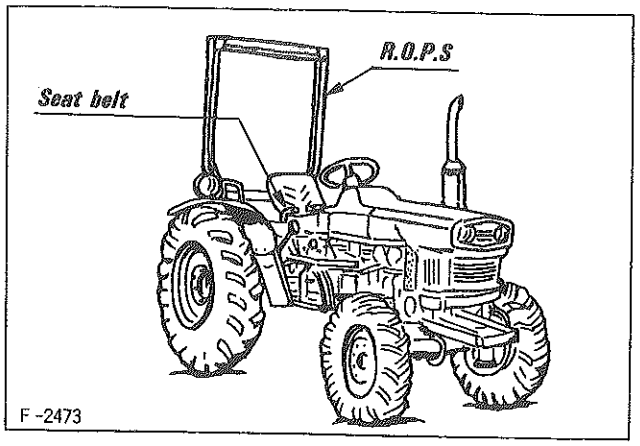
(1) **For your safety, ROPS with a seat belt is recommended by KUBOTA for almost all applications. Check operator's manual and discuss with your local dealer.**

Always use seat belt when the tractor is equipped with a ROPS. Never use the seat belt when the tractor is not equipped with a ROPS.

(ROPS: Roll-Over Protective Structures)

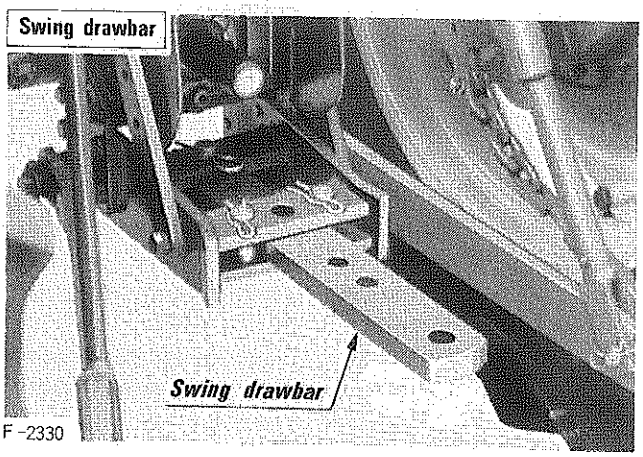
Never modify structural members of ROPS by welding, bending, grinding or cutting, as this may weaken the structure. If any component is damaged, replace it. Do not attempt repairs.

If ROPS is loosened or removed for any reason, make certain all parts are reinstalled correctly. Tighten mounting bolts to proper torque, see ROPS installation instructions.



(2) Unreasonable operation such as on dangerous terrain, beyond the load capacity or beyond the intended use of the tractor must be avoided as it may cause the tractor to tip over. Refer to "Specifications of Implement Limitations" on page 60 which outlines the maximum loads for safe tractor operation.

(3) Never pull from the top link, the rear axle or any point above the drawbar. Doing so could cause the tractor to tip over rearward causing personal injury. For pulling, attach to the Drawbar only. (fixed or swinging type).

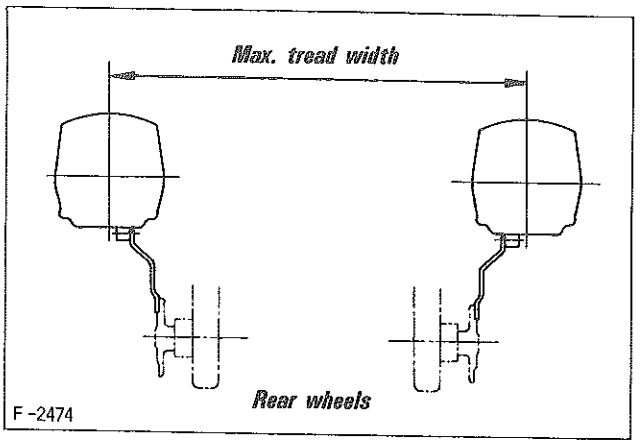


(4) Do not drive the tractor close to the edges of ditches or banks which may break under the weight of the tractor, especially when the ground is loose or wet.

(5) Always slow the tractor down before turning. Turning at a high speed may tip the tractor over.

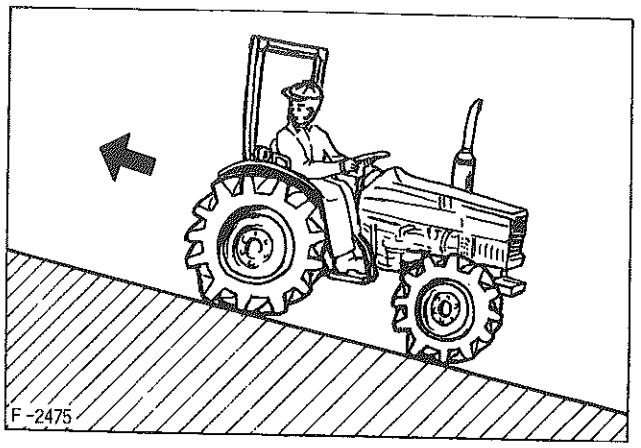
(6) Use caution while operating the tractor under abnormal conditions.

(7) Tractors with narrow tread width require extra driving caution to avoid tip-overs. You can improve stability by adjusting rear wheels to maximum tread width, see page 29.

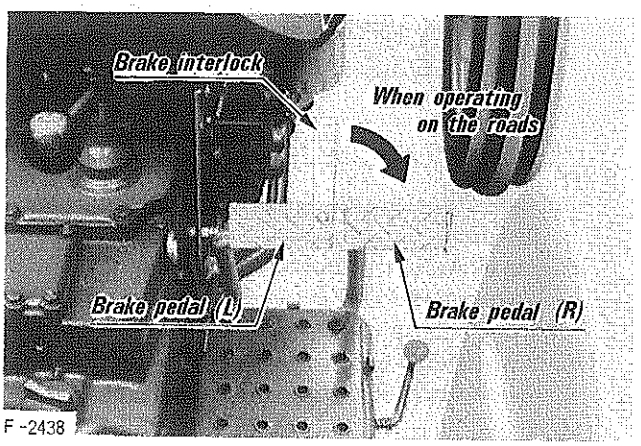


(8) If descending a slope, never disengage the clutch or shift to neutral. Doing so could cause loss of control of the tractor.

(9) Always back-up when going up a slope. Driving forward could cause the tractor to tip over backward. Stay off hills and slopes too steep for safe operation.



(10) To help assure straight-line stops when driving at transport speeds, lock the brake pedals together. Uneven braking at road speeds could cause the tractor to roll over.



(11) The tractor cannot turn with the differential locked and attempting to do so could be dangerous.

3. ROAD TRANSPORTING

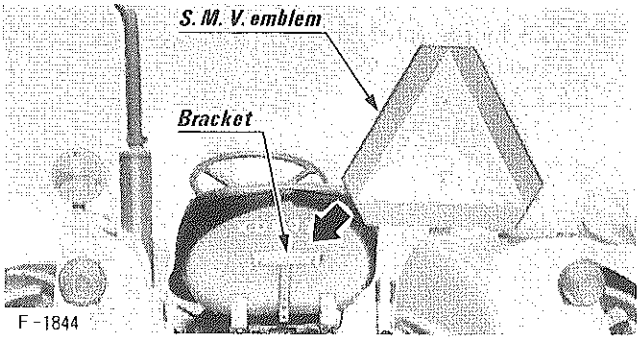
(1) Before traveling on the road, be sure to interlock the two brake pedals. Applying only one rear brake at road speeds could cause the tractor to roll over.

(2) Observe all local and state traffic regulations. Use S.M.V. emblem and warning flashers as required.

(S.M.V.: Slow Moving Vehicle)

[Note]

Consult KUBOTA dealer about installation of the S.M.V. emblem and warning flashers.



(3) When operating the tractor on a road, turn the light switch to the bright head lamp position. Be sure the SMV emblem is visible and clear. Always dim the headlights before meeting another vehicle. Hold road speed to controllable rate.

(4) Do not apply the differential lock while traveling at road speeds. Doing so could cause loss of control of the tractor.

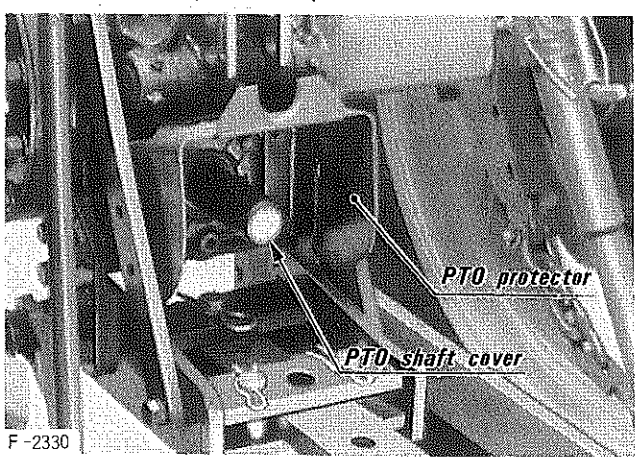
(5) Power steering makes the steering wheel easy to turn. Drive the tractor with care especially when traveling at road speeds.

(6) Do not drive the tractor on the road with the implement in operation.

4. SAFE PTO OPERATION

(1) Stay clear of all rotating parts.

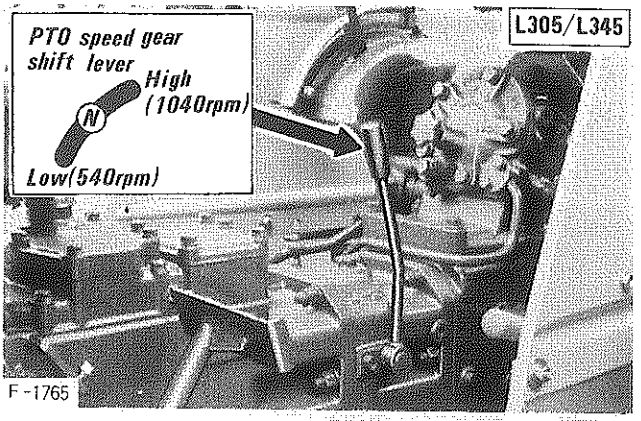
(2) Keep all safety covers in place at all time.

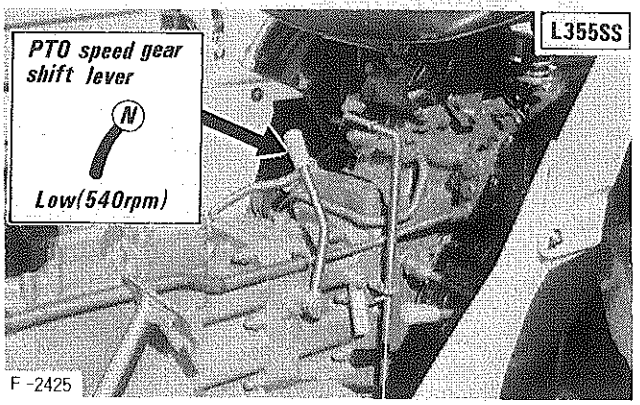


(3) Disengage PTO, stop engine and allow all rotating components to come to a complete stop before connecting, disconnecting, adjusting or cleaning any PTO driven equipment.

(4) Before installing or using any tractor attachment, read the attachment's Operator's Manual and review all its safety labels.

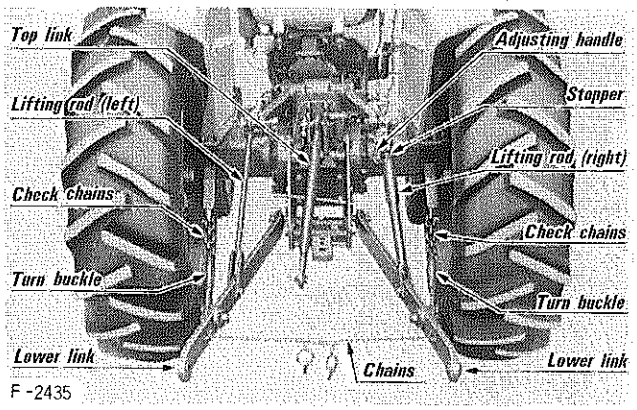
(5) To prevent a PTO driven implement from overspeeding and possibly causing personal injury, use the (1040 RPM) PTO speed only when this speed is specifically recommended by the implement manufacturer. Otherwise, use only the (540 RPM) PTO speed.





5. SAFE 3-POINT HITCH OPERATION

(1) Use 3-point hitch only with equipment designed for 3-point hitch usage.



(2) When using a 3-point hitch mounted implement, be sure to install the proper counterballast weight on the tractor.

(3) When transporting on the road, set the implement lowering control in the "lock" position to hold the implement in the raised position.

6. POSSIBLE HAZARDS

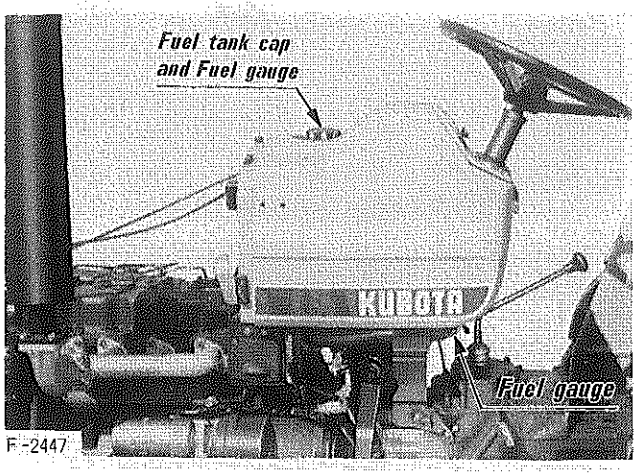
■ EXHAUST FUMES

(1) To avoid the danger of exhaust fume poisoning, do not operate the engine in a closed building without proper ventilation to outside air.

■ FIRES

(1) Always stop the engine before refueling. Keep away from sparks and flames.

(2) Avoid fuel spills and over filling the fuel tank. Clean up any spills on tractor before starting engine.
Fuel gauge are two types, fuel tank cap mounted type and fuel tank side mounted type.

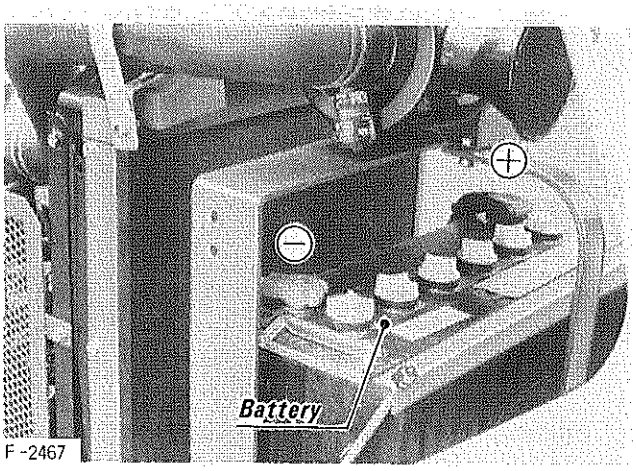


(3) Keep first aid kit and fire extinguisher near by at all times.

■ EXPLOSIONS

(1) A battery, especially when charging, will give off hydrogen and oxygen gases which are very explosive. Keep away from sparks and open flames at all times.

(2) To avoid sparks from an accidental short circuit, always disconnect the battery ground cable (−) first and always reconnect the ground cable (−) last.

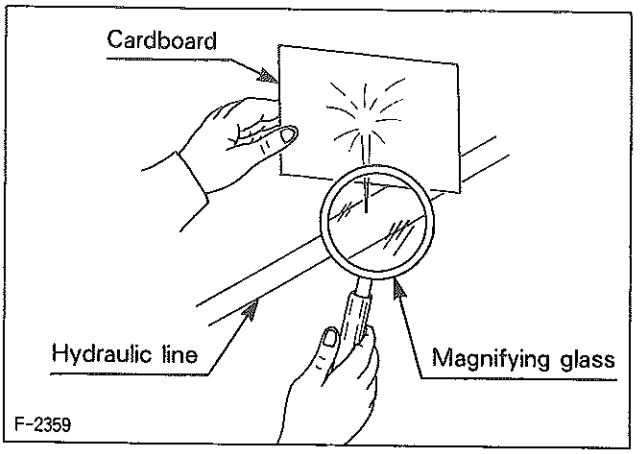


(3) Refer to section 9.11 for specific battery instructions.

■ HIGH PRESSURE FLUIDS

(1) Do not remove radiator filler cap until coolant temperature is below its boiling point. Then loosen cap slightly to the stop to relieve any excess pressure before removing cap completely.

(2) Escaping hydraulic fluid under pressure can have sufficient force to penetrate skin, causing serious personal injury. Before disconnecting lines, be sure to relieve all pressure. Before applying pressure to the system, be sure that all connections are tight and that lines, pipes and hoses are not damaged. Fluid escaping from a very small hole can be almost invisible. Don't use hands to search for suspected leaks, but use a piece of cardboard or wood.



If injured by escaping fluid, see a doctor at once. Serious infection or reaction can develop if proper medical treatment is not administered immediately.

■ SAFE SERVICING

(1) Before servicing the tractor: locate the tractor on a firm level surface; set the parking brake; place the gear shift lever in neutral; and stop the engine.

(2) Disconnect the battery ground cable before servicing on or near electrical components.

(3) Service or check the tractor after it has completely cooled off. Avoid touching the muffler and the radiator until they have cooled off.

(4) When changing the wheel tread width, securely support tractor while raised.

(5) Always retighten wheel bolts to the specified torque and check regularly.

(6) Do not attempt to mount a tire on a rim unless qualified to do so with the proper equipment.

7. TRACTOR SAFETY LABELS

❶ Part No. 35260-3491-1

⚠ CAUTION

TO AVOID PERSONAL INJURY:
1. Read and understand operator's manual before attempting to start or operate the tractor.
2. Before starting engine, make certain everyone is at a safe distance from machine and PTO is OFF.
3. Never permit passengers on tractor.
4. Before dismounting, stop engine, set park brake, and lower implement to the ground.
5. Keep all shields in place and stay away from all moving parts.
6. Slow down for turns, rough roads, and when applying individual brakes.
7. Lock the brake pedals together for road travel.
8. On public roads use SMV emblem and warning lights.
9. Always attach towed loads to the tractor drawbar.

❷ Part No. 35260-2979-1

⚠ WARNING

TO AVOID PERSONAL INJURY:
1. Attach pulled or towed loads to the drawbar only.
2. Use the 3-point hitch only with equipment designed for 3-point hitch usage.

❸ Part No. 35260-2978-1

⚠ CAUTION

TO AVOID PERSONAL INJURY:
1. Roll-Over Protective Structure (ROPS) with a seat belt is recommended by KUBOTA in most applications. Check operator's manual and discuss with your local dealer.
2. Always use seat belt when the tractor is equipped with Roll-Over Protective Structure (ROPS).
   Never use seat belt when the tractor is not equipped with ROPS.

❹ Part No. 35260-2534-1

⚠ WARNING

TO AVOID PERSONAL INJURY:
1. Keep PTO shield in place at all times.
2. Before using PTO, lock swinging drawbar in center position and set distance from drawbar pin hole to PTO at 14 in. (356mm).
3. Do not operate the PTO at speeds faster than the speed recommended by the implement manufacturer.

❺ [L355SS] Part No. 35370-3136-2

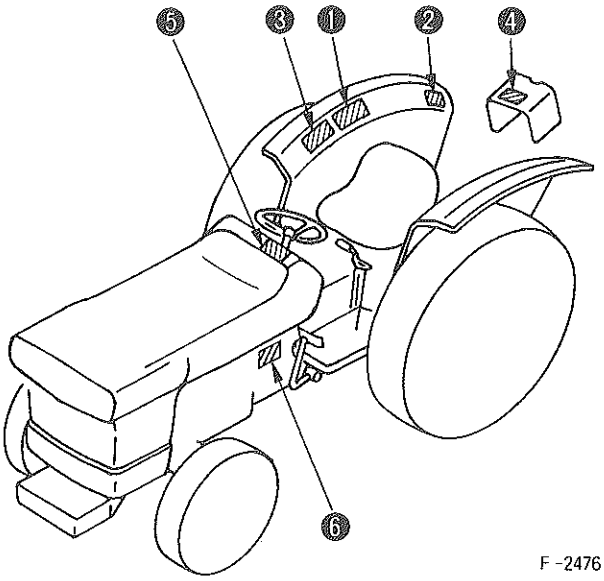
⚠ WARNING

BEFORE DISMOUNTING TRACTOR:
1. ALWAYS SET PARKING BRAKE
   Leaving transmission in gear with the engine stopped will not prevent tractor with shuttle transmission from rolling.
2. LOCK SHUTTLE SHIFT LEVER IN NEUTRAL POSITION
   This prevents movement of shuttle shift lever out of neutral position.
3. STOP THE ENGINE

❻ Part No. 35820-9863-1

⚠ WARNING

AVOID POSSIBLE INJURY OR DEATH FROM A MACHINE RUNAWAY:
1. Do not start engine by shorting across starter terminals. Machine may start in gear and move if normal starting circuitry is bypassed.
2. Start engine only from operator's seat with transmission and PTO in neutral.
   NEVER start engine while standing on ground.



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CARE OF SAFETY SIGNS

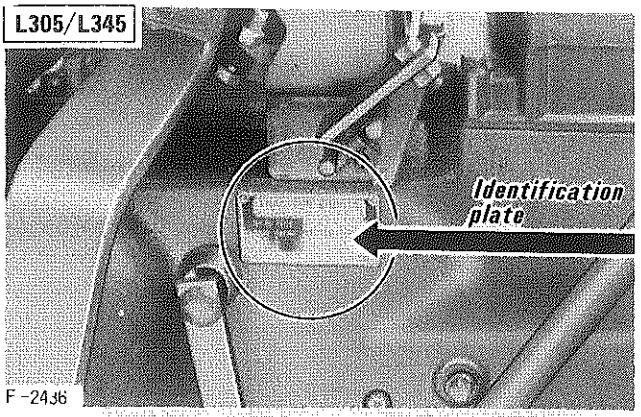
(1) Keep safety signs clean and free from obstructing material.
(2) Clean safety signs with soap and water, dry with a soft cloth.
(3) Replace damaged or missing safety signs with new safety signs from your Kubota dealer.
(4) If a component with safety sign (s) affixed is replaced with new part, make sure new safety sign (s) is (are) attached in the same location(s) as the replaced component.
(5) Mount new safety signs by applying on a clean dry surface and pressing any bubbles to outside edge.

1. SERVICING OF TRACTOR

Your dealer is interested in your new tractor and has the desire to help you get the most value from it. After reading this manual thoroughly, you will find that you can do some of the regular maintenance yourself.
However, when in need of parts or major service, be sure to see your KUBOTA dealer.
For service, contact the KUBOTA Dealership from which you purchased your tractor or your local authorized KUBOTA dealer.
When in need of parts, be prepared to give your dealer both the tractor and engine serial numbers.
The tractor serial number is located on the transmission housing on the right-hand side of the tractor. The engine serial number is located on the engine crankcase, right side.
Locate the serial numbers now and record them in the space provided.

KUBOTA L305/L305DT/L345/L345DT/L355SS
Tractor Serial No. _____
Engine Serial No. _____
Date of Purchase _____
(To be filled in by purchaser)

L305/L345



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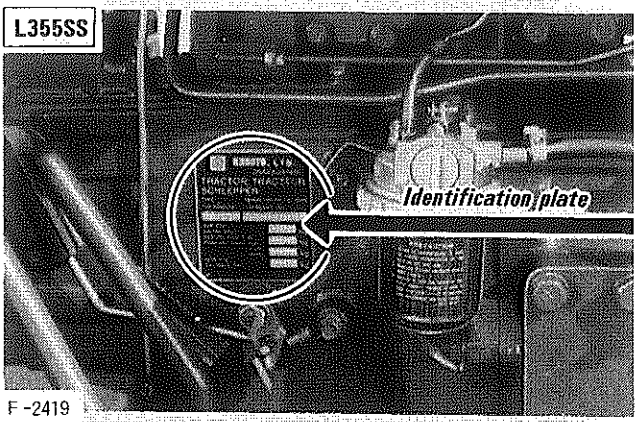
L355SS



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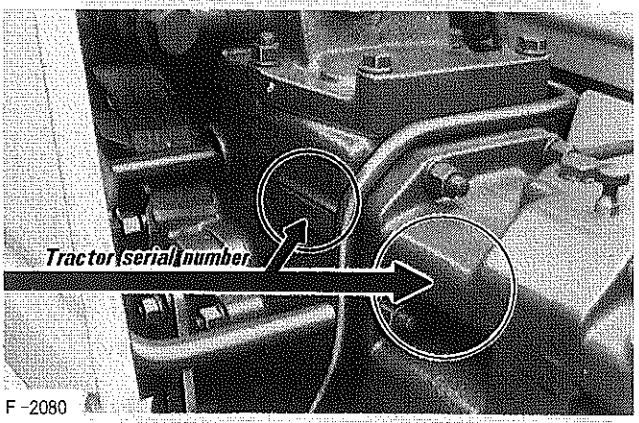
Tractor serial number location are two types, transmission housing on the R.H. side and mid case on the R.H. side.



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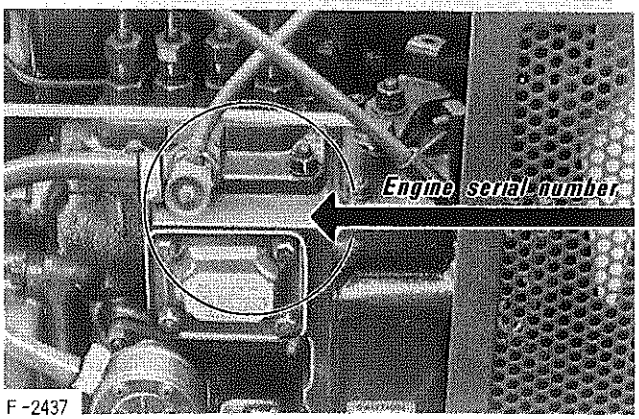

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2. SPECIFICATIONS

[L305]

Model				L305 (2WD)		L305DT (4WD)	
Engine gross power				22.4 kW (30 HP)*			
Engine	Model			KUBOTA D1301–DA			
	Type			Vertical, water-cooled, 4-cycle diesel			
	No. of cylinders			3			
	Bore and stroke			82 x 82 mm (3.2 x 3.2 in.)			
	Total displacement			1299 cm^3 (79.3 cu. in.)			
	Rated revolution			46.7 r/s (2800 rpm)			
	Fuel			Diesel fuel No.1 [below −10°C (14°F)] Diesel fuel No.2 [above −10°C (14°F)]			
	Starter			Electric starter with battery, glow plug and decompression device, 12V, 1.4 kW			
	Lubrication			Forced lubrication by trochoidal pump			
	Cooling			Water with pressurized radiator			
	Battery			12V 100Ah			
Capacities	Fuel tank			33.5ℓ (8.8 U.S. gals.)			
	Engine crankcase			6.3ℓ (6.6 U.S. qts.)			
	Engine coolant			5.8ℓ (6.1 U.S. qts.)			
	Transmission case			30ℓ (31.7 U.S. qts.)		31ℓ (32.7 U.S. qts.)	
	Front axle diff. case (total)			—		5ℓ (5.2 U.S. qts.)	
	Front axle gear case			—		0.7ℓ (0.7 U.S. qt.)	
Tires		Front		5.50 – 16	5.50 – 16	8.3 – 16	7 – 16
		Rear		13.6 – 24	12.4 – 24	13.6 – 24	12.4 – 24
Dimensions	Overall length		mm (in.)	3210 (126.4)	3210 (126.4)	3210 (126.4)	3210 (126.4)
	Overall width		mm (in.)	1630 (64.2)	1595 (62.8)	1630 (64.2)	1595 (62.8)
	Overall height with muffler		mm (in.)	2000 (78.7)	2000 (78.7)	2030 (79.9)	2030 (79.9)
	Wheel base		mm (in.)	1840 (72.4)	1840 (72.4)	1850 (72.8)	1850 (72.8)
	Min. ground clearance		mm (in.)	360 (14.2)	360 (14.2)	350 (13.8)	320 (12.6)
	Treads	Front	mm (in.)	1130 (44.5)	1155 (45.5)	1225 (48.2)	1150 (45.3)
				1210 (47.6)	1235 (48.6)		
				1290 (50.8)	1315 (51.8)		
				1370 (53.9)	1395 (54.9)		
				1450 (57.1)	1475 (58.0)		
		Rear	mm (in.)	1275 (50.2)	1275 (50.2)	1275 (50.2)	1275 (50.2)
				1370 (53.9)	1365 (53.7)	1370 (53.9)	1365 (53.7)
				1475 (58.0)	1465 (57.7)	1475 (58.0)	1465 (57.7)
				1575 (62.0)	1545 (60.8)	1575 (62.0)	1545 (60.8)
				1680 (66.1)	1645 (64.8)	1680 (66.1)	1645 (64.8)
Weight			kg (lbs.)	1180 (2600)	1125 (2480)	1355 (2985)	1295 (2855)
PTO Shaft				Transmission case rear (rear PTO) and engine front (front PTO)			
Rear PTO				SAE 1-3/8			
	Revolutions			2 speeds (9 and 17.3 r/s at 42.3 engine r/s) (540 and 1040 rpm at 2540 engine rpm)			
Clutch				Dry dual plates			
Steering				Integral type power steering			
Transmission				Gear shift type, 8 forward and 2 reverse			
Min. turning radius			m (feet)	2.9 (9.5)	2.9 (9.5)	2.8 (9.2)	2.8 (9.2)
Brake				Wet disk type			
Differential				Bevel gear			

Note: * Manufacturer's estimate.

[L345]

Model				L345 (2WD)		L345DT (4WD)	
Engine gross power				25.4 kW (34 HP)*			
Engine	Model			KUBOTA V1501-DA			
	Type			Vertical, water-cooled, 4-cycle diesel			
	No. of cylinders			4			
	Bore and stroke			76 x 82 mm (3.0 x 3.2 in.)			
	Total displacement			1487 cm^3 (90.7 cu. in.)			
	Rated revolution			46.7 r/s (2800 rpm)			
	Fuel			Diesel fuel No.1 [below −10°C (14°F)] Diesel fuel No.2 [above −10°C (14°F)]			
	Starter			Electric starter with battery, glow plug and decompression device, 12V, 1.4 kW			
	Lubrication			Forced lubrication by trochoidal pump			
	Cooling			Water with pressurized radiator			
	Battery			12V 100Ah			
Capacities	Fuel tank			35ℓ (9.2 U.S. gals.)		33.5ℓ (8.8 U.S. gals.)	
	Engine crankcase			9.1ℓ (9.6 U.S. qts.)			
	Engine coolant			7.0ℓ (7.4 U.S. qts.)			
	Transmission case			30ℓ (31.7 U.S. qts.)		31ℓ (32.7 U.S. qts.)	
	Steering box (manual steering)			0.3ℓ (0.3 U.S. qts.)			
	Front axle diff. case (total)			—		5ℓ (5.2 U.S. qts.)	
	Front axle gear case			—		0.7ℓ (0.7 U.S. qt.)	
Tires		Front		6.00 – 16	5.50 – 16	9.5 – 16	8 – 18
		Rear		13.6 – 28	12.4 – 28	13.6 – 28	12.4 – 28
Dimensions	Overall length		mm (in.)	3375 (132.9)	3375 (132.9)	3375 (132.9)	3375 (132.9)
	Overall width		mm (in.)	1490 (58.7)	1450 (57.1)	1490 (58.7)	1450 (57.1)
	Overall height with muffler		mm (in.)	2065 (81.3)	2050 (80.7)	2070 (81.5)	2060 (81.1)
	Wheel base		mm (in.)	1935 (76.2)	1935 (76.2)	1945 (76.6)	1945 (76.6)
	Min. ground clearance		mm (in.)	385 (15.2)	370 (14.6)	365 (14.4)	350 (13.8)
	Treads	Front	mm (in.)	1130 (44.5) 1210 (47.6) 1290 (50.8) 1370 (53.9) 1450 (57.1)	1155 (45.5) 1235 (48.6) 1315 (51.8) 1395 (54.9) 1475 (58.0)	1245 (49.0)	1185 (46.7)
		Rear	mm (in.)	— 1170 (46.0) 1275 (50.2) 1370 (53.9) 1475 (58.0) 1575 (62.0) 1680 (66.1)	1130 (44.5) 1210 (47.6) 1300 (51.2) 1320 (52.0) 1420 (55.9) 1490 (58.7) 1600 (63.0)	— 1170 (46.0) 1275 (50.2) 1370 (53.9) 1475 (58.0) 1575 (62.0) 1680 (66.1)	1130 (44.5) 1210 (47.6) 1300 (51.2) 1320 (52.0) 1420 (55.9) 1490 (58.7) 1600 (63.0)
Weight			kg (lbs.)	1260 (2770)	1200 (2640)	1425 (3135)	1345 (2965)
PTO Shaft				Transmission case rear (rear PTO) and engine front (front PTO)			
Rear PTO				SAE 1-3/8			
	Revolutions			2 speeds (9 and 17.3 r/s at 42.3 engine r/s) (540 and 1040 rpm at 2540 engine rpm)			
Clutch				Dry dual plates			
Steering				Booster type power steering		Integral type power steering	
Transmission				Gear shift type, 8 forward and 2 reverse			
Min. turning radius			m (feet)	3.0 (9.8)	2.7 (8.9)	3.0 (9.8)	3.0 (9.8)
Brake				Wet disk type			
Differential				Bevel gear			

Note: * Manufacturer's estimate.

[L355SS]

Model				L355SS (4WD)
Engine gross power				26.9 kW (36 HP)*
Engine	Model			KUBOTA V1702–A
	Type			Vertical, water-cooled, 4-cycle diesel
	No. of cylinders			4
	Bore and stroke			82 x 82 mm (3.2 x 3.2 in.)
	Total displacement			1732 cm^3 (105.6 cu.in.)
	Rated revolution			43.3 r/s (2600 rpm)
	Fuel			Diesel fuel No.1 [below −10°C (14°F)] Diesel fuel No.2 [above −10°C (14°F)]
	Starter			Electric starter with battery, glow plug and decompression device, 12V, 1.4 kW
	Lubrication			Forced lubrication by trochoidal pump
	Cooling			Water with pressurized radiator
	Battery			12V 100Ah
Capacities	Fuel tank			33.5ℓ (8.8 U.S. gals.)
	Engine crankcase			9.1ℓ (9.6 U.S. qts.)
	Engine coolant			7.0ℓ (7.4 U.S. qts.)
	Transmission case			32ℓ (33.7 U.S. qts.)
	Front axle diff. case (total)			5ℓ (5.2 U.S. qts.)
	Front axle gear case			0.7ℓ (0.7 U.S. qt.)
Tires		Front		8.3 – 16
		Rear		13.6 – 24
Dimensions	Overall length		mm (in.)	3310 (130.3)
	Overall width		mm (in.)	1630 (64.2)
	Overall height with muffler		mm (in.)	2065 (81.3)
	Wheel base		mm (in.)	1945 (76.6)
	Min. ground clearance		mm (in.)	350 (13.8)
	Treads	Front	mm (in.)	1225 (48.2)
		Rear	mm (in.)	1275 (50.2)
				1370 (53.9)
				1475 (58.0)
				1575 (62.0)
				1680 (66.1)
Weight			kg (lbs.)	1370 (3020)
PTO Shaft				Transmission case rear (rear PTO) and engine front (front PTO)
Rear PTO				SAE 1-3/8
	Revolutions			9 r/s at 40.5 engine r/s (540 rpm at 2430 engine rpm)
Clutch				Dry single plate
Steering				Integral type power steering
Transmission				Gear shift type with full power shuttle, 8 forward and 8 reverse
Min. turning radius			m (feet)	3.0 (9.8)
Brake				Wet disk type
Differential				Bevel gear

Note: * Manufacturer's estimate.

■ Traveling speeds

Model		L305 (DT)		L345 (DT)	
Tire sizes		12.4 – 24	13.6 – 24	12.4/11 – 28	13.6 – 28
Forward	1	1.29km/h (0.80mph)	1.35km/h (0.84mph)	1.39km/h (0.86mph)	1.47km/h (0.91mph)
	2	1.67km/h (1.04mph)	1.76km/h (1.09mph)	1.81km/h (1.12mph)	1.91km/h (1.19mph)
	3	2.47km/h (1.49mph)	2.53km/h (1.57mph)	2.60km/h (1.62mph)	2.74km/h (1.70mph)
	4	4.49km/h (2.79mph)	4.72km/h (2.93mph)	4.85km/h (3.01mph)	5.11km/h (3.18mph)
	5	5.56km/h (3.46mph)	5.85km/h (3.64mph)	6.01km/h (3.74mph)	6.33km/h (3.93mph)
	6	7.22km/h (4.49mph)	7.60km/h (4.72mph)	7.81km/h (4.85mph)	8.23km/h (5.11mph)
	7	10.37km/h (6.44mph)	10.91km/h (6.78mph)	11.21km/h (6.97mph)	11.82km/h (7.35mph)
	8	19.36km/h (12.03mph)	20.37km/h (12.66mph)	20.93km/h (13.01mph)	22.06km/h (13.71mph)
Reverse	1	2.19km/h (1.36mph)	2.30km/h (1.43mph)	2.37km/h (1.47mph)	2.56km/h (1.59mph)
	2	9.45km/h (5.87mph)	9.94km/h (6.18mph)	10.21km/h (6.35mph)	10.77km/h (6.69mph)

Model		L355SS
Tire sizes		13.6 – 24
Forward Reverse	1	1.36km/h (0.85mph)
	2	1.95km/h (1.21mph)
	3	3.23km/h (2.01mph)
	4	4.75km/h (2.95mph)
	5	6.10km/h (3.79mph)
	6	8.73km/h (5.42mph)
	7	14.44km/h (8.97mph)
	8	21.23km/h (13.19mph)

(Specifications and design subject to change without notice.)

3. HANDLING NEW TRACTOR

How a new tractor is handled and maintained determines the life of the tractor.

A new tractor just off the factory production line has been, of course, well fitted and tested, but the various parts are not accustomed to severe types of work, so care should be taken to operate the tractor for the first 100 hours at a slower speed and avoid excessive work or operation until the various parts become well "broken-in." The manner in which the tractor is handled during the "breaking-in" period greatly affects the life of your tractor. Therefore, to obtain the maximum performance and the longest life of the tractor, it is very important to properly break-in your tractor.

In handling a new tractor the following precautions should be well observed.

■ Do not operate the tractor at full speed for the first 100 hours.

- Do not start quickly nor apply the brakes suddenly.
- In winter, run the tractor after fully warming up the engine.
- Do not run at speeds faster than necessary.
- On rough roads, slow down to suitable speeds. Do not operate the tractor at fast speed.

The above precautions are not limited only to new tractors, but to all tractors. But it should be especially observed in case of new tractors.

■ Changing lubricating oil for new tractors

The lubricating oil is specially important in the case of a new tractor. The various parts are not "broken-in" and are not accustomed to each other; small metal grit may develop during the operating of the tractor; and this may wear out or damage the parts. Therefore, care should be taken to exchange the lubricating oil a little earlier than would ordinarily be required.

For further details of exchange interval hours, see check list.

■ Read "For Safe Operation" to assure Safe Operation.

Please read "For Safe Operation."

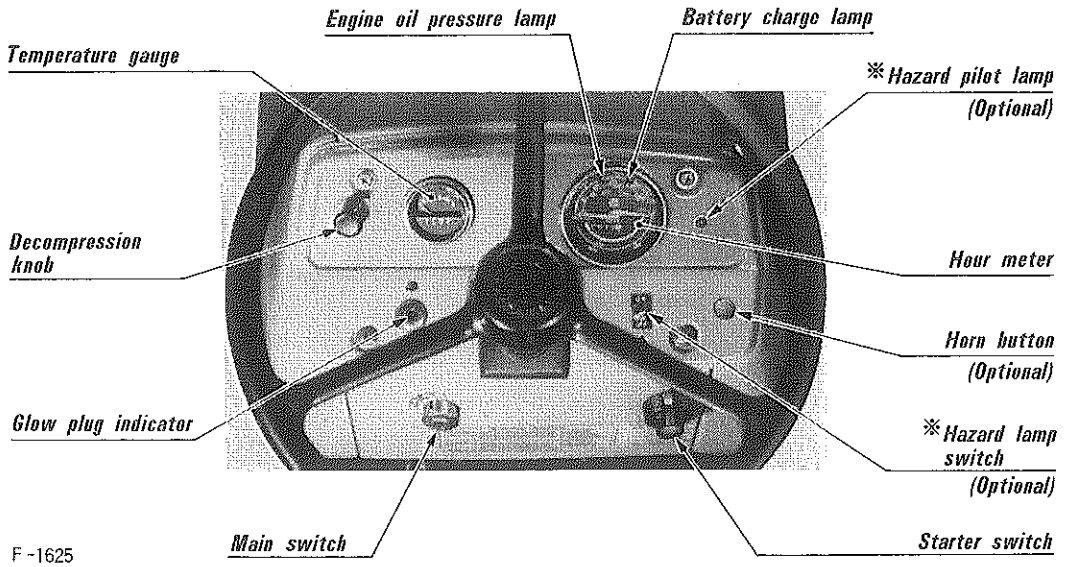
3.1 LOADING AND UNLOADING

(1) When loading (or unloading) a tractor onto a truck or trailer, chock the truck or trailer's tires.

(2) Securely fix a rugged ramp with non-skids to the truck or trailer bed and check to see that there are no people around before starting to load or unload the tractor.

4. INSTRUMENT PANEL AND CONTROLS

4.1 SWITCHES



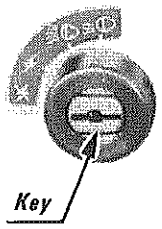
F-1625

[Note] ※Consult KUBOTA dealer about installation of the hazard lamp (switch, pilot lamp).

■ Main Switch

The main switch is separate from the starting switch. By turning the main switch one stage clockwise, the electric circuit starts functioning.

When turned to the second stage, the head-light is turned on. When turned further to the third stage, the head-light would be dimmed and the angle of the light would be lowered. When the tractor is not to be used, do not leave the key in the main switch, but always remove the key and carry it with you.



F-1626

(OFF)···Electric circuit is open.

(ON)····Electric circuit is closed.

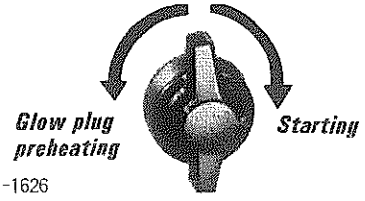
·····Head lights "ON".
※Tail lights "ON" (Optional)

·····Head lights dimmed.
※Tail lights "ON" (Optional)

[Note]
※Consult KUBOTA dealer about installation of the tail light.

■ Starter Switch

When the starter switch is turned to the right, the engine will start turning. When released, the switch will return to its neutral position.



F-1626

IMPORTANT:

- Because of the safety device, the engine may not be started except when the clutch is disengaged.

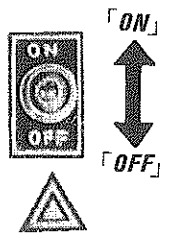
■ Glow Plug Indicator (Pre-heating Indicator)

When the starter switch is turned to the left, the glow plug indicator becomes red. This shows the condition of pre-heating in the combustion chamber.

■ Hazard Lamp Switch (Optional)

When hazard lamp switch is pushed to on position, the hazard lamps flash.

[Note]
Consult KUBOTA dealer about installation of the hazard lamp (switch).



F-1627

■ Horn Button (Optional)

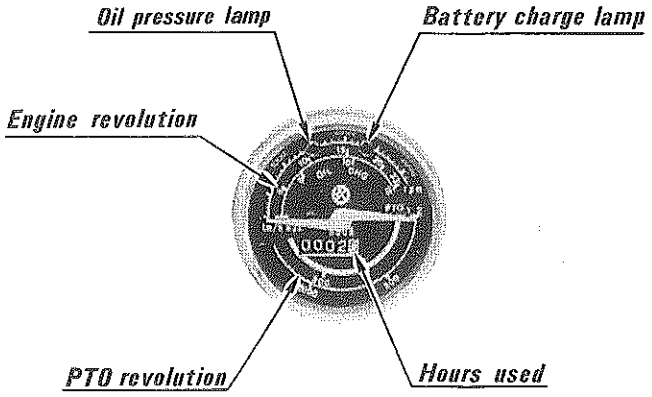
The horn may be sounded with the key switch turned to the on position.

■ Hour Meter

This meter shows the number of hours the tractor has been operated at rated engine rpm.
The last digit (white background) indicates 1/10 of an hour. The time in minutes will be shown by multiplying by six to last digit on white background.

Example 0 1 7 0 1 ... 170 hours 6 minutes used

Moving hand indicates the revolution per minute of the engine.



F-2414

■ Decompression Knob

To assist in cold weather starting, or starting with a weak battery, the following procedures should be used:

- Set throttle to proper starting position.
- Preheat the engine.
- Pull out the decompression knob.
- Engage starter and allow engine RPM to build up.
- While cranking engine, push decompression knob back in to allow engine to start.

■ Engine Oil Pressure Lamp

The engine oil lamp indicates low engine oil pressure when the lamp is on and proper engine oil pressure when the lamp is off.
The light goes on when the Main switch is turned on. It goes off when the engine starts and engine oil begins to circulate normally. If the light stays on even after the engine starts, immediately stop the engine, and check the cause of the trouble.

■ Battery Charge Lamp

The battery charge lamp will glow red when the main switch is turned on and should go out as engine starts. If the lamp continues to glow above idle speeds, the battery is being discharged, indicating the electrical system should be checked.

■ Temperature Gauge

This indicates the engine temperature with the main switch in the ON position.

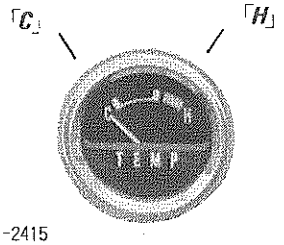
IMPORTANT:

- If the indicator should go over the H line, the engine must be stopped until the cause of the overheating is corrected. (Such as quantity of coolant, fan belt loosening)

CAUTION:

- **Do not remove radiator filler cap until coolant temperature is below its boiling point. Then loosen cap slightly to the stop to relieve any excess pressure before removing cap completely.**

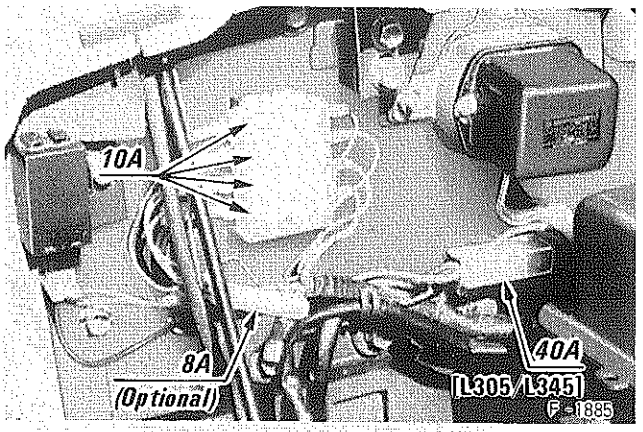
(1) After operating the engine, never touch radiator until it has had sufficient time to cool.
(2) Check this temperature gauge frequently as you operate.

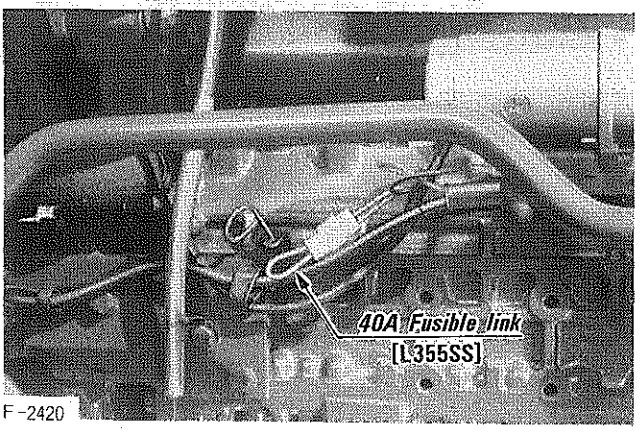


F-2415

■ Fuses

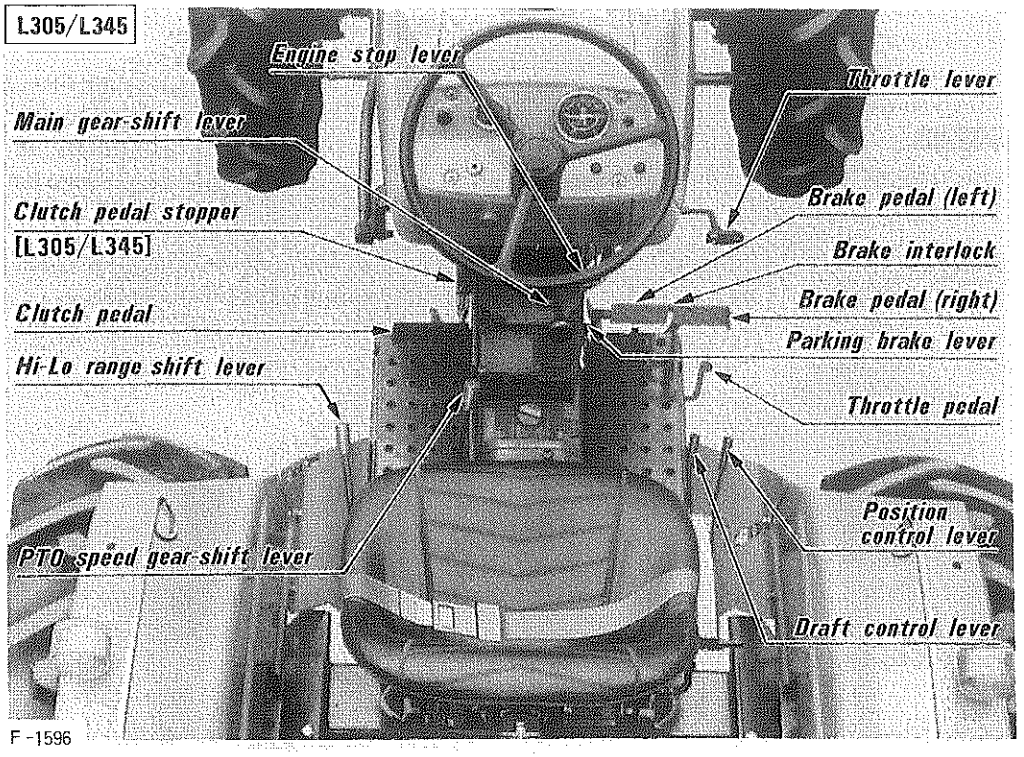
The fuse box contains four 10 ampere fuses. These fuses along with an optional 8 ampere and 40 ampere in line fuses (L305/L345) or 40 ampere fusible link (L355SS) safeguard the electric circuit.

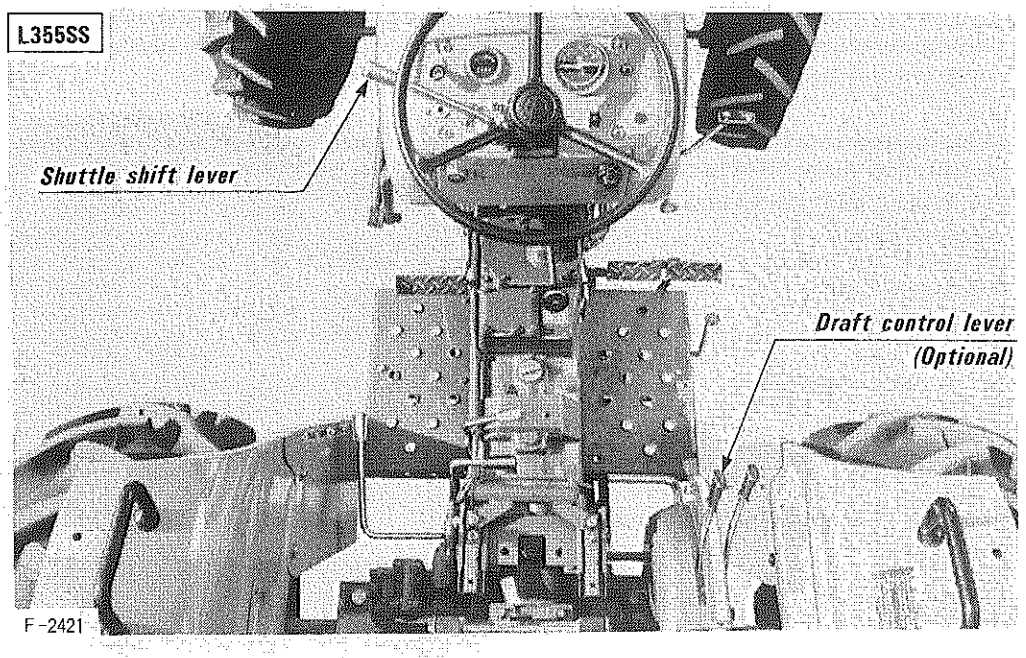




F-2420

4.2 CONTROLS





■ Throttle Lever

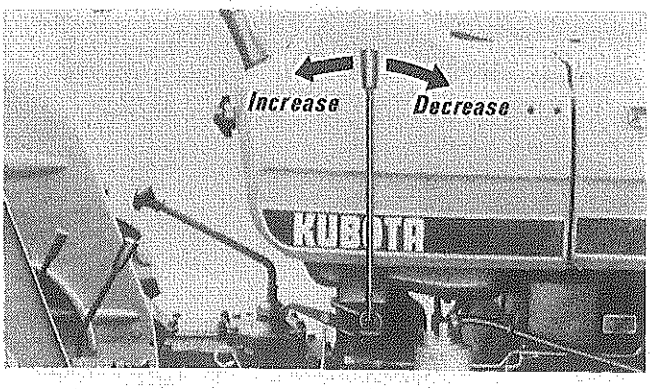
WARNING:

L345•L345DT types only.

- **Depending on the model year, the hand throttle of this product is operated into two directions.**
- **Check and study the control of Hand Throttle lever as the following:**
  - **(1) First of all, please check your tractor serial number to know the type of Hand Throttle lever. The tractor serial number is located on the transmission housing or the mid case on the R.H. side of the tractor.**
  - **(2) Make sure that your tractor is equipped with any type of Hand Throttle lever by moving a little forward/rearward before operation.**
  - **(3) Be particularly careful when backing your tractor. Slowing down will allow you to have much better control.**

- **Tractor serial number** .....
  .....{ L345(2WD): No.11324 and below
  L345DT(4WD): No.11773 and below

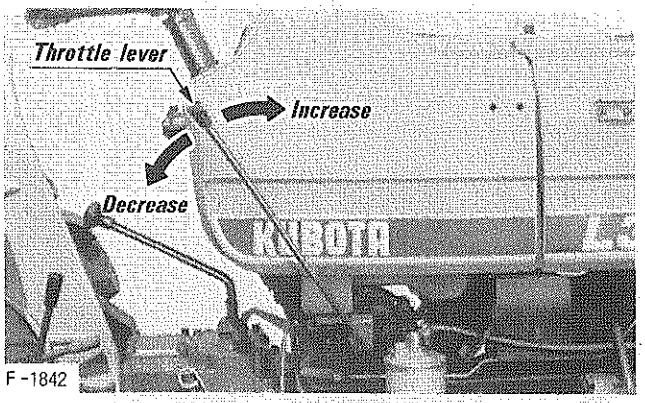
When the throttle is pulled, the speed of the engine is increased. When pushed forward, the speed is decreased.



- **Tractor serial number** .....
  .....{ L345(2WD): No.11325 and above
  L345DT(4WD): No.11774 and above

All of L305, L305DT, L355SS

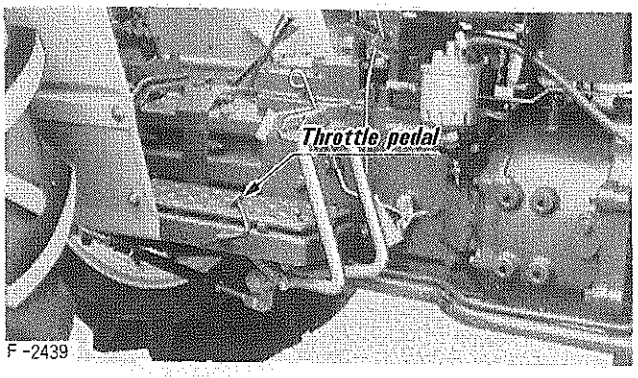
Pulling the throttle lever backward decreases engine speed, and pushing it forward increases engine speed.



F-1842

■ Throttle Pedal

Depressing the pedal increases engine speed.
The throttle pedal may also be used to increase above engine speed set with the throttle lever.



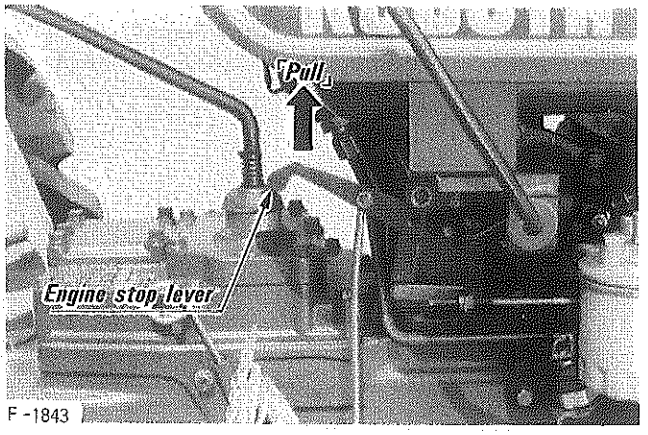
F-2439

■ Engine Stop Lever [L305/L345]

- **Tractor serial number** .....
  .....{ L305(2WD): No.10317 and above
  L305DT(4WD): No.10515 and above

All of L345, L345DT.

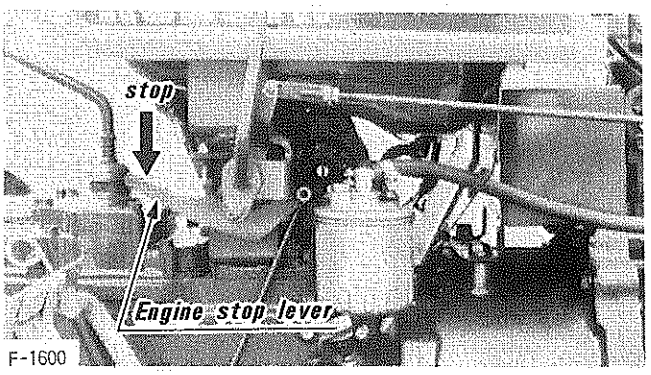
Pull engine stop lever upward and hold it until the engine stops.



F-1843

- **Tractor serial number** .....
  .....{ L305(2WD): No.10316 and below
  L305DT(4WD): No.10514 and below

When the hand accelerator is fully pulled forward and the foot removed from the foot accelerator, the engine will continue to turn at slow speed. Push this lever to stop engine.



F-1600

■ Engine Stop Knob [L355SS]

Pull engine stop knob and hold it until the engine stops.

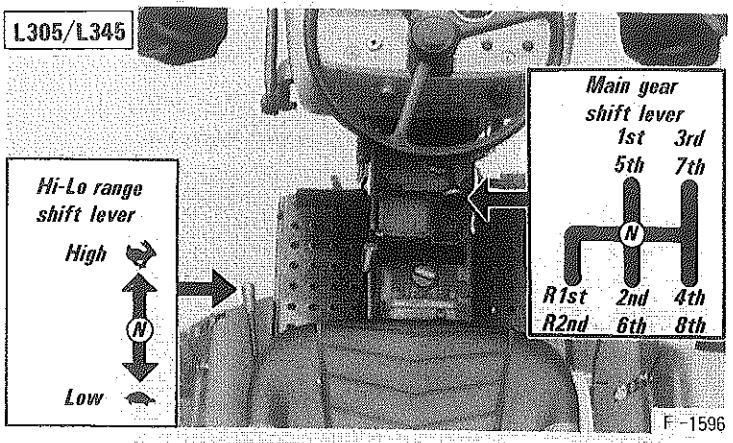
F-2422

■ Main Gear Shift Lever & Hi-Lo Range Shift Lever [L305/L345]

Main gear shift lever pattern is in the form of an "H". Hi-Lo range pattern is in a straight line with 3 positions, "High", "Neutral" and "Low".
By combination and use of the main gear shift lever and the Hi-Lo range shift lever, eight speeds forward and two speeds reverse are obtained.

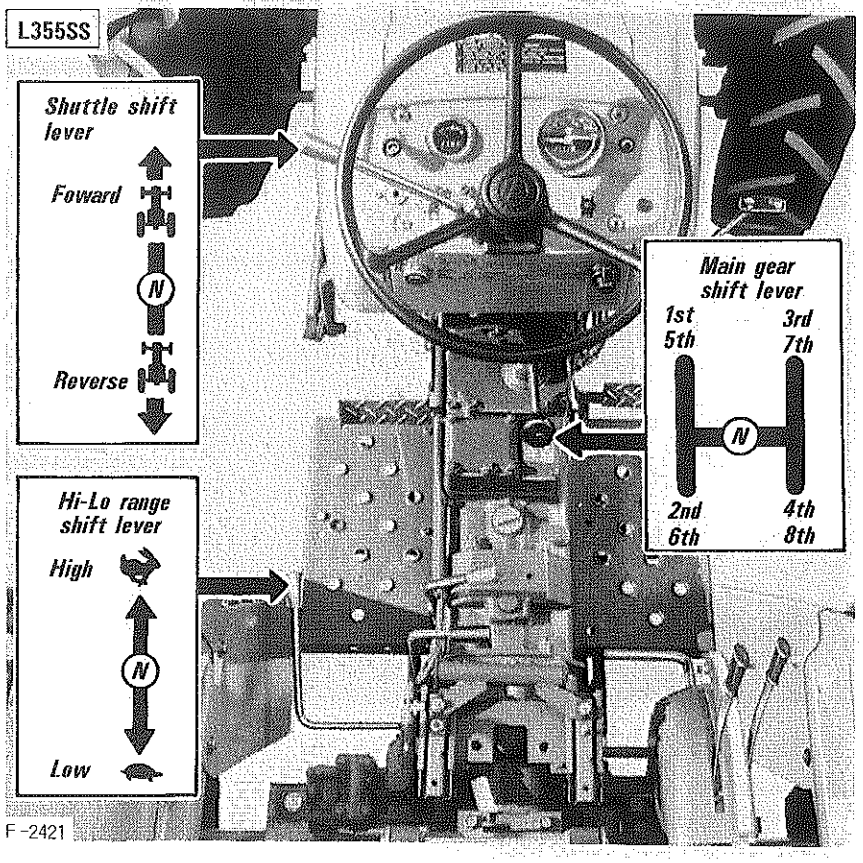
IMPORTANT:

- To change speed, press the clutch pedal completely down and stop the tractor before attempting to proceed with speed change.



■ Main Gear Shift Lever & Hi-Lo Range Shift Lever [L355SS]

Main gear shift lever pattern is in the form of an "H". Hi-Lo range pattern is in a straight line with 3 positions, "High, Neutral and Low".
By the combination of using the main gear shift lever and the Hi-Lo range shift lever, eight speeds are obtained.

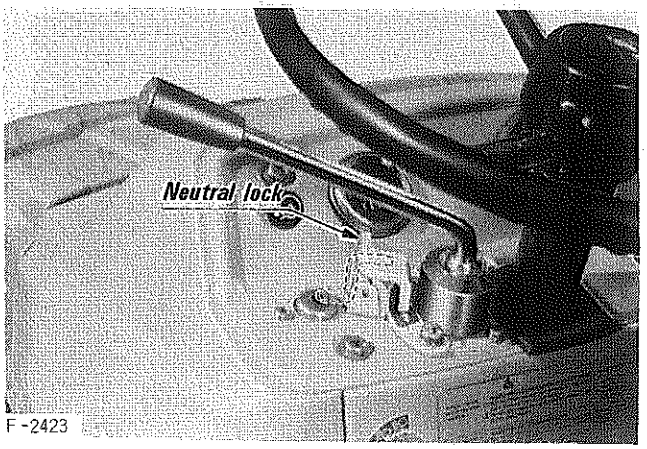


■ Shuttle Shift Lever (Power actuated) [L355SS]

Shift the shuttle shift lever forward to obtain forward speeds and shift it rearward to obtain reverse speeds without using the clutch pedal.
Total of eight forward and eight reverse speeds can be obtained.
Tractors with power shuttle shift can obtain live PTO by shifting shuttle shift lever to neutral position.

IMPORTANT:

(1) Reduce engine speed to low idle before shifting the shuttle shift lever.
(2) Before shifting the main gear shift lever or the Hi-Lo range shift lever, fully disengage the clutch and completely stop the tractor.



WARNING:

BEFORE DISMOUNTING TRACTOR:

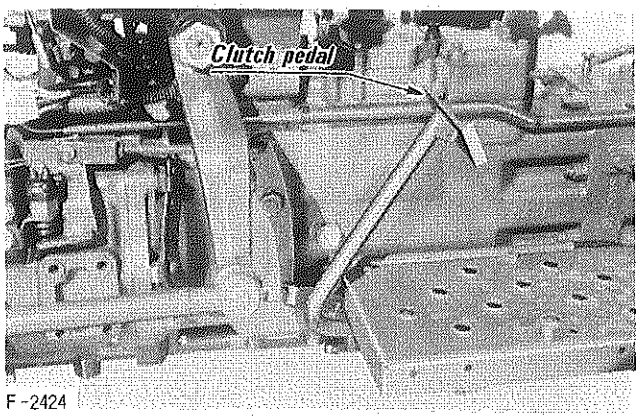
(1) ALWAYS SET PARKING BRAKE
Leaving transmission in gear with the engine stopped will not prevent tractor with shuttle transmission from rolling.

(2) LOCK SHUTTLE SHIFT LEVER IN NEUTRAL POSITION
This prevents movement of shuttle shift lever out of neutral position.

(3) STOP THE ENGINE

■ Clutch Pedal [L355SS]

The clutch is disengaged when the clutch pedal is fully pressed down.



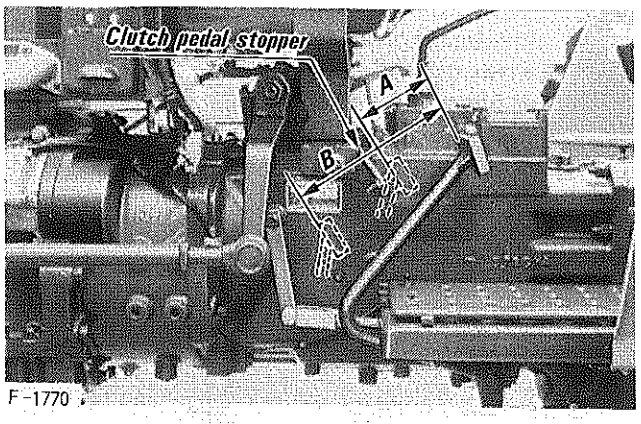
F-2424

■ Clutch Pedal [L305/L345]

CAUTION:

- **Never use the clutch pedal stopper when operating PTO powered equipment.**

The transmission clutch is disengaged when the clutch pedal is pressed down half-way. The PTO clutch remains engaged. Both transmission and PTO clutch are disengaged when the pedal is fully pressed down.
By using clutch stopper, only transmission clutch is disengaged.



F-1770

(A) Only the transmission clutch is disengaged.
(B) Both the transmission and the PTO clutch are disengaged.

It is recommended to use the stopper when operating the tractor with an implement not requiring PTO power such as front-end loader, blade, etc. to avoid excessive slip of PTO clutch.

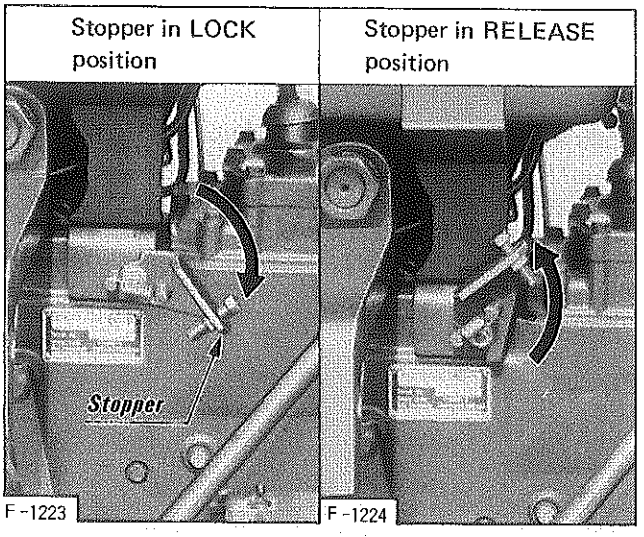
IMPORTANT:

To help prevent premature clutch wear:

(1) The clutch pedal must be quickly disengaged and be slowly engaged.
(2) Avoid operating the tractor with your foot resting on the clutch pedal.

■ Clutch Pedal Stopper [L305/L345]

When the PTO operation is not to be used, put the clutch pedal stopper in place.
While the tractor is traveling on a road, place the PTO lever in neutral.

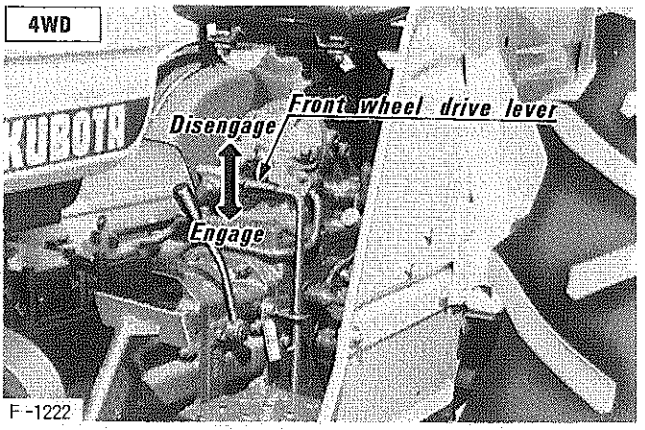


F-1223 F-1224

- For operation of the clutch and adjustment of the clutch pedal, refer to the respective items.

■ Front Wheel Drive Lever [4WD]

The front wheel drive is used only when greater traction power is required or to prevent the tractor from lunging during rotary tilling hard soil.
Pushing down the lever engages the front wheels for 4 wheel drive.



F-1222

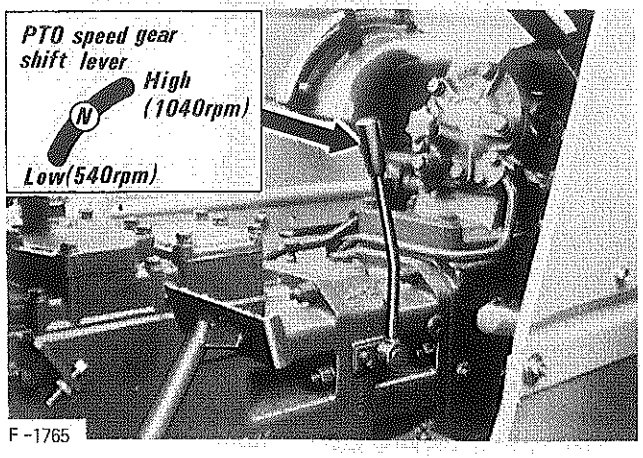
■ PTO Speed Gear Shift Lever

CAUTION:
- Use of the 2nd PTO speed, if equipped, is recommended only if implement manufacture specifically approves its use. In all other PTO applications use only 540 RPM PTO to prevent overspeeding.

IMPORTANT:
- Depress clutch pedal fully before engaging PTO.

[L305/L345]

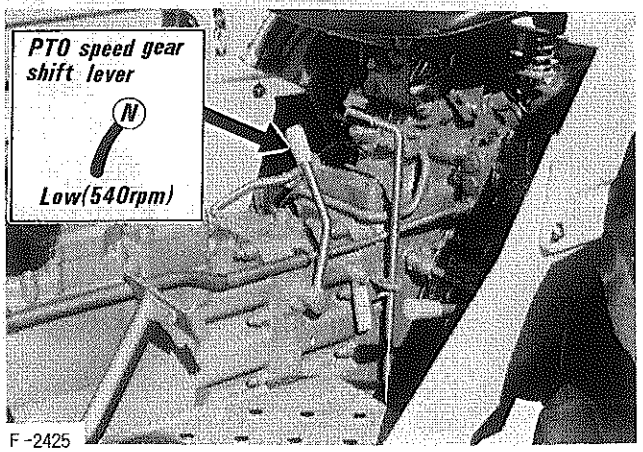
The tractor has two speeds – 540 & 1040 RPM. For standard 540 RPM PTO speed, operate the engine at 2540 engine RPM.



F-1765

[L355SS]

The tractor has a 540 RPM speed position and a neutral position. For standard 540 RPM PTO speed, operate the engine at 2430 engine RPM.

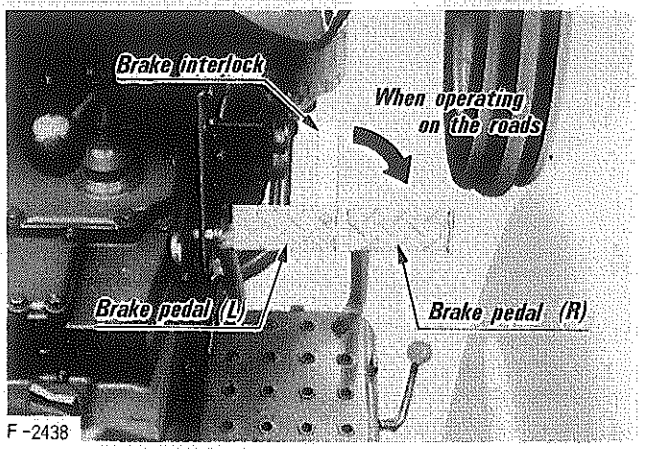


F-2425

■ Brake Pedals (Right and Left)

WARNING:
- Applying only one rear wheel brake at high speeds could cause the tractor to swerve or roll-over.

(1) Before operating the tractor on a road, be sure to interlock the right and left pedals as illustrated below. It will be very dangerous to use only one brake.
(2) Use individual brakes to assist in making sharp turns in field applications. Disengage the brake lock and depress only one brake pedal.

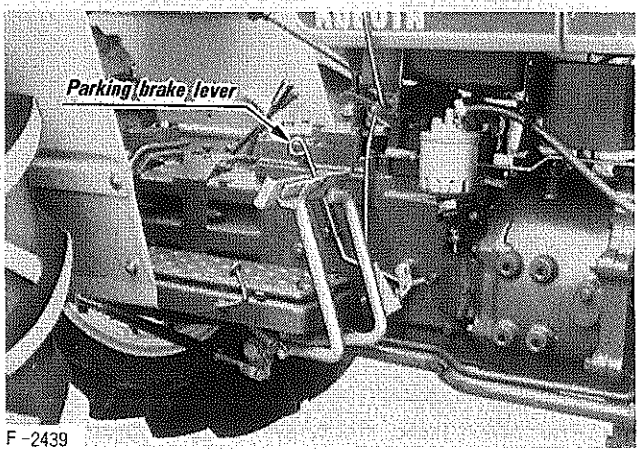


F-2438

■ Parking Brake Lever

(1) To set the parking brake;
- Interlock the brake pedals.
- Depress the brake pedals.
- Latch the brake pedals with the parking brake lever.

(2) To release the parking brake, depress the brake pedals again.

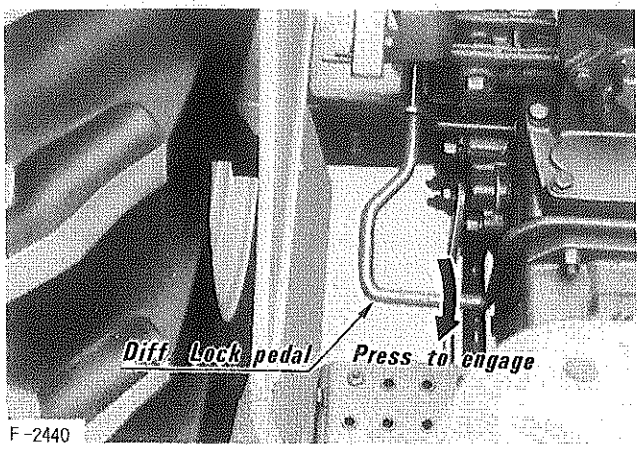


F-2439

■ Differential Lock Pedal

CAUTION:
- **Never apply the differential lock when traveling at high speeds. Doing so could cause the tractor to swerve out of control.**

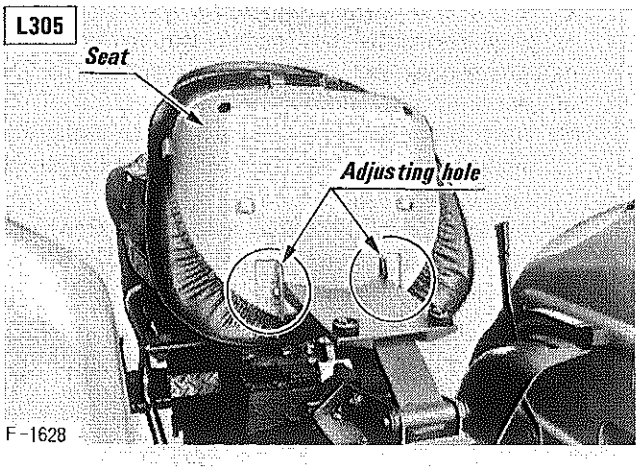
Differential lock is applied only in cases where: the wheels are likely to slip, or only one of the rear wheel slips.
Lightly stepping on the differential lock pedal with the heel makes the rear wheels run at equal speed. To unlock, just release the pedal.



F-2440

■ Seat [L305]

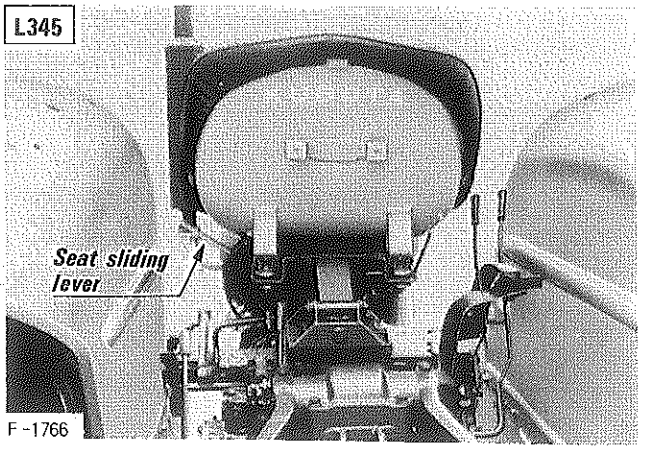
The operator's seat position can be adjusted forward and backward in 60 mm (2.4 in.) range by changing the adjusting hole.



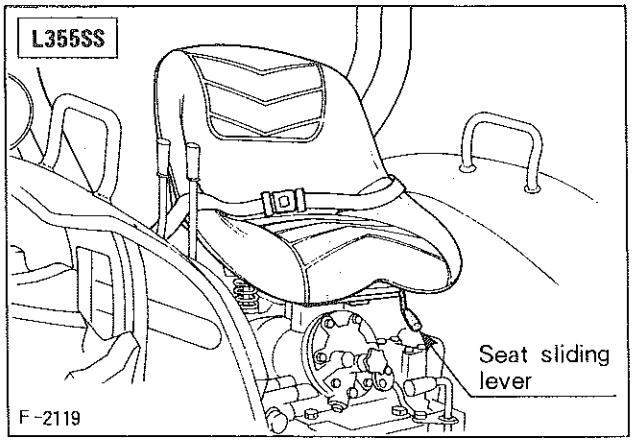
F-1628

■ Adjustable Sliding Seat [L345/L355SS]

The operator's seat has a sliding adjustment. To adjust, pull the lever and slide the seat forward or back. Release the lever to lock the seat in the selected position.



F-1766



F-2119

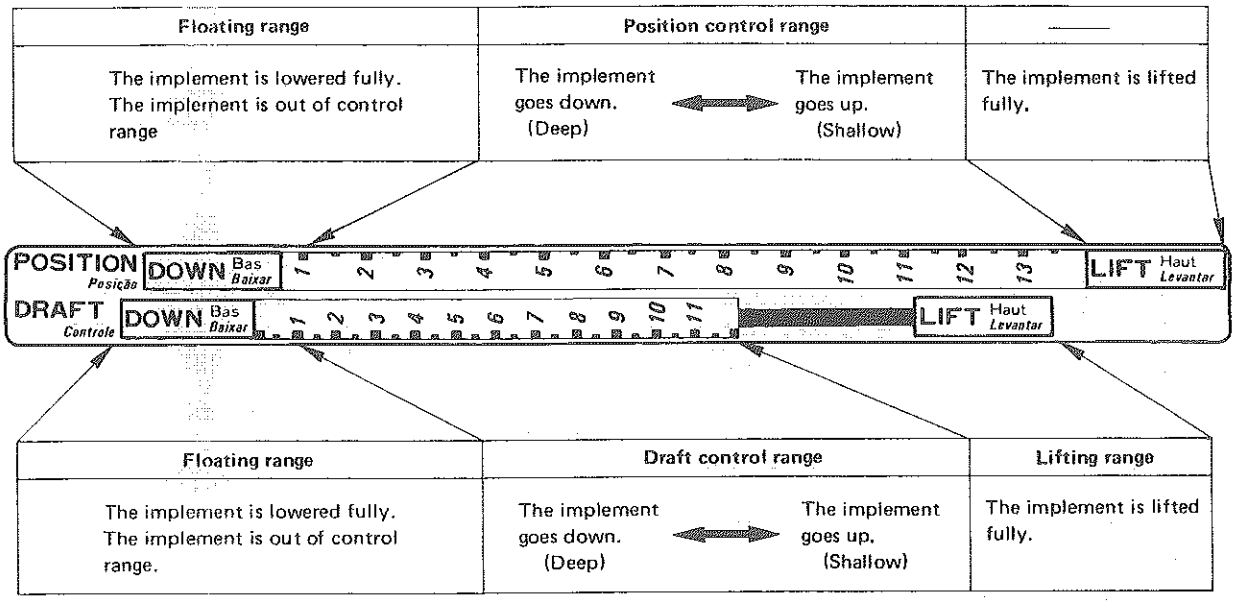
■ How to Open the Hood

To open the hood, remove the hood latch located upper side.
Lift the hood from the rear.

CAUTION:
- **Never open the hood while the engine is running.**

■ Position Control and Draft Control

The hydraulic operation is of two types: position control and draft control



IMPORTANT:

(1) Do not operate until the engine is well warmed up. If operation is attempted while the engine is still cold, the hydraulic mechanism will not fully function and its service life will be shortened.

(2) If noises are heard when the implement is lifting after the hydraulic control lever has been activated, the hydraulic mechanism is not adjusted properly. Unless corrected the unit will be damaged. Contact your Kubota dealer for adjustment.

■ Position Control

(1) The position of the implement can be adjusted freely with the position control lever when the position of the implement is within a certain range.

(2) The implement is lowered fully when the lever is moved to the floating range.

■ Draft Control

When using draft control, set the position control lever to "LIFT".

Draft control is useful when working with implements (e.g.; plows, harrows, etc.) which do not have– or do not use– wheels or other means for resting on the ground and adjusting the working depth.

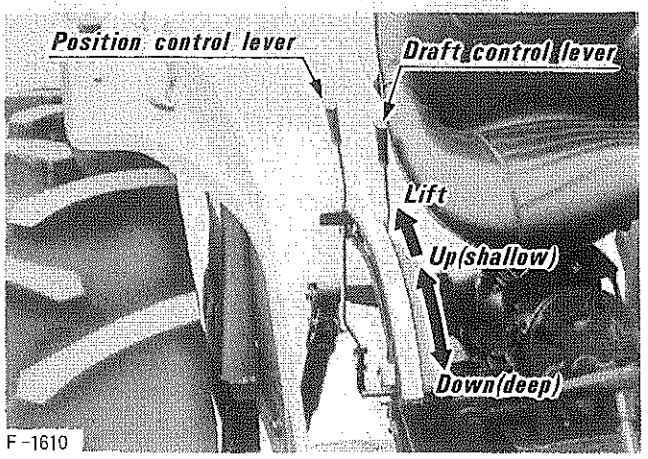
(1) In the floating range, the implement is lowered fully.

(2) In the draft range, the draft control system will automatically adjust the implement's working depth to maintain an even pull on the tractor regardless of the soil condition.

(3) When the draft control lever is pulled backwards, the implement depth becomes shallow, and when pushed forwards, becomes deep.

(4) In the position of "LIFT", the implement is lifted fully.

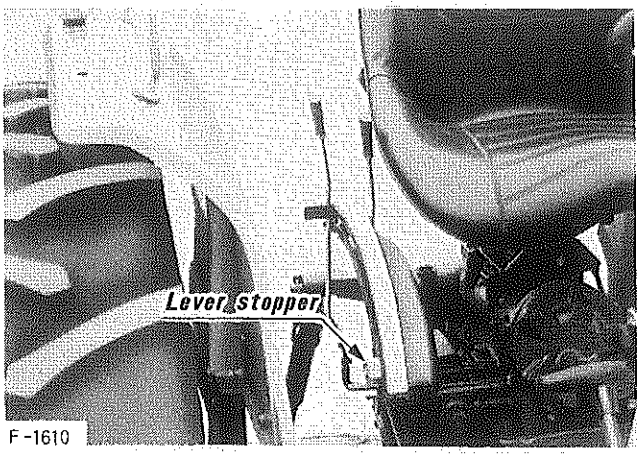
Similarly set the draft control lever to "LIFT" when using position control.



F-1610

■ Adjustment of Lever Stopper

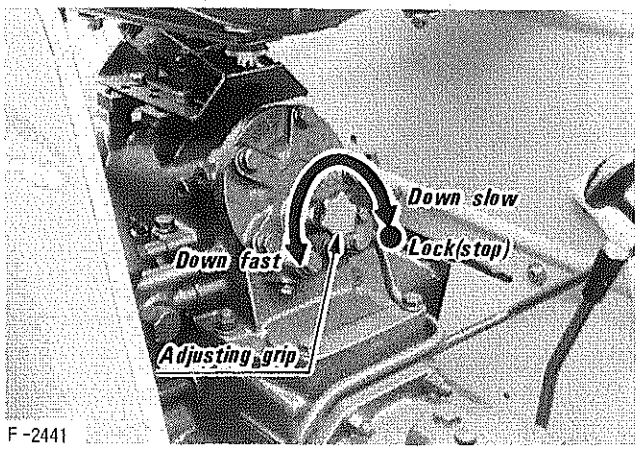
(1) Prior to operation, adjust the position of the hydraulic lever by fixing the stopper at the point when the implement is positioned at the desired elevation.
(2) While operating the tractor, the desired position of the implement can then be obtained by simply moving the hydraulic lever to the point where it will be stopped by the stop bolt.
(3) When it is necessary to lift or lower the implement to one of its extreme positions, push the lever inward and adjust it to its desired position.



F-1610

■ 3-point Hitch Down Speed Control

Adjust down speed of implement by turning the grip under the seat. The lowering speed depends on weight of implement and operating speed.
Adjust grips clockwise for slow lowering speed, counterclockwise for faster lowering speed.
Do not tighten the grip excessively to lock the hydraulics.



F-2441

■ Power Steering

(1) The power steering system is actuated only while the engine is running. It makes the steering wheel a little hard to turn when the engine runs at low speed. As long as the engine is off, the tractor with power steering functions in the same manner as the ones without power steering.
(2) Do not turn the steering wheel carelessly while the tractor is stopped or steer the tractor forcibly with a front wheel in a ditch. Otherwise the front wheels and the front axle will wear out quickly.
(3) Avoid operating the tractor continuously with the steering wheel turned all the way to either side. Keeping the relief valve activated causes oil to deteriorate, and the pump and link will be damaged or worn very quickly.

CAUTION:
- **Power steering makes the steering wheel easy to turn. Drive the tractor with care especially when traveling on a road.**

4.3 AUXILIARY HYDRAULICS

CAUTION:

- **Escaping hydraulic fluid under pressure can have sufficient force to penetrate skin, causing serious personal injury. Before disconnecting lines, be sure to relieve all pressure. Before applying pressure to system, be sure all connections are tight and that lines, pipes, and hoses are not damaged. Fluid escaping from a very small hole can be almost invisible. Use a piece of cardboard or wood, rather than hands, to search for suspected leaks.**
  If injured by escaping fluid, see a doctor at once. Serious infection or reaction can develop if proper medical treatment is not administered immediately.

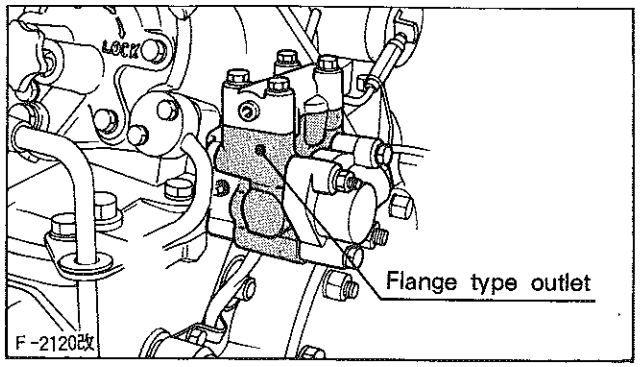
Before making any hydraulic connections:

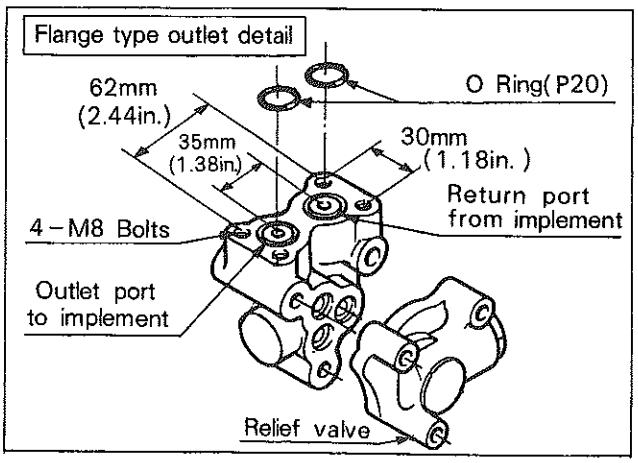
(1) Stop engine.
(2) Lower both position control lever and draft control lever (if provided) down to the lowest positions.
(3) Keep the above caution in mind at all times.

■ Hydraulic Flange Type Outlet

The hydraulic flange type outlet should be used when the use of both the 3-point hitch and the auxiliary hydraulics are required.

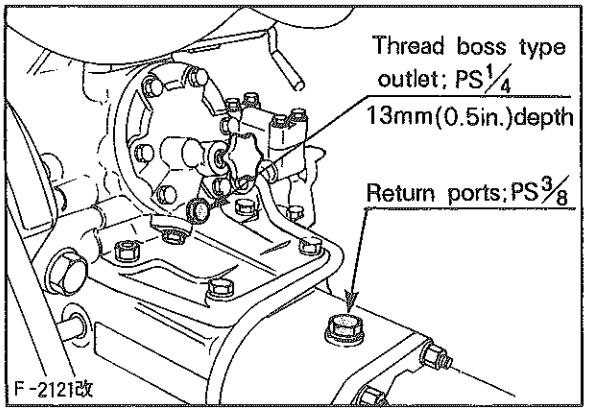
Be sure to use a control valve of the "power beyond type" for the operation of the flange type outlet.





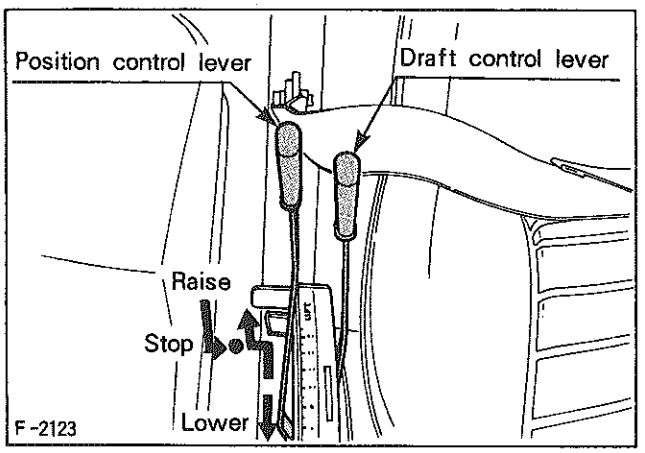
■ Thread Boss Type Outlet

If no additional control valve on an implement is provided, the implement can be operated by the hydraulic control lever on the tractor. Connect the implement hydraulic hose to the tractor as illustrated below.



(Operation with draft and position control)

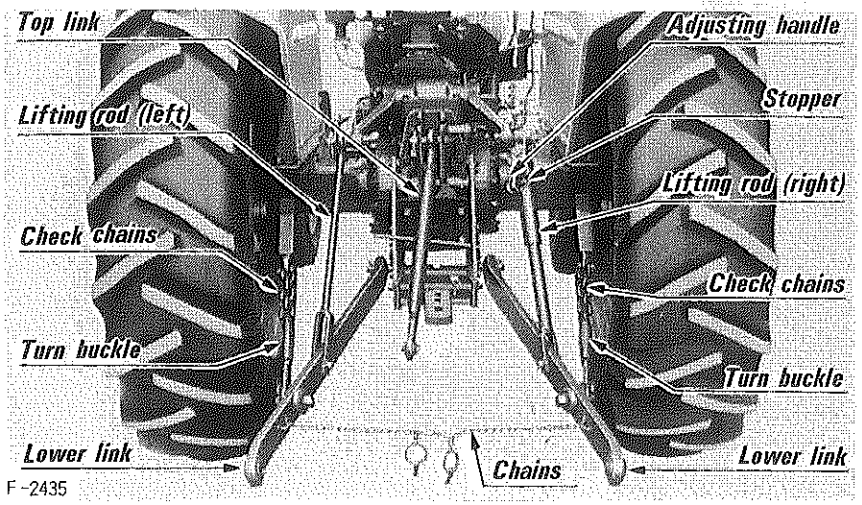
(1) Turn the 3-point hitch down speed adjusting grip to the lock position to prevent the 3-point hitch from lowering.
(2) Pull the draft control lever completely back to lift position.
(3) To raise implement, pull the position control lever completely back beyond the stop.
When the relief valve is activated, push the lever forward until the relief valve goes off.
(4) To lower implement, push the lever forward.



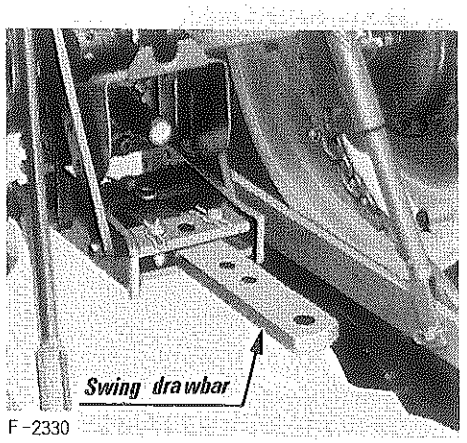
IMPORTANT:

(1) When using the thread boss type outlet, turn 3-point hitch down speed adjusting grip to lock position to avoid lowering 3-point hitch.
(2) Clean the tractor in the area of hydraulic outlets before opening the tractor hydraulic system to connect the auxiliary hydraulic system.
Insure that the implement hydraulic system is full of fluid and that it is compatible with the fluid in the tractor.

5. THREE-POINT HITCH & DRAWBAR



F-2435



F-2330

CAUTION:

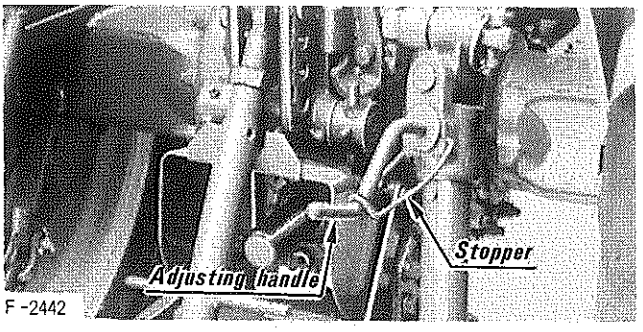
- **Never pull from the top link, the rear axle or any point above the drawbar. Doing so could cause the tractor to tip over rearward causing personal injury.**
  For pulling, attach to the drawbar (fixed or swinging type). Use the 3-point hitch only with equipment designed for 3-point hitch usage.

■ Adjustment of Top Link

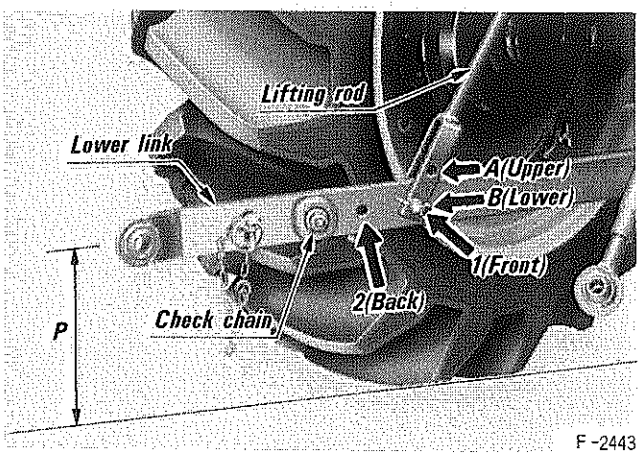
(1) Adjust the angle of the implement to the desired position by shortening or lengthening the Top Link.
(2) The fixed position of the top-hitch varies according to the type of implement being used.

■ Adjustment of Lifting Rod

(1) Level a 3-point mounted implement from side to side by turning the adjusting handle to shorten or lengthen the adjustable lifting rod.
(2) After the adjustment is completed, secure with the stopper.
(3) Correct positioning of the lifting rod to the lower link is shown below. Positioning varies according to the type of implement being used.



F-2442



F-2443

Lower Link End Height (P)

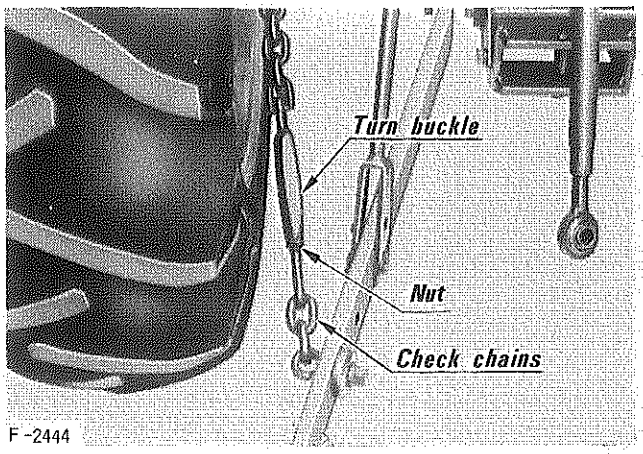
Hole used	L305		L345		L355SS
	with 12.4 – 24 tire	with 13.6 – 24 tire	with 12.4/11–28 tire	with 13.6 – 28 tire	with 13.6 – 24 tire
1 & A	795 mm (31.3 in.)	820 mm (32.3 in.)	860 mm (33.9 in.)	885 mm (34.8 in.)	820 mm (32.3 in.)
1 & B	705 mm (27.8 in.)	730 mm (28.7 in.)	765 mm (30.1 in.)	790 mm (31.1 in.)	720 mm (28.3 in.)

IMPORTANT:

- **Never use lower link 2 (Back) hole.**

■ Adjustment of Check Chains

Adjust the turn-buckle to control horizontal sway of the implement.



F-2444

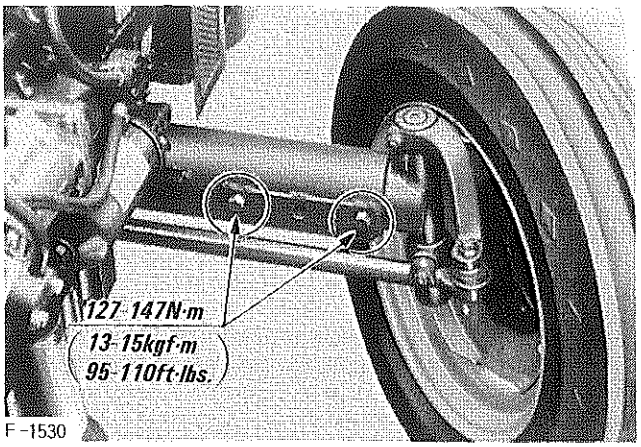
Type of implement	Chain adjustment
Plow, furrower subsoiler, cultivator, ditcher	Loosen until the implement can be moved 50~60 mm (2~2.5 in.) horizontally.
Rotary, mower, hayrake, tedder, ridger	Tighten

6. WHEELS, TIRES AND TREAD

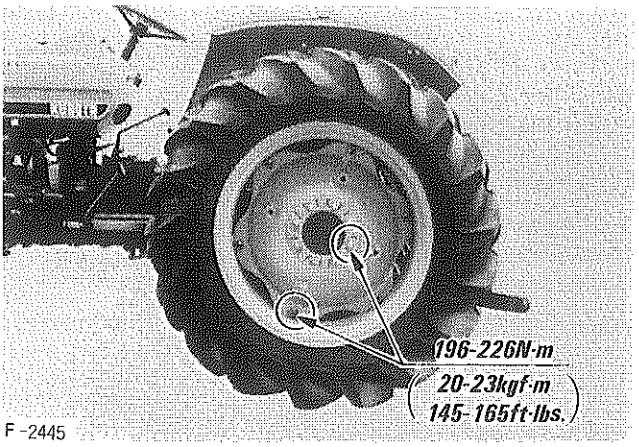
CAUTIONS:
Never operate tractor with a loose rim, wheel, or axle.
(1) Any time bolts are loosened, retighten to specified torque.
(2) Check all bolts frequently and keep them tight.

IMPORTANT:
Follow same checking procedure when tractor is first used.

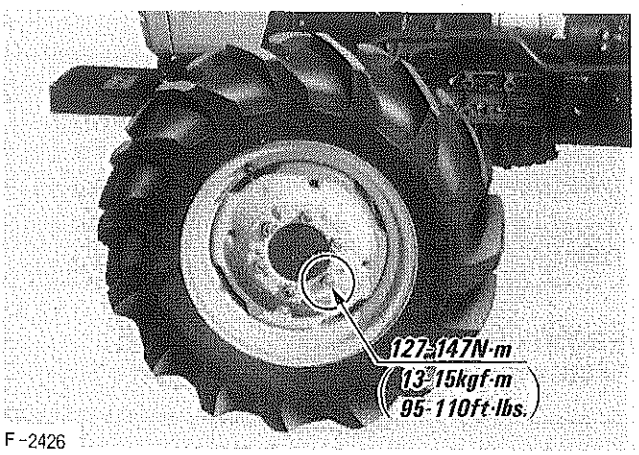
CAUTION:
- **A wide wheel tread decreases danger when working on slopes or hills, or when working with trailer, etc.**



F-1530



F-2445



F-2426

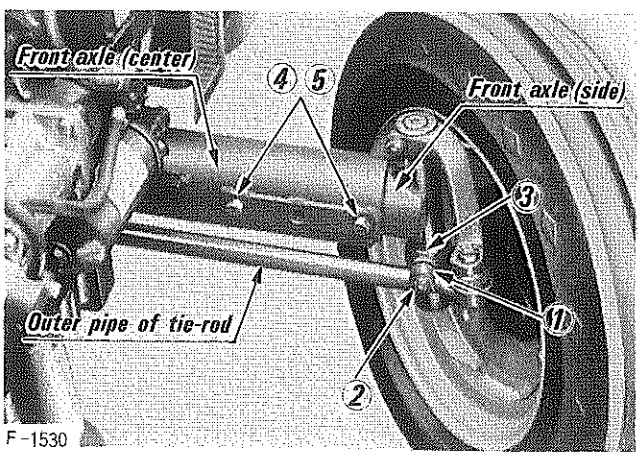
6.1 TREAD

CAUTION:
- **Support the tractor securely on stands before adjusting tread width.**

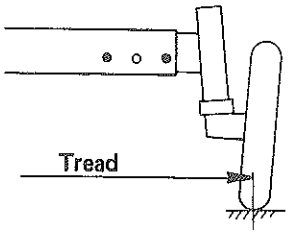
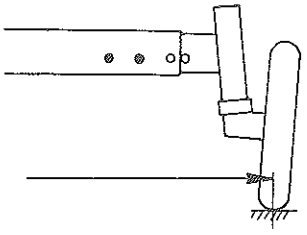
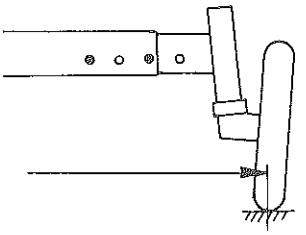
[FRONT] 2WD

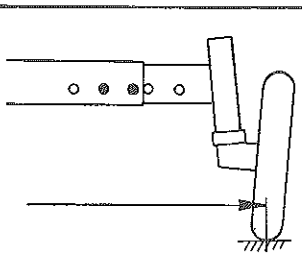
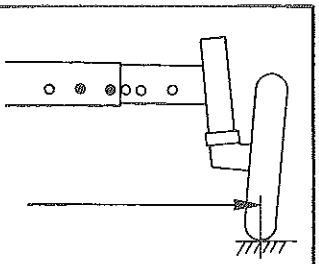
The 2WD front axle is 5 stage adjustable axle.

(1) Loosen nut ② of clamp ① on the outer pipe of tie-rod, and remove bolt ③.
(2) Jack up front end of tractor. Loosen nut ④ and remove bolt ⑤, four bolts. Then it is possible to separate the front axle (left) (right), and (center).
(3) Insert bolt ⑤ into the hole of the desired tread width and tighten with nut ④. Insert bolt ③ into the inner pipe of the tie-rod and tighten.
(4) Select the bolt holes for the front axle (side), and (center) according to the illustration.



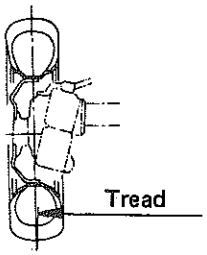
F-1530

				
L305 (2WD)	5.50 – 16	1155 mm (45.5 in.)	1235 mm (48.6 in.)	1315 mm (51.8 in.)
	5.50 – 16 (U.S.A.)	1130 mm (44.5 in.)	1210 mm (47.6 in.)	1290 mm (50.8 in.)
L345 (2WD)	5.50 – 16	1155 mm (45.5 in.)	1235 mm (48.6 in.)	1315 mm (51.8 in.)
	6.00 – 16	1130 mm (44.5 in.)	1210 mm (47.6 in.)	1290 mm (50.8 in.)

			
L305 (2WD)	5.50 – 16	1395 mm (54.9 in.)	1475 mm (58.0 in.)
	5.50 – 16 (U.S.A.)	1370 mm (53.9 in.)	1450 mm (57.1 in.)
L345 (2WD)	5.50 – 16	1395 mm (54.9 in.)	1475 mm (58.0 in.)
	6.00 – 16	1370 mm (53.9 in.)	1450 mm (57.1 in.)

[FRONT] 4WD

The 4WD front axle is not adjustable.

		
L305 (4WD)	7 – 16	1150 mm (45.3 in.)
	8.3 – 16	1225 mm (48.2 in.)
L345 (4WD)	8 – 18	1185 mm (46.7 in.)
	9.5 – 16	1245 mm (49.0 in.)
L355SS (4WD)	8.3 – 16	1225 mm (48.2 in.)

IMPORTANT:

(1) Always attach tires as shown in the above drawings.

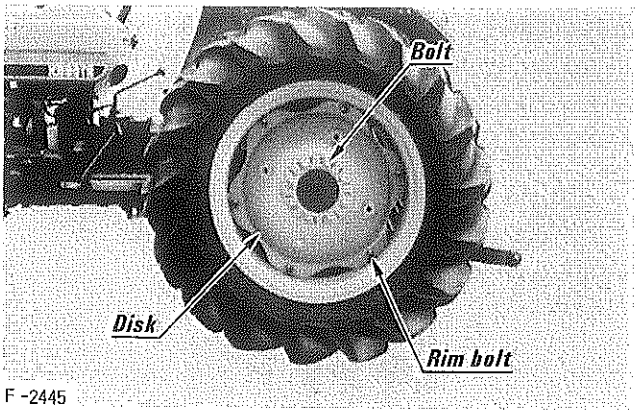
(2) If not attached as illustrated, transmission parts may be damaged.

Do not use tires larger than specified.

[REAR]

The rear axle tread widths can be adjusted in 5 to 7 positions depending on tractor model and tire size. The tire should always be installed so that tread mark is same as shown in illustration.

Tread width can be adjusted by: 1) moving disk on rim, 2) dishing rim inward or outward, 3) switching wheels to opposite side of tractor. See illustration for wheel and rim positions for each tread setting. Always tighten bolts to proper torque specifications.



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		Tread			
L305 (2WD) (4WD)	12.4–24	———	———	1275 mm (50.2 in.)	1365 mm (53.7 in.)
	13.6–24	———	———	1275 mm (50.2 in.)	1370 mm (53.9 in.)
L345 (2WD) (4WD)	12.4/11–28	1130 mm (44.5 in.)	1210 mm (47.6 in.)	1300 mm (51.2 in.)	1320 mm (52.0 in.)
	13.6–28	———	1170 mm (46.0 in.)	1275 mm (50.2 in.)	1370 mm (53.9 in.)
L355SS (4WD)	13.6–24	———	———	1275 mm (50.2 in.)	1370 mm (53.9 in.)

L305 (2WD) (4WD)	12.4–24	1465 mm (57.7 in.)	1545 mm (60.8 in.)	1645 mm (64.8 in.)
	13.6–24	1475 mm (58.0 in.)	1575 mm (62.0 in.)	1680 mm (66.1 in.)
L345 (2WD) (4WD)	12.4/11–28	1420 mm (55.9 in.)	1490 mm (58.7 in.)	1600 mm (63.0 in.)
	13.6–28	1475 mm (58.0 in.)	1575 mm (62.0 in.)	1680 mm (66.1 in.)
L355SS (4WD)	13.6–24	1475 mm (58.0 in.)	1575 mm (62.0 in.)	1680 mm (66.1 in.)

IMPORTANT:

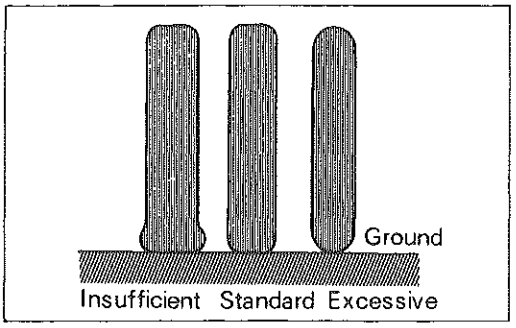
(1) Always attach tires as shown in the above drawings.

(2) If not attached as illustrated, transmission parts may be damaged.

Do not use tires larger than specified.

6.2 TIRES

Though the tire pressure is factory-set to the prescribed level, it naturally drops slowly in the course of time. Thus, check it everyday and inflate as necessary.



CAUTION:

- **Do not attempt to mount a tire. This should be done by a qualified person with the proper equipment.**
  Qualified persons with the proper tire mounting equipment should recognize the following warning.

WARNING:

- **Never exceed 241 kPa (35 psi) when attempting to seat a bead. If beads have not been seated by the time the pressure reaches 241 kPa (35 psi), deflate the assembly, reposition the tire on the rim, relubricate and reinflate. After seating the bead, adjust inflation pressure as recommended in the inflation pressure chart.**

6.3 BALLAST

(1) Selecting Front Ballast.
Add weight to front end if needed for stability. Heavy pulling and heavy rear mounted implements tend to lift front wheels. Add enough ballast to maintain steering control and prevent tip over. Remove weight where it is no longer needed. Front weights are available from your Kubota Dealer. Your dealer can help you decide how much is required for your particular application.

CAUTION:

- **Additional ballast may be needed for transporting heavy integral implements. When implement is raised, drive slowly over rough ground, regardless of how much ballast is used.**

(2) Select rear ballast carefully.
Add weight to rear wheels if needed to improve traction or for stability. Amount of rear ballast should be matched to job and ballast should be removed when it is not needed. Rear wheel weights are available or liquid may be added to the tires. Consult your Kubota Dealer for the correct ballasting necessary for your particular application.

(2-1) Using liquid weight in rear tires.
Water and calcium chloride solution provides, safe economical ballast. Used properly, it will not damage tires, tubes or rims. The addition of calcium chloride is recommended to prevent the water from freezing.
Use of this method of weighting the wheels has the full approval of the tire companies. See your tire dealer for this service. Do not fill any tire more than 75% full (to valve stem level).

Liquid weight per tire (75 Percent filled)

Tire sizes	12.4 – 24	12.4/11 – 28	13.6 – 24	13.6 – 28
Slush free at –10°C (14°F) Solid at –30°C (–23°F) [Approx. 1 kg (2 lbs.) $CaCl_2$ per 4ℓ (1 gal.) of water]	132 kg (290 lbs.)	150 kg (331 lbs.)	160 kg (352 lbs.)	183 kg (403 lbs.)
Slush free at –24°C (–12°F) Solid at –47°C (–52°F) [Approx. 1.5 kg (3.5 lbs.) $CaCl_2$ per 4ℓ (1 gal.) of water]	140 kg (308 lbs.)	161 kg (355 lbs.)	172 kg (379 lbs.)	199 kg (439 lbs.)
Slush free at –47°C (–52°F) Solid at –52°C (–62°F) [Approx. 2.25 kg (5 lbs.) $CaCl_2$ per 4ℓ (1 gal.) of water]	151 kg (330 lbs.)	170 kg (374 lbs.)	181 kg (400 lbs.)	212 kg (467 lbs.)

IMPORTANT:

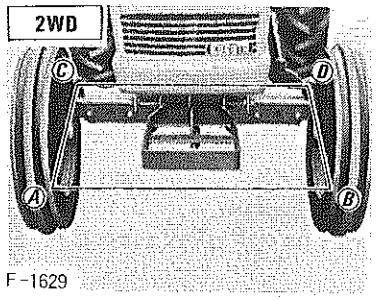
- Do not fill the following tires with water.
  5.00–15 5.50–16 6.00–16 7–16 8.3–16 8–18 9.5–16

■ Inflation Pressure

Rear	12.4–24, 4PR	120 kPa (1.2 kgf/cm^2 ; 17 psi)
	12.4–24, 6PR	120 kPa (1.2 kgf/cm^2 ; 17 psi)
	12.4/11–28, 6PR	120 kPa (1.2 kgf/cm^2 ; 17 psi)
	13.6–24, 6PR	120 kPa (1.2 kgf/cm^2 ; 17 psi)
	13.6–28, 6PR	120 kPa (1.2 kgf/cm^2 ; 17 psi)
Front	5.50–16, 4PR	240 kPa (2.4 kgf/cm^2 ; 34 psi)
	6.00–16, 6PR	340 kPa (3.4 kgf/cm^2 ; 49 psi)
	7–16, 4PR	180 kPa (1.8 kgf/cm^2 ; 26 psi)
	8–18, 4PR	180 kPa (1.8 kgf/cm^2 ; 26 psi)
	8.3–16, 6PR	180 kPa (1.8 kgf/cm^2 ; 26 psi)
	9.5–16, 6PR	180 kPa (1.8 kgf/cm^2 ; 26 psi)

6.4 TOE-IN [For 2WD and 4WD]

Toe-in equals distances Ⓒ Ⓓ – Ⓐ Ⓑ. Specification is 2 to 8mm (0.1 to 0.3 in.).
To adjust toe-in loosen the lock nut and adjust the length of the tie rod until the proper toe-in measurement is obtained. Retighten the lock nut.



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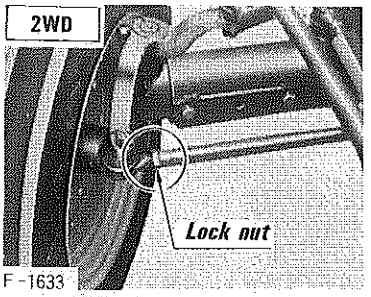
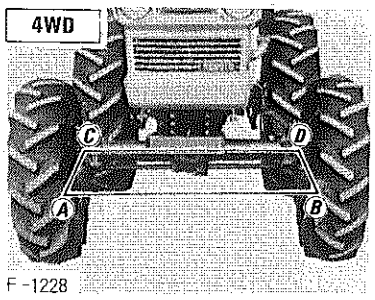


F-1633



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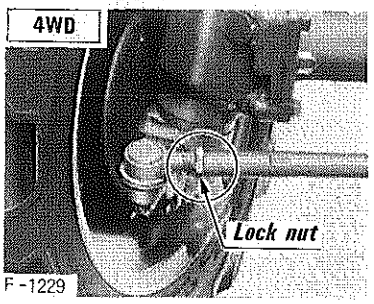

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7. OPERATING INSTRUCTIONS

Pre-Start Checks

Prior to starting the engine, make pre-start checks according to the Maintenance Check List on page 36 to 38.

CAUTION:
(1) Read "For Safe Operation" in the front of this manual.
(2) Read the warning and caution label located on the tractor.

7.1 OPERATING THE ENGINE

CAUTIONS:
(1) Do not start the engine in a closed room. Otherwise, the air will be polluted with exhaust gas which is very dangerous.
(2) Make it a rule to set main gear shift lever, Hi-Lo range shift lever, shuttle shift lever and PTO speed gear shift lever to the "neutral" positions before starting the engine.

■ Starting

(1) Sit in the operator's seat. If the tractor is equipped with a ROPS, fasten the seat belt.
(2) Set the parking brake.
(3) Place Main gear shift lever, Hi-Lo range shift lever, shuttle shift lever and PTO speed gear shift lever in the "neutral" positions.
(4) Place hydraulic control lever in lowest position.
(5) Increase the engine speed slightly with hand throttle. (approximately 1500 rpm position) (For operation of the hand throttle, refer to page 17)
(6) Insert the key into the main switch and turn it on.
(7) Make sure that the engine oil pressure lamp and battery charge lamp are on.
(8) Fully depress the clutch pedal and turn the starter switch left, until the glow plug lamp turns red. Though the glow plug lamp turns red in about 10 seconds, it takes at least 20 seconds until the preheating coil in the combustion chamber is fully heated. The lower the ambient temperature, the longer the preheating time. For the necessary preheating time, refer to the table below:

Temperature	Preheating Time
Over 0°C (32°F)	20 – 30 sec.
Below 0°C (32°F)	40 – 60 sec.

(9) Turn the starter switch to the start position and the starter will turn and the engine should start.
(10) Make sure that the engine oil pressure lamp has gone off. If the lamp is still on, immediately stop the engine and check the lubrication system.
(11) Make sure that the battery charge lamp has gone off. If the lamp is still on, immediately stop the engine and check the electric system.
(12) Perform warm-up operations by running the engine at the medium speed.

IMPORTANT:
(1) Do not turn the starter switch while the engine is running.
(2) When the temperature is below 0°C (32°F), place the Hi-Lo range shift lever in the neutral position and keep the engine at medium speed to warm up the lubricant of engine and transmission at least 10 minutes.
And after that depress the clutch pedal several times slowly.
If the tractor is operated before the lubricant of engine and transmission is warm enough, the tractor life will be shortened.
(3) Don't operate the tractor under full load condition until it is sufficiently warmed up.
(4) Don't use starting fluid.

■ Starting with Weak Battery or in Cold Weather

Perform the following procedure between the steps (6) and (10) on Starting:
(1) Pull out the decompression knob.
(2) Depress the clutch pedal all the way and turn the starter switch to the start position.
(3) After the flywheel starts to run at full pitch in 3 to 5 seconds, push the decompression knob back. If necessary, operate preheating before pulling the decompression knob.

IMPORTANT:
- When the ambient temperature is less than −15°C (5°F) and tractor will not be used for a long period, remove the battery from the tractor and store it somewhere warm until next operation.

■ Stopping

(1) Operate the engine stop lever (knob) and hold it until the engine stops. (For operation of the engine stop lever, refer to page 17)
(2) Turn the main switch off and remove the key.

IMPORTANT:
- Although engine can be stopped by drawing the decompression knob, this should never be done except in such an emergency case that the engine cannot be stopped by the engine stop lever (knob). Especially, if the decompression knob is drawn while the engine is running at high speed, there is the danger that the valve seat may be damaged or that the decompression device may malfunction. For this reason, be absolutely sure not to draw the decompression knob when the engine is running except in emergency cases.

7.2 OPERATING THE TRACTOR

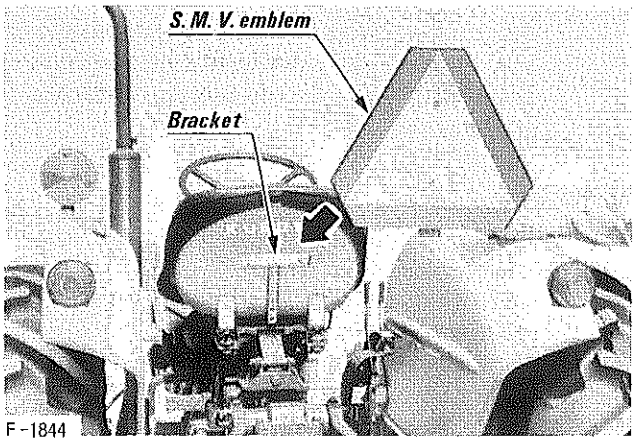
■ Starting

(1) Depress the clutch pedal to disengage the clutch.
(2) Shift levers to the desired speed position.
(3) Unlock the parking brake.
(4) Accelerate the engine to a proper level to prevent engine stall.
(5) Slowly release the clutch pedal.

CAUTIONS:

(1) To help assure straight line stops when driving at transport speeds, lock the brake pedals together. Uneven braking at road speeds could cause the tractor to roll over.
(2) Do not allow any person other than the driver to ride on the tractor.
(3) Do not drive the tractor close to the edges of ditches or banks which may break under the weight of the tractor, especially when the ground is loose or wet.
(4) Slow the tractor down to a safe speed before turning.
(5) Do not drive the tractor on the road with the implement in motion.
(6) After the differential lock has been used, be sure to see that it has been released.
(7) When traveling on a road, attach the S.M.V. emblem to the tractor to identify it as a low speed vehicle.

[Note]
Consult KUBOTA dealer about installation of the S.M.V. emblem.



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IMPORTANT:

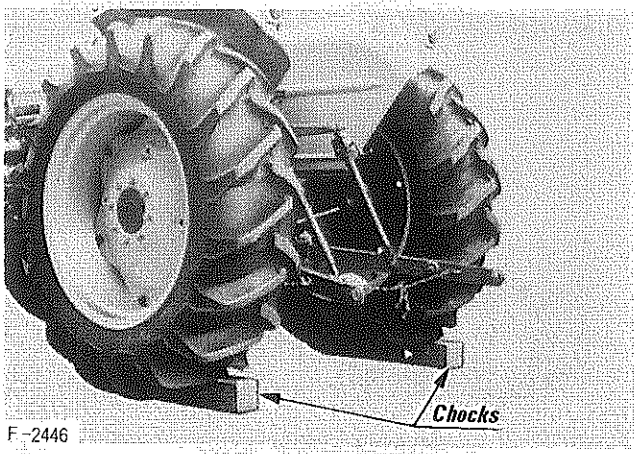
(1) Do not move the tractor with the parking brake on.
(2) Do not operate the tractor with your foot resting on the clutch pedal. This may contribute to premature clutch wear.
(3) Gear shift levers cannot be shifted while the tractor is moving. To shift levers be sure to stop the tractor and depress the clutch pedal.

■ Stopping

(1) Slow down the engine.
(2) Disengage PTO and Main gear shift by moving levers to neutral.
(3) Lock shuttle shift lever in neutral position (L355SS).
(4) Interlock the right and left brake pedals and put on the parking brake.

■ Parking

(1) When parking, be sure to put on the parking brake.
(2) If necessary to park on an incline, be sure to chock the wheels to prevent accidental rolling of the machine.



F-2446

(3) Before getting off the tractor, be sure to stop the engine and lower the implement to the ground.

■ Turning

When turning on curves, be sure to reduce the speed, then turn the steering wheel.

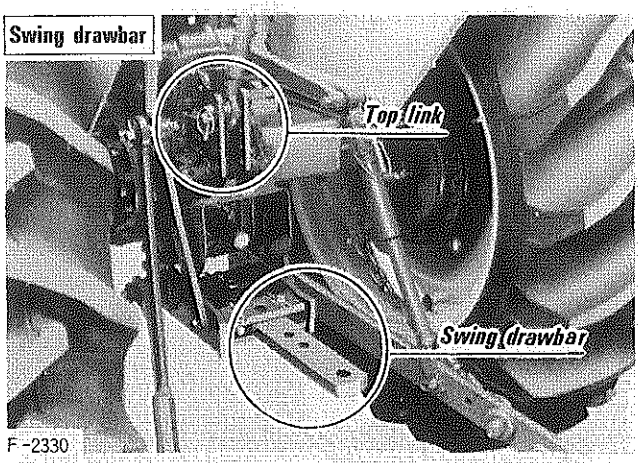
CAUTION:

- **The individual rear wheel braking on this tractor permits tighter turns and increased traction under slippery conditions. Sudden application of one brake at higher speed or while making fast turns could cause the tractor to tip over.**

7.3 PULLING

CAUTION:

- **Never pull from the top link, the rear axle or any point above the drawbar. Doing so could cause the tractor to tip over rearward causing personal injury.**
  For pulling, attach to the drawbar (fixed or swinging type). Use the 3-point hitch only with equipment designed for 3-point hitch usage.



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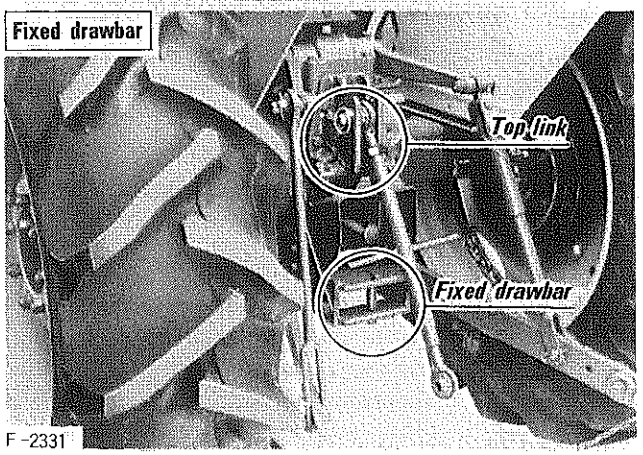

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7.4 CHECK DURING DRIVING

While driving, make the following checks to see that all the parts are functioning normally.

■ Temperature Gauge

CAUTION:

- **Do not remove radiator filler cap until coolant temperature is below its boiling point. Then loosen cap slightly to the stop to relieve any excess pressure before removing cap completely.**

If the indicator should go over H line, immediately stop the engine and exercise the following checks and remedies, with the safety caution in mind.

(1) Shortage or leakage of the coolant.
(2) Foreign matter on the radiator net and dust and dirt between the radiator fins and tube.
(3) Fan drive belt loose.
(4) Blockage in the radiator tube.

■ Engine Oil Pressure Lamp

The pressure lamp signals to the operator that the engine oil pressure is below the prescribed level. If the lamp should go on during operation, immediately stop the engine and check;

(1) The level of the engine oil. (See page 41)
(2) The conditions of the lubrication system.

■ Battery Charge Lamp

The charge lamp signals to the operator that alternator is not charging the battery.
If the lamp goes on during operation, immediately stop the engine and check:

(1) Wiring failure.
(2) Connection failure of alternator and regulator.

■ Fuel

Do not allow the fuel tank to empty completely.
Doing so will allow air to enter into the fuel system. Should this happen, the fuel system must be bled. (See page 39)

■ Exhaust Fumes

(1) Exhaust fumes are colorless at normal output drive.
(2) If the exhaust turns dark continuously during driving, this probably indicates overloading the engine. In such a case, corrective action should be applied to conditions of operation so that subsequent damage to the engine can be avoided.

■ Urgent Stop

Should the following problems take place, immediately stop the engine.

(1) The engine suddenly slows down or speeds up.
(2) Unusual noises are suddenly heard.
(3) Exhaust fumes suddenly become very dark.
(4) The engine oil pilot lamp goes on while operating.
(5) The battery charge lamp goes on while operating.

For checks and remedies in the above situations, consult your dealer for instruction.

7.5 OPERATING ON PUBLIC ROADS

(1) Make sure the left and right brake pedals are interlocked before attempting to operate on public roads.
(2) Do not rest your foot on the clutch pedal while operating on public roads.
(3) On public roads, only the driver is allowed to ride on the tractor.
(4) Pay close attention to the condition of the roadside (shoulders) on public roads. There have been cases of roadside collapse due to the weight of the tractor. Special caution must be taken on rainy days.
(5) Be sure to reduce engine speed, or, if necessary, change to "low" speed range when turning the tractor on sharp curves.
(6) Use engine to brake when descending slopes by placing throttle in slow position.
(7) While operating on public roads, obey all safety regulations and allow automobiles travelling faster to pass. Do not block the road.

7.6 OPERATION ON SLOPES

■ Engine Braking

When tractor is on a downward slope, keep transmission in gear, operate the hand throttle to reduce engine speed and release the foot throttle. This will slow the engine speed which will help brake the tractor. (For operation of the hand throttle, refer to page 17)

When driving the tractor down a slope, never depress the clutch pedal but use the engine to help slow down. If necessary to further reduce the tractor speed, depress the brake pedal lightly.

CAUTION:

- **If descending a slope, never disengage the clutch or shift transmission levers to neutral to coast downhill. Doing so could cause the tractor to speed up out of control. Very steep slope and hillside operation is not recommended.**

7.7 HANDLING THE TRACTOR ON THE FARM

■ Operation on Farm Roads

(1) Stop operation of any attached farming implement while driving on farm roads.
(2) The front wheels of the tractor tend to lift when farm implements are attached to the rear of the tractor.
(3) When it is necessary to attach a large-sized or extra-heavy implement to the rear of the tractor, contact your dealer for selection of an appropriate counterweight for the front and slow down.
(4) While driving the tractor on farm roads, keep in mind safe driving practices.

IMPORTANT:

- For maximum safety always pay close attention to the balance between the front and rear wheels of the tractor.

■ Operation in the Field

(1) For field work, disconnect the brake pedal interlock so that the right and left brakes can be engaged separately.
(2) Be careful not to cause sudden loads while operating an implement from the power-take-off since such loads tend to shorten engine life. Always lower implements slowly.

7.8 DIRECTIONS FOR OPERATING

■ Differential Lock Pedal

Observe the following precautions when applying the differential lock.

(1) Apply the differential lock moderately. Limit its use to the below situations.
   - When the tractor enters or leaves the farm field, it cannot move straight because of excessive individual wheel-spin due to difficult or slippery field conditions.
   - One rear wheel is caught in a loose area of the field and the tractor cannot move due to wheel-spin.
   - In the case of plowing, the rear wheel closer to the ridge is caught in the loose soil and is affected by wheel-spin.
(2) The use of the differential lock must be limited to a particular period of time and cannot be applied beyond that limit.
(3) When the rear wheel is subjected to excessive loads, even releasing the pedal sometimes may not unlock the differential although the pedal springs back. Should the differential not unlock when turning the tractor, lightly step on the brake pedal opposite to the turn side or turn back the steering wheel and run the tractor straight. By doing so, the differential can be unlocked. If the brake pedal of the turn side is depressed during turning, the differential lock system takes on an undue load. Be careful about such an improper operation.

CAUTION:

- **The tractor cannot turn with the differential locked and attempting to could be very dangerous.**

8. MAINTENANCE

8.1 DAILY CHECK

To prevent trouble from occurring, it is important to know the conditions of the tractor well. Check it before starting.

CAUTION:
- **Be sure to check and service the tractor on a level surface with the engine shut off and the parking brake on.**

(1) Check the parts where there was trouble before.
(2) Walk around the tractor;
  1) Check the tire pressure, and check for wear and damage. (See page 30)
  2) Check for oil and water leaks.
  3) Check the engine oil level. (See page 41)
  4) Check the amount of transmission oil. (See page 42)
  5) Check if there is enough fuel. (See page 39)
  6) Check if there is enough coolant in the radiator. (See page 46)
  7) Check for dust build up on the air cleaner dust cup. (See page 47)
  8) Check the tractor body for damage and check that all bolts and nuts are tight.
  9) Check the pilot lamps for damage.
  10) Check the S.M.V. emblem for damage and clean or replace as necessary.
(3) While sitting in the operator's seat;
  11) Check the throttle pedal, brake pedals and clutch pedal. (See page 51)
  12) Check the parking brake.
  13) Check the steering wheel. (See page 52)
(4) After turning the main switch on;
  14) Check the performance of the pilot lamps.
  15) Check headlights, tail lights and hazard lamps, turn signals (optional) clean if necessary.
(5) Starting the engine;
  16) Check the color of the exhaust fumes.
  17) Check operation of all meters and gauges.

8.2 LUBRICANTS

To prevent serious damage to hydraulic systems, use only KUBOTA genuine fluid or its equivalent.

<table>
<tr><th colspan="2" rowspan="2">Place</th><th colspan="3">Capacities</th><th rowspan="2">Lubricants</th></tr>
<tr><th>L305</th><th>L345</th><th>L355SS</th></tr>
<tr><td colspan="2">Engine crankcase</td><td>6.3ℓ
(6.6 U.S. qts.)</td><td>9.1ℓ
(9.6 U.S. qts.)</td><td>9.1ℓ
(9.6 U.S. qts.)</td><td>● Engine oil: API Service CC or CD
Below 0°C (32°F) SAE10W or 10W–30
0 to 25°C (32 to 77°F) SAE20 or 10W–30
Above 25°C (77°F) SAE30 or 10W–30</td></tr>
<tr><td rowspan="2">Transmission</td><td>2WD</td><td>30ℓ
(31.7 U.S.qts.)</td><td>30ℓ
(31.7 U.S.qts.)</td><td>—</td><td rowspan="3">● Transmission and Hydraulic Oil.
The fluid listed below or equivalent are recommended.
<table><tr><th>Maker</th><th>Brand (Standard)</th></tr><tr><td>SHELL</td><td>DONAX–TD</td></tr><tr><td>Mobil</td><td>Mobil fluid 423</td></tr><tr><td>Exxon</td><td>Torque Fluid 56</td></tr></table>[Below –18°C (0°F)]
Transmission and Hydraulic Oil, Winter Grade.</td></tr>
<tr><td>4WD</td><td>31ℓ
(32.8 U.S.qts.)</td><td>31ℓ
(32.8 U.S.qts.)</td><td>32ℓ
(33.4 U.S.qts.)</td></tr>
<tr><td colspan="2">Power steering oil tank</td><td>—</td><td>1.5ℓ
(1.6 U.S. qts.)</td><td>1.5ℓ
(1.6 U.S. qts.)</td></tr>
<tr><td colspan="2">Front axle differential case (4WD)</td><td>2.5ℓ
(2.6 U.S. qts.)</td><td>2.5ℓ
(2.6 U.S. qts.)</td><td>2.5ℓ
(2.6 U.S. qts.)</td><td rowspan="3">● Gear Oil SAE80 or SAE90</td></tr>
<tr><td colspan="2">Front axle gear case (Right & left) (4WD)</td><td>0.7ℓ
(0.7 U.S. qt.)</td><td>0.7ℓ
(0.7 U.S. qt.)</td><td>0.7ℓ
(0.7 U.S. qt.)</td></tr>
<tr><td colspan="2">Steering gear box (Manual steering)</td><td>—</td><td>0.3ℓ
(0.3 U.S. qt.)</td><td>0.3ℓ
(0.3 U.S. qt.)</td></tr>
<tr><td colspan="2">Clutch release hub</td><td colspan="3">moderate amount</td><td>● SAE Wheel-Bearing Grease (NLGI No.3)</td></tr>
<tr><td colspan="2">Cylinder (booster type power steering) (2WD)</td><td>—</td><td>moderate amount</td><td>—</td><td rowspan="10">● SAE multi-purpose type grease (NLGI No.2)</td></tr>
<tr><td colspan="2">Pedal shaft</td><td colspan="3">moderate amount</td></tr>
<tr><td colspan="2">Top link holder</td><td colspan="2">moderate amount</td><td>—</td></tr>
<tr><td colspan="2">Lifting rod (right)</td><td colspan="3">moderate amount</td></tr>
<tr><td colspan="2">Propeller shaft bearing case (4WD)</td><td colspan="3">moderate amount</td></tr>
<tr><td colspan="2">Center pins (2WD)</td><td colspan="2">moderate amount</td><td>—</td></tr>
<tr><td colspan="2">King pins (2WD)</td><td colspan="2">moderate amount</td><td>—</td></tr>
<tr><td colspan="2">Front wheel hubs (2WD)</td><td>45 g (1.6 oz)</td><td>45 g (1.6 oz)</td><td>—</td></tr>
<tr><td colspan="2">Seat adjuster</td><td>—</td><td colspan="2">moderate amount</td></tr>
<tr><td colspan="2">Front wheel drive lever (4WD)</td><td colspan="3">moderate amount</td><td>● Machine oil</td></tr>
</table>

8.3 MAINTENANCE CHECK LIST

Frequency of Checks	Check Points	Reference Pages
Initial operation (initial 60 hours)	During this period, pay special attention to the following. (1) After the initial 35 hours of use, change the engine oil and the oil filter cartridge. (2) After the initial 50 hours of use, change the transmission fluid and clean the hydraulic oil filter screen. (3) Quick starts or sudden braking should be avoided.	41 to 42 42 to 43 –
Every 50 hours	Lubricate the following points. King pins (2WD), Center pins (2WD), Pedal shaft, Lifting rod (right), Cylinder (Power steering), Top link holder, Front wheel drive lever (4WD), Propeller shaft bearing case (4WD).	44 to 45
	Check and tighten fuel and hydraulic fittings.	40, 43
Every 75 hours	Change engine oil	41
Every 100 hours	Clean air cleaner element.	47 to 48
	Check battery electrolyte level.	48
	Check toe-in.	31
	Check fuel line.	40
	Clean fuel filter (L355SS)	41
Every 150 hours	Check steering gear box oil level (Manual steering only).	44
	Change engine oil filter cartridge.	42
	Check radiator hose and hydraulic pipes.	43, 46
Every 200 hours	Check clutch play.	51
	Check brake play.	51
	Check fan drive belt tension.	51
	Check steering wheel play.	52
	Check front axle support. (2WD)	52
Every 300 hours	Change transmission fluid in all chassis reservoirs. Transmission case, front axle differential case (4WD), front axle gear case (right and left) (4WD). ● Clean hydraulic oil filter.	43 to 44
	Clean fuel tank	41
	Apply grease to clutch release hub.	44
	Check that bearing, cylinder head and pump connections are tight.	–
	Apply grease to the front wheel hubs (2WD).	45
	Check power steering oil (L345/L355SS)	50
Every 400 hours	Change fuel filter.	40
Every 500 hours	Clean radiator core.	47
Every one to two months	Recharge Battery if necessary.	48 to 49
Every year or every 6 times of cleaning	Change air cleaner element.	47
Every year	Change anti-freeze and coolant.	46 to 47
Every 2 years	Change battery, if necessary.	48 to 49
	Change radiator hose and clamps.	46
	Change fuel line and clamps.	40
	Change hydraulic hoses and clamps.	–

9. CHECK AND MAINTENANCE

9.1 FUEL

■ Checking and Refueling

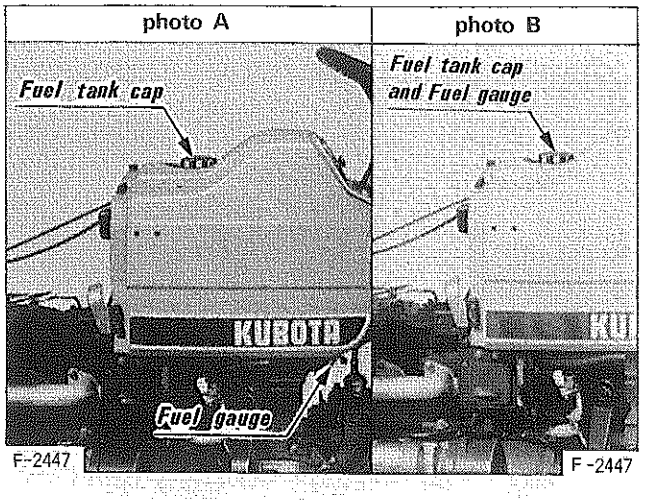
CAUTION:
- **Stop the engine before adding fuel. Keep away from sparks and flames.**

(1) Check the fuel level. Take care that the fuel level does not fall under the prescribed lower limit.

Fuel tank capacity	35ℓ (9.2 U.S. gals.)
Capacity with integral power steering	33.5ℓ (8.8 U.S. gals.)

(2) Use high speed diesel fuel or No. 2 diesel fuel.
(3) Use No. 1 diesel fuel, if temperature is below −10°C (14°F).

Fuel gauge are two types, fuel tank side mounted type (photo A) and fuel tank cap mounted type (photo B).



IMPORTANT:
(1) Always use a strainer in refueling to prevent fuel injection pump contamination.
(2) Once the fuel tank becomes empty air is admitted to the fuel system, in such case, it will be necessary to bleed the fuel system before the engine will start.

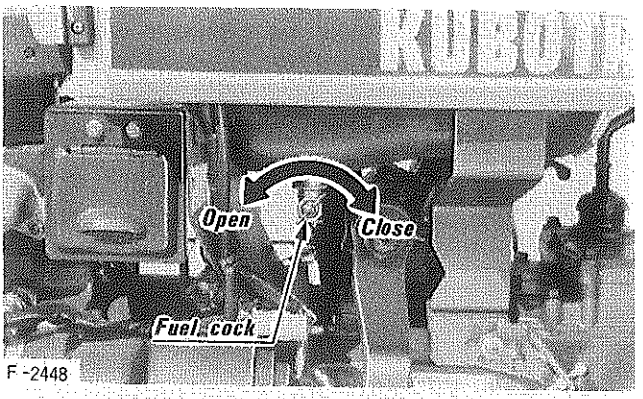
■ Bleeding the Fuel Line

Air must be removed:
(1) When the fuel filter and lines are removed.
(2) When tank is completely empty.
(3) After the tractor has not been used for a long period of time.

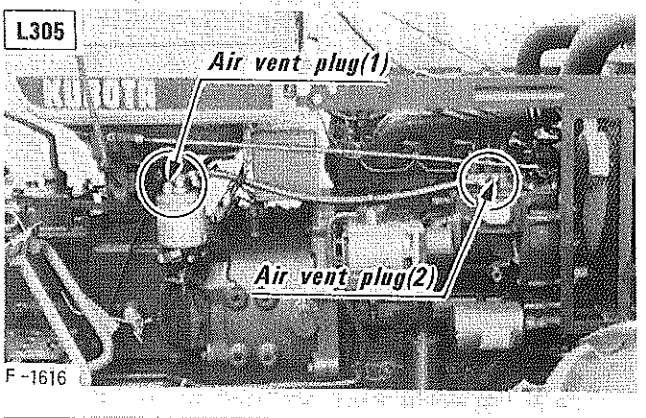
Bleeding procedure is as follows:

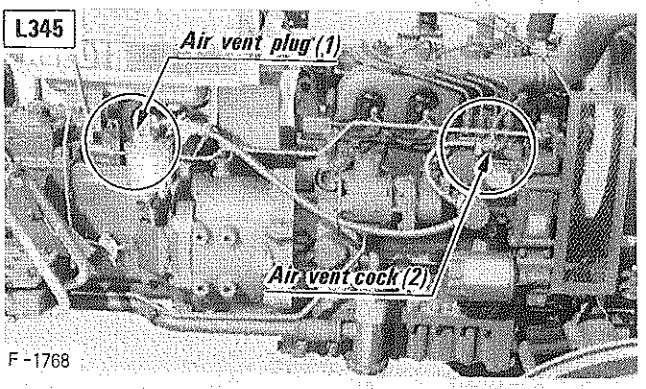
CAUTION:
- **Do not bleed the fuel system when the engine is hot.**

[L305/L345]
(1) Fill the fuel tank with fuel, and open the fuel cock.



(2) Loosen the air vent plug (1) of the fuel filter two or three turns using a wrench.
(3) When there are no more air bubbles in the fuel which flows out, tighten as before.
(4) Loosen the air vent plug (cock) (2) of the injection pump and vent air in the same way.





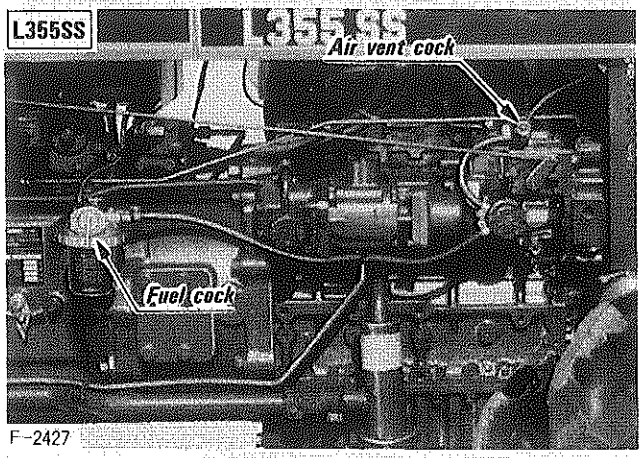
When the air venting is finished, fuel which does not contain air bubbles will be filtered by the fuel filter and sent to the fuel injection pump. Fill the fuel tank before it becomes empty. If a diesel system is allowed to run out of fuel, it will become necessary to air-bleed the system after filling the fuel tank.

[L355SS]

(1) Fill the fuel tank with fuel, and open the fuel cock.
(2) Open the air vent cock on the fuel injection pump.
(3) Pull the engine stop knob back completely to prevent the engine from starting while turning the key to rotate the engine for about 10 seconds.

CAUTION:
- **Be sure to pull the engine stop knob back completely before energizing the starter.**

(4) Close the air vent cock when air bubbles disappear from the fuel flowing out.



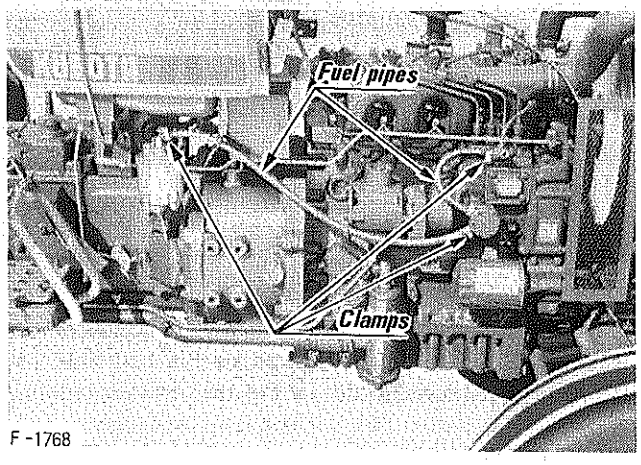
F-2427

■ Checking Fuel Line

CAUTIONS:
(1) Stop the engine when attempting the check and change prescribed below.
(2) Never fail to check the fuel line periodically.
The fuel line is subject to wear and aging, fuel may leak out onto the running engine, causing a fire.

The fuel line connections should be checked every 6 months or 100 service hours, whichever occurs first.

(1) If the clamp is loose, apply a slight coat of lubricant onto the threads and securely retighten it.



F-1768

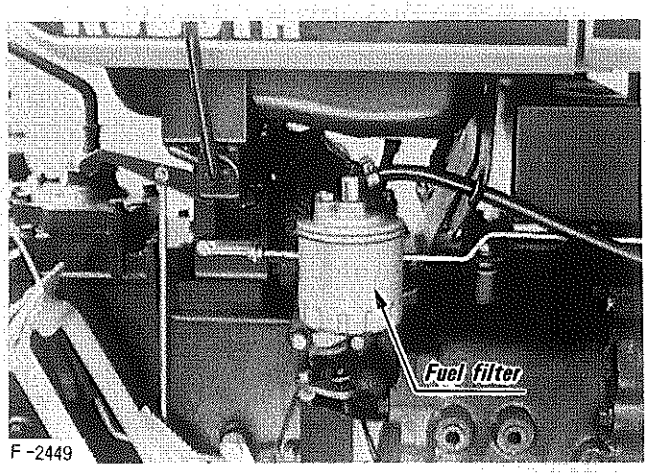
(2) The fuel line is made of rubber and ages regardless of period of service.
(3) After inspection, if the fuel line and clamps are found damaged or deteriorated, replace them.
(4) After the fuel line and clamps have been changed, bleed the fuel system.

IMPORTANT:
- When the fuel line is disconnected for change, close both ends of the fuel line with a piece of clean cloth or paper to prevent dust and dirt from entering. Entrance of dust and dirt causes malfunction of the fuel injection pump. In addition, particular care must be taken not to admit dust and dirt into the fuel pump.

■ Changing the Fuel Filter [L305/L345]

When period of operation reaches approx. 400 hours, change the fuel filter.
This job should not be done in the field, but in a clean place so as to prevent dust intrusion.

(1) Close the fuel cock.
(2) Unscrew the filter and replace with new one.
(3) When installing a new filter, apply a small amount of fuel on the gasket and tighten it by hand.
(4) Bleed the fuel system.

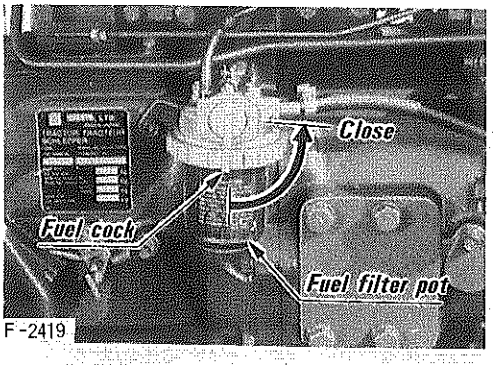


F-2449

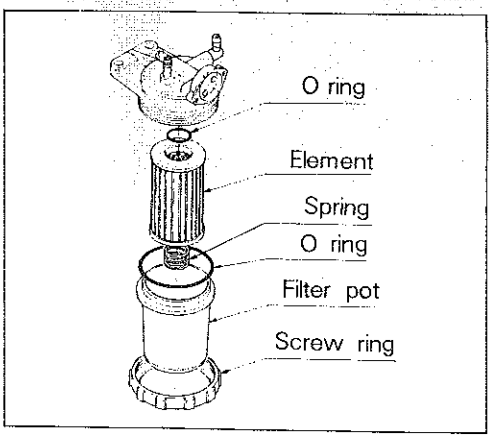
■ Cleaning the Fuel Filter Pot [L355SS]

When period of operation reaches approx. 100 hours, clean the fuel filter. This job should not be done in the field, but in a clean place so as to prevent dust intrusion.

(1) Close the fuel filter cock.
(2) Unscrew the screw ring and remove the filter pot, and rinse the inside with kerosene.
(3) Take out the element and dip it in the kerosene to rinse.
(4) After cleaning, reassemble the fuel filter, keeping out dust and dirt.
(5) Bleed the fuel system.



F-2419

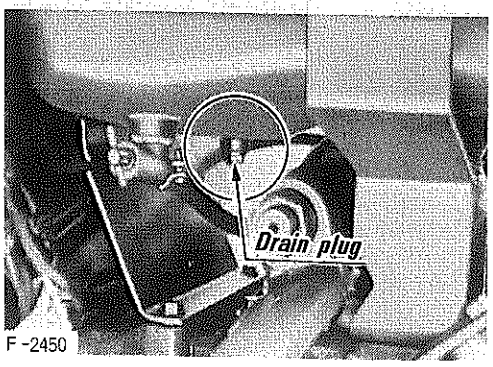


IMPORTANT

- If dust and dirt enter the fuel, the fuel pump and injection nozzle are subject to quick wear. To prevent this, be sure to clean the fuel filter pot periodically.

■ Clean Fuel Tank

Remove drain plug, and clean the inside of the tank.



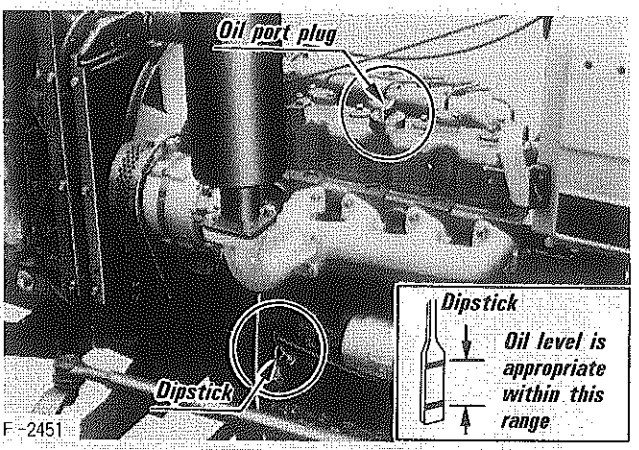
F-2450

9.2 ENGINE OIL

■ Oil Level Check and Replenishment

(See page 37)

(1) Check engine oil before starting the engine and 5 minutes or more after the engine has stopped.
(2) To check the oil level, pull out the dipstick, wipe it clean, replace it, and pull it out again. Check to see that the oil level lies between the two notches.
(3) If the level is too low, add new oil to the prescribed level at the oil port.



F-2451

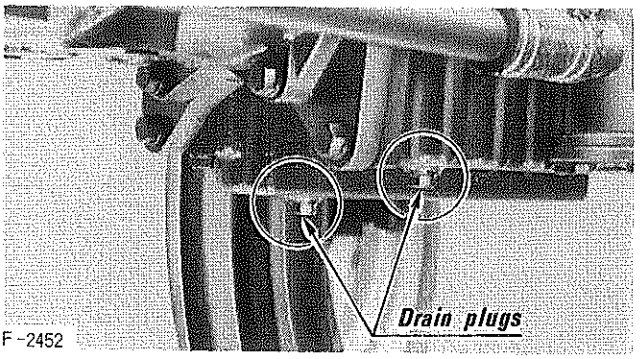
(4) When using an oil of different maker or viscosity from the previous one, remove all of the old oil. Never mix two different types of oil.
(5) Use the proper Engine Oil SAE according to the ambient temperatures.
Refer to 8.2 "LUBRICANTS."

■ Engine Oil Change

CAUTION:

- **Before changing the oil, be sure to stop the engine.**

(1) To change the used oil, remove the drain plugs at the bottom of the engine and drain the oil completely. All the used oil can be drained out easily when the engine is still warm.



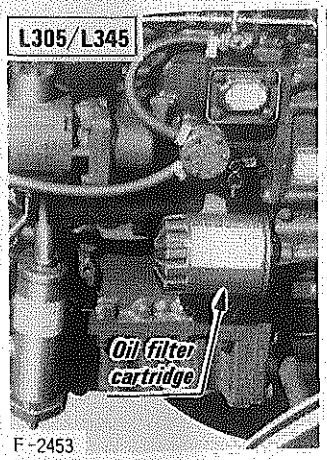
F-2452

(2) Reinstall the drain plugs.
(3) Fill with the new oil up to the upper notch on the dipstick.

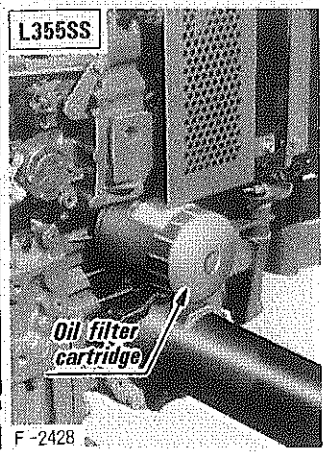
■ Engine Oil Filter Cartridge Change

CAUTION:
- Be sure to stop the engine before changing the oil filter cartridge.

(1) The oil filter cartridge must be changed every 150 service hours.
(2) Apply a slight coat of oil onto the cartridge gasket.
(3) To install the new cartridge, screw it on by hand. Over tightening may cause deformation of rubber gasket.
(4) After the new cartridge has been replaced, the engine oil level normally lowers a little. Add engine oil to proper level. Check for oil leaks around filter gasket.



F-2453



F-2428

IMPORTANT:
- To prevent serious damage to the engine, replacement element must be highly efficient. Use only a KUBOTA genuine filter or its equivalent.

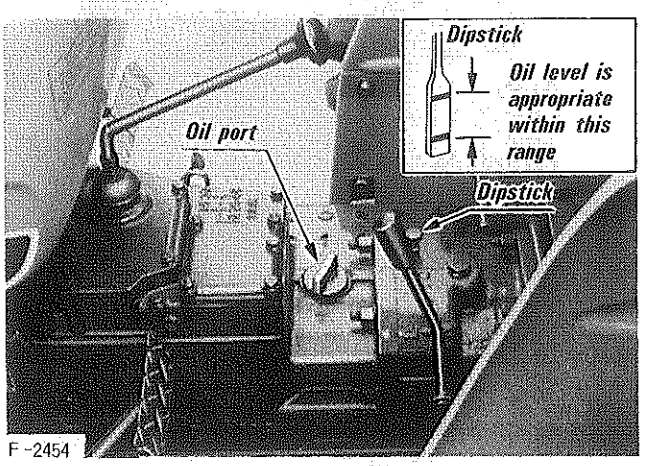
9.3 TRANSMISSION FLUID

CAUTION:
- Be sure to stop the engine before checking and changing the transmission fluid.

■ Transmission Fluid Check and Replenishment

[L305/L345]

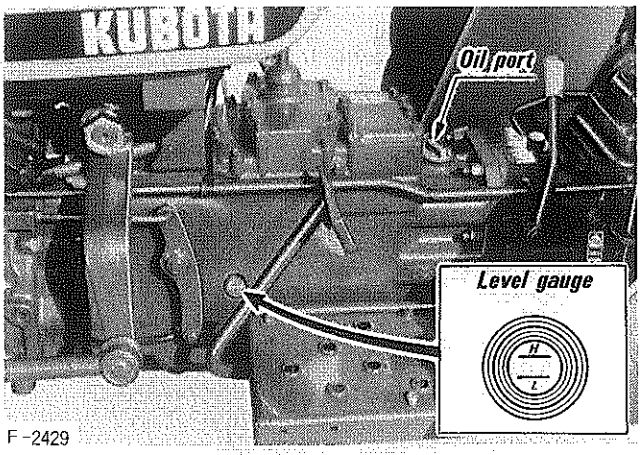
To check the oil level, pull out the dipstick, wipe it clean, replace it, and pull out it again. Check to see that the oil level lies between the two notches.
If short, replenish through the port.
Use Transmission and Hydraulic Oil. (See page 37)
[Below −18°C (0°F)] Transmission and Hydraulic Oil, Winter Grade.



F-2454

[L355SS]

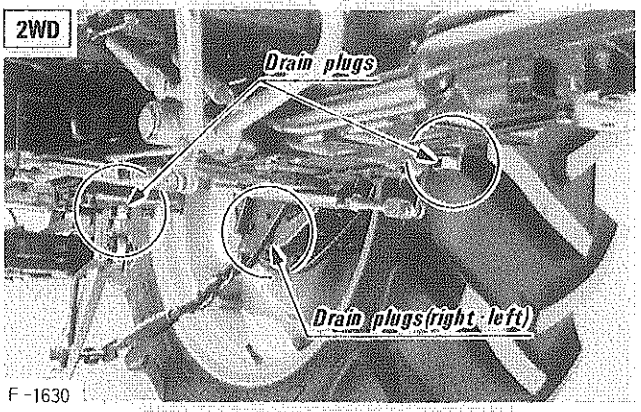
View the fluid level through the fluid level gauge.
If low, replenish through the port.
Use transmission and Hydraulic Oil. (See page 37)
[Below −18°C (0°F)] Transmission and Hydraulic Oil, Winter Grade.



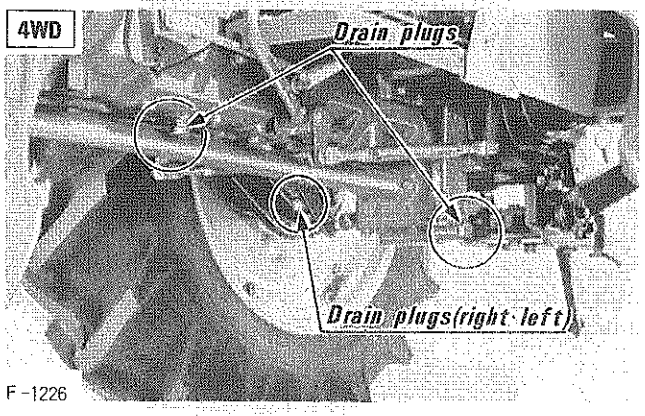
F-2429

■ Transmission Fluid Change

The fluid in the transmission case is also used for the hydraulic system.
To drain the transmission case, place oil pan underneath the transmission case and remove the drain plugs at the bottom of the transmission case and rear axle cases (both sides). After draining, disassemble and clean the hydraulic oil filter.
After reassembling, fill with new multi-grade transmission fluid.



F-1630



F-1226

IMPORTANT:

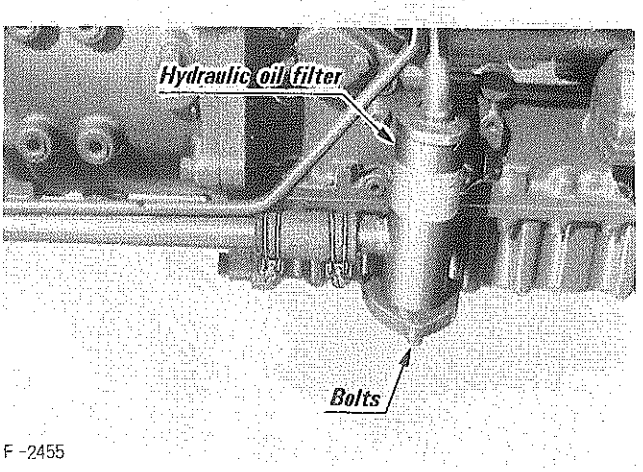
- Operate only at low RPM's immediately after changing the transmission fluid and cleaning the hydraulic oil filter. Keep the engine at medium speed for a few minutes to insure proper lubrication of all parts so there is no damage to transmission.

■ Cleaning of Hydraulic Oil Filter

CAUTION:

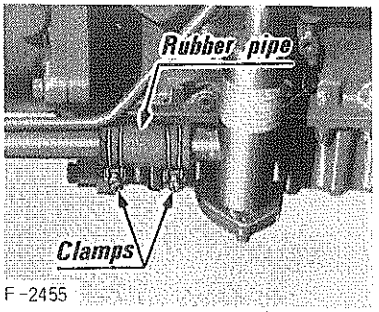
- **Be sure to stop the engine before cleaning hydraulic oil filter.**

(1) The hydraulic oil filter must be cleaned every 300 service hours.
(2) Remove bolts to take out the spring and the filter, and clean them with diesel fuel or kerosene.



F-2455

■ Hydraulic Pipe and Clamps

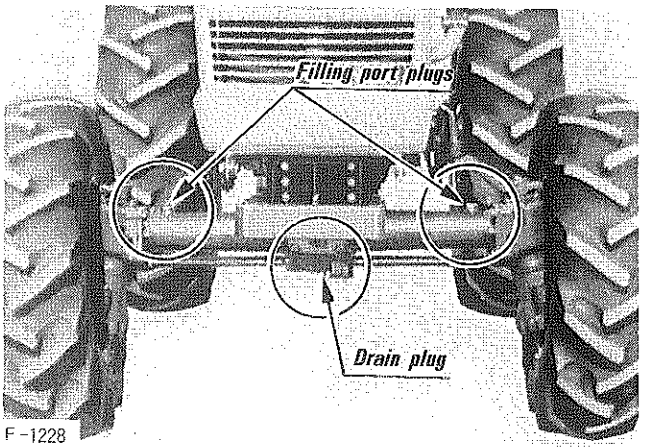


F-2455

9.4 CHANGING FRONT AXLE DIFFERENTIAL CASE OIL

[4WD] (See page 37)

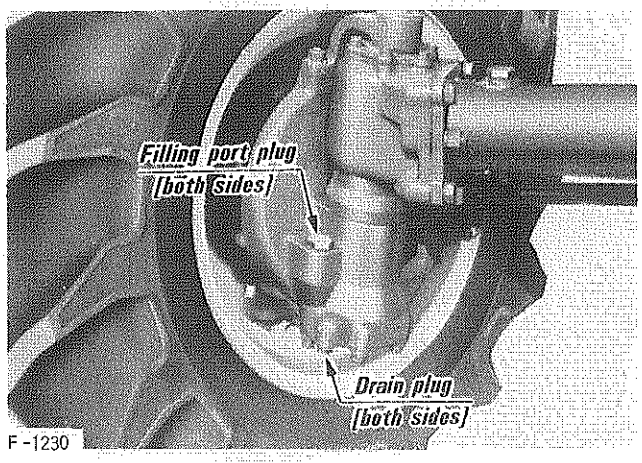
Remove the drain and filling port plugs. After draining, replace the drain plug and fill with new oil.



F-1228

9.5 CHANGING FRONT AXLE GEAR CASE OIL (RIGHT AND LEFT) [4WD] (See page 37)

Remove the drain and filling port plugs to drain the used oil. After draining, replace the drain plug and fill with new oil.

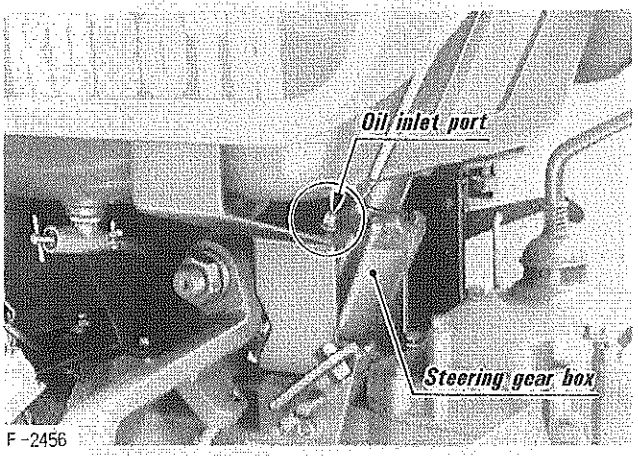


F-1230

9.6 STEERING GEAR BOX OIL (See page 37)

— Manual Steering Only —

If the oil is insufficient, fill with gear lube up to the oil inlet port.



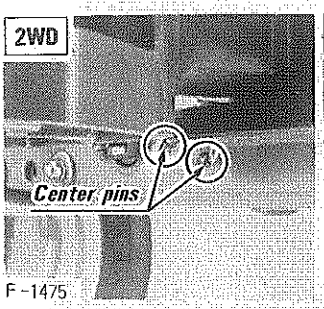
F-2456

9.7 LUBRICATION POINTS BEFORE STARTING

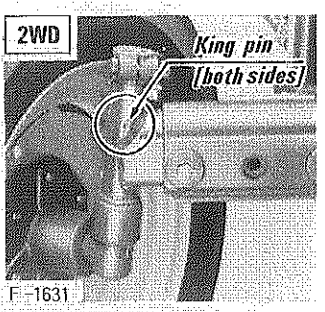
Oil or grease the following points before starting.

■ King Pins [2WD] and Center Pins [2WD]

Grease the king pins and center pins with grease gun.



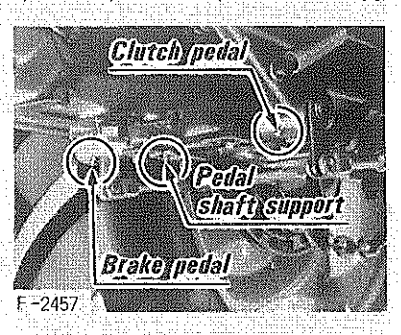
F-1475



F-1631

■ Pedal Shaft

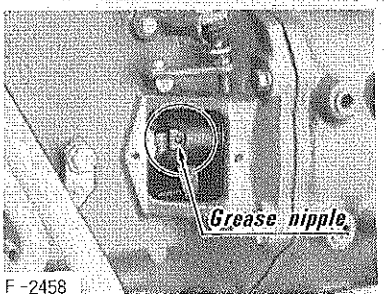
Grease brake, clutch pedal and pedal shaft support.



F-2457

■ Clutch Release Hub

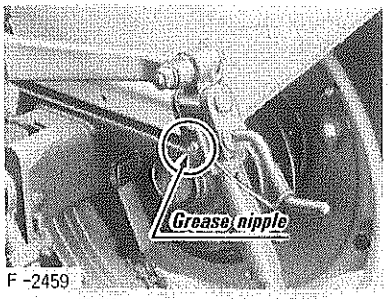
Remove the cover and sparingly lubricate the clutch release hub (throw-out bearing). Too much grease will adversely effect the clutch performance.



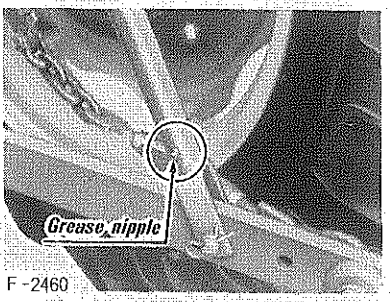
F-2458

■ Lifting Rod (right)

Grease the two points provided.



F-2459

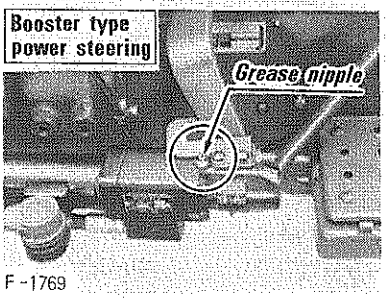


F-2460

■ Power Steering Cylinder

— Optional booster type power steering only —

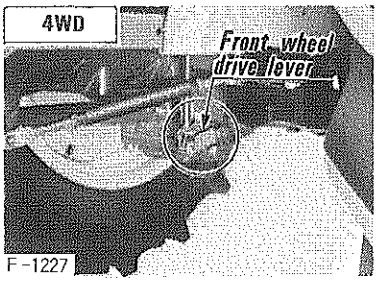
Grease the cylinder.



F-1769

■ Front Wheel Drive Lever [4WD]

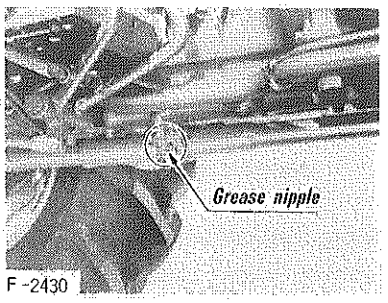
Oil or grease the front wheel drive lever.



F-1227

■ Propeller Shaft Bearing Case [4WD]

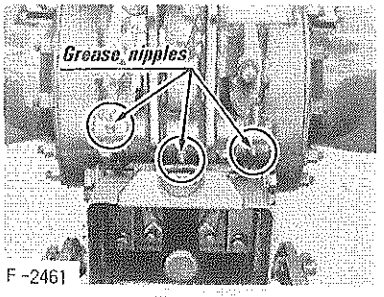
Grease the bearing case.



F-2430

■ Top Link Holder [L305/L345]

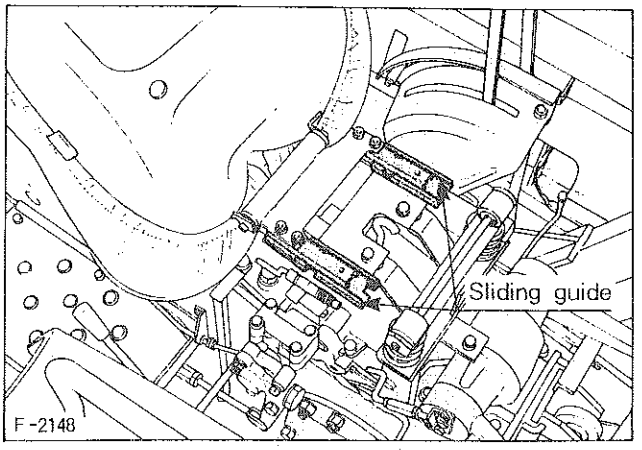
Grease the three points provided.



F-2461

■ Seat Adjuster [L345/L355SS]

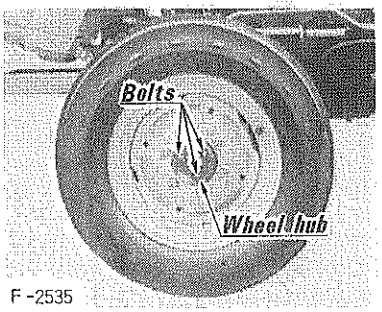
Apply the grease on the surface of sliding guide.



F-2148

■ Front Wheel Hubs [2WD]

Remove the cover and lubricate the front wheel hub bearings.



F-2535

9.8 RADIATOR

CAUTION:
- **Do not remove radiator filler cap until coolant temperature is below its boiling point. Then loosen cap slightly to the stop to relieve any excess pressure before removing cap completely.**

■ Checking, Replenishing and Changing Coolant

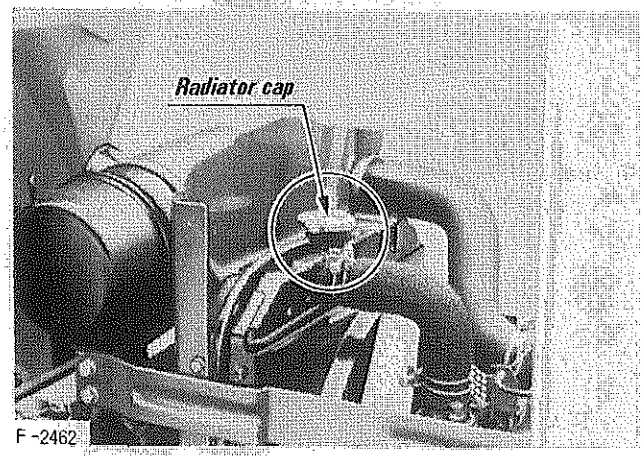
(1) Remove the radiator pressure cap and check to see that the coolant level is just below the port. If low, add clean water and anti-freeze.

Prescribed quantity	L305	5.8ℓ (6.1 U.S. qts.)
	L345 L355SS	7.0ℓ (7.4 U.S. qts.)

IMPORTANT:

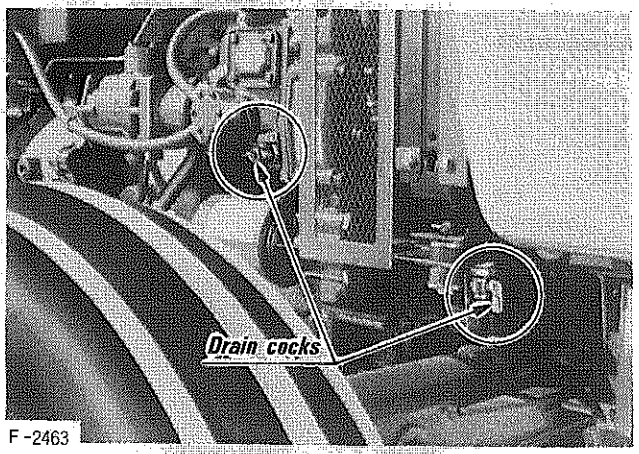
(1) Use clean, fresh water to fill the radiator.

(2) Securely tighten the radiator cap.



F-2462

(3) To drain the used coolant, open the radiator drain cock and remove radiator cap. The radiator cap must be removed to completely drain the radiator.



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(4) Be sure to close the pressure cap securely. If the cap is loose or improperly closed, water may leak out and the engine could overheat.

(5) Radiator should be filled with part anti-freeze and part water at all times as recommended by the anti-freeze manufacturer. The anti-freeze contains a corrosion inhibitor and will allow a higher operating temperature in the radiator during the hot season.

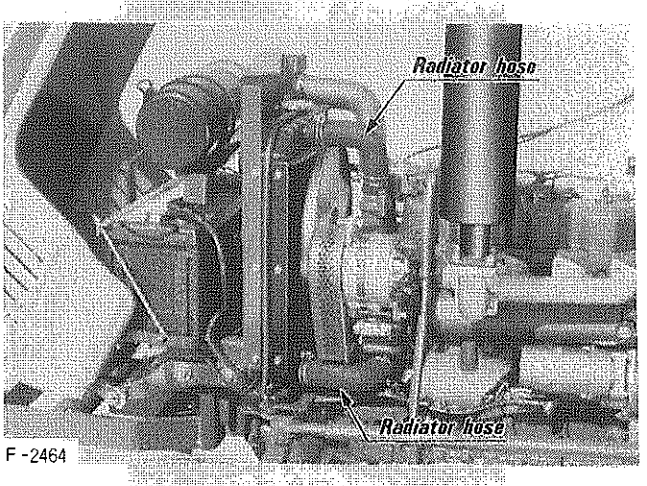
(6) Don't use an anti-freeze and scale inhibitor at the same time.

■ Checking Radiator Hose

Check the radiator hose clamps for tightness every 6 months or 150 service hours, whichever occurs first.

(1) If the clamp is loose, apply a slight coat of oil and securely retighten.

(2) The radiator hose is made from rubber and tends to age. It must be changed every two years. When deterioration is found, replace the radiator hose. Also change the clamp and securely tighten.



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■ Stopping Water Leakage From Radiator

(1) A small water leak can be eliminated with the Kubota Radiator Cement No. 40 or equivalent.

(2) If water leakage should become excessive, consult your local dealer.

■ Cleaning Cooling System

(1) The cooling system should be cleaned on the following occasions:
- Every 500 service hours
- When adding an anti-freeze solution.
- When changing from water containing anti-freeze to pure water.

(2) When cleaning the water cooling system, the Kubota Scale Inhibitor No. 20 is recommended to effectively wash away the scale build-up.

■ Anti-Freeze

If the coolant freezes, the engine cylinder and radiator may crack. In cold weather before the temperature drops below 0°C (32°F), drain out the water or add a proper amount of anti-freeze when the tractor is shut down.

(1) There are two types of anti-freeze solutions, permanent type (PT) and semi-permanent type (SPT). For the Kubota Engine, be sure to use the permanent type.

(2) When anti-freeze is used for the first time, fill and drain clean water two or three times so as to completely clean the inside of the radiator.

(3) Radiator should be filled with anti-freeze and water solution as recommended by the anti-freeze manufacturer. The anti-freeze contains a corrosion inhibitor and will allow a higher operating temperature in the radiator during the hot season. Remember that the effective coolant capacity of the radiator is shown on the table below.

Capacity	L305	5.8ℓ (6.1 U.S. qts.)
	L345 L355SS	7.0ℓ (7.4 U.S. qts.)

(4) Mix the anti-freeze and the water, then pour the mixture into the radiator.

(5) When the coolant mixed with anti-freeze decreases due to evaporation, replenish with water only.
If loss has been due to leaking, add water and anti-freeze mixture with the same mix ratio as the original preparation.

(6) Anti-freeze solutions absorb moisture, so be sure to securely close the container after use.

(7) Anti-freeze and water should be changed every year.

(8) Do not use an anti-freeze and a scale inhibitor at the same time. This may cause sludge to form, adversely affecting the engine parts.

■ Checking and Cleaning Radiator

Daily or every 5 hours of operation, check to be sure the radiator net and radiator core are clean.
Dirt or chaff on the radiator net or radiator core decrease cooling performance.

(1) In that case, detach the net and remove all the foreign materials from them.

(2) Remove the dust from between the fins and the tube.

(3) Tighten the fan drive belt as necessary. For this, refer to page 51.

(4) If scale forms in the tube, clean with KUBOTA scale inhibitor.

9.9 AIR CLEANER

(1) The air cleaner uses a dry element, never apply oil.

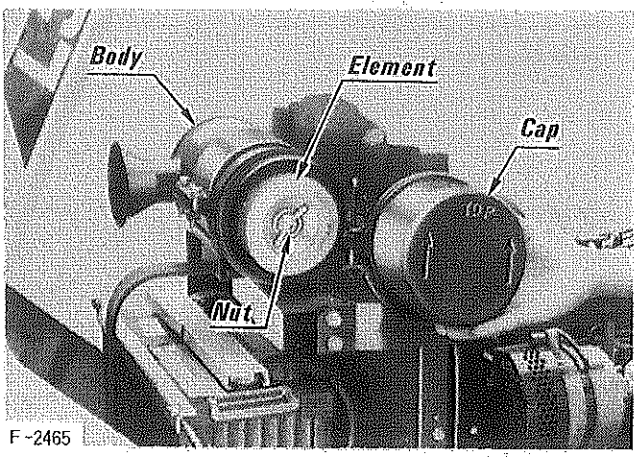
(2) Do not let dust build up excessively in the dust cup. Detach the dust cup and clean out the dust—normally once a week, but everyday if working conditions are especially dusty.

(3) Do not touch the filter element except in cases where cleaning is required.

(4) When cleaning the element, refer to the instructions below.

(5) If the element is stained with carbon or oil, replace the filter.

(6) Change the element once yearly or every 6th time the air cleaner is rinsed with water. Which ever is sooner.



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IMPORTANT:

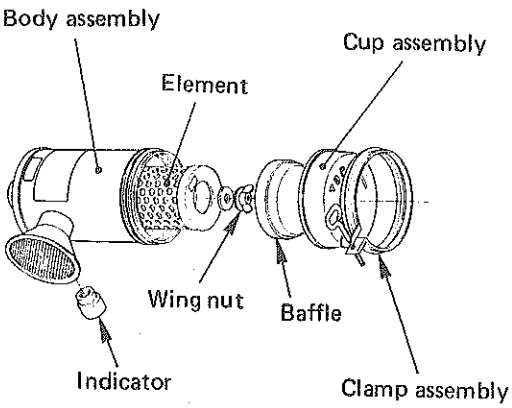
(1) Be sure to refit the dust cup with the arrow ↑ (on the rear) upright. If the dust cup is improperly fitted, dust passes by the dust cup and directly adheres to the element.

(2) Do not run the engine with filter element removed.

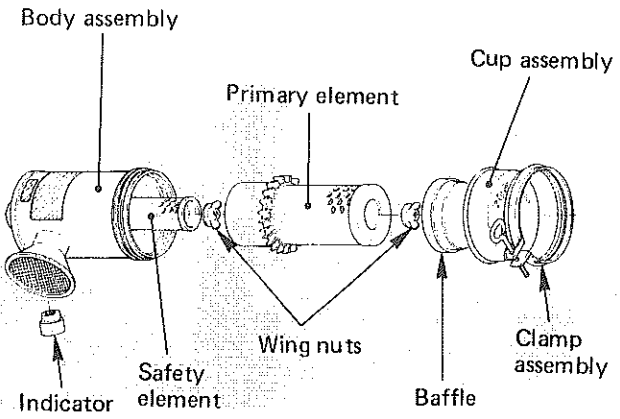
9.10 CLEANING AIR FILTER ELEMENT

(1) To clean the element, use clean dry compressed air on the inside of the element.
Air pressure at the nozzle must not exceed 690 kPa (7 kg/cm^2; 100 psi).
Maintain reasonable distance between the nozzle and the filter.

(2) To wash the element, use KUBOTA Filter cleaner or Donaldson ND-1500 Filter Cleaner which is especially effective on oily and soot-laden filters.
To use: Dissolve KUBOTA Filter Cleaner in a concentrated solution of cold water. When granules are thoroughly mixed. [add water to make a solution equivalent to 15 g KUBOTA Filter Cleaner for each 1ℓ (1 quart) of water. (2 oz KUBOTA Filter Cleaner for each 1 gallon of water.)] Allow element to soak 15 minutes. Then agitate element to dislodge loosened dust-rinse in clear water—allow element to dry.



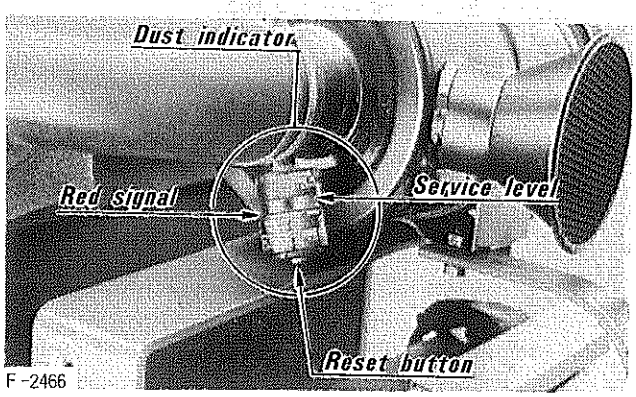
Structure of single element air cleaner



Structure of double elements air cleaner (Optional)

■ Dust Indicator

There is a dust indicator on air cleaner body. If red signal is in service level, filter element must be cleaned.
Reset the red signal by pushing a button after cleaning.



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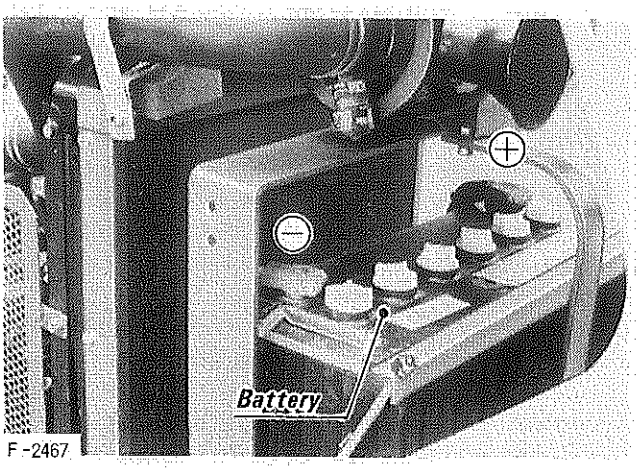
9.11 BATTERY

CAUTION:

- **Never remove the battery cap while the engine is running.**
  Keep electrolyte away from eyes, hands and clothes. If you are spattered with it, wash it away completely with water.

Mishandling the battery shortens the service life and adds to maintenance costs. Be sure to handle it correctly so that it will develop its full potential performance.



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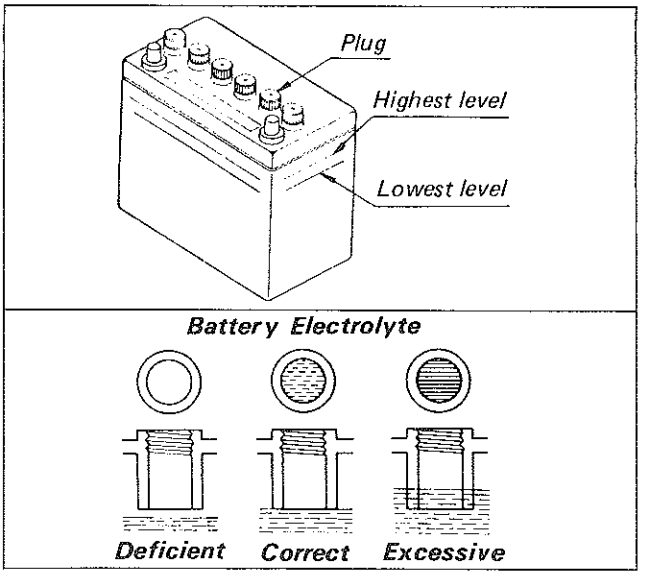
CAUTION:

- **Gas given off by batteries is explosive. To avoid injury or battery damage, avoid sparks near the batteries.**

(1) If the battery is weak, the engine is difficult to start and the lamps become dim. It is important to check the battery daily and recharge before trouble occurs.
(2) The water in the electrolyte evaporates during recharging. Liquid shortage damages the battery and excessive liquid spills over and damages the tractor body. If low, be sure to fill up the battery with distilled water.



(3) To slow charge the battery connect the battery positive terminal to the charger positive terminal and the negative to the negative, then recharge in the standard fashion.

(4) A boost charge is only for emergencies. It partially charges the battery at a high rate and in a short time. When using a boost-charged battery, it is necessary to recharge the battery as early as possible after the operation has been finished. Failure to do this extremely affects the service life due to overdischarge.

CAUTIONS:

(1) When connecting the battery, do not reverse the polarities. Connection with reverse polarities causes troubles to the battery and electrical system in the tractor.

(2) When disconnecting the cable from the battery, start with the negative terminal first. When connecting, start with the positive terminal first. Reversing the steps may cause short-circuiting, should a metalic tool touch the terminals.

(3) If the tractor is to be operated for a short time without battery (using a slave battery for starting), do not, under any circumstances, interrupt the circuit by switching off the main switch before stopping the engine by means of fuel pump shut off cable. Use additional current (lights) while engine is running. Insulate terminal of battery cable before starting by means of slave battery. If this advice is disregarded, damage to alternator and regulator may result.

■ Directions for Storage

(1) When shutting down the tractor for long periods of time, remove the battery from the tractor, adjust the electrolyte to the proper level and store in a dry place out of direct sunlight.

(2) The battery self-discharges even while it is stored. Recharge it once a month in hot seasons and once every two months in cold seasons.

IMPORTANT:

- The tractor has been shipped with dry-type battery. Yours dealer will fill the battery with electrolyte and charge for initial use.

■ Charging Dry Type Battery

(1) Remove vent plugs and discard temporary sealing cardboards and tapes.

(2) Fill each cell with electrolyte having a specific gravity given in Table 1 up to highest level marked on the battery case side.

Table 1

	AIR TEMPERATURES	
	TEMPERATE Ordinarily below 20°C (68°F)	TROPICAL Frequently above 20°C (68°F)
sp.gr. of Electrolyte for Filling	1.260	1.240
sp.gr. of Electrolyte when fully charged	1.260 to 1.275	1.240 to 1.255

(3) After standing 2 or 3 hours correct the electrolyte to former level.

(4) Connect positive terminal (+) of battery, with positive terminal of D.C. charging unit, and negative terminal (—) with negative terminal.

(5) Batteries are preferably charged by current showed in Table 2. Keep vent plugs removed during charging.

Table 2

TYPE	Volts (V)	Number of plate per cell	Capacity at 20 H.R (A.H)	Volume of Electrolyte (ℓ)	Normal Charging Rate (A)
105E41R N100Z	12	19	100	6.5	9

(6) Check temperature of electrolyte, if it reaches 40°C (105°F) lower the charging rate. When temperature is too high, reduce charging rate and charge for a proportionately longer period.

(7) If the tractor is stored after original charge, periodically recharge as shown below:

Table 3

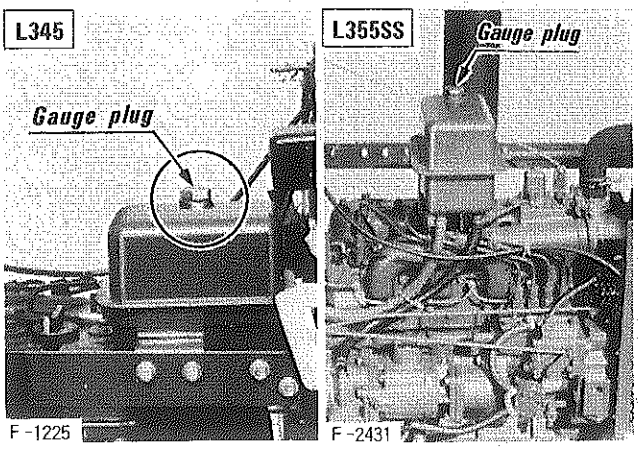
Period of storage from manufactured (months)	Recharging (hours)
0 — 6	about 5 hours
6 — 12	10
over 12	30

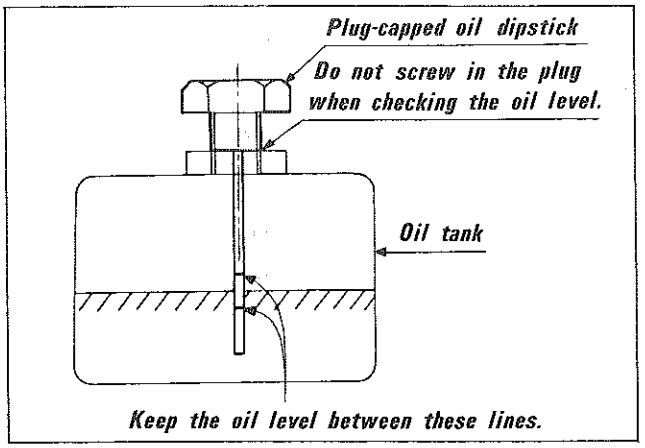
A battery is fully charged when all cells are gassing freely and the specific gravity ceases to rise for three consecutive readings taken at one hour intervals. Specific gravity shall then be adjusted to that shown in Table 1.

(8) Check electrolyte level two hours after charging is finished and correct it if necessary by adding distilled water.

9.12 POWER STEERING [L345/L355SS]

If the oil level is low, be sure to add oil to the prescribed level. Also be sure to use the recommended oil.

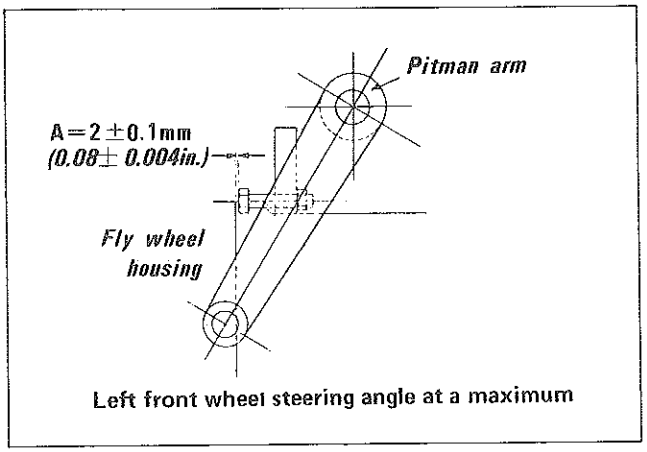




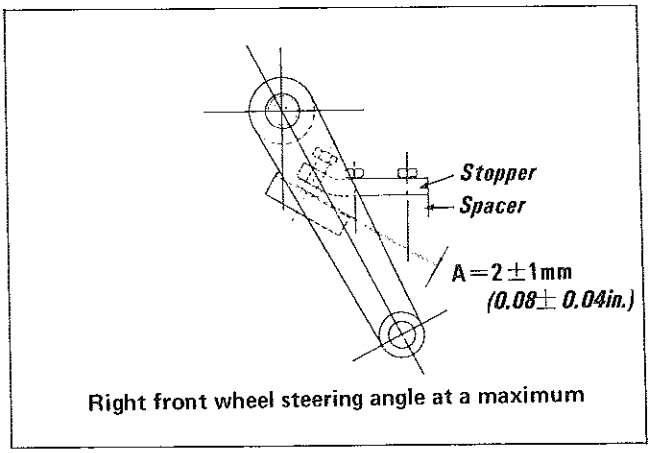
■ Adjusting the Pitman Arm Stopper
—Optional booster type power steering only—

The pitman arm stopper has been adjusted so that no relief pressure is generated in the booster. If relief pressure is produced, adjust the stopper in the following manner:

- Stop the engine to free the steering wheel and keep the front wheel steering angles at a maximum. Adjust the bolt of the swivel stopper as follows:



Left front wheel steering angle at a maximum



Right front wheel steering angle at a maximum

IMPORTANT:

- At the maximum right and left front wheel steering angles, check to see that the front wheel stopper contact the pitman arm, and that no relief pressure is produced.

■ Periodic Inspection and Maintenance

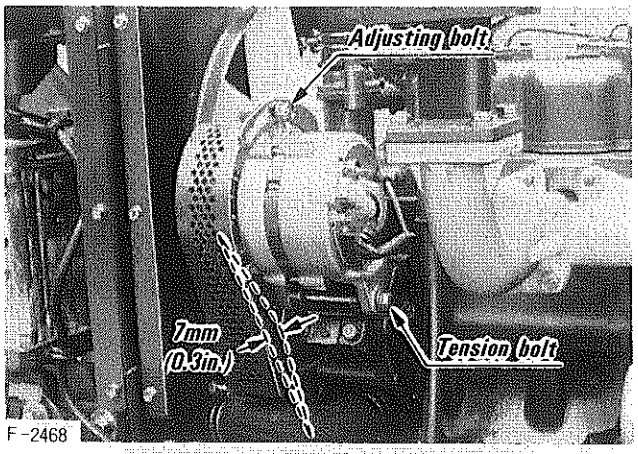
Location for inspection	Frequency	Procedure	Correction
Oil pressure system	Every 8 hours of operation	Check piping and booster for any oil leak.	Tighten joints.
Link system	Every 8 hours of operation	Check bolts and nuts for slackness.	Tighten bolts and nuts.
Cylinder (Only booster type)	Every 50 hours of operation	Grease the valve.	Use SAE multi-purpose type grease. (NLGI No.2)

10. ADJUSTMENTS

CAUTION:
- **When making adjustments, park the tractor on flat ground, apply the parking brake, and stop the engine.**

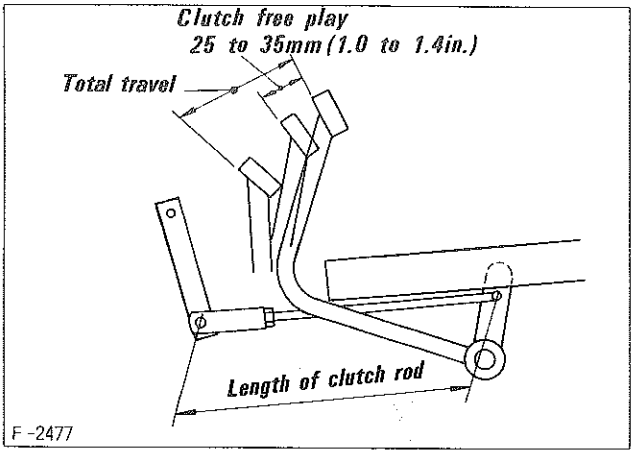
10.1 FAN DRIVE BELT TENSION

If the fan drive belt becomes loose, the engine may overheat.
Check the belt tension as shown below.
To adjust, loosen both adjusting and tension bolts. Adjust the alternator to obtain proper belt tension and tighten both adjusting and tension bolts.
Normal belt tension:
The belt should deflect approx. 7 mm (0.3 in.) when the center of the belt is depressed with a finger pressure of 98N (10 kgf, 22 lbs.).



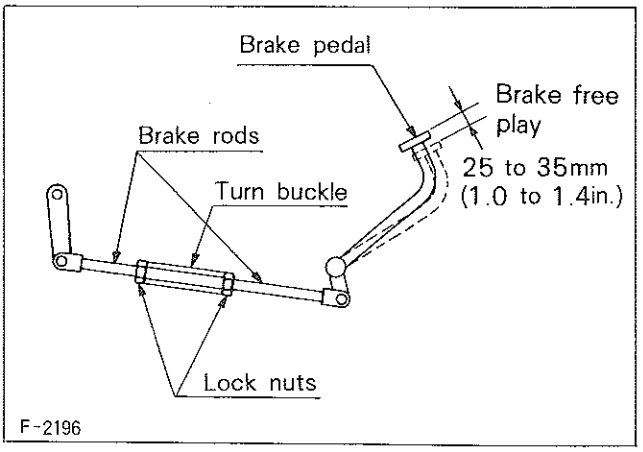
10.2 CLUTCH

Normal clutch free play ranges from 25 to 35 mm (1.0 to 1.4 in.).
If the clutch becomes difficult to disengage or pedal play decreases, adjust the length of the clutch rod after removing the pin. When the clutch free play is excessive, extend the rod. When the clutch free play is too little, shorten the rod.



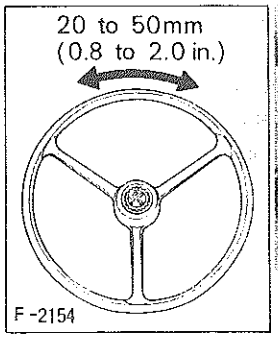
10.3 BRAKE

If brake pedal travel becomes too great or travel varies too greatly between the right and left pedals, loosen the turnbuckle lock nut and turn the turnbuckle in the desired direction until the proper pedal travel is achieved. Normal right and left pedal free play ranges from 25 to 35 mm (1.0 to 1.4 in.). After adjustment, interlock the right and left brake pedals and finally tighten the lock nut securely.



10.4 STEERING WHEEL

Normal steering wheel play is 20 to 50 mm (0.8 to 2.0 in.). To adjust this, loosen the lock nut and turn the adjusting bolt to the right. After adjustment, securely retighten the nut.



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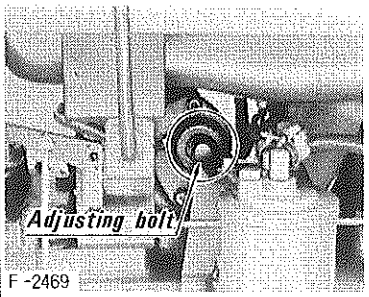

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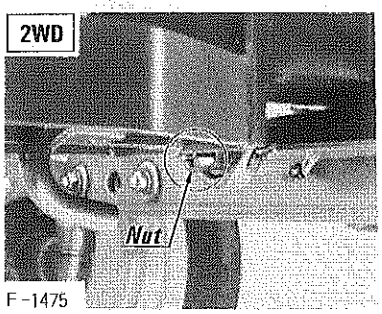
10.5 FRONT AXLE SUPPORT [2WD]

Insure front axle support is securely clamped. If not, remove the split cotter pin first, and firmly tighten the nut. Reinstall the cotter pin.



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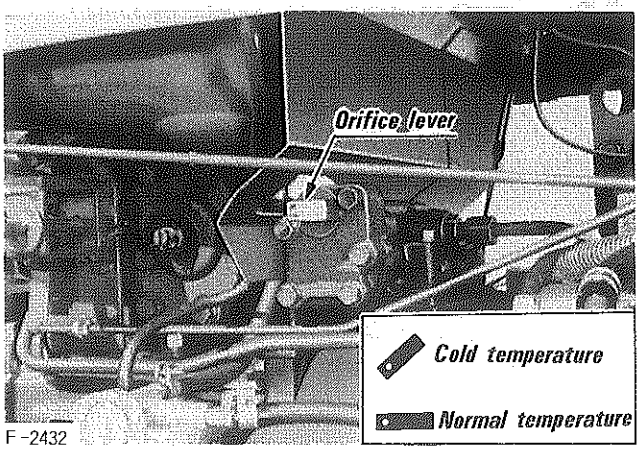
10.6 ORIFICE LEVER [L355SS]

When operating the tractor in cold weather [temperature is below 0°C (32°F)] place the orifice lever in the cold temperature position.



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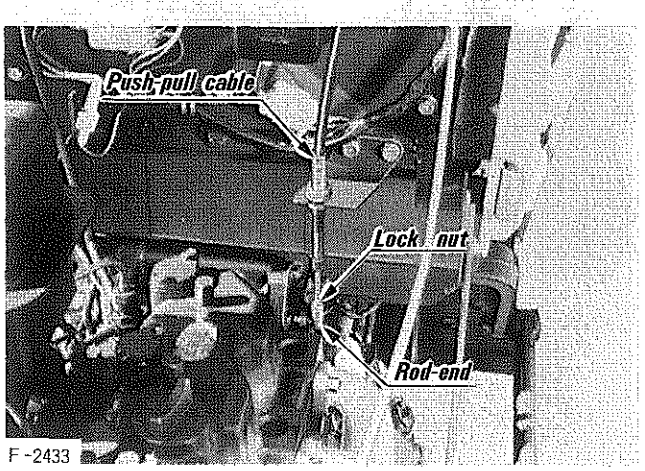
10.7 SHUTTLE SHIFT LEVER [L355SS]

If shuttle shift lever neutral position does not line up with locking slot, adjust by loosening the lock nut of the push-pull cable and turning the rod-end to line up neutral mark and neutral lock device. Retighten the lock nut.



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11. TROUBLESHOOTING

11.1 ENGINE TROUBLESHOOTING

■ When engine is difficult to start

Cause	Countermeasures
Fuel is thick and doesn't flow	* Check the fuel oil tank and fuel oil filter. * Remove water, dirt and other impurities * As all fuel oil will be filtered by the filter, if there should be water or other foreign matters on the filter, replace the filter.
Air or water mixed in fuel system	* If air is in the fuel filter or injection lines, the fuel pump will not work properly. To attain proper fuel injection pressure, check carefully for loosened fuel lines, cap nut, etc. * Loosen air vent screws atop fuel filter and fuel injection pump to eliminate all the air in the fuel oil system.
Thick carbon deposits on orifice of injection nozzle.	* This is caused when water or dirt is mixed in the fuel. Clean the nozzle injection piece, being careful not to damage the orifice. * Check to see if nozzle is working properly or not. If not, install a new nozzle.
Valve clearance is wrong	* Adjust valve clearance. See your KUBOTA dealer.
Leaking valves	* Grind valves. See your KUBOTA dealer.
Fuel injection timing is wrong	* Adjust injection timing. See your KUBOTA dealer.
Engine oil becomes thick in cold weather and engine cranks slow.	* Change grade of oil according to the weather (temperature).
Low compression	* Bad valve or excessive wear of rings, pistons and liners cause insufficient compression. Replace with new parts.
Battery is discharged and the engine will not crank.	* Charge battery. * Use decompression device. * In winter, always remove battery from tractor, charge fully and keep indoors. Install in tractor at time of use.

■ When output is insufficient

Cause	Countermeasures
Carbon build-up around orifice of nozzle piece.	* Clean orifice and needle valve, being very careful not to damage the nozzle orifice. * Check nozzle. If defective, replace with new parts.
Compression is insufficient. Leaking valves	* Bad valve and excessive wear of rings, pistons and liners cause insufficient compression. Replace with new parts. * Grind valves.
Fuel is insufficient	* Check fuel system.
Overheating of moving parts	* Check lube oil system. * Check to see if lube oil filter is working properly. * Filter screens or elements deposited with impurities would cause poor lubrication. Clean screens. * Check to see if bearing clearance is within factory specs. * Check engine timing.
Valves out of adjustment	* Adjust to proper valve clearance. See your KUBOTA dealer.
Air cleaner is dirty	* Clean the element every 100-200 hours of operation.
Fuel injection pressure is wrong	* Adjust to proper pressure. See your KUBOTA dealer.

■ When color of exhaust is especially black

See your KUBOTA dealer.

■ When engine suddenly stops

Cause	Countermeasures
Leak of fuel	* Check the fuel tank and refill if necessary. * Also check the fuel system for air or leaks
Bad nozzle	* If necessary, replace with a new nozzle.
Moving parts are overheated due to shortage of lube oil or improper lubrication	* Check amount of engine oil with oil level gage. * Check lubricating oil system. * Check to see if element inside the lubricating oil filter (2) has become old and clogged. If necessary, replace with new element. * Check to see if the engine bearing clearances is within factory specs.

IMPORTANT:

- When the engine has suddenly stopped, decompress the engine by the decomp and turn the engine lightly by pulling on the fan belt. If the engine turns easily without abnormalities, the cause of the trouble is usually lack of fuel or bad nozzle.

■ When engine must be stopped immediately

Cause	Countermeasures
Speed suddenly decreases or increases	* Check the adjustments and timing of injection and the fuel system.
Unusual sound is heard suddenly.	* Check all moving parts carefully.
Color of exhaust suddenly turns dark	* Check the fuel injection system, especially the fuel injection nozzle.
Bearing parts are overheated	* Check the lubricating system.
Oil lamp lights up during operation	* Check lubricating system. * Check to see if the engine bearing clearances is within factory specs. * Check the function of the regulating valve inside of oil filter (2). * Check pressure switch * Check filter base gasket

11.2 TRACTOR TROUBLESHOOTING

■ When tractor does not move while engine is running

Cause	Countermeasure
Speed change lever is at neutral	* Check speed change lever
Parking brake is working	* Release the parking brake

■ When 3 point hitch does not move

Cause	Countermeasure
Oil filter is clogged	* Clean or change the filter
3 point hitch does not lower	* Check the hydraulic adjusting grip.

11.3 BATTERY TROUBLESHOOTING

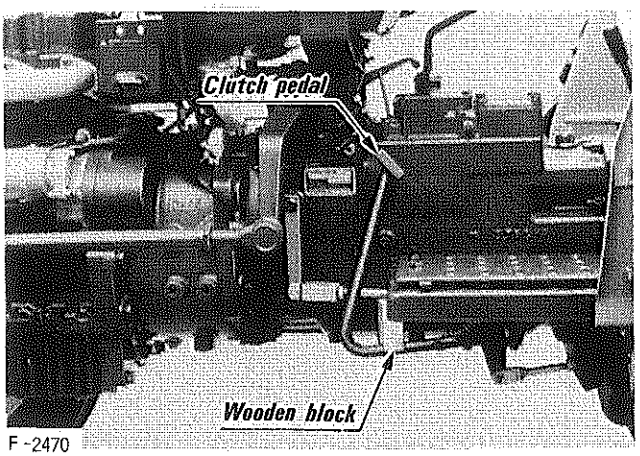
Condition of Battery	Cause	Countermeasure	Precaution
Starter does not function	Key is not "ON"	Turn key "ON"	
	Battery over-used until light becomes dim	Charge for long period by ordinary charging method until specific gravity of 1.26 is reached.	Do not overuse the battery and charge before fully discharged. (Refrain from overdischarging)
	Charging of battery neglected		
	Defective Alternator rectifier.	Repair Alternator and replace defective rectifier. Charge battery well.	Check Alternator rectifier.
	Dirty or corroded terminal contacts	Wash terminal with hot water and tighten well.	Keep terminals clean, tighten well and grease to prevent corrosion.
	Bad brushes, armature or field	Replace	
	Life of battery expired	Replace battery	
From beginning, starter does not function, and lights become dim quickly.	Battery not charged well	Charge battery for long period by ordinary charging method.	Battery must be serviced properly before initial use.
Low electrolyte level.	Battery used with shortage of electrolyte.	Add distilled water and charge battery	Make routine checks of electrolyte
	Battery over-used. Moreover, charging was neglected. (Refrain from over-discharging.)	Charge for long period.	Do not overuse the battery and fully discharge.
	Defective Alternator rectifier. Defective terminal contacts causing sulphation of electrodes.	Check Alternator and rectifier and charge battery for a long period by ordinary charging method.	Make routine checks of terminals, to make sure they are clean and tight.
Battery cannot be charged.	The current of the Alternator during operation is too high causing plates to drop, warp or short-circuit.	Decrease the charging current of Alternator. Exchange defective battery.	Check charging current of Alternator.
	Life of battery expired.	Exchange battery.	
Corrosion of terminals severe.		Clean scale from terminals and tighten well.	Keep terminals clean and well tightened. Apply grease to prevent corrosion.
	Current of the Alternator during operation is too large.	Adjust charging current of Alternator.	Check charging current of Alternator.
Electrolyte decrease rapidly	Over heating due to over charging.	Check charging out put.	
	Storage battery cracked or has small holes.	Replace battery	Secure battery to tractor so it would not move.

12. LONG-TERM STORAGE

CAUTION:
- **When storing, remove the key from the main switch.**

When the tractor will not be operated for two or three months or longer, clean the tractor and perform the following treatment before storage.

(1) Repair the parts as needed.
(2) Check nuts and bolts, tighten as necessary.
(3) Apply grease or engine oil to the parts most likey to rust.
(4) Remove the wheel and front bracket weights.
(5) Pump up the wheel tires to a little above the standard pressure levels.
(6) Change the engine oil and run the engine for five minutes so that the oil circulates through the entire system.
(7) Stop the engine by pulling the engine stop lever (knob).
(8) Drain the radiator. Flush and refill with new coolant.
(9) Check air cleaner and clean if necessary.
(10) Block the clutch pedal with a wooden block.
If the tractor is stored for a long period with the clutch left engaged, the clutch disc may rust, rendering it inoperative.



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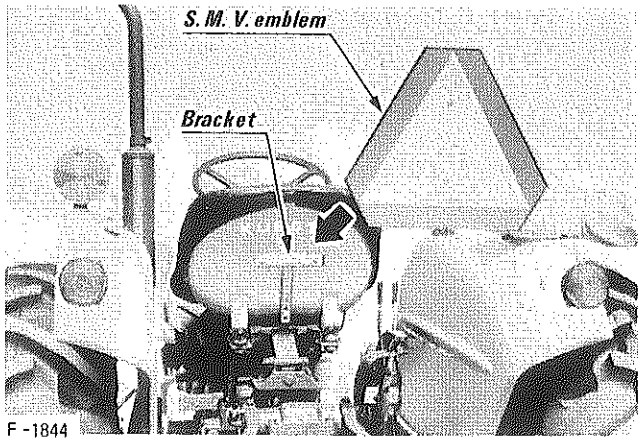
(11) Lower the implement to the ground.
(12) Remove the battery from the tractor, recharge it, adjust the electrolyte to the proper level, and store in a dry place out of direct sunlight.
(13) The battery runs down over time even while in storage. Recharge it once a month in hot seasons and once every two months in cold seasons.
(14) Store the tractor where dry and sheltered from rain. Further cover the tractor with a tarpaulin.
(15) When leaving the tractor outdoors, protect the muffler opening from rain.

CAUTION:
- **To clean the tractor stop the engine. Do not clean the tractor with engine running.**

13. OPTIONS (consult KUBOTA distributors or dealers)

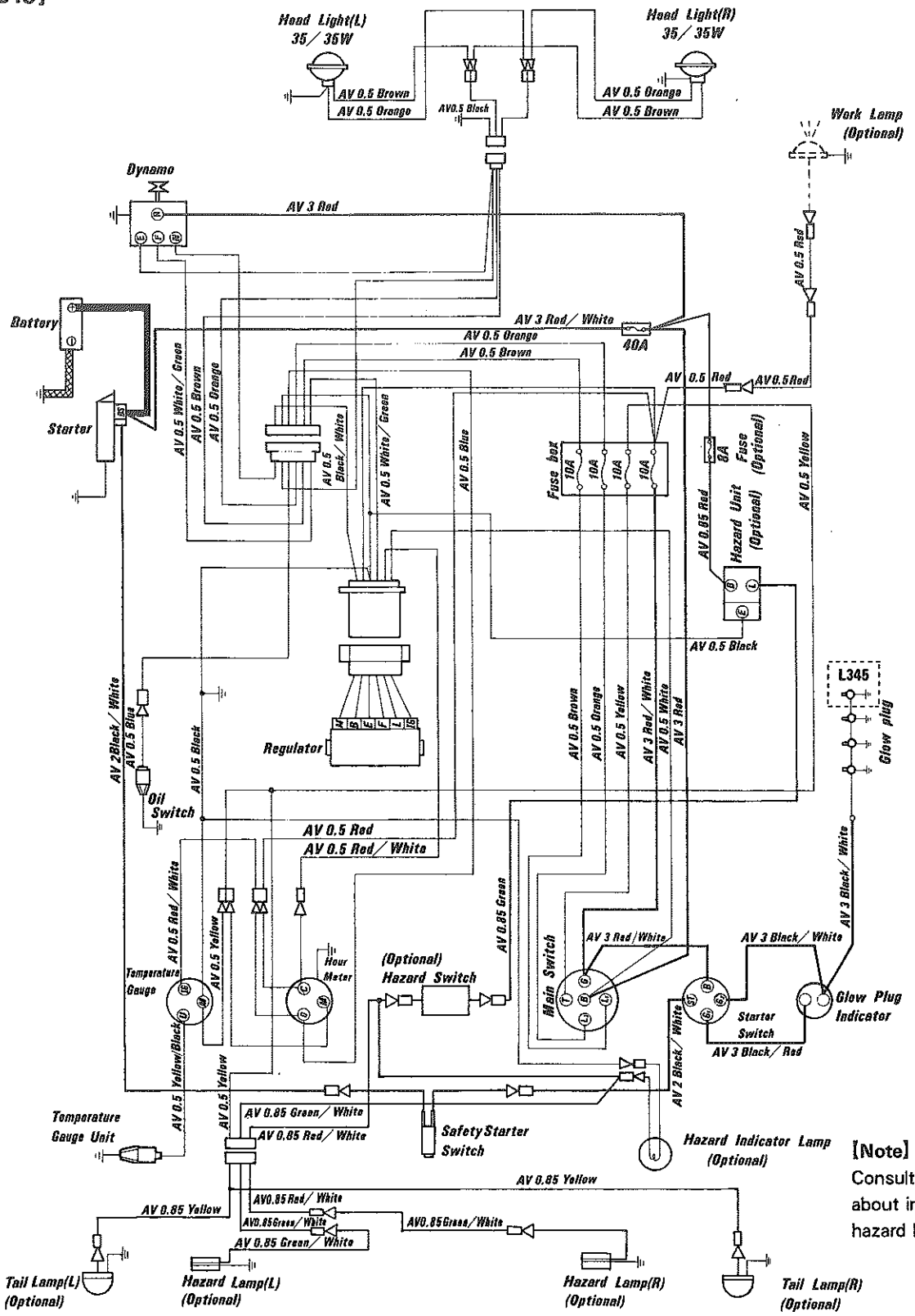
■ S.M.V. (Slow Moving Vehicle) Emblem

- Recommended to forwarn overtaking traffic of tractor's presence.



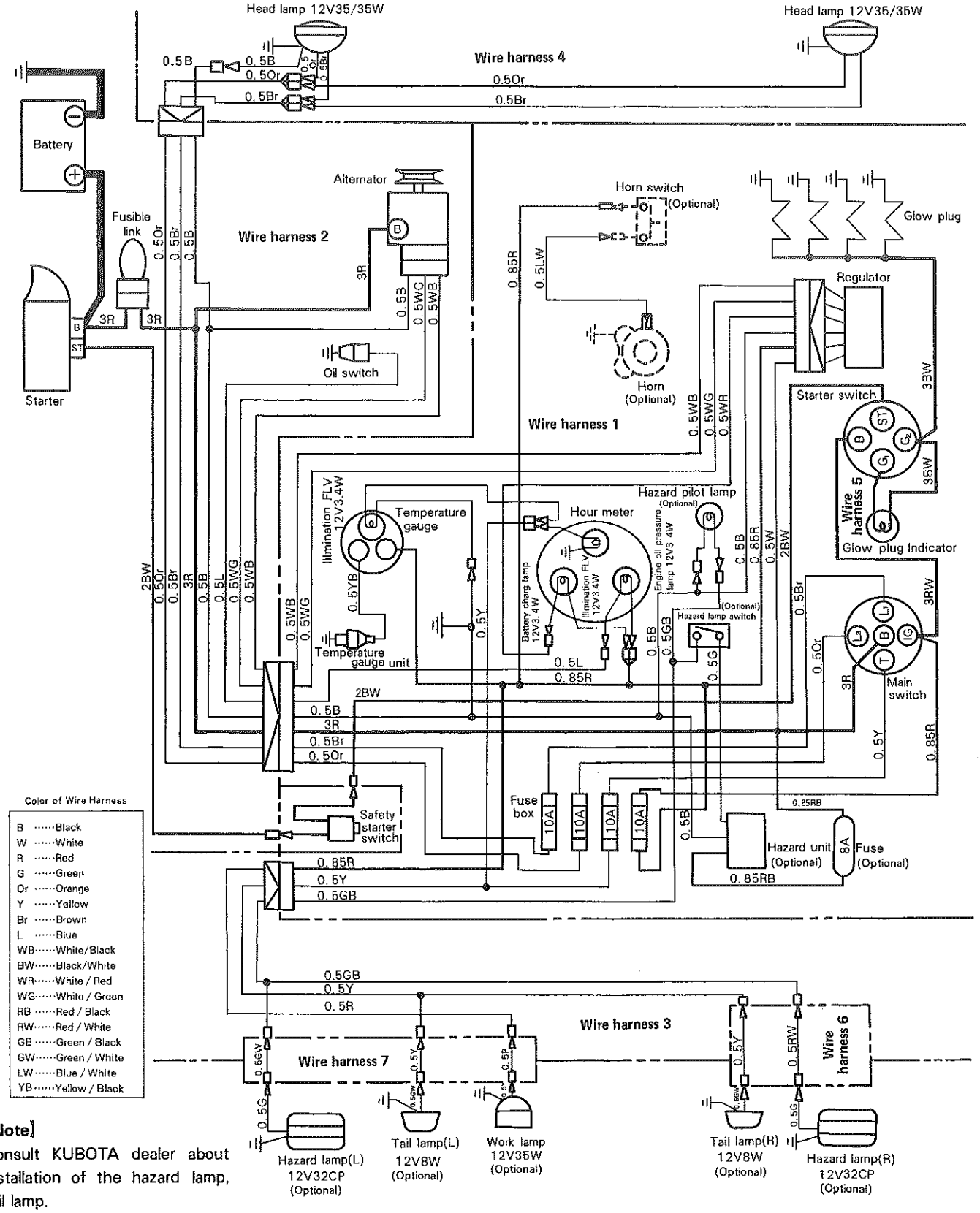
14. WIRING DIAGRAM

[L305/L345]



[Note]
Consult KUBOTA dealer about installation of the hazard lamp, tail lamp.

[L355SS]



Color of Wire Harness

B	Black
W	White
R	Red
G	Green
Or	Orange
Y	Yellow
Br	Brown
L	Blue
WB	White/Black
BW	Black/White
WR	White / Red
WG	White / Green
RB	Red / Black
RW	Red / White
GB	Green / Black
GW	Green / White
LW	Blue / White
YB	Yellow / Black

[Note]

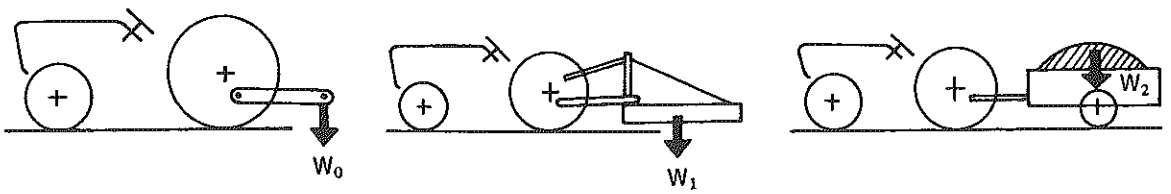
Consult KUBOTA dealer about installation of the hazard lamp, tail lamp.

15. SPECIFICATIONS OF IMPLEMENT LIMITATIONS

The Kubota L305/L345/L355SS tractors have been thoroughly tested for proper performance with implements sold or approved by KUBOTA. Use with implements which exceed the maximum specifications listed below, or which are otherwise unfit for use with the Kubota L305/L345/L355SS tractors may result in malfunctions or failures of the tractor, damage to other property and injury to the operator or others. [Any malfunctions or failures of the tractor resulting from use with improper implements are not covered by the warranty.]

Model	Tire	Tread with farm tires mm (in.)				Operating condition	Lower link end max. loading weight W_0	Actual figures	
			Front		Rear			Implement weight W_1	Trailer loading weight W_2
			2WD	4WD					
L305	Front 5.50–16 or 8.3–16 Rear 13.6–24	1	1130 (44.5)	1225 (48.2)	1275 (50.2)	Hard load operation (Flat ground condition)	Below 800 kg (1760 lbs.)	As in the following list	Below 1500 kg (3300 lbs.)
		2	1210 (47.6)						
		3	1290 (50.8)		1370 (53.9)	Medium load operation (Flat ground or slope condition)	Below 700 kg (1540 lbs.)		
		4	1370 (53.9)		1475 (58.0)				
		5	1450 (57.1)		1575 (62.0)	Light load operation (Slope condition)	Below 590 kg (1300 lbs.)		
		6	—		1680 (66.1)				
	Front 5.50–16 or 7–16 Rear 12.4–24	1	1155 (45.5)	1150 (45.3)	1275 (50.2)	Hard load operation (Flat ground condition)	Below 800 kg (1760 lbs.)	As in the following list	Below 1500 kg (3300 lbs.)
		2	1235 (48.6)						
		3	1315 (51.8)						
		4	1395 (54.9)		1365 (53.7)	Medium load operation (Flat ground or slope condition)	Below 700 kg (1540 lbs.)		
		5	1475 (58.0)		1465 (57.7)				
		6	—		1545 (60.8)	Light load operation (Slope condition)	Below 590 kg (1300 lbs.)		
		7	—		1645 (64.8)				

Lower link end max. loading weight . . . . The max. allowable load which can be put on the lower link end: W_0
Implement weight . . . . . The implement's weight which can be put on the lower link: W_1
Trailer loading weight . . . . . The max. loading weight for trailer (without trailer's weight): W_2



Model	Tire	Tread with farm tires mm (in.)				Operating condition	Lower link end max. loading weight W_0	Actual figures	
			Front		Rear			Implement weight W_1	Trailer loading weight W_2
			2WD	4WD					
L345	Front 6.00–16 or 9.5–16 Rear 13.6–28	1	1130 (44.5)	1245 (49.0)	1170 (46.0)	Hard load operation (Flat ground condition)	Below 800 kg (1760 lbs.)	As in the following list	Below 2000 kg (4400 lbs.)
		2	1210 (47.6)		1275 (50.2)				
		3	1290 (50.8)		1370 (53.9)	Medium load operation (Flat ground or slope condition)	Below 700 kg (1540 lbs.)		
		4	1370 (53.9)		1475 (58.0)				
		5	1450 (57.1)		1575 (62.0)	Light load operation (Slope condition)	Below 590 kg (1300 lbs.)		
		6	—		1680 (66.1)				
	Front 5.50–16 or 8–18 Rear 12.4/11–28	1	1155 (45.5)	1185 (46.7)	1130 (44.5)	Hard load operation (Flat ground condition)	Below 800 kg (1760 lbs.)	As in the following list	Below 2000 kg (4400 lbs.)
		2	1235 (48.6)		1210 (47.6)				
		3	1315 (51.8)		1300 (51.2)				
		4	1395 (54.9)		1320 (52.0)	Medium load operation (Flat ground or slope condition)	Below 700 kg (1540 lbs.)		
		5	1475 (58.0)		1420 (55.9)				
		6	—		1490 (58.7)	Light load operation (Slope condition)	Below 590 kg (1300 lbs.)		
		7	—		1600 (63.0)				
L355 SS	Front 8.3–16 Rear 13.6–24	1		1225 (48.2)	1275 (50.2)	Hard load operation (Flat ground condition)	Below 800 kg (1760 lbs.)	As in the following list	Below 2000 kg (4400 lbs.)
		2			1370 (53.9)	Medium load operation (Flat ground or slope condition)	Below 700 kg (1540 lbs.)		
		3			1475 (58.0)				
		4			1575 (62.0)	Light load operation (Slope condition)	Below 590 kg (1300 lbs.)		
		5			1680 (66.1)				

Implement		Remarks	L305 (2WD)	L305 (4WD)	L345 (2WD)	L345 (4WD)	L355SS (4WD)
Rotary mower	Rear (1 Blade)	Max. cutting width Max. weight	152cm (60 in.) 295kg (650 lbs.)	152cm (60 in.) 295kg (650 lbs.)	183cm (72 in.) 295kg (650 lbs.)	183cm (72 in.) 295kg (650 lbs.)	183cm (72 in.) 295kg (650 lbs.)
	Mid or rear (2~3 Blade)	Max. cutting width Max. weight	183cm (72 in.) 295kg (650 lbs.)	183cm (72 in.) 295kg (650 lbs.)	183cm (72 in.) 295kg (650 lbs.)	183cm (72 in.) 295kg (650 lbs.)	183cm (72 in.) 295kg (650 lbs.)
	Sickle bar	Max. cutting width	183cm (72 in.)	183cm (72 in.)	183cm (72 in.)	183cm (72 in.)	183cm (72 in.)
Rotary tiller		Max. tilling width Max. weight	127cm (50 in.) 295kg (650 lbs.)	127cm (50 in.) 295kg (650 lbs.)	152cm (60 in.) 340kg (750 lbs.)	152cm (60 in.) 340kg (750 lbs.)	152cm (60 in.) 340kg (750 lbs.)
Bottom plow		Max. size	14 in. x 2	16 in. x 2	14 in. x 2	16 in. x 2	16 in. x 2
Disc plow		Max. size	26 in. x 2	26 in. x 2	26 in. x 2	26 in. x 2	26 in. x 2
Cultivator		Max. size	152cm (60 in.) 1 Row	152cm (60 in.) 1 Row	183cm (72 in.) 1 Row	183cm (72 in.) 1 Row	183cm (72 in.) 1 Row
Disc harrow		Max. harrowing width Max. weight	183cm (72 in.) 295kg (650 lbs.)	193cm (76 in.) 295kg (650 lbs.)	193cm (76 in.) 364kg (800 lbs.)	193cm (76 in.) 364kg (800 lbs.)	193cm (76 in.) 364kg (800 lbs.)
Sprayer		Max. tank capacity	378ℓ (100 gals.)	378ℓ (100 gals.)	378ℓ (100 gals.)	378ℓ (100 gals.)	378ℓ (100 gals.)
Front blade		Max. cutting width Max. weight Sub frame necessary	168cm (66 in.) 250kg (550 lbs.)	183cm (72 in.) 250kg (550 lbs.)	183cm (72 in.) 295kg (650 lbs.)	183cm (72 in.) 295kg (650 lbs.)	183cm (72 in.) 295kg (650 lbs.)
Rear blade		Max. cutting width Max. weight	168cm (66 in.) 295kg (650 lbs.)	183cm (72 in.) 295kg (650 lbs.)	183cm (72 in.) 318kg (700 lbs.)	183cm (72 in.) 318kg (700 lbs.)	183cm (72 in.) 318kg (700 lbs.)
Front-end loader		Max. lifting capacity Max. width Oil pressure, relief valve Sub frame necessary	590kg (1300 lbs.) 183cm (72 in.) 12.3MPa (126 kgf/cm^2, 1800 psi.)	590kg (1300 lbs.) 183cm (72 in.) 12.3MPa (126 kgf/cm^2, 1800 psi.)	682kg (1500 lbs.) 183cm (72 in.) 12.3MPa (126 kgf/cm^2, 1800 psi.)	682kg (1500 lbs.) 183cm (72 in.) 12.3MPa (126 kgf/cm^2, 1800 psi.)	682kg (1500 lbs.) 183cm (72 in.) 12.3MPa (126 kgf/cm^2, 1800 psi.)
Box blade		Max. cutting width Max. weight	152cm (60 in.) 295kg (650 lbs.)	152cm (60 in.) 295kg (650 lbs.)	183cm (72 in.) 318kg (700 lbs.)	183cm (72 in.) 318kg (700 lbs.)	183cm (72 in.) 318kg (700 lbs.)
Back hoe (Should be used with 1~4 stage Rear tread)		Max. digging depth Max. weight Sub frame necessary	244cm (96 in.) 590kg (1300 lbs.)	244cm (96 in.) 590kg (1300 lbs.)	244cm (96 in.) 682kg (1500 lbs.)	244cm (96 in.) 682kg (1500 lbs.)	244cm (96 in.) 682kg (1500 lbs.)
Snow blower		Max. working width Max. weight Sub frame necessary	152cm (60 in.) 272kg (600 lbs.)	152cm (60 in.) 272kg (600 lbs.)	183cm (72 in.) 340kg (750 lbs.)	183cm (72 in.) 340kg (750 lbs.)	183cm (72 in.) 340kg (750 lbs.)
Trailer		Max. load capacity	1500kg (3300 lbs.)	1500kg (3300 lbs.)	2000kg (4400 lbs.)	2000kg (4400 lbs.)	2000kg (4400 lbs.)
Three point lift		Max. load capacity	See page 60 to 61				

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Kubota®

KUBOTA TRACTOR CORPORATION

CORPORATE OFFICE: 3401 DEL AMO BOULEVARD, TORRANCE, CA 90503
WESTERN DIVISION: 1175 S. Guild Ave., Lodi, CA 95240 • (209) 334-9910
CENTRAL DIVISION: 14855 F.A.A. Blvd., Fort Worth, TX 76155 • (817) 871-0900
NORTHERN DIVISION: One Kubota Way, Groveport, OH 43125 • (614) 835-1100
SOUTHEAST DIVISION: 1025 Northbrook Parkway, Suwanee, GA 30024 • (770) 995-8855

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