

Product: Kubota B6100HST B7100HST Service Manual

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# WSM

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## WORKSHOP MANUAL **TRACTOR**

### B6100HST,B7100HST

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# Kubota

KiSC issued 07, 2016 A

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# GENERAL

# GENERAL



# GENERAL

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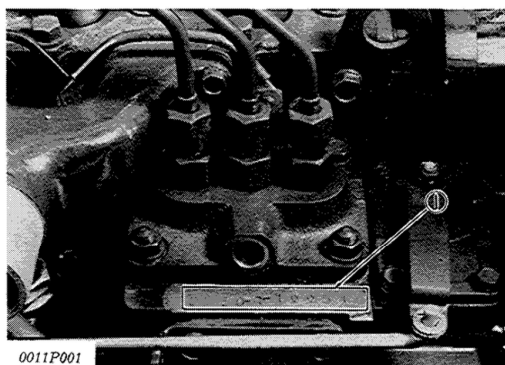
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## Group 1

# Tractor Identification

### Serial Numbers

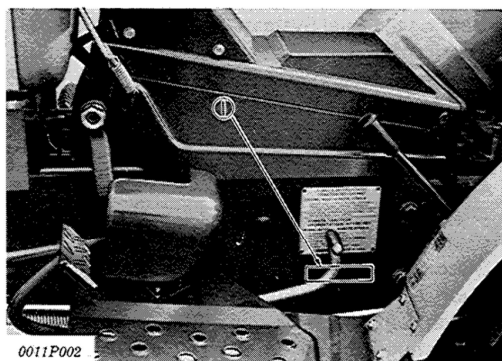
#### Engine Serial Number



#### 1. Engine Serial Number

*Fig. A-1 Engine Serial Number*

#### Tractor Serial Number



#### 1. Tractor Serial Number

*Fig. A-2 Tractor Serial Number*

## Group 2

## Specifications

## General Specifications

## Engine

Max. output/speed .....	12 kW/46.7 rps (16 HP/2800 rpm)
Max. torque/speed .....	50 Nm (5.1 kgf-m, 37 ft-lbs)/1800 rpm
Model .....	KUBOTA D750-AH
Type .....	Vertical, water-cooled 4 cycle diesel engine
Number of cylinders .....	3
Bore and stroke .....	68 mm x 70 mm ( $2\frac{43}{64}$ in. x $2\frac{3}{4}$ in.)
Total cubic capacity .....	762 cm <sup>3</sup> (46.5 cu.in.)
Compression ratio .....	22
Direction of rotation .....	Counterclockwise, viewed from flywheel
Dimensions (Length x Width x Height) .....	721 mm x 697.5 mm x 631 mm ( $28\frac{25}{64}$ in. x $27\frac{15}{32}$ in. x $24\frac{27}{32}$ in.)
Weight .....	93 kg (205 lbs.)
Combustion chamber .....	Spherical combustion chamber type
Fuel injection pump type (Model) .....	Bosch Type K Mini Pump (NP-PFR3KD50/2NP4)
Fuel injection nozzle type (Model) .....	Throttle Type (ND-DN12SD12)
Injection pressure .....	13.7 to 14.7 MPa (140 to 150 kgf/cm <sup>2</sup> , 1988 to 2130 psi)
Injection timing .....	0.401 to 0.436 rad. (23° to 25°) before T.D.C.
Fuel	
Type .....	Diesel fuel No. 2-D (ASTM D975)
Consumption .....	200 g/ps-h (0.446 lbs./Hp-h)
Fuel supply pump normal operating pressure .....	20 kPa (0.2 kgf/cm <sup>2</sup> , 2.8 psi)
Cooling .....	With pressurized radiator
Lubrication .....	Forced lubrication by trochoid pump and full-flow micronic oil filter with bypass valve.
Starting .....	Electric starter with glow plug, compression release

## Clutch

Type .....	Dry, single plate type
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## Steering

Type .....	Ball screw type, manual steering
Gear ratio .....	15.4 : 1

## Transmission

Type .....	Hydrostatic transmission and gear shift (high, low)
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### Hydrostatic Transmission (H.S.T.)

#### Pump

Type .....	Variable displacement piston pump
Displacement .....	0 to 45.9 ℓ/min. (0 to 12.1 U.S. gals./min.) at engine 2800 rpm
Swashplate angle .....	−0.28 to 0.28 rad. (−16° to 16°)

#### Motor

Type .....	Fixed displacement piston motor
Displacement .....	45.9 ℓ/min. (12.1 U.S. gals./min.)
Swashplate angle .....	0.28 rad. (16°)

Charge pump type ..... Trochoid pump

Charge pump displacement ..... 13.7 ℓ/min. (3.6 U.S. gals./min.) at engine 2800 rpm

Oil capacity ..... 0.6 ℓ (0.6 U.S. qts.)

Oil filter cartridge ..... 10 μm (0.010 mm, 0.0004 in.) meshes  
(Installed with 3/4-16 UNF unified fine screw threads)

Weight ..... 15.7 kg (34.6 lbs.)

#### Oil Cooler

Type ..... Corrugated fin type radiator

#### Brake

Type ..... Right and left independent with dry drum

Parking brake ..... Hook-interlocked with main brake

#### Travel Speeds

At rated engine speed with 8–16 (BS) tires.

##### Forward

1st .....	0 to 5.7 km/h (0 to 3.5 mph)
2nd .....	0 to 14.5 km/h (0 to 9.0 mph)

##### Reverse

1st .....	0 to 3.9 km/h (0 to 2.4 mph)
2nd .....	0 to 10 km/h (0 to 6.2 mph)

#### PTO

Direction of revolution ..... Front, Mid ..... clockwise viewed from front end  
Rear ..... clockwise viewed from rear end

Size ..... Mid ..... involute spline SAE No. 5  
Rear ..... 1⅜ in. 6 spline

Speed (engine speed 2800 rpm) ..... Front ..... direct to crankshaft (optional)  
Mid ..... 2450 rpm  
Rear ..... 540, 850 rpm

Three-point Linkage ..... CAT. 1

#### Capacities

Engine crankcase ..... 3.9 ℓ (4.1 U.S. qts.)

Radiator ..... 4.6 ℓ (4.9 U.S. qts.)

Fuel tank ..... 13 ℓ (3.4 U.S. gals.)

Steering gear box	0.2 ℓ (0.2 U.S. qts.)
Transmission — hydraulic system	13.5 ℓ (3.6 U.S. gals.) [include hydrostatic transmission case 0.6 ℓ (0.6 U.S. qts.)]
Front differential case	1.5 ℓ [1.6 U.S. qts.] only 4 WD
Front wheel axle case	each side 0.5 ℓ (0.5 U.S. qts.) only 4 WD

**Lubricants (Oil Classification)**

Engine crankcase	Engine oil API Service Class CC or CD Above 25°C (77°F) SAE 30 or 10 W-30 0 to 25°C (32° to 77°F) SAE 20 or 10 W-30 Below 0°C (32°F) SAE 10 W or 10 W-30
------------------	---

**Transmission (hydraulic system, hydrostatic transmission)****Hydrostatic Transmission Oil**

Maker	Brand
KUBOTA	UDT oil
Shell	DONAX-TD, DONAX-TM
Mobil	Mobil Fluid 350, 423
Exxon	Torque Fluid 56
J.I. Case	TCH Fluid
White Motor	Hydraulic Oil Type 55
Ford	Tractor Hydraulic Fluid
Steering gear box	SAE 80 Gear Oil
Front differential case	SAE 80 Gear Oil
Front wheel gear case	SAE 80 Gear Oil

**Front Wheel Alignment**

Kingpin inclination	4 WD 0.175 rad. (10°), 2 WD 0.140 rad. (8°)
Toe-in	0 to 5 mm (0 to $\frac{1}{8}$ in.)
Camber angle	0.035 rad. (2°)
Caster angle	4 WD 0.015 rad (50') [Tires 6-12, 8-16 BS] 2 WD 0 rad. (0°) [Tires 4.00-9, 8-16 BS]

**Hydraulic System**

Control type	Spool sliding, closed center type
Pump type (Model)	Gear pump (GP-OB-9.6-3127C)
Displacement	11.2 ℓ/min (11.8 U.S. qts./min) engine speed 2800 rpm
Full flow pressure	10.8 to 11.8 MPa (110 to 120 kgf/cm <sup>2</sup> 1570 to 1710 psi) Oil temp. 40 to 45°C (104 to 113°F)
Cylinder bore x stroke	60 mm x 78 mm (2 $\frac{3}{16}$ in. x 3 $\frac{1}{16}$ in.)
Max. lift	4410 N, (450 kgf, 1000 lbs.)

**Electric System****Battery**

Model	NT80-S6L
Capacity	12 V x 45 Ah
Dimensions (length x width x height)	192 mm x 127 mm x 227 mm (7 $\frac{1}{16}$ in. x 5 in. x 8 $\frac{15}{16}$ in.)

**AC Dynamo**

Nominal voltage	12 V
Maximum output	10 A, 120 W (35 A, 420 W ... Option)
Rotating direction	Clockwise, viewed from the pulley
Polarity	Negative grounding

**Regulator**

Type	Thyristor direct control type
Nominal voltage	14.0 to 15.0 V

**Starter**

Type	Magnet switch type
Nominal voltage	12 V
Nominal output	0.8 kW
Time rating	Max. 10 seconds tolerant continually revolving
Rotating direction	Clockwise, viewed from the pinion
Number of pinion teeth	9

**Glow plug**

Type	Sheathed type (Bar type)
Voltage, current (with one plug)	Amperage is approx. 7 A, after DC 10.5 V is applied for 30 seconds.

**Glow plug controller**

Amperage	20 A
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**Tractor Dimensions**

Items		B7100 HST-D (4WD)		
Tire size	Front	6 – 12	20.5 x 8.00 – 10	6 – 12
	Rear	8 – 16	29 x 12.00 – 15	8 – 16
Farm or Turf		Farm	Turf	Farm
Tire Brand		Goodyear	Goodyear	Bridgestone
Overall Length		2135 mm (84 1/16 in.)	2100 mm (82 3/4 in.)	2130 mm (83 5/8 in.)
Overall Width		1040 mm (40 15/16 in.)	1140 mm (44 7/8 in.)	1040 mm (40 15/16 in.)
Overall Height		1190 mm (46 7/32 in.)	1165 mm (45 5/8 in.)	1190 mm (46 7/32 in.)
Wheel Base		1400 mm (55 1/8 in.)	1400 mm (55 1/8 in.)	1400 mm (55 1/8 in.)
Minimum Ground Clearance *1		240 mm ( 9 29/64 in.)	225 mm ( 8 55/64 in.)	240 mm ( 9 29/64 in.)
Tread (Front Wheel)		845 mm (33 17/64 in.)	895 mm (33 15/64 in.)	850 mm (33 15/32 in.)
Tread (Rear Wheel)	1	725 mm (28 35/64 in.)	—	660 mm (25 63/64 in.)
	2	775 mm (30 33/64 in.)	—	710 mm (27 61/64 in.)
	3	825 mm (32 31/64 in.)	815 mm (32 3/32 in.)	760 mm (29 59/64 in.)
	4	—	—	870 mm (34 1/4 in.)
Weight				570 kg (1260 lbs.)
Turning Radius with Brake				2080 mm (82 in.)

\*1 to transmission case bottom

Items		B7100 HST-E (2WD)		
Tire size	Front	6.90-9	20.5 x 8.00 – 10	4.00 – 9
	Rear	8 – 16	29 x 12.00 – 15	8 – 16
Farm or Turf		Farm	Turf	Farm
Tire Brand		Goodyear	Goodyear	Bridgestone
Overall Length		2135 mm (84 $\frac{1}{16}$ in.)	2105 mm (82 $\frac{7}{8}$ in.)	2135 mm (84 $\frac{1}{16}$ in.)
Overall Width		980 mm (38 $\frac{3}{4}$ in.)	1010 mm (39 $\frac{49}{64}$ in.)	980 mm (38 $\frac{3}{4}$ in.)
Overall Height		1195 mm (47 $\frac{3}{4}$ in.)	1190 mm (46 $\frac{27}{32}$ in.)	1170 mm (46 $\frac{1}{16}$ in.)
Wheel Base		1390 mm (54 $\frac{5}{8}$ in.)	1390 mm (54 $\frac{5}{8}$ in.)	1390 mm (54 $\frac{5}{8}$ in.)
Minimum Ground Clearance *1		265 mm (10 $\frac{7}{16}$ in.)	250 mm ( 9 $\frac{27}{32}$ in.)	250 mm ( 9 $\frac{27}{32}$ in.)
Tread (Front Wheel)		770 mm (30 $\frac{5}{16}$ in.)	770 mm (30 $\frac{5}{16}$ in.)	685 mm (26 $\frac{31}{32}$ in.)
Tread (Rear Wheel)	1	725 mm (28 $\frac{35}{64}$ in.)	—	660 mm (25 $\frac{63}{64}$ in.)
	2	775 mm (30 $\frac{33}{64}$ in.)	—	710 mm (27 $\frac{61}{64}$ in.)
	3	825 mm (32 $\frac{31}{64}$ in.)	815 mm (32 $\frac{3}{32}$ in.)	760 mm (29 $\frac{59}{64}$ in.)
	4	—	—	870 mm (34 $\frac{1}{4}$ in.)
Weight				510 kg (1120 lbs.)
Turning Radius with Brake				1950 mm (77 in.)

\*1 to transmission case bottom

# **Bolt Torques**

Material Grade Nominal Dia. (mm)	Standard Bolt	Special Bolt	Special Bolt
	SS41, S20C	S43C, S48C (Refined)	SCR3, SCM 3 (Refined)
M 6	7.9 to 9.4 Nm 0.80 to 0.95 kgf·m 5.8 to 6.9 ft-lbs	9.8 to 11.3 Nm 1.00 to 1.15 kgf·m 7.2 to 8.3 ft-lbs	12.2 to 14.2 Nm 1.25 to 1.45 kgf·m 9.0 to 10.5 ft-lbs
M 8	17.6 to 20.6 Nm 1.80 to 2.10 kgf·m 13.0 to 15.2 ft-lbs	23.6 to 27.5 Nm 2.40 to 2.80 kgf·m 17.4 to 20.3 ft-lbs	29.4 to 34.3 Nm 3.00 to 3.50 kgf·m 21.7 to 25.3 ft-lbs
M10	39.2 to 45.1 Nm 4.00 to 4.60 kgf·m 28.9 to 33.3 ft-lbs	48.0 to 55.9 Nm 4.90 to 5.70 kgf·m 35.4 to 41.2 ft-lbs	60.7 to 70.6 Nm 6.20 to 7.20 kgf·m 44.8 to 52.1 ft-lbs
M12	62.8 to 72.5 Nm 6.40 to 7.40 kgf·m 46.3 to 53.5 ft-lbs	77.4 to 90.2 Nm 7.90 to 9.20 kgf·m 57.1 to 66.5 ft-lbs	102.9 to 117.7 Nm 10.50 to 12.00 kgf·m 75.9 to 86.8 ft-lbs
M14	107.9 to 125.5 Nm 11.00 to 12.80 kgf·m 79.6 to 92.6 ft-lbs	123.5 to 147.1 Nm 12.60 to 15.00 kgf·m 91.1 to 108.5 ft-lbs	166.8 to 196.2 Nm 17.00 to 20.00 kgf·m 123.0 to 144.7 ft-lbs
M16	166.8 to 191.2 Nm 17.00 to 19.50 kgf·m 123.0 to 141.0 ft-lbs	196.2 to 225.6 Nm 20.00 to 23.00 kgf·m 144.7 to 166.4 ft-lbs	259.9 to 304.0 Nm 26.50 to 31.00 kgf·m 191.7 to 224.2 ft-lbs
M18	245.1 to 284.4 Nm 25.00 to 29.00 kgf·m 180.8 to 209.8 ft-lbs	274.5 to 318.7 Nm 28.00 to 32.50 kgf·m 202.5 to 235.1 ft-lbs	343.3 to 402.0 Nm 35.00 to 41.00 kgf·m 253.2 to 296.5 ft-lbs
M20	333.4 to 392.2 Nm 34.00 to 40.00 kgf·m 245.9 to 289.3 ft-lbs	367.7 to 431.4 Nm 37.50 to 44.00 kgf·m 271.2 to 318.2 ft-lbs	490.3 to 568.8 Nm 50.00 to 58.00 kgf·m 361.6 to 419.5 ft-lbs

Bolt material grades are shown by numbers punched on the bolt heads.

Prior to tightening, be sure to check out the number as shown below:

Punched Number	Bolt Material Grade	
None	Standard Bolts	SS41, S20C
7	Special Bolts	S43C, S48C (Refined)
9	Special Bolts	SCM3, SCR3 (Refined)

## **IMPORTANT:**

When tightening bolts for aluminum parts, (ex. differential gear case) tightening torques are 65% of the values shown in the table.



# Specifications

## B6100HST

### General Specifications

#### Engine

Max. output/speed .....	10.4 kW/46.7 rps (14 HP/2800 rpm)
Max. torque/speed .....	44 Nm (4.45 kgf·m, 32 ft-lbs)/1900 rpm
Model .....	KUBOTA D650-AH
Type .....	Vertical, water-cooled 4 cycle diesel engine
Number of cylinders .....	3
Bore and stroke .....	64 mm x 70 mm (2 1/2 in. x 2 3/4 in.)
Total cubic capacity .....	675 cm <sup>3</sup> (41.2 cu. in.)
Compression ratio .....	22
Direction of rotation .....	Counterclockwise, viewed from flywheel
Dimensions (Length x Width x Height) .....	538 mm x 656 mm x 610 mm (21 3/16 in. x 25 53/64 in. x 24 1/64 in.)
Weight .....	93 kg (205 lbs.)
Combustion chamber .....	Turbulence combustion chamber type
Fuel injection pump type (Model) .....	Bosch Type K mini Pump (NP-PFR 3KD 50/2NP 4)
Fuel injection nozzle type (Model) .....	Throttle Type (ND-DN12SD12)
Injection pressure .....	13.7 to 14.7 MPa (140 to 150 kgf/cm <sup>2</sup> , 1988 to 2130 psi)
Injection timing .....	0.401 to 0.436 rad. (23° to 25°) before T.D.C.
Fuel	
Type .....	Diesel fuel No. 2-D (ASTM D975)
Consumption .....	205 g/ps·h (0.446 lbs./Hp·h)
Fuel supply pump normal operating pressure ..	20 kPa (0.2 kgf/cm <sup>2</sup> , 2.8 psi)
Cooling .....	Water-cooled type with pressurized radiator
Lubrication .....	Forced lubrication by trochoid pump and full-flow micronic oil filter with bypass valve
Starting .....	Electric starter with glow plug, compression release

#### Clutch

Type .....	Dry, single plate type
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#### Steering

Type .....	Ball screw type, manual steering
Gear ratio .....	15.4 : 1

#### Transmission

Type .....	Hydrostatic transmission and gear shift (high, low)
------------	---

### Hydrostatic Transmission (H.S.T.)

#### Pump

Type .....	Variable displacement piston pump
Displacement .....	0 to 45.9 ℓ/min. (0 to 12.1 U.S. gals./min.) at engine 2800 rpm
Swashplate angle .....	−0.28 to 0.28 rad. (−16° to 16°)

#### Motor

Type .....	Fixed displacement piston motor
Displacement .....	45.9 ℓ/min. (12.1 U.S. gals./min.)
Swashplate angle .....	0.28 rad. (16°)

Charge pump type ..... Trochoid pump

Charge pump displacement ..... 13.7 ℓ/min. (3.6 U.S. gals./min.) at engine 2800 rpm

Oil capacity ..... 0.6 ℓ (0.6 U.S. qts.)

Oil filter cartridge ..... 10 μm (0.010 mm, 0.0004 in.) meshes  
(Installed with 3/4-16 UNF unified fine screw threads)

Weight ..... 15.7 kg (34.6 lbs.)

#### Oil Cooler

Type ..... Corrugated fin type radiator

#### Brake

Type ..... Right and left independent with dry drum

Parking brake ..... Hook-interlocked with main brake

#### Travel Speeds

At rated engine speed with 7–16 (BS) tires.

#### Forward

1st .....	0 to 5.9 km/h (0 to 3.7 mph)
2nd .....	0 to 14.8 km/h (0 to 9.2 mph)

#### Reverse

1st .....	0 to 3.9 km/h (0 to 2.4 mph)
2nd .....	0 to 10 km/h (0 to 6.2 mph)

#### PTO

Direction of revolution ..... Front, Mid ..... clockwise viewed from front end  
 Rear ..... clockwise viewed from rear end

Size ..... Mid ..... involute spline SAE No. 5  
 Rear ..... 1 3/8 in. 6 spline

Speed (engine speed 2800 rpm) ..... Front ..... direct to crankshaft (optional)  
 Mid ..... 2450 rpm  
 Rear ..... 540, 850 rpm

Three-point Linkage ..... CAT, 1

#### Capacities

Engine crankcase ..... 3.9 ℓ (4.1 U.S. qts.)

Radiator ..... 4.6 ℓ (4.9 U.S. qts.)

Fuel tank ..... 13 ℓ (3.4 U.S. gals.)

Steering gear box	0.2 ℓ (0.2 U.S. qts.)
Transmission — hydraulic system	13.5 ℓ (3.6 U.S. gals.) [include hydrostatic transmission case 0.6 ℓ (0.6 U.S. qts.)]
Front differential case	0.15 ℓ (0.16 U.S. qts.) only 4WD
Front wheel axle case	each side 0.5 ℓ (0.5 U.S. qts.) only 4 WD

**Lubricants (Oil Classification)**

Engine crankcase	Engine oil API Service Class CC or CD Above 25°C (77°F) SAE 30 or 10 W-30 0 to 25°C (32° to 77°F) SAE 20 or 10 W-30 Below 0°C (32°F) SAE 10 W or 10 W-30
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**Transmission (hydraulic system, hydrostatic transmission)****Hydrostatic Transmission Oil**

Maker	Brand
KUBOTA	UDT oil
Shell	DONAX-TD, DONAX-TM
Mobil	Mobil Fluid 350, 423
Exxon	Torque Fluid 56
J.I. Case	TCH Fluid
White Motor	Hydraulic Oil Type 55
Ford	Tractor Hydraulic Fluid

Steering gear box	SAE 80 Gear Oil
Front differential case	SAE 80 Gear Oil
Front wheel gear case	SAE 80 Gear Oil

**Front Wheel Alignment**

Kingpin inclination	4WD 0.209 rad. (12°), 2WD 0.140 rad. (8°)
Toe-in	0 to 5 mm (0 to $\frac{1}{16}$ in.)
Camber angle	0.035 rad. (2°)
Caster angle	4WD 0.009 rad. (30'), [Tires 6-12, 8.3-16 GY] 2WD 0.015 rad. (50'), [Tires 6.9-9, 8.3-16 GY]

**Hydraulic System**

Control type	Spool sliding, closed center type
Pump type (Model)	Gear pump (GP-OB-9.6-3127C)
Displacement	11.2 ℓ/min (11.8 U.S. qts./min) engine speed 2800 rpm
Full flow pressure	10.8 to 11.8 MPa (110 to 120 kgf/cm <sup>2</sup> , 1570 to 1710 psi) Oil temp. 40 to 45°C (104 to 113°F)
Cylinder bore x stroke	60 mm x 78 mm ( $2\frac{3}{4}$ in. x $3\frac{1}{16}$ in.)
Max. lift	4410 N, (450 kgf, 1000 lbs.)

**Electric System**

Battery	
Model	NT80-S6L
Capacity	12 V x 45 Ah
Dimensions (length x width x height)	192 mm x 127 mm x 227 mm ( $7\frac{9}{16}$ in. x 5 in. x $8\frac{15}{16}$ in.)

**AC Dynamo**

Nominal voltage	12 V
Maximum output	10 A, 120 W (35 A, 420 W ... Option)
Rotating direction	Clockwise, viewed from the pulley
Polarity	Negative grounding

**Regulator**

Type	Thyristor direct control type
Nominal voltage	14.0 to 15.0 V

**Starter**

Type	Magnet switch type
Nominal voltage	12 V
Nominal output	0.8 kW
Time rating	Max. 10 seconds tolerant continually revolving
Rotating direction	Clockwise, viewed from the pinion
Number of pinion teeth	9

**Glow plug**

Type	Sheathed type (Bar type)
Voltage, current (with one plug)	Amperage is approx. 7 A, after DC 10.5 V is applied for 30 seconds.

**Glow plug controller**

Amperage	20 A
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**Tractor Dimensions**

Items		B6100HST-D (4WD)			
Tire size	Front	6 – 12	20.5 x 8.00 – 10	5 – 12	
	Rear	8.3 – 16	29 x 12.00 – 15	7.2 – 16	
Farm of Turf		Farm	Turf	Farm	
Tire Brand		Goodyear	Goodyear	Front	Bridgestone
				Rear	Goodyear
Overall Length		2130 mm (83 <sup>55</sup> / <sub>64</sub> in.)	2100 mm (82 <sup>43</sup> / <sub>64</sub> in.)	2105 mm (82 <sup>7</sup> / <sub>8</sub> in. )	
Overall Width		1025 mm (40 <sup>23</sup> / <sub>64</sub> in.)	1120 mm (44 <sup>2</sup> / <sub>32</sub> in.)	1010 mm (39 <sup>23</sup> / <sub>32</sub> in.)	
Overall Height		1185 mm (46 <sup>31</sup> / <sub>32</sub> in.)	1165 mm (45 <sup>55</sup> / <sub>64</sub> in.)	1155 mm (45 <sup>15</sup> / <sub>32</sub> in.)	
Wheel Base		1400 mm (55 <sup>1</sup> / <sub>8</sub> in.)	1400 mm (55 <sup>1</sup> / <sub>8</sub> in.)	1400 mm (55 <sup>1</sup> / <sub>8</sub> in.)	
Minimum Ground Clearance *1		240 mm ( 9 <sup>29</sup> / <sub>64</sub> in.)	225 mm ( 8 <sup>55</sup> / <sub>64</sub> in.)	230 mm ( 9 <sup>1</sup> / <sub>16</sub> in.)	
Tread (Front Wheel)		785 mm (30 <sup>57</sup> / <sub>64</sub> in.)	825 mm (32 <sup>31</sup> / <sub>64</sub> in.)	785 mm (30 <sup>57</sup> / <sub>64</sub> in.)	
Tread (Rear Wheel)	1	725 mm (28 <sup>35</sup> / <sub>64</sub> in.)	—	725 mm (28 <sup>35</sup> / <sub>64</sub> in.)	
	2	775 mm (30 <sup>33</sup> / <sub>64</sub> in.)	—	775 mm (30 <sup>33</sup> / <sub>64</sub> in.)	
	3	825 mm (32 <sup>31</sup> / <sub>64</sub> in.)	815 mm (32 <sup>3</sup> / <sub>32</sub> in.)	825 mm (32 <sup>31</sup> / <sub>64</sub> in.)	
	4	—	—	—	
Weight				560 kg (1230 lbs.)	
Turning Radius with Brake		2235 mm (91 <sup>59</sup> / <sub>64</sub> in.)			

\*1 to transmission case

Items		B6100HST-E (2WD)		
Tire size	Front	6.9 – 9	18 x 8.50 – 8	4.00 – 9
	Rear	8.3 – 16	29 x 12.00 – 15	7.2 – 16
Farm or Turf		Farm	Turf	Farm
Tire Brand		Goodyear	Goodyear	Goodyear
Overall Length		2130 mm (83 <sup>55</sup> / <sub>64</sub> in.)	2105 mm (82 <sup>7</sup> / <sub>8</sub> in.)	2105 mm (82 <sup>7</sup> / <sub>8</sub> in.)
Overall Width		1025 mm (40 <sup>23</sup> / <sub>64</sub> in.)	1120 mm (44 <sup>3</sup> / <sub>32</sub> in.)	1010 mm (39 <sup>23</sup> / <sub>32</sub> in.)
Overall Height		1190 mm (46 <sup>27</sup> / <sub>32</sub> in.)	1170 mm (46 <sup>1</sup> / <sub>16</sub> in.)	1155 mm (45 <sup>15</sup> / <sub>32</sub> in.)
Wheel Base		1390 mm (54 <sup>5</sup> / <sub>8</sub> in.)	1390 mm (54 <sup>5</sup> / <sub>8</sub> in.)	1390 mm (54 <sup>5</sup> / <sub>8</sub> in.)
Minimum Ground Clearance *1		260 mm (10 <sup>27</sup> / <sub>64</sub> in.)	240 mm (9 <sup>29</sup> / <sub>64</sub> in.)	230 mm (9 <sup>1</sup> / <sub>16</sub> in.)
Tread (Front Wheel)		770 mm (30 <sup>5</sup> / <sub>16</sub> in.)	770 mm (30 <sup>5</sup> / <sub>16</sub> in.)	685 mm (26 <sup>31</sup> / <sub>32</sub> in.)
Tread (Rear Wheel)	1	725 mm (28 <sup>35</sup> / <sub>64</sub> in.)	—	725 mm (28 <sup>35</sup> / <sub>64</sub> in.)
	2	775 mm (30 <sup>33</sup> / <sub>64</sub> in.)	—	775 mm (30 <sup>33</sup> / <sub>64</sub> in.)
	3	825 mm (32 <sup>31</sup> / <sub>64</sub> in.)	815 mm (32 <sup>3</sup> / <sub>32</sub> in.)	825 mm (32 <sup>31</sup> / <sub>64</sub> in.)
	4	—	—	—
Weight				500 kg (1100 lbs.)
Turning Radius with Brake		2090 mm (82 <sup>9</sup> / <sub>32</sub> in.)		

\*1 to transmission case



## Group 3

# Fuel and Lubricants

## Fuel

KUBOTA Diesel Engines will not perform at peak efficiency unless the fuel listed below are used:

### CAUTION:

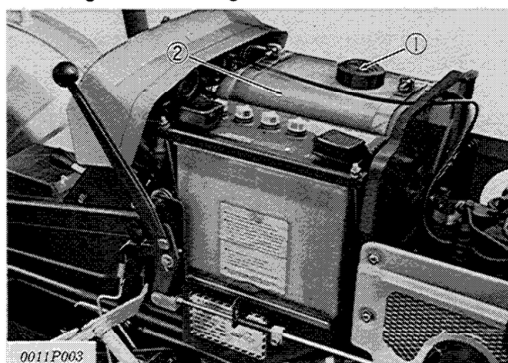
Do not fill fuel tank when engine is running or hot. Do not smoke when filling fuel tank.

Wipe dust and dirt from around filler cap before removing it. Place cap in clean area.

### IMPORTANT:

Do not permit dirt or other foreign matter to enter the fuel system. This may cause hard starting, poor performance and engine damage. Always use clean fuel storage cans and funnels.

### Checking and Refueling



1. Fuel Tank Cap 2. Fuel Tank

*Fig. A-3 Checking and Refueling Fuel Tank*

### IMPORTANT:

Stop the engine before filling with fuel. Keep away from sparks and flames.

- (1) Check the fuel level. Make sure the fuel level does not fall below the prescribed lower limit.
- (2) Use grade No. 2-D fuel as defined by ASTM D975 for diesel fuel oil.

Fuel tank capacity: 13 ℓ (3.4 U.S. gals.)

### NOTE:

- Always use a strainer when refueling, or dust and sand may enter to damage the fuel injection pump.
- If the fuel tank becomes empty, air enters the fuel system. If this happens, the fuel system must be vented.

### Venting the Fuel System

Air must be vented when:

The fuel filter and piping are removed.

The fuel tank becomes completely empty.

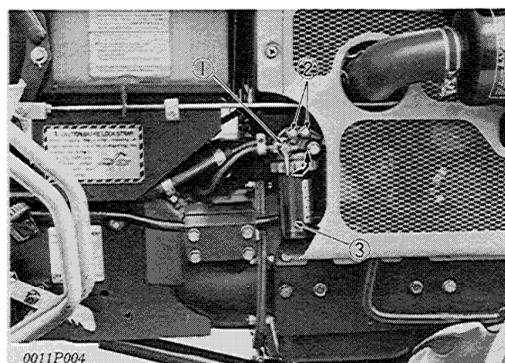
The tractor has not been used for an extended time.

Venting procedure is as follows:

### IMPORTANT:

Do not perform venting when the engine is hot.

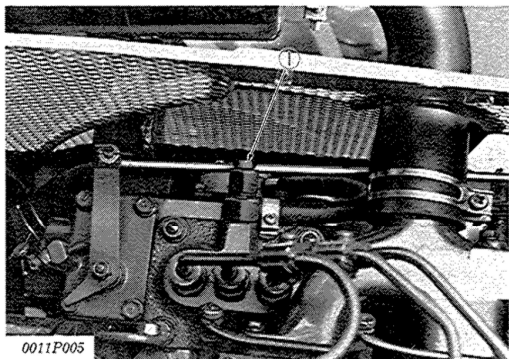
- (1) Fill the fuel tank with fuel, and open the fuel cock.



1. Fuel Cock 2. Vent Screw 3. Fuel Filter Pot

*Fig. A-4 Venting Air from Fuel Filter*

- (2) Twist off the air vent screw at the top of the filter by turning it twice.
- (3) When bubbles disappear from fuel coming out of the plug, twist it back on.



1. Air Vent Plug

*Fig. A-5 Venting Air from Injection Pump*

- (4) Open the air vent plug on the fuel injection pump.
- (5) Pull the accelerator lever back completely to stop the engine, and running the starter for about 10 seconds.

**IMPORTANT:**

Be sure to pull the accelerator lever completely back before run the starter.

- (6) Close the air vent plug when air bubbles disappear from the fuel flowing out.

**Lubricants**

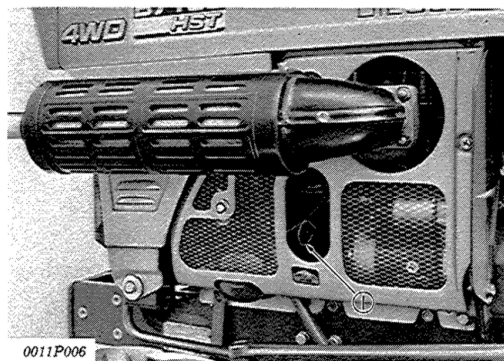
Proper use of lubricating oil and grease is important to insure low upkeep costs, long tractor life, and satisfactory service.

Use only lubricants specified in this section and apply them at intervals according to the instructions in the lubrication and periodic service section.

**Engine Lubricating Oil**

We recommend KUBOTA Genuine Oil for use in the engine crankcase. KUBOTA Genuine Oil is compounded specifically for use in KUBOTA engines and provides superior lubrication under all conditions.

**Checking Engine Crankcase Oil Level**



1. Dip Stick

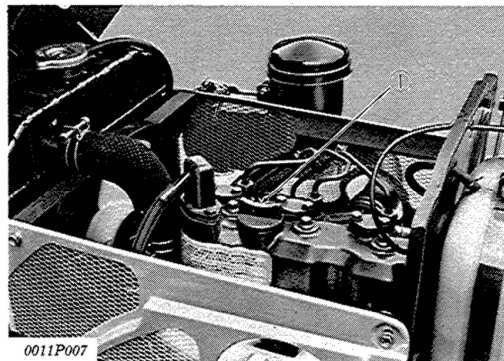
*Fig. A-6 Checking Engine Crankcase Oil Level*

With the tractor on level ground and the engine stopped for 5 minutes or more, remove the dip stick.

Read the engine oil level on the dip stick.

If the oil level is below the lower mark on the dip stick, add sufficient KUBOTA Genuine Engine Oil or its equivalent of the proper viscosity to bring the level to the upper marks.

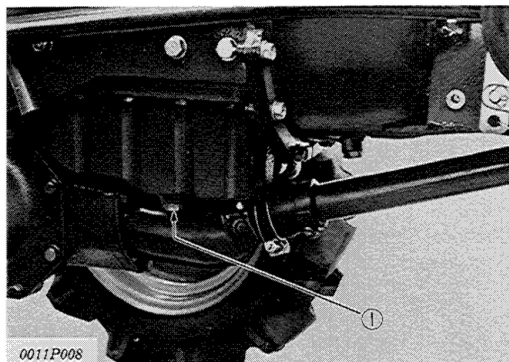
**Changing Engine Oil**



1. Oil Port Plug

*Fig. A-7 Engine Oil Port Plug*





1. Oil Drain Plug

*Fig. A-8 Engine Oil Drain Plug*

Drain the oil while the engine is still warm, by removing both the drain plug on the oil pan and oil cap, so that the oil may completely drain. Do not mix different brands of oil. If a different brand of oil should be employed, drain out the existing oil no matter how new it may be and then replace it. Do the same when using oil of a different viscosity.

**IMPORTANT:**

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

**SERVICE INTERVAL:**

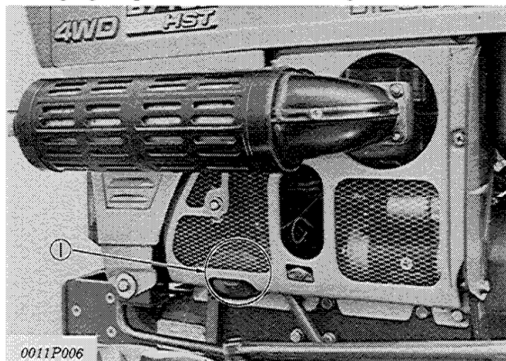
At initial 35 hours and then after every 75 hours.

**Engine Oil Specifications**

KUBOTA Genuine Oil (for diesel engines) or CC/CD class oils defined by API. It should be as follows according to temperature.

25°C (77°F) above . . . . . SAE30 or 10W-30  
 0° to 25°C (32°F to 77°F) . . SAE20 or 10W-30  
 0°C (32°F) below . . . . . SAE10W or 10W-30

Cap. 3.9ℓ (4.1 U.S. qts.)

**Changing Engine Oil Filter Cartridge**

1. Oil Filter Cartridge

*Fig. A-9 Changing Engine Oil Filter Cartridge*

- (1) Apply a slight coat of oil to the cartridge gasket.
- (2) Screw the new cartridge in by hand. Over tightening may cause deformation of rubber gasket.
- (3) After cartridge has been replaced, engine oil normally decreases a little. Check that the engine oil does not leak through the seal and be sure to read the oil level. Then, add engine oil up to the prescribed level.

**IMPORTANT:**

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

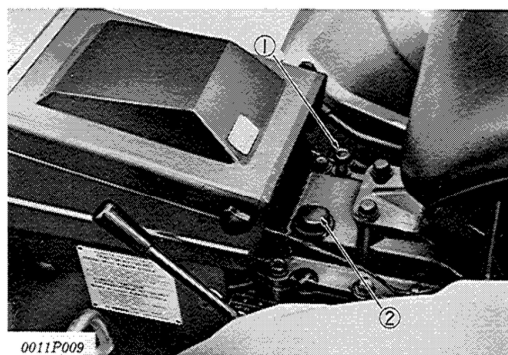
**SERVICE INTERVAL:**

Every 150 hours

**NOTE:**

To prevent serious damage to the lubricating system, replacement of element must be highly efficient. Use only a KUBOTA genuine filter or its equivalent.

### Checking Transmission Oil Level



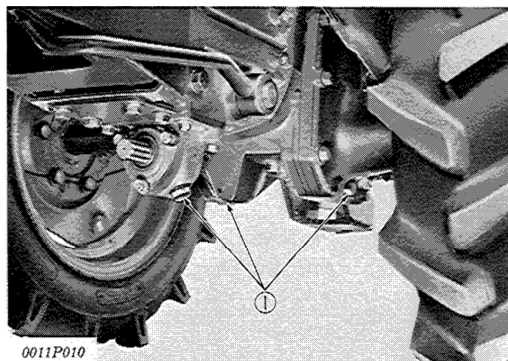
1. Dip Stick

2. Oil Port

Fig. A-10 Checking Transmission Oil Level

With the tractor on level ground, run the engine for a minute to fill the filter. Stop the engine and check the hydraulic system oil level with the dip stick. If the oil level is below the lower line on the dip stick, remove the filter cap and add KUBOTA Genuine Hydrostatic Transmission Oil or its equivalent to bring the oil level up to the upper line.

### Changing Transmission Oil



1. Drain Plugs

Fig. A-11 Changing Transmission Oil

The oil in the transmission case is also used for the hydrostatic drive system.

To drain the transmission oil, place a oil pan underneath the transmission case and remove the drain plugs at the rear axle cases and mid PTO case.

After draining, disassemble and clean the strainers and change the oil filter cartridge. After reassembling fill with new hydrostatic transmission oil.

#### IMPORTANT:

Be sure to stop the engine before changing the transmission oil.

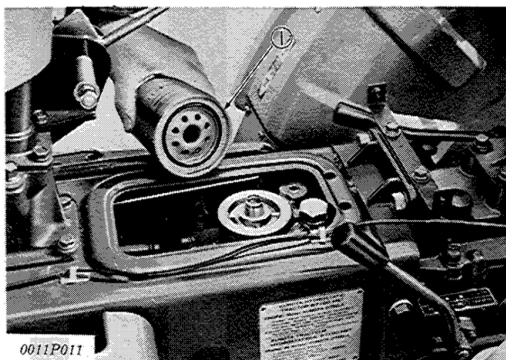
Transmission Oil Capacity:

13.5ℓ (3.6 U.S. gals.)

#### IMPORTANT:

Never operate the tractor immediately after changing the transmission oil and filter cartridge. Keeping the engine at medium speed for a few minutes prevents damage to transmission.

### Changing Transmission Oil Filter Cartridge



1. Oil Filter Cartridge

Fig. A-12 Changing Transmission Oil Filter Cartridge

- (1) Remove the 4 bolts which secure the cover. Detach the knob of the speed set device to remove the cover.
- (2) Remove the oil filter cartridge by using the filter wrench.
- (3) Lightly tighten the joint screw A by using a screwdriver.
- (4) Apply a slight coat of oil onto the cartridge gasket.
- (5) Screw the new cartridge in by hand. Over tightening may cause deformation of rubber gasket.
- (6) After the cartridge has been replaced, the transmission oil will decrease a little. Make sure that the transmission oil does not leak through the seal, and check the oil level.

#### IMPORTANT:

Be sure to stop the engine before changing the oil filters.

#### SERVICE INTERVAL:

At initial 50 hours and then after every 200 hours.

#### IMPORTANT:

To prevent serious damage to hydraulic system, replacement of filter must be a highly efficient, 10  $\mu$ m filter. Use only a KUBOTA genuine filter or its equivalent.

**KUBOTA**

**Cleaning Strainers**

Since the fine particles in the oil can damage the component parts of the hydraulic system which is precision built to withstand high pressure, the suction pipes are provided with oil strainers at their ends. When changing transmission oil, disassemble and rinse the oil strainers with kerosene to completely clean them. For reassembly, take care not to damage any parts.

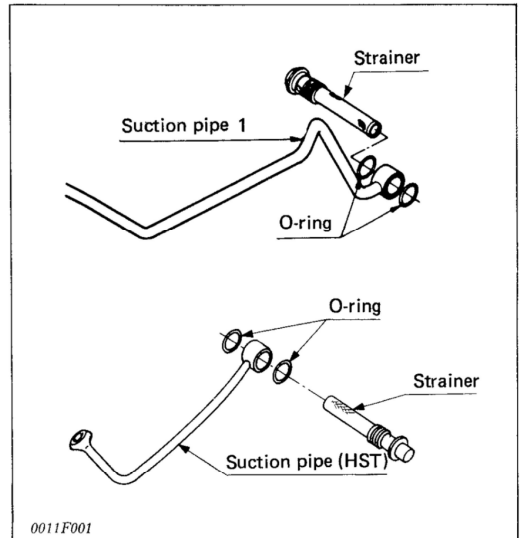


Fig. A-13

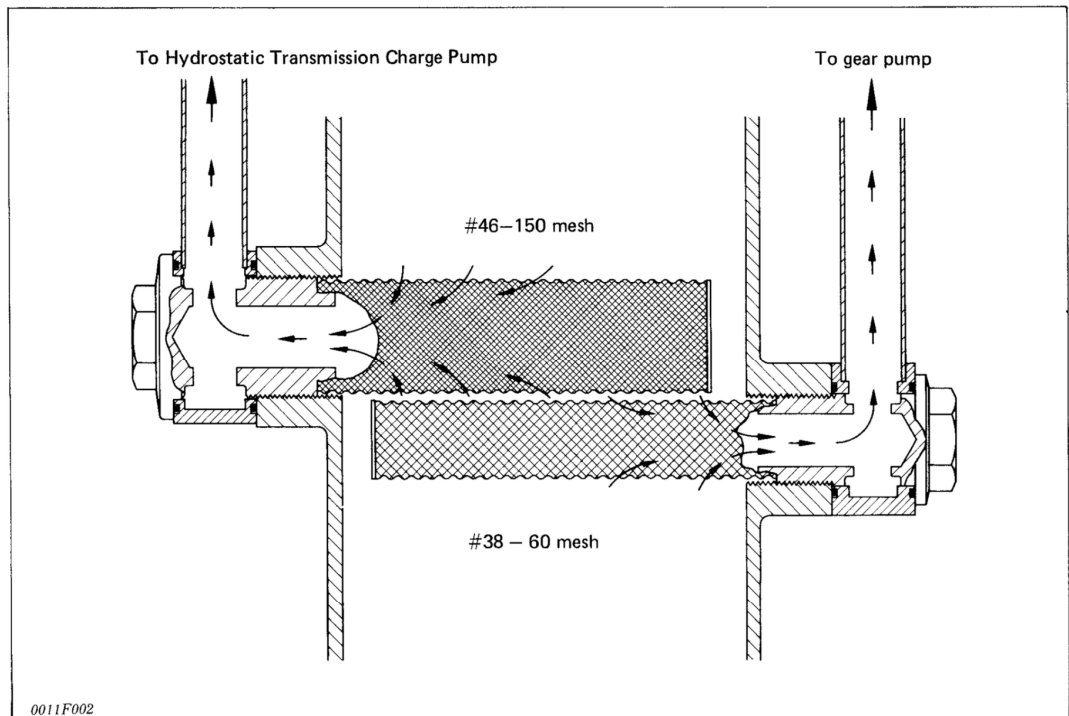
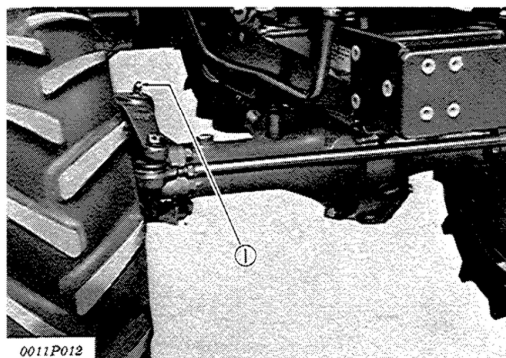


Fig. A-14 Oil Strainer Assembly

### Lubricating Grease Fittings

#### Kingpins and Center Pin

Grease the kingpins and center pin, with the provided grease gun.

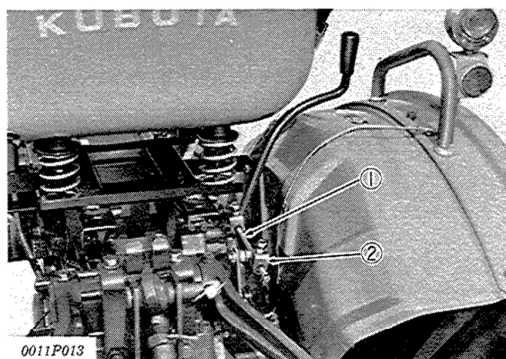


1. Kingpin

Fig. A-15 Greasing the Kingpin and Center Pin

#### Interlock Rod

Oil or grease the interlock rod and sliding holder.

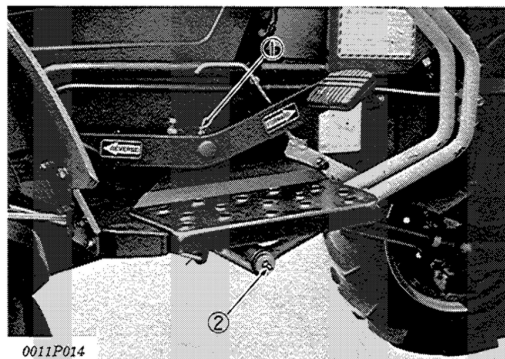


1. Interlock Rod 2. Sliding Holder

Fig. A-16 Oiling or Greasing the Interlocker Rod and Sliding Holder

### Pedal Shafts

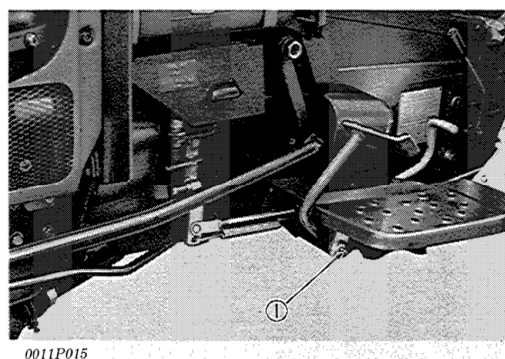
Grease the grease nipples on both ends of the brake pedal shaft and the speed control pedal shaft.



1. Speed Control Pedal Shaft Grease Nipple

2. Brake Pedal Shaft Grease Nipple

Fig. A-17 Greasing Pedal Shafts

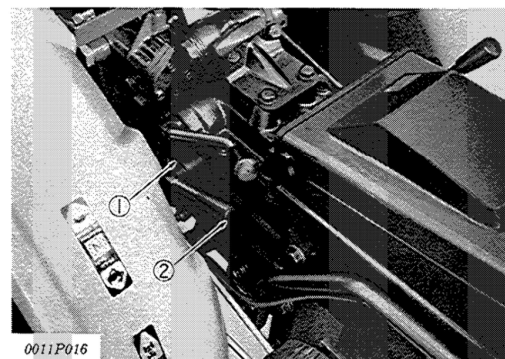


1. Pedal Shaft Grease Nipple

Fig. A-18 Greasing Pedal Shaft

### Front Wheel Drive Lever (4WD)

Oil the ball race at the root of the front wheel drive lever.



1. Oil 2. Front Wheel Drive Lever

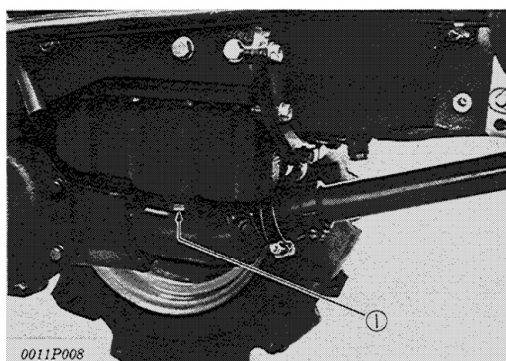
Fig. A-19 Oiling Front Wheel Drive Lever

## Group 4

## Separation

## Separating Engine from Clutch Housing

## 1. Draining Engine Oil



## 1. Oil Drain Plug

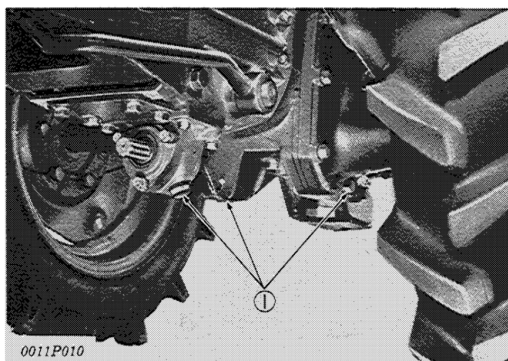
Fig. A-20 Draining Engine Oil

- (1) Loosen the drain plug on the lower left side of the engine and drain oil.

**NOTE:**

After draining oil, tighten the drain plug.

## 2. Draining Transmission Oil



## 1. Drain Plugs

Fig. A-21 Draining Transmission Oil

- (1) Drain oil from the drain plugs in the rear axle cases and mid PTO case.
- (2) Drain oil from the right and left front wheel gear cases.

**NOTE:**

After draining oil, tighten the drain plugs.

## 3. Removing Negative Battery Cord.

- (1) Open the bonnet (hood).
- (2) Disconnect the negative battery cord from the negative terminal.

## 4. Removing Air Cleaner

- (1) Remove the air cleaner assembly.

## 5. Removing Muffler

- (1) Detach the muffler.

## 6. Removing Side Covers (Right, Left)

- (1) Disconnect the lamp wiring.
- (2) Detach the side covers (Right, Left)

## 7. Removing Drag Link



Fig. A-22 Removing Drag Link

- (1) Remove the split pin.
- (2) Remove the nut connecting knuckle arm and drag link.  
Draw out the rod end with tie-rod pin puller.

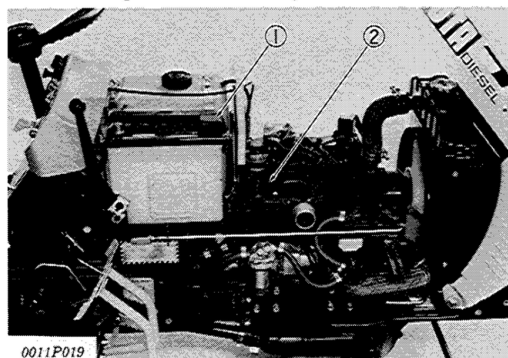
# **SPECIAL TOOLS:**

Tie-rod Pin Puller (Code No. 07916-06022)



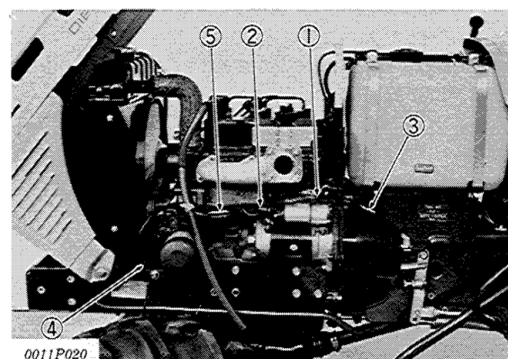
*Fig. A-23 Tie-rod Pin Puller*

## 8. Removing Electrical Wiring



1. Positive Battery Cord
2. Glow Plug Wiring

*Fig. A-24 Removing Electrical Wiring*

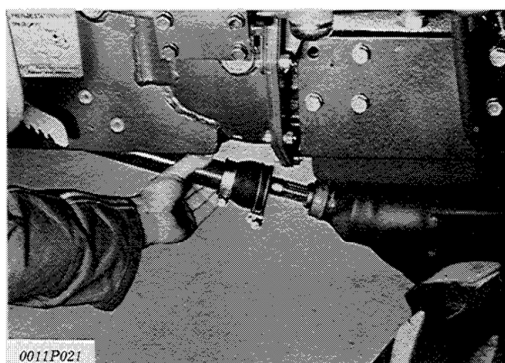


1. Oil Switch Wiring
2. Starter Wiring
3. Safety Switch Cord
4. Headlight Wiring
5. Fan Dynamo Cords

*Fig. A-25 Removing Electrical Wiring*

- (1) Disconnect the positive battery cord.
- (2) Disconnect the glow plug wiring.
- (3) Disconnect the headlight wiring.
- (4) Disconnect the fan dynamo cord.
- (5) Disconnect the oil switch wiring.
- (6) Disconnect the starter wiring.
- (7) Disconnect the safety switch cords.

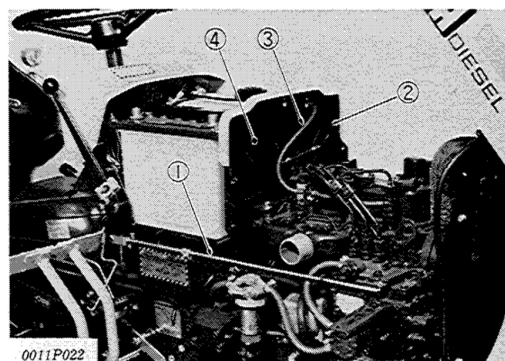
## 9. Removing Drive Shaft Band



*Fig. A-26 Removing Drive Shaft Band*

- (1) Loosen the drive shaft band from the tractor is right side.
- (2) After the band is loosened enough, pull it backwards.

## 10. Removing Heat Insulator



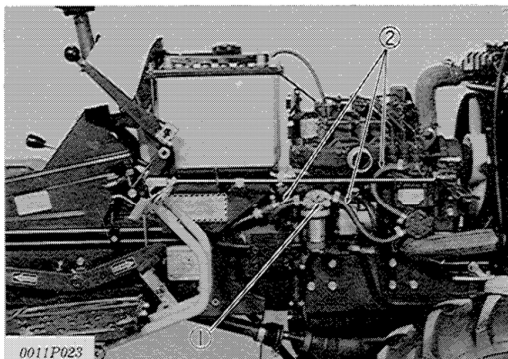
1. Release Rod
2. Decompression Wire
3. Overflow Pipe
4. Heat Insulator

*Fig. A-27 Removing Heat Insulator*

- (1) Release the release rod on the speed control lever side.
- (2) Release the decompression wire on the decompression lever side.
- (3) Disconnect the overflow pipe on the injection nozzle side.
- (4) Remove the heat insulator.



## 11. Removing Fuel Filter and Fuel Tank



1. Fuel Filter Cock      2. Pipe

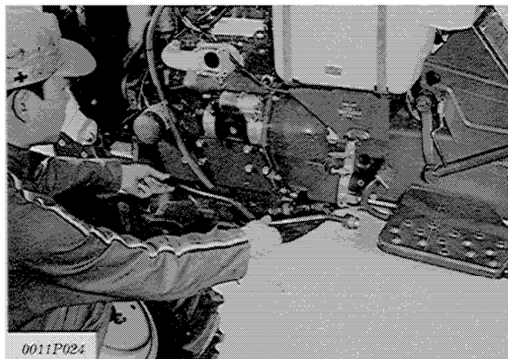
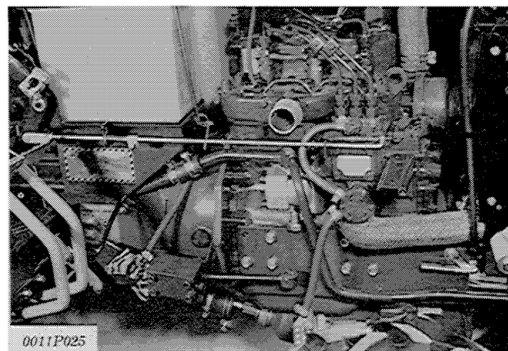
*Fig. A-28 Removing Fuel Filter*

- (1) Close the fuel filter cock.
- (2) Remove the pipe on the fuel filter side and plug it to prevent oil from spilling.
- (3) Open the tank band and dismount the fuel tank.

**NOTE:**

Do not spill oil in the pipes.

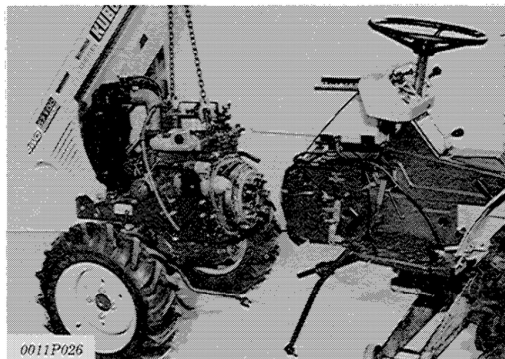
## 12. Removing Hydraulic Pipes

*Fig. A-29 Removing Hydraulic Pipes**Fig. A-30 Removing Hydraulic Pipes*

Printed in Japan

- (1) Remove the fixing bolt.
- (2) Remove the rubber joint at the center portion of the suction pipe from the pump side.
- (3) Remove the delivery pipe from the pump side.

## 13. Separation

*Fig. A-31 Separation*

- (1) Lift the engine and support the body with a jack.
- (2) Remove the connecting bolts and separate.

**KUBOTA**

KiSC issued 07, 2016 A

### Assembling Engine and Clutch Housing

#### 1. Assembling Engine and Clutch Housing

- (1) With the front wheel drive lever in neutral, join the engine and the housing case, align the splines and tighten the connection bolts.
- (2) Tighten the set bolts (7T) to 24 to 27 Nm (2.4 to 2.8 kgf-m, 17 to 20 ft-lbs).

#### 2. Installing Hydraulic Pipes

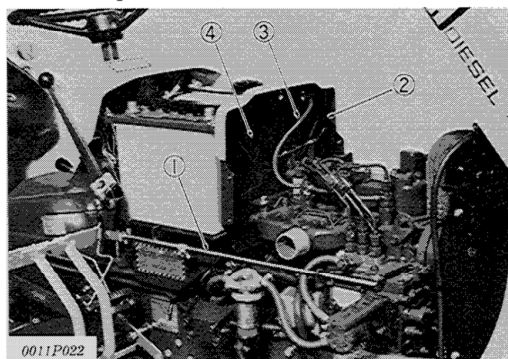
- (1) Install the oil strainer after cleaning.
- (2) Return the O-ring to the right position.
- (3) Install the copper gaskets. If the surface is seriously damaged, replace it.

#### 3. Installing Fuel Tank and Fuel Filter

##### NOTE:

Do not spill fuel.

#### 4. Installing Heat Insulator



- |                       |                   |
|-----------------------|-------------------|
| 1. Release Rod        | 3. Overflow Pipe  |
| 2. Decompression Wire | 4. Heat Insulator |

Fig. A-32 Installing Heat Insulator

- (1) When installing the wire stopper, allow play, and check to see that when the decompression lever is released, it properly disengages.
- (2) Adjust the length of the accelerator rod so that the engine idles at 1050 to 1150 rpm.
- (3) Tighten the nut so that the accelerator lever functions at 20 to 25 N (2.0 to 2.5 kgf, 4.4 to 5.5 lbs.).

#### 5. Installing Drive Shaft Band

#### 6. Electrical Wiring

- (1) Connect the battery negative cord after all other electrical connections have been made.
- (2) Bend the cord clamps of each wire harness.
- (3) When connecting, check to see that no wires are short-circuited by being in contact with the tractor body.

#### 7. Installing Drag Link

- (1) Check to see there is no dirt on the tapered surface connecting the knuckle arm and the drag link.
- (2) Tighten the drag link nut to 29 to 49 Nm (3 to 5 kgf-m, 22 to 36 ft-lbs).
- (3) Spread the split pin to each side.

##### NOTE:

Do not forget to fit the M10 spring washer.

#### 8. Installing Side Cover (Right, Left)

#### 9. Installing Muffler

- (1) Check the muffler gasket. If defective, replace.
- (2) Install the muffler so that exhaust fumes will not be directed toward the operator.

#### 10. Installing Air Cleaner

- (1) Install the dust cup with the "TOP" mark facing upwards.
- (2) If the element is stained with carbon or oil, clean with detergent.

#### 11. Installing Negative Battery Cord

- (1) Check to see all electrical wiring is correctly done, and then connect the cord to the negative terminal.
- (2) Before connecting, clean the terminal.

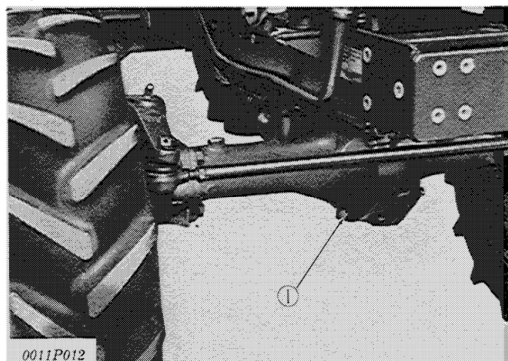
#### 12. Adding Transmission Oil

- (1) Amount of oil . . . . . 13.5ℓ (3.6 U.S. gals.)

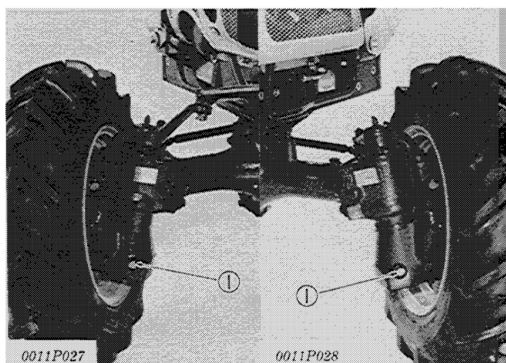
#### 13. Adding Engine Oil

- (1) Amount of oil . . . . . 3.9ℓ (4.1 U.S. qts.)



**Separating Engine from Front End****1. Drain Plug***Fig. A-33 Draining Differential Gear Case Oil*

1. Draining Differential Gear Case Oil
  - (1) Drain oil from the differential gear case.
2. Draining Axle Case Oil

**1. Drain Plug***Fig. A-34 Draining Axle Case Oil*

- (1) Drain oil from the right and left axle cases.
3. Removing Bonnet (Hood)
  - (1) Open the bonnet (hood) and remove the headlight lead.
  - (2) Remove the bonnet (hood).
4. Draining Coolant
  - (1) Remove radiator cap.
  - (2) Drain coolant through the cock on the bottom of the radiator.

**NOTE:**

  - When the engine is warm, do not remove the cap.
  - After draining coolant, tighten the drain cock.
5. Removing Negative Battery Cord
6. Removing Air Cleaner
7. Removing Muffler
8. Removing Side Cover (See page 4-1)

**9. Removing Water Pipes**

- (1) Loosen the bands with a screwdriver.
- (2) Disconnect the water pipes from radiator.

**10. Removing Drag Link (See page 4-1)****11. Removing Drive Shaft Band (See page 4-2)****12. Removing Hydraulic Pipes (See page 4-3)****13. Removing Front Wheel Support Mounting Bolt**

- (1) Remove the bolts fixing the front wheel support.

**14. Separation****NOTE:**

Do not break the oil filter cartridge.

**Assembling Engine and Front End****1. Installing Engine to Front End**

- (1) Check to see if the engine and the front wheel support are on the same level.

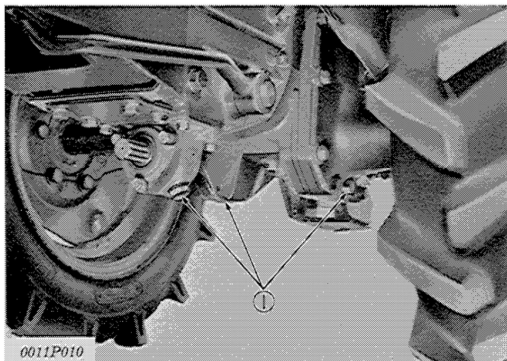
**2. Installing Front Wheel Support Mounting Bolt**

- (1) Tighten the mounting bolts to 48 to 56 Nm (4.9 to 5.7 kgf-m, 35 to 41 ft-lbs.)

**3. Installing Hydraulic Pipes (See page 4-4)****4. Installing Drive Shaft Band****5. Installing Drag Link (See page 4-4)****6. Installing Water Pipes****7. Installing Side Cover****8. Installing Muffler****9. Installing Air Cleaner****10. Installing Negative Battery Cord****11. Installing Bonnet (Hood)****12. Adding Transmission Oil (See page 3-4)****13. Adding Engine Oil (See page 3-2)**

## Separating Clutch Housing from Transmission Case

### 1. Draining Transmission Oil



#### 1. Drain Plug

*Fig. A-35 Draining Transmission Oil*

- (1) Drain oil from the drain plugs in the rear axle cases and mid PTO case.

#### NOTE:

After draining oil, tighten the drain plugs.

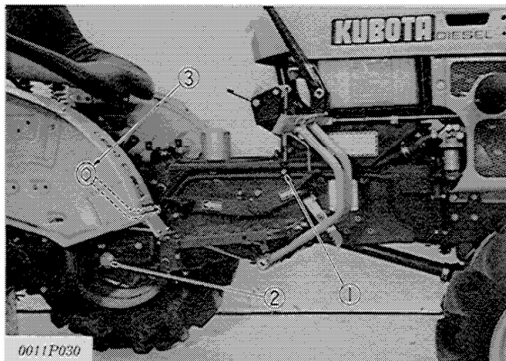
### 2. Removing Hydrostatic Transmission Filter Cover

- (1) Remove the four knob bolts and detach the cover.

### 3. Removing Battery Negative Cord

- (1) Open the bonnet (hood).
- (2) Disconnect the negative battery cord from the negative terminal.

### 4. Removing Hydraulic Pipes



#### 1. Bolt

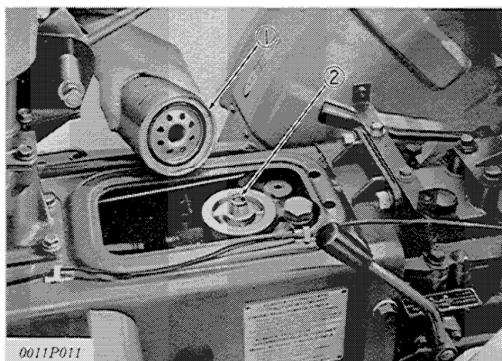
#### 2. Strainer

#### 3. Pipe Joint

*Fig. A-36 Removing Hydraulic Pipes*

- (1) Remove the bolt.
- (2) Remove the strainer at the rear of the delivery pipe.
- (3) Remove the pipe joint at the rear of the suction pipe.

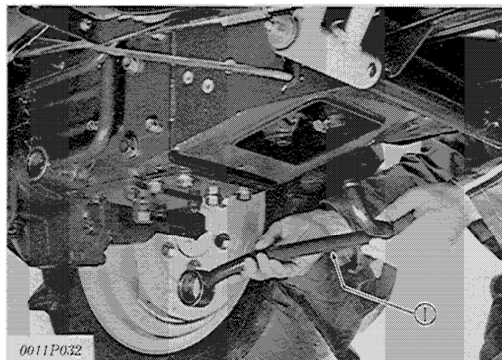
### 5. Removing Hydrostatic Transmission Oil Filter and Joint



#### 1. Oil Filter Cartridge

#### 2. Filter Joint

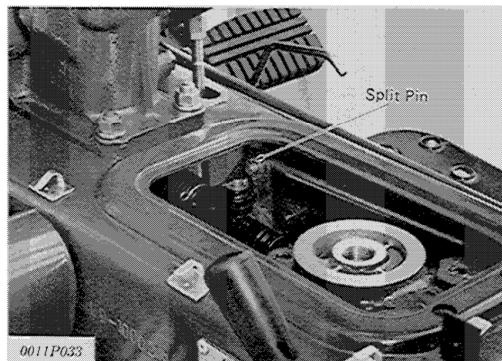
*Fig. A-37 Removing Oil Filter and Joint*



#### 3. Suction Pipe

*Fig. A-38 Removing Suction Pipe*

- (1) Detach the oil filter cartridge and filter joint.
- (2) Remove the joint at the rear and the joint at the center section of the pipe which connects the hydrostatic transmission and the cooler.
- (3) Remove the suction pipe connected to the hydrostatic transmission.



*Fig. A-39 Removing Split Pin*

**KUBOTA**