WSM

WORKSHOP MANUAL
TRACTOR

STα-30,STα-35

Kubota

PREVIEW - YOUFIXTHIS.COM

Download full manual at youfixthis.com

KiSC issued 11, 2006 A

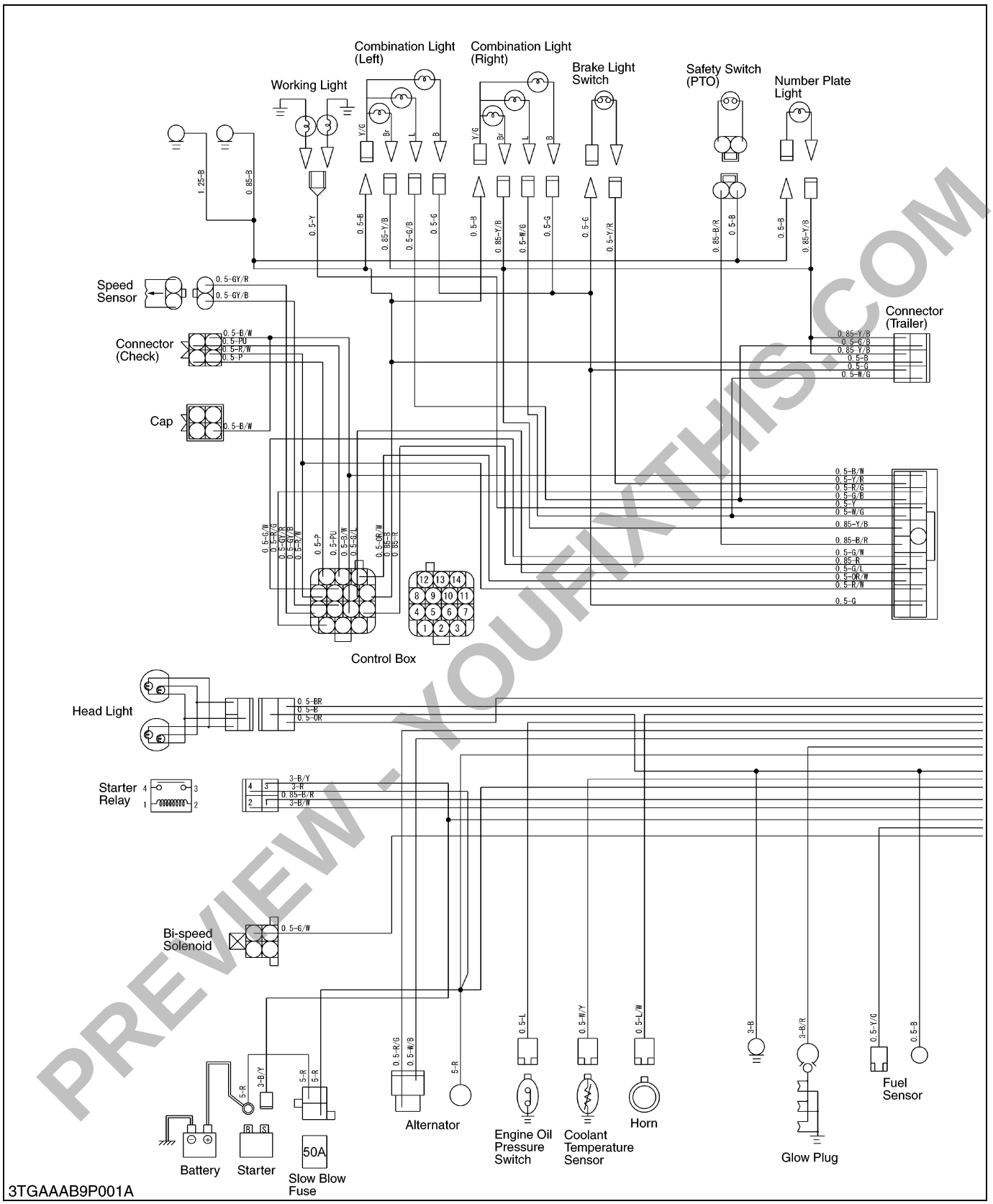
GENERAL

CONTENTS

1. FEATURES G-1
2. TRACTOR IDENTIFICATION G-2
3. GENERAL PRECAUTIONS G-3
4. HANDLING PRECAUTIONS FOR ELECTRICAL PARTS AND WIRING .. G-4
   [1] WIRING G-4
   [2] BATTERY G-6
   [3] FUSE G-6
   [4] CONNECTOR G-6
   [5] HANDLING OF CIRCUIT TESTER G-7
5. LUBRICANTS FUEL AND COOLANT G-8
6. TIGHTENING TORQUES G-9
   [1] GENERAL USE SCREWS, BOLTS AND NUTS G-9
   [2] STUD BOLTS G-9
7. MAINTENANCE G-10
8. CHECK AND MAINTENANCE G-11
   [1] DAILY CHECK G-11
   [2] CHECK POINTS OF INITIAL 50 HOURS G-12
   [3] CHECK POINTS OF EVERY 50 HOURS G-15
   [4] CHECK POINTS OF EVERY 100 HOURS G-17
   [5] CHECK POINTS OF EVERY 200 HOURS G-22
   [6] CHECK POINTS OF EVERY 400 HOURS G-24
   [7] CHECK POINTS OF EVERY 600 HOURS G-24
   [8] CHECK POINTS OF EVERY 800 HOURS G-25
   [9] CHECK POINTS OF EVERY 1 YEAR G-25
   [10] CHECK POINTS OF EVERY 2 YEARS G-25
   [11] OTHERS G-28
9. SPECIAL TOOLS G-30
   [1] SPECIAL TOOLS FOR ENGINE G-30
   [2] SPECIAL TOOLS FOR TRACTOR G-36
10. TIRES G-39
   [1] TIRE PRESSURE G-39
   [2] TREAD G-39
      (1) Front Wheels G-40
      (2) Rear Wheels G-40
   [3] TIRE LIQUID INJECTION G-41
11. IMPLEMENT LIMITATIONS G-43

PREVIEW - YOUFIXTHIS.COM

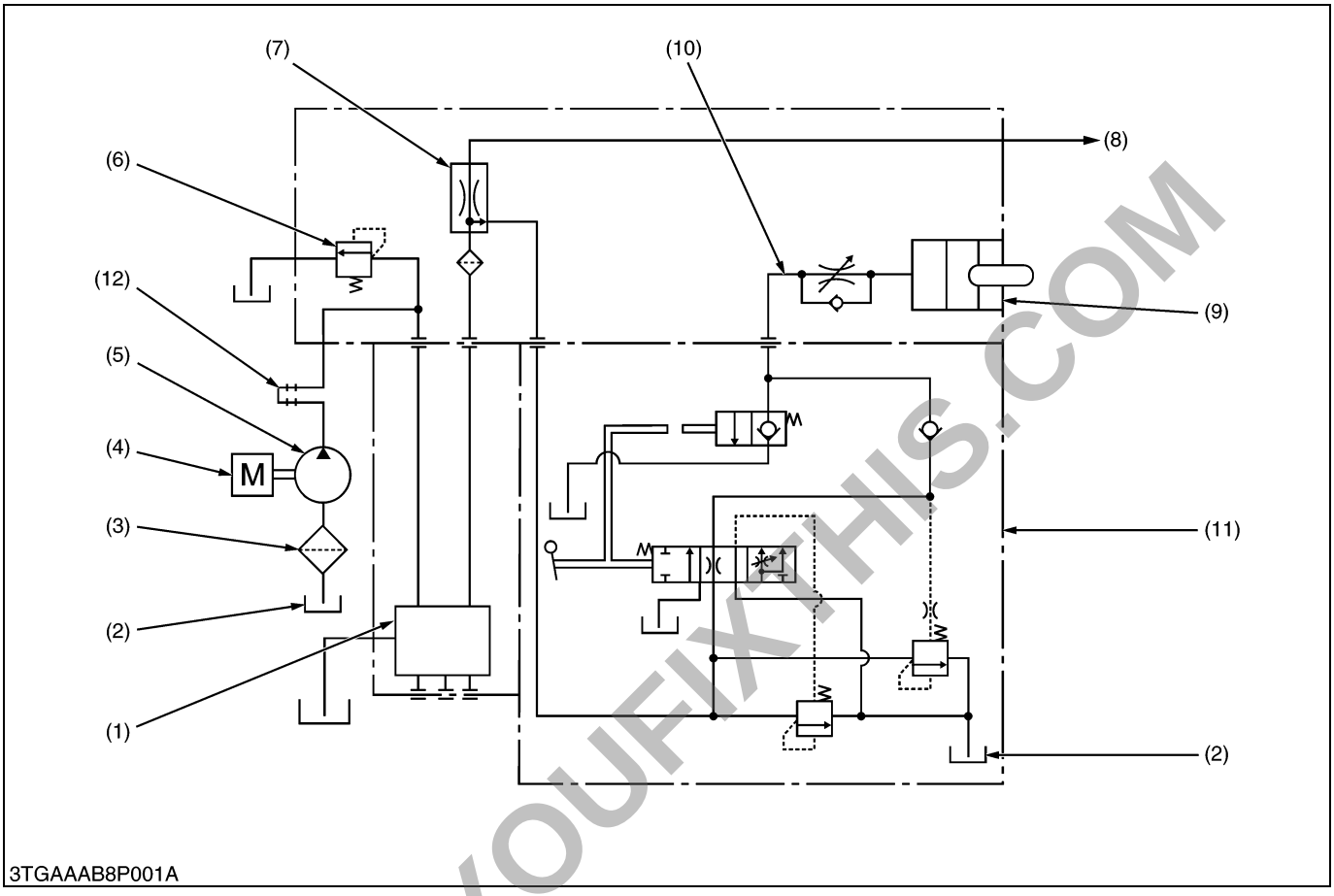
Download full manual at youfixthis.com



PREVIEW - YOUFIXTHIS.COM

Download full manual at youfixthis.com

1. HYDRAULIC CIRCUIT

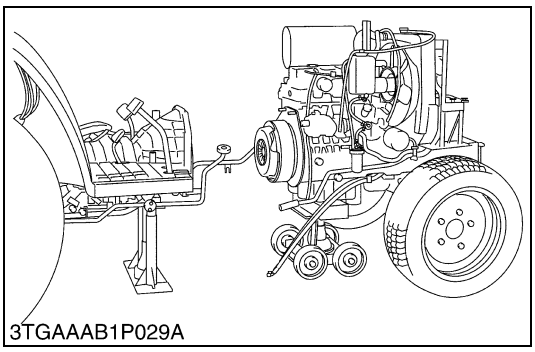


(1) Auxiliary Control Valve
(2) Oil Tank (Transmission Case)
(3) Oil Filter
(4) Engine
(5) Hydraulic Pump
(6) Relief Valve
(7) Flow Priority Valve
(8) To Bi-speed Turn Circuit
(9) Hydraulic Cylinder
(10) Lowering Speed Adjusting Valve
(11) Position Control Valve
(12) Hydraulic Block Type Outlet

1. When the engine (4) is started, the hydraulic pump (5) is rotated to draw oil from the transmission case (2) through the suction pipe. Supplied oil is filtered by the oil filter (3).
2. Filtered oil is forced out by the hydraulic pump to auxiliary control valve (1) then flow to the priority valve (7) to divide for bi-speed circuit (8) and 3-point hydraulic circuit.
3. After that the oil flows to position control valve (11).
4. The position control valve (11) switches the oil flow, and oil is channeled to the hydraulic cylinder (9) for the 3-point hydraulic system or returned to the oil tank (2).
5. The hydraulic system has a relief valve (6) which restricts the maximum pressure in the circuit.

PREVIEW - YOUFIXTHIS.COM

Download full manual at youfixthis.com


3TGAAAB1P029A

Separating the Engine from Clutch Housing

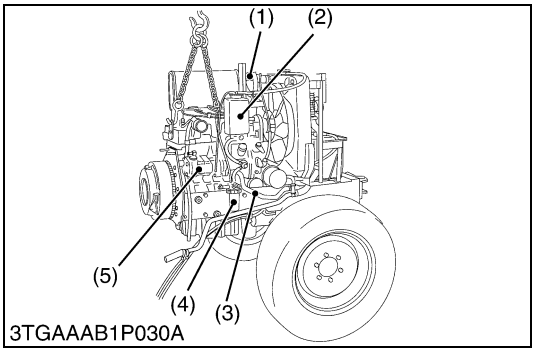
1. Place the jack under the center frame and engine oil pan.
2. Remove the engine mounting screws, bolts and nuts, and separate the engine from the clutch housing.

(When reassembling)

- Apply liquid gasket (Three Bond 1208D or equivalent) to joint face of the engine and clutch housing.

Tightening torque	Engine mounting M10 screw, bolt and nut	48.1 to 55.8N·m 4.9 to 5.7 kgf·m 35.5 to 41.2 ft-lbs
	Engine mounting M12 nut	77.5 to 90.2 N·m 7.9 to 9.2 kgf·m 57.2 to 66.5 ft-lbs

W1056610



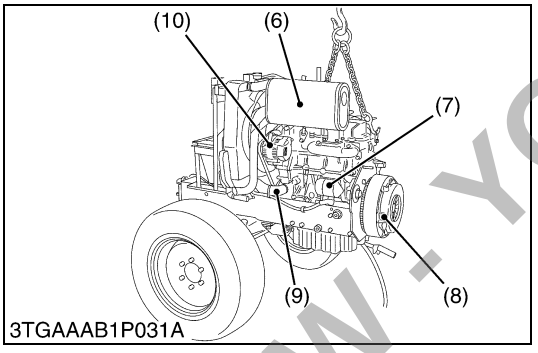
3TGAAAB1P030A

Separating Front Axle Assembly and Outer Parts

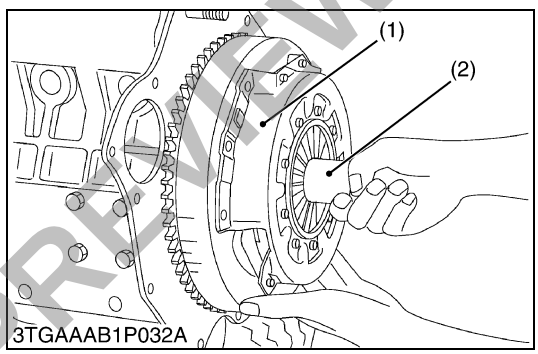
1. Disconnect the radiator hoses (1), (3) and (9).
2. Remove the muffler (6).
3. Remove the recovery tank (2).
4. Remove the stater motor (7) and alternator (10).
5. Remove the fuel filter (4) and hydraulic pump (5).
6. Remove the engine mounting screws and separate the front axle assembly from engine.

(1) Radiator Hose
(2) Recovery Tank
(3) Radiator Hose
(4) Fuel Filter
(5) Hydraulic Pump
(6) Muffler
(7) Stater Motor
(8) Clutch Assembly
(9) Radiator Hose
(10) Alternator

W1058184



3TGAAAB1P031A



3TGAAAB1P032A

Clutch Assembly

1. Remove the clutch assembly (1).

(When reassembling)

- Direct the shorter end of the clutch disc boss toward the flywheel.
- Apply molybdenum disulphide (Three Bond 1901 or equivalent) to the splines of clutch disc boss.
- Make sure of reamer screws position and after two reamer bolts are tightened, other screws are tightened.

■ **IMPORTANT**

- **Be sure to align the center of disc and flywheel by inserting the clutch center tool (2).**

■ **NOTE**

- **Do not allow grease and oil on the clutch disc facing.**

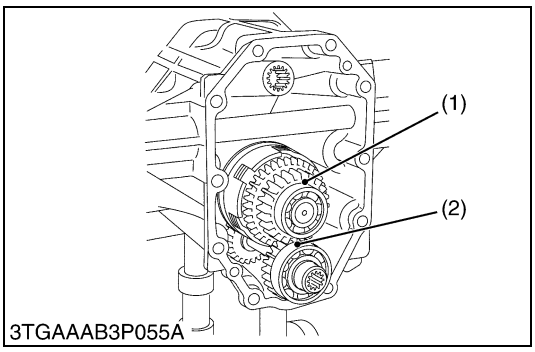
Tightening torque	Clutch cover mounting screws	23.5 to 27.5 N·m 2.4 to 2.8 kgf·m 17.5 to 20.3 ft-lbs

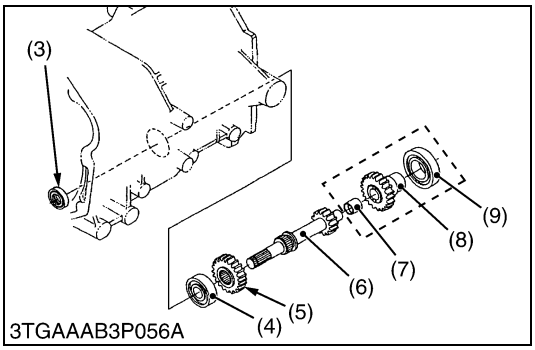
(1) Clutch Assembly (2) Clutch Center Tool

W1017588

PREVIEW - YOUFIXTHIS.COM

Download full manual at youfixthis.com





18T Gear Shaft

1. Take out the bi-speed turn hydraulic clutch assembly (1) with 18T gear shaft (2) from the clutch housing case.

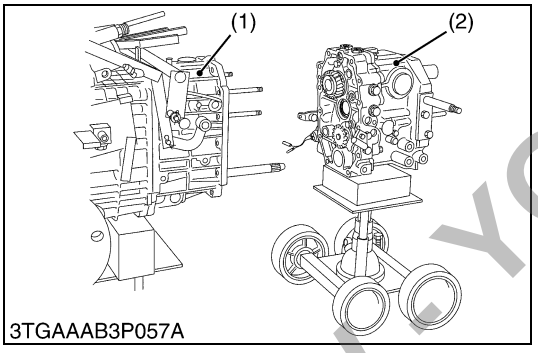
(When reassembling)

- Apply grease to the oil seal (3) of the clutch housing.

(1) Bi-speed Turn Hydraulic Clutch Assembly
(2) 18T Gear Shaft
(3) Oil Seal
(4) Ball Bearing
(5) 22T Gear
(6) 18T Gear Shaft
(7) Bushing
(8) 19T Gear
(9) Ball Bearing

W1018377

(7) Hydrostatic Transmission (HST)



Separating Hydrostatic Transmission (HST) from Transmission Case

1. Separate hydrostatic transmission (2) and transmission case (1).

(When reassembling)

- Apply liquid gasket (Three Bod 1208D or equivalent) to joint face of the HST and transmission case.

Tightening torque	HST mounting screw and nut	39.3 to 44.1 N·m 4.0 to 4.5 kgf·m 29.0 to 32.5 ft-lbs

(1) Transmission Case
(2) Hydrostatic Transmission (HST)

W1018767

PREVIEW - YOUFIXTHIS.COM

Download full manual at youfixthis.com

6. TIGHTENING TORQUES

Screws, bolts and nuts whose tightening torques are not specified in this Workshop Manual should be tightened according to the table below.

[1] GENERAL USE SCREWS, BOLTS AND NUTS

Indication on top of bolt	⬡ 4 **No-grade or 4T**			⬡ 7 **7T**						⬡ 9 **9T**		
Material of bolt	SS400, S20C			S43C, S48C						SCr435, SCM435		
Material of opponent part	Ordinariness			Aluminum			Ordinariness			Aluminum			Ordinariness		
Unit / **Diameter**	N·m	kgf·m	ft-lbs	N·m	kgf·m	ft-lbs	N·m	kgf·m	ft-lbs	N·m	kgf·m	ft-lbs	N·m	kgf·m	ft-lbs
M6 (6 mm, 0.24 in.)	7.85 to 9.31	0.80 to 0.95	5.79 to 6.87	7.85 to 8.82	0.80 to 0.90	5.79 to 6.50	9.81 to 11.2	1.00 to 1.15	7.24 to 8.31	7.85 to 8.82	0.80 to 0.90	5.79 to 6.50	12.3 to 14.2	1.25 to 1.45	9.05 to 10.4
M8 (8 mm, 0.31 in.)	17.7 to 20.5	1.8 to 2.1	13.1 to 15.1	16.7 to 19.6	1.7 to 2.0	12.3 to 14.4	23.6 to 27.4	2.4 to 2.8	17.4 to 20.2	17.7 to 20.5	1.8 to 2.1	13.1 to 15.1	29.5 to 34.3	3.0 to 3.5	21.7 to 25.3
M10 (10 mm, 0.39 in.)	39.3 to 45.1	4.0 to 4.6	29.0 to 33.2	31.4 to 34.3	3.2 to 3.5	23.2 to 25.3	48.1 to 55.8	4.9 to 5.7	35.5 to 41.2	39.3 to 44.1	4.0 to 4.5	29.0 to 32.5	60.9 to 70.6	6.2 to 7.2	44.9 to 52.0
M12 (12 mm, 0.47 in.)	62.8 to 72.5	6.4 to 7.4	46.3 to 53.5	–	–	–	77.5 to 90.2	7.9 to 9.2	57.2 to 66.5	62.8 to 72.5	6.4 to 7.4	46.3 to 53.5	103 to 117	10.5 to 12.0	76.0 to 86.8
M14 (14 mm, 0.55 in.)	108 to 125	11.0 to 12.8	79.6 to 92.5	–	–	–	124 to 147	12.6 to 15.0	91.2 to 108	–	–	–	167 to 196	17.0 to 20.0	123 to 144
M16 (16 mm, 0.63 in.)	167 to 191	17.0 to 19.5	123 to 141	–	–	–	197 to 225	20.0 to 23.0	145 to 166	–	–	–	260 to 304	26.5 to 31.0	192 to 224
M18 (18 mm, 0.71 in.)	246 to 284	25.0 to 29.0	181 to 209	–	–	–	275 to 318	28.0 to 32.5	203 to 235	–	–	–	344 to 402	35.0 to 41.0	254 to 296
M20 (20 mm, 0.79 in.)	334 to 392	34.0 to 40.0	246 to 289	–	–	–	368 to 431	37.5 to 44.0	272 to 318	–	–	–	491 to 568	50.0 to 58.0	362 to 419

W1034542

[2] STUD BOLTS

Material of opponent part	Ordinariness			Aluminum		
Unit / **Diameter**	N·m	kgf·m	ft-lbs	N·m	kgf·m	ft-lbs
M8 (8 mm, 0.31 in.)	11.8 to 15.6	1.2 to 1.6	8.68 to 11.5	8.82 to 11.8	0.90 to 1.2	6.51 to 8.67
M10 (10 mm, 0.39 in.)	24.6 to 31.3	2.5 to 3.2	18.1 to 23.1	19.7 to 25.4	2.0 to 2.6	14.5 to 18.8
M12 (12 mm, 0.47 in.)	29.5 to 49.0	3.0 to 5.0	21.7 to 36.1	31.4	3.2	23.1

W1048139

PREVIEW - YOUFIXTHIS.COM

Download full manual at youfixthis.com

(2) Fail Safe System

The bi-speed system equipped with “FAIL SAFE SYSTEM”, “FINE ADJUSTMENT MODE” and “SELF-DIAGNOSIS MODE”.

- The fail safe system mention to the operator for some trouble occurred while operating the tractor in usually.
- The fine adjustment mode is necessary to input when replace the front wheel angle sensor has been changed, to set the front tire angle information for the bi-speed controller, to proper bi-speed operation.
- The self-diagnosis mode to make easier for find out the trouble point when bi-speed system has been broken down.

The handling method of there systems are as follow.

(A) When Indicating Fail Safe Lamp

When fail safe system is operate, the lamp blinking indicate as follows.
The lamp is mounted on instrument panel (Bi-speed indicating lamp).

[Lamp Blinking Chart]

Blinking mode	Related Sensor / Valve
Slow	Front wheel turning angle sensor
Slow	Disconnection for travelling speed sensor
Quick	Defective the bi-speed solenoid

Lamp Blinking Mode
Slow ..... Lights up: 1.0 sec. Lights off: 0.2 sec.
Quick ..... Lights up: 0.2 sec. Lights off: 0.2 sec.

(B) Fine Adjustment Mode

■ **Fine adjustment function**

A front wheel turning angle sensor has been introduced to detect the front wheel turning angle for better bi-speed control. This function is intended to correct fluctuations in sensor action with respect to the straight-run reference.

Procedure 1: Making the fine adjustment reference settings

1. Get the front wheels in the straight-run state.
2. Turn off the main switch.

Procedure 2: Changing to the fine adjustment mode

1. Hole down the bi-speed switch and turn on the main switch (The engine does not start). Now make sure the bi-speed lamp lights up and goes out 0.75 second later.
2. Release the bi-speed switch. This calls for the “fine adjustment and self-diagnosis mode”.

Procedure 3: Checking the lamp light-up and saving the fine adjustment data

1. First check up the bi-speed lamp.
   If any setting is wrong or a component part is defective or malpositioned, the lamp starts blinking the number of times that corresponds to a trouble spot. See the “Self-diagnosis Mode”. The lamp remains off when there is nothing in trouble. If it is necessary to start the engine for making the settings again, turn off the main switch and repeat the above steps from step 1 in Procedure 1.
2. When the data is judged correct, the lamp lights up and stays on. Then hold down the bi-speed switch for longer than 3 seconds. (The lamp goes out just when this switch is pressed down.)
3. When the fine adjustment data has been properly saved, the bi-speed lamp lights up and stays on again. Now release the bi-speed switch.
4. If the data has not been saved properly, the bi-speed lamp starts flashing at shorter intervals. In such case, turn off the main switch and repeat the steps from Step 1 in Procedure 2.

Procedure 4: Exiting from the fine adjustment mode

1. Make sure the bi-speed lamp stay on. Finally turn off the main switch.

[Fine Adjustment and Self-Diagnosis Reference]

Description	Status	Related Sensor
Front wheel	Straight run	Front wheel sensor
Tractor body	Stop	Travelling speed sensor
Engine	Stop	–

PREVIEW - YOUFIXTHIS.COM

Download full manual at youfixthis.com

1. TROUBLESHOOTING

Symptom	Probable Cause	Solution	Reference Page
Engine Does Not Start	• No fuel	Replenish fuel	G-8
	• Air in the fuel system	Bleed	G-28
	• Water in the fuel system	Change fuel and repair or replace fuel system	–
	• Fuel pipe clogged	Clean	–
	• Fuel filter clogged	Change	G-18
	• Excessively high viscosity of fuel or engine oil at low temperature	Use the specified fuel or engine oil	G-8
	• Fuel with low cetane number	Use the specified fuel	G-8
	• Fuel leak due to loose injection pipe retaining nut	Tighten nut	–
	• Incorrect injection timing	Adjust	1-S50
	• Fuel camshaft worn	Replace	–
	• Injection nozzle clogged	Clean	–
	• Injection pump malfunctioning	Repair or replace	–
	• Seizure of crankshaft, camshaft, piston, cylinder or bearing	Repair or replace	–
	• Compression leak from cylinder	Replace head gasket, tighten cylinder head screw, glow plug and nozzle holder	1-S20
	• Improper valve timing	Correct or replace timing gear	–
	• Piston ring and cylinder worn	Replace	1-S40, S47
	• Excessive valve clearance	Adjust	1-S21
Starter Does Not Run	• Battery discharged	Charge	G-22
	• Starter malfunctioning	Repair or replace	10-S8
	• Main switch malfunctioning	Repair or replace	10-S7
	• Clutch safety switch, HST safety switch or PTO safety switch improperly adjusted or defective	Repair or replace	2-S4, 3-S7, 10-S10
	• Starter relay defective	Replace	10-S8
	• Wiring disconnected	Connect	–
Engine Revolution is Not Smooth	• Fuel filter clogged or dirty	Change	G-18
	• Air cleaner clogged	Clean or change	G-17
	• Fuel leak due to loose injection pipe retaining nut	Tighten nut	–
	• Injection pump malfunctioning	Repair or replace	–
	• Incorrect nozzle injection pressure	Adjust	1-S53
	• Injection nozzle stuck or clogged	Repair or replace	1-S54
	• Governor malfunctioning	Repair	1-S24
Either White or Blue Exhaust Gas is Observe	• Excessive engine oil	Reduce to the specified level	G-12
	• Piston ring and cylinder worn or stuck	Repair or replace	1-S40, S47
	• Incorrect injection timing	Adjust	1-S51
	• Deficient compression	Adjust top clearance	1-S22

W1014322

PREVIEW - YOUFIXTHIS.COM

Download full manual at youfixthis.com

5. LUBRICANTS FUEL AND COOLANT

	Place	Capacity		Lubricants, fuel and coolant
		STα-30	**STα-35**	
1	Fuel tank	29.5 L 7.79 U.S.gals. 6.49 Imp.gals.		No. 2-D diesel fuel No. 1-D diesel fuel if temperature is below –10 °C (14 °F)
2	Coolant (with recovery tank)	5.8 L 1.56 U.S.gals. 1.28 Imp.gals.		Fresh clean water (soft water) with anti-freeze
3	Engine crankcase (with filter)	4.5 L 1.19 U.S.gals. 0.99 Imp.gals.		Engine oil : API service CC or CD class Below 0 °C (32 °F) : SAE10W, 10W-30 or 10W-40 0 to 25 °C (32 to 77 °F): SAE20, 10W-30 or 10W-40 Above 25 °C (77 °F): SAE30, 10W-30 or 10W-40
4	Transmission case	18.5 L 4.89 U.S.gals. 4.07 Imp.gals.		KUBOTA SUPER UDT fluid*
5	Front axle case	4.0 L 1.06 U.S.gals. 0.88 Imp.gals.		KUBOTA SUPER UDT fluid* or SAE80, 90 gear oil

Grease

	Place	No. of greasing point	Capacity	Type of grease
6	Brake pedal shaft	1	Until grease overflows	Multipurpose type grease
	Clutch pedal shaft	1		
	Top link	2		
	Lift rod	1		
	Battery terminal	2	Moderate amount	

* KUBOTA original transmission hydraulic fluid.

PREVIEW - YOUFIXTHIS.COM

Download full manual at youfixthis.com

SPECIFICATIONS

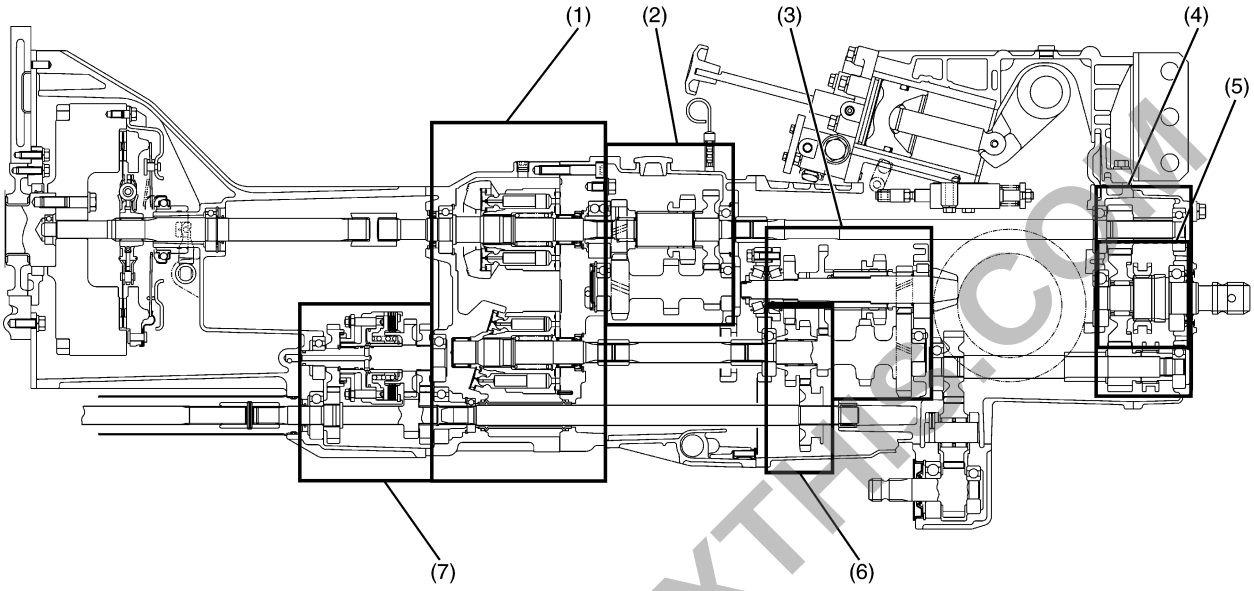
Model			STα-30			STα-35		
PTO power			17.3 kW (23.5 PS)			21.0 kW (28.5 PS)		
Engine	Maker		KUBOTA					
	Model		D1463-M-ST			D1703-M-ST		
	Type		ETVCS, Indirect Injection. Vertical, water-cooled, 4-cycle diesel					
	Number of cylinders		3					
	Bore and stroke		82 × 92.4 mm (3.23 × 3.64 in.)			87 × 92.4 mm (3.43 × 3.64 in.)		
	Total displacement		1463 cm^3 (89.28 cu.in.)			1647 cm^3 (100.51 cu.in.)		
	Engine net power (ECE-R24)		21.2 kW			25.5 kW		
	SAE gross		22.4 kW (30 HP)			26.8 kW (35.9 HP)		
	Rated revolution		45 r/s (2700 min^{-1} (rpm))					
	Maximum torque		96.5 N·m (9.85 kgf·m) / 1500 min^{-1} (rpm))			111 N·m (11.3 kgf·m) / 1500 min^{-1} (rpm))		
	Battery		12 V, RC : 110 min, CCA : 550 A					
	Starting system		Electric starting with cell starter 12 V, 1.4 kW					
	Lubricating system		Forced lubrication by trochoidal pump					
	Cooling system		Pressurized radiator, forced circulation with water pump					
	Fuel		Diesel fuel No. 2-D [above –10 °C (14 °F)], Diesel fuel No. 1 [below –10 °C (14 °F]					
Capacities	Fuel tank		29.5 L (7.79 U.S.gals., 6.49 Imp.gals.)					
	Engine crankcase (with filter)		4.5 L (1.19 U.S.gals., 0.99 Imp.gals.)					
	Engine coolant (with recovery tank)		5.8 L (1.56 U.S.gals., 1.28 Imp.gals.)					
	Transmission case		18.5 L (4.89 U.S.gals., 4.07 Imp.gals.)					
	Front axle case		4.0 L (1.06 U.S.gals., 0.88 Imp.gals.)					
Tires	Front		Farm 6-12	Farm 6.00-12	Turf 24 × 8.50-14	Farm 6-12	Farm 6.00-12	Turf 24 × 8.50-14
	Rear		12.4-16	9.5-22	13.6-16	12.4-16	9.5-22	13.6-16
Dimensions	Overall length (with 3P)		2870 mm (113 in.)					
	Overall width (minimum tread)		1465 mm (57.7 in.)	1220 mm (48.1 in.)	1310 mm (51.6 in.)	1465 mm (57.7 in.)	1220 mm (48.1 in.)	1310 mm (51.6 in.)
	Overall height (with ROPS)		2330 mm (91.7 in.)	2350 mm (92.5 in.)	2345 mm (92.3 in.)	2330 mm (91.7 in.)	2350 mm (92.5 in.)	2345 mm (92.3 in.)
	Wheel base		1610 mm (63.4 in.)					
	Minimum ground clearance (Mid-PTO case)		215 mm (8.5 in.)	235 mm (9.3 in.)	230 mm (9.1 in.)	215 mm (8.5 in.)	235 mm (9.3 in.)	230 mm (9.1 in.)
	Tread	Front	1020 mm (40.2 in.)					
		Rear	1148 mm (45.2 in.)	950, 1070 mm (37.4, 42.1 in.)	965, 1055 mm (38.0, 41.5 in.)	1148 mm (45.2 in.)	950, 1070 mm (37.4, 42.1 in.)	965, 1055 mm (38.0, 41.5 in.)
Weight (with ROPS)			975 kg (2150 lbs)	965 kg (2130 lbs)	985 kg (2170 lbs)	975 kg (2150 lbs)	965 kg (2130 lbs)	985 kg (2170 lbs)
Minimum turning radius (with bi-speed turn)		with brake	2.2 m (7.2 feet)					
		without brake	2.5 m (8.2 feet)					
Clutch			Dry single plate					

W1028117

PREVIEW - YOUFIXTHIS.COM

Download full manual at youfixthis.com

1. STRUCTURE

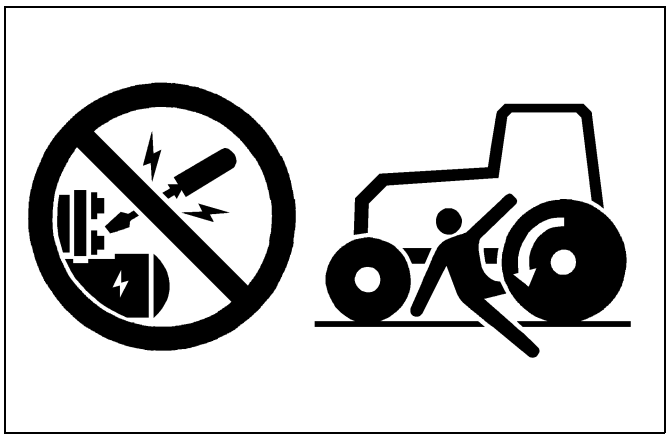


3TGAAAB3P001A

(1) Hydrostatic Transmission Section
(2) PTO Gear Shift Section
(3) Range Gear Shift Section
(4) Rear PTO Shift Section
(5) Mid-PTO Shift Section
(6) Front Wheel Drive Section
(7) Bi-speed Turn Section

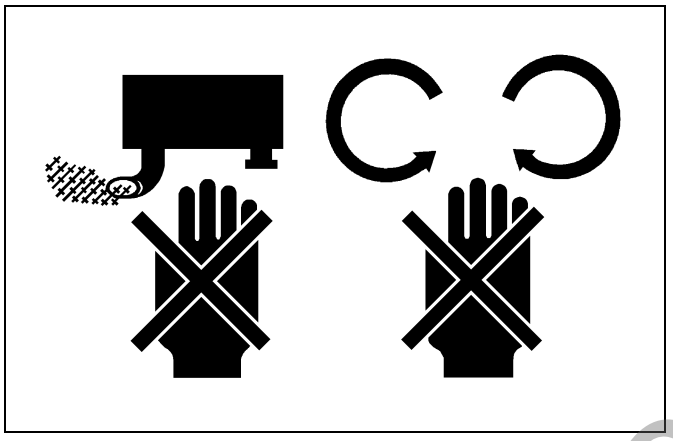
PREVIEW - YOUFIXTHIS.COM

Download full manual at youfixthis.com



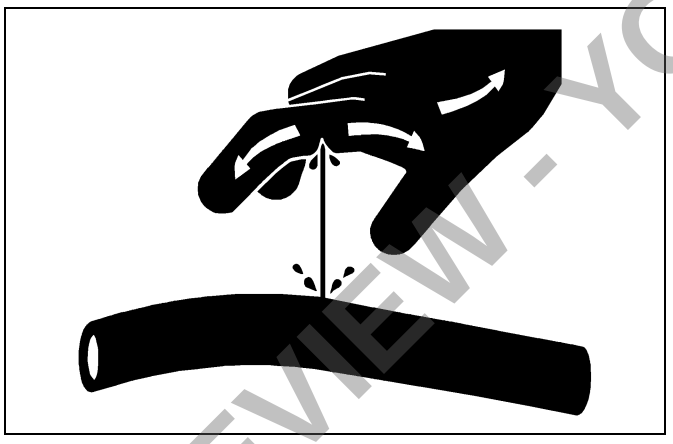
SAFETY STARTING

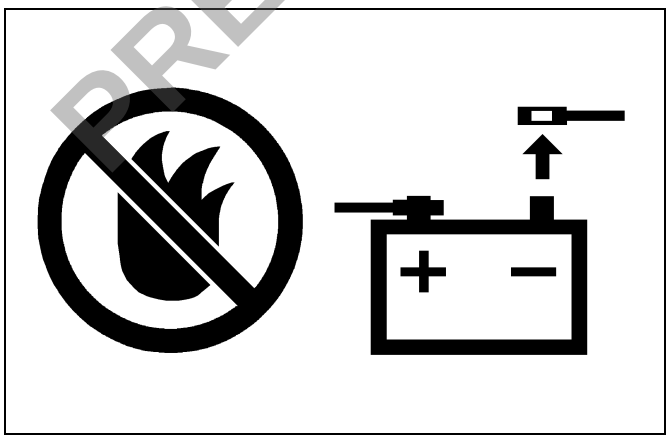
- Do not start the engine by shorting across starter terminals or bypassing the safety start switch.
- Do not alter or remove any part of machine safety system.
- Before starting the engine, make sure that all shift levers are in neutral positions or in disengaged positions.
- Never start the engine while standing on ground. Start the engine only from operator's seat.



SAFETY WORKING

- Do not work on the machine while under the influence of alcohol, medication, or other substances or while fatigued.
- Wear close fitting clothing and safety equipment appropriate to the job.
- Use tools appropriate to the work. Markshift tools, parts, and procedures are not recommended.
- When servicing is performed together by two or more persons, take care to perform all work safely.
- Do not work under the machine that is supported solely by a jack. Always support the machine by safety stands.
- Do not touch the rotating or hot parts while the engine is running.
- Never remove the radiator cap while the engine is running, or immediately after stopping. Otherwise, hot water will spout out from radiator. Only remove radiator cap when cool enough to touch with bare hands. Slowly loosen the cap to first stop to relieve pressure before removing completely.
- Escaping fluid (fuel or hydraulic oil) under pressure can penetrate the skin causing serious injury. Relieve pressure before disconnecting hydraulic or fuel lines. Tighten all connections before applying pressure.





AVOID FIRES

- Fuel is extremely flammable and explosive under certain conditions. Do not smoke or allow flames or sparks in your working area.
- To avoid sparks from an accidental short circuit, always disconnect the battery negative cable first and connect it last.
- Battery gas can explode. Keep sparks and open flame away from the top of battery, especially when charging the battery.
- Mark sure that no fuel has been spilled on the engine.

PREVIEW - YOUFIXTHIS.COM

Download full manual at youfixthis.com

SERVICING

CONTENTS

1. TROUBLESHOOTING 1-S1
2. SERVICING SPECIFICATIONS 1-S4
3. TIGHTENING TORQUES 1-S10
4. CHECKING, DISASSEMBLING AND SERVICING 1-S11
   - [1] SEPARATING ENGINE FROM TRACTOR 1-S11
   - [2] ENGINE BODY 1-S20
     - (1) Checking and Adjusting 1-S20
     - (2) Disassembling and Assembling 1-S22
     - (3) Servicing 1-S32
   - [3] LUBRICATING SYSTEM 1-S48
     - (1) Checking 1-S48
     - (2) Servicing 1-S48
   - [4] COOLING SYSTEM 1-S49
     - (1) Checking and Adjusting 1-S49
   - [5] FUEL SYSTEM 1-S51
     - (1) Checking and Adjusting 1-S51
     - (2) Disassembling and Assembling 1-S54

PREVIEW - YOUFIXTHIS.COM

Download full manual at youfixthis.com

SERVICING

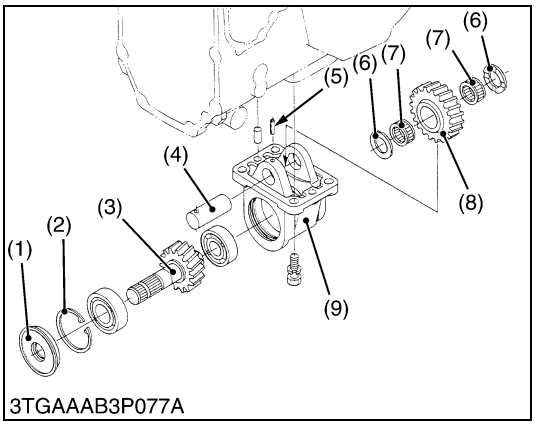
CONTENTS

1. TROUBLESHOOTING 2-S1
2. SERVICING SPECIFICATIONS 2-S2
3. TIGHTENING TORQUES 2-S3
4. CHECKING, DISASSEMBLING AND SERVICING 2-S4
   [1] CHECKING AND ADJUSTING 2-S4
   [2] DISASSEMBLING AND ASSEMBLING 2-S4
      (1) Separating Engine from Clutch Housing 2-S4
      (2) Separating Clutch Assembly 2-S12
      (3) Disassembling Clutch Release 2-S13
   [3] SERVICING 2-S13

PREVIEW - YOUFIXTHIS.COM

Download full manual at youfixthis.com

(10) Mid-PTO Gear Case



Mid-PTO Case and Shaft

1. Remove the mid-PTO case (9) from differential gear case.
2. Remove the oil seal (1) and internal snap ring (2).
3. Pull out the mid-PTO shaft (3).
4. Tap in the spring pin (5) to idle shaft (4), and pull out the idle shaft (4).

(When reassembling)

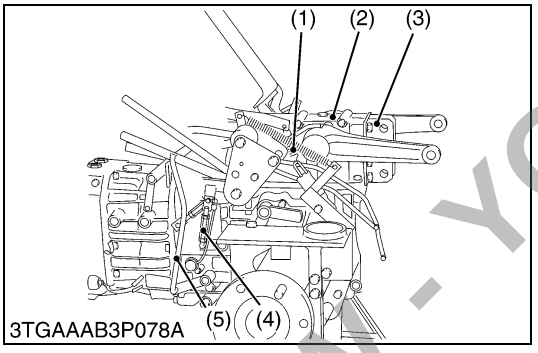
- Direct the grooved sides of the thrust collars to the needle bearing side.
- Apply grease to the oil seal (1).
- Apply liquid gasket (Three Bod 1208D or equivalent) to the joint face of mid-PTO case and differential gear case.

Tightening torque	Mid-PTO case mounting screw	29.4 to 34.3 N·m 3.0 to 3.5 kgf·m 21.7 to 25.3 ft-lbs

(1) Oil Seal
(2) Internal Snap Ring
(3) Mid-PTO Shaft
(4) Idle Shaft
(5) Spring Pin
(6) Thrust Collar
(7) Needle Bearing
(8) 23T Gear
(9) Mid-PTO Case

W1022598

(11) Differential Gear Case



Separating Hydraulic Cylinder

1. Remove the position lever stay with position lever and PTO speed charge lever as a unit.
2. Remove the top link bracket (3).
3. Remove the front drive rod (5) and differential lock rod (4).
4. Remove the cruise spring (1).
5. Separate the hydraulic cylinder.

(When reassembling)

- Adjust the cruise tension (See page 3-S9).
- Be sure to fix the differential lock pedal and groove of differential fork rod.
- Apply liquid gasket (Three Bond 1208D or equivalent) to the joint face of hydraulic cylinder and differential gear case.

Tightening torque	Top link bracket mounting screw	39.3 to 44.1 N·m 4.0 to 4.5 kgf·m 29.0 to 32.5 ft-lbs
	Hydraulic cylinder mounting screw	39.3 to 44.1 N·m 4.0 to 4.5 kgf·m 29.0 to 32.5 ft-lbs

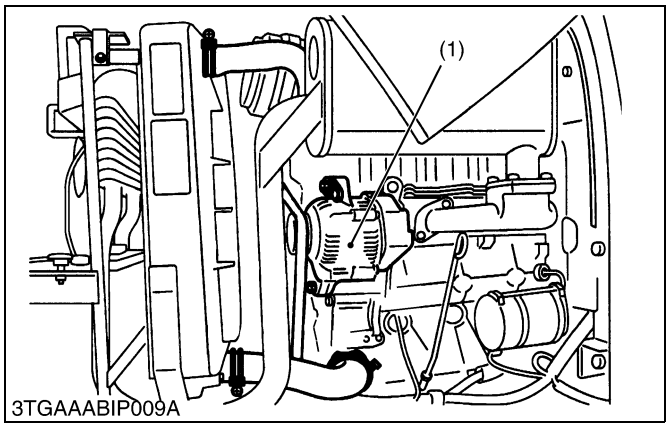
(1) Cruise Spring
(2) Hydraulic Cylinder
(3) Top Link Bracket
(4) Differential Lock Rod
(5) Front Drive Rod

W1023086

PREVIEW - YOUFIXTHIS.COM

Download full manual at youfixthis.com

[3] ENGINE RUNNING SENSOR



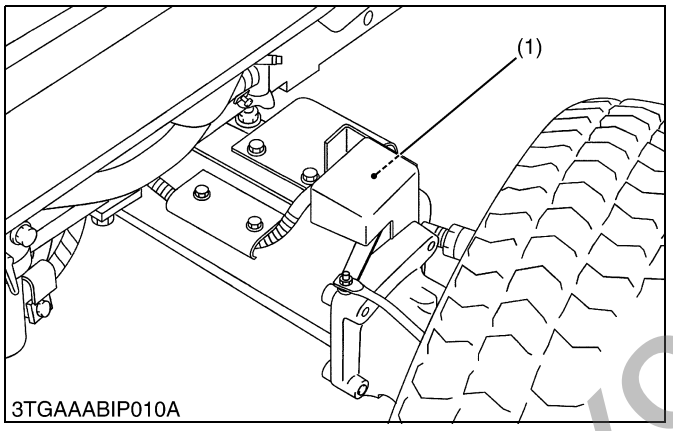
The bi-speed system will not operate at engine stopping.

It is detected from **L** terminal voltage of alternator (1).

(1) Alternator

W1015587

[4] FRONT WHEEL TURNING SENSOR

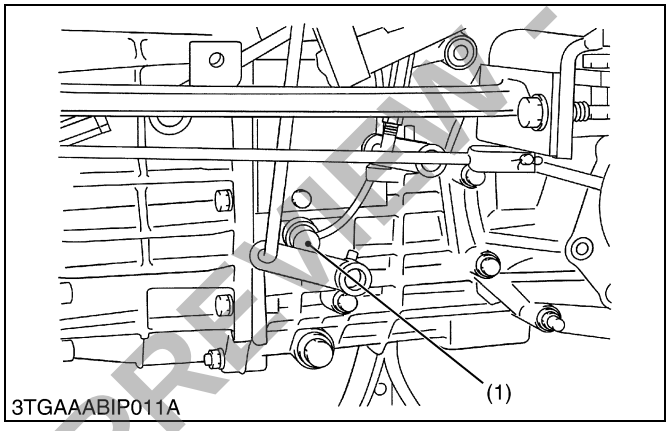


The front wheel turning angle is detected by the front wheel turning angle sensor (1) mounted on the front axle case. For detection, a resistor are used.

(1) Front Wheel Turning Angle Sensor

W1014003

[5] TRAVELLING SPEED SENSOR



The travelling speed is detected by the travelling speed sensor (1) installed in the differential case.

This sensor generate the varies alternating voltage following the metal distance.

The sensor generate alternating voltage and detect to frequency from top and bottom of teeth of the gear 19-22T gap of rotating rear counter shaft.

The sensor detect the travelling speed with frequency that is in proportional to rotating speed of rear counter shaft.

(1) Travelling Speed Sensor

W1014070

PREVIEW - YOUFIXTHIS.COM

Download full manual at youfixthis.com

SERVICING

CONTENTS

1. TROUBLESHOOTING 9-S1
2. SERVICING SPECIFICATIONS 9-S2
3. TIGHTENING TORQUES 9-S4
4. CHECKING, DISASSEMBLING AND SERVICING 9-S5
   - [1] CHECKING AND ADJUSTING 9-S5
     - (1) Hydraulic Pump 9-S5
     - (2) Position Control Valve 9-S7
   - [2] DISASSEMBLING AND ASSEMBLING 9-S9
     - (1) Hydraulic Pump 9-S9
     - (2) Position Control Valve 9-S10
     - (3) Hydraulic Cylinder Cover 9-S11
     - (4) Hydraulic Cylinder 9-S12
     - (5) Auxiliary Control Valve 9-S13
   - [3] SERVICING 9-S14
     - (1) Hydraulic Pump 9-S14
     - (2) Hydraulic Cylinder 9-S14

PREVIEW - YOUFIXTHIS.COM

Download full manual at youfixthis.com

PREVIEW ONLY

You're viewing 18 of 359 pages

The full manual includes:

- All 359 pages, complete
- Searchable PDF (find any keyword)
- No watermarks
- Instant download
- Print-ready quality

GET FULL MANUAL NOW

Kubota STα-30, STα-35 Workshop Manual



Scan or click anywhere
youfixthis.com

Click anywhere on this page to get the full manual