WSM

WORKSHOP MANUAL
TRACTOR

M135X-S
(SUPPLEMENT)

Kubota

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KiSC issued 07, 2009 A

INFORMATION

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1. SAFETY FIRST

⚠ SAFETY FIRST

- **This symbol, the industry's "Safety Alert Symbol", is used throughout this manual and on labels on the machine itself to warn of the possibility of personal injury. Read these instructions carefully.**
- **It is essential that you read the instructions and safety regulations before you attempt to repair or use this unit.**

⚠ DANGER
- **Indicates an imminently hazardous situation which, if not avoided, will result in death or serious injury.**

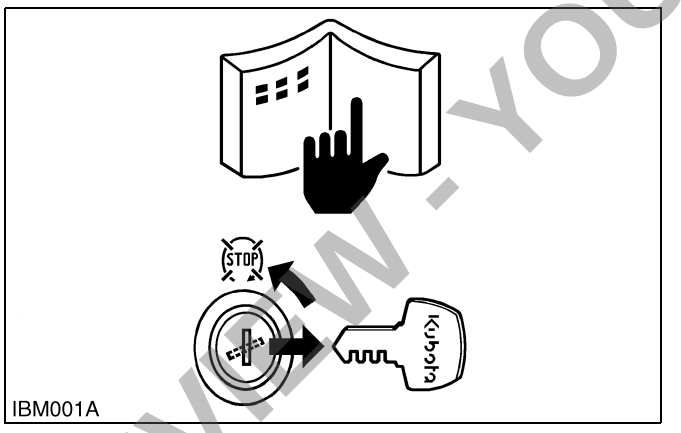
⚠ WARNING
- **Indicates a potentially hazardous situation which, if not avoided, could result in death or serious injury.**

⚠ CAUTION
- **Indicates a potentially hazardous situation which, if not avoided, may result in minor or moderate injury.**

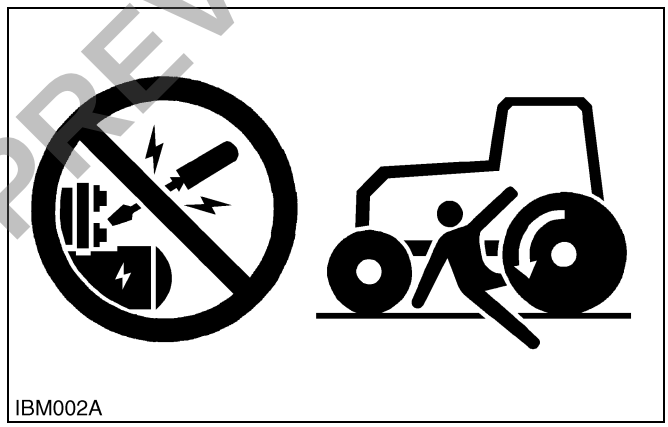
■ IMPORTANT
- **Indicates that equipment or property damage could result if instructions are not followed.**

■ NOTE
- **Gives helpful information.**

WSM000001INI0001US1



IBM001A


IBM002A

BEFORE YOU START SERVICE

- Read all instructions and safety instructions in this manual and on your machine safety decals.
- Clean the work area and machine.
- Park the machine on a stable and level ground, and set the parking brake.
- Lower the implement to the ground.
- Stop the engine, then remove the key.
- Disconnect the battery negative cable.
- Hang a **"DO NOT OPERATE"** tag in the operator station.

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START SAFELY

- Do not do the procedures below when you start the engine.
  - short across starter terminals
  - bypass the safety start switch
- Do not alter or remove any part of machine safety system.
- Before you start the engine, make sure that all shift levers are in neutral positions or in disengaged positions.
- Do not start the engine when you stay on the ground. Start the engine only from operator's seat.

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3. SPECIFICATIONS

Model			M135X-S
Engine	Model		V6108-TIE3
	Type		Direct injection, W/turbocharger, water-cooled, 4-cycle diesel
	Number of cylinder		4
	Total displacement		6124 cm^3 (374 cu.in.)
	Bore and stroke		118 × 140 mm (4.65 × 5.51 in.)
	Net power		100.7 kW (135 HP)*
	PTO power (factory observe)		88.0 kW (118 HP)* / 2200 min^{-1} (rpm)
	Maximum torque		323 N·m (33.0 kgf·m, 238 lbf·ft) / 1500 min^{-1} (rpm)
	Battery capacity		12 V, 160 Ah at 20 hours, 1090CCA
	Fuel		Diesel fuel No. 1 [below −10 °C (14 °F], Diesel fuel No. 2-D [above −10 °C (14 °F)]
	Fuel tank capacity		190 L (50.2 U.S.gal, 41.8 Imp.gals)
	Engine oil capacity		14.6 L (15.4 U.S.qts, 12.8 Imp.qts)
	Coolant capacity		14.6 L (15.4 U.S.qts, 12.8 Imp.qts)
Dimensions	Overall length		4350 mm (171.3 in.)
	Overall width (min. tread)		2180 mm (85.8 in.)
	Overall height		2725 mm (107.3 in.)
	Wheel base		2680 mm (105.5 in.)
	Tread	Front	1775 to 1875 mm (69.9 to 73.8 in.)
		Rear	1590 to 2085 mm (62.6 to 82.1 in.)
	Crop clearance		615 mm (24.2 in.)
Weight			4860 kg (10714 lbs)
Traveling system	Standard tire size	Front	14.9R24
		Rear	18.4R38
	Clutch		Multiple wet disc, Electronic Hydraulically operated
	Steering		Hydrostatic power steering
	Braking system		Hydraulically operated wet disk
	Differential		Bevel gears with differential gear lock (Front, Rear)
Hydraulic system	Hydraulic control system		Electronic draft control
	Pump capacity		77.2 L (20.4 U.S.gals, 17.0 Imp.gals) / min.
	Three point hitch		SAE Category 2
	Max. lifting force	At lift points**	2635 kg (5809 lbs) at lower link end with links horizontal
		24 in. behind lift points	2360 kg (5203 lbs)
	Remote hydraulic control		Two remote valve with detent and self-canceling
	System pressure		19.7 MPa (201 kgf/cm^2 , 2857 psi)
	Traction system		Swinging drawbar, adjustable in direction
PTO system	Live PTO (Independent)	Direction of turning	Clockwise, viewed from tractor rear
		Standard PTO	6 splines : 540 min^{-1} / 1994 min^{-1} 21 splines : 1000 min^{-1} / 2050 min^{-1}

■ **NOTE**

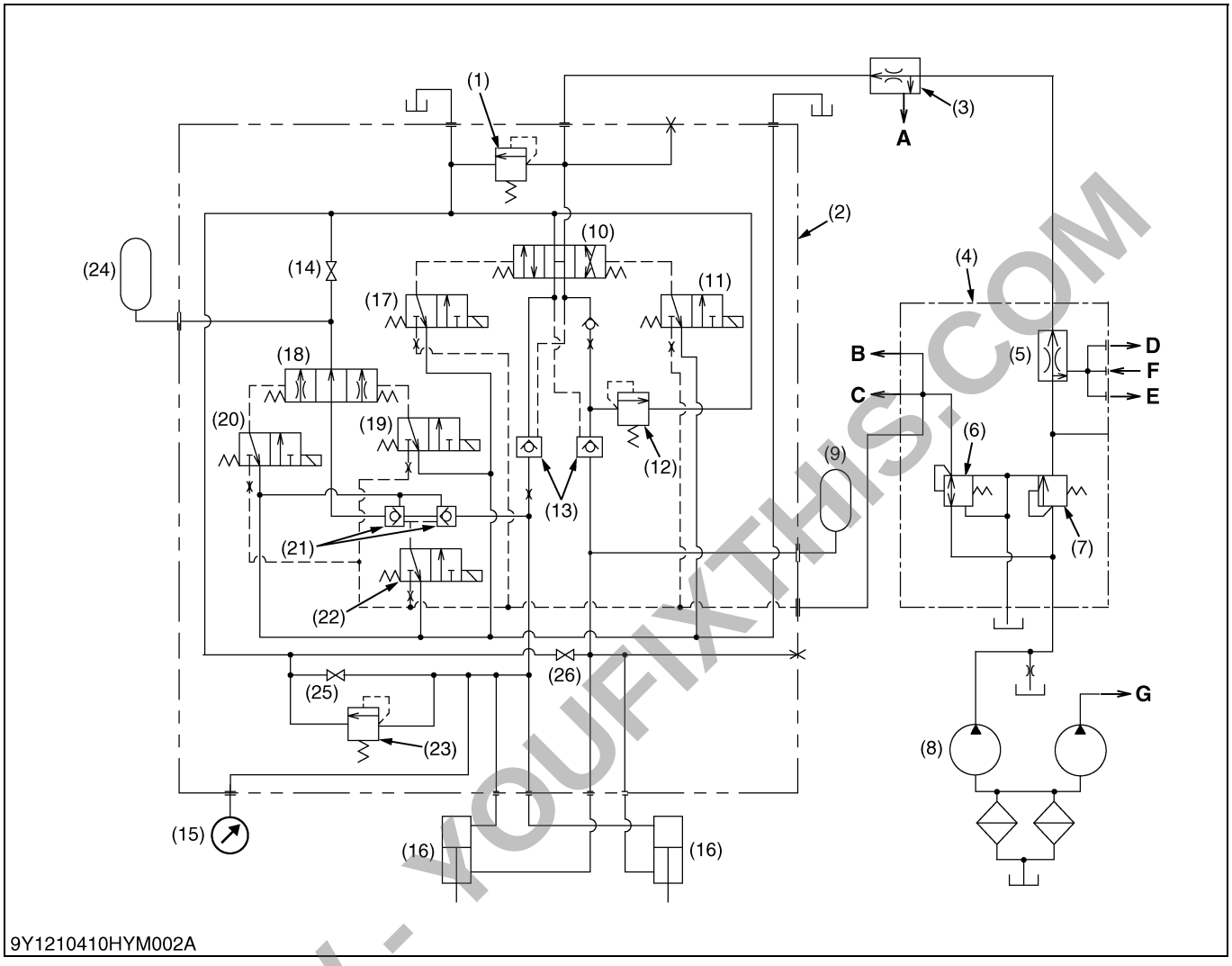
- ***Manufacture's estimate**
- ****At lower link and with links horizontal.**
- **The company reserves the right to change the specifications without notice.**

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3. HYDRAULIC CIRCUIT



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(1) Main Relief Valve
(2) Suspension Valve
(3) Flow Priority Valve
(4) Regulator Valve
(5) Flow Priority Valve
(6) Reducing Valve
(7) Relief Valve
(8) Hydraulic Pump (for Power Steering / PTO / Power Shift / 4WD / Bi-speed / Front Suspension)
(9) Accumulator for Cylinder Descent
(10) Main Spool
(11) Solenoid for Lifting the Body
(12) Relief Valve for Retracting Cylinder
(13) Pilot Check Valve
(14) Pressure Releasing Valve for Accumulator
(15) Pressure Sensor
(16) Suspension Cylinder
(17) Solenoid for Descending the Body
(18) Variable Orifice
(19) Solenoid for Middle Damping Force
(20) Solenoid for Large Damping Force
(21) Double Check Valve
(22) Solenoid for Lock Cancellation
(23) Cylinder Safety Valve
(24) Accumulator for Cylinder Extension
(25) Pressure Releasing valve for Cylinder Extension
(26) Pressure Releasing Valve for Cylinder Descent

A : To Steering Controller
B : To Power Shift Valve
C : To PTO Valve
D : To Power Shift Valve for Lubricating
E : To PTO Valve for Lubricating
F : From Steering Controller
G : To 3-point Hitch System

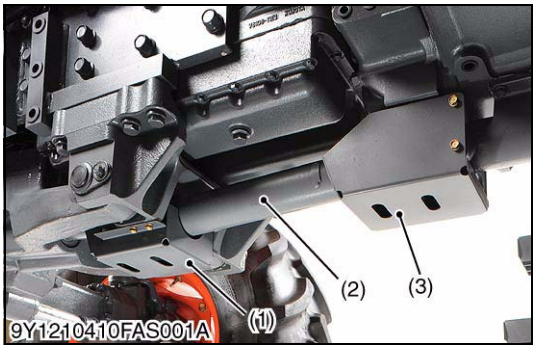
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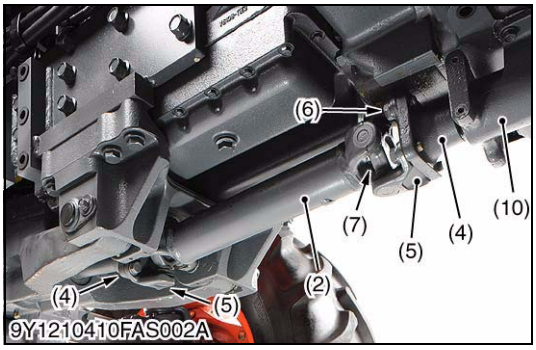
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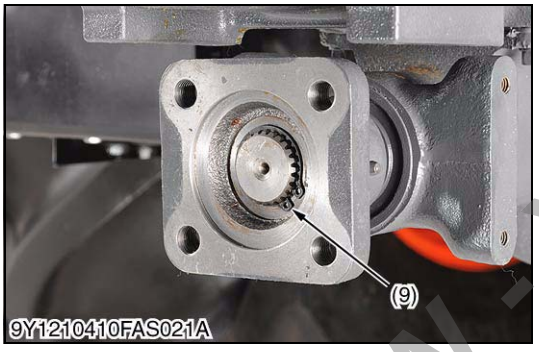
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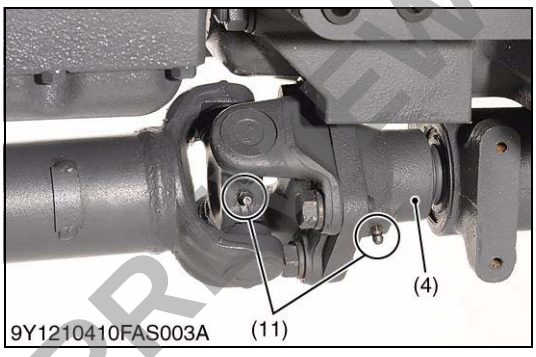
4. CHECKING, DISASSEMBLING AND SERVICING

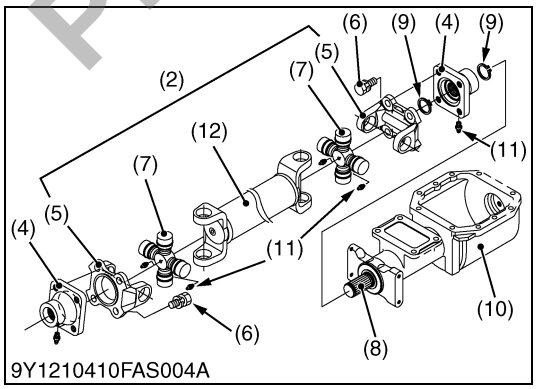
[1] DISASSEMBLING AND ASSEMBLING











Propeller Shaft

1. Remove the front cover (1) and the rear cover (3).
2. Remove the flange yoke mounting screw (6) and slide out the middle propeller shaft (2) rear ward.
3. Remove the circlip (9) and the flange yoke (4).

(When reassembling)

- When connecting the middle propeller shaft (2) and flange yoke (4), align the grease nipples (11) as shown in the figure.
- Grease to the grease nipples (11).

(1) Front Cover
(2) Middle Propeller Shaft
(3) Rear Cover
(4) Flange Yoke
(5) Flange Yoke
(6) Screw
(7) Universal Joint
(8) Drive Shaft
(9) Circlip
(10) Drive Case
(11) Grease Nipple
(12) Yoke Pipe

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3. TIGHTENING TORQUES

Tightening torques of screws, bolts and nuts on the table below are especially specified.

Item	N·m	kgf·m	lbf·ft
Flange yoke mounting screw (M14, 7T)	124 to 147	12.6 to 15.0	91.2 to 108
Drive case mounting screw (M10, 7T)	48 to 55	4.9 to 5.7	36 to 41
Front axle pivot adjusting screw lock nut	98.0 to 147	10.0 to 14.9	72.3 to 108
Main frame mounting screw (M18, 9T)	344 to 402	35.0 to 41.0	254 to 296

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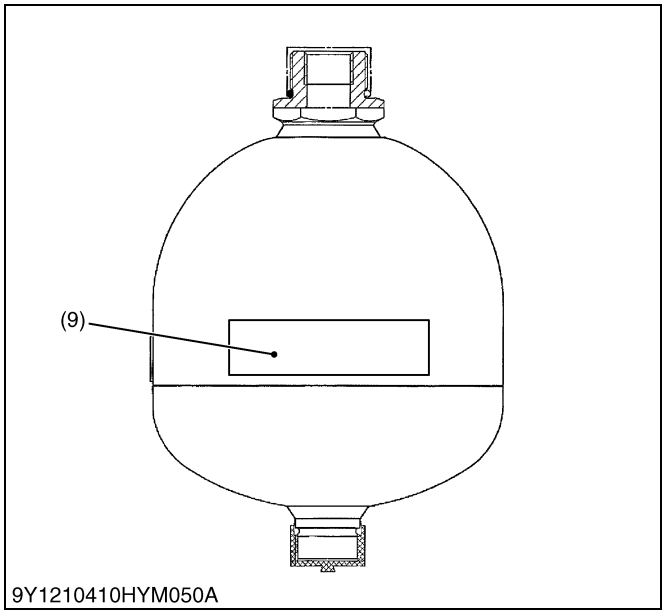
1. TROUBLESHOOTING

Symptom	Probable Cause	Solution	Reference Page
Suspension Cylinder Does not Extend or Retract Smoothly	Suspension valve malfunctioning	Replace or adjusting	S8-S20
	Clearance between the ball and the front frame plate excessive	Replace	S6-S8
	Main frame bushing excessive	Replace	S6-S10
	Suspension cylinder hose damaged	Replace	S8-S20
	Oil filter clogged	Replace	G-19
	Relief valve malfunctioning	Replace	S8-S22

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(Reference)

Meaning of Marking (9)

■ **Accumulator for cylinder extension (Big size) : 3T460-45710 ACCUMULATOR**

(a) (b) (c) (d) (e) (f) (g) (h)
SBO210 - 1.4E1 / 663 U - 210AB029

■ **Accumulator for cylinder descent (Small size) : 3T460-45720 ACCUMULATOR**

(a) (b) (c) (d) (e) (f) (g) (h)
SBO100 - 0.7E1 / 663 U - 100AB016

(a) Series
(b) Nominal volume
(c) Type
Weld type:
E1 = Rechargeable M28 x 1.5
E2 = Sealed gas connection, with gas pre-charge as requested
E3 = Rechargeable, gas valve M16 x 1.5 / M14 x 1.5
Screw type:
A6 = Rechargeable M28 x 1.5, exchangeable diaphragm
A3 = Gas valve M16 x 1.5 / M14 x 1.5, exchangeable diaphragm

(d) Meterial code
Depending on operating fluid
Standard model = 112 for mineral oil

(d1)(d2)(d3)
e.g. 6 6 3

(d1) Fluid connection (Upper digit)
1 = Carbon steel
3 = Stainless steel 1.4571
4 = Carbon steel with surface protection
6 = Low temperature steel

(d2) Accumulator shell (Middle digit)
0 = Plastic coated
1 = Carbon steel
2 = Carbon steel with surface protection
4 = Stainless steel 1.4571
6 = Low temperature steel

(d3) Diaphragm (Low digit)
2 = NBR20 (acrylonitrile butadiene)
3 = ECO (ethylene oxide epichlorohydrin)
4 = IIR (butyl)
5 = NBR21 (low temperature)
6 = FKM (fluoro rubber)
7 = Other (on request)

(e) Certification code
U = PED 97/23/EC
For other countries see table.

(f) Permitted operating pressure [bar]

(g) Fluid connection from
Standard connection = AK or AB
e.g. From AK = G 3/4

(h) Pre-charge pressure P_0 [bar] at 20 , must be stated separately, if required

(9) Marking

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S9 ELECTRICAL SYSTEM

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