WSM

WORKSHOP MANUAL
UTILITY VEHICLE

RTV1140CPX



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MECHANISM

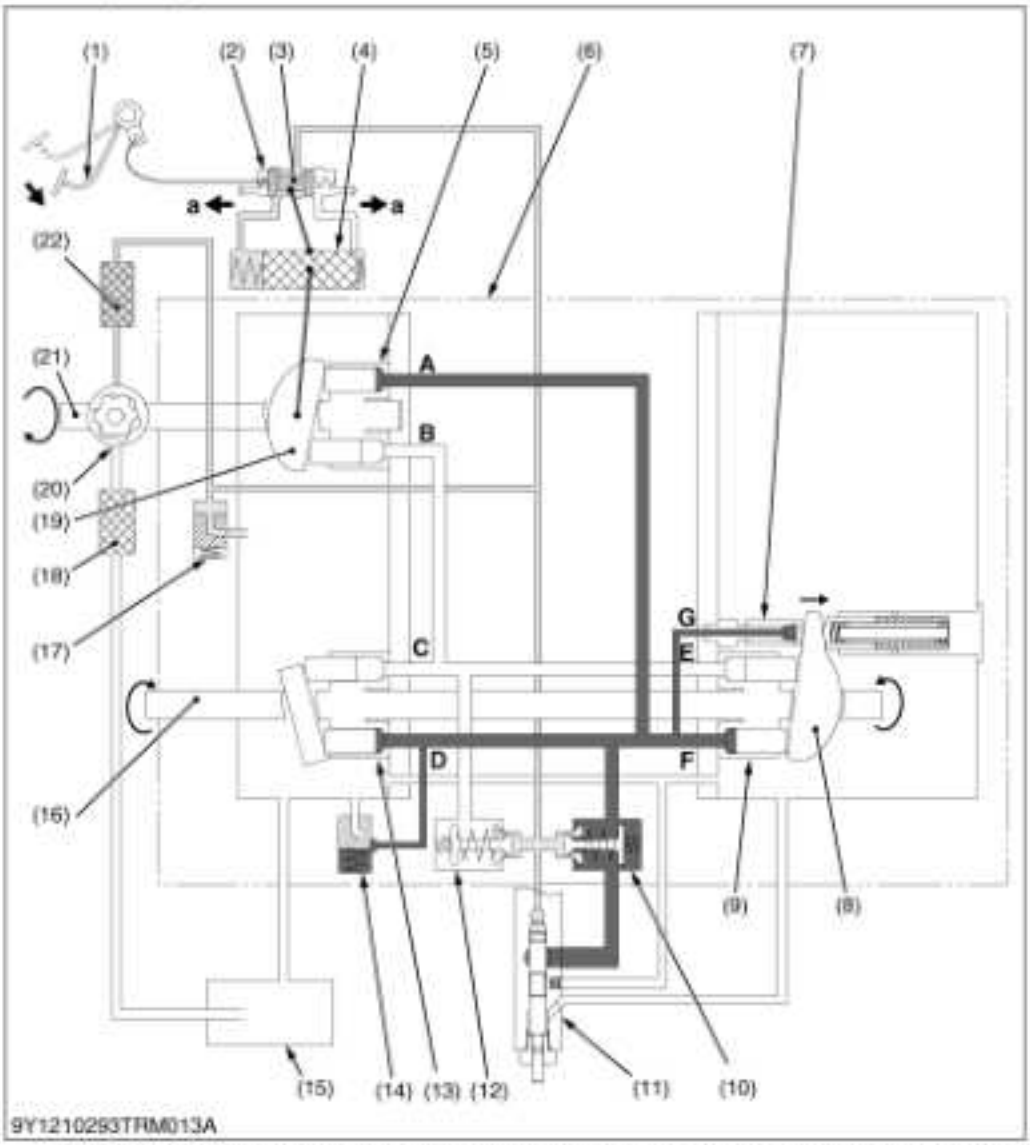
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(D) Pedal Depressed Fully, Under Light Load and Assist Motor Started Up to Maximum Capacity Level



(1) Pedal
(2) Regulator Valve Assembly
(3) Regulator Spool
(4) Servo Piston
(5) Cylinder Block
(6) HST Housing
(7) Control Piston
(8) Variable Swashplate (Assist Motor)
(9) Cylinder Block (Assist Motor)
(10) Check and High Pressure Relief Valve (Forward)
(11) Unload Valve
(12) Check and High Pressure Relief Valve
(13) Cylinder Block (Stationary Motor)
(14) Anti-cavitation Valve
(15) Transmission Case
(16) Output Shaft
(17) Charge Relief Valve
(18) Oil Filter Cartridge (Suction)
(19) Variable Swashplate (HST Pump)
(20) Charge Pump
(21) Input Shaft
(22) Oil Filter Cartridge

a: To HST Housing

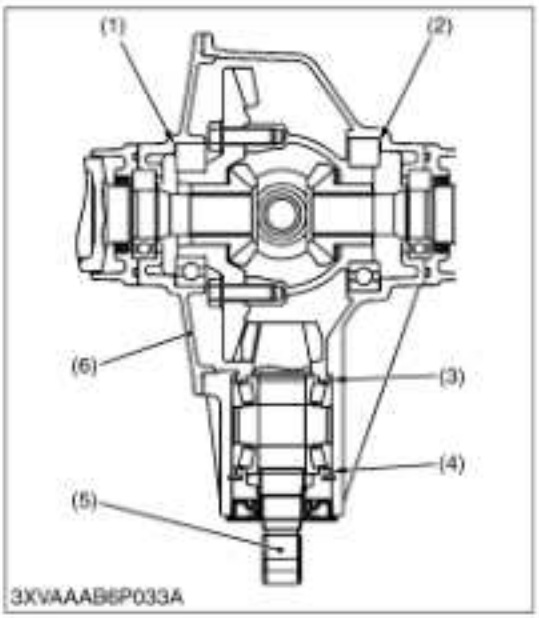
The pedal (1) is fully depressed, the control lever is activated by the pedal (1) to switch the regulator valve (2) hydraulic circuit. The servo piston (4) is then actuated to tilt the pump variable swashplate (19) to maximum (see the above illustration).

The pump cylinder block (5) is driven by the input shaft (21) to put the oil under high pressure and to feed it at the highest rate out of the pump port **A**. The pressure-fed oil flows into the motor port **D** along the circuit. The pressure of the oil from the HST pump (19) now gets high enough to start tilting the assist motor variable swashplate (8). The oil is fed to the port **F** (branch flow) and port **G** too. As a result, the output shaft (16) is driven by the stationary motor (13) and assist motor (8). The output shaft (16) rpm drops in proportion to the tilt of the assist motor variable swashplate (8), whereas its torque increases.

Then the stationary motor oil and the assist motor's oil drops to a low pressure and return through their respective ports **C** and **E** to the pump port **B**.

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Backlash between Bevel Pinion Shaft and Bevel Gear

1. Put the solder (0.5 mm (0.020 in.) thickness) on the position where the tooth proper contact of bevel pinon shaft.
2. Reassemble the differential assembly and front case cover, and rotate the bevel pinion shaft carefully.
3. Separate the front differential case cover and remove the differential assembly, again.
4. Measure the backlash by thickness of the point where solder is the thinnest.
5. When the backlash is too large, decrease the number of shims (LH) in the side of the bevel gear, and insert the shim (RH) of the same thickness as the removed ones to the opposite side.
6. When the backlash is too small, do the opposite way to increase backlash.
   Adjust the backlash properly by repeating the above procedure.

Backlash between bevel pinion shaft and bevel gear	Factory specification	0.15 to 0.30 mm 0.0059 to 0.011 in.

(Reference)

- Thickness of shims (1) (LH)
  0.2 mm (0.008 in.)
  0.3 mm (0.012 in.)
  0.5 mm (0.020 in.)
- Thickness of shims (2) (RH)
  0.1 mm (0.004 in.)
  0.2 mm (0.008 in.)
  0.3 mm (0.012 in.)
  0.5 mm (0.020 in.)
- Thickness of adjusting collars (3), (4)
  3.4 mm (0.134 in.)
  3.6 mm (0.142 in.)
  3.8 mm (0.150 in.)
  3.9 mm (0.154 in.)
  4.0 mm (0.157 in.)
  4.1 mm (0.161 in.)
  4.2 mm (0.165 in.)
  4.4 mm (0.173 in.)
  4.5 mm (0.177 in.)
  4.6 mm (0.181 in.)

Thickness of shim LH (1) (Cover side)	Factory specification	0.50 mm 0.020 in.
Thickness of shim RH (2) (Case side)	Factory specification	0.90 mm 0.035 in.

Combination 1

Thickness of collar (3) (Front)	Factory specification	4.4 mm 0.17 in.
Thickness of collar (4) (Rear)	Factory specification	4.4 mm 0.17 in.

Combination 2

Thickness of collar (3) (Front)	Factory specification	4.6 mm 0.18 in.
Thickness of collar (4) (Rear)	Factory specification	3.4 mm 0.13 in.

(1) Adjusting Shim
(2) Adjusting Shim
(3) Adjusting Collar
(4) Adjusting Collar
(5) Bevel Pinion Shaft
(6) Front Differential Case Cover

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GAUGES

Symptom	Probable Cause	Solution	Reference Page
Fuel Gauge Does Not Function	Fuel gauge defective	Replace	8-S23
	Fuel level sensor defective	Replace	8-S21
	Wiring harness disconnected or improperly connected (between fuel gauge and fuel level sensor)	Replace or Replace	–
Coolant Temperature Gauge Does Not Function	Coolant temperature gauge defective	Replace	8-S23
	Coolant temperature sensor defective	Replace	8-S22
	Wiring harness disconnected or improperly connected (between coolant temperature gauge and coolant temperature sensor)	Repair or Replace	–

HORN

Symptom	Probable Cause	Solution	Reference Page
Horn Does Not Sound When Horn Button Is Pushes	Fuse blown (10 A)	Replace	G-41
	Horn switch defective	Replace	8-S25
	Horn defective	Replace	8-S25
	Wiring harness disconnected or improperly connected (between combination switch terminal and horn)	Repair or Replace	–

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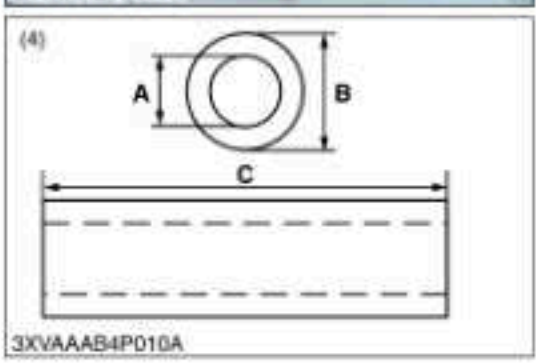
[3] DISASSEMBLING AND ASSEMBLING

(1) Rear Axle Bracket Assembly









Rear Axle and Propeller Shaft

1. Remove the slotted nut (2) and draw out the rear axle (1).
2. Tap the outside of the propeller shaft (3) and remove the propeller shaft to the inside **"a"**.

(When reassembling)

- Prepare the pipe (4) of the same diameter as bearing inner, and tap it while keeping the bearing when you tap the propeller shaft.
- Moreover, there is no problem if the bearing is inserted in the position in which a rear axle can be tightened.
- After that, the bearing and the collar can be fixed to a correct position by tightening the propeller shaft slotted nut.
- Apply grease to splines of propeller shaft.

	(4) Pipe Dimension
A	31 mm (1.22 in.)
B	51 mm (2.0 in.)
C	178 mm (7.0 in.)

(1) Rear Axle
(2) Slotted Nut
(3) Propeller Shaft
(4) Pipe

a: Inside

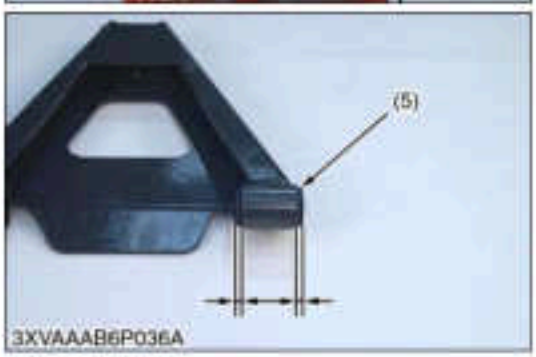
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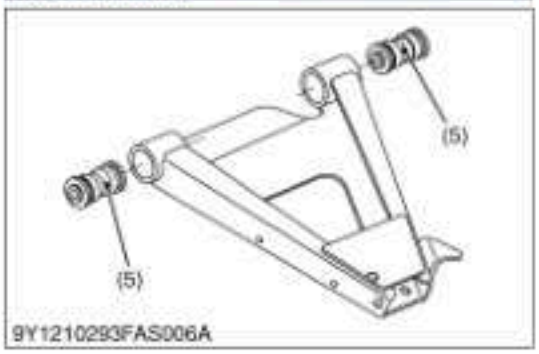
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Lower Arm, and Rubber Bush

1. Replace any bushing that are worn, cracked, hardened, or otherwise damaged.
2. Remove the lower arm rubber bush (5) with press machine and lower arm bush tool 1 (1), 2 (2), 3 (3).
3. Visually inspect the lower arm for breaks or distortion.
4. If the lower arm is damaged is any way, replace it.

(When reassembling)

- Install the lower arm rubber bush with press machine and lower arm bush tool 1 (1), 2 (2), 4 (4).

■ **NOTE**

- **Use soapy water when you install the bush. Never use neither oil nor grease, etc..**
- **Bush must install it to go out right and left and evenly (see photo).**

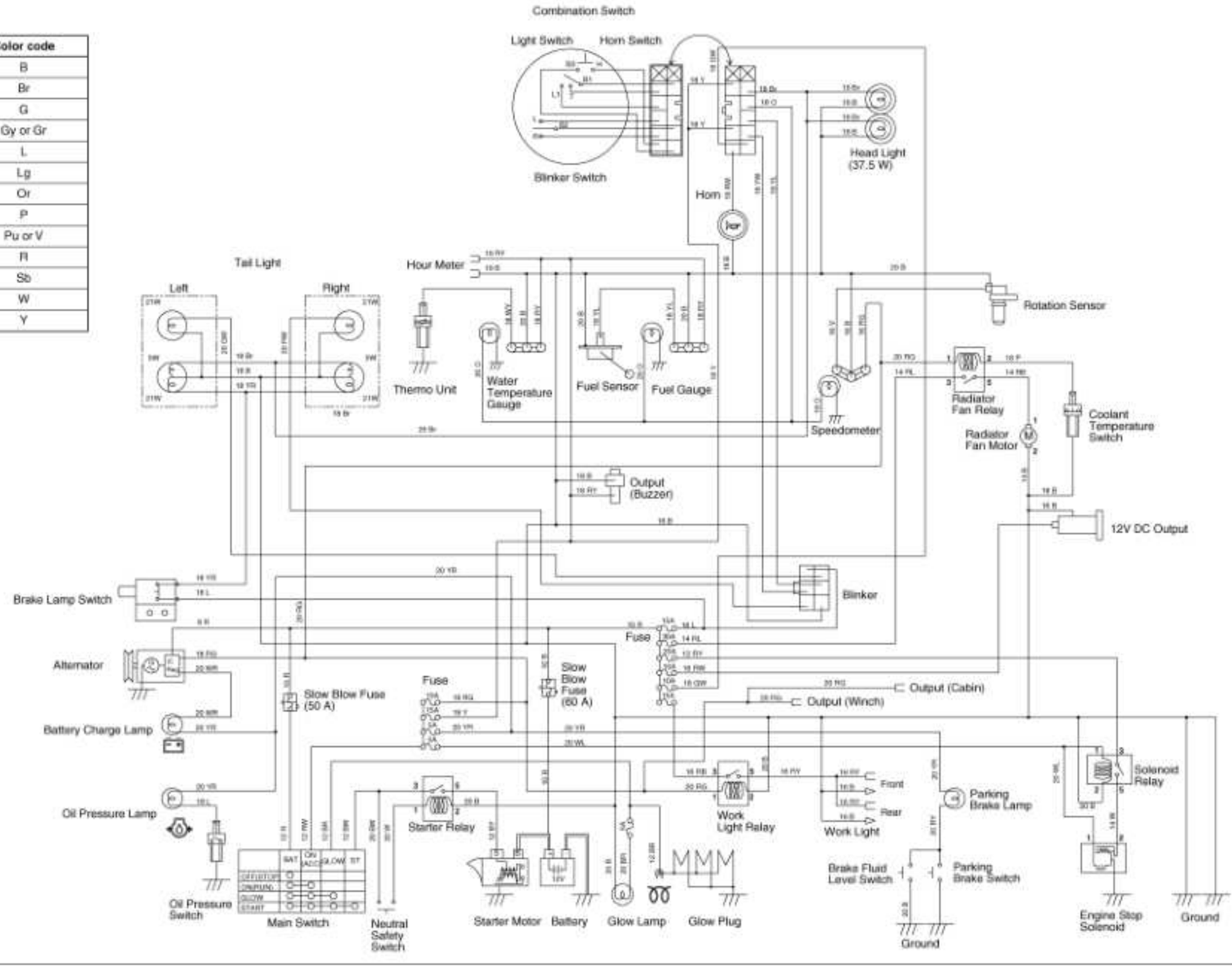
(1) Lower Bush Tool 1
(2) Lower Bush Tool 2
(3) Lower Bush Tool 3
(4) Lower Bush Tool 4
(5) Rubber Bush

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1. WIRING DIAGRAM

Color of wiring	Color code
Black	B
Brown	Br
Green	G
Gray	Gy or Gr
Blue	L
Light Green	Lg
Orange	Or
Pink	P
Purple	Pu or V
Red	R
Sky Blue	Sb
White	W
Yellow	Y



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