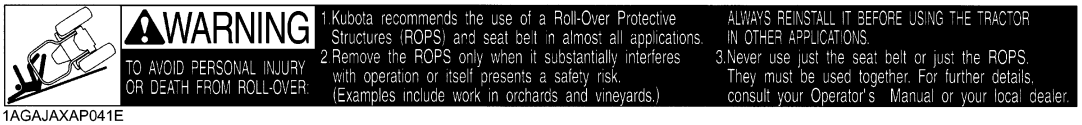
SAFETY DECALS

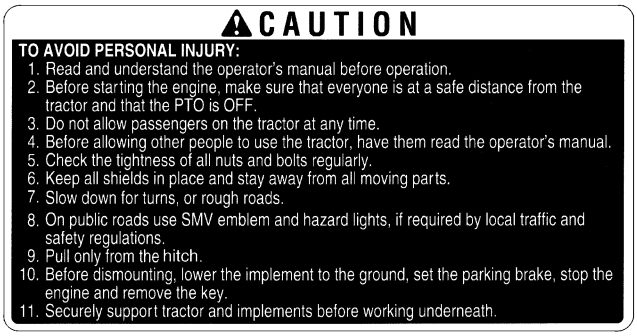
The following safety decals are installed on the machine.
If a decal becomes damaged, illegible or is not on the machine, replace it. The decal part number is listed in the parts list.

(1) Part No. K2581-6557-1



1AGAJAXAP041E

(2) Part No. K2581-6548-1



1AGAJAXAP042E

(3) Part No. 6C140-4746-1

1AGAJAXAP045E

(4) Part No. K2581-6552-1

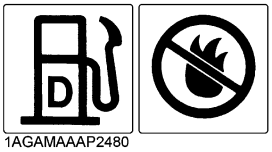
Do not put hands under the rear fender.

1AGAJAXAP047E

(5) Part No. K2581-6549-1

Diesel fuel only

No fire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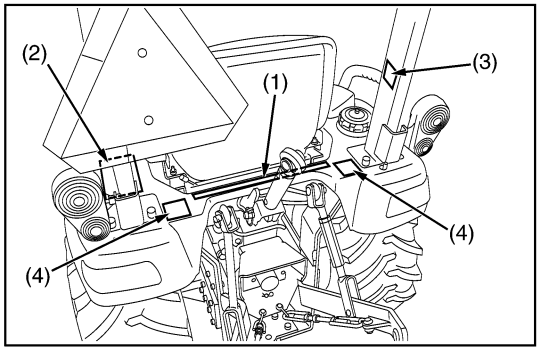

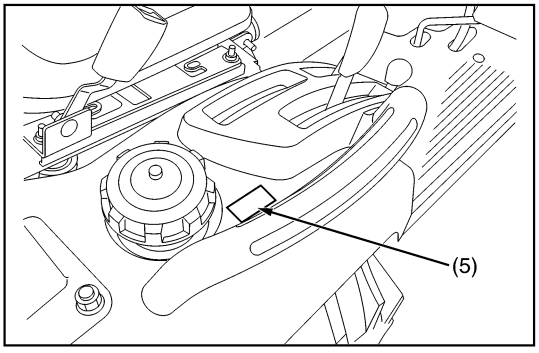

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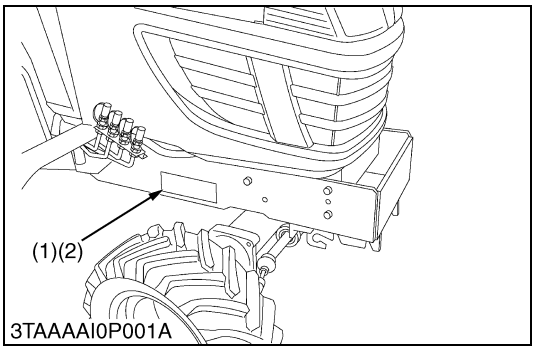
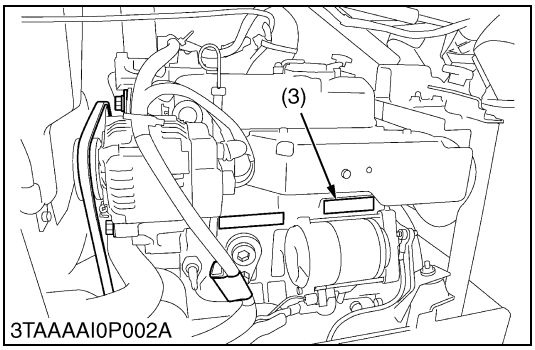
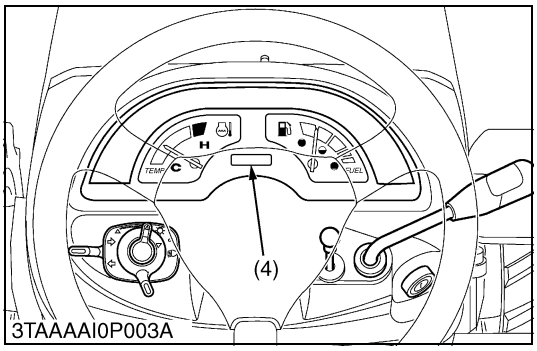
1. TRACTOR IDENTIFICATION

[1] SERIAL NUMBER





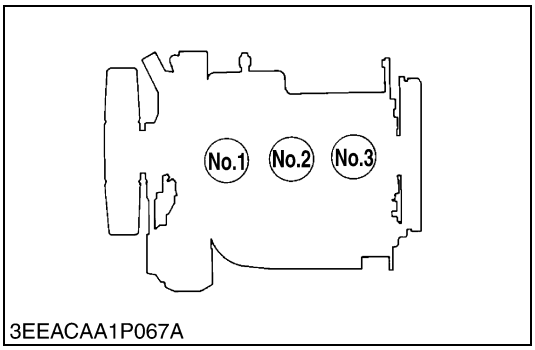


When contacting your local KUBOTA distributor, always specify engine serial number, tractor serial number and hour meter reading.

(1) Tractor Identification Plate
(2) Tractor Serial Number
(3) Engine Serial Number
(4) Hour Meter

W1010590

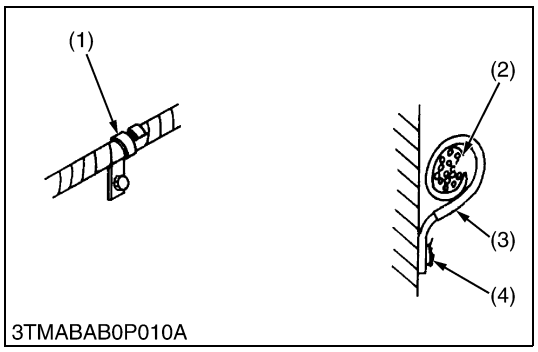
[2] CYLINDER NUMBER



The cylinder numbers of KUBOTA diesel engine are designated as shown in the figure.

The sequence of cylinder numbers is given as No.1, No.2 and No.3 starting from the gear case side.

W1011077



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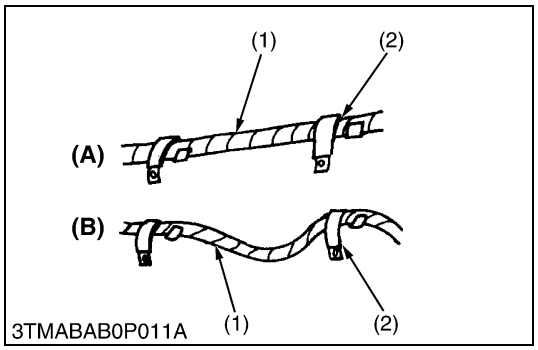
- Securely clamp, being careful not to damage wiring.

(1) Clamp
• Wind Clamp Spirally
(2) Wire Harness
(3) Clamp
(4) Welding Dent

W10114580

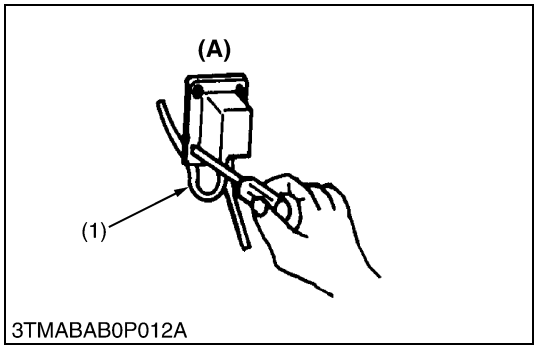


3TMABAB0P011A

- Clamp wiring so that there is no twist, unnecessary sag, or excessive tension, except for movable part, where sag be required.

(1) Wiring
(2) Clamp
(A) Correct
(B) Incorrect

W10115870



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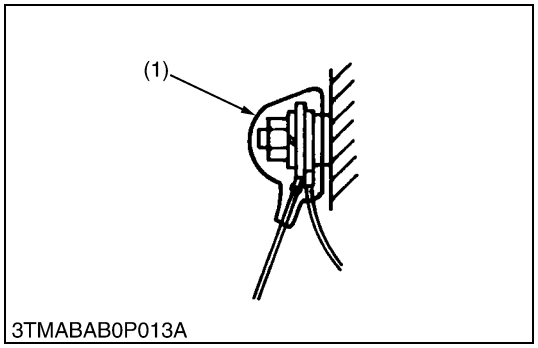
- In installing a part, take care not to get wiring caught by it.

(1) Wiring
(A) Incorrect

W10116700



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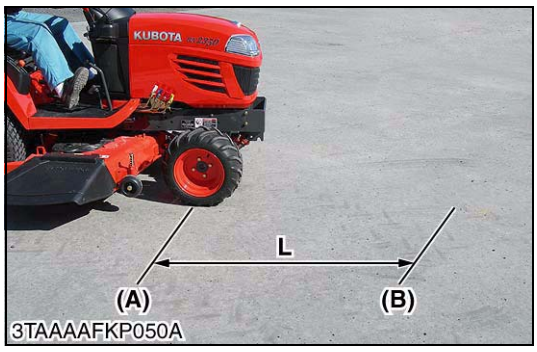
- After installing wiring, check protection of terminals and clamped condition of wiring, only connect battery.

(1) Cover
• Securely Install Cover

W10117350



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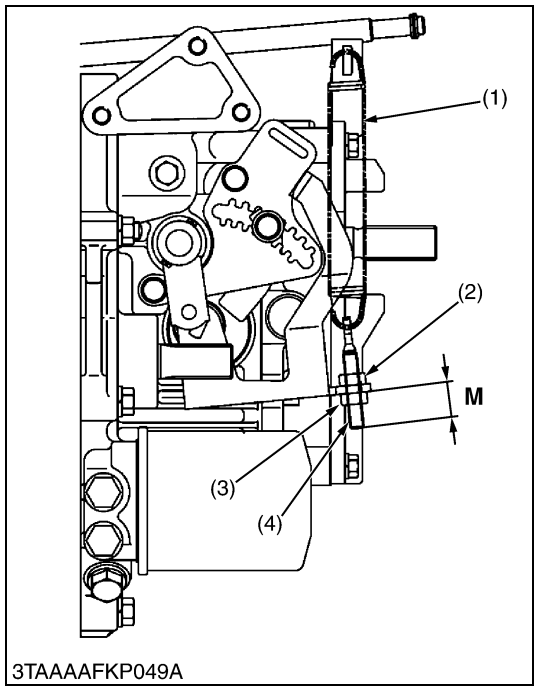

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Adjusting HST Neutral Spring (for Dynamic Braking)

WARNING

- **Do not operate if tractor move on level ground with foot off speed control pedal.**
- **If tractor moves on level ground with foot off the pedal, or, if the pedal is too slow in returning to "NEUTRAL" position when removing the foot from the pedal, adjust the HST neutral spring.**

The HST neutral spring located under the front right side of the fender can adjust returning speed of speed control pedal.

Since the HST neutral spring tension is weakened, the HST tension should be checked and adjusted every 100 hours.

1. Checking the HST neutral spring tension : Dynamic braking
   - Start the engine and hold the maximum engine speeds.
   - Operate the machine on the concrete level ground.
   - Shift the range gear shift lever to "**High**" position.
   - Depress the speed control pedal to "**Forward**".
   - Release the foot from the speed control pedal.
   - Check the distance between the foot releasing point and the machine stopping point.
   - If the distance is more than approximately 3 m (9.8 feet), strengthen the HST neutral spring tension so that the machine will stop in approximately 3 m (9.8 feet) after releasing the foot from the speed control pedal.

(Reference)

Distance (**L**) between the foot releasing point and the machine stopping point	Reference	Approximately 3 m (9.8 feet)

2. Remove the step from the machine.
   - Loosen the lock nut (2).
   - Turn the adjusting nut (3) half turn to pull the HST neutral spring (1).
   - Tighten and lock the lock nut (2).
   - Start the engine and check dynamic brake as mentioned former.
   - If the machine will not stop with dynamic brake in approximately 3 m (9.8 feet), adjust the neutral spring again.

(Reference)

Length (**M**) of adjusting rod at shipping the machine from the factory	Reference	10 mm 0.39 in.

(1) HST Neutral Spring
(2) Lock Nut
(3) Adjusting Nut
(4) Adjusting Rod

(A) Foot Releasing Point
(B) Machine Stopping Point
L : Distance between Foot Releasing Point and the Machine Stopping Point
M : Length of Adjusting Rod from Stay

W1079634

Implement		Remarks	BX1860	BX2360	BX2660
Mower	Mid-Mount	Max. Cutting Width	1370 mm (54 in.)	1520 mm (60 in.)	
		Max.Weight	95 kg (210 lbs)	115 kg (254 lbs)	140 kg (309 lbs)
	Rotary-Cutter (1 Blade)	Max. Cutting Width	1070 mm (42 in.)		
		Max.Weight	140 kg (300 lbs)		
	Rear-Mount (2 or 3 Blade)	Max. Cutting Width	1220 mm (48 in.)	1520 mm (60 in.)	
		Max.Weight	115 kg (250 lbs)	140 kg (300 lbs)	
	Flail Mower	Max. Cutting Width	1070 mm (42 in.)		
	Sickle Bar	Max. Cutting Width	1220 mm (48 in.)		
Rotary Tiller		Max. Tilling Width	1070 mm (42 in.)		
		Max. Weight	170 kg (375 lbs)		
Bottom Plow		Max. Size	12 in. × 1	14 in. × 1	
Disc Plow		Max. Size	22 in. × 1		
Cultivator		Max. Width	1220 mm (48 in.) 1 Row		
Disc Harrow		Max. Harrowing Width	1220 mm (48 in.)	1370 mm (54 in.)	
		Max. Weight	120 kg (265 lbs)	140 kg (300 lbs)	
Sprayer		Max. Tank Capacity	150 L (40 U.S.gals, 33 Imp.gals)		
Front Blade		Max. Cutting Width	1370 mm (54 in.)	1520 mm (60 in.)	
		Sub Frame	Necessary		
Rear Blade		Max. Cutting Width	1370 mm (54 in.)	1520 mm (60 in.)	
		Max. Weight	140 kg (300 lbs)	160 kg (350 lbs)	
Front Loader		Max. Lifting Capacity	200 kg (440 lbs)	240 kg (530 lbs)	
		Max. Width	1220 mm (48 in.)		
Box Blade		Max. Cutting Width	1220 mm (48 in.)		
		Max. Weight	170 kg (375 lbs)		
Snow Blower (Front)		Max. Working Width	1270 mm (50 in.)		
		Max. Weight	160 kg (350 lbs)		
		Sub Frame	Necessary		
Post Hole Digger		Digging Depth	1140 mm (45 in.)		
Rotary Broom		Cleaning Width	1190 mm (47 in.)		
Trailer		Max. Load Capacity	800 kg (1765 lbs)		

■ **NOTE**
- **Backhoe cannot be attached.**
- **Implement size may very depending on soil operating conditions.**
- **Reduce speed and trailer loads when operating in slippery conditions or when operating on slopes and utilize front wheel drive.**

W1012736

ENGINE BODY (Continued)

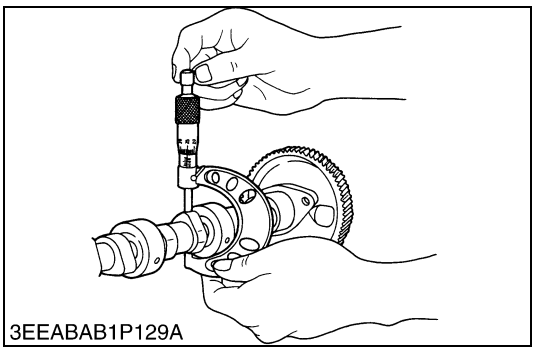
Item		Factory Specification	Allowable Limit
Crankshaft to Crankshaft Bearing 2	Oil Clearance	0.034 to 0.095 mm 0.0014 to 0.0037 in.	0.20 mm 0.0079 in.
Crankshaft Journal	O.D.	47.934 to 47.950 mm 1.8872 to 1.8877 in.	–
Crankshaft Bearing 2	I.D.	47.984 to 48.029 mm 1.8892 to 1.8908 in.	–
Crankshaft to Crankshaft Bearing 3	Oil Clearance	0.034 to 0.098 mm 0.0014 to 0.0038 in.	0.20 mm 0.0079 in.
Crankshaft Journal	O.D.	51.921 to 51.940 mm 2.0442 to 2.0448 in.	–
Crankshaft Bearing 3	I.D.	51.974 to 52.019 mm 2.0463 to 2.0479 in.	–
Crankpin to Crankpin Bearing	Oil Clearance	0.029 to 0.091 mm 0.0012 to 0.0035 in.	0.20 mm 0.0079 in.
Crankpin	O.D.	39.959 to 39.975 mm 1.5732 to 1.5738 in.	–
Crankpin Bearing	I.D.	40.040 to 40.050 mm 1.5764 to 1.5767 in.	–
Crankshaft	Side Clearance	0.15 to 0.31 mm 0.0059 to 0.012 in.	0.50 mm 0.020 in.
Cylinder Liner	I.D.	76.000 to 76.019 mm 2.9922 to 2.9928 in.	76.15 mm 2.998 in.
Cylinder (Oversized)		76.500 to 76.519 mm 3.0119 to 3.0125 in.	76.65 mm 3.018 in.

W10138740

LUBRICATING SYSTEM

Engine Oil Pressure	At Idle Speed	More than 49 kPa 0.50 kgf/cm^2 7.1 psi	–
	At Rated Speed	197 to 441 kPa 2.00 to 4.50 kgf/cm^2 28.5 to 64.0 psi	147 kPa 1.50 kgf/cm^2 21.3 psi
Inner Rotor to Outer Rotor	Clearance	0.060 to 0.18 mm 0.0024 to 0.0071 in.	–
Outer Rotor to Pump Body	Clearance	0.100 to 0.180 mm 0.00394 to 0.00708 in.	–
Inner Rotor to Cover	Clearance	0.025 to 0.075 mm 0.00099 to 0.0029 in.	–

W10139730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Cam Height

1. Measure the height of the cam at its highest point with an outside micrometer.
2. If the measurement is less than the allowable limit, replace the camshaft.

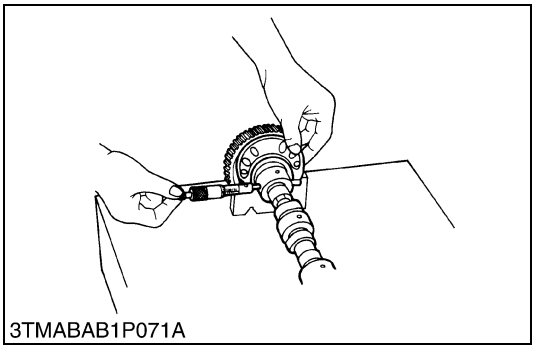
[BX1860, BX2360]

Cam height of intake and exhaust	Factory spec.	26.88 mm 1.058 in.
	Allowable limit	26.83 mm 1.056 in.

[BX2660]

Cam height of intake	Factory spec.	28.80 mm 1.134 in.
	Allowable limit	28.75 mm 1.132 in.
Cam height of exhaust	Factory spec.	29.00 mm 1.142 in.
	Allowable limit	28.95 mm 1.140 in.

W10297880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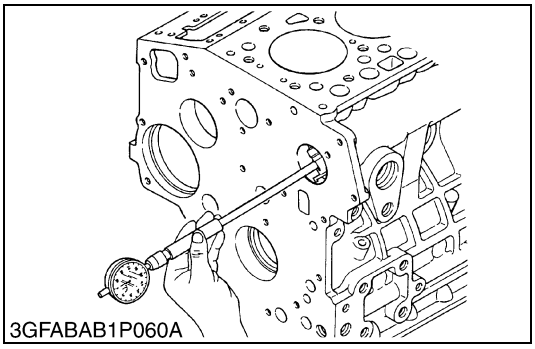
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Oil Clearance of Camshaft Journal

1. Measure the camshaft journal O.D. with an outside micrometer.
2. Measure the cylinder block bore I.D. for camshaft with a cylinder gauge, and calculate the oil clearance.
3. If the oil clearance exceeds the allowable limit, replace the camshaft.

[BX1860, BX2360]

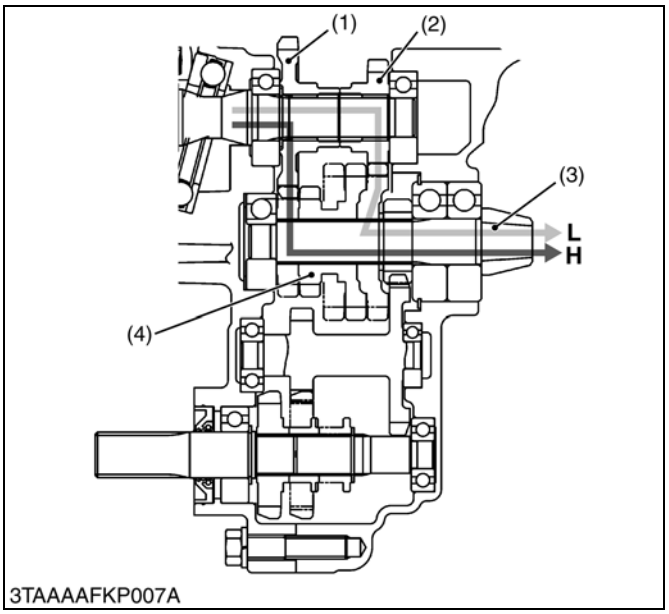
Oil clearance of camshaft journal	Factory spec.	0.050 to 0.091 mm 0.0020 to 0.0035 in.
	Allowable limit	0.15 mm 0.0059 in.
Camshaft journal O.D.	Factory spec.	32.934 to 32.950 mm 1.2967 to 1.2972 in.
Camshaft bearing I.D. (Cylinder block bore I.D.)	Factory spec.	33.000 to 33.025 mm 1.2993 to 1.3001 in.

[BX2660]

Oil clearance of camshaft journal	Factory spec.	0.050 to 0.091 mm 0.0020 to 0.0035 in.
	Allowable limit	0.15 mm 0.0059 in.
Camshaft journal O.D.	Factory spec.	35.934 to 35.950 mm 1.4147 to 1.4153 in.
Camshaft bearing I.D. (Cylinder block bore I.D.)	Factory spec.	36.000 to 36.025 mm 1.4173 to 1.4183 in.

W10299330

[2] RANGE GEAR SHIFT SECTION



Two kinds of power flow are selected by operating the range gear shift lever to shift the 16T-24T shifter gear (4) on the spiral bevel gear shaft (3).

■ **Low Range**

17T Gear Shaft (2) → Shifter Gear (24T) (4) → Spiral Bevel Pinion Shaft (3).

■ **High Range**

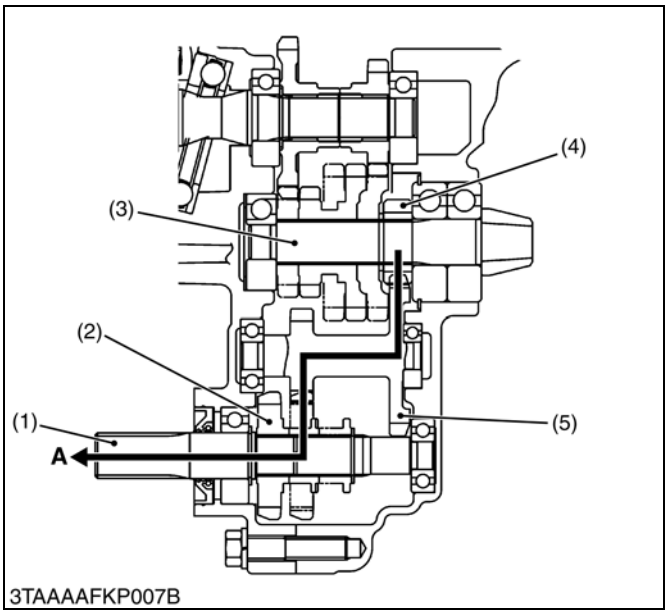
25T Gear (1) → Shifter Gear (16T) (4) → Spiral Bevel Pinion Shaft (3).

(1) 25T Gear
(2) 17T Gear
(3) Spiral Bevel Pinion Shaft
(4) 16T-24T Shifter Gear

L : Low Range
H : High Range

W1014705

[3] FRONT WHEEL DRIVE SECTION



2-wheel drive or 4-wheel drive is selected by changing the position of 19T shifter gear (2) with the front wheel drive lever.

■ **Front Wheel Drive "Disengaged"**

When the front wheel drive lever is set to **"Disengaged"** position, the 19T shifter gear (2) is neutral and power is not transmitted to the front wheel drive shaft (1).

■ **Front Wheel Drive "Engaged"**

When the front wheel drive lever is set to **"Engaged"** position, the 19T shifter gear (2) slides to the right to engage with 13T-25T gear shaft (5). Therefore, the power from spiral bevel pinion shaft (3) is transmitted to the front wheel drive shaft (1) through the gears.

(1) Front Wheel Drive Shaft
(2) 19T Shifter Gear
(3) Spiral Bevel Pinion Shaft
(4) 12T Gear
(5) 13T-25T Gear Shaft

A : Front Wheel Drive "Engaged"

W1014843

TRAVELLING GEAR SHIFT SECTION

Symptom	Probable Cause	Solution	Reference Page
Noise from Transmission	Transmission oil insufficient	Refill	2-S16
	Gear worn or broken	Replace	–
	Bearings worn	Replace	–
Gear Slip Out of Mesh	Shift fork spring tension insufficient	Replace	2-S39, S40
	Shift fork or shifter worn	Replace	2-S39, S40
	Shift fork bent	Replace	2-S39, S40

W1013580

DIFFERENTIAL GEAR SECTION

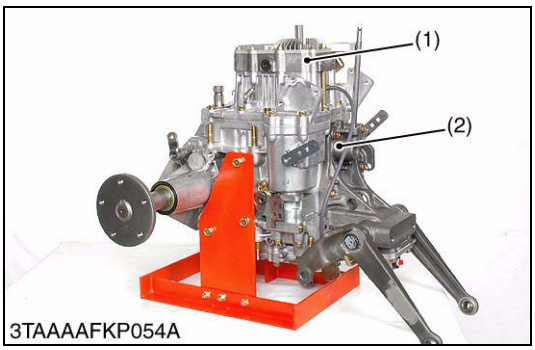
Excessive or Unusual Noise at All Time	Improper backlash between spiral bevel pinion and bevel gear	Adjust	2-S46
	Improper backlash between differential pinion and differential side gear	Adjust	2-S45
	Bearing worn	Replace	–
	Insufficient or improper type of transmission fluid used	Replenish or change	G-7, 2-S16
Noise while Turning	Differential pinions or differential side gears worn or damaged	Replace	2-S35, 2-S40
	Differential lock binding (does not disengaged)	Replace	2-S36
	Bearing worn	Replace	–
Differential Lock Can Not Be Set	Differential lock shift fork damaged	Replace	2-S36
	Differential lock shifter mounting pin damaged	Replace	2-S36
	Differential lock pin damaged	Replace	2-S36
Differential Lock Pedal Does Not Return	Differential lock pedal return spring weaken or damaged	Replace	2-S22
	Differential lock fork shaft rusted	Repair	2-S36

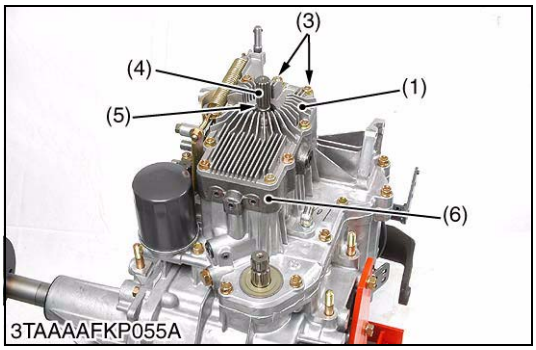
W1013718

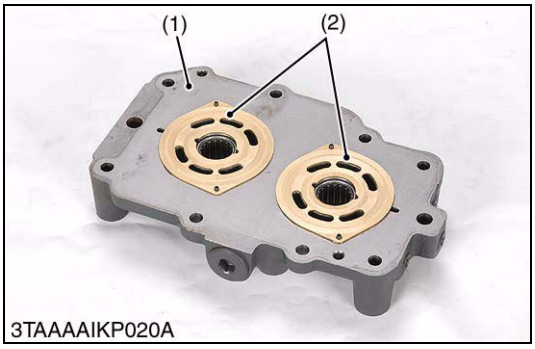
BRAKE SECTION

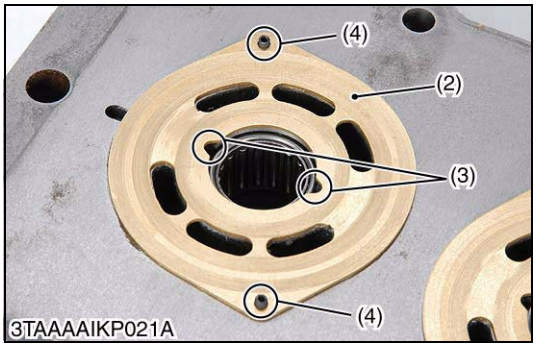
Brake Drags	Brake pedal free travel too small	Adjust	G-22
	Ball holes of actuator for uneven wear	Replace	2-S47
	Brake pedal return spring weaken or broken	Replace	2-S22
	Brake cam rusted	Repair	2-S37
Poor Braking Force	Brake pedal free travel excessive	Adjust	G-22
	Brake disc worn	Replace	2-S37
	Actuator warped	Replace	2-S37
	Brake cam or lever damaged	Replace	2-S37
	Transmission fluid improper	Change	2-S16

W1010878









Oil Cooler Cover

1. Remove the HST front cover.
2. Remove the HST front cover (1) not to damage the oil seal (5).
3. Remove the center section (6).

(When reassembling)

1. Do not damage the oil seal (5).
2. Tighten the HST mounting bolts and the nut to the factory specifications.

Tightening torque	Oil cooler cover mounting bolt (M8)	18 to 20 N·m 1.8 to 2.1 kgf·m 13 to 15 lbf·ft
	Oil cooler cover mounting nut (M8)	18 to 20 N·m 1.8 to 2.1 kgf·m 13 to 15 lbf·ft

(1) HST Front Cover
(2) Transaxle Assembly
(3) Bolt
(4) Internal Cir-clip
(5) Oil Seal
(6) Center Section

W1086612

Center Section and Valve Plates

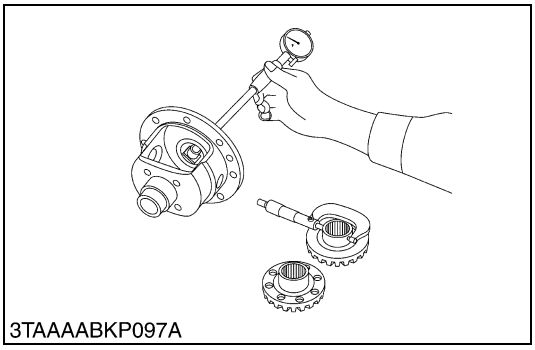
1. Remove the valve plates (2).

(When reassembling)

1. Check the direction of the groove (3).
2. Install the valve plates (2) to the anchor pins (4) securely.
3. Install the groove of the valve plate (pump plate) to the engine side.

(1) Center Section
(2) Valve Plate
(3) Groove
(4) Anchor Pin

W1086956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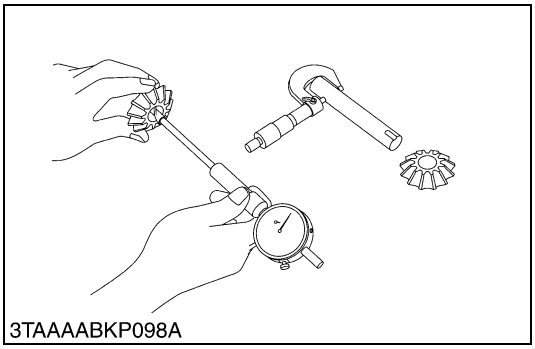
Clearance between Differential Case and Differential Side Gear

1. Measure the differential side gear boss O.D. with an outside micrometer.
2. Measure the differential case I.D. with a cylinder gauge and calculate the clearance.
3. If the clearance exceeds the allowable limit, replace faulty parts.

Clearance between differential case and differential side gear	Factory spec.	0.0500 to 0.151 mm 0.00197 to 0.00594 in.
	Allowable limit	0.30 mm 0.012 in.

Differential case I.D.	Factory spec.	38.000 to 38.062 mm 1.4961 to 1.4985 in.
Differential side gear O.D.	Factory spec.	37.911 to 37.950 mm 1.4926 to 1.4940 in.

W1029693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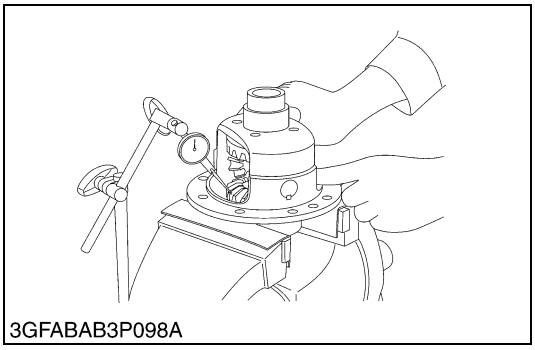
Clearance between Differential Pinion Shaft and Differential Pinion

1. Measure the differential pinion shaft O.D. with an outside micrometer.
2. Measure the differential pinion I.D. with a cylinder gauge, and calculate the clearance.
3. If the clearance exceeds the allowable limit, replace faulty parts.

Clearance between differential pinion shaft and differential pinion	Factory spec.	0.0800 to 0.122 mm 0.00315 to 0.00480 in.
	Allowable limit	0.30 mm 0.012 in.

Differential pinion I.D.	Factory spec.	20.060 to 20.081 mm 0.78977 to 0.79059 in.
Differential pinion shaft O.D.	Factory spec.	19.959 to 19.980 mm 0.78579 to 0.78661 in.

W1029832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Backlash between Differential Pinion and Differential Side Gear

1. Secure the differential case with a vise.
2. Set the dial indicator (lever type) with its finger on the tooth of the differential side gear.
3. Press differential pinion and side gear against the differential case.
4. Hold the differential pinion and move the differential side gear to measure the backlash.
5. If the backlash exceeds the allowable limit, adjust with differential side gear shims.

Backlash between differential pinion and differential side gear	Factory spec.	0.15 to 0.30 mm 0.0059 to 0.011 in.
	Allowable limit	0.40 mm 0.016 in.

(Reference)

- Thickness of shims :
  1.5 mm (0.059 in.), 1.6 mm (0.063 in.), 1.7 mm (0.067 in.)

W1029971

1. TROUBLESHOOTING

Symptom	Probable Cause	Solution	Reference Page
Cannot Be Steered	Steering controller malfunctioning	Replace	4-S5
Hard Steering	Power steering oil improper	Change with specified oil	G-7
	Hydraulic pump malfunctioning	Replace	5-S13
	Flow priority valve malfunctioning	Repair or replace	5-M6
	Steering controller malfunctioning	Replace	4-S5
Steering Force Fluctuates	Steering controller malfunctioning	Replace	4-S5
	Flow priority valve malfunctioning	Replace	5-M6
	Air sucked in pump due to lack of oil	Replenish	G-7
	Air sucked in pump from suction circuit	Repair	5-S13
Steering Wheel Turns Spontaneously When Released	Steering controller malfunctioning	Replace	4-S5
Front Wheels Wander to Right and Left	Steering controller malfunctioning	Replace	4-S5
	Air sucked in pump due to lack of oil	Replenish	G-7
	Air sucked in pump from suction circuit	Repair	5-S13
	Insufficient bleeding	Bleed	G-30
	Cylinder malfunctioning	Repair or replace	4-S8
	Improper toe-in adjustment	Adjust	3-S4
	Tire pressure uneven	Inflate	G-41
Wheels Are Turned to a Direction Opposite to Steering Direction	Cylinder piping connected in reverse	Repair	4-S6, S7
Steering Wheel Turns Idle in Manual Steering	Insufficient bleeding	Bleed	G-30
	Air sucked in due to lack of oil	Replenish	G-7
Noise	Air sucked in pump due to lack of oil	Replenish	G-7
	Air sucked in pump from suction circuit	Repair	5-S13
	Pipe deformed	Replace	–
Oil Temperature Increases Rapidly	Steering controller (relief valve) malfunctioning	Replace	4-S5

W1014322

(2) Hydraulic Cylinder


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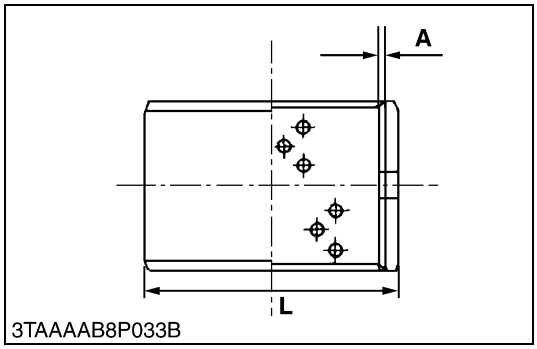

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Hydraulic Cylinder Bore

1. Check the cylinder internal surface for scoring or damage.
2. Measure the cylinder I.D. with a cylinder gauge.
3. If the measurement exceeds the allowable limit, replace the hydraulic cylinder block.

Cylinder I.D.	Factory spec.	80.05 to 80.15 mm 3.152 to 3.155 in.
	Allowable limit	80.20 mm 3.157 in.

W10171300

Hydraulic Arm Shaft Bushing

1. Visually inspect the DX bushings for signs of wear or damage. (The DX bushing tends to show concentrated wear.)
2. If the DX bushing is worn beyond the alloy thickness (**A**), replace it.

(Reference)

Hydraulic arm shaft bushing	Alloy thickness (**A**)	0.57 mm 0.022 in.

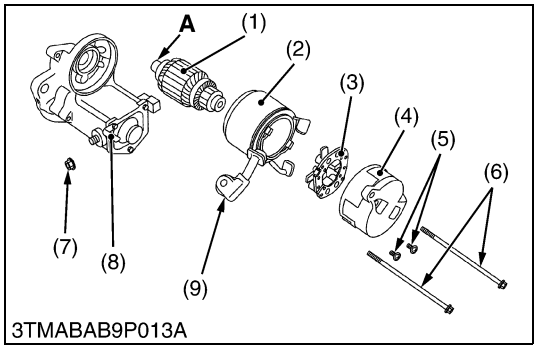
Hydraulic arm shaft	LH	O.D.	31.925 to 31.950 mm 1.2569 to 1.2578 in.
	RH	O.D.	29.925 to 29.950 mm 1.1782 to 1.1791 in.

A : Alloy Thickness **L : Outside Diameter**

W1016329

[2] DISASSEMBLING AND ASSEMBLING

(1) Starter



Motor

1. Disconnect the connecting lead (9) from the magnet switch (8).
2. Remove the screws (6), and then separate the end frame (4), yoke (2) and armature (1).
3. Remove the two screws (5), and then take out the brush holder (3) from the end frame (4).

(When reassembling)

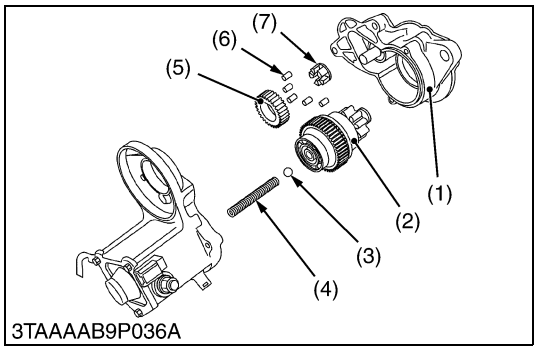
- Apply grease to the spline teeth (**A**) of the armature (1).

Tightening torque	Nut (7)	5.9 to 11.8 N·m 0.6 to 1.2 kgf·m 4.3 to 8.7 lbf·ft

(1) Armature
(2) Yoke
(3) Brush Holder
(4) End Frame
(5) Screw
(6) Screw
(7) Nut
(8) Magnet Switch
(9) Connecting Lead

A : Spline Teeth

W1016288



Magnet Switch

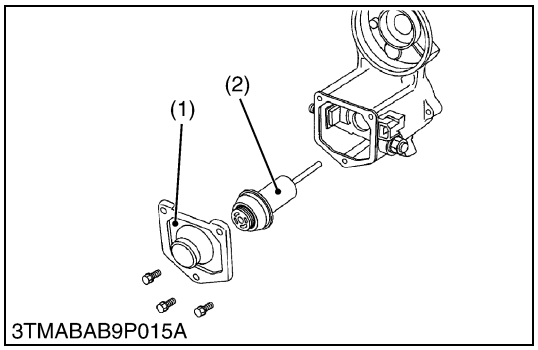
1. Remove the drive end frame (1) mounting screws.
2. Take out the overrunning clutch (2), ball (3), spring (4), gears (5), rollers (6) and retainer (7).

(When reassembling)

- Apply grease to the gear teeth of the gears (5) and overrunning clutch (2), and ball (3).

(1) Drive End Frame
(2) Overrunning Clutch
(3) Ball
(4) Spring
(5) Gear
(6) Roller
(7) Retainer

W1016728



Plunger

1. Remove the end cover (1).
2. Take out the plunger (2).

(1) End Cover
(2) Plunger

W1016883

(2) Alternator

Alternator

1. Check the battery charging voltage while engine runs.
2. Check the increasing voltage when increasing the engine revolution.
3. If the battery charging voltage does not increase, the alternator is faulty.
4. Replace the alternator as an assembly.

(1) Battery

W1058597