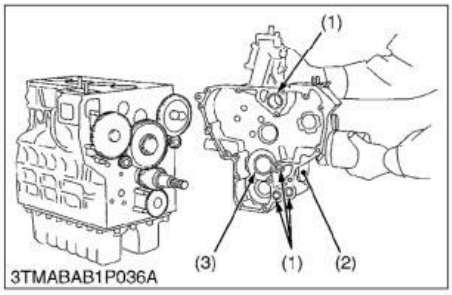
WSM

WORKSHOP MANUAL
TRACTOR

MX5000

Kubota

KiSC issued 04, 2006 A



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Gear Case

1. Remove the hour meter gear case.
2. Remove the gear case (2).
3. Remove the O-rings (1).

(When reassembling)

- Apply liquid gasket (Three Bond 1215 or equivalent) to both side of hour meter gear case gasket.
- Check to see if there are four O-rings (1) inside the gear case (2).
- Apply a thin film of engine oil to the oil seal (3), and install it, noting the lip come off.
- Before installing the gear case gasket, apply a non-drying adhesive.

(1) O-ring
(2) Gear Case
(3) Oil Seal

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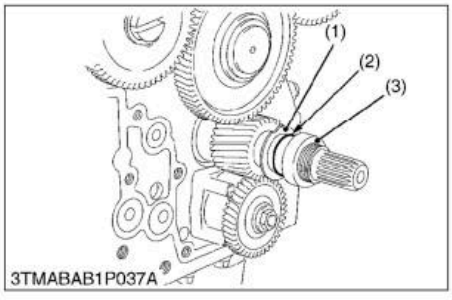

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Crankshaft Oil Slinger

1. Remove the crankshaft collar (3).
2. Remove the O-ring (2).
3. Detach the crankshaft oil slinger (1).

(When reassembling)

- Insert the crankshaft collar (3) after install the gear case to cylinder body.

(1) Crankshaft Oil Slinger
(2) O-ring
(3) Crankshaft Collar

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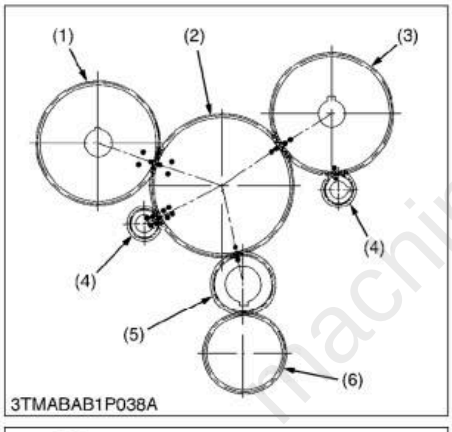

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Idle Gear

1. Remove the external snap ring.
2. Detach the idle gear collar.
3. Detach the idle gear.

(When reassembling)

- Check to see each gear is aligned with its aligning mark:
  1 Mark : Idle gear and crank gear, cam gear and balancer gear
  2 Marks : Cam gear and idle gear
  3 Marks : Idle gear and injection pump gear
  4 Marks : Idle gear and balancer gear

(1) Injection Pump Gear
(2) Idle Gear
(3) Cam Gear
(4) Balancer Gear
(5) Crank Gear
(6) Oil Pump Drive Gear

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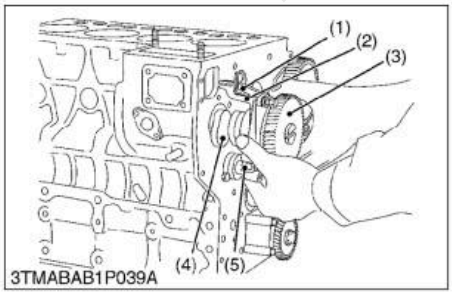

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Fuel Camshaft and Fork Lever Assembly

1. Remove the pump drive gear from fuel camshaft.
2. Detach the fuel camshaft stopper.
3. Remove the three fork lever holder mounting screws.
4. Draw out the fuel camshaft assembly (3), (4) and fork lever assembly (1), (2), (5) at the same time.

(When reassembling)

- After installation, check to see that the fork lever 1 (1) and 2 (2) are fixed to the fork lever shaft, and that they can turn smoothly in the holder (5).

(1) Fork Lever 1
(2) Fork Lever 2
(3) Injection Pump Gear
(4) Fuel Camshaft
(5) Fork Lever Holder

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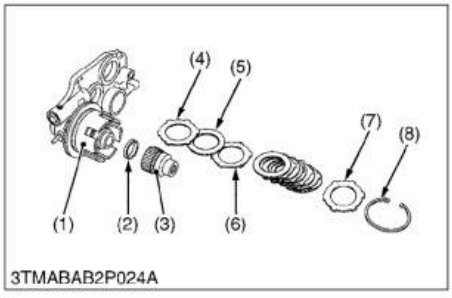

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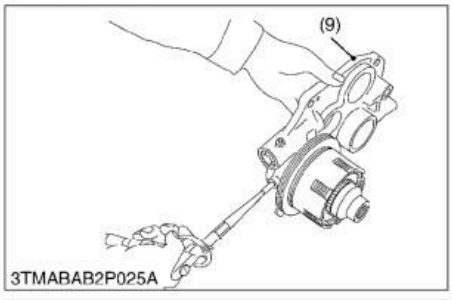

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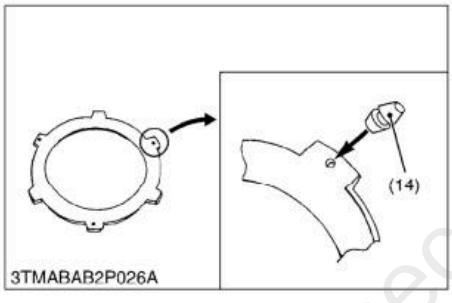

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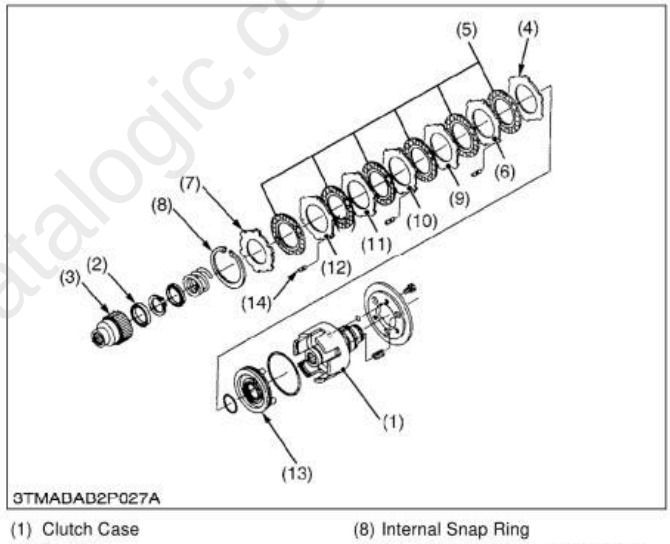
Clutch Hub and Clutch Discs

1. Remove the internal snap ring (8), and then take out the clutch discs (5), the back plate (7), the steel plates (6), (9), (10), (11) and (12), the hub (3) and the bearings (2).

(When reassembling)

- Install the clutch discs (5) and steel plates (12), (11), (10), (9) and (6) mutually. (Refer to figure below.)
- Do not confuse the two types steel plates. The steel plates with the plug rubbers (14) are (6), (10), (12) and without plug rubbers (14) are (9) and (11).
- Do not confuse the back plate (7) and steel plates. The back plate (7) is thicker than the steel plates.
- Assemble the plug rubbers portion of the three steel plates (6), (10) and (12) are same positions while assembling them. (Refer to figure below.)
- Apply enough transmission fluid to the discs (5).
- Confirm the moving of the piston (13) smoothly when pressure air at 0.29 to 0.39 MPa (3 to 4 kgf/cm^2, 42 to 57 psi) is sent to clutch pack. (Refer to the figure left.)



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(1) Clutch Case
(2) Bearing
(3) Hub
(4) Steel Plate (without Plug Rubber)
(5) Clutch Disc
(6) Steel Plate (with Plug Rubber)
(7) Back Plate
(8) Internal Snap Ring
(9) Steel Plate (without Plug Rubber)
(10) Steel Plate (with Plug Rubber)
(11) Steel Plate (without Plug Rubber)
(12) Steel Plate (with Plug Rubber)
(13) Piston
(14) Plug Rubber

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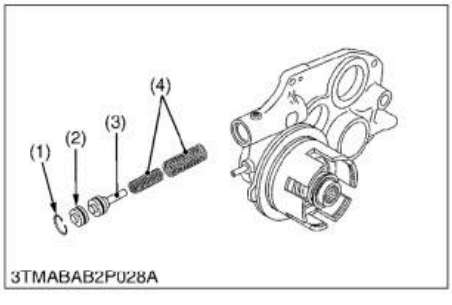

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Modulating Valve

1. Remove the internal snap ring (1).
2. Remove the spring seat (2).
3. Draw out the spring (3) and piston (4).

(1) Internal Snap Ring
(2) Spring Seat
(3) Spring
(4) Piston

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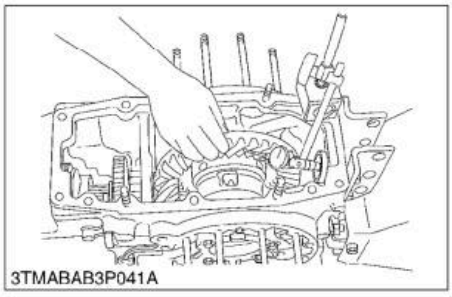
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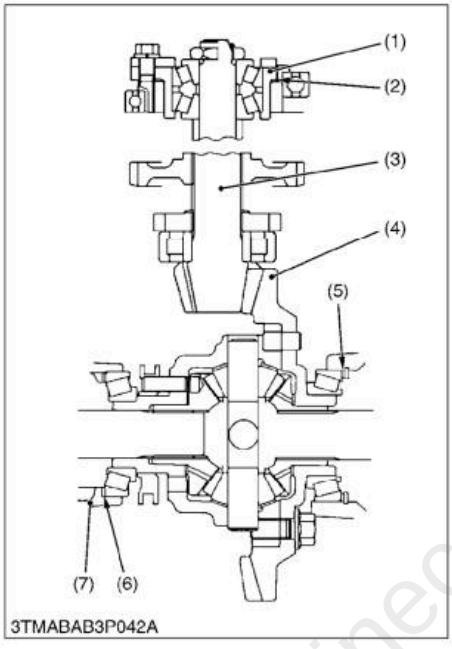

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Backlash and Tooth Contact between Spiral Bevel Gear and Spiral Bevel Pinion Shaft

1. Set the dial indicator (lever type) with its finger on the tooth surface.
2. Measure the backlash by fixing the spiral bevel pinion shaft (3) and moving the spiral bevel gear (4) by hand.
3. When the backlash is too large, decrease the number of shims (5) in the side of the spiral bevel gear, and insert the shims (6) of the same thickness as the removed ones to the opposite side. When the backlash is too small, do the opposite way of exceed backlash.
4. Adjust the backlash properly by repeating the above procedure.
5. Apply red lead lightly over several teeth at three positions equally spaced on the spiral bevel gear.
6. Turn the spiral bevel pinion shaft, while pressing a wooden piece against the perphery on the spiral bevel gear.
7. Check the tooth contact. If not proper, adjust according to the instructions next page.

Backlash between spiral bevel gear and spiral bevel pinion shaft	Factory spec.	0.15 to 0.30 mm 0.006 to 0.012 in.
	Allowable limit	0.4 mm 0.016 in.

(Reference)

- Thickness of shims (2) :
  0.1 mm (0.004 in.) 0.2 mm (0.008 in.) 0.5 mm (0.020 in.)
- Thickness of shims (5) :
  0.4 mm (0.016 in.) 0.7 mm (0.028 in.) 1.0 mm (0.039 in.)
  0.5 mm (0.020 in.) 0.8 mm (0.031 in.) 1.2 mm (0.047 in.)
  0.6 mm (0.024 in.) 0.9 mm (0.035 in.) 1.4 mm (0.055 in.)
- Thickness of shims (6)
  0.4 mm (0.016 in.) 0.8 mm (0.031 in.) 1.2 mm (0.047 in.)
  0.6 mm (0.024 in.) 1.0 mm (0.039 in.) 1.6 mm (0.063 in.)

(1) Pinion Bearing Case
(2) Shim
(3) Spiral Bevel Pinion
(4) Spiral Bevel Gear
(5) Shim
(6) Shim
(7) Differential Support

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More than 35 % red lead contact area on the gear tooth surface.
The center of tooth contact at 1/3 of the entire width from the small end.

(A) Proper Contact

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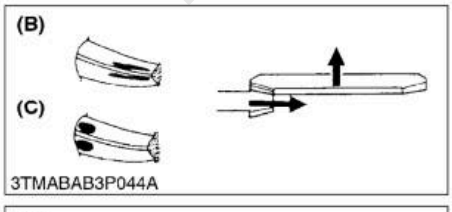

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Replace the adjusting shim (2) with thicker one to move the spiral bevel pinion shaft backward.
For move the spiral bevel gear rightward, reduce right side shim (5) and add shim (6) of the same thickness as the right side to left side.

(B) Shallow Contact **(C) Heel Contact**

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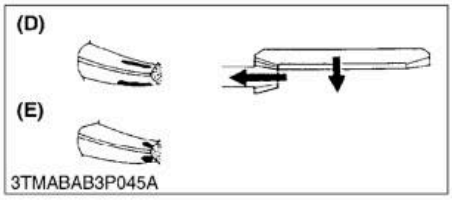

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Replace the shim (5) with a thinner one to move the spiral bevel pinion shaft forward.
For move the spiral bevel gear leftward, reduce left side shim (6) and add shim (5) of the same thickness as the left side to right side.
Repeat above until the proper tooth contact and backlash are achieved.

(D) Deep Contact **(E) Toe Contact**

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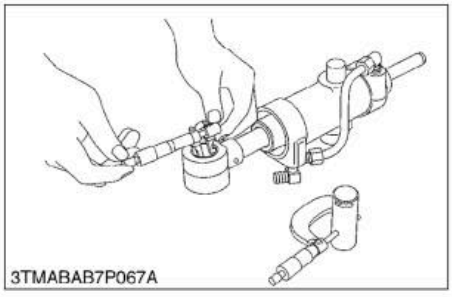
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Clearance between Rod End Shaft and Rod End Bushing

1. Measure the rod end shaft O.D. with an outside micrometer.
2. Measure the rod end bushing I.D. with an inside micrometer, and calculate the clearance.
3. If the clearance exceeds the allowable limit, replace the rod end bushing.

Clearance between rod end shaft and rod end bushing	Factory spec.	0.025 to 0.135 mm 0.00098 to 0.00531 in.
	Allowable limit	0.35 mm 0.0138 in.

Rod end shaft O.D.	Factory spec.	27.950 to 27.975 mm 1.10039 to 1.10138 in.
Rod end bushing I.D.	Factory spec.	28.000 to 28.085 mm 1.10236 to 1.10571 in.

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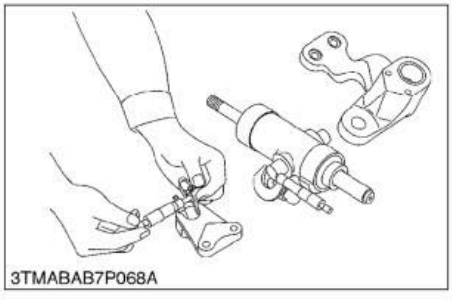
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Clearance between Cylinder Tube Pin and Pitman Arm Bushing

1. Measure the cylinder tube pin O.D. with an outside micrometer.
2. Measure the pitman arm bushing I.D.with an inside micrometer, and calculate the clearance.
3. If the clearance exceeds the allowable limit, replace the pitman arm bushing.

Clearance between cylinder tube pin and pitman arm bushing	Factory spec.	0.020 to 0.122 mm 0.00079 to 0.00480 in.
	Allowable limit	0.35 mm 0.0138 in.

Cylinder tube pin O.D.	Factory spec.	23.959 to 23.980 mm 0.94327 to 0.94409 in.
Pitman arm bushing I.D.	Factory spec.	24.000 to 24.081 mm 0.94488 to 0.91807 in.

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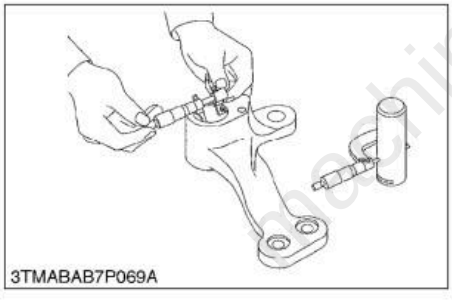
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Clearance between Pitman Arm Shaft and Pitman Arm Bushing

1. Measure the pitman arm shaft O.D. with an outside micrometer.
2. Measure the pitman arm bushings I.D. with an inside micrometer, and calculate the clearance.
3. If the clearance exceeds the allowable limit, replace the pitman arm bushing.

Clearance between pitman arm shaft and pitman arm bushings	Factory spec.	0.025 to 0.135 mm 0.00098 to 0.00531 in.
	Allowable limit	0.35 mm 0.0138 in.

Pitman arm shaft O.D.	Factory spec.	39.950 to 39.975 mm 1.57283 to 1.57382 in.
Pitman arm bushing I.D.	Factory spec.	40.000 to 40.085 mm 1.57480 to 1.57815 in.

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Full Version Available

Kubota MX5000 Tractor Workshop Manual

This is a short preview. The complete manual contains all chapters, wiring diagrams, torque specifications and full service procedures.