WSM

WORKSHOP MANUAL
TRACTOR

M7040DT-SU

Kubota

KiSC issued 01, 2022 A

LUBRICATING SYSTEM

Item		Factory Specification	Allowable Limit
Engine Oil Pressure	At Idle Speed	–	49 kPa 0.5 kgf/cm^2 7 psi
	At Rated Speed	196 to 392 kPa 2.0 to 4.0 kgf/cm^2 28 to 57 psi	147.1 kPa 1.5 kgf/cm^2 21.3 psi
Engine Oil Pressure Switch	Working Pressure	39.2 to 58.8 kPa 0.4 to 0.6 kgf/cm^2 5.6 to 8.4 psi	–
Inner Rotor to Outer Rotor	Clearance	0.03 to 0.09 mm 0.0012 to 0.0035 in.	0.3 mm 0.0118 in.
Outer Rotor to Pump Body	Clearance	0.100 to 0.184 mm 0.0039 to 0.0072 in.	0.3 mm 0.0118 in.
Rotor to Cover	Clearance	0.025 to 0.075 mm 0.0010 to 0.0030 in.	0.225 mm 0.0089 in.
Relief Valve	Working Pressure	885 kPa 9.04 kgf/cm^2 129 psi	–

COOLING SYSTEM

Item		Factory Specification	Allowable Limit
Fan/Air-conditioner Belt (ROPS Model)	Tension	16 to 17 mm / 98 N 0.63 to 0.66 in. / 98 N (10 kgf, 22 lbf)	–
Fan/Air-conditioner Belt (CABIN Model)	Tension	11 to 12 mm / 98 N 0.44 to 0.47 in. / 98 N (10 kgf, 22 lbf)	–
Alternator Belt	Tension	10.0 to 12.0 mm / 98 N 0.394 to 0.472 in. / 98 N (10 kgf, 22 lbf)	–
Radiator Cap	Air Leakage	10 seconds or more 88 → 59 kPa 0.9 → 0.6 kgf/cm^2 13 → 9 psi	–
Radiator	Water Tightness	Water tightness at specified pressure 137 kPa 1.4 kgf/cm^2 20 psi	–
Thermostat	Valve Opening Temperature	74.5 to 78.5 °C 166.1 to 173.3 °F	–
	Valve Opening Temperature (Opened Completely)	90 °C 194 °F	–

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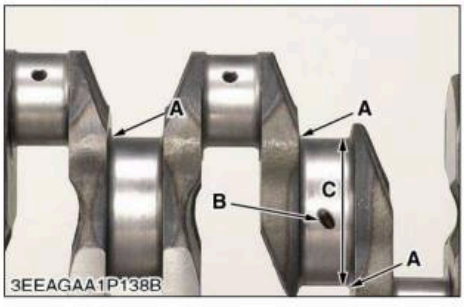

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Oil Clearance between Crankshaft Journal and Crankshaft Bearing

1. Clean the crankshaft journal (2) and crankshaft bearing.
2. Put a strip of press gauge on the center of the journal.

■ **IMPORTANT**

- **Never insert the press gauge into the oil hole of the journal.**

3. Install the crankcase 2 (1) and tighten the crankcase 2 mounting screws to the specified torque, and remove the crankcase 2 (1) again.
4. Measure the amount of the flattening with the scale and get the oil clearance.
5. If the clearance exceeds the allowable limit, replace the crankshaft bearing.

Crankshaft journal O.D.	Factory specification	79.977 to 79.990 mm 3.1487 to 3.1492 in.

Oil clearance between crankshaft journal and crankshaft bearing	Factory specification	0.030 to 0.073 mm 0.0012 to 0.0029 in.
	Allowable limit	0.20 mm 0.0079 in.

(Reference)

- Undersize dimensions of crankshaft journal

Undersize	0.2 mm0.008 in.	0.4 mm0.016 in.
Dimension **A**	3.3 to 3.7 mm radius 0.1299 to 0.1457 in. radius	3.3 to 3.7 mm radius 0.1299 to 0.1457 in. radius
*Dimension **B**	1.0 to 1.5 mm relief 0.0394 to 0.0591 in. relief	1.0 to 1.5 mm relief 0.0394 to 0.0591 in. relief
Dimension **C**	79.777 to 79.790 mm dia. 3.1408 to 3.1413 in. dia.	79.577 to 79.590 mm dia. 3.1330 to 3.1335 in. dia.
The crankshaft journal must be fine-finished to higher than Rmax = 0.8S *Holes to be de-burred and edges rounded with 1.0 to 1.5 mm (0.0394 to 0.0591 in.) relief.		

(1) Crankcase 2
(2) Crankshaft Journal
(3) Crankcase 1

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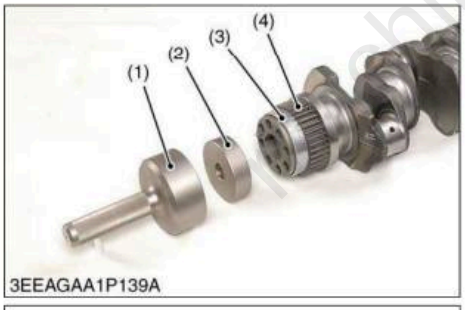

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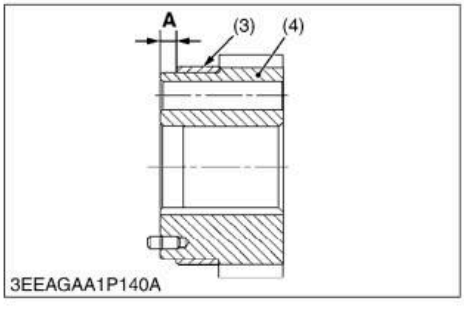

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Replacing Crankshaft Sleeve

1. Remove the used crankshaft sleeve
2. Set the sleeve guide (2) to the crankshaft gear (4).
3. Heat a new sleeve (3) to a temperature between 150 and 200 °C (302 and 392 °F), and fix the sleeve to the crankshaft as shown in figure.
4. Press fit the sleeve using the auxiliary socket for pushing (1). (Refer to "8. SPECIAL TOOLS" at "G. GENERAL" section.)

■ **NOTE**

- **Mount the sleeve with its largely chamfered surface facing outward.**
- **Keep the space (A) between the edge of the crankshaft gear and the crankshaft sleeve.**

(1) Auxiliary Socket for Pushing
(2) Sleeve Guide
(3) Crankshaft Sleeve
(4) Crankshaft Gear

A : More than 6.5 mm (0.256 in.)

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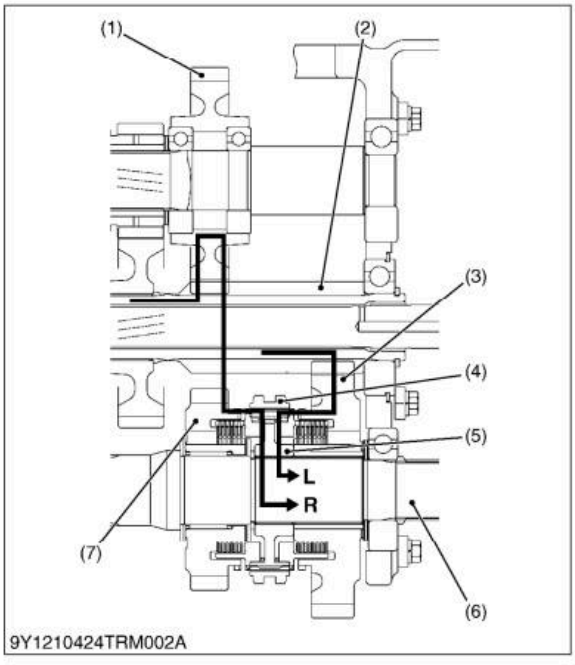
[2] SHUTTLE SHIFT SECTION (LOW-REVERSE)



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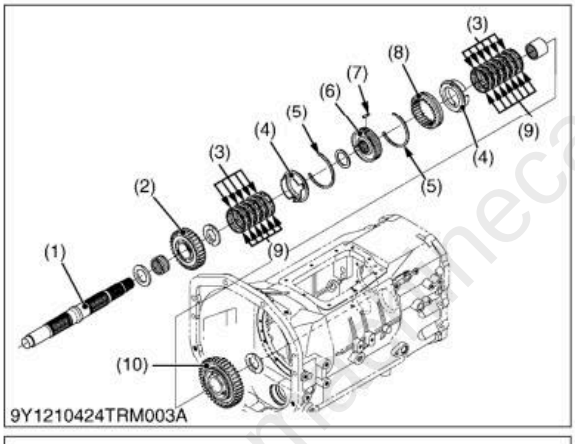

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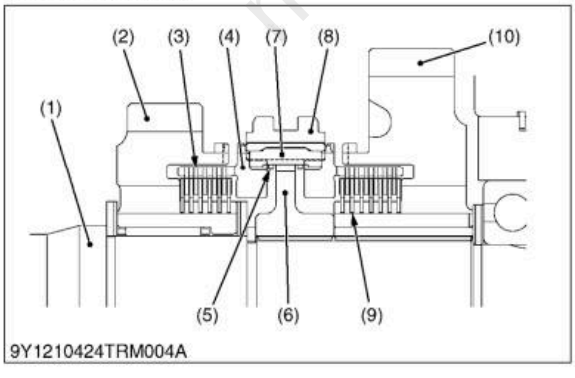

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Shuttle Shift Section

The shuttle shift section allows the operators to change forward and reverse with a auxiliary speed change lever. It is used synchromesh type gear shift.

It also operates as a reduction until when shifting from forward to reverse.

When the auxiliary speed change lever is move to the **L** or **R** position, the shifter (4) is slid to the rear or front by the mechanical linkage to be engaged with the 32T (7) or 41T gear (3).

Then, the power is transmitted to the 3rd shaft (6).

The power is transmitted as follows.

L : Low (Forward)

13T Gear (2) → 41T Gear (3) → Shifter (4) → Hub (5) → 3rd Shaft (6).

R : Reverse

13T Gear (2) → 35T Gear (1) → 32T Gear (7) → Shifter (4) → Hub (5) → 3rd Shaft (6).

(1) 35T Gear
(2) 13T Gear Shaft (2nd Shaft)
(3) 41T Gear
(4) Shifter
(5) Hub
(6) 3rd Shaft
(7) 32T Gear

L : Low (Forward)
R : Reverse

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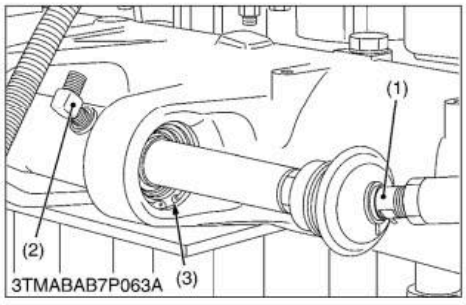
Synchromesh (Disc Type)

The coupling (6) is splined to the 3rd shaft (1) and the shifter (8) is mounted on the coupling. The two synchronizer springs (5) hold the synchronizer keys (7) out against the shifter (8). The coupling (6) each have three slots into which the ends of the synchronizer keys (7) fit. The holder (4) fixed plates (3). The gear (2) and (10) are splined and fixed discs (9). These plates (3) and discs (9) provide the frictional force to synchronize the speed of the 3rd shaft and the gear (1) and (10).

(1) 3rd Shaft
(2) 32T Gear
(3) Plate
(4) Holder
(5) Synchronizer Spring
(6) Coupling
(7) Synchronizer Key
(8) Shifter
(9) Disc
(10) 41T Gear

(To be continued)



Steering Cylinder

1. Remove the tie-rod joint (1) (right and left).
2. Remove the fittings (2) from steering cylinder.
3. Remove the internal snap ring (3).
4. Draw out the steering cylinder to the left.

(When reassembling)

- Apply liquid lock (Three Bond 1372 or equivalent) to the tie-rod joint.
- When reassembling internal circlip (3), it should be positioned so that sharp edge face to outward as shown in the figure.

Tightening torque	Tie-rod and steering cylinder	167 to 196 N·m 17.0 to 20.0 kgf·m 123 to 144 lbf·ft

(1) Tie-rod Joint
(2) Fitting
(3) Internal Snap Ring
(4) Cylinder
(5) Cylinder Rod
(6) Front Axle Case

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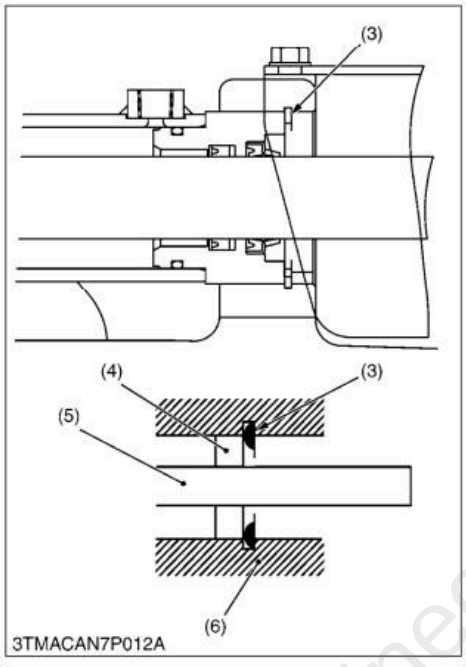

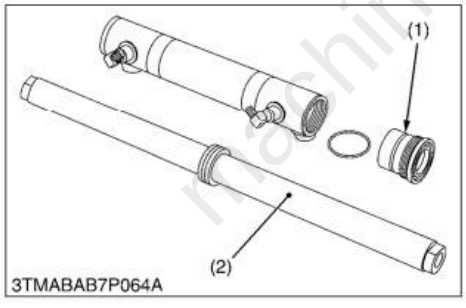

Disassembling Steering Cylinder

1. Remove the guide assembly (1) and remove the piston rod (2).

(When reassembling)

- Apply transmission fluid to the oil seal and O-ring.
- Apply liquid lock (Three Bond 1215 or equivalent) to the joint face of piston rod and tube.

(1) Guide Assembly
(2) Piston Rod

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