

Product: 2009 Kubota WSM M9540 Dual Speed(Supplement) Tractor Service Repair Workshop Manual
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WSM

WORKSHOP MANUAL **TRACTOR**

M9540 DUAL SPEED (SUPPLEMENT)

Kubota

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TO THE READER

In this section, the main additional function and altered position of M9540Dual Speed tractor from M9540-CABIN tractor.

As for the items which are not explained in this section, refer to M8540 and M9540 workshop manual.

■ General

Information on the tractor identification, the general precautions, maintenance check list, check and maintenance and special tools are described.

■ Mechanism

Information on the construction and function are included. This part should be understood before proceeding with troubleshooting, disassembling and servicing.

Refer to Diesel Engine / Tractor Mechanism Workshop Manual (Code No. 9Y021-01870 / 9Y021-18200) for the one which has not been described to this workshop manual.

■ Servicing

Information on the troubleshooting, servicing specification lists, tightening torque, checking and adjusting, disassembling and assembling, and servicing which cover procedures, precautions, factory specifications and allowable limits.

All information illustrations and specifications contained in this manual are based on the latest product information available at the time of publication.

The right is reserved to make changes in all information at any time without notice.

Due to covering many models of this manual, information or picture being used, have not been specified as one model.

March 2009

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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.



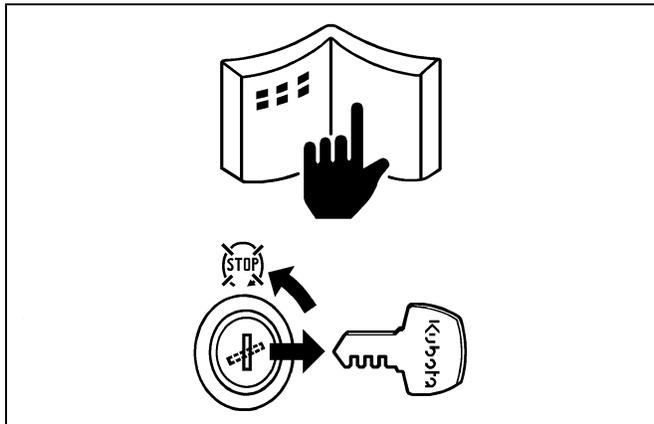
IMPORTANT

: Indicates that equipment or property damage could result if instructions are not followed.



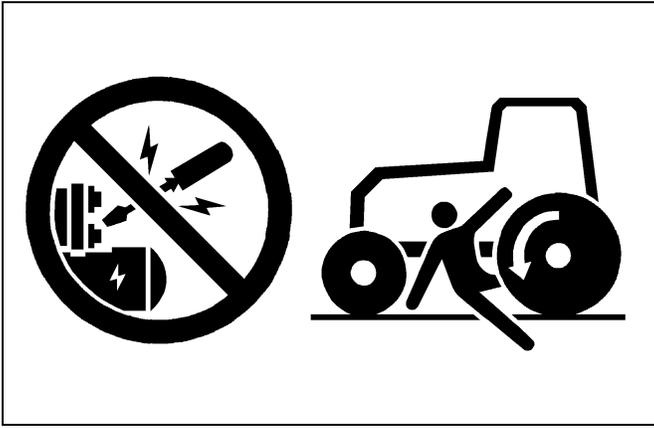
NOTE

: Gives helpful information.



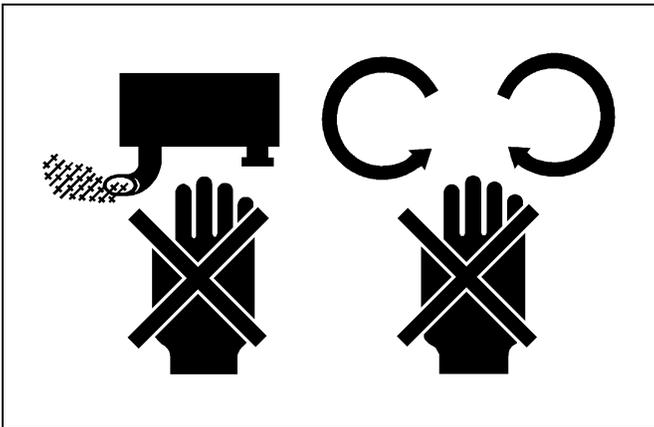
BEFORE SERVICING AND REPAIRING

- 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 firm and level ground, and set the parking brake.
- Lower the implement to the ground.
- Stop the engine, and remove the key.
- Disconnect the battery negative cable.
- Hang a "**DO NOT OPERATE**" tag in operator station.



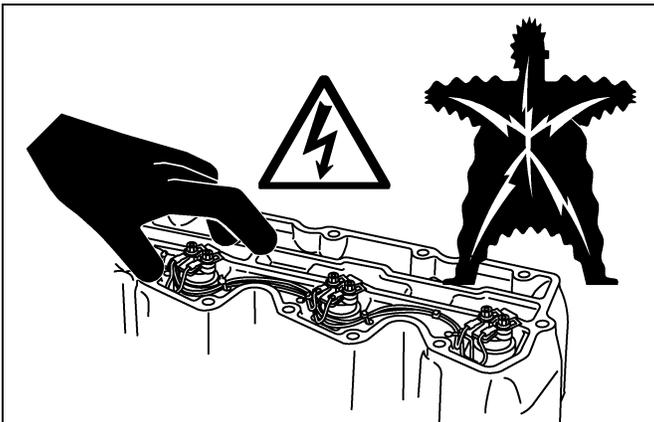
SAFETY STARTING

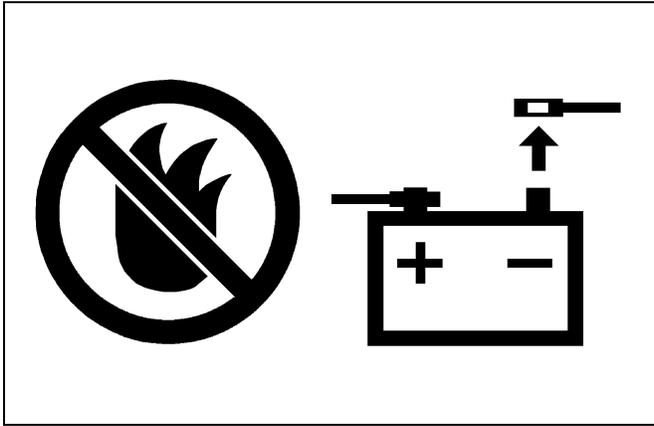
- Do not start the engine by shorting across starter terminals or bypassing the safety start switch.
- Do not alter or remove any part of machine safety system.
- Before starting the engine, make sure that all shift levers are in neutral positions or in disengaged positions.
- Never start the engine while standing on ground. Start the engine only from operator's seat.



SAFETY WORKING

- Do not work on the machine while under the influence of alcohol, medication, or other substances or while fatigued.
- Wear close fitting clothing and safety equipment appropriate to the job.
- Use tools appropriate to the work. Makeshift tools, parts, and procedures are not recommended.
- When servicing is performed together by two or more persons, take care to perform all work safely.
- Do not work under the machine that is supported solely by a jack. Always support the machine by safety stands.
- Do not touch the rotating or hot parts while the engine is running.
- Never remove the radiator cap while the engine is running, or immediately after stopping. Otherwise, hot water will spout out from radiator. Only remove radiator cap when cool enough to touch with bare hands. Slowly loosen the cap to first stop to relieve pressure before removing completely.
- Escaping fluid (fuel or hydraulic oil) under pressure can penetrate the skin causing serious injury. Relieve pressure before disconnecting hydraulic or fuel lines. Tighten all connections before applying pressure.
- Do not open high-pressure fuel system. High-pressure fluid remaining in fuel lines can cause serious injury. Do not disconnect or attempt repair fuel lines, sensors, or any other components between the high-pressure fuel pump and injectors on engines with high pressure common rail fuel system.
- High voltage exceeding 100 V is generated in the ECU, and is applied to the injector. Pay sufficient caution to electric shock when performing work activities.





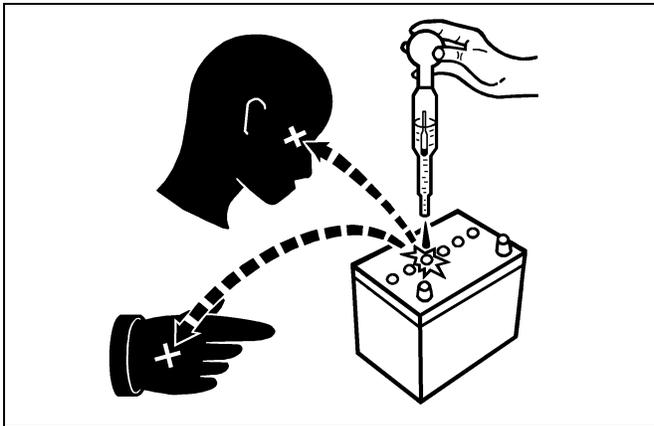
AVOID FIRES

- Fuel is extremely flammable and explosive under certain conditions. Do not smoke or allow flames or sparks in your working area.
- To avoid sparks from an accidental short circuit, always disconnect the battery negative cable first and connect it last.
- Battery gas can explode. Keep sparks and open flame away from the top of battery, especially when charging the battery.
- Make sure that no fuel has been spilled on the engine.



VENTILATE WORK AREA

- If the engine must be running to do some work, make sure the area is well ventilated. Never run the engine in a closed area. The exhaust gas contains poisonous carbon monoxide.



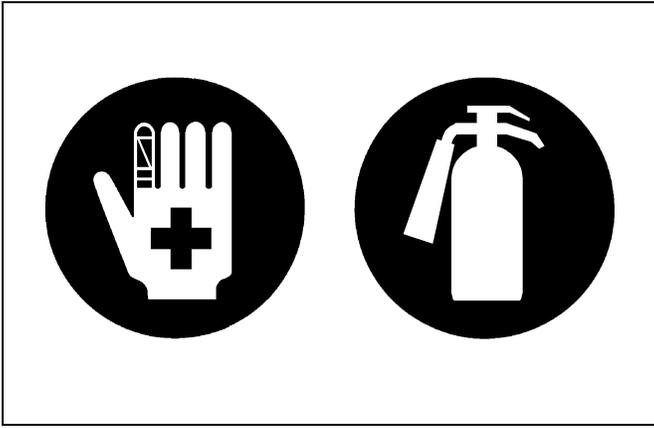
PREVENT ACID BURNS

- Sulfuric acid in battery electrolyte is poisonous. It is strong enough to burn skin, clothing and cause blindness if splashed into eyes. Keep electrolyte away from eyes, hands and clothing. If you spill electrolyte on yourself, flush with water, and get medical attention immediately.



DISPOSE OF FLUIDS PROPERLY

- Do not pour fluids into the ground, down a drain, or into a stream, pond, or lake. Observe relevant environmental protection regulations when disposing of oil, fuel, coolant, electrolyte and other harmful waste.

**PREPARE FOR EMERGENCIES**

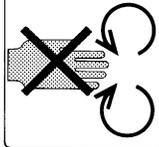
- Keep a first aid kit and fire extinguisher handy at all times.
- Keep emergency numbers for doctors, ambulance service, hospital and fire department near your telephone.

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. 6C090-4958-2
Do not get your hands close
to engine fan and fan belt.



1AGAIAZAP110A

(2) Part No. K3512-4719-1
Do not touch hot surface
like muffler, etc.

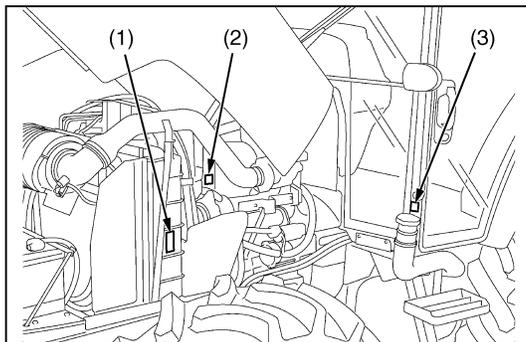


1BDABANAP080A

(3) Part No. 6C040-4741-2
No fire



1AGAIAZAP104A



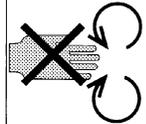
9Y1210338ICI001A

(1) Part No. 32310-4958-1
Do not touch hot surface like muffler, etc.



1AGAIAZAP071A

(2) Part No. 6C090-4958-2
Do not get your hands close to engine fan and fan belt.



1AGAIAZAP110A

(3) Part No. 3A851-7295-1

CAUTION	REFRIGERANT UNDER HIGH PRESSURE	ATTENTION	REFRIGERANT SOUS HAUTE PRESSION
Improper service methods may cause injury. Air conditioning system should be serviced by qualified personnel. See Repair Manual.		Un entretien incorrect peut provoquer des blessures. Le système de climatisation doit être entretenu par une personne qualifiée. Voir le manuel de réparation.	
Réfrigérant HFC134a Max. 0.95kg (2.09lbs.) USE ONLY Min. 0.85kg (1.87lbs.)	Huile ND-OIL 8 SAE OR EQUIVALENT J-639	Réfrigérant HFC134a Max. 0.95kg (2.09lbs.) UNIQUEMENT Min. 0.85kg (1.87lbs.)	Huile ND-OIL 8 SAE OU EQUIVALENTE J-639
MFD. BY DENSO CORPORATION JAPAN.		FABRIQUE PAR DENSO CORPORATION JAPON.	

1AGAIDGAP074A

(4) Part No. 3N300-9892-1

! DANGER/POISON

 SHIELD EYES. EXPLOSIVE GASES CAN CAUSE BLINDNESS OR INJURY.	 NO • SPARKS • FLAMES • SMOKING	 SULFURIC ACID CAN CAUSE BLINDNESS OR SEVERE BURNS.
---	--	--

KEEP OUT OF REACH OF CHILDREN. DO NOT TIP. DO NOT OPEN BATTERY.

FLUSH EYES IMMEDIATELY WITH WATER.

GET MEDICAL HELP FAST.

PROPOSITION 65 WARNING

BATTERY POSTS, TERMINALS, AND RELATED ACCESSORIES CONTAIN LEAD AND LEAD COMPOUNDS, CHEMICALS KNOWN TO THE STATE OF CALIFORNIA TO CAUSE CANCER AND REPRODUCTIVE HARM. WASH HANDS AFTER HANDLING.

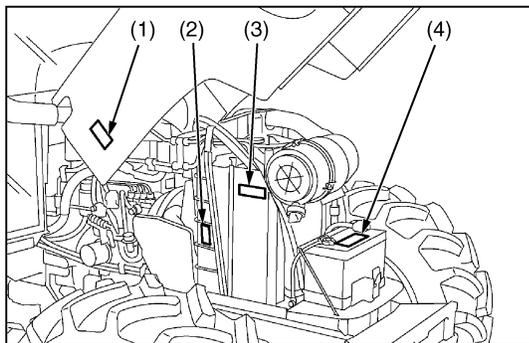
105E41R 12V

HYDROMETER

RESERVE CAPACITY (MIN) 160

COLD CRANKING AMPS(-18°C) 900

1AGAICHAP100A



9Y1210338ICI002A

(1) Part No. 3F240-9857-1 [Hydraulic shuttle model]

⚠ WARNING

To avoid free wheeling when shifting the shuttle lever while on a slope: Stop completely by using the brake and by depressing the clutch pedal. Start off after selecting shuttle direction by releasing the clutch pedal.

(2) Part No. TA040-4965-2



⚠ DANGER

TO AVOID POSSIBLE INJURY OR DEATH FROM A MACHINE RUNAWAY.

1. Do not start engine by shorting across starter terminals or bypassing the safety start switch. Machine may start in gear and move if normal starting circuitry is bypassed.
2. Start engine only from operator's seat with transmission and PTO OFF. Never start engine while standing on the ground.

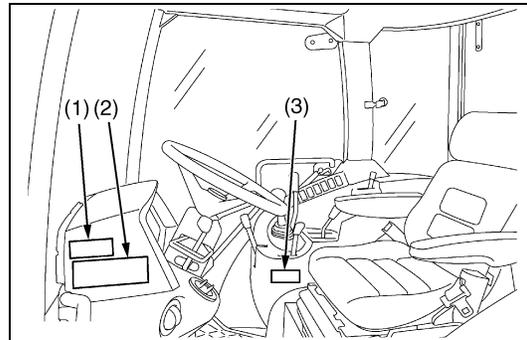
(3) Part No. 6C150-4743-1 [Hydraulic shuttle model]

⚠ WARNING



BEFORE DISMOUNTING TRACTOR:

1. ALWAYS SET PARKING BRAKE. Leaving transmission in gear with the engine stopped will not prevent tractor from rolling.
2. PARK ON LEVEL GROUND WHENEVER POSSIBLE. If parking on a slope, position tractor across the slope.
3. LOWER ALL IMPLEMENTS TO THE GROUND.
4. STOP THE ENGINE.



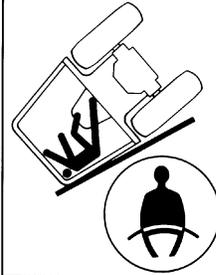
3TMACANCP007A

(1) Part No. 3F240-9836-2

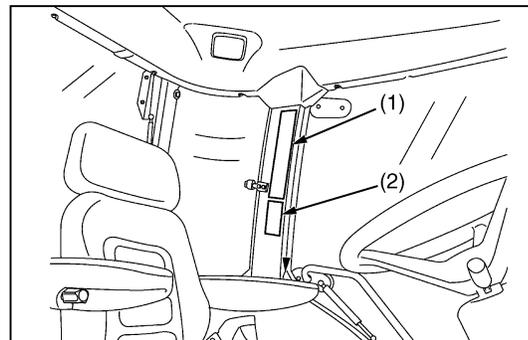
CAUTION**TO AVOID PERSONAL INJURY:**

1. Read and understand the operator's manual before operation.
2. Before starting the engine, make sure that everyone is at a safe distance from tractor and the PTO is off.
3. Do not allow passengers on the tractor at any time.
4. Before allowing other people to use the tractor, have them read the operator's manual.
5. Check the tightness of nuts and bolts regularly.
6. Keep all shields in place and stay away from all moving parts.
7. Lock the two brake pedals together before driving on the road.
8. Slow down for turns, or rough roads, or when applying individual brakes.
9. On public roads use SMV emblem and hazard lights, if required by local traffic and safety regulations.
10. Pull only from the drawbar.
11. Before dismantling, lower the implement to the ground, set the parking brake, stop the engine and remove the key.
12. Securely support tractor and implements before working underneath.

(2) Part No. TA040-4902-1

WARNING**TO AVOID INJURY OR DEATH FROM ROLL-OVER:**

Always use seat belt when driving.



3TMACANCP008A

(1) Part No. 3P305-9856-1

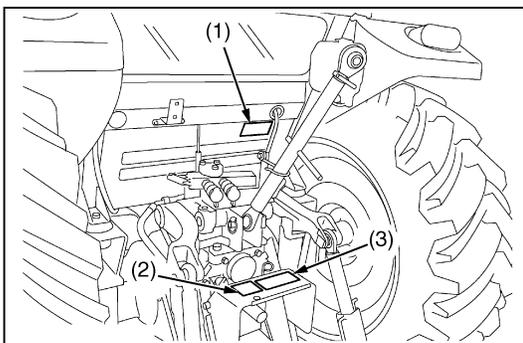
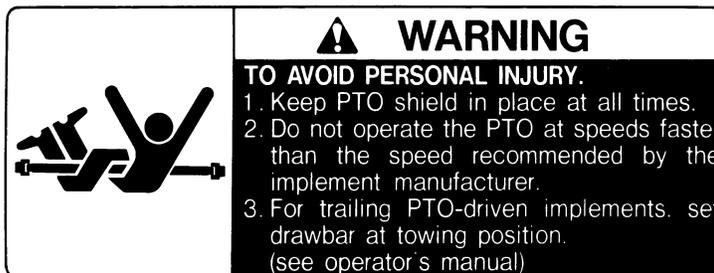


1AGAICVAP046E

(2) Part No. TA040-4935-1



(3) Part No. TA040-4959-3

**CARE OF DANGER, WARNING AND CAUTION LABELS**

1. Keep danger, warning and caution labels clean and free from obstructing material.
2. Clean danger, warning and caution labels with soap and water, dry with a soft cloth.
3. Replace damaged or missing danger, warning and caution labels with new labels.
4. If a component with danger, warning or caution label (s) affixed is replaced with new part, make sure new label (s) is (are) attached in the same location (s) as the replaced component.
5. Mount new danger, warning and caution labels by applying on a clean dry surface and pressing any bubbles to outside edge.

3TMACANCP009A

SPECIFICATIONS

Model		M9540 Cabin Dual Speed		
		4WD		
Engine	Model	V3800DI-TE3		
	Type	Vertical, water-cooled, 4-cycle direct injection diesel engine		
	Number of cylinders	4		
	Total displacement	3769 cm ³ (230.0 cu.in.)		
	Bore and stroke	100 × 120 mm (3.9 × 4.7 in.)		
	Rated speed	2600 min ⁻¹ (rpm)		
	Net power ^{*1}	70.8 kW (95 HP)		
	PTO power ^{*1} (Factory observed)	62.7 kW (84 HP)		
	Maximum torque	316.0 N·m (32.22 kgf·m, 233.1 lbf·ft) / 1500 to 1700 min ⁻¹ (rpm)		
	Battery capacity	12 V, RC : 160 min, CCA : 900 A		
	Fuel tank capacity	110 L (29.1 U.S.gals., 24.2 Imp.gals.)		
	Engine oil capacity	10.7 L (11.3 U.S.qts., 9.4 Imp.qts.)		
	Coolant capacity	9.0 L (9.5 U.S.qts., 7.9 Imp.qts.)		
	Dimensions	Overall length	3760 mm (148 in.)	
Overall width (min. tread)		2010 mm (79 in.)		
Overall height		2570 mm (101 in.)		
Wheel base		2250 mm (88.6 in.)		
Tread		Front	1520, 1620 mm (59.8, 63.8 in.)	
		Rear	1520 to 1920 mm (59.8 to 75.6 in.)	
Minimum ground clearance	Drawbar bracket	450 mm (17.7 in.)		
Weight		2800 kg (6175 lbs)		
Traveling system	Standard tire size	Front	12.4-24	
		Rear	18.4-30	
	Clutch	Multiple wet discs		
	Steering	Hydraulic power steering		
	Braking system	Hydraulic wet discs		
Differential	Bevel gears with differential lock (Rear)			
Hydraulic system	Hydraulic control system	Position, draft (top link sensing) and mix control		
	Pump capacity	64.3 L (17.0 U.S.gals., 14.1 Imp.gals.) / min.		
	3-point hitch	SAE Category II		
	Max. lifting force	At lift points ^{*2}	3900 kg (8600 lbs)	
		24 in. behind lift points ^{*2}	3300 kg (7275 lbs)	
	Remote hydraulic control	1 remote valves (2nd, 3rd and flow control valve option)		
System pressure	19.6 MPa (200 kgf/cm ² , 2844.7 psi)			
Traction system		Swinging drawbar, adjustable in direction		
PTO	Live PTO (Independent)	Direction of turning	Clockwise, viewed from tractor rear	
		PTO speed	6 spline : 540 min ⁻¹ (rpm) / 2205 min ⁻¹ (rpm) engine speed	

Note : *1 : Manufacture's estimate

*2 : At lower link end with links horizontal.

The company reserves the right to change the specifications without notice.

W10281170

TRAVELING SPEEDS

(At rated engine rpm)

Model			M9540 Cabin Dual Speed	
Tire size (Rear)			18.4-30	
Transmission type			F24 / R24 with Dual speed model	
Shuttle shift lever	Range gear shift lever	Main gear shift lever	Hi	Lo
			km/h (mph)	km/h (mph)
Forward	CREEP (Option)	1	0.44 (0.28)	0.37 (0.23)
		2	0.57 (0.35)	0.48 (0.30)
		3	0.75 (0.47)	0.63 (0.39)
		4	0.96 (0.60)	0.80 (0.50)
		5	1.19 (0.74)	1.00 (0.62)
		6	1.43 (0.89)	1.20 (0.75)
	L	1	2.8 (1.7)	2.4 (1.5)
		2	3.6 (2.2)	3.0 (1.9)
		3	4.7 (3.0)	4.0 (2.5)
		4	6.1 (3.8)	5.1 (3.2)
		5	7.5 (4.7)	6.3 (3.9)
		6	9.0 (5.6)	7.6 (4.7)
	H	1	11.0 (6.9)	9.3 (5.8)
		2	14.1 (8.8)	11.9 (7.4)
		3	18.6 (11.6)	15.7 (9.8)
		4	23.9 (14.9)	20.1 (12.5)
		5	29.6 (18.5)	24.9 (15.6)
		6	35.6 (22.2)	29.9 (18.7)

The company reserves the right to change the specifications without notice.

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(At rated engine rpm)

Model			M9540 Cabin Dual Speed	
Tire size (Rear)			18.4-30	
Transmission type			F24 / R24 with Dual speed model	
Shuttle shift lever	Range gear shift lever	Main gear shift lever	Hi	Lo
			km/h (mph)	km/h (mph)
Reverse	CREEP (Option)	1	0.45 (0.28)	0.38 (0.23)
		2	0.57 (0.36)	0.48 (0.30)
		3	0.76 (0.47)	0.64 (0.40)
		4	0.97 (0.67)	0.81 (0.51)
		5	1.20 (0.75)	1.01 (0.63)
		6	1.44 (0.90)	1.21 (0.76)
	L	1	2.8 (1.8)	2.4 (1.5)
		2	3.6 (2.3)	3.1 (1.9)
		3	4.8 (3.0)	4.0 (2.5)
		4	6.1 (3.8)	5.2 (3.2)
		5	7.6 (4.7)	6.4 (4.0)
		6	9.1 (5.7)	7.7 (4.8)
	H	1	11.2 (7.0)	9.4 (5.9)
		2	14.3 (9.0)	12.0 (7.5)
		3	18.9 (11.8)	15.9 (9.9)
		4	24.2 (15.1)	20.3 (12.7)
		5	30.0 (18.7)	25.2 (15.7)
		6	36.0 (22.5)	30.3 (18.9)

The company reserves the right to change the specifications without notice.

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DG GENERAL

GENERAL

CONTENTS

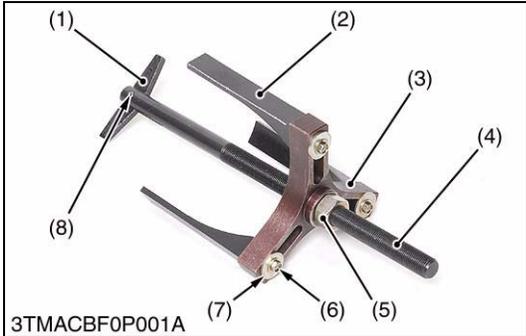
1. SPECIAL TOOLS.....	DG-1
[1] SPECIAL TOOLS FOR TRACTOR.....	DG-1

1. SPECIAL TOOLS

[1] SPECIAL TOOLS FOR TRACTOR

■ NOTE

- The following special tools are not provided, make them referring to the figure.



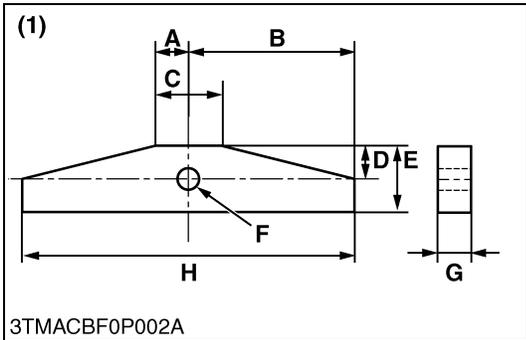
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Hydraulic Clutch Spring Compressor

Application: Use exclusively for pushing the spring, to remove the circlip for hydraulic clutch.

- (1) Tool 4 (Plate)
- (2) Tool 3 (Clow)
- (3) Tool 1 (Body)
- (4) Tool 2 (Center Bar)
- (5) Nut (M x P1.5)
- (6) Screw (M5 x P1.0 - L10mm)
- (7) Washer (M5)
- (8) Spring Pin (5.0 mm Dia. - L16 mm)

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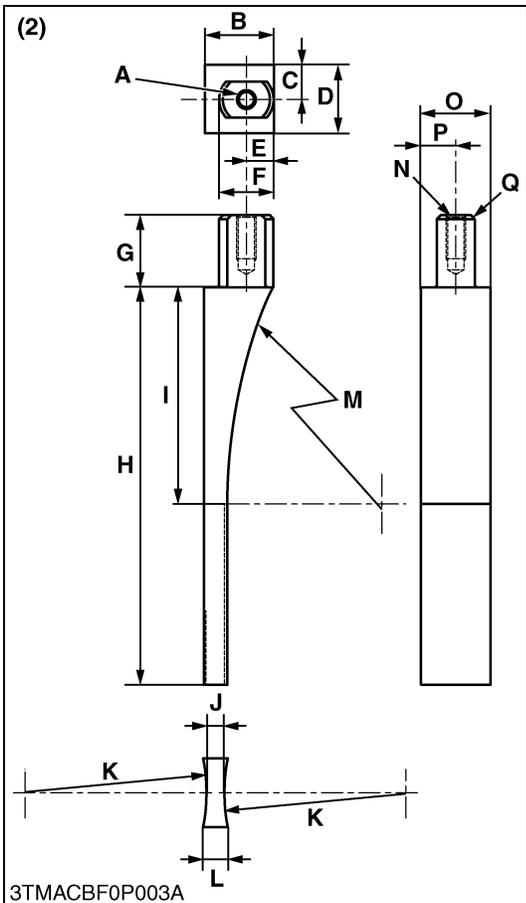


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(1) Tool 4 (Plate)

A	8 mm (0.3 in.)
B	40 mm (1.6 in.)
C	16 mm (0.63 in.)
D	8 mm (0.3 in.)
E	16 mm (0.63 in.)
F	5.2 mm dia. (0.20 in. dia.)
G	5.70 to 5.90 mm (0.225 to 0.232 in.)
H	80 mm (3.1 in.)

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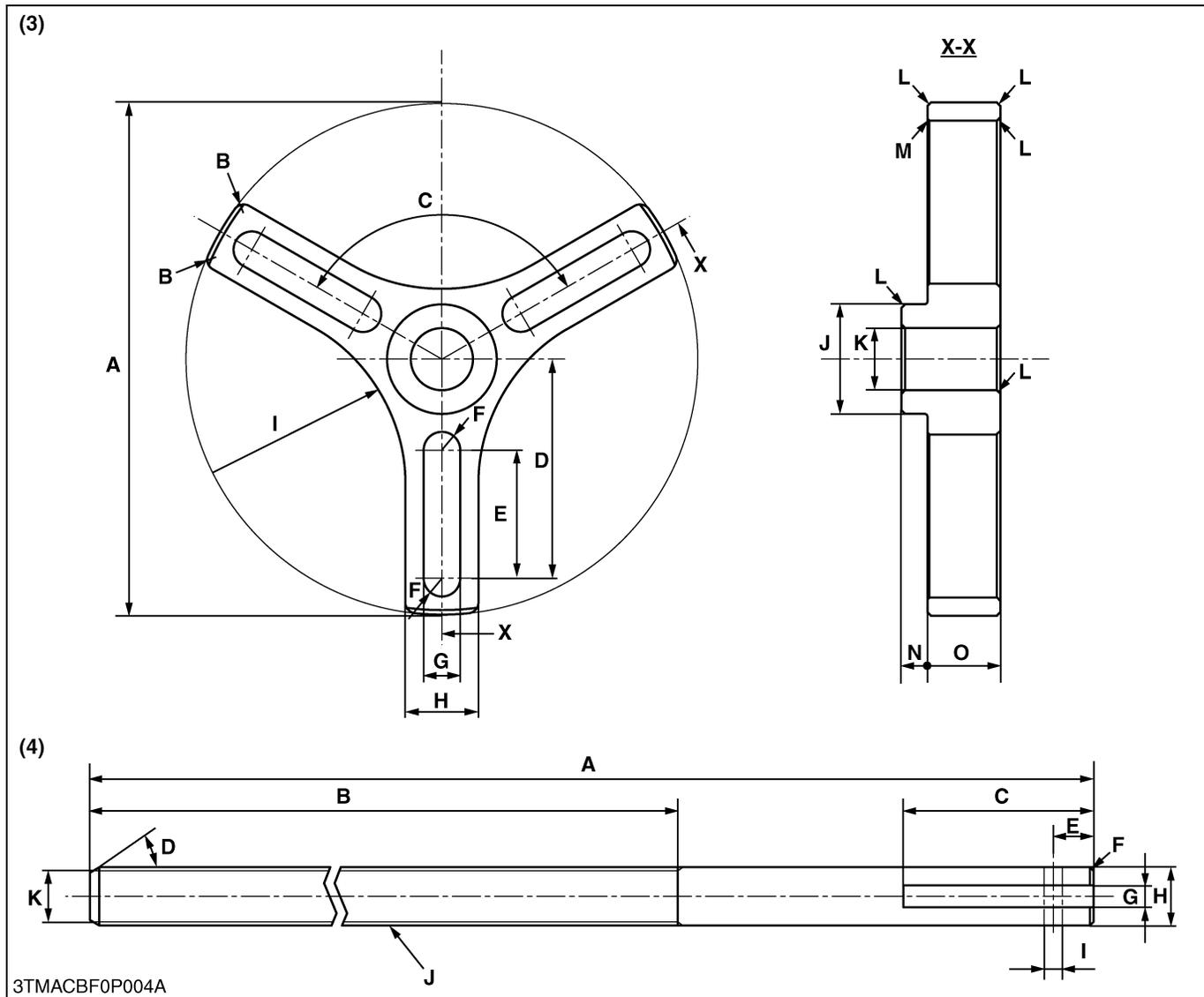


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(2) Tool 3 (Clow) : 3 pcs.

A	M5 x P1.0 x 12 mm depth (0.47 in. depth)
B	19 mm (0.75 in.)
C	5 mm (0.2 in.)
D	9.73 to 10.0 mm (0.383 to 0.393 in.)
E	7.5 mm (0.30 in.)
F	15 mm dia. (0.59 in. dia.)
G	20.05 to 20.10 mm (0.7894 to 0.7913 in.)
H	110 mm (4.33 in.)
I	60 mm (2.4 in.)
J	5 mm (0.2 in.)
K	50 mm (2.0 in.)
L	6.8 mm (0.27 in.)
M	Radius 150 to 160 mm (5.91 to 6.29 in.)
N	4.2 mm dia. x 15 mm depth (0.17 in. dia. x 0.59 in. depth)
O	19 mm (0.75 in.)
P	9.5 mm (0.37 in.)
Q	Chamfer 1.0 mm (0.039 in.)

W1023692



(3) Tool 1 (Body)

A	140 mm dia. (5.51 in. dia.)	I	Radius 50 mm (2.0 in.)
B	Radius 3 mm (0.1 in.)	J	30 mm dia. (1.2 in. dia.)
C	2.09 rad (120 °)	K	17 mm dia. (0.67 in. dia.)
D	60 mm (2.4 in.)	L	Chamfer 1.0 mm (0.039 in.)
E	35 mm (1.4 in.)	M	Chamfer 0.5 mm (0.02 in.)
F	Radius 5 mm (0.2 in.)	N	7 mm (0.3 in.)
G	10.00 to 10.27 mm (0.3937 to 0.4043 in.)	O	20 mm (0.79 in.)
H	20 mm (0.79 in.)	X (X-X)	View direction

(4) Tool 2 (Center Bar)

A	330 mm (13.0 in.)	G	6.00 to 6.58 mm (0.237 to 0.259 in.)
B	210 mm (8.27 in.)	H	16 mm dia. (0.63 in. dia.)
C	52 mm (2.0 in.)	I	5.00 to 5.18 mm dia. (0.197 to 0.203 in. dia.)
D	0.52 rad (30 °)	J	M16 x P1.5 mm
E	11 mm (0.43 in.)	K	13 mm dia. (0.51 in. dia.)
F	Chamfer 1.0 mm (0.039 in.)		

D2 CLUTCH

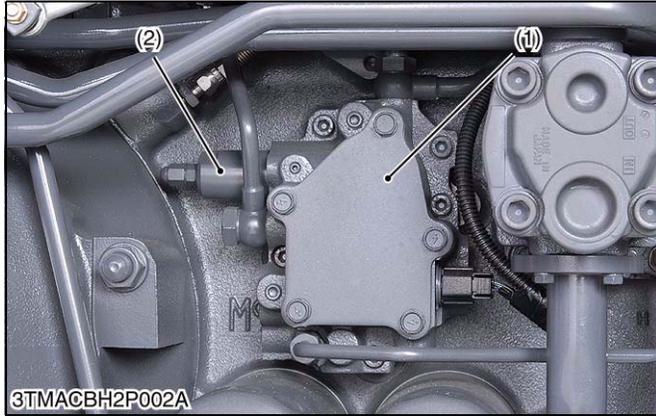
MECHANISM

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1. PTO CLUTCH	D2-M1
[1] PTO SOLENOID VALVE, RELIEF VALVE AND OIL FLOW.....	D2-M1

1. PTO CLUTCH

[1] PTO SOLENOID VALVE, RELIEF VALVE AND OIL FLOW



When the PTO switch is at the **OFF** position, the oil flows is stopped by the PTO solenoid valve (3).

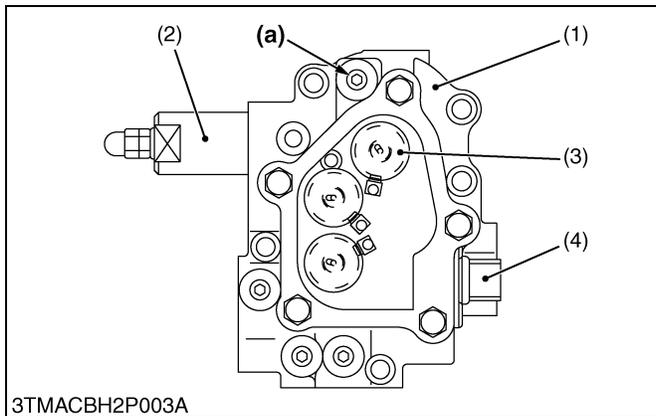
When the PTO switch is at **ON** position, the solenoid valve (3) is operated and the oil flows through the PTO solenoid valve (3) to the PTO clutch pack (5) to engage it.

The relief valve (2) maintains the hydraulic system pressure and supply the oil to lubricate the shuttle section, synchro-mesh gears, PTO clutch pack and PTO brake section.

■ **NOTE**

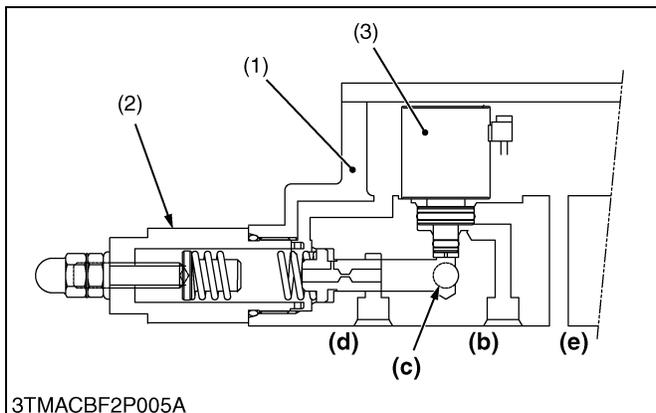
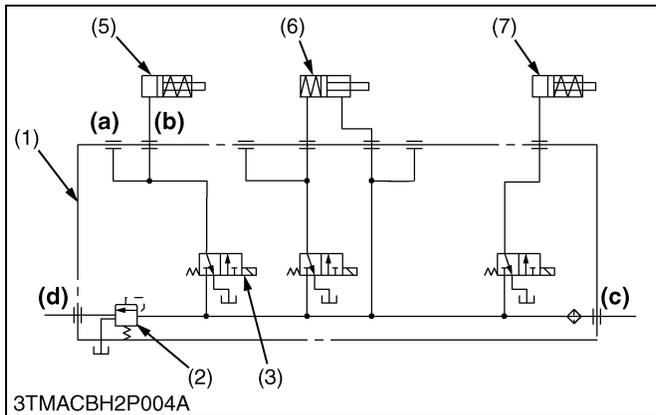
- **Hydraulic system pressure is a operating pressure for the PTO clutch pack and 2WD-4WD clutch pack.**

(2.16 MPa, 22.0 kgf/cm², 313 psi)



- | | |
|------------------------------|---------------------------------|
| (1) Solenoid Valve Assembly | (a) Check Port for PTO Pressure |
| (2) Relief Valve | (b) PTO Port |
| (3) PTO Solenoid Valve | (c) P Port |
| (4) Connector | (d) Lubricating Port |
| (5) PTO Clutch Pack | (e) T Port |
| (6) 2WD-4WD Clutch Pack | |
| (7) Differential Lock Piston | |

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SERVICING

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1. TROUBLESHOOTING	D2-S1
2. CHECKING AND ADJUSTING	D2-S2
[1] PTO CLUTCH	D2-S2
3. DISASSEMBLING AND ASSEMBLING	D2-S3
[1] SOLENOID VALVE (PTO)	D2-S3
(1) Removing Solenoid Valve Assembly	D2-S3
4. SERVICING	D2-S4
[1] SOLENOID VALVE (PTO)	D2-S4

1. TROUBLESHOOTING

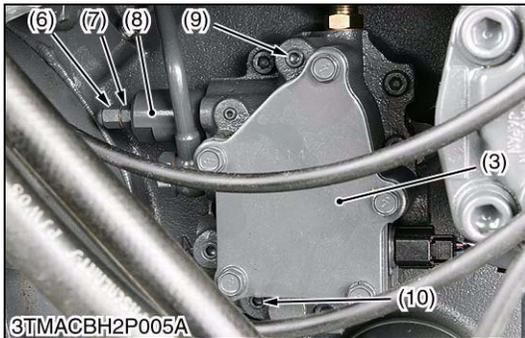
PTO CLUTCH

Symptom	Probable Cause	Solution	Reference Page
PTO Clutch Slip	Operating pressure is low	Adjust	D2-S2
	PTO solenoid valve malfunctioning	Replace	D9-S7
PTO Shaft Does Not Rotate	PTO solenoid valve malfunctioning	Replace	D9-S7
	PTO switch malfunctioning	Replace	D9-S3

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2. CHECKING AND ADJUSTING

[1] PTO CLUTCH



PTO Clutch Operating Pressure

■ IMPORTANT

- Do not connect the universal joint of the implement to the tractor PTO shaft while testing.
 - Set the main shift lever and shuttle lever in Neutral position.
 - Set the parking brake lever in parking position.
1. Place the disassembling stand under the transmission case.
 2. Remove the right rear wheel and left fender.
 3. Place the disassembling stand under the left rear axle case.
 4. Remove the plug (R1/8) (13) on the solenoid valve assembly (3).
 5. Assemble the adaptor (R1/8) (2), threaded joint (4), cable (5) and pressure gauge (1).
 6. Start the engine and set the engine speed to maximum.
 7. Turn on the PTO switch and measure the oil pressure.
 8. If only the pressure in the PTO clutch engaged position is low, check the hydraulic PTO clutch system.
 9. If the measurement is not within the factory specifications, measure the system pressure, and adjust the system pressure with relief valve (8) if necessary.

PTO pressure (when PTO switch is "ON" position)	Factory spec.	2.16 to 2.26 MPa 22 to 23 kgf/cm ² 312.91 to 327.14 psi
PTO pressure (when PTO switch is "OFF" position)	Factory spec.	No pressure

Condition

- Engine speed : Approx. 2600 min⁻¹ (rpm)
- Oil temperature : 45 to 55 °C
113 to 131 °F

(Reference)

- Turn the adjusting screw after removed lock nuts (6) and (7).
- Turn the adjusting screw clockwise direction → Pressure increase
- Turn the adjusting screw counterclockwise direction → Pressure decrease.

■ NOTE

- Plug thread size : R1/8

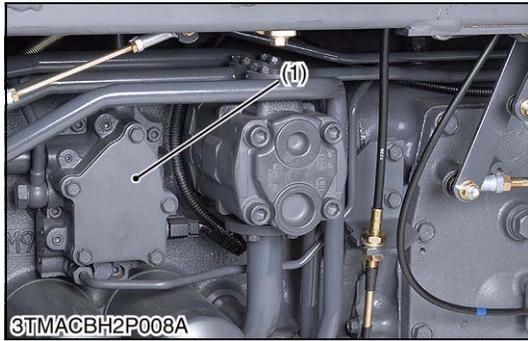
- | | |
|-----------------------------|--|
| (1) Pressure Gauge | (6) Lock Nut |
| (2) Adaptor | (7) Lock Nut |
| (3) Solenoid Valve Assembly | (8) Return Hose |
| (4) Threaded Joint | (9) Plug (PTO Clutch Check Port) |
| (5) Cable | (10) Plug (System Pressure Check Port) |

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3. DISASSEMBLING AND ASSEMBLING

[1] SOLENOID VALVE (PTO)

(1) Removing Solenoid Valve Assembly



Solenoid Valve Assembly

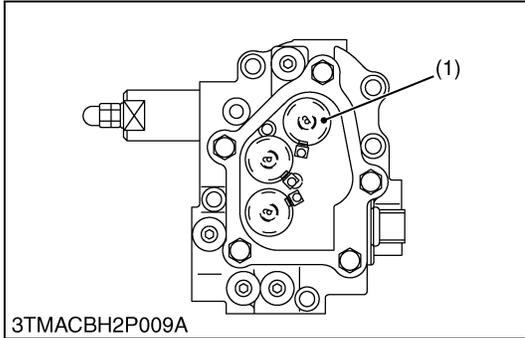
1. Refer to the "5. DISASSEMBLING AND ASSEMBLING" at "3. TRANSMISSION" section.

(1) Solenoid Valve Assembly

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4. SERVICING

[1] SOLENOID VALVE (PTO)



Solenoid Valve (PTO)

1. Refer to the "4. CHECKING AND ADJUSTING" at "9. ELECTRICAL SYSTEM".

(1) PTO Solenoid Valve

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D3 TRANSMISSION

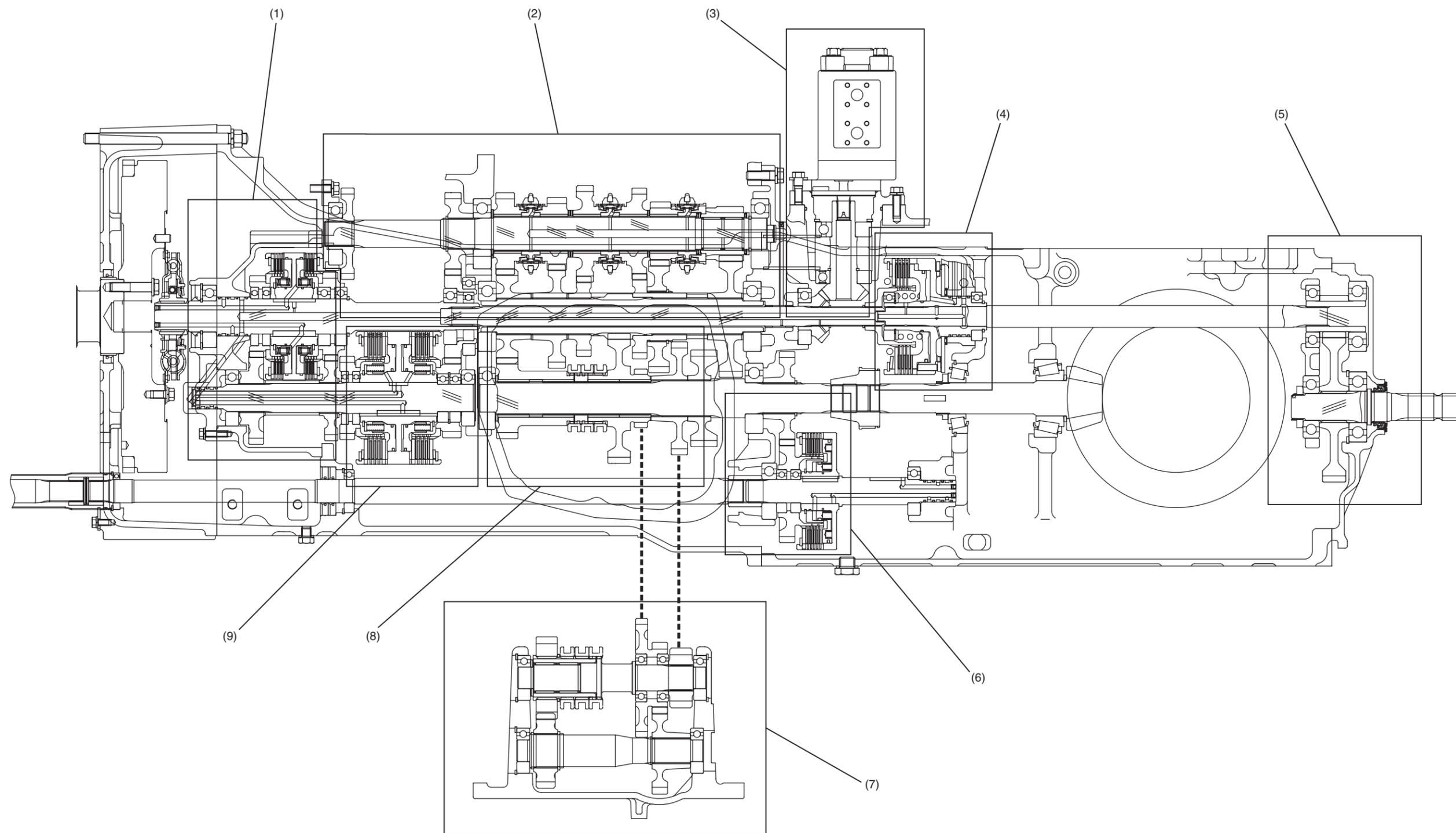
MECHANISM

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[2] OIL FLOW.....	D3-M11

1. STRUCTURE

[1] F24/R24 SPEED TRANSMISSION MODEL



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(1) Hi-Lo Dual Speed Section
(2) Main Gear Shift Section

(3) Hydraulic Pump and Drive Section
(4) PTO Clutch Section

(5) PTO Gear Section
(540 min⁻¹ (rpm))

(6) Four Wheel Drive Section

(7) Creep Gear Section
(Cassette Type, Option)

(8) Auxiliary Gear Shift Section

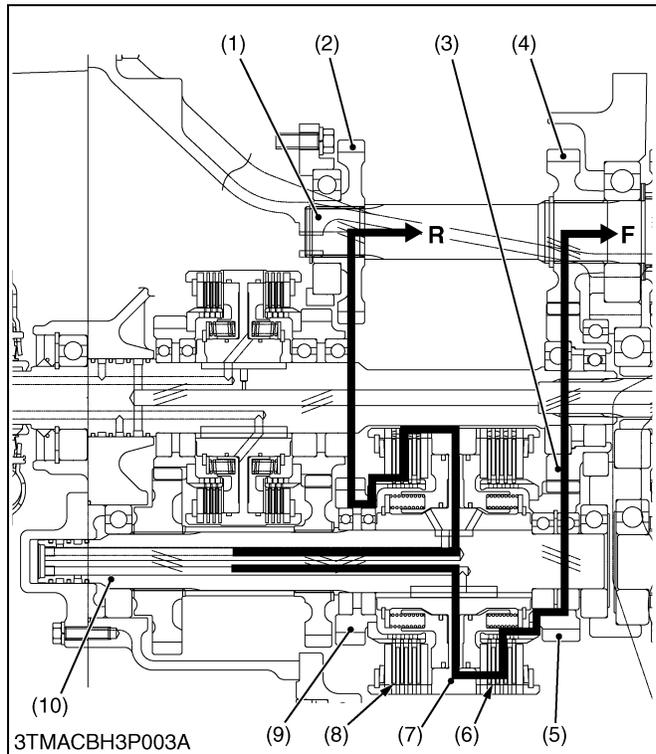
(9) Hydraulic Shuttle Section

D3-M1

2. POWER TRAIN FOR TRAVELING GEAR

[1] SHUTTLE SHIFT SECTION

(1) Hydraulic Clutch Pack



F24/R24 Speed Transmission Model

(Forward)

Shaft 1 (10) → Shuttle Clutch Body (7) → Clutch Disc and Plate (6) → 24T Gear (5) → 31T Gear (3) → 27T Gear (4) → 1st Shaft (1)

(Reverse)

Shaft 1 (10) → Shuttle Clutch Body (7) → Clutch Disc and Plate (8) → 27T Gear (9) → 30T Gear (2) → 1st Shaft (1)

- | | |
|---------------------------|---------------------------|
| (1) 1st Shaft | (8) Clutch Disc and Plate |
| (2) 30T Gear | (9) 27T Gear |
| (3) 31T Gear | (10) Shaft 1 |
| (4) 27T Gear | |
| (5) 24T Gear | |
| (6) Clutch Disc and Plate | F : Forward |
| (7) Shuttle Clutch Body | R : Reverse |

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