PART NO. TO97C5-E-02

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Technical Manual
Operational Principle

ZW370
Wheel Loader

Service Manual consists of the following separate Part No.

Technical Manual (Operational Principle)	: Vol. No.TO97C5-E
Technical Manual (Troubleshooting)	: Vol. No.TT97C5-E
Workshop Manual	: Vol. No.W97C5-E

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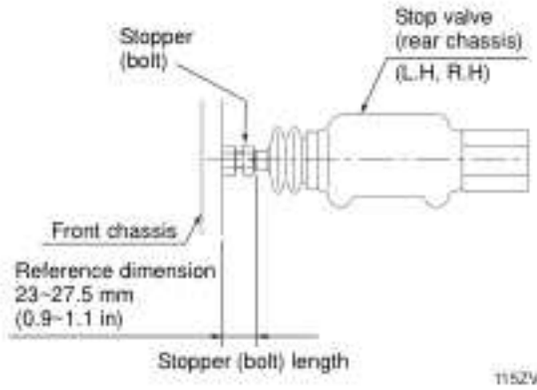
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Stop Valve

Stop valve adjustment procedure



⚠ WARNING

When the machine turns, the clearance in the articulation area closes. As a result, people may be caught, leading to a severe accident. To prevent such an accident, observe the following items strictly when adjusting the steering stopper.

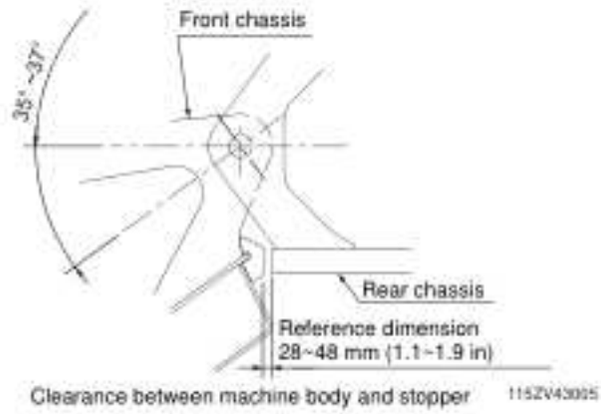
- Stop the engine before starting adjustment of the stopper bolt.
- When confirming the operation after setup, keep proper distance from the articulation area of the machine.

The stop valve works when the spool is pushed in 3 mm (0.118 in).

Adjust the stopper bolt by using the following procedure.

- Adjust the stopper (bolt) length so that the clearance between the machine body and the stopper becomes the reference dimension "28~48 mm (1.102~1.890 in)" shown in the table below.

Reference dimension



Articulation angle (°)	37	36	35
Clearance between machine body and stopper (mm) (in)	28 (1.102)	38 (1.496)	48 (1.890)
Stopper (bolt) length (mm) (in)	23 (0.906)	25 (0.984)	27.5 (1.083)

*The target value should be the articulation angle "36°".

- After adjustment, turn the steering wheel slowly at a rate of 5 sec or more per turn, and confirm the clearance between the machine body and the stopper.
- When adjustment is completed, tighten the lock nut of the stopper (bolt).

: 90 N-m (9.2 kgf-m) (67 lb-ft)

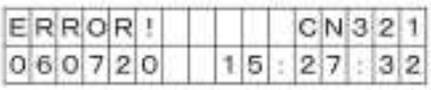
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Clear active fault log (error pop up) (S/N 9001~9166)

When a fault occurs, the corresponding fault code is forcibly displayed on the screen.

When two or more active faults occur, up to 5 fault codes each are displayed repeatedly. (Up to total 10 fault codes for CN and EG errors together)

For deleting the displayed fault codes, press one of the [▷ (step forward)] button, [◁ (step back)] button, [×] button or [○] button.



80V2UI02024

Then, the screen displayed before the active fault codes appears again.

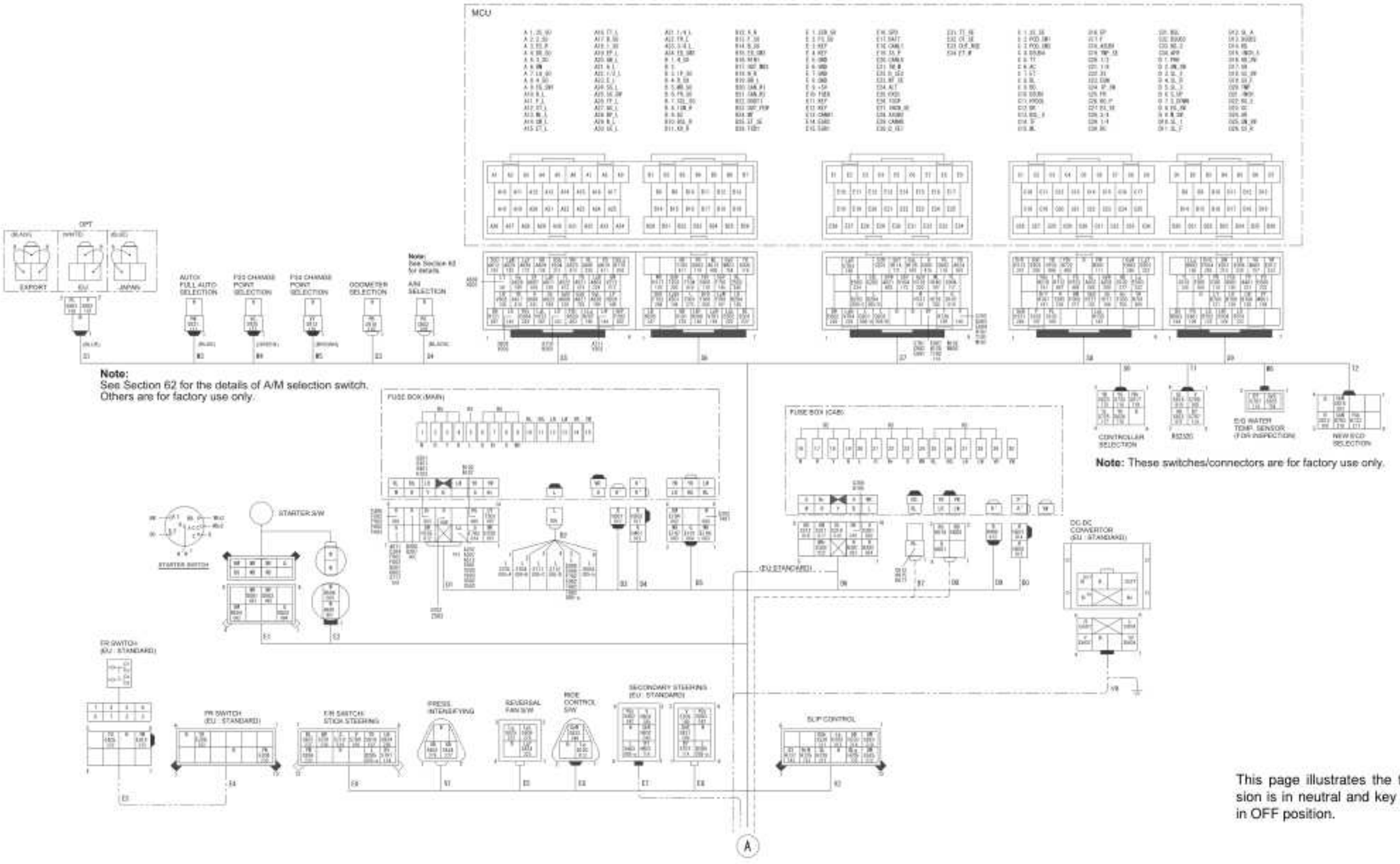
Active fault codes are displayed repeatedly when the starter switch is ON and will continue to display until the cause of each fault code is eliminated.

If there is a fault that has been erased, and the cause is not repaired, the fault will quickly reappear in the screen due to being active.

It will continue to reappear until the underlying cause of the fault is eliminated.

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Electrical Wiring Diagram (2/3) (S/N 9351~)



This page illustrates the transmission is in neutral and key switch is in OFF position.

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Electrical wiring diagram abbreviation chart

(S/N 9001~9350)

INSTRUMENT PANEL	
WL	Radiator water level warning lamp
C	Charge lamp
AC	Air cleaner clogging alarm
TT	T/M oil temperature alarm
WT	Engine water temperature alarm
EP	Engine oil pressure alarm
BP	Brake oil pressure alarm
CE	MCU error (failure alarm)
+	+24 V power supply
ES	Secondary steering
FR	Reversal fan indication lamp
EG2	Engine warning lamp
EG1	Engine protection lamp
EG3	Engine stop lamp
SS	FR switch, S/S switch indication lamp
WTM	Engine water temperature gauge (sensor)
TTM	T/M oil temperature gauge (sensor)
	—
(+)	Instrument panel illumination
TF	T/M oil filter clogging alarm
	—
	—
F	Fuel level lamp (F)
3/4	Fuel level lamp (3/4)
1/2	Fuel level lamp (1/2)
1/4	Fuel level lamp (1/4)
EMP	Fuel level lamp (E)
GND	GND (–)
+	+ 24 V power supply
	—
	—
	—
	—
N	Neutral
–	GND (–)
1	1st speed indication
2	2nd speed indication
3	3rd speed indication
4	4th speed indication

INSTRUMENT PANEL	
P	Parking brake lamp
A	AUTO lamp
AB	Auto brake lamp
SM	Meter (Speed/Tacho) +
SM	Meter (Speed/Tacho) –
	—
TC	Declutch lamp
PH	Preheating lamp
WL	Work lamp
W	Central alarm lamp
GND	GND (–)
	—
	—
H	High-beam lamp
L	Turn signal (left) lamp
R	Turn signal (right) lamp
	—
GND	Hour meter (–)
HM	Hour meter (+)

MCU	
A1	Efficient loading system solenoid valve
A2	2nd speed solenoid valve
A3	Secondary steering motor relay
A4	Ride control solenoid valve
A5	3rd speed solenoid valve
A6	Hour meter
A7	T/C lock-up solenoid valve
A8	4th speed indicator relay
A9	E/G torque selection
A10	Back-up lamp
A11	Fuel level lamp (F)
A12	Steering oil pressure warning lamp
A13	Radiator water level warning lamp
A14	Central warning lamp
A15	E/G coolant temperature warning lamp
A16	T/M oil temperature warning lamp
A17	D solenoid valve
A18	1st speed solenoid valve
A19	E/G oil pressure warning lamp

MCU	
A20	Auto brake lamp
A21	Auto shift indicator lamp
A22	Fuel level lamp (1/2)
A23	Fuel level lamp (E)
A24	S/S indicator lamp
A25	Traction control selection
A26	T/M oil filter warning lamp
A27	Air cleaner warning lamp
A28	Brake pressure warning lamp
A29	Neutral indicator lamp
A30	Traction control indicator lamp
A31	Fuel level lamp (1/4)
A32	Reversal fan indicator lamp
A33	Fuel level lamp (3/4)
A34	E/G droop selection 2
B1	H solenoid valve
B2	—
B3	Pressure intensifying solenoid valve
B4	R solenoid valve
B5	Modulation valve (SPCC)
B6	Reversal fan solenoid valve
B7	S/S solenoid valve L
B8	E/G idle selection
B9	Buzzer
B10	Lower kickout relay
B11	Lift kickout relay
B12	MCU fault relay
B13	L solenoid valve
B14	Auto brake solenoid valve
B15	E/G droop selection 1
B16	Communication RIN1
B17	Mode control
B18	Neutral relay
B19	Brake lamp (S/N –9257)
	Brake relay (S/N 9258~)
B20	—
B21	—
B22	Communication DOUT1
B23	Communication FEW
B24	Meter output (Speed/Tacho)

MCU	
B25	E/G coolant temperature sensor (S/N 9001~9150)
	E/G water temperature sensor (for inspection) (S/N 9151~)
B26	Communication TXD1
E1	S/S solenoid valve R
E2	Fan speed control solenoid valve
E3	Power supply +24 V
E4	Power supply +24 V
E5	Power supply GND
E6	Power supply GND
E7	Power supply GND
E8	Power supply GND
E9	+5 V output
E10	Tacho-graph E/G speed
E11	Power supply +24 V
E12	Power supply +24 V
E13	Communication CAN H1
E14	E/G speed sensor 2 (not used)
E15	E/G ECM
E16	Machine speed sensor
E17	Power supply
E18	Communication CAN L1
E19	S/S potentiometer
E20	Communication CAN L0
E21	T/M oil temperature gauge
E22	Brake oil pressure sensor 2
E23	Hydraulic oil temperature sensor
E24	Alternator
E25	Communication RXD1
E26	Tacho-graph machine speed
E27	Declutch sensor (brake oil pressure sensor)
E28	Spare analog input
E29	Communication CAN H0
E30	Brake oil pressure sensor 1
E31	T/M oil temperature sensor
E32	Air temperature probe
E33	Communication (RESET)
E34	E/G coolant temperature gauge

MCU	
C1	Efficient loading system oil pressure sensor
C2	Specification change 1
C3	Specification change 2
C4	Spare digital input
C5	T/M oil temperature switch (not used)
C6	Air cleaner clogging switch
C7	E/G coolant temperature switch (not used)
C8	—
C9	—
C10	Spare digital input
C11	Hydraulic oil level switch
C12	Reset switch (S/N 9001~9250)
	New ECO mode selection (S/N 9251~)
C13	Lower kickout set-up
C14	T/M oil filter clogging switch
C15	Radiator water level switch
C16	E/G oil pressure switch
C17	Fuel level F switch
C18	Spare analog input
C19	T/M pressure sensor
C20	Fuel level 1/2 switch
C21	Fuel level 1/8 switch
C22	Efficient loading system switch
C23	E/G mode selection switch
C24	Pressure intensifying switch
C25	Reversal fan (manual) switch
C26	Boom angle sensor
C27	Secondary steering oil pressure sensor
C28	Fuel level 3/4 switch
C29	Fuel level 1/4 switch
C30	Recall switch (S/N 9001~9250)
	New declutch selection (S/N 9251~)
C31	Lower kickout switch (S/N 9001~9150)
	Auto/Full auto selection (S/N 9151~)
C32	Spare digital input
C33	Ride control switch
C34	Auto fan reversal switch

MCU	
D1	Parking switch
D2	Auto/Manual selection
D3	Shift lever 2
D4	Shift lever R
D5	Shift lever 3
D6	Shift up switch
D7	Shift down switch
D8	E/G speed sensor selection
D9	Meter selection
D10	Shift lever 1
D11	Shift lever F
D12	Shift lever A
D13	Spare digital input (S/N 9001~9150)
	F34 change point selection (S/N 9151~)
D14	Downshift button
D15	Declutch set up
D16	Odometer selection
D17	Shift hold switch
D18	S/S shift selection switch
D19	S/S shift switch F
D20	—
D21	Declutch switch
D22	Kickout set up
D23	Traction control switch
D24	Armrest switch
D25	Tire diameter selection (S/N 9001~9150)
	F23 change point selection (S/N 9151~)
D26	S/S shift switch R

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