CEBM009900

Shop Manual

KOMATSU®

GD530A(W)-2B(C)Y
GD650A(W)-2B(C)Y
GD670A(W)-2B(C)Y

MOTOR GRADER

SERIAL NUMBERS

GD530A-2BY	203481
GD530A-2CY	203201
GD530AW-2BY	210242
GD530AW-2CY	203290
GD650A-2BY	202556
GD650A-2CY	202642
GD650AW-2BY	203328
GD650AW-2CY	202662
GD670A-2BY	203282
GD670A-2CY	202681
GD670AW-2BY	203338
GD670AW-2CY	203234

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CONTENTS

01	GENERAL	01-1
10	STRUCTURE AND FUNCTION	10-1
20	TESTING, ADJUSTING AND TROUBLESHOOTING	20-1
30	DISASSEMBLY AND ASSEMBLY	30-1
40	MAINTENANCE STANDARD	40-1
90	OTHER	90-1

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PRODUCT PUBLICATIONS INFORMATION

Various product Parts and Service Publications are available to all **KOMATSU** construction equipment owners, including operation and maintenance manuals, parts books and service manuals.

Special publications, such as service tool, air conditioning and turbocharger service manuals are also available as well as selected Operation and Service manuals in foreign languages.

The Publications listed below are available for this particular machine(s).

DESCRIPTION	FORM NUMBER
PARTS BOOK - PAPER:	
Chassis and Engine GD530	BEPB002900
Chassis and Engine GD650	BEPBG65091
Chassis and Engine GD670	BEPBG67100
OPERATION AND MAINTENANCE MANUAL:	
Chassis and Engine	CEAM009700
SHOP MANUAL	
Chassis	CEBM009900
Engine 114E-2 Series	CEBM000601
Engine 102E-2 Series	SEBM010011
SAFETY MANUAL	
Machine specific	1085 960 R2

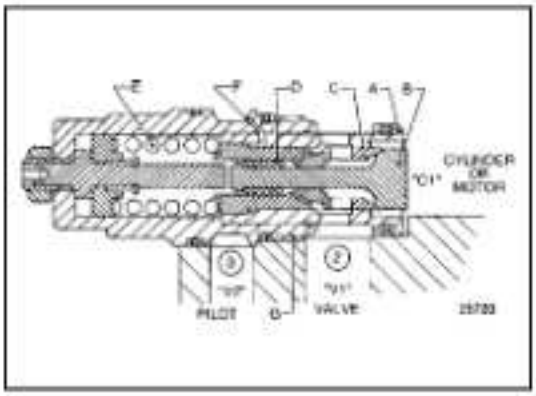
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If the PIPS system is not available at the distributor location, then the following Requisition for Technical Service Publications and Service Forms can be used. Form KDC91E is shown on the reverse side of this page.

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LEGEND

A. FLOATING BODY
B. CHECK POPPET ASSEMBLY
C. CHECK SEAT/VALVE SPOOL ASSEMBLY
D. CHECK SPRING
E. MAJOR BIAS SPRING
F. PILOT PASSAGE



Remark

The valve action discussed is for moving the circle to the right.

At right, a cutaway view of a counterbalance valve. Positive internal-piloting pressure from supply line "**V2**", opposite the controlled (counterbalanced) line "**C1**". Utilized with the load-induced pressure from line "**C1**", pressure against the check valve seat end of the spool opens the valve. With the pilot-assist feature, internal pilot pressure from supply line "**V2**" effectively reduces the pressure setting of the valve by allowing pilot pressure through pilot passage (F). This pressure forces the check seat and valve spool assembly (C) against the major bias spring (E). The loaded machine member is restrained until pressure is available from the opposite cylinder line "**C1**". That means the actuator cannot move faster than the speed resulting from the pressurized supply (pump) fluid in line "**V2**". This action permits smooth, positive control of overrunning loads and cushioned deceleration. This positive control of overrunning loads occurs due to a pressure drop that takes place during the overrun condition in the supply pilot line "**V2**". This action allows the major bias spring (E) to move the valve spool assembly to the right, closing the valve.

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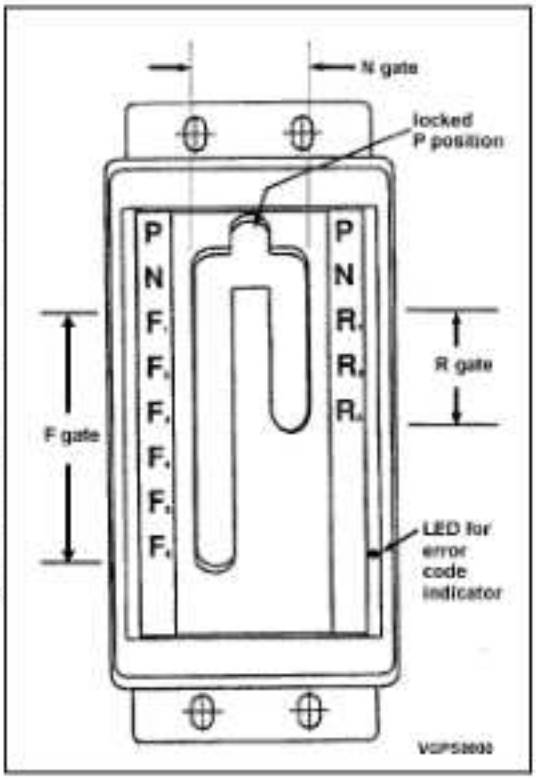
TRANSMISSION POWER SHIFT

TRANSMISSION SHIFTER

When the LED flashes an error code, the transmission automatically shifts to Neutral despite the gearshift remaining at the selected position. Thus, the machine cannot move.

Move the gearshift to the Neutral position to coincide with the transmission being in neutral, and which also clears the controller's memory. After clearing the controller's memory, the transmission gears can once again be engaged.

To determine if the problem is a "glitch" or one-time occurrence, reposition the gearshift to the desired gear range and continue with the operation. If the LED flashes again, count the number of flashes because a problem exists. See the table Section 20-100 TRANSMISSION SHIFTER for a diagnostic interpretation of the LED flash code, and make the needed repairs. After repairing the problem, clear the controller's memory before returning the machine to service.



PIN USAGE

PIN#	USAGE	OTHER NAME
1	Logic power	Logic power (+BATT)
2	Logic ground	Logic ground (-BATT)
3	Solenoid power	Dirty power (+BATT)
4	Solenoid power	
5	Solenoid ground	Dirty ground (-BATT)
6	Solenoid ground	
7	Solenoid S4	Drive S4
8	Not park	
9	Not used	
10	De-clutch pedal	Communication input 3
11	Not used (CAN/H)	
12	Variable horsepower	Drive S8
13	Solenoid S3	Drive S3
14	Not used (J1708/A)	
15	Not used (J1708/B)	
16	Parking brake	Communication input 1
17	Not used (CAN/L)	
18	Reverse signal	Communication output 1
19	Forward signal	Communication output 2
20	Solenoid S2	Drive S2
21	Solenoid S1	Drive S1
22	Solenoid S5	Drive S5
23	Solenoid S6	Drive S6
24	Neutral START	Drive S7

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PRESSURE TEST

After completing the brake pedal adjustments, perform a hydraulic pressure check to assure that the adjustments are correct.

1. Connect a calibrated 2,000 psi (140.6 kg/cm²) gauge to the test port fitting.
2. Start the engine.
3. With the engine running and the brake pedal (2) released, the gauge should register 0 psi (0.0 kg/cm²).

   _____ psi with the Brake Pedal Released
4. Depress the brake pedal (2) against the pedal stop bolt (5). The gauge should register 1160 ±75 psi (81.5 ±5.3 kg/cm²).

   _____ psi with the Brake Pedal Applied
5. Turn the engine off.
6. If both pressure readings are correct, remove the pressure gauge. If the pressure readings do not meet specifications, readjust the pedal linkage as done previously.
7. Connect a calibrated 50 psi (3.5 kg/cm²) gauge.

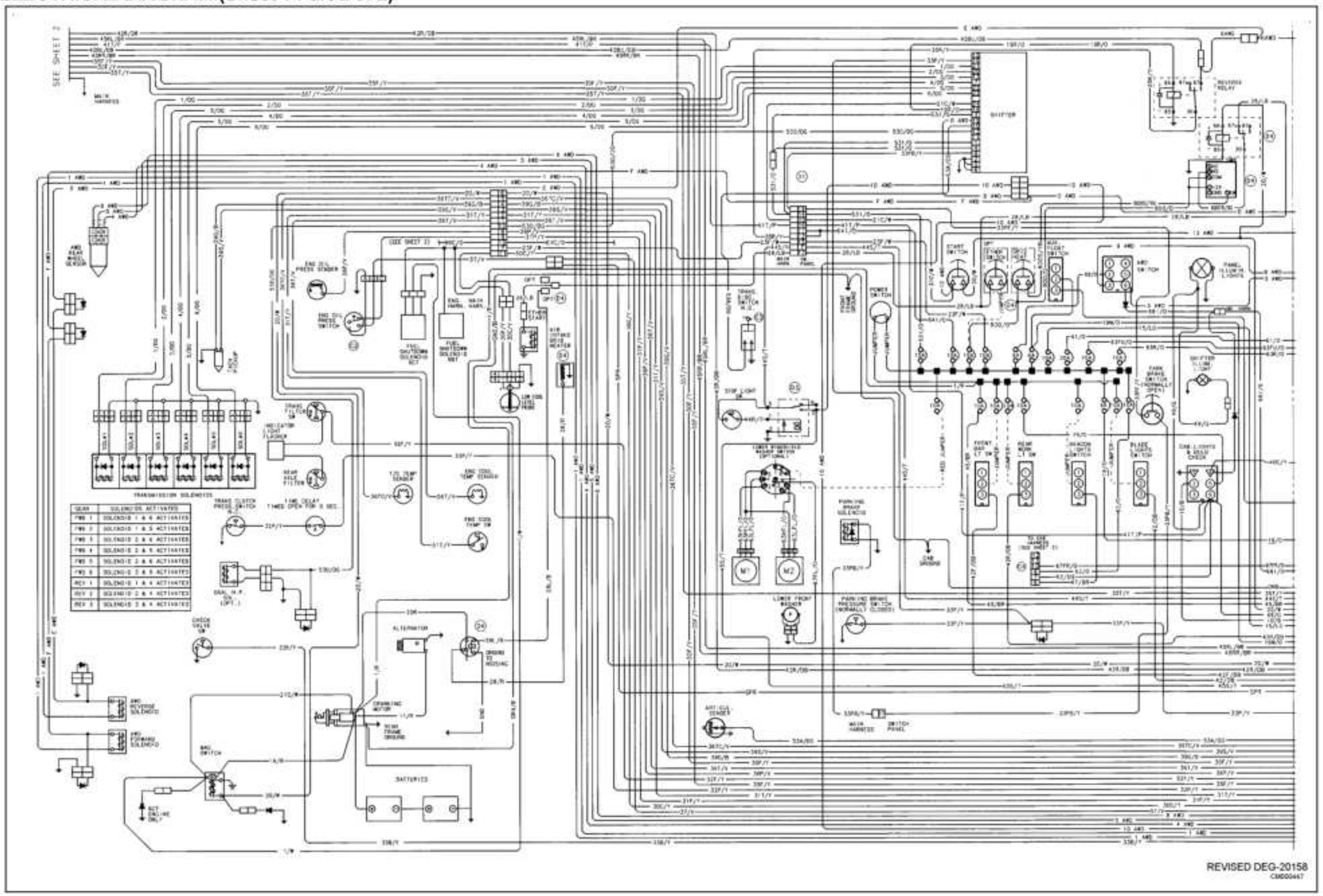
WARNING! Do not depress the brake pedal with the 50 psi (3.5 kg/cm^2) gauge installed.

8. Start the engine.
9. With the brake pedal (2) released, the pressure should register 0 psi (0.0 kg/cm²). However, if the pressure increases:
   A. Loosen the jamnut at the rubber bumper (4).
   B. Turn the bumper (4) CW to increase the 1.50 in (38.1 mm) Dimension until pressure equals 0.0 (0.0 kg/cm²), then increase an additional 0.060 in (1.52 mm).
   C. Tighten the jamnut.

   _____ psi with Brake Pedal Released _____ psi with Brake Pedal Applied
10. Turn the engine off and make the adjustments.
11. Recheck the brake system until the proper readings are obtained.

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REVISED ELECTRICAL DIAGRAM (Sheet 1 Part 2 of 2)



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