SEBM020911

SHOP MANUAL

KOMATSU®

GD555-3C
GD655-3C
GD675-3C

MACHINE MODEL	SERIAL NUMBER
GD555-3C	**50001 and up**
GD655-3C	**50001 and up**
GD675-3C	**50001 and up**

- This shop manual may contain attachments and optional equipment that are not available in your area. Please consult your local Komatsu distributor for those items you may require.
  Materials and specifications are subject to change without notice.
- GD555-3C mounts the SA6D102E-1 or SAA6D102E-2 engine.
  GD655-3C, GD675-3C mount the S6D114E-1, SA6D114E-1 or SAA6D114E-2 engine.
  For details of the engine, see the 102 Series Engine Shop Manual and the 114 Series Engine Shop Manual.

MidWestTech | Komatsu GD555-3C, GD655-3C, GD675-3C Motor Grader Service Manual | Publication SEBM020911
Order the manual at mid-west-tech.com >

SPECIFICATIONS

GD555-3C

Machine Model					GD555-3C VHP Engine	
Serial Number					50001 – 51000	51001 and up
Machine weight				kg	13,850	14,040
	On front axle				3,950	4,000
	On rear axle				9,900	10,040
Dimensions	Overall length			mm	8,370	8,350
	Overall width				2,525	
	Overall height (top of muffler)				2,980	
	Overall height (with ROPS cab)				3,100	
	Wheel base				5,850	
	Distance between centers of tandem wheels				1,535	
	Tread (Front)				2,130	
	Tread (Rear)				2,130	
	Ground clearance				350	
Performance	Travel speed	Forward	1st	km/h	3.3	
			2nd		4.8	
			3rd		6.8	
			4th		9.8	
			5th		14.9	
			6th		21.6	
			7th		29.6	
			8th		42.9	
		Reverse	1st	km/h	4.4	4.4
			2nd		8.9	9.0
			3rd		18.7	19.7
			4th		36.1	39.1
	Maximum drawbar pull			kN {kg}	77.7 {7,920}	78.7 {8,030}
	Gradeability			deg.	24	
	Min. Turning radius			m	6.8	
	Static stability			deg.	35	

- VHP engine: Variable horsepower engine.

MidWestTech | Komatsu GD555-3C, GD655-3C, GD675-3C Motor Grader Service Man... Order the manual at mid-west-tech.com >

Machine Model				GD555-3C	
				VHP Engine	
Serial Number				50001 – 51000	51001 and up
Engine	Engine model			SA6D102E-1	SAA6D102E-2
	Type			4-cycle, water cooled, overhead valve, direct-injection type with turbocharger and aftercooler	
	Cylinder number - bore x stroke		mm	6 - 102 x 120	
	Piston displacement		ℓ {cc}	5.88 {5,880}	
	Performance	Flywheel horsepower	kW/rpm {HP/rpm}	104.4 to 119.3/2,000 {140 to 160/2,000}	
		Maximum torque	Nm/rpm {kgm/rpm}	606.3 to 741.6/1,400 {60.9 to 74.5/1,400}	575.4 to 728.6/1,500 {58.7 to 74.3/1,500}
		Max. speed at no load	rpm	2,200	2,200
		Min. speed at no load	rpm	800	850
		Fuel consumption ratio	g/kWh {g/HPh}	229.4 to 232.4 {171.1 to 173.3}	214.3 {159.7}
	Starting motor			24 V, 7.5 kW	24 V, 5.5 kW
	Alternator			24 V, 50 A	
	Battery			12 V, 112 Ah x 2	
	Radiator type			CF19-4	
Power train	Torque converter			3-element, single-stage Automatic shifting, wet-type clutch	
	Transmission			Multiple shaft Fully automatic electric, automatic shifting type, pump force feed type 8 forward speeds, 4 reverse speeds	
	Reduction gear			Spiral bevel gear, single-stage reduction	
	Rear axle			Fully floating tandem type	
	Tandem			Double-row chain drive	
Steering	Front axle	Type		Reverse Elliott, angle type	
		Max. leaning angle	deg.	16	
	Steering system	Type		Fully hydraulic type	
		Steering angle	deg.	49	
		Articulate angle	deg.	23	

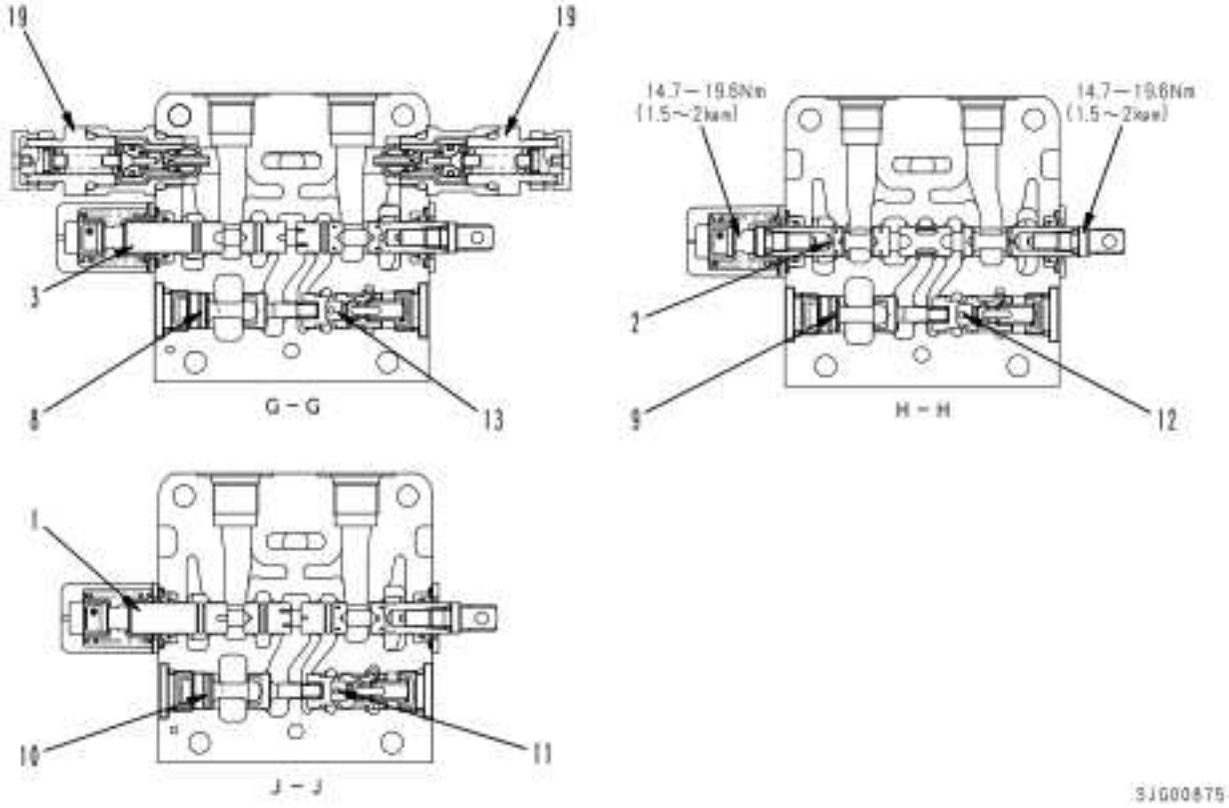
MidWestTech | Komatsu GD555-3C, GD655-3C, GD675-3C Motor Grader Service Man... Order the manual at mid-west-tech.com >

Machine Model				GD555-3C				
				VHP Engine				
Serial Number				50001 and up				
Steering, operating system	Tires	Tires (front)		13.00-24-10PR				
		Tires (rear)		13.00-24-10PR				
		Inflation pressure (front)	kPa {kg/cm²}	275 {2.75}				
		Inflation pressure (rear)	kPa {kg/cm²}	275 {2.75}				
	Brakes	Main brake		Rear 4-wheel braking, multiple-disc wet type				
		Parking brake		Dry disc type				
Hydraulic system	Hydraulic pump	Type x no.		Komatsu LPV90 Variable swash plate type x 1				
		Discharge	ℓ/min.	205				
		Set pressure	MPa {kg/cm²}	206 {210}				
	Control valve	Type x no.		4-spool type x 2 (CLSS)				
		Control method		Hydraulic type				
	Steering related cylinders	Type		Steering		Leaning	Articulating	
				Double-acting piston type				
		Cylinder bore	mm	50		70	90	
		Piston rod outside diameter	mm	35		35	50	
		Piston stroke	mm	330		160	325	
	Work equipment cylinders	Type		Blade lift	Blade side shift	Blade tilt	Drawbar side shift	Ripper
				Double-acting piston type				
		Cylinder bore	mm	80	80	80	80	100
		Piston rod outside diameter	mm	50	50	40	45	50
		Piston stroke	mm	1,160	1,250	300	585	600
		Type		Scarifier				
				Double-acting piston type				
		Cylinder bore	mm	80				
		Piston rod outside diameter	mm	50				
		Piston stroke	mm	345				

MidWestTech | Komatsu GD555-3C, GD655-3C, GD675-3C Motor Grader Service Man... Order the manual at mid-west-tech.com >

LEFT 5-SPOOL VALVE (RIPPER SPECIFICATION) (3/3)

GD555-3C



1. Spool (blade tilt)
2. Spool (circle)
3. Spool (blade shift)
4. Spool (left blade lift)
5. Spool (ripper)
6. Pressure compensation valve F (ripper)
7. Pressure compensation valve F (left blade lift)
8. Pressure compensation valve F (blade shift)
9. Pressure compensation valve F (circle)
10. Pressure compensation valve F (blade tilt)
11. Pressure compensation valve R (blade tilt)
12. Pressure compensation valve R (circle)
13. Pressure compensation valve R (blade shift)
14. Pressure compensation valve R (left blade lift)
15. Pressure compensation valve (ripper)
16. LS bypass plug
17. Unload valve
18. Safety-suction valve

Unit: mm

No.	Check item	Criteria					Remedy
		Standard size			Repair limit		
		Free length x OD	Installed length	Installed load	Free length	Installed load	
19	Spool return spring	56.27 x 20.1	25.4	34.8 N {3.55 kg}	—	27.9 N {2.84 kg}	Replace spring if damaged or deformed
20	Spool return spring (circle)	87.7 x 19.7	25.4	34.8 N {3.55 kg}	—	27.9 N {2.84 kg}	
21	Pressure compensation valve spring (R)	23 x 8.4	15	6.9 N {0.7 kg}	—	5.52 N {0.56 kg}	
22	Pressure compensation valve spring (F)	15.4 x 6	8	7.45 N {0.76 kg}	—	5.98 N {0.61 kg}	
23	Unload valve spring	35.25 x 19	20.5	137 N {14 kg}	—	110 N {11.2 kg}	

MidWestTech | Komatsu GD555-3C, GD655-3C, GD675-3C Motor Grader Service Man... Order the manual at mid-west-tech.com >

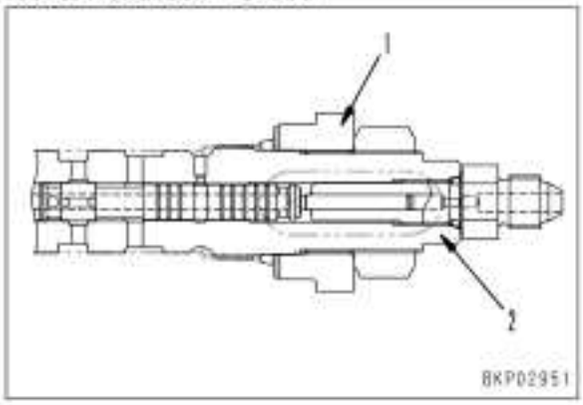
ADJUSTING PC VALVE

★ If the load becomes high and the engine speed drops, or the engine speed remains normal and the work equipment becomes slower, but the pump discharge pressure and the LS differential pressure are normal, adjust the PC valves as follows.

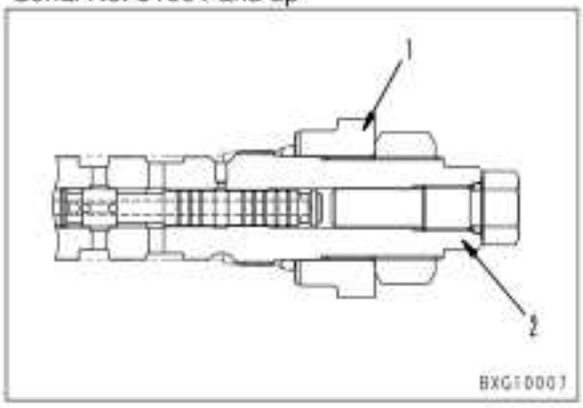
1. Loosen the locknut (1) and turn the sleeve (2) to adjust as follows.
   - If the work equipment speed is slow, turn CLOCKWISE.
   - If the engine speed drops, turn COUNTER-CLOCKWISE
   - ★ Turning the sleeve clockwise increases the pump absorption torque.
   - ★ Turn the adjustment sleeve within a range of 180° to the left or right.

2. After adjusting, tighten the locknut (1) from 88 to 113 Nm {9 to 11.5 kgm}.

Serial No. 50001 – 51000

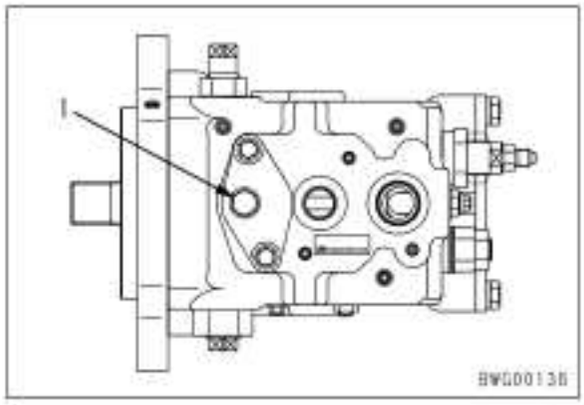


Serial No. 51001 and up



BLEEDING AIR FROM HYDRAULIC CIRCUIT

1. Bleeding air from the pump
   1) Loosen the air bleed plug (1), and bleed the air from the pump.
   - ★ When air no longer is discharged with the oil, the air bleeding operation is completed.
   2) Tighten the plug (1) from 14.7 to 19.6 Nm {1.5 to 2.0 kgm}
   - ★ Precautions when starting the engine After completing the above procedure and starting the engine, run the engine at low idle for 10 minutes.



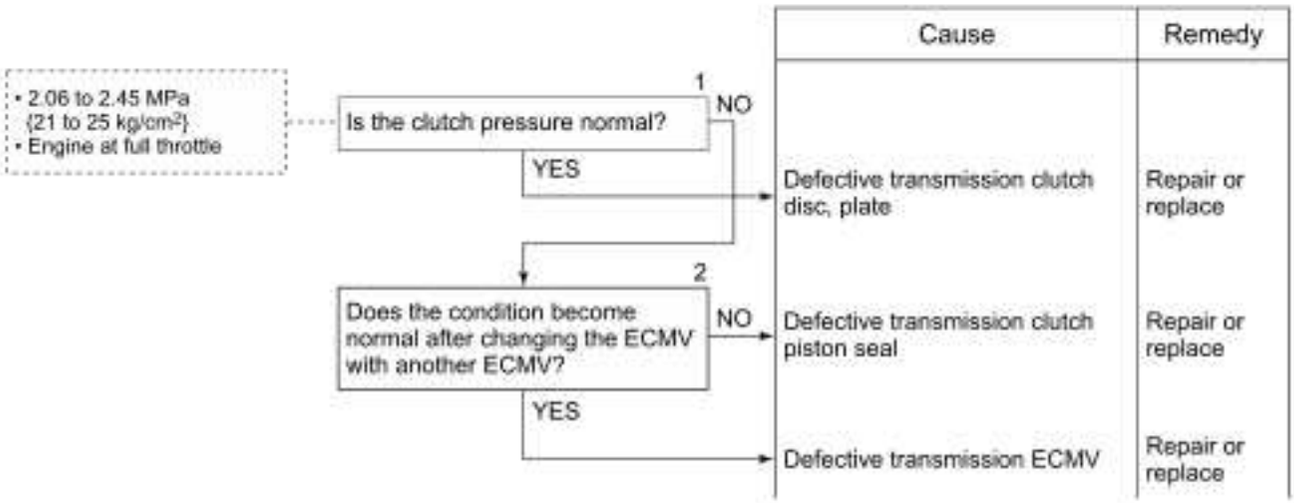
2. Bleeding air from the pump circuit
   1) Start the engine, remove the plugs (1) and (2), and bleed the air.
   - ★ When air no longer is discharged with the oil, the air bleeding operation is completed.
   2) Tighten the plugs (1) and (2).



MidWestTech | Komatsu GD555-3C, GD655-3C, GD675-3C Motor Grader Service Man... Order the manual at mid-west-tech.com >

H-12 Transmission does not shift-up or shift-down

Before troubleshooting, operate the gearshift lever to each speed range to determine the speed ranges where the transmission does not shift-up or shift-down.

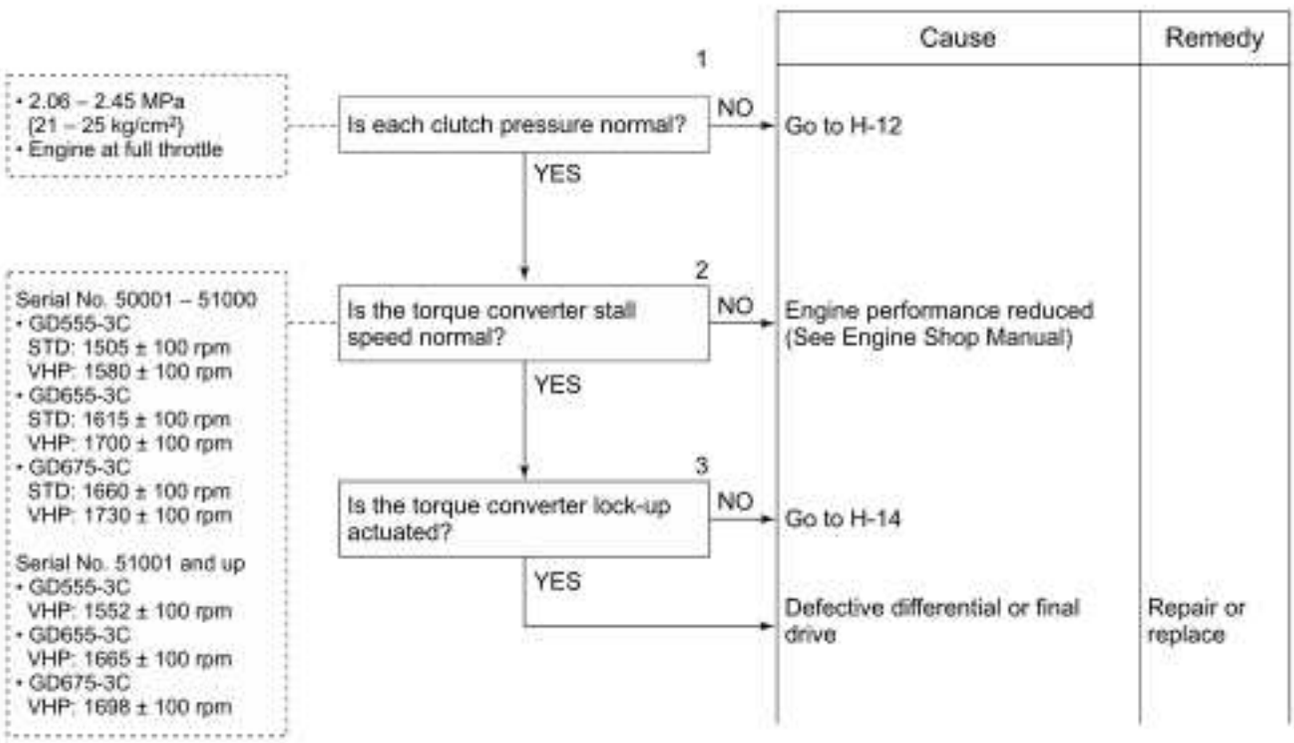


H-13 Machine is slow or lacks power when traveling

Before troubleshooting, operate the gearshift lever to each speed range to check if the travel is slow or lacks power in all speed ranges, or if it is only in certain speed ranges.

a) Travel is slow or lacks power in all speed ranges

- Check that the brake is not dragging before troubleshooting.The machine should move after the gearshift lever is at F4 and the engine is at low idle.

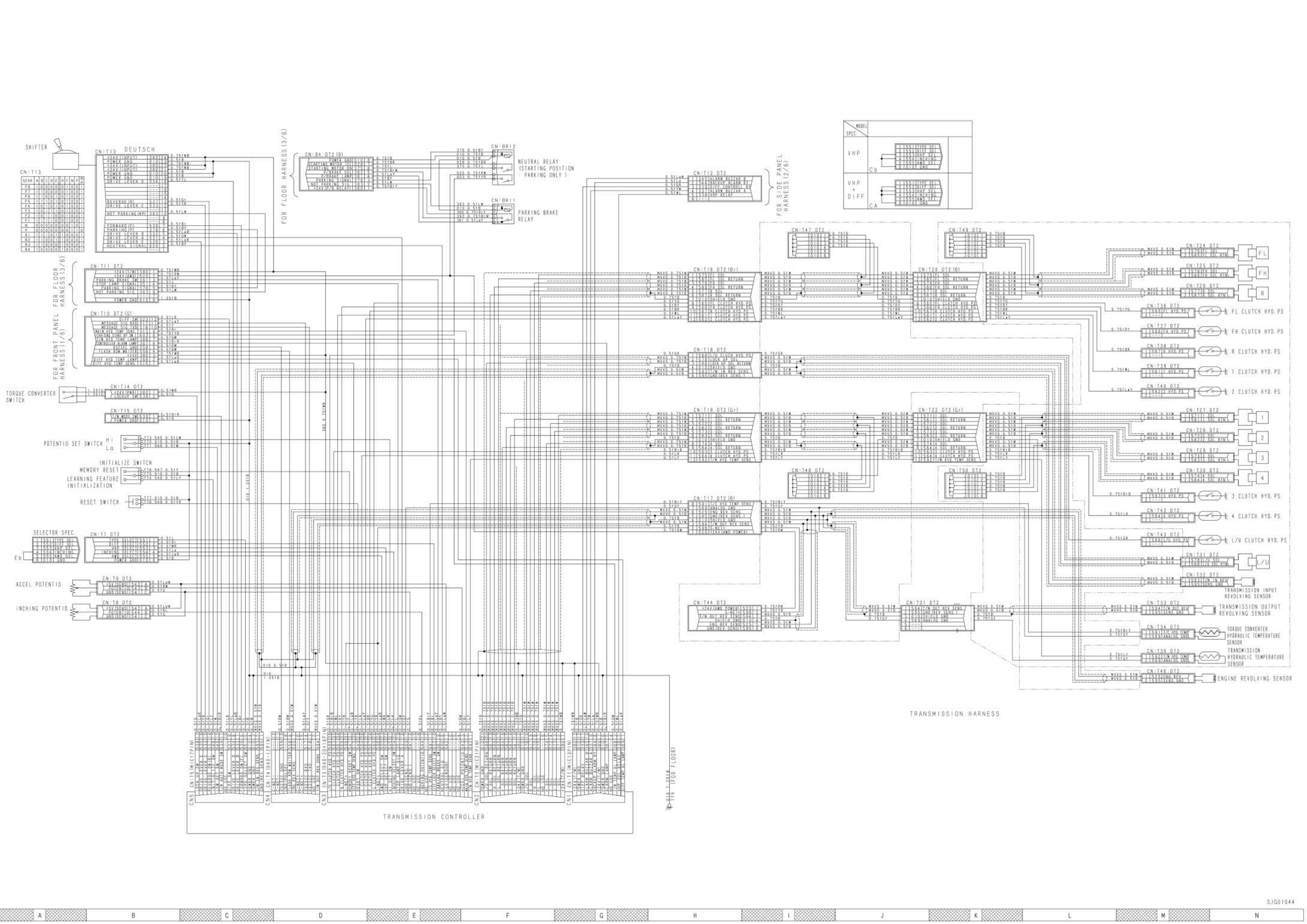


b) Travel is slow or lacks power in certain speed ranges: Refer to troubleshooting H-11.

MidWestTech | Komatsu GD555-3C, GD655-3C, GD675-3C Motor Grader Service Man... Order the manual at mid-west-tech.com >

ELECTRICAL CIRCUIT DIAGRAM (6/6)

Serial No.: 51001 and up



MidWestTech | Komatsu GD555-3C, GD655-3C, GD675-3C Motor Grader Service Manual | Publication SEBM020911

Order the manual at mid-west-tech.com >