

PARTS & SERVICE NEWS

REF NO.	AA03030
DATE	February 10, 2003

SUBJECT: TRANSMISSION SHIFTER UPGRADE

PURPOSE: To inform the field of the graders new transmission shifter program.

APPLICATION: 830B Motor Grader Serial Number 211038 and Up
 830C Motor Grader Serial Number 211038 and Up
 850B Motor Grader Serial Number 211038 and Up
 850C Motor Grader Serial Number 211038 and Up
 870B Motor Grader Serial Number 211038 and Up
 870C Motor Grader Serial Number 211038 and Up
 GD530A-2BY Motor Grader Serial Number 211038 and Up
 GD530A-2CY Motor Grader Serial Number 211038 and Up
 GD530AW-2BY Motor Grader Serial Number 211038 and Up
 GD530AW-2CY Motor Grader Serial Number 211038 and Up
 GD650A-2BY Motor Grader Serial Number 211038 and Up
 GD650A-2CY Motor Grader Serial Number 211038 and Up
 GD650AW-2BY Motor Grader Serial Number 211038 and Up
 GD650AW-2CY Motor Grader Serial Number 211038 and Up
 GD670A-2BY Motor Grader Serial Number 211038 and Up
 GD670A-2CY Motor Grader Serial Number 211038 and Up
 GD670AW-2BY Motor Grader Serial Number 211038 and Up
 GD670AW-2CY Motor Grader Serial Number 211038 and Up

FAILURE CODE: DAQ0MA

DESCRIPTION: The grader transmission shifter has been replaced for better shift response program, as some shifters were being returned for warranty when the shifter has not failed. With the previous shifter, operators complained not being able to make a fast shift out of neutral. In addition they did not like the programming when they landed in between gears, the shifter forced them to go back to neutral. The new shifter program permits a fast shift out of neutral. The program was also such that the if the shift handle stops in between the detented handle positions the grader remains in the last gear for 0.25 second then drops to neutral. The handle can be moved to the desired gear without having to return to neutral.

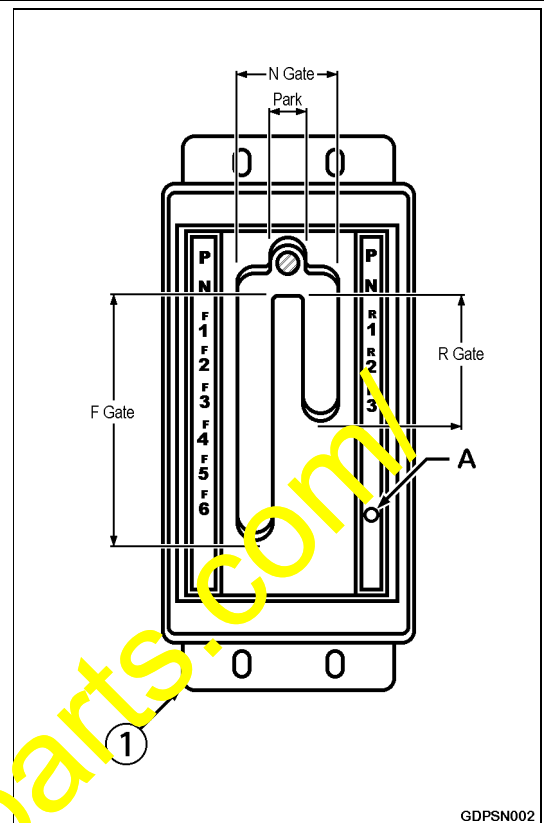
Item	New Part	Description	Qty	Old Part
①	1439 905 H92	SHIFTER ASSY, TRANSMISSION.....	1	1439 905 H91

NOTE The information in this Parts & Service News does not authorize or imply any obligation on the part of Komatsu America Company to provide reimbursement for any expenses. Machines requiring part repair or part replacement during the machine warranty are covered under normal warranty. Out of warranty machines are the responsibility of the distributor/customer.

The U gate shifter now has on board diagnostics. A red colored LED (A) on the right side of the shifter will flash a code to indicate the type of problem. See the following table to for a diagnostic interruption of the error code flashing sequences.

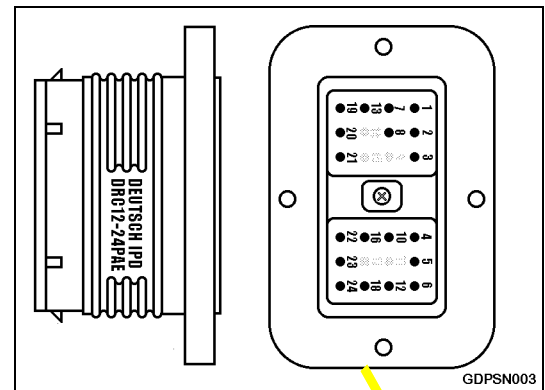
NOTE When an error code occurs the transmission automatically shifts to neutral despite the gearshift remaining at the selected position. Thus the machine cannot move. Move the gearshift to the neutral position will clear the controller's memory. After clearing the memory, the transmission gears can once again be engaged. To determine if the problem is a glitch or a actual problem, reposition the handle to the desired gear range and continue the operation. If the LED light flashes again, count the number of flashes because you may have a electrical problem with one of the shifter input output wires. See the following table for a diagnostic interpretation to the LED flash code and make the needed repairs.

- Error 1 LED flashes after 0.25 seconds, a neutral like state invoked after 2 seconds.
- Error 2 The shift lever retries the operation several times over a 5 second period prior to declaring this type of fault.
- Error 3 The shift lever retries the operation several times over a 5 second period prior to declaring this type of fault. LED will continue to flash for 5 seconds after this fault is cleared.



Error	Description	LED Response	Time to Error Code	Clear Error Attempt
0	Unit functioning normally.	LED off	---	---
1	Shift lever held between two gear positions or shift lever sensor fault.	One flash, pause repeating	0.25second	Move the shift lever to a valid gear position, or to Neutral or Park
2	High side driver output shorted to battery	Two flashes, pause repeating	Immediate	Move the shift lever to another gear position, or to Neutral or Park. Use a voltmeter to determine if there is a positive voltage on pins 7, 8, 12, 13, 18, 19, 20, 21, 22, 23 or 24. Determine the cause of positive voltage and correct.
3	High side driver output shorted to ground	Three flashes, pause repeating	Immediate	Move the shift lever to another gear position, or to Neutral or Park. Use a voltmeter to determine if there is a short to ground on pins 7, 8, 12, 13, 18, 19, 20, 21, 22, 23 or 24. Determine cause of the short circuit and correct.
4	Ignition attempt (or power cycle) with shift lever in Forward or Reverse	LED stays on	Immediate	Move the shift lever to Neutral or Park. If the error does not clear, replace the shifter

The transmission shifter connector is a Deutsch DRC12-24PAE.



Pin	Signal	Type	Volts min	Volts max	Amps max
1	V battery	Power	9	32	★
2	Battery ground	Ground	---	---	---
3	V battery	Power	9	32	★
4	V battery	Power	9	32	★
5	Battery ground	Ground	---	---	---
6	Battery ground	Ground	---	---	---
7	S4 solenoid	HSD O/P	9	32	4
8	NOT PARK solenoid	HSD O/P	9	32	4
10	DECLUTCH pressure - pedal	I/P, switch NP to ground	0	32	NA
12	S8 VHP solenoid	HSD O/P	9	32	4
13	S3 solenoid	HSD O/P	9	32	4
16	Parking brake pressure - hydraulic	I/P switch NC to ground	0	32	NA
18	Reverse solenoid	HSD O/P	9	32	4
19	Forward Solenoid	HSD O/P	9	32	4
20	S2 solenoid	HSD O/P	9	32	4
21	S1 solenoid	HSD O/P	9	32	4
22	S5 solenoid	HSD O/P	9	32	4
23	S6 solenoid	HSD O/P	9	32	4
24	S7 neutral start solenoid	HSD O/P	9	32	4

★ 15A total on the three V battery Pins 1, 3 and 4, not 15A per V battery pin.

HSD:High Side Driver

VHP:Variable Horse Power

Parking Brake Pressure Switch input:Ground when brake on, travel disabled.

Declutch Pressure Switch input:Ground when pedal pressed to floor.