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DIAGNOSIS

1. TC

Symptoms	Check	Action
Electric shift problems	<ul style="list-style-type: none"> Faulty or damaged TCCU, speed sensor, motor, clutch or internal wirings 	<ul style="list-style-type: none"> Overhaul and check, replace if necessary
	<ul style="list-style-type: none"> Damaged or worn shift cam, hub, fork and rail shift 	<ul style="list-style-type: none"> Overhaul and check for wear and damage.
	<ul style="list-style-type: none"> Binding shift fork, hub collar or gear 	<ul style="list-style-type: none"> Check sliding parts, replace if necessary.
Cannot drive front wheel when shifting to 4H, 4L	<ul style="list-style-type: none"> Broken drive chain 	<ul style="list-style-type: none"> Check internal parts and replace drive chain.
Noise in 4WD operation	<ul style="list-style-type: none"> Improper or low oil Loosened bolts or mounted parts Noisy T/C bearing 	<ul style="list-style-type: none"> Drain and replace with specified oil. Retighten as specified. Disassemble bearings and parts and check for wear or damage. Replace if necessary.
	<ul style="list-style-type: none"> Gear abnormal noise 	<ul style="list-style-type: none"> Check for wear and damage including speedometer gear. Replace if necessary.
Noise in 4H or 4L	<ul style="list-style-type: none"> Worn or damaged sprockets or drive chain 	<ul style="list-style-type: none"> Disassemble and check for wear and damage. Replace if necessary.
	<ul style="list-style-type: none"> Incorrect tire pressure 	<ul style="list-style-type: none"> Adjust tire pressure.
Transfer case oil leakage	<ul style="list-style-type: none"> Cracked transfer case 	<ul style="list-style-type: none"> Replace the case.
	<ul style="list-style-type: none"> Leakage from other parts 	<ul style="list-style-type: none"> Clean case and parts and check for leakage.
	<ul style="list-style-type: none"> Breather clogging 	<ul style="list-style-type: none"> Remove breather hose and clean. Replace if necessary.
	<ul style="list-style-type: none"> Improper or too much oil 	<ul style="list-style-type: none"> Use specified oil and adjust oil level.
	<ul style="list-style-type: none"> Loosened sealing bolts 	<ul style="list-style-type: none"> Retighten.
	<ul style="list-style-type: none"> Improperly applied sealant Worn or damaged oil seal 	<ul style="list-style-type: none"> Use specified sealant and retighten. Replace oil seal.

ECU-GASOLIN
ECU-DIESEL
BRAKE
AIR-BAG
CCCS
FATC
FFH
P/TRUNK
RAIN SENSOR
STICS
TC
TCU
TGS LEVER

Modification basis	
Application basis	
Affected VIN	

Code	Description	Action
P1806	Detective CAN communication	<ul style="list-style-type: none"> • Check communication line. • Replace TCCU if necessary.
P1805	Defective mode switch	<ul style="list-style-type: none"> • When the mode switch is defective • Check TCCU pin No.4 and 16. • Mode change <ul style="list-style-type: none"> - 2H (Pin No. 4: Ground) - 4H (No contact: Open) - 4L (Pin No.16: Ground)
P1821	Open or short to ground in magnetic clutch coil circuit	<ul style="list-style-type: none"> • Voltage at TCCU pin No.11: 11 ~ 15 V • EMC resistance: 2.5 Ω • Check the relevant connectors for contact. • Replace TCCU if necessary.
P1822	Open or short to ground in hub control circuit	<ul style="list-style-type: none"> • When the hub control circuit is open or short to ground over 0.2 second • Replace TCCU if necessary.
P1841	Open to ground in shift motor circuit	<ul style="list-style-type: none"> • When TCCU detects the motor failure for 1 second • Check the relevant harnesses for contact. • Replace TCCU if necessary.
P1842	Short to ground in shift motor output circuit	<ul style="list-style-type: none"> • When TCCU detects the motor failure for 1 second • Check the relevant harnesses for contact. • Replace TCCU if necessary.
P1843	Defective position sensor in motor	<ul style="list-style-type: none"> • 2H-4H: after 1.5 seconds • 4H-4L: after 3 seconds • Check the relevant harnesses for contact. • Replace TCCU if necessary.
P1844	Stuck in 4L mode	<ul style="list-style-type: none"> • When no shifting operation from 4L to 4H, even though the shift conditions are satisfied and no error. • Replace TCCU if necessary.

Modification basis	
Application basis	
Affected VIN	

Code	Description	Action
P1850	Defective position encoder	<ul style="list-style-type: none"> • When the position encoder is defective • Check the relevant harnesses. • Check the relevant connectors for contact. • Check the shift motor.
P1851	Short to ground for position encoder 1	<ul style="list-style-type: none"> • Short to ground for position encoder 1 in shift motor • Check the relevant harnesses for short. <ul style="list-style-type: none"> - TCCU pin No.18 • Check the relevant connectors for contact. • Check the shift motor.
P1852	Short to ground for position encoder 2	<ul style="list-style-type: none"> • Short to ground for position encoder 2 in shift motor • Check the relevant harnesses for short. <ul style="list-style-type: none"> - TCCU pin No.5 • Check the relevant connectors for contact. • Check the shift motor.
P1853	Short to ground for position encoder 3	<ul style="list-style-type: none"> • Short to ground for position encoder 2 in shift motor • Check the relevant harnesses for short. <ul style="list-style-type: none"> - TCCU pin No.19 • Check the relevant connectors for contact. • Check the shift motor.
P1854	Short to ground for position encoder 4	<ul style="list-style-type: none"> • Short to ground for position encoder 4 in shift motor • Check the relevant harnesses for short. <ul style="list-style-type: none"> - TCCU pin No.17 • Check the relevant connectors for contact. • Check the shift motor.
P1815	Abnormal CAN neutral signal	<ul style="list-style-type: none"> • No neutral signal from automatic transmission over 1 second through CAN. • Check CAN communication line. • Check TCU.

ECU-GASOLIN
 ECU-DIESEL
 BRAKE
 AIR-BAG
 CCCS
 FATC
 FFH
 P/TRUNK
 RAIN SENSOR
 STICS
 TC
 TCU
 TGS LEVER

Modification basis	
Application basis	
Affected VIN	

Symptoms		Cause	Action
Noise	Noise in all ranges	- Low oil level	- Check major components (bearing surface) for excessive wear - Replenish oil
		- Improper oil	- Drain oil and replenish the specified oil
		- Worn or broken chain	- Replace chain or sprocket
	Growling	- Broken bearing	- Replace transfer case housing
		- Low oil level	- Check major components (bearing surface) for excessive wear - Replenish oil
	Noise when cornering	- Worn pinion gear teeth	- Replace differential carrier assembly
	Low frequency noise and vibration	- Missing shaft support snap ring	- Visually check the relevant parts for wear and replace if necessary
Howling	- Abnormal friction in drive system	- Disassemble drive system, check rotating parts for wear and replace the worn parts.	
Clunking	Clunking (when starting and stopping)	- Excessive backlash in T/C (over 3°)	- Check backlash and replace if necessary
		- Improper mounting	- Excessive backlash in drive system - Check drive system
		- Excessive backlash in other parts	- Excessive backlash in drive system - Check drive system
Undrivable	Cannot deliver forward/reverse driving force	- Worn or broken chain	- Replace chain or sprocket
		- Broken sprocket	- Replace chain or sprocket
		- Broken differential carrier	- Replace differential carrier assembly
		- Broken shaft	- Replace shaft
Binding	Dragging in front wheels or rear wheels	- Differential carrier stuck	- Replace differential carrier
Leakage	Leakage at transmission connection	- Damaged oil seal in T/C	- Replace oil seal
		- Clogged breather	- Check breather for clogging - Replace connecting hose
	Leakage at front and rear shafts	- Foreign material in oil seal	- Remove any foreign material, check oil seal for damage and replace oil seal
		- Broken oil seal	- Replace oil seal
		- Clogged breather	- Check breather for clogging - Replace connecting hose
	Leakage at case or cover body	- Cracked case or cover	- Replace transfer case
		- Air bubbles inside	
	Leakage at drain plug	- Bubbles no mounting bolt	- Replace drain plug
		- Uneven or missing plug coating	
	Leakage at filler plug	- Bubbles no mounting bolt	- Replace filler plug
- Uneven or missing plug coating			
Leakage at body connection	- Improperly applied sealant	- Disassemble T/C, apply sealant and reassemble it	
	- Loose bolt around the leaking area	- Tighten to the specified torque	

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