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Model Year Start: 2016	Model: LX570	Prod Date Range: [09/2015 -]
Title: JF2A TRANSFER / 4WD / AWD: TRANSFER SYSTEM: FREEZE FRAME DATA; 2016 - 2018 MY LX570 [09/2015 -]		

FREEZE FRAME DATA

1. FREEZE FRAME DATA

(a) When a DTC is stored, the 4 wheel drive control ECU stores the current vehicle state as Freeze Frame Data.

HINT:

Freeze Frame Data at the time a DTC is stored:

When the 4 wheel drive control ECU stores data at the time a DTC is stored, no updates will be performed until the data is cleared.

2. CHECK FREEZE FRAME DATA

- (a) Turn the engine switch off.
- (b) Connect the Techstream to the DLC3.
- (c) Turn the engine switch on (IG).
- (d) Turn the Techstream on.
- (e) Enter the following menus: Powertrain / Four Wheel Drive / Trouble Codes.
- (f) According to the display on the Techstream, select the trouble code data display with Freeze Frame Data.

Four Wheel Drive

TESTER DISPLAY	MEASUREMENT ITEM/RANGE	NORMAL CONDITION	DIAGNOSTIC NOTE
FR Wheel Speed	Front wheel speed sensor RH reading/ Min.: 0.00 km/h (0.00 mph) Max.: 327.67 km/h (203.61 mph)	Vehicle stopped: 0.00 km/h (0.00 mph)	No large fluctuations when driving at a constant speed.
FL Wheel Speed	Front wheel speed sensor LH reading/ Min.: 0.00 km/h (0.00 mph) Max.: 327.67 km/h (203.61 mph)	Vehicle stopped: 0.00 km/h (0.00 mph)	No large fluctuations when driving at a constant speed.
RR Wheel Speed	Rear wheel speed sensor RH reading/ Min.: 0.00 km/h (0.00 mph) Max.: 327.67 km/h (203.61 mph)	Vehicle stopped: 0.00 km/h (0.00 mph)	No large fluctuations when driving at a constant speed.
RL Wheel Speed	Rear wheel speed sensor LH reading/ Min.: 0.00 km/h (0.00 mph) Max.: 327.67 km/h (203.61 mph)	Vehicle stopped: 0.00 km/h (0.00 mph)	No large fluctuations when driving at a constant speed.
Vehicle Speed	Maximum wheel speed sensor reading/ Min.: 0.00 km/h (0.00 mph) Max.: 327.67 km/h (203.61 mph)	Vehicle stopped: 0.00 km/h (0.00 mph)	No large fluctuations when driving at a constant speed.
Transfer Oil Temperature	Transfer shift actuator temperature/ Min.: -56°C (-69°F) Max.: 199°C (390°F)	Displays transfer shift actuator temperature	-
Ambient Temperature	Ambient Temperature/ Min.: -56°C (-69°F) Max.: 199°C (390°F)	Displays ambient temperature	-
Transfer Position Control SW	Transfer position switch (integration control and panel assembly) status/ ON or OFF	ON: L4 OFF: H4	-
Center Differential Lock Control SW	Center differential lock switch (integration control and panel assembly) status/ ON or OFF	ON: Switch pressed and held OFF: Switch not pressed	-
Rear Differential Lock Control SW	-	-	This option is displayed but it is not used.
Center Differential Lock Position SW	Center differential lock detection switch status/ ON or OFF	ON: Switch on (lock) OFF: Switch off (free)	-
Transfer Neutral	-	-	This option is displayed but

Position SW TESTER	MEASUREMENT ITEM/RANGE	NORMAL CONDITION	it is not used. DIAGNOSTIC NOTE
DISPLAY Rear Differential Lock Position SW	-	-	This option is displayed but it is not used.
IG SW	Engine switch status/ ON or OFF	ON: Engine switch on (IG)	-
Center Differential Lock Limit SW (TL2)	Center differential lock limit switch (TL2) status/ ON or OFF	ON: Switching between free and lock, or set to lock OFF: Set to free	-
Center Differential Lock Limit SW (TL3)	Center differential lock limit switch (TL3) status/ ON or OFF	ON: Set to free or switching between free and lock OFF: Set to lock	-
Rear Differential Lock Limit SW (RLY1)	-	-	This option is displayed but it is not used.
Rear Differential Lock Limit SW (RLY2)	-	-	This option is displayed but it is not used.
H-L Limit SW (HL1)	High-low transfer limit switch (HL1) status/ ON or OFF	ON: 4H OFF: 4L	Switches from on to off: While switching from 4H to 4L Switches from off to on: While switching from 4L to 4H
H-L Limit SW (HL2)	High-low transfer limit switch (HL2) status/ ON or OFF	ON: 4L OFF: 4H	Switches from off to on: While switching from 4H to 4L Switches from on to off: While switching from 4L to 4H
H-L Limit SW (HL3)	High-low transfer limit switch (HL3) status/ ON or OFF	ON: While switching between 4H and 4L OFF: Set to 4H or 4L	-
Clutch SW	-	-	This option is displayed but it is not used.
Shift SW Status (N Range)	Shift lever neutral condition/ ON or OFF	ON: Shift lever in N OFF: Shift lever not in N	-
Engine Fail Signal	Engine control system malfunction status/ Normal or Abnormal	Normal: Engine control system normal	Abnormal: Engine control system malfunctioning
Shift SW Status (P Range)	Shift lever P condition/ ON or OFF	ON: Shift lever in P OFF: Shift lever not in P	-
Stop Light SW	Stop light switch assembly condition/ ON or OFF	ON: Brake pedal depressed OFF: Brake pedal released	-
VSC System	VSC system availability/ Without or With	With: w/ VSC	-
VSC Fail Signal	VSC system malfunction status/ Normal or Abnormal	Normal: VSC system normal	Abnormal: VSC system malfunctioning
Center Differential Lock Shift Motor Target Current	Center differential lock shift motor driver circuit target current value/ Min.: 0.0 A Max.: 25.5 A	Normal: 0.0 A Switching: 0.0 to 25.5 A	-
H-L Shift Motor Target Current	High-low transfer shift motor drive circuit target current value/ Min.: 0.0 A Max.: 25.5 A	Normal: 0.0 A Switching: 0.0 to 25.5 A	-

TESTER DISPLAY	MEASUREMENT ITEM/RANGE	NORMAL CONDITION	DIAGNOSTIC NOTE
Rear Differential Lock Shift Motor Target Current	-	-	This option is displayed but it is not used.
Motor Actual Current	Motor drive circuit actual current value/ Min.: 0.0 A Max.: 25.5 A	Normal: 0.0 A Switching: 0.0 to 25.5 A	-
Motor Energization Status Signal	Motor power signal status/ ON or OFF	ON: Power supplied to motor OFF: Power not supplied to motor	-
C/C Cancel Request	Cruise control cancellation signal status/ ON or OFF	ON: Cruise control cancellation requested OFF: Cruise control cancellation not requested	-
L4 Position Signal	L4 status signal/ ON or OFF	ON: L4 state OFF: State other than L4	-
Rear Differential Lock Position Signal	-	-	This option is displayed but it is not used.
H-L Actuator Fail Signal	High-low transfer actuator malfunction status/ Normal or Abnormal	Normal: High-low transfer actuator normal	Abnormal: High-low transfer actuator malfunctioning
Center Differential Lock Position Signal	Center differential lock condition signal/ ON or OFF	ON: Lock condition OFF: Condition other than lock	-
Transfer Neutral Position Signal	-	-	This option is displayed but it is not used.
Buzzer Request	Buzzer sounding request/ Sound, Sound(3 times), No Sound	No Sound: Does not sound	Sound(3 times): During a malfunction*1
L4 Indicator Request	4LO indicator light request/ Blink3, Blink1, ON, OFF	- Blink3: Indicator light rapidly blinks - Blink1: Indicator light blinks - ON: Indicator light illuminates - OFF: Indicator light turns off	- Blinking: 0.5 second intervals (0.5 seconds on and 0.5 seconds off) - Rapidly blinking: 0.25 second intervals (0.25 seconds on and 0.25 seconds off)
Rear Differential Lock Indicator Request	-	-	This option is displayed but it is not used.
Center Differential Lock Indicator Request	Center differential lock indicator light request/ Blink3, Blink2, Blink1, ON or OFF	- Blink3: Indicator light rapidly blinks - Blink2: Indicator light blinks 3 times - Blink1: Indicator light blinks - ON: Indicator light illuminates - OFF: Indicator	- Blinking: 0.5 second intervals (0.5 seconds on and 0.5 seconds off) - Rapidly blinking: 0.25 second intervals (0.25 seconds on and 0.25

TESTER DISPLAY	MEASUREMENT ITEM/RANGE	NORMAL CONDITION	DIAGNOSTIC NOTE
IG Voltage	IG monitor voltage/ Min.: 0.0 V Max.: 25.5 V	11 to 14 V: Engine switch on (IG)	-
Motor Voltage	Motor driver circuit monitor voltage/ Min.: 0.0 V Max.: 25.5 V	Normal: 1.5 to 12.0 V Switching: 3.5 V	-
Mode Status	Mode transition condition/ Initial Control, Particular Control at Start-Up, Shift Setting Control at Start-Up, H4F, H4L, L4F, L4L, L4LL*2, H4F->H4L, H4L->H4F, L4F->L4L, L4L->L4F, H4F->L4F, L4F->H4F, H4L->L4L, L4L->H4L, L4L->L4LL*2, L4LL->L4L*2, S04, S05, S06, S07, S08, S09, S10, B1, B2, B3, B4, HF1	Transition condition of the high-low transfer actuator and center differential lock actuator	HINT: - S04 to S10: Control while switching limited - B1 to B4: During return control - HF1: During fuel control
Motor Relay (RY1-1)	Internal ECU relay (RY1-1) condition*3/ ON or OFF	ON: Relay on OFF: Relay off	-
Motor Relay (RY1-2)	Internal ECU relay (RY1-2) condition*3/ ON or OFF	ON: Relay on OFF: Relay off	-
Motor Relay (RY2-1)	Internal ECU relay (RY2-1) condition*3/ ON or OFF	ON: Relay on OFF: Relay off	-
Motor Relay (RY2-2)	Internal ECU relay (RY2-2) condition*3/ ON or OFF	ON: Relay on OFF: Relay off	-
AT/MT	AT or MT identification/ AT or MT	AT: Automatic transmission	-
CAN Signal Invalid Status by IG Voltage Low	Whether CAN communication data invalid condition due to IG voltage drop/ Valid or Inval	Valid: IG voltage 10 V or higher	Inval: IG voltage below 10 V
SW Input Invalid Status by IG Voltage Low	Input invalid condition of switches inside actuator due to IG voltage drop/ Valid or Inval	Valid: IG voltage 7.4 V or higher	Inval: IG voltage below 7.4 V
Transfer Shift Invalid Status by IG Voltage Low	Transfer shift actuator switching operation invalid condition due to IG voltage drop/ Valid or Inval	Valid: IG voltage 10 V or higher	Inval: IG voltage below 10 V
Number of DTC	Number of DTCs stored/ Min.: 0 Max.: 255	0	-

*1: For details regarding malfunctions, refer to the buzzer sounding conditions of the diagnosis system (See page [INFO](#)).

*2: Item not equipped, therefore not displayed

*3: For the position of the relay, refer to the P17A9 wiring diagram (See page [INFO](#)).

3. CLEAR FREEZE FRAME DATA

NOTICE:

Clearing the DTCs will also clear the Freeze Frame Data.

- Turn the engine switch off.
- Connect the Techstream to the DLC3.
- Turn the engine switch on (IG).
- Clear the DTCs and Freeze Frame Data (See page [INFO](#)).