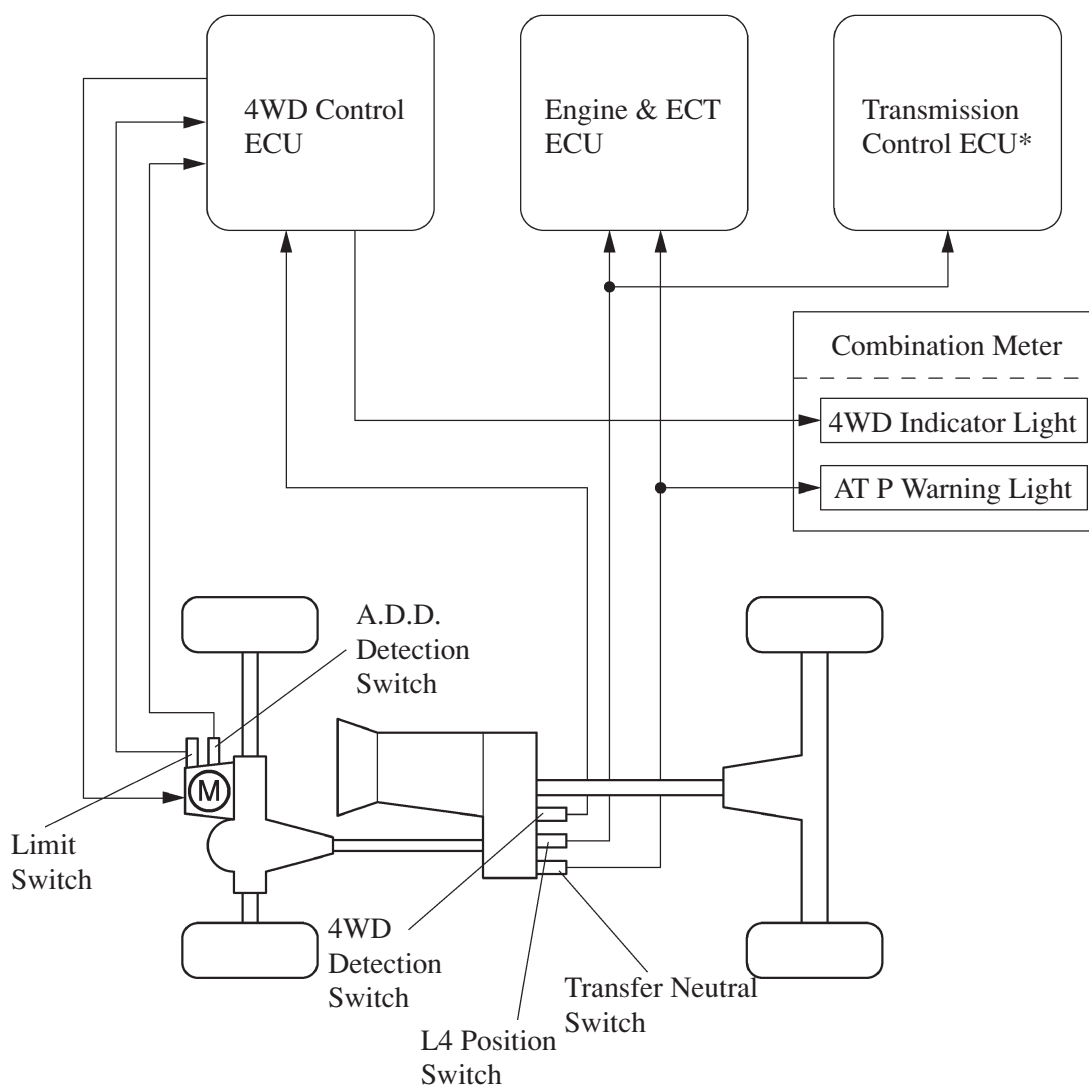


■ 4WD SYSTEM

1. General

- In the 4WD system of the new Hilux, the VF2A transfer switches to H2, H4, or L4 when the driver manually operates the 4WD shift lever.
- On a model equipped with a front differential with A.D.D. (Automatic Disconnecting Differential) shift actuator, when the driver operates the shift lever to 4WD or 2WD, the 4WD control ECU operates the A.D.D. shift actuator in order to lock or free the engagement of the front drive shaft and the front differential.

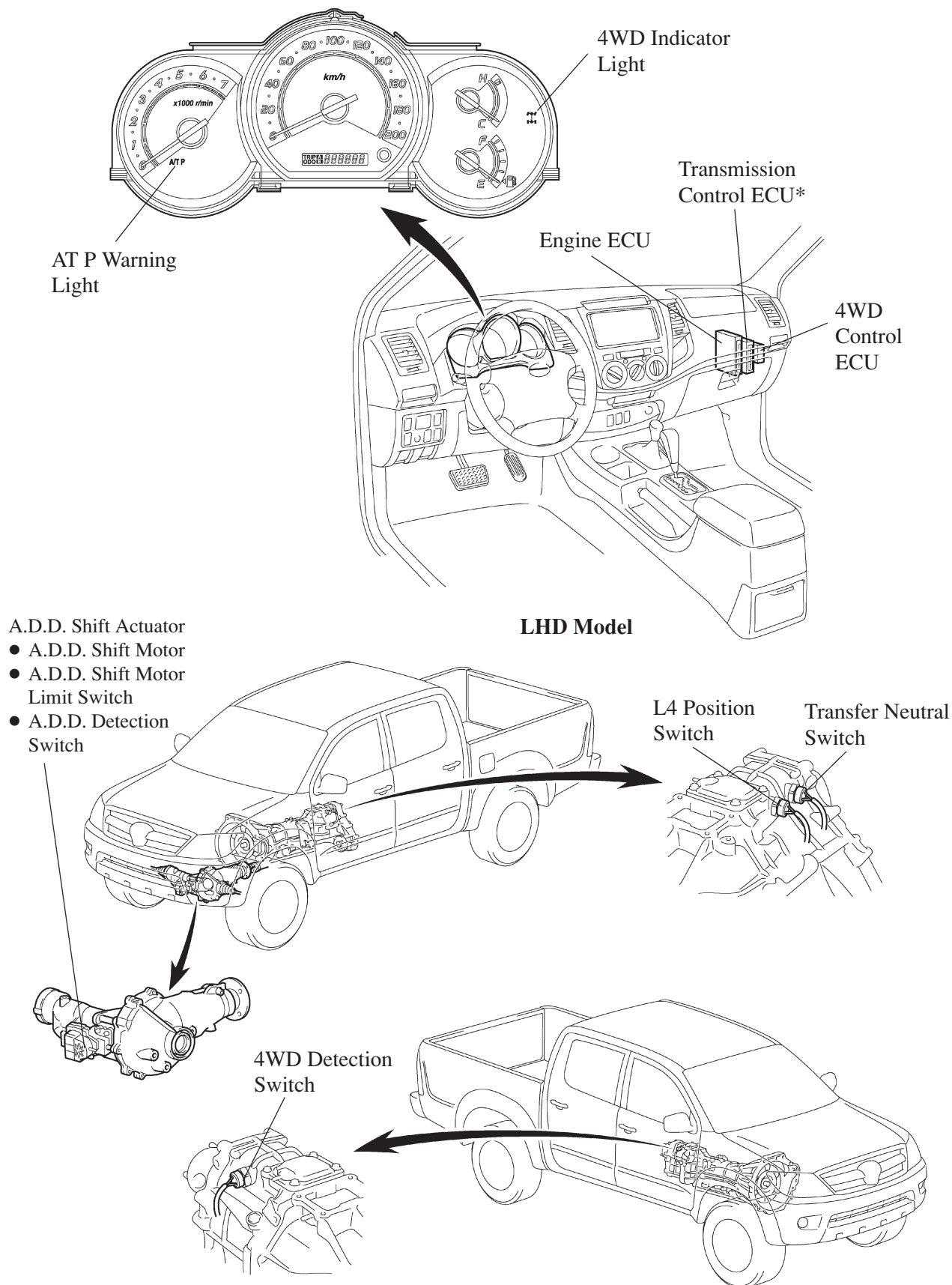
► System Diagram ◀



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*: Only for A340F Automatic Transmission Model

► Layout of Main Components ◀



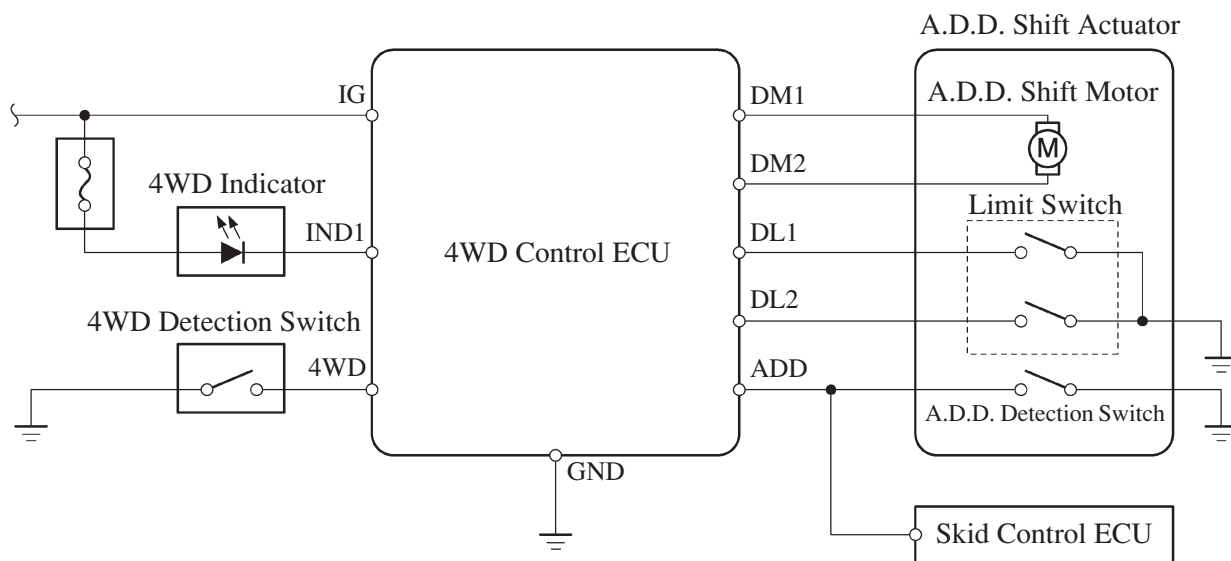
*: Only for A340F Automatic Transmission Model

2. A.D.D. Shift Actuator Operation

General

On a model equipped with a front differential with A.D.D. shift actuator, the 4WD detection switch provided in the transfer detects that the driver has operated the 4WD shift lever to the 4WD (H2 → H4) or 2WD (H4 → H2) position. Then, the 4WD control ECU operates the A.D.D. shift actuator in order to lock or free the engagement of the front drive shaft and the front differential.

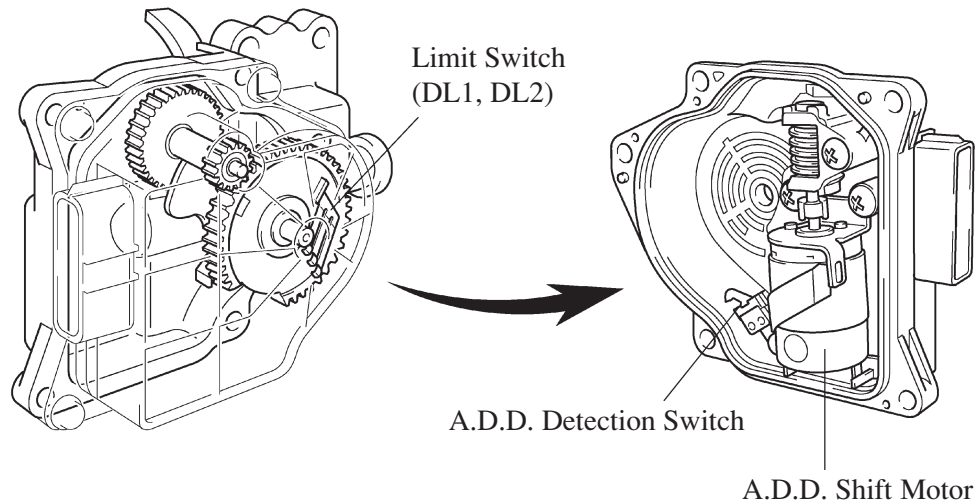
► Wiring Diagram ◀



A.D.D. Shift Actuator

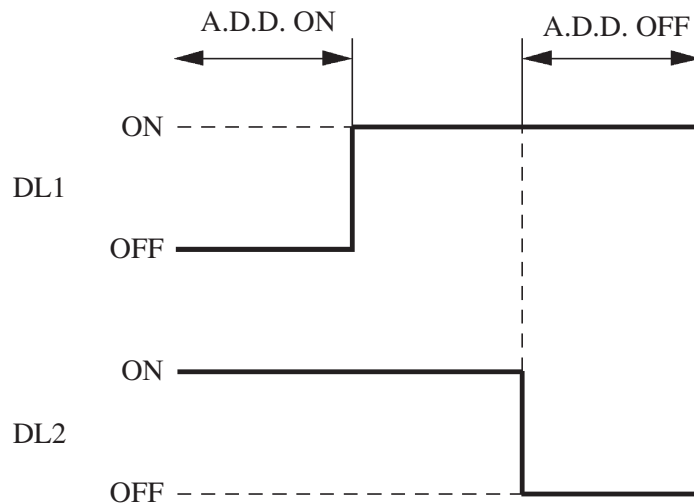
A.D.D. shift actuator, which contains A.D.D. shift motor, A.D.D. shift motor limit switch, and A.D.D. detection switch, cannot be disassembled.

A.D.D. shift motor limit switch has 2 contact point switches (DL1 and DL2). The combinations of 2 contact point switches have been detected shift motor position (A.D.D. OFF or A.D.D. ON).



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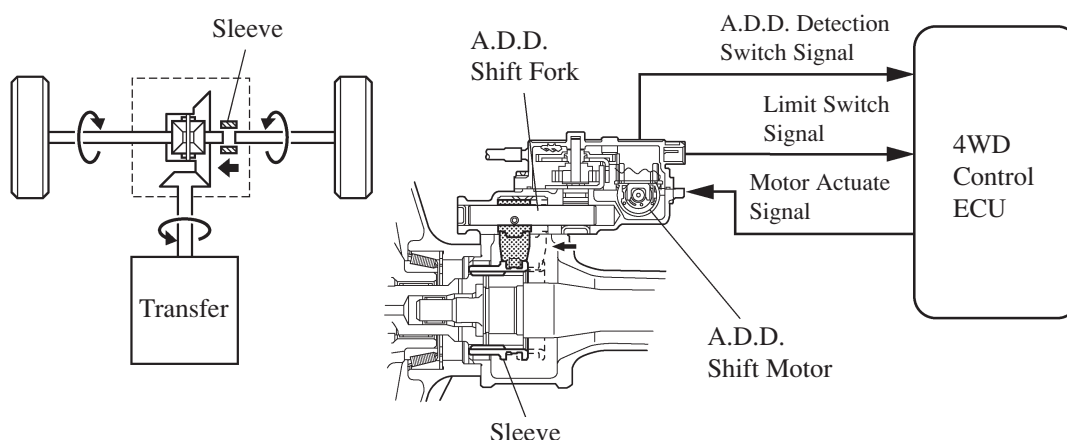
► Combinations of 2 Contact Point Switches ◀



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H2 → H4 (4WD)

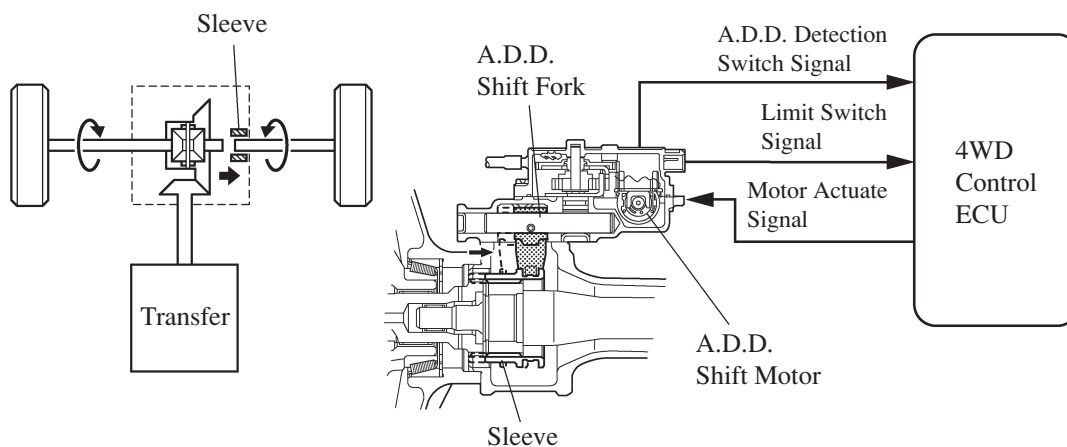
- When the 4WD shift lever turns to H4 position, this signal is input into the 4WD control ECU, and the 4WD control ECU actuates the A.D.D. shift motor.
- The operation of the A.D.D. shift motor causes the A.D.D. shift fork and sleeve to move towards the front differential, thus engaging the front drive shaft and the front differential. As a result, the drive force from the transfer is transmitted to the front wheels.



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H4 → H2 (2WD)

- When the 4WD shift lever turns to H2 position, this signal is input into the 4WD control ECU, and the 4WD control ECU actuates the A.D.D. shift motor.
- The operation of the A.D.D. shift motor causes the A.D.D. shift fork and sleeve to move towards the front wheels, thus freeing the engagement of the front drive shaft and the front differential. This prevents the front differential and the front propeller shaft from being rotated by the front wheels while the vehicle is being driven.



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