BRAKE

■ BRAKE CONTROL SYSTEM

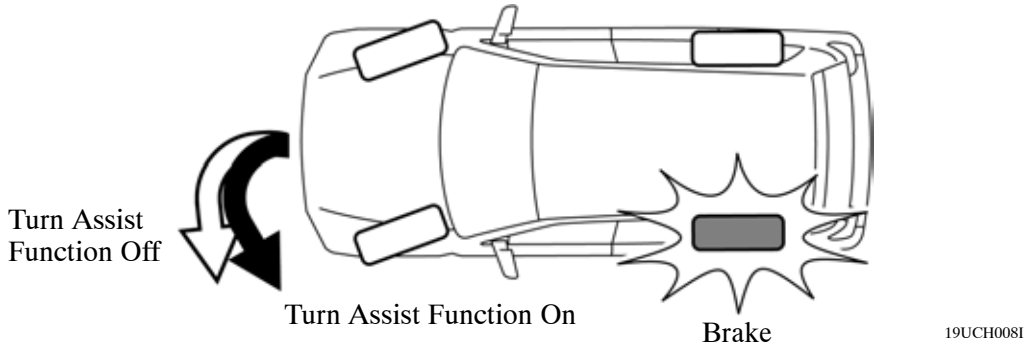
1. CRAWL with Turn Assist Function

General

- When driving through a tight corner that cannot easily be passed through without cutting the steering wheel in the opposite direction, a control is implemented by using the turn assist function to improve turning performance in response to the driver's steering while constant low speed is maintained by CRAWL control, thus reducing the driver's steering operation.
- The CRAWL speed select switch has been changed from the conventional 3-step type to a 5-step type.

Turn Assist Function

- The driver's intention to turn is judged in accordance with a steering sensor signal, thus controlling and increasing the brake hydraulic pressure of the rear wheels in the inner side of turning.
- The rear wheels in the inner side of turning are locked [the wheel speed is 0 km/h (0 mph)] and the brake hydraulic pressure is maintained. When the wheels have been locked for a certain amount of time, brake hydraulic pressure will be reduced. As a result, the brake hydraulic pressure is controlled and increased until the wheels are locked again after they have started to move.



Turn Assist Function Operation Condition

When all of the following conditions are met, the turn assist function will operate. When the turn assist function can be operated, the turn assist indicator light will turn on.

Turn Assist Function Operation Conditions	● The CRAWL is on. ● The turn assist switch is on. ● The center differential lock switch is off. ● Vehicle speed is 10 km/h (6.2 mph) or less. ● The accelerator pedal and brake pedal are not depressed. ● The shift lever is in D or S. ● Steering angle is large.

2. Multi-terrain Select

General

- When driving on off-roads of varying surfaces, multi-terrain select starts controlling when a road mode is selected by operating the mode select switch.
- The following road modes; MUD & SAND, LOOSE ROCK, MOGUL, ROCK & DIRT and ROCK can be selected. The brake control is automatically switched to A-TRC, thus achieving a superior off-road traction.
- To optimally control the wheel spin and wheel lock in response to the road surfaces, a superior traction is ensured on slippery road surfaces and on uphills with steep inclines.



Mud and Sand



Loose Rock



Mogul



Rock

19UCH009I

Multi-terrain Select Control

- A-TRC and engine output control are performed in accordance with the road mode selected by the driver.
- The multi-terrain select indicator light, slip indicator light, CRAWL indicator light and multi-information display operate to inform the driver of the multi-terrain select operating conditions.

Multi-terrain Select Road Mode	Transfer Drive Mode	Control	
		A-TRC	Control Results
Mud and Sand	L4	The wheels are allowed to slip more than usual.	Outputs a large amount of drive force and suppresses deceleration feeling by assuming that the vehicle is driving on a soft, slippery road surface.
Loose Rock	L4	The wheels are allowed to slip more than usual.	Outputs a large amount of drive force and suppresses deceleration feeling by assuming that the vehicle is driving on slippery or loose-graveled uphill slopes.
Mogul	L4	The wheels are made to grip more than usual.	Suppresses deceleration feeling to achieve smooth driving on hills while improving LSD function by assuming that the vehicle is driving on a highly bumpy road surface.
Rock and Dirt	L4	The wheels are made to grip more than usual.	Gives the wheels grip and improves the LSD function by assuming that the vehicle is driving on a highly bumpy road surface.
Rock	L4	The wheels are made to grip more than usual.	Gives the wheels grip and improves the LSD function by assuming that the vehicle is driving on a highly bumpy road surface.

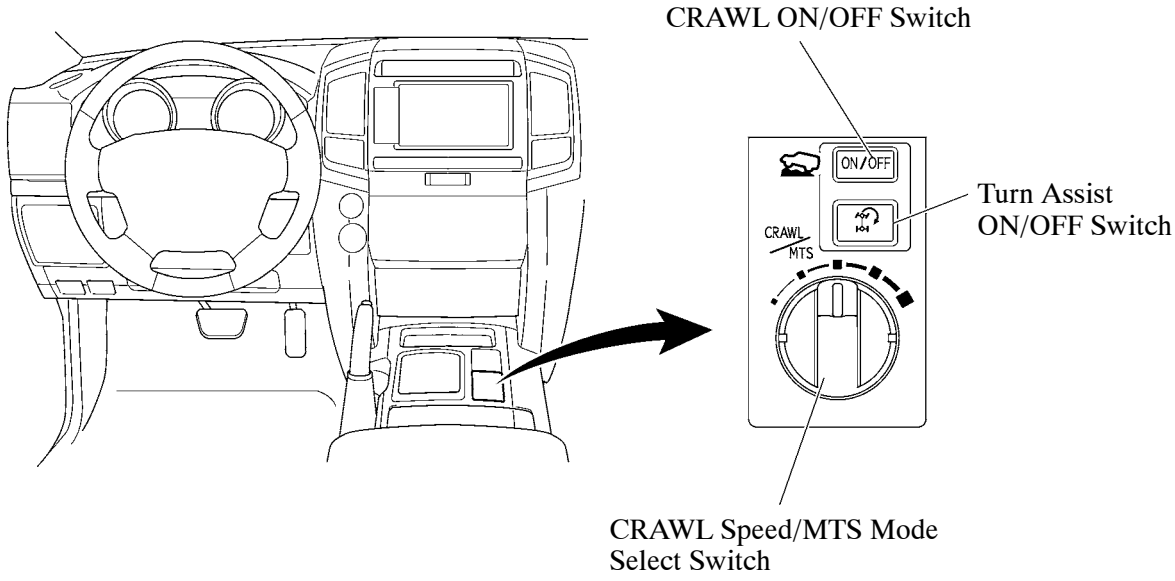
Multi-terrain Operation Condition

- By selecting the road mode through the mode select switch operation when all of the following conditions are met, the control status will become READY and the multi-terrain select indicator light will turn on. In addition, if all of the following conditions cannot be met, the multi-terrain select indicator light will turn off to finish control.
- When A-TRC operates in this condition, the slip indicator light will flash.

Multi-terrain Select Operate Condition	● Transfer drive mode is in L4. ● The VSC OFF switch is off. ● The CRAWL is not control. ● The brake control system is normal.

3. Console Switch

The CRAWL ON/OFF switch, turn assist ON/OFF switch and CRAWL speed/MTS mode selector switch are provided on the center console.



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4. Indicator Light

- The turn assist indicator light and multi-terrain select indicator light are provided in the combination meter.
- Each indicator lights operate as follows:

Condition		Indicator Light			
		Multi-terrain Indicator Light	CRAWL Indicator Light	Turn Assist Indicator Light	Slip Indicator Light
		 19UCH011I	 19UCH012I	 19UCH014I	 19UCH013I
Multi-terrain Select	Operates	○	—	—	—
	A-TRC Operates	○	—	—	▲
	System Malfunctions	×	—	—	○
	During CRAWL Control	×	○	—	▲
CRAWL	Operates (Only CRAWL)	—	○	×	▲
	Operates (CRAWL and Turn Assist Function)	—	○	○	▲
	Operates → Control Releases	—	▲ → ×	×	×
	Operates → Control Releases (Only Turn Assist Function)	—	○	×	▲
	Stops Control Temporarily	—	▲	▲*	×
	System Malfunctions	—	×	×	○
	Operates → System Malfunctions	—	▲ → ×	×	○

○: Illuminates
▲: Blinks
×: Turns off
*: When turn assist function does not operate, indicator light turns off.