Brought to you by Eris Studios
NOT FOR RESALE

1. Basic Diagnostic Procedure

A: PROCEDURE

1. WITHOUT SUBARU SELECT MONITOR

CAUTION:

Remove foreign matter (dust, water, etc.) from the ABSCM&H/U connector during removal and installation.

NOTE:

- To check the harness for broken wires or short circuits, shake it while holding it or the connector.
- When the ABS warning light illuminates, read and record the DTC indicated by ABS warning light.

	Step	Check	Yes	No
1	CHECK PRE-INSPECTION. 1) Ask the customer when and how trouble occurred using interview checklist. <ref. abs-4,="" check="" for="" interview.="" list="" to=""> 2) Before performing diagnosis, inspect the unit which might influence ABS problem. <ref. abs-8,="" description.="" general="" inspection,="" to=""></ref.></ref.>	Is the unit that might influence the ABS problem normal?	Go to step 2.	Repair or replace each unit.
2	CHECK INDICATION OF DTC. Calling up the DTC. <ref. (dtc).="" abs-19,="" code="" diagnostic="" read="" to="" trouble=""> Record all DTCs.</ref.>	Is only the start code issued?	Go to step 3.	Go to step 4.
3	PERFORM THE GENERAL DIAGNOSTICS. 1)Inspect using "General Diagnostics Table". <ref. abs-159,="" diagnostics="" general="" table.="" to=""> 2)Perform the clear memory mode. <ref. abs-21,="" clear="" memory="" mode.="" monitor,="" operation,="" select="" subaru="" to="" without=""> 3)Perform the inspection mode. <ref. abs-20,="" inspection="" mode.="" to=""> Calling up the DTC. <ref. (dtc).="" abs-19,="" code="" diagnostic="" read="" to="" trouble=""></ref.></ref.></ref.></ref.>	Is only the start code issued?	Complete the diagnosis.	Go to step 4.
4	PERFORM THE DIAGNOSIS. 1)Repair trouble cause. NOTE: For DTC list, refer to "List of DTC". <ref. (dtc).="" abs-23,="" code="" diagnostic="" list="" list,="" monitor,="" of="" select="" subaru="" to="" trouble="" without=""> 2)Perform the clear memory mode. <ref. abs-21,="" clear="" memory="" mode.="" monitor,="" operation,="" select="" subaru="" to="" without=""> 3)Perform the inspection mode. <ref. abs-20,="" inspection="" mode.="" to=""> 4)Calling up the DTC. <ref. (dtc).="" abs-19,="" code="" diagnostic="" read="" to="" trouble=""></ref.></ref.></ref.></ref.>		Complete the diagnosis.	Repeat the step 4 until only start code is issued.

2. WITH SUBARU SELECT MONITOR

CAUTION:

Remove foreign matter (dust, water, etc.) from the ABSCM&H/U connector during removal and installation.

NOTE:

• To check the harness for broken wires or short circuits, shake it while holding it or the connector.

BASIC DIAGNOSTIC PROCEDURE ABS (DIAGNOSTICS)

Step	Check	Yes	RESALE
CHECK PRE-INSPECTION.	Is the unit that might influence the ABS problem normal?	Go to step 2.	Repair or replace each unit.
1)Turn the ignition switch to OFF. 2)Connect the SUBARU SELECT MONITOR to data link connector. 3)Turn the ignition switch to ON and SUBARU SELECT MONITOR to ON. NOTE: If the communication function of Subaru Select Monitor cannot be executed normally, check communication circuit. <ref. abs-79,="" communication="" diagnostics="" for="" impossible,="" initializing="" monitor.="" procedure="" select="" subaru="" to="" with=""> 4)Read the DTC. <ref. abs-17,="" current="" data,="" monitor.="" operation,="" read="" select="" subaru="" to=""> 5)Record all DTCs and freeze frame data.</ref.></ref.>	Is the DTC displayed?	Go to step 4.	Go to step 3.
<ref. abs-159,="" diagnostics="" general="" table.="" to=""> 2)Perform the clear memory mode. <ref. abs-17,="" clear="" memory="" mode,="" monitor.="" operation,="" select="" subaru="" to=""> 3)Perform the inspection mode. <ref. abs-20,="" inspection="" mode.="" to=""> 4)Calling up the DTC. <ref. (dtc),="" abs-16,="" code="" diagnostic="" monitor.="" operation,="" read="" select="" subaru="" to="" trouble=""> Check DTC is not displayed.</ref.></ref.></ref.></ref.>	Is the ABS warning light turned off after ignition switch OFF?	Complete the diagnosis.	Inspect using "diagnostics procedure for No DTC". <ref. abs-82,="" code.="" no="" to="" trouble=""></ref.>
	Are the DTCs indicated on display?	Inspect using "diagnostics procedure with Sub- aru Select Monitor". <ref. abs-79,="" diagnos-="" monitor.="" procedure="" select="" subaru="" tics="" to="" with=""></ref.>	Complete the diagnosis.

CHECK LIST FOR INTERVIEW to you by Eris Studios

ABS (DIAGNOSTICS)

2. Check List for Interview

A: CHECK

Check the following items about the vehicle's state.

1. STATE OF ABS WARNING LIGHT

ABS warning light	☐ Always						
comes on.	□ Sometimes						
	□ Only once						
	☐ Does not come on						
	When / how long does it come on?:						
Ignition key position LOCK							
	□ ACC						
	☐ ON (before starting engine)						
	□ START						
	☐ On after starting (Engine is running)						
	☐ On after starting (Engine is stop)						
Timing	☐ Immediately after ignition is ON.						
	☐ Immediately after ignition starts.						
	☐ When advancing		km/h to	km/h			
			MPH to	MPH			
	☐ While traveling at a constant speed	km/h		MPH			
	☐ When decelerating		km/h to	km/h			
			MPH to	MPH			
	□When turning to right	Steering angle :		deg			
		Steering time :		sec			
	☐ When turning to left	Steering angle:		deg			
	Steering time :			sec			
	☐ When moving other electrical parts						
	Parts name :						
	Operating condition :						

2. STATE OF BRAKE WARNING LIGHT

Brake warning light	☐ Always				
comes on.	□ Sometimes				
	□ Only once				
	☐ Does not come on				
	☐ When parking brake lever is pulled				
	☐ When parking brake lever is released				
	When / how long does it come on?:				
Ignition key position	□ LOCK				
	□ ON (before starting engine)				
	□ START				
	☐ On after starting (Engine is running)				
	☐ On after starting (Engine is stop)				

CHECK LIST FOR INTERVIEW

		No- YOA	BS (DIAGNOSTI	CS)		
		10/ 50-	J Fri			
Timing	☐ Immediately after ignition is ON.	· UR	RECISS	Stille		
	☐ Immediately after ignition starts.		ESAL	Stuc		
	☐ When advancing		km/h to kr	m/h		
			MPH to M	PH		
	☐ While traveling at a constant speed	km/h	М	PH		
	☐ When decelerating		km/h to kr	m/h		
			MPH to M	PH		
	□When turning to right	Steering angle :	(deg		
		Steering time :	,	sec		
	☐ When turning to left	Steering angle :	(deg		
		Steering time :		sec		
	☐ When operating other electrical parts					
	Parts name :					
	Operating condition :					
S. SYMPTOMS						
ABS operating condi-	☐ Does not operate.					
ion	•	Malala anna d	1	//-		
IOII	☐ Operates only when abruptly applying brakes.	Vehicle speed :		m/h		
			M	PH		
	How to step on brake pedal :					
	a) Operating time : sec					
	b) Operating noise : ☐ Produce / ☐ Does not produce					
	What kind of noise?	☐ Knock				
		□ Gong gong				
		☐ Bong				
		☐ Buzz				

c) Reaction force of brake pedal

☐ Gong gong buzz☐ Others:

 $\hfill \square$ Press and released

 $\ \square$ Press down once with a clunk

☐ Stick

☐ Others :

CHECK LIST FOR INTERVIEW

Behavior of vehicle	a) Directional stability cannot be obtained or steering refuses to work when applying brakes :					
	☐ Yes / ☐ No	TESAL				
	When:	☐ Vehicle turns to right ☐ Vehicle turns to left ☐ Spins				
	□ Others :					
	b) Directional stability cannot be obtained or steering refuses to work when accelerating : ☐ Yes / ☐ No					
	When:	☐ Vehicle turns to right ☐ Vehicle turns to left ☐ Spins ☐ Others:				
	c) Brakes out of order : ☐ Yes / ☐ No					
	• What :	☐ Braking distance is long ☐ Brakes lock or drag ☐ Pedal stroke is long ☐ Pedal sticks ☐ Others:				
	d) Poor acceleration : ☐ Yes / ☐ No	d Ottleis.				
	• What :	☐ Fails to accelerate ☐ Engine stalls ☐ Others:				
	e) Occurrence of vibration : ☐ Yes / ☐ No					
	Where What kind:					
		f) Occurrence of abnormal noise : ☐ Yes / ☐ No				
	Where What kind:					
	g) Occurrence of other phenomena : \square Ye	es / □ No				
	What kind :					
4. CONDITION	NS UNDER WHICH TROUBLE OC	CURS				
Environment	a) Weather	□ Fine				
		□ Cloudy				
		☐ Rainy☐ Snowy				
		☐ Various/Others :				
	b) Ambient temperature	°C (°F)				
	c) Road	☐ Urban area ☐ Suburbs				
		☐ Highway ☐ General road				
		☐ Ascending slope☐ Descending slope☐ Paved road				
		☐ Faved road ☐ Gravel road				
		☐ Muddy road				
		□ Sandy place □ Others :				
	d) Road surface	□ Dry □ Wet				
		□ New-fallen snow				
		☐ Compressed snow ☐ Frozen slope				

CHECK LIST FOR INTERVIEW

ABS (DIAGNOSTICS)

Condition	a) Brakes	Deceleration :	Deceleration : g		
		☐ Continuous / ☐ Intermi	☐ Continuous / ☐ Intermittent		
	b) Accelerator	Acceleration:	g		
		☐ Continuous / ☐ Intermi	ttent		
	c) Vehicle speed	km/h	MPH		
		☐ Advancing			
		☐ Accelerating			
		☐ Reducing speed			
		☐ Low speed			
		☐ Turning			
		☐ Others :			
	d) Tire inflation pressure	Front RH tire :	kPa		
		Front LH tire :	kPa		
		Rear RH tire :	kPa		
		Rear LH tire :	kPa		
	e) Degree of wear	Front RH tire :			
		Front LH tire:			
		Rear RH tire :	Rear RH tire :		
		Rear LH tire :	Rear LH tire :		
	f) Genuine parts are used. : Yes / No				
	g) Chain is passed around tires. : 🗆 Yes /	□ No			
	h) T tire is used. : ☐ Yes / ☐ No				
	i) Condition of suspension alignment :				
	j) Loading state :				
	k) Repair parts are used. : ☐ Yes / ☐ No				
	• What :				
	I) Others :				

3. General Description

A: CAUTION

1. SUPPLEMENTAL RESTRAINT SYSTEM "AIRBAG"

Airbag system wiring harness is routed near the ABS wheel speed sensor, ABS control module and hydraulic control unit.

CAUTION:

- All airbag system wiring harness and connectors are colored yellow. Do not use electrical test equipment on these circuit.
- Be careful not to damage the airbag system wiring harness when servicing the ABS wheel speed sensor, ABS control module and hydraulic control unit.

B: INSPECTIONBefore performing diagnostics, check the following items which might affect ABS problems:

1. BATTERY

Measure the battery voltage and specific gravity of electrolyte.

Standard voltage: 12 V, or more Specific gravity: Above 1.260

2. BRAKE FLUID

- 1) Check the brake fluid level.
- Check the brake fluid leakage.

3. HYDRAULIC UNIT

Check the hydraulic unit.

- With brake tester <Ref. to ABS-8, CHECKING THE HYDRAULIC UNIT ABS OPERATION WITH BRAKE TESTER, INSPECTION, ABS Control Module and Hydraulic Control Unit (ABSCM&H/ U).>
- Without brake tester <Ref. to ABS-7, CHECK- ING THE HYDRAULIC UNIT ABS OPERATION BY PRESSURE GAUGE, INSPECTION, ABS Control Module and Hydraulic Control Unit (AB-SCM&H/U).>

4. BRAKE DRAG

Check for brake drag.

5. BRAKE PAD AND ROTOR

Check the brake pad and rotor.

- Front <Ref. to BR-18, INSPECTION, Front Brake Pad.> and <Ref. to BR-21, INSPECTION, Front Disc Rotor.>
- Rear <Ref. to BR-29, INSPECTION, Rear Brake Pad.> and <Ref. to BR-30, INSPECTION, Rear Disc Rotor.>

6. TIRE

Check the tire specifications, tire wear and air pressure. <Ref. to WT-2, SPECIFICATIONS, General Description.>

GENERAL DESCRIPTION ABS (DIAGNOSTICS)

C: PREPARATION TOOL

1. SPECIAL TOOLS

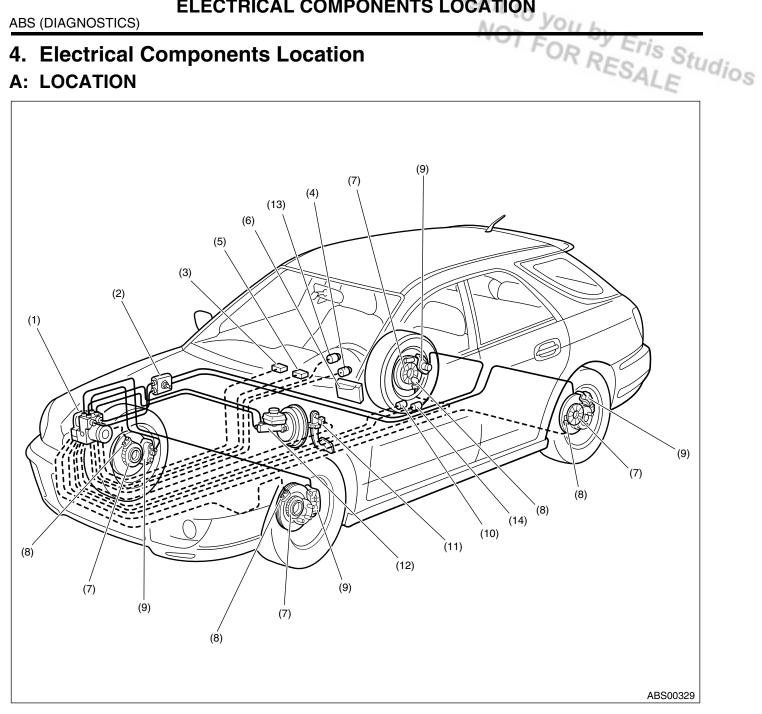
ILLUSTRATION	TOOL NUMBER	DESCRIPTION	REMARKS
	24082AA230	CARTRIDGE	Troubleshooting for electrical systems.
ST24082AA230			
	22771AA030	SUBARU SELECT MONITOR KIT	Troubleshooting for electrical systems.
ST22771AA030			

2. GENERAL PURPOSE TOOLS

TOOL NAME	REMARKS	
Circuit tester	Used for measuring resistance, voltage and amperage.	
Oscilloscope	Used for measuring sensor.	

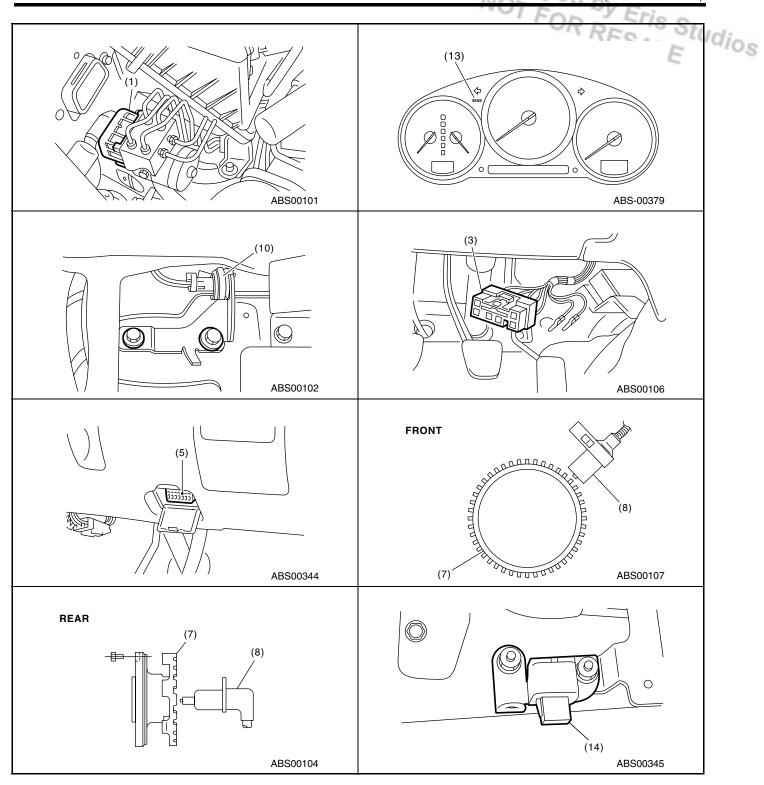
4. Electrical Components Location

A: LOCATION



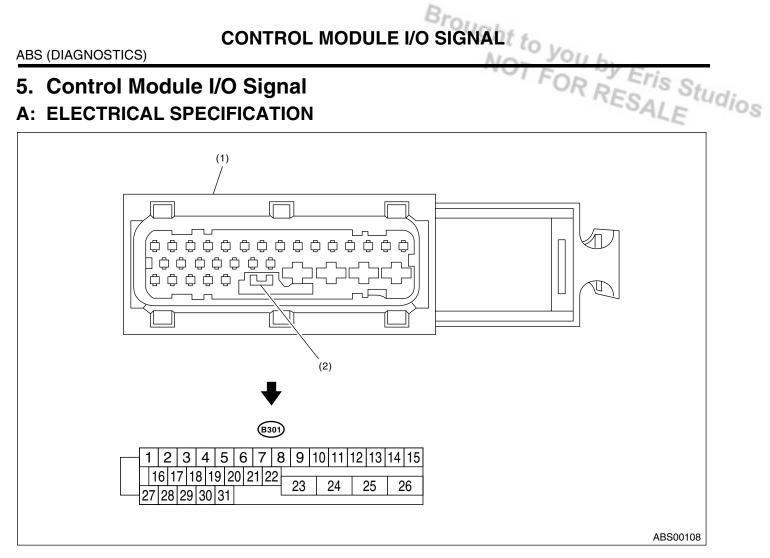
- ABS control module and hydraulic control unit (ABSCM&H/U)
- (2)Connector
- Diagnosis connector (3)
- (4) ABS warning light
- Data link connector (for Subaru (5) Select Monitor)
- (6)Transmission control module (TCM) (AT model)
- (7) Tone wheel
- (8) ABS wheel speed sensor
- (9) Wheel cylinder
- G sensor (10)
- (11) Stop light switch

- Master cylinder (12)
- Brake & EBD warning light
- Lateral G sensor (STi model)



5. Control Module I/O Signal

A: ELECTRICAL SPECIFICATION



ABS control module and hydraulic control unit (ABSCM&H/U) connector

(2) Connector switch

NOTE:

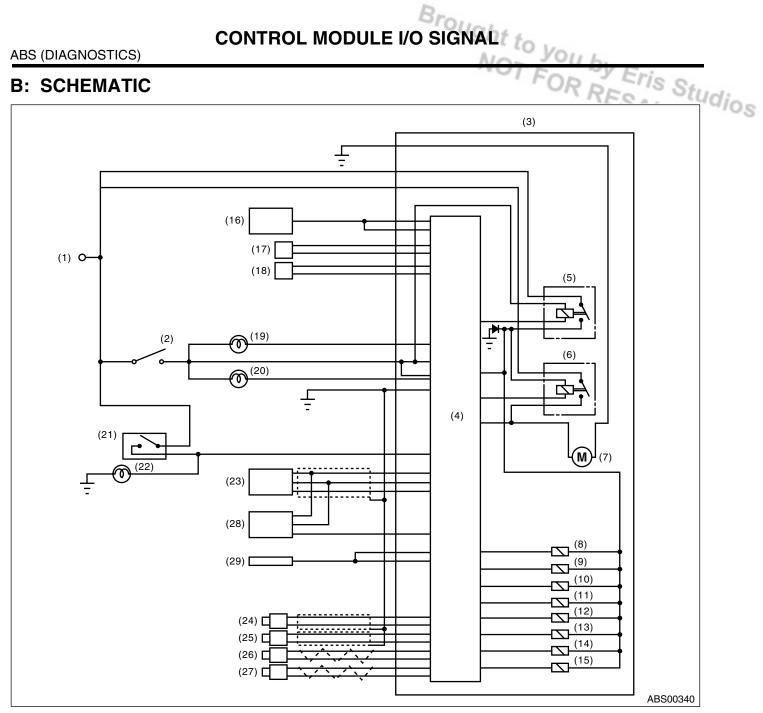
- The terminal numbers in ABS control module and hydraulic control unit connector are as shown in the fig-
- When the connector is removed from ABSCM&H/U, the connector switch closes the circuit between terminal No. 22 and No. 23. The ABS warning light illuminates.

CONTROL MODULE I/O SIGNAL ABS (DIAGNOSTICS)

Contents		Terminal No.	Input/Output signal
Conte	ints	(+) — (–)	Measured value and measuring conditions
	Front left wheel	9 — 10	
ABS wheel speed sen-	Front right wheel	11 — 12	0.12 — 1 V
sor*2 (Wheel speed sensor)	Rear left wheel	7 — 8	(When it is 20 Hz.)
(Whice speed sensor)	Rear right wheel	14 — 15	
Valve relay power suppl	y*1	24 — 23	10 — 15 V
Motor relay power suppl	y*1	25 — 23	10 — 15 V
	Power supply	30 — 28	4.75 — 5.25 V
G sensor*2	Ground	28	_
	Output	6 — 28	2.1 — 2.5 V when vehicle is in horizontal position.
	Power supply	30 — 28	4.75 — 5.25 V
Lateral G sensor (STi model)	Ground	28	_
(STI IIIodel)	Output	29 — 28	2.3 — 2.7 V when vehicle is in horizontal position.
Stop light switch*1		2 — 23	Less than 1.5 V when the stop light is OFF and, 10 — 15 V when the stop light is ON.
ABS warning light*2		22 — 23	Less than 1.5 V within 1.5 seconds immediately after ignition switch has been turned to ON, and 10 — 15 V after 1.5 seconds has elapsed.
Brake warning light*2 (EBD warning light)		21 — 23	Less than 1.5 V within 1.5 seconds immediately after ignition switch has been turned to ON, and 10 — 15 V after 1.5 seconds has elapsed.
AT ABS signal (AT models only)		31 — 23	Less than 1.5 V when the ABS control still operates and more than 5.5 V when ABS does not operate.
ABS operation signal monitor		3 — 23	Less than 1.5 V when the ABS control still operates and more than 5.5 V when ABS does not operate.
Subaru Select Moni- Data is received.		20 — 23	Less than 1.5 V when no data is received.
tor*2	Data is sent.	5 — 23	4.75 — 5.25 V when no data is sent.
ABS diagnosis connec-	Terminal No. 3	29 — 23	10 — 15 V when ignition switch is ON.
tor Terminal No. 6		4 — 23	10 — 15 V when ignition switch is ON.
Power supply*1		1 — 23	10 — 15 V when ignition switch is ON.
Grounding line	Grounding line		_
Grounding line		26	_

^{*1:} Measure the I/O signal voltage after removing the connector from the ABSCM&H/U terminal. *2: Measure the I/O signal voltage at connector (F2).

B: SCHEMATIC

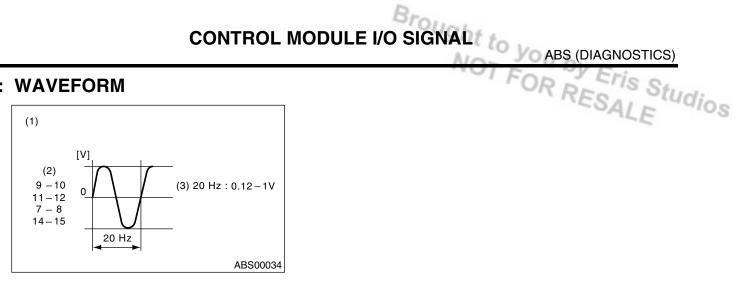


- (1) Battery
- (2) **IGN**
- ABS control module and hydraulic control unit (ABSCM&H/U)
- (4) ABS control module area
- (5) Valve relay
- Motor relay (6)
- Motor (7)
- (8) Front inlet solenoid valve LH
- (9)Front outlet solenoid valve LH
- (10)Front inlet solenoid valve RH
- Front outlet solenoid valve RH

- (12)Rear inlet solenoid valve LH
- (13)Rear outlet solenoid valve LH
- Rear inlet solenoid valve RH (14)
- (15)Rear outlet solenoid valve RH
- Transmission control module (16)(TCM) (AT model)
- (17)Diagnosis connector
- Data link connector (18)
- Brake warning light (19)
- (20)ABS warning light (21)Stop light switch
- (22)Stop light

- (23)G sensor
- Front ABS wheel speed sensor LH
- (25)Front ABS wheel speed sensor
- (26)Rear ABS wheel speed sensor LH
- Rear ABS wheel speed sensor (27)RH
- Lateral G sensor (STi model) (28)
- Driver's control center differential (29)control module (STi model)

C: WAVEFORM



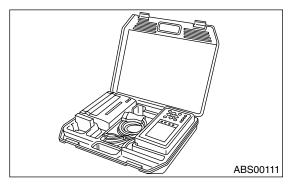
- (1) ABS wheel speed sensor
- (2) Terminal No.
- (3) Standard output voltage

6. Subaru Select Monitor

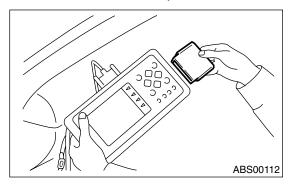
A: OPERATION

1. READ DIAGNOSTIC TROUBLE CODE (DTC)

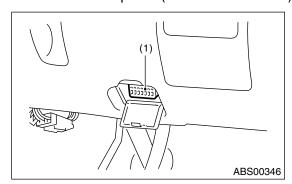
1) Prepare the Subaru Select Monitor kit.



- 2) Connect the diagnosis cable to Subaru Select Monitor.
- 3) Insert the cartridge into Subaru Select Monitor. <Ref. to ABS-9, SPECIAL TOOLS, PREPARATION TOOL, General Description.>



- 4) Connect the Subaru Select Monitor to data link connector.
 - (1) Data link connector located in the lower portion of instrument panel (on the driver's side).

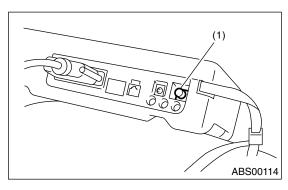


- (1) Data link connector
- (2) Connect the diagnosis cable to data link connector.

CAUTION:

Do not connect the scan tools except for Subaru Select Monitor and OBD-II general scan tool.

5) Turn the ignition switch to ON (engine OFF) and Subaru Select Monitor switch to ON.



(1) Power switch

- 6) On the «Main Menu» display screen, select the {Each System Check} and press [YES] key.
- 7) On the «System Selection Menu» display screen, select the {Brake Control System} and press [YES] key.
- 8) Press the [YES] key after the information of engine type is displayed.
- 9) On the «ABS Diagnosis» display screen, select the {DTC Display} and press [YES] key.
- 10) On the «DTC Display» display screen, select the {Current DTC} or {History DTC} and press [YES] key.

NOTE:

- For detailed operation procedure, refer to the SUBARU SELECT MONITOR OPERATION MAN-UAL.
- For detailed concerning the DTC, refer to the LIST OF DTC. <Ref. to ABS-23, List of Diagnostic Trouble Code (DTC).>
- A maximum of 3 DTCs are displayed in order of occurrence.
- If a particular DTC is not properly stored in memory (due to a drop in ABSCM&H/U power supply, etc.) when a problem occurs, the DTC, followed by a question mark "?", appears on the Subaru Select Monitor display. This shows it may be an unreliable reading.

Display screen	Contents to be monitored
Latest	The most recent DTC appears on Subaru Select Monitor display.
Old	The second most recent DTC appears on Subaru Select Monitor display.
Older	The third most recent DTC appears on Subaru Select Monitor display.
Reference	DTC issued after elapse of a specified period of time.

2. READ CURRENT DATA

- 1) On the «Main Menu» display screen, select the {Each System Check} and press «YES» key.
- 2) On the «System Selection Menu» display screen, select the {Brake Control System} and press «YES» key.
- 3) Press the «YES» key after the information of ABS type is displayed.
- 4) On the «Brake Control Diagnosis» display screen, select the {Current Data Display & Save} and press «YES» key.
- 5) On the «Data Display Menu» display screen, select the {Data Display} and press «YES» key.
- 6) Using the scroll key, move the display screen up or down until desired data is shown.
- A list of the support data is shown in the following table.

Display screen	Contents to be monitored	Unit of measure
FR Wheel Speed	Wheel speed detected by Front ABS wheel speed sensor RH is displayed	km/h or MPH
FL Wheel Speed	Wheel speed detected by Front ABS wheel speed sensor LH is displayed	km/h or MPH
RR Wheel Speed	Wheel speed detected by Rear ABS wheel speed sensor RH is displayed	km/h or MPH
RL Wheel Speed	Wheel speed detected by Rear ABS wheel speed sensor LH is displayed	km/h or MPH
Stop Light Switch	Stop light switch signal	ON or OFF
Stop Light Switch	Stop light switch monitor voltage is displayed.	V
G Sensor Output Signal	Voltage equivalent to vehicle acceleration detected by analog G sensor is displayed.	V
Lateral G Sensor Output Signal	Lateral G detected by Lateral G sensor is displayed in voltage. (STi model)	V
Valve Relay Signal	Valve Relay Signal	ON or OFF
Motor Relay Signal	Motor Relay Signal	ON or OFF
ABS Signal to TCM	ABS operation signal from ABS control module to TCM	ON or OFF
ABS Warning Lamp	ON operation of ABS warning light is displayed.	ON or OFF
EBD Warning Light	ON operation of EBD warning light is displayed.	ON or OFF
Motor Relay Monitor	Operating condition of motor relay is displayed.	ON or OFF
Valve Relay Monitor	Operating condition of the valve relay is displayed.	ON or OFF
CCM Signal	ABS operation signal from ABS control module to TCM	ON or OFF

NOTE:

For detailed operation procedure, refer to the SUBARU SELECT MONITOR OPERATION MANUAL.

3. CLEAR MEMORY MODE

- 1) On the «Main Menu» display screen, select the {2. Each System Check} and press «YES» key.
- 2) On the «System Select Menu» display screen, select the {Brake System} and press «YES» key.
- 3) Press the «YES» key after the information of engine type is displayed.
- 4) On the "Brake Control Diagnosis" display screen, select the {Clear Memory} and press "YES" key.

Display screen	Contents to be monitored
Clear memory?	Function of clearing DTC.

5) When the "Done" and "turn ignition switch to OFF" are shown on display screen, turn the Subaru Select Monitor and ignition switch to OFF.

NOTE:

For detailed operation procedure, refer to the SUB-ARU SELECT MONITOR OPERATION MANUAL.

4. ABS SEQUENCE CONTROL

Display screen	Contents to be monitored	Index No.
ABS sequence control	Perform ABS sequence control by operating valve and pump motor sequentially.	<ref. abs-9,<br="" to="">ABS Sequence Control.></ref.>

5. FREEZE FRAME DATA

NOTE:

- Data stored at the time of trouble occurrence is shown on display.
- Each time trouble occurs, the latest information is stored in the freeze frame data in memory.
- Freeze frame data will be memorized maximum to three.
- If freeze frame data is not properly stored in memory (due to a drop in ABSCM power supply, etc.), a DTC, preceded by a question mark "?", appears on the Subaru Select Monitor display. This shows it may be an unreliable reading.

Display screen	Contents to be monitored
FR wheel speed	Wheel speed detected by Front ABS wheel speed sensor RH is displayed in km/h or mile/h.
FL wheel speed	Wheel speed detected by Front ABS wheel speed sensor LH is displayed in km/h or mile/h.
RR wheel speed	Wheel speed detected by Rear ABS wheel speed sensor RH is displayed in km/h or mile/h.
RL wheel speed	Wheel speed detected by Rear ABS wheel speed sensor LH is displayed in km/h or mile/h.
ABSCM power voltage	Power (in volts) supplied to ABSCM& H/U appears on the Subaru Select Monitor display.
G sensor output voltage	Voltage equivalent to vehicle acceleration detected by analog G sensor is displayed.
Lateral G sen- sor output volt- age	Voltage equivalent to Lateral G detected by analog Lateral G sensor is displayed.
Motor relay monitor	Motor relay operation monitor signal
Stop light switch	Stop light switch signal
ABS signal to TCM	ABS operation signal from ABS control module to TCM
ABS-AT control	ABS operation signal from ABS control module to TCM
ABS operation signal	ABS operation signal
Condition of malfunction	Displays if the malfunction has occurred to ABS only, or to ABS and EBD.

	No- You h	_
6. ANALOG	DATA ARE DISPLAYED	Idios
Display screen	Contents to be monitored	.03
FR wheel speed	Wheel speed detected by Front ABS wheel speed sensor RH is displayed in km/h or mile/h.	
FL wheel speed	Wheel speed detected by Front ABS wheel speed sensor LH is displayed in km/h or mile/h.	
RR wheel speed	Wheel speed detected by Rear ABS wheel speed sensor RH is displayed in km/h or mile/h.	
RL wheel speed	Wheel speed detected by Rear ABS wheel speed sensor LH is displayed in km/h or mile/h.	
Stop light switch	Stop light switch monitor voltage is displayed.	
G sensor output voltage	Refers to vehicle acceleration detecting by analog G sensor. It appears on the Subaru Select Monitor display in volts.	
Lateral G sen- sor output volt- age	Voltage equivalent to Lateral G detected by analog Lateral G sensor is displayed.	

7. ON/OFF DATA ARE DISPLAYED

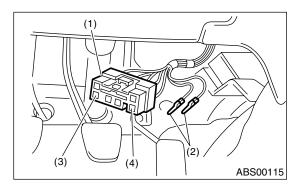
Display screen	Contents to be monitored
Stop light switch	Stop light switch signal
Valve relay signal	Valve relay signal
Motor relay signal	Motor relay signal
ABS signal to TCM	ABS operation signal from ABS control module to TCM
ABS warning light	ABS warning light
Valve relay monitor	Valve relay operation monitor signal
Motor relay monitor	Motor relay operation monitor signal
CCM signal	ABS operation signal from ABS control module to TCM

7. Read Diagnostic Trouble Code (DTC)

A: OPERATION

1. WITHOUT SUBARU SELECT MONITOR

1) Take out the diagnosis connector from side of driver's seat.

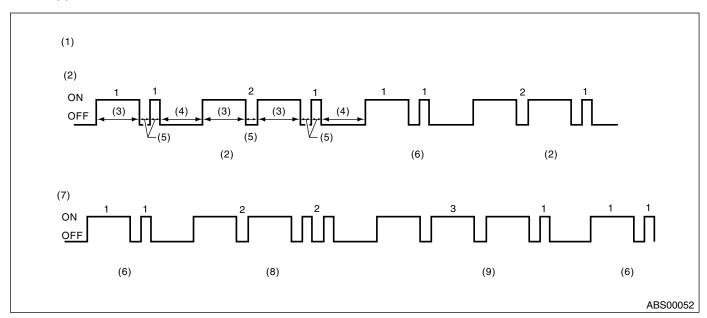


- (1) Diagnosis connector
- (2) Ground terminal
- (3) Terminal No. 3
- (4) Terminal No. 6

- 2) Turn the ignition switch to OFF.
- 3) Connect the diagnosis connector terminal 6 to Ground terminal.
- 4) Turn the ignition switch to ON.
- 5) ABS warning light is set in the diagnostic mode and blinks to identify DTC.
- 6) After the start code (11) is shown, the DTCs will be shown in order of the last information first. These repeat for a maximum of 3 minutes.

NOTE:

- When there are no DTCs in memory, only the start code (11) is shown.
- When on-board diagnosis of the ABS control module detects a problem, the information (up to a maximum of three) will be stored in EEP ROM as a DTC. When there are more than three, the most recent three will be stored. (Stored codes will stay in memory until they are cleared.)



- (1) Example of DTC indication
- (4) 1.0 sec.

(5)

DTC: 21

1.2 sec.

(2)

(3)

(6) Start code

0.3 sec.

- (7) DTC: 22, 31
- (8) DTC: 22
- (9) DTC: 31

2. WITH SUBARU SELECT MONITOR

Refer to SUBARU SELECT MONITOR for information about how to obtain and understand DTCs. <Ref. to ABS-16, Subaru Select Monitor.>

ABS (DIAGNOSTICS)

INSPECTION MODE NOT FOR RESALE

8. Inspection Mode

A: OPERATION

Reproduce the condition under which the problem has occurred as much as possible.

Drive the vehicle at a speed more than 40 km/h (25 MPH) for at least 1 minute.

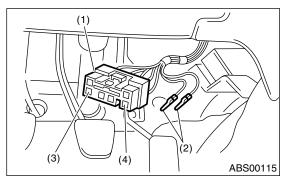
is Studios

9. Clear Memory Mode

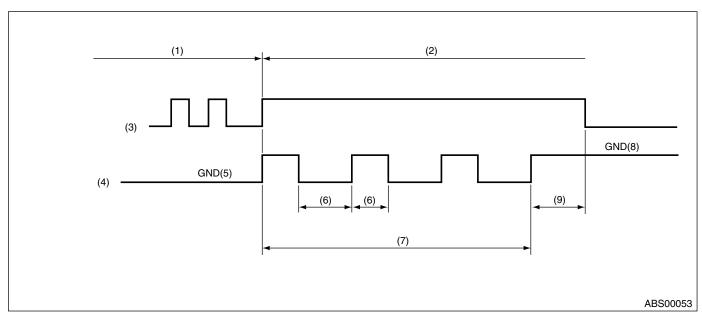
A: OPERATION

1. WITHOUT SUBARU SELECT MONITOR

1) After calling up a DTC, disconnect the diagnosis connector terminal 6 from Ground terminal.



- (1) Diagnosis connector
- (2) Ground terminal
- (3) Terminal No. 3
- (4) Terminal No. 6
- 2) Repeat 3 times within approx. 12 seconds; connecting and disconnecting terminal 6 and Ground terminal for at least 0.2 seconds each time.



- Diagnostic trouble code (DTC) (1) indication mode
- Clear memory mode (2)
- ABS warning lamp (3)
- (4) Terminal No. 8
- Low level (5)
- (6)0.2 sec. or more
- (7) 12 sec. or less

- Open (high level) (8)
- 1.5 sec. (9)

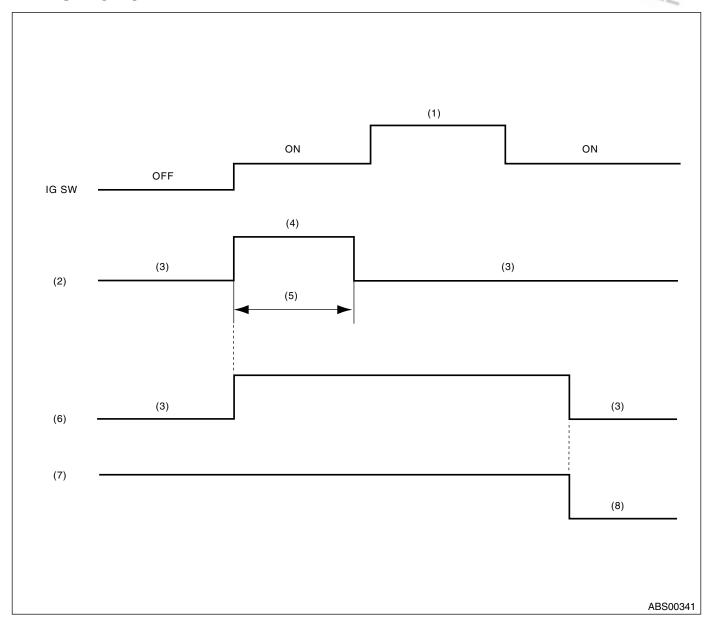
NOTE:

After the diagnostics is completed, make sure to clear memory. Make sure only start code (11) is shown after memory is cleared.

2. WITH SUBARU SELECT MONITOR

Refer to SUBARU SELECT MONITOR for information about how to clear DTC. < Ref. to ABS-16, Subaru Select Monitor.>

10.ABS Warning Light/Brake Warning Light Illumination Pattern A: INSPECTION



- (1) START
- (2) ABS warning light
- (3) Goes out

- (4) Illuminates
- (5) 1.5 sec.
- (6) Brake warning light (EBD warning light)
- (7) Parking brake
- (8) Release
- 1) When the ABS warning light does not illuminate in accordance with this illumination pattern, there must be an electrical malfunction.
- 2) When the ABS warning light remains constantly OFF, repair the ABS warning light circuit or diagnosis circuit. <Ref. to ABS-28, Diagnostics Procedure without Subaru Select Monitor.>

NOTE:

Even though the ABS warning light does not go out 1.5 seconds after it illuminates, the ABS system operates normally when the warning light goes out while driving at approx. 12 km/h (7 MPH). However, the Anti-lock brakes do not work while ABS warning light is illuminated.

11.List of Diagnostic Trouble Code (DTC)

A: LIST

1. WITHOUT SUBARU SELECT MONITOR

DTC	Contents	of diagnosis	Index No.		
_	ABS warning light does	not illuminate.	<ref. abs="" abs-28,="" come="" does="" light="" not="" on,<br="" to="" warning="">Diagnostics Procedure without Subaru Select Monitor.></ref.>		
_	ABS warning light remains on.		<ref. abs="" abs-31,="" does="" go="" light="" not="" off,<br="" to="" warning="">Diagnostics Procedure without Subaru Select Monitor.></ref.>		
_	Brake warning light rem	ains on.	<ref. abs-34,="" brake="" diagnostics="" do="" go="" light="" monitor.="" not="" off,="" procedure="" select="" subaru="" to="" warning="" without=""></ref.>		
_	DTC does not illuminate).	<ref. abs-36,="" appear,="" diagnostics="" does="" dtc="" monitor.="" not="" procedure="" select="" subaru="" to="" without=""></ref.>		
11	Start code • DTC is shown after sta • Only start code is shown		_		
21		Front ABS wheel speed sensor RH	<ref. 21="" abnormal="" abs="" abs-37,="" dtc="" speed<br="" to="" wheel="" —="">SENSOR (OPEN CIRCUIT OR INPUT VOLTAGE TOO HIGH) (FRONT RH) —, Diagnostics Procedure without Subaru Select Mon- itor.></ref.>		
23	Abnormal ABS wheel speed sensor (Open circuit or input voltage too high)	Front ABS wheel speed sensor LH	<ref. (front="" (open="" 23="" abnormal="" abs="" abs-37,="" circuit="" diagnostics="" dtc="" high)="" input="" lh)="" monitor.="" or="" procedure="" select="" sensor="" speed="" subaru="" to="" too="" voltage="" wheel="" without="" —="" —,=""></ref.>		
25		Rear ABS wheel speed sensor RH	<ref. (open="" (rear="" 25="" abnormal="" abs="" abs-37,="" circuit="" diagnostics="" dtc="" high)="" input="" monitor.="" or="" procedure="" rh)="" select="" sensor="" speed="" subaru="" to="" too="" voltage="" wheel="" without="" —="" —,=""></ref.>		
27		Rear ABS wheel speed sensor LH	<ref. (open="" (rear="" 27="" abnormal="" abs="" abs-38,="" circuit="" diagnostics="" dtc="" high)="" input="" lh)="" monitor.="" or="" procedure="" select="" sensor="" speed="" subaru="" to="" too="" voltage="" wheel="" without="" —="" —,=""></ref.>		
22		Front ABS wheel speed sensor RH	<ref. 22="" abnormal="" abs="" abs-42,="" dtc="" speed<br="" to="" wheel="" —="">SENSOR (ABNORMAL ABS WHEEL SPEED SENSOR SIGNAL) (FRONT RH) —, Diagnostics Procedure without Subaru Select Monitor.></ref.>		
24		Front ABS wheel speed sensor LH	<ref. 24="" abnormal="" abs="" abs-42,="" dtc="" speed<br="" to="" wheel="" —="">SENSOR (ABNORMAL ABS WHEEL SPEED SENSOR SIGNAL) (FRONT LH) —, Diagnostics Procedure without Subaru Select Monitor.></ref.>		
26	Abnormal ABS wheel speed sensor (Abnormal ABS wheel speed sensor signal)	Rear ABS wheel speed sensor RH	<ref. 26="" abnormal="" abs="" abs-42,="" dtc="" speed<br="" to="" wheel="" —="">SENSOR (ABNORMAL ABS WHEEL SPEED SENSOR SIGNAL) (REAR RH) —, Diagnostics Procedure without Subaru Select Monitor.></ref.>		
28		Rear ABS wheel speed sensor LH	<ref. (abnormal="" (rear="" 28="" abnormal="" abs="" abs-43,="" diagnostics="" dtc="" lh)="" monitor.="" procedure="" select="" sensor="" signal)="" speed="" subaru="" to="" wheel="" without="" —="" —,=""></ref.>		
29		Any one of four	<ref. (abnormal="" (any="" 29="" abnormal="" abs="" abs-47,="" diagnostics="" dtc="" four)="" monitor.="" of="" one="" procedure="" select="" sensor="" signal)="" speed="" subaru="" to="" wheel="" without="" —="" —,=""></ref.>		

LIST OF DIAGNOSTIC TROUBLE CODE (DTC)

ABS (DIAGNOSTICS)

DTC	Contents of	of diagnosis	Index No.
31		Front inlet valve RH	<ref. (front="" 31="" abnormal="" abs-51,="" abscm&h="" circuit(s)="" diagnostics="" dtc="" in="" inlet="" monitor.="" procedure="" rh)="" select="" solenoid="" subaru="" to="" u="" valve="" without="" —="" —,=""></ref.>
32		Front outlet valve RH	<ref. (front="" 32="" abnormal="" abs-54,="" abscm&h="" circuit(s)="" diagnostics="" dtc="" in="" monitor.="" outlet="" procedure="" rh)="" select="" solenoid="" subaru="" to="" u="" valve="" without="" —="" —,=""></ref.>
33		Front inlet valve LH	<ref. (front="" 33="" abnormal="" abs-51,="" abscm&h="" circuit(s)="" diagnostics="" dtc="" in="" inlet="" lh)="" monitor.="" procedure="" select="" solenoid="" subaru="" to="" u="" valve="" without="" —="" —,=""></ref.>
34	Inlet valve, outlet valve	Front outlet valve LH	<ref. (front="" 34="" abnormal="" abs-54,="" abscm&h="" circuit(s)="" diagnostics="" dtc="" in="" lh)="" monitor.="" outlet="" procedure="" select="" solenoid="" subaru="" to="" u="" valve="" without="" —="" —,=""></ref.>
35	in hydraulic control unit	Rear inlet valve RH	<ref. (rear="" 35="" abnormal="" abs-51,="" abscm&h="" circuit(s)="" diagnostics="" dtc="" in="" inlet="" monitor.="" procedure="" rh)="" select="" solenoid="" subaru="" to="" u="" valve="" without="" —="" —,=""></ref.>
36		Rear outlet valve RH	<ref. (rear="" 36="" abnormal="" abs-54,="" abscm&h="" circuit(s)="" diagnostics="" dtc="" in="" monitor.="" outlet="" procedure="" rh)="" select="" solenoid="" subaru="" to="" u="" valve="" without="" —="" —,=""></ref.>
37		Rear inlet valve LH	<ref. (rear="" 37="" abnormal="" abs-52,="" abscm&h="" circuit(s)="" diagnostics="" dtc="" in="" inlet="" lh)="" monitor.="" procedure="" select="" solenoid="" subaru="" to="" u="" valve="" without="" —="" —,=""></ref.>
38		Rear outlet valve LH	<ref. (rear="" 38="" abnormal="" abs-55,="" abscm&h="" circuit(s)="" diagnostics="" dtc="" in="" lh)="" monitor.="" outlet="" procedure="" select="" solenoid="" subaru="" to="" u="" valve="" without="" —="" —,=""></ref.>
41	Abnormal ABS control module		<ref. 41="" abnormal="" abs="" abs-58,="" control="" dtc="" mod-<br="" to="" —="">ULE —, Diagnostics Procedure without Subaru Select Monitor.></ref.>
42	Source voltage is abnor	mal.	<ref. 42="" abnormal="" abs-60,="" diagnostics="" dtc="" is="" monitor.="" procedure="" select="" source="" subaru="" to="" voltage="" without="" —="" —,=""></ref.>
44	A combination of AT cor	ntrol abnormal	<ref. 44="" a="" abnormal="" abs-63,="" at="" combination="" control="" diagnostics="" dtc="" monitor.="" of="" procedure="" select="" subaru="" to="" without="" —="" —,=""></ref.>
51	Abnormal valve relay		<ref. 51="" abnormal="" abs-65,="" diagnostics="" dtc="" monitor.="" procedure="" relay="" select="" subaru="" to="" valve="" without="" —="" —,=""></ref.>
52	Abnormal motor and/or r	motor relay	<ref. 52="" abnormal="" abs-68,="" and="" diagnostics="" dtc="" monitor.="" motor="" or="" procedure="" relay="" select="" subaru="" to="" without="" —="" —,=""></ref.>
54	Abnormal stop light switch		<ref. ,="" 54="" abnormal="" abs-71,="" diagnostics="" dtc="" light="" monitor.="" procedure="" select="" stop="" subaru="" switch="" to="" without="" —=""></ref.>
56	Abnormal G sensor output voltage		<ref. 56="" abnormal="" abs-73,="" diagnostics="" dtc="" g="" monitor.="" output="" procedure="" select="" sensor="" subaru="" to="" voltage="" without="" —="" —,=""></ref.>
73	Abnormal Lateral G sens	sor output voltage	<ref. 73="" abnormal="" abs-76,="" diagnostics="" dtc="" g="" lateral="" monitor.="" output="" procedure="" select="" sensor="" subaru="" to="" voltage="" without="" —="" —,=""></ref.>

2. WITH SUBARU SELECT MONITOR

DTC	Sub code No.	Display screen	Contents of diagnosis	Index No.
_	_	Communication for initializing impossible	Subaru Select Monitor communication failure	<ref. abs-79,="" communication="" for="" initializ-<br="" to="">ING IMPOSSIBLE, Diagnostics Procedure with Subaru Select Monitor.></ref.>
_	_	No DTC	Although no DTC appears on the Sub- aru Select Monitor display, the ABS warning light remains on.	<ref. abs-82,="" code,="" diagnostics<br="" no="" to="" trouble="">Procedure with Subaru Select Monitor.></ref.>

				TO FOL OF FILE
DTC	Sub code No.	Display screen	Contents of diagnosis	Index No.
21	4A02	Open or short circuit in Front ABS wheel speed sensor RH cir- cuit	Open or short circuit in Front ABS wheel speed sensor RH cir- cuit	<ref. 21="" abs-85,="" cir-<br="" dtc="" open="" or="" short="" to="" —="">CUIT IN FRONT RIGHT ABS WHEEL SPEED SENSOR CIRCUIT —, Diagnostics Procedure with Subaru Select Monitor.></ref.>
22	48C5, 4945 48E5, 4845 4905, 4885	Front ABS wheel speed sensor RH abnormal signal	Front ABS wheel speed sensor RH abnormal signal	<ref. 22="" abnor-mal="" abs="" abs-91,="" diagnostics="" dtc="" front="" monitor.="" procedure="" right="" select="" sensor="" signal="" speed="" subaru="" to="" wheel="" with="" —="" —,=""></ref.>
23	4202	Open or short circuit in Front ABS wheel speed sensor LH cir- cuit	Open or short circuit in Front ABS wheel speed sensor LH cir- cuit	<ref. 23="" abs-85,="" cir-<br="" dtc="" open="" or="" short="" to="" —="">CUIT IN FRONT LEFT ABS WHEEL SPEED SENSOR CIRCUIT —, Diagnostics Procedure with Subaru Select Monitor.></ref.>
24	40C5, 4145 40E5, 4045 4105, 4085	Front ABS wheel speed sensor LH abnormal signal	Front ABS wheel speed sensor LH abnormal signal	<ref. 24="" abnormal<br="" abs-91,="" dtc="" front="" left="" to="" —="">ABS WHEEL SPEED SENSOR SIGNAL —, Diagnostics Procedure with Subaru Select Monitor.></ref.>
25	4602	Open or short circuit in Rear ABS wheel speed sensor RH cir- cuit	Open or short circuit in Rear ABS wheel speed sensor RH cir- cuit	<ref. 25="" abs-85,="" cir-<br="" dtc="" open="" or="" short="" to="" —="">CUIT IN REAR RIGHT ABS WHEEL SPEED SENSOR CIRCUIT —, Diagnostics Procedure with Subaru Select Monitor.></ref.>
26	44C5, 4545 44E5, 4445 4505, 4485	Rear ABS wheel speed sensor RH abnormal signal	Rear ABS wheel speed sensor RH abnormal signal	<ref. 26="" abnormal<br="" abs-91,="" dtc="" rear="" right="" to="" —="">ABS WHEEL SPEED SENSOR SIGNAL —, Diagnostics Procedure with Subaru Select Monitor.></ref.>
27	4E02	Open or short circuit in Rear ABS wheel speed sensor LH cir- cuit	Open or short circuit in Rear ABS wheel speed sensor LH cir- cuit	<ref. 27="" abs-86,="" cir-<br="" dtc="" open="" or="" short="" to="" —="">CUIT IN REAR LEFT ABS WHEEL SPEED SENSOR CIRCUIT —, Diagnostics Procedure with Subaru Select Monitor.></ref.>
28	4CC5, 4D45 4CE5, 4C45 4D05, 4C85	Rear ABS wheel speed sensor LH abnormal signal	Rear ABS wheel speed sensor LH abnormal signal	<ref. 28="" abnormal="" abs="" abs-92,="" diagnostics="" dtc="" left="" monitor.="" procedure="" rear="" select="" sensor="" signal="" speed="" subaru="" to="" wheel="" with="" —="" —,=""></ref.>
29	5080 50C0	Abnormal ABS wheel speed sensor signal on any one of four sensor	Abnormal ABS wheel speed sensor signal on any one of four	<ref. 29="" abnormal="" abs="" abs-97,="" dtc="" to="" wheel<br="" —="">SPEED SENSOR SIGNAL ON ANY ONE OF FOUR SENSOR —, Diagnostics Procedure with Subaru Select Monitor.></ref.>
31	3200	Front inlet valve RH malfunction	Front inlet valve RH malfunction	<ref. 31="" abs-101,="" diagnostics="" dtc="" front="" inlet="" malfunction="" monitor.="" procedure="" right="" select="" subaru="" to="" valve="" with="" —="" —,=""></ref.>
32	3600	Front outlet valve RH malfunction	Front outlet valve RH malfunction	<ref. 32="" abs-104,="" diagnostics="" dtc="" front="" malfunction="" monitor.="" outlet="" procedure="" right="" select="" subaru="" to="" valve="" with="" —="" —,=""></ref.>
33	2200	Front inlet valve LH malfunction	Front inlet valve LH malfunction	<ref. 33="" abs-101,="" diagnostics="" dtc="" front="" inlet="" left="" malfunction="" monitor.="" procedure="" select="" subaru="" to="" valve="" with="" —="" —,=""></ref.>
34	2600	Front outlet valve LH malfunction	Front outlet valve LH malfunction	<ref. 34="" abs-104,="" diagnostics="" dtc="" front="" left="" malfunction="" monitor.="" outlet="" procedure="" select="" subaru="" to="" valve="" with="" —="" —,=""></ref.>
35	2A00	Rear inlet valve RH malfunction	Rear inlet valve RH malfunction	<ref. 35="" abs-101,="" diagnostics="" dtc="" inlet="" malfunction="" monitor.="" procedure="" rear="" right="" select="" subaru="" to="" valve="" with="" —="" —,=""></ref.>
36	2E00	Rear outlet valve RH malfunction	Rear outlet valve RH malfunction	<ref. 36="" abs-104,="" diagnostics="" dtc="" malfunction="" monitor.="" outlet="" procedure="" rear="" right="" select="" subaru="" to="" valve="" with="" —="" —,=""></ref.>
37	3A00	Rear inlet valve LH malfunction	Rear inlet valve LH malfunction	<ref. 37="" abs-102,="" diagnostics="" dtc="" inlet="" left="" malfunction="" monitor.="" procedure="" rear="" select="" subaru="" to="" valve="" with="" —="" —,=""></ref.>
38	3E00	Rear outlet valve LH malfunction	Rear outlet valve LH malfunction	<ref. 38="" abs-105,="" diagnostics="" dtc="" left="" malfunction="" monitor.="" outlet="" procedure="" rear="" select="" subaru="" to="" valve="" with="" —="" —,=""></ref.>

LIST OF DIAGNOSTIC TROUBLE CODE (DTC)

D=0	101	D: 1		For Stie
DTC	Sub code No.	Display screen	Contents of diagnosis	Index No.
41	02A0, 0040, 0020, 02C0, 00E0, 0340, 0140, 0160, 0280, 0460, 0260, 0060, 0080, 0300	ABS control module malfunction	ABS control module and hydraulic control unit malfunction	<ref. 41="" abs="" abs-108,="" control="" diagnostics="" dtc="" malfunction="" module="" monitor.="" procedure="" select="" subaru="" to="" with="" —="" —,=""></ref.>
42	5A00	Power supply voltage too low	Power supply voltage too low	<ref. 42="" abs-110,="" diagnostics="" dtc="" low="" monitor.="" power="" procedure="" select="" subaru="" supply="" to="" too="" volt-age="" with="" —="" —,=""></ref.>
42	5A80	Power supply voltage too high	Power supply voltage too high	<ref. 42="" abs-113,="" diagnostics="" dtc="" high="" monitor.="" power="" procedure="" select="" subaru="" supply="" to="" too="" volt-age="" with="" —="" —,=""></ref.>
44	1600	ABS-AT control (Non Controlled)	ABS-AT control (Non Controlled)	<ref. (non="" 44="" abs-116,="" abs-at="" control="" controlled)="" diagnostics="" dtc="" monitor.="" procedure="" select="" subaru="" to="" with="" —="" —,=""></ref.>
44	1500	ABS-AT control (Controlled)	ABS-AT control (Controlled)	<ref. 44="" abs-118,="" abs-at="" control<br="" dtc="" to="" —="">(CONTROLLED) —, Diagnostics Procedure with Subaru Select Monitor.></ref.>
51	0C80 0EA0	Valve relay malfunction	Valve relay malfunction	<ref. 51="" abs-120,="" dtc="" mal-<br="" relay="" to="" valve="" —="">FUNCTION —, Diagnostics Procedure with Subaru Select Monitor.></ref.>
J1	0C40	Valve relay ON failure	Valve relay ON failure	<ref. 51="" abs-123,="" diagnostics="" dtc="" fail-ure="" monitor.="" on="" procedure="" relay="" select="" subaru="" to="" valve="" with="" —="" —,=""></ref.>
	10A1	Open circuit in motor relay circuit	Open circuit in motor relay circuit	<ref. 52="" abs-125,="" circuit="" dtc="" in<br="" open="" to="" —="">MOTOR RELAY CIRCUIT —, Diagnostics Procedure with Subaru Select Monitor.></ref.>
52	10E1	Motor relay ON failure	Motor relay ON failure	<ref. 52="" abs-127,="" diagnostics="" dtc="" fail-ure="" monitor.="" motor="" on="" procedure="" relay="" select="" subaru="" to="" with="" —="" —,=""></ref.>
	10C1	Motor malfunction	Motor malfunction	<ref. 52="" abs-129,="" diagnostics="" dtc="" malfunction="" monitor.="" motor="" procedure="" select="" subaru="" to="" with="" —="" —,=""></ref.>
54	5600	Stop light switch sig- nal circuit malfunc- tion	Stop light switch sig- nal circuit malfunction	<ref. 54="" abs-131,="" dtc="" light="" stop="" switch<br="" to="" —="">SIGNAL CIRCUIT MALFUNCTION —, Diagnostics Pro- cedure with Subaru Select Monitor.></ref.>
	7600	Open or short circuit in G sensor circuit	Open or short circuit in G sensor circuit	<ref. 56="" abs-133,="" cir-<br="" dtc="" open="" or="" short="" to="" —="">CUIT IN G SENSOR CIRCUIT —, Diagnostics Proce- dure with Subaru Select Monitor.></ref.>
56	7580	Battery short in G sensor circuit	Battery short in G sensor circuit	<ref. 56="" abs-136,="" battery="" dtc="" g<br="" in="" short="" to="" —="">SENSOR CIRCUIT —, Diagnostics Procedure with Sub- aru Select Monitor.></ref.>
30	7540	Abnormal G sensor high μ output	Abnormal G sensor high μ output	<ref. 56="" abnormal="" abs-140,="" diagnostics="" dtc="" g="" high="" m="" monitor.="" output="" procedure="" select="" sensor="" subaru="" to="" with="" —="" —,=""></ref.>
	7500	Detection of G sensor stick	Detection of G sensor stick	<ref. 56="" abs-143,="" detection="" dtc="" g="" of="" sen-<br="" to="" —="">SOR STICK —, Diagnostics Procedure with Subaru Select Monitor.></ref.>

LIST OF DIAGNOSTIC TROUBLE CODE (DTC)

				- 1 FO - 3 FFI -
DTC	Sub code No.	Display screen	Contents of diagnosis	Index No.
73	7A00	Open or short circuit in Lateral G sensor circuit	Open or short circuit in Lateral G sensor circuit	<ref. 73="" abs-146,="" cir-<br="" dtc="" open="" or="" short="" to="" —="">CUIT IN LATERAL G SENSOR CIRCUIT —, Diagnos- tics Procedure with Subaru Select Monitor.></ref.>
	7980	Battery short in Lateral G sensor circuit	Battery short in Lateral G sensor circuit	<ref. 73="" abs-149,="" battery="" dtc="" in<br="" short="" to="" —="">LATERAL G SENSOR CIRCUIT —, Diagnostics Procedure with Subaru Select Monitor.></ref.>
	7940	Abnormal Lateral G sensor high μ output	Abnormal Lateral G sensor high μ output	<ref. 73="" abnormal="" abs-153,="" dtc="" g<br="" lateral="" to="" —="">SENSOR HIGH m OUTPUT —, Diagnostics Procedure with Subaru Select Monitor.></ref.>
	7900	Detection of Lateral G sensor stick	Detection of Lateral G sensor stick	<ref. 73="" abs-156,="" detection="" dtc="" lat-<br="" of="" to="" —="">ERAL G SENSOR STICK —, Diagnostics Procedure with Subaru Select Monitor.></ref.>

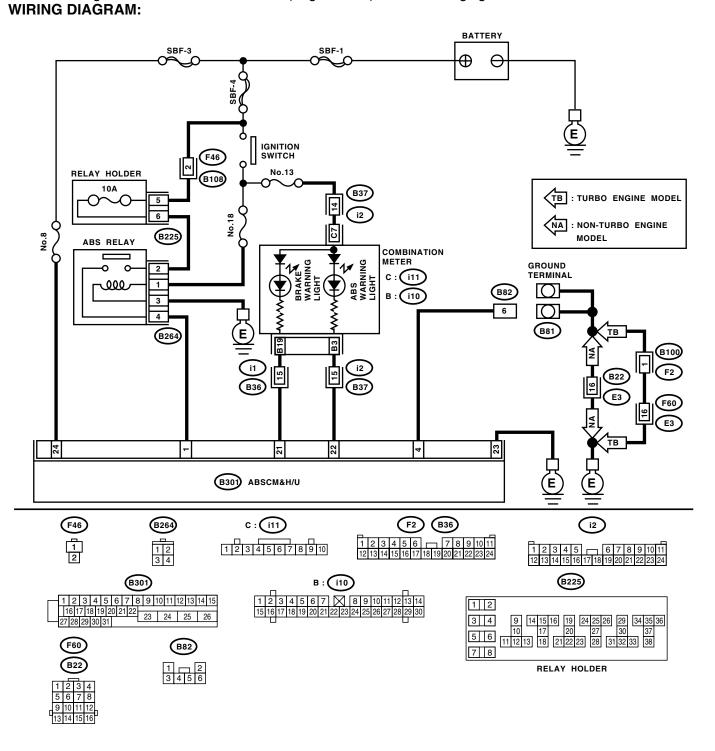
12.Diagnostics Procedure without Subaru Select Monitor

DIAGNOSIS:

· ABS warning light circuit is open or shorted.

TROUBLE SYMPTOM:

• When the ignition switch is turned to ON (engine OFF), ABS warning light does not come on.



ABS00347

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	- 1	O For	y Fri	•
Step	Check	Yes	No St	lel:
	Are other warning lights turned on?	Go to step 2.	Repair the combination meter. <ref. assembly.="" combination="" idi-10,="" meter="" to=""></ref.>	14/0
	Is the ABS warning light bulb open?	Replace the ABS and brake warn- ing light bulb. <ref. idi-10,<br="" to="">Combination Meter Assembly.></ref.>	Go to step 3.	
CHECK BATTERY SHORT OF ABS HARNESS. 1)Disconnect the connector (i2) from connector (B37). 2)Measure the voltage between connector (i2) and chassis ground. Connector & terminal (i2) No. 15 (+) — Chassis ground (-):	Is the voltage less than 3 V?	Go to step 4.	Repair battery short in the warn- ing light harness.	
CHECK BATTERY SHORT OF ABS AND BRAKE WARNING LIGHT HARNESS. 1)Turn the ignition switch to ON. 2)Measure the voltage between connector (i2) and chassis ground. Connector & terminal (i2) No. 15 (+) — Chassis ground (-):	Is the voltage less than 3 V?	Go to step 5.	Repair battery short in the warn- ing light harness.	
CHECK WIRING HARNESS. 1)Turn the ignition switch to OFF. 2)Install the combination meter. 3)Turn the ignition switch to ON. 4)Measure the voltage between connector (i2) and chassis ground. Connector & terminal (i2) No. 15 (+) — Chassis ground (-):	Is the voltage 10 — 15 V?	Go to step 6.	Repair open circuit in the wiring harness.	
CHECK BATTERY SHORT OF ABS AND BRAKE WARNING LIGHT HARNESS. 1)Turn the ignition switch to OFF. 2)Measure the voltage between connector (B37) and chassis ground. Connector & terminal (B37) No. 15 (+) — Chassis ground (-):	Is the voltage less than 3 V?	Go to step 7.	Repair battery short in the wiring harness.	
7 CHECK BATTERY SHORT OF ABS AND BRAKE WARNING LIGHT HARNESS. 1)Turn the ignition switch to ON. 2)Measure the voltage between connector (B37) and chassis ground. Connector & terminal (B37) No. 15 (+) — Chassis ground (-):	Is the voltage less than 3 V?	Go to step 8.	Repair battery short in the wiring harness.	
	Is the resistance less than 0.5 Ω ?	Go to step 9.	Repair open circuit in the ABSCM&H/ U ground harness.	

	Step	Check	Yes	No St
9	CHECK WIRING HARNESS. Measure the resistance between connector (B37) and chassis ground. Connector & terminal (B37) No. 15 — Chassis ground:	Is the resistance less than 0.5 Ω ?	Go to step 10.	Repair open circuit in the harness/connector.
10	CHECK POOR CONTACT IN CONNECTORS. Turn the ignition switch to OFF.	Is there poor contact in con- nectors between combination meter and ABSCM&H/U?	Repair the con- nector.	Replace the ABSCM&H/U. <ref. abs-6,<br="" to="">ABS Control Mod- ule and Hydraulic Control Unit (ABSCM&H/U).></ref.>

ABS (DIAGNOSTICS)

B: ABS WARNING LIGHT DOES NOT GO OFF

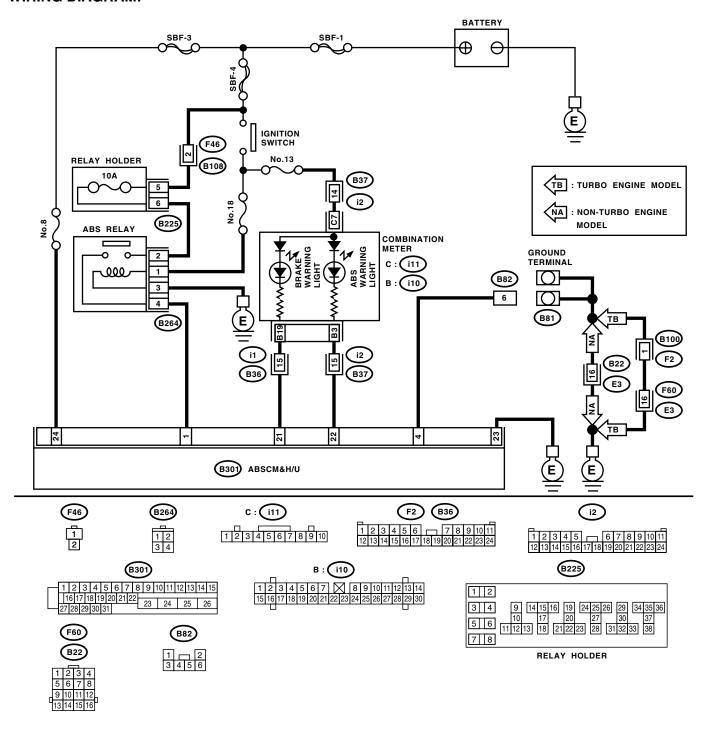
DIAGNOSIS:

· ABS warning light circuit is open or shorted.

TROUBLE SYMPTOM:

When starting the engine and while ABS warning light is kept ON.

WIRING DIAGRAM:



ABS00347

			For	y Fri	- -
	Step	Check	Yes	No St	101:
1	CHECK INSTALLATION OF ABSCM&H/U CONNECTOR. Turn the ignition switch to OFF.	Is the ABSCM&H/U connector inserted into ABSCM until the clamp locks onto it?	Go to step 2.	Insert the ABSCM&H/U con- nector into ABSCM&H/U until the clamp locks onto it.	^{(Q} /0.
2	CHECK GROUND TERMINAL. Measure the resistance between Ground terminals (B81) and chassis ground. Terminals Ground terminal (A) — Chassis ground: Ground terminal (B) — Chassis ground:	Is the resistance less than 0.5 Ω ?	Go to step 3.	Repair the open circuit in Ground terminal harness.	
3	CHECK DIAGNOSIS LINE. 1)Connect the Ground terminal (B81) to diagnosis connector (B82) No. 6. 2)Disconnect the connector from ABSCM& H/U. 3)Measure the resistance between ABSCM&H/U connector and chassis ground. Connector & terminal (B301) No. 4 — Chassis ground:	Is the resistance less than 0.5 Ω ?	Go to step 4.	Repair the open circuit in harness connector between ABSCM&H/U and diagnosis connec- tor.	
1	CHECK GENERATOR. 1)Start the engine. 2)Idle the engine. 3)Measure the voltage between generator and chassis ground. Terminals Generator B terminal (+) — Chassis ground (-):	Is the voltage 10 — 15 V?	Go to step 5.	Repair the generator. <ref. generator.="" sc(h4so)-14,="" to=""></ref.>	
5	CHECK BATTERY TERMINAL. Turn the ignition switch to OFF.	Is there poor contact at battery terminal?	Repair or tighten the battery terminal.	Go to step 6.	
6	CHECK POWER SUPPLY OF ABSCM. 1)Start the engine. 2)Idle the engine. 3)Measure the voltage between ABSCM&H/U connector and chassis ground. Connector & terminal (B301) No. 1 (+) — Chassis ground (-):	Is the voltage 10 — 15 V?	Go to step 7.	Repair the ABSCM&H/U power supply cir- cuit.	
7	CHECK WIRING HARNESS. 1)Disconnect the connector (i2) from connector (B37). 2)Turn the ignition switch to ON.	Does the ABS warning light turn on?	Repair the front or body wiring harness.	Go to step 8.	
3	CHECK PROJECTION AT ABSCM&H/U. 1)Turn the ignition switch to OFF. 2)Check for damage at the ABSCM&H/U terminal. NOTE: For detail of connector switch, refer to following. <ref. abs-12,="" control="" electrical="" i="" module="" o="" signal.="" specification,="" to=""></ref.>	Is there any damage on projection which switches connector switch?	Replace the ABSCM&H/U. <ref. abs-6,<br="" to="">ABS Control Mod- ule and Hydraulic Control Unit (ABSCM&H/U).></ref.>	Go to step 9.	
9	CHECK ABSCM&H/U. Measure the resistance between ABSCM&H/U terminals. Terminals No. 22 — No. 23:	Is the resistance more than 1 $\mbox{M}\Omega ?$	Go to step 10.	Replace the ABSCM&H/U. <ref. abs-6,<br="" to="">ABS Control Mod- ule and Hydraulic Control Unit (ABSCM&H/U).></ref.>	

	Step	Check	Yes	No
10	CHECK WIRING HARNESS. Measure the resistance between connector (B37) and chassis ground. Connector & terminal (B37) No. 15 — Chassis ground:	Is the resistance less than 0.5 Ω ?	Go to step 11.	Repair the harness.
11	CHECK WIRING HARNESS. 1)Connect the connector to ABSCM&H/U. 2)Measure the resistance between connector (B37) and chassis ground. Connector & terminal (B37) No. 15 — Chassis ground:	Is the resistance more than 1 M Ω ?	Go to step 12.	Repair the harness.
12	CHECK POOR CONTACT IN ABSCM&H/U CONNECTOR.	Is there poor contact in ABSCM&H/U connector?	Repair the connector.	Replace the ABSCM&H/U. <ref. abs-6,<br="" to="">ABS Control Mod- ule and Hydraulic Control Unit (ABSCM&H/U).></ref.>

ABS (DIAGNOSTICS)

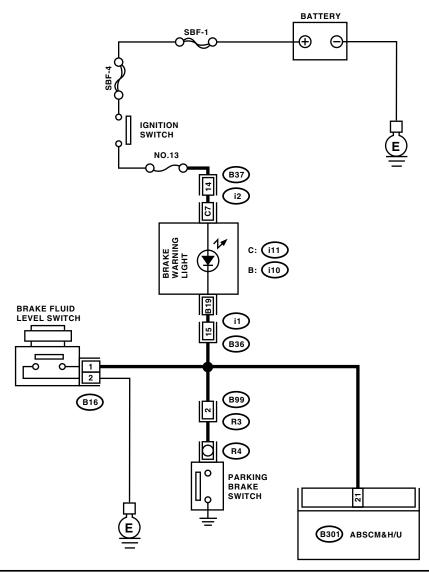
C: BRAKE WARNING LIGHT DO NOT GO OFF

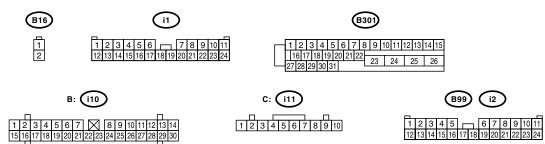
DIAGNOSIS:

- Brake warning light circuit is shorted.
- Faulty sensor/connector

TROUBLE SYMPTOM:

• After starting the engine, brake warning light is kept ON, even if the parking brake lever has been released. **WIRING DIAGRAM:**





ABS00350

RESALE

	Ota	Ob a a la	COP	L'Elis e.
	Step	Check	Yes	No St
1	CHECK BRAKE FLUID AMOUNT. Check the amount of brake fluid in reservoir tank of master cylinder.	Is the brake fluid amount between "MAX" line and "MIN" line?	Go to step 2.	Fill the brake fluid to specified amount.
2	CHECK BRAKE FLUID LEVEL SWITCH. 1)Disconnect the level switch connector (B16) from master cylinder. 2)Measure the resistance of master cylinder terminals. Terminals No. 1 — No. 2:	Is the resistance more than 1 $\mbox{M}\Omega ?$	Go to step 3.	Replace the master cylinder.
3	CHECK PARKING BRAKE SWITCH. 1)Disconnect the connector (R4) from parking brake switch. 2)Release the parking brake switch. 3)Measure the resistance between parking brake switch terminal and chassis ground.	Is the resistance more than 1 $\mbox{M}\Omega ?$	Go to step 4.	Replace the parking brake switch.
4	CHECK GROUND SHORT OF HARNESS. 1)Disconnect the connector form ABSCM & H/U. 2)Disconnect the connector (i1) from combination meter. 3)Turn the ignition switch to ON.	Does the brake warning light go off?	Go to step 5.	Repair the harness.
5	CHECK POOR CONTACT IN ABSCM & H/U.	Is there poor contact in ABSCM & H/U connector?	Repair the con- nector.	Replace the ABSCM&H/U. <ref. abs-6,<br="" to="">ABS Control Mod- ule and Hydraulic Control Unit (ABSCM&H/U).></ref.>

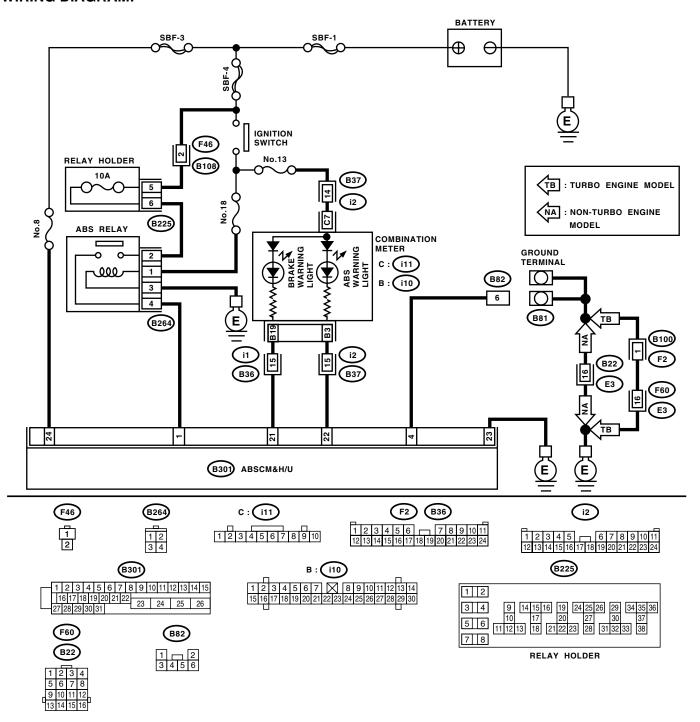
D: DTC DOES NOT APPEAR

DIAGNOSIS:

• Diagnosis circuit is open.

TROUBLE SYMPTOM:

• The ABS warning light turns on or off normally but the start code cannot be read out in diagnostic mode. **WIRING DIAGRAM:**



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ABS (DIAGNOSTICS)

		T	FOD	J Stis C	1
	Step	Check	Yes	REO NO ST	Id:
1	CHECK GROUND TERMINAL. 1)Turn the ignition switch to OFF. 2)Measure the resistance between Ground terminals (B81) and chassis ground. Terminals Ground terminal (A) — Chassis ground: Ground terminal (B) — Chassis ground:	Ω?	Go to step 2.	Repair the Ground terminal harness.	1410
2	CHECK DIAGNOSIS LINE. 1)Connect the Ground terminal (B81) to diagnosis connector (B82) No. 6. 2)Disconnect the connector from ABSCM& H/U. 3)Measure the resistance between ABSCM&H/U connector and chassis ground. Connector & terminal (B301) No. 4 — Chassis ground:	Is the resistance less than 0.5 Ω ?	Go to step 3.	Repair the har- ness connector between ABSCM&H/U and diagnosis connec- tor.	
3	CHECK POOR CONTACT IN ABSCM&H/U CONNECTOR.	Is there poor contact in ABSCM&H/U connector?	Repair the connector.	Replace the ABSCM&H/U. <ref. (abscm&h="" abs="" abs-6,="" and="" control="" hydraulic="" module="" to="" u).="" unit=""></ref.>	

E: DTC 21

— ABNORMAL ABS WHEEL SPEED SENSOR (OPEN CIRCUIT OR INPUT VOLTAGE TOO HIGH) (FRONT RH) —

NOTE:

For the diagnostic procedure, refer to DTC 27. <Ref. to ABS-38, DTC 27 — ABNORMAL ABS WHEEL SPEED SENSOR (OPEN CIRCUIT OR INPUT VOLTAGE TOO HIGH) (REAR LH) —, Diagnostics Procedure without Subaru Select Monitor.>

F: DTC 23

— ABNORMAL ABS WHEEL SPEED SENSOR (OPEN CIRCUIT OR INPUT VOLTAGE TOO HIGH) (FRONT LH) —

NOTE:

For the diagnostic procedure, refer to DTC 27. <Ref. to ABS-38, DTC 27 — ABNORMAL ABS WHEEL SPEED SENSOR (OPEN CIRCUIT OR INPUT VOLTAGE TOO HIGH) (REAR LH) —, Diagnostics Procedure without Subaru Select Monitor.>

G: DTC 25

— ABNORMAL ABS WHEEL SPEED SENSOR (OPEN CIRCUIT OR INPUT VOLTAGE TOO HIGH) (REAR RH) —

NOTE:

For the diagnostic procedure, refer to DTC 27. <Ref. to ABS-38, DTC 27 — ABNORMAL ABS WHEEL SPEED SENSOR (OPEN CIRCUIT OR INPUT VOLTAGE TOO HIGH) (REAR LH) —, Diagnostics Procedure without Subaru Select Monitor.>

ABS (DIAGNOSTICS)

H: DTC 27

DTC 27 — ABNORMAL ABS WHEEL SPEED SENSOR (OPEN CIRCUIT OR INPUT **VOLTAGE TOO HIGH) (REAR LH) —**

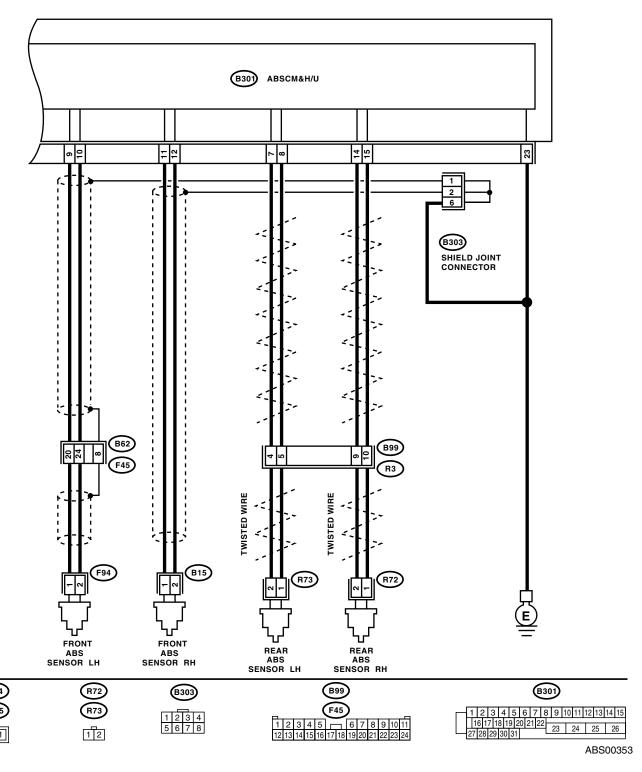
DIAGNOSIS:

- Faulty ABS wheel speed sensor (Broken wire, input voltage too high)
- · Faulty harness connector

TROUBLE SYMPTOM:

ABS does not operate.

WIRING DIAGRAM:



			O Fa-	y Fri
	Step	Check	Yes	No St
1	CHECK ABS WHEEL SPEED SENSOR.	Is the resistance as following	Go to step 2.	Replace the ABS
	1)Turn the ignition switch to OFF.	value?		wheel speed sen-
	2)Disconnect the connector from ABS wheel	Front: $1 - 1.5 \text{ k}\Omega$		sor. Front: <ref. td="" to<=""></ref.>
	speed sensor.	Rear: 1.025 — 1.265 kΩ		ABS-12, Front
	3)Measure the resistance of ABS wheel speed			ABS Wheel Speed
	sensor connector terminals while shaking the			Sensor.> Rear:
	harness lightly. <i>Terminals</i>			<ref. abs-15,<="" td="" to=""></ref.>
				Rear ABS Wheel
	Front RH No. 1 — No. 2: Front LH No. 1 — No. 2:			Speed Sensor.>
	Rear RH No. 1 — No. 2:			
	Rear LH No. 1 — No. 2:			
2		Is the voltage less than 1 V?	Go to step 3.	Replace the ABS
2	SPEED SENSOR.	is the voltage less than i v !	Go to step 3.	wheel speed sen-
	1)Disconnect the connector from ABSCM&			sor. Front: <ref. td="" to<=""></ref.>
	H/U.			ABS-12, Front
	2)Measure the voltage between ABS wheel			ABS Wheel Speed
	speed sensor and chassis ground.			Sensor.> Rear:
	Terminals			<ref. abs-15,<="" td="" to=""></ref.>
	Front RH No. 1 (+) — Chassis ground (–):			Rear ABS Wheel
	Front LH No. 1 (+) — Chassis ground (–):			Speed Sensor.>
	Rear RH No. 1 (+) — Chassis ground (–):			-
	Rear LH No. 1 (+) — Chassis ground (–):			
3	CHECK BATTERY SHORT OF ABS WHEEL	Is the voltage less than 1 V?	Go to step 4.	Replace the ABS
	SPEED SENSOR.			wheel speed sen-
	1)Turn the ignition switch to ON.			sor. Front: <ref. td="" to<=""></ref.>
	2)Measure the voltage between ABS wheel			ABS-12, Front
	speed sensor and chassis ground.			ABS Wheel Speed
	Terminals			Sensor.> Rear:
	Front RH No. 1 (+) — Chassis ground (-):			<ref. abs-15,<="" td="" to=""></ref.>
	Front LH No. 1 (+) — Chassis ground (-):			Rear ABS Wheel
	Rear RH No. 1 (+) — Chassis ground (-):			Speed Sensor.>
4	Rear LH No. 1 (+) — Chassis ground (–):	la tha maistana a a fallanda a	0-1	Dan sin the silver
4	CHECK HARNESS/CONNECTOR BETWEEN ABSCM&H/U AND ABS WHEEL SPEED	Is the resistance as following value?	Go to step 5.	Repair the har- ness/connector
	SENSOR.	Front: 1 — 1.5 kΩ		between
	1)Turn the ignition switch to OFF.	Rear: 1.025 — 1.265 kΩ		ABSCM&H/U and
	2)Connect the connector to ABS wheel speed			ABS wheel speed
	sensor.			sensor.
	3)Measure the resistance between			
	ABSCM&H/U connector terminals.			
	Connector & terminal			
	DTC 21			
	(B301) No. 11 — No. 12:			
	DTC 23			
	(B301) No. 9 — No. 10:			
	DTC 25			
	(B301) No. 14 — No. 15: DTC 27			
	(B301) No. 7 — No. 8:			
	(B301) NO. 7 — NO. 8:			

DIAGNOSTICS PROCEDURE WITHOUT SUBARU SELECT MONITOR ABS (DIAGNOSTICS)

			FOR	y Frie
	Step	Check	Yes	No St
5	CHECK BATTERY SHORT OF HARNESS. Measure the voltage between ABSCM&H/U	Is the voltage less than 1 V?	Go to step 6.	Repair the har- ness between
	connector and chassis ground.			ABSCM&H/U and
	Connector & terminal			ABS wheel speed
	DTC 21			sensor.
	(B301) No. 11 (+) — Chassis ground (–):			
	DTC 23			
	(B301) No. 9 (+) — Chassis ground (–):			
	DTC 25			
	(B301) No. 14 (+) — Chassis ground (–):			
	DTC 27 (P201) No. 7(1) Changing ground ()			
6	(B301) No. 7 (+) — Chassis ground (-): CHECK BATTERY SHORT OF HARNESS.	lo the voltage less than 1 1/2	Go to step 7.	Donair the har
6	1)Turn the ignition switch to ON.	Is the voltage less than 1 V?	Go to step 7.	Repair the har- ness between
	2)Measure the voltage between ABSCM&H/U			ABSCM&H/U and
	connector and chassis ground.			ABS wheel speed
	Connector & terminal			sensor.
	DTC 21			
	(B301) No. 11 (+) — Chassis ground (–):			
	DTC 23			
	(B301) No. 9 (+) — Chassis ground (–): DTC 25			
	(B301) No. 14 (+) — Chassis ground (–):			
	DTC 27			
	(B301) No. 7 (+) — Chassis ground (–):			
7	CHECK INSTALLATION OF ABS WHEEL	Are the ABS wheel speed sen-	Go to step 8.	Tighten the ABS
	SPEED SENSOR.	sor installation bolts tightened	'	wheel speed sen-
	Turn the ignition switch to OFF.	33 N·m (3.3 kgf-m, 24 ft-lb)?		sor installation
				bolts securely.
8	CHECK ABS WHEEL SPEED SENSOR GAP.	Is the gap as following value?	Go to step 9.	Adjust the gap.
	Measure the tone wheel to ABS wheel speed	Front wheel:		NOTE:
	sensor piece gap over entire perimeter of the	0.3 — 0.8 mm (0.012 — 0.031		Adjust the gap us-
	wheel.	in) Rear wheel		ing spacers (Part No. 26755AA000).
		0.7 — 1.2 mm (0.028 — 0.047		If the spacers can-
		in)		not correct gap, re-
		,		place worn sensor
				or worn tone
				wheel.
9	CHECK TONE WHEEL RUNOUT.	Is the runout less than 0.05	Go to step 10.	Replace the tone
	Measure the tone wheel runout.	mm (0.0020 in)?		wheel. Front:
				<ref. abs-18,<="" th="" to=""></ref.>
				Front Tone
				Wheel.> Rear:
				<ref. abs-19,<br="" to="">Rear Tone</ref.>
				Wheel.>
				VVIICEI./

			FOR	y Eria
	Step	Check	Yes	No St
10	CHECK GROUND SHORT OF ABS WHEEL SPEED SENSOR. 1) Turn the ignition switch to ON. 2) Measure the resistance between ABS wheel speed sensor and chassis ground. Terminals Front RH No. 1 — Chassis ground: Front LH No. 1 — Chassis ground: Rear RH No. 1 — Chassis ground: Rear LH No. 1 — Chassis ground:	Is the resistance more than 1 $M\Omega$?	Go to step 11.	Replace the ABS wheel speed sen- sor and ABSCM&H/U. Front: <ref. abs="" abs-12,="" front="" sensor.="" speed="" to="" wheel=""> Rear: <ref. abs="" abs-15,="" rear="" sensor.="" speed="" to="" wheel=""> and <ref. (abscm&h="" 6,="" abs="" abs-="" and="" control="" hydraulic="" module="" to="" u).="" unit=""></ref.></ref.></ref.>
11	CHECK GROUND SHORT OF HARNESS. 1) Turn the ignition switch to OFF. 2) Connect the connector to ABS wheel speed sensor. 3) Measure the resistance between ABSCM&H/U connector terminal and chassis ground. Connector & terminal DTC 21 (B301) No. 11 — Chassis ground: DTC 23 (B301) No. 11 — Chassis ground: DTC 25 (B301) No. 14 — Chassis ground: DTC 27 (B301) No. 7 — Chassis ground:	Is the resistance more than 1 $\mbox{M}\Omega ?$	Go to step 12.	Repair the harness between ABSCM&H/U and ABS wheel speed sensor. Replace the ABSCM&H/U. <ref. (abscm&h="" abs="" abs-6,="" and="" control="" hydraulic="" module="" to="" u).="" unit=""></ref.>
12	CHECK POOR CONTACT IN CONNECTORS.	Is there poor contact in con- nectors between ABSCM&H/U and ABS wheel speed sensor?	Repair the connector.	Go to step 13.
13	CHECK ABSCM&H/U. 1)Connect all connectors. 2)Erase the memory. 3)Perform the inspection mode. 4)Read out the DTC.	Is the same DTC as in current diagnosis still being output?	Replace the ABSCM&H/U. <ref. abs-6,<br="" to="">ABS Control Mod- ule and Hydraulic Control Unit (ABSCM&H/U).></ref.>	Go to step 14.
14	CHECK ANY OTHER DTC APPEARANCE.	Are other DTCs being output?	Proceed with the diagnosis corresponding to the DTC.	A temporary poor contact. NOTE: Check the harness and connectors between AB-SCM&H/U and ABS wheel speed sensor.

ABS (DIAGNOSTICS)

DTC 22 1:

is Studios — ABNORMAL ABS WHEEL SPEED SENSOR (ABNORMAL ABS WHEEL SPEED SENSOR SIGNAL) (FRONT RH) —

NOTE:

For the diagnostic procedure, refer to DTC 28. <Ref. to ABS-43, DTC 28 — ABNORMAL ABS WHEEL SPEED SENSOR (ABNORMAL ABS WHEEL SPEED SENSOR SIGNAL) (REAR LH) —, Diagnostics Procedure without Subaru Select Monitor.>

J: DTC 24

ABNORMAL ABS WHEEL SPEED SENSOR (ABNORMAL ABS WHEEL SPEED SENSOR SIGNAL) (FRONT LH) —

NOTE:

For the diagnostic procedure, refer to DTC 28. <Ref. to ABS-43, DTC 28 — ABNORMAL ABS WHEEL SPEED SENSOR (ABNORMAL ABS WHEEL SPEED SENSOR SIGNAL) (REAR LH) —, Diagnostics Procedure without Subaru Select Monitor.>

K: DTC 26

— ABNORMAL ABS WHEEL SPEED SENSOR (ABNORMAL ABS WHEEL SPEED SENSOR SIGNAL) (REAR RH) —

NOTE:

For the diagnostic procedure, refer to DTC 28. <Ref. to ABS-43, DTC 28 — ABNORMAL ABS WHEEL SPEED SENSOR (ABNORMAL ABS WHEEL SPEED SENSOR SIGNAL) (REAR LH) —, Diagnostics Procedure without Subaru Select Monitor.>

ABS (DIAGNOSTICS)

L: DTC 28

S_{tudios} — ABNORMAL ABS WHEEL SPEED SENSOR (ABNORMAL ABS WHEEL SPEED SENSOR SIGNAL) (REAR LH) —

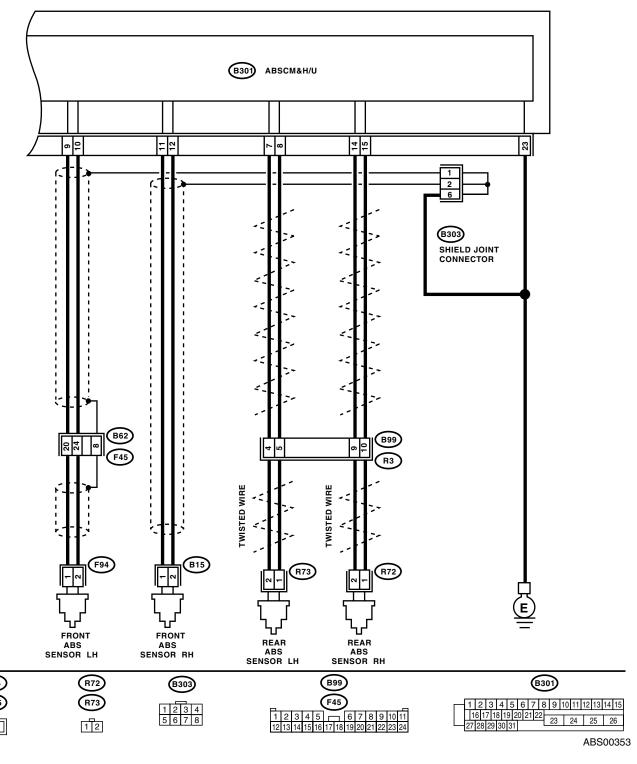
DIAGNOSIS:

- Faulty ABS wheel speed sensor signal (noise, irregular signal, etc.)
- Faulty harness/connector

TROUBLE SYMPTOM:

ABS does not operate.

WIRING DIAGRAM:



		- 1	FAR	y Erica
	Step	Check	Yes	REO NO STI
1	CHECK INSTALLATION OF ABS WHEEL	Are the ABS wheel speed sen-	Go to step 2.	Tighten the ABS
	SPEED SENSOR.	sor installation bolts tightened		wheel speed sen-
	Turn the ignition switch to OFF.	33 N⋅m (3.3 kgf-m, 24 ft-lb)?		sor installation
			_	bolts securely.
2	CHECK ABS WHEEL SPEED SENSOR GAP.	. .	Go to step 3.	Adjust the gap.
	Measure the tone wheel to ABS wheel speed	Front wheel:		NOTE:
	sensor piece gap over entire perimeter of the wheel.	0.3 — 0.8 mm (0.012 — 0.031 in)		Adjust the gap us- ing spacer (Part
	WIGGI.	Rear wheel		No. 26755AA000).
		0.7 — 1.2 mm (0.028 — 0.047		If the spacer can-
		in)		not correct gap, re-
				place worn sensor
				or worn tone
				wheel.
3	PREPARE OSCILLOSCOPE.	Is an oscilloscope available?	Go to step 4.	Go to step 5.
4	CHECK ABS WHEEL SPEED SENSOR SIG-	Is an oscilloscope pattern	Go to step 8.	Go to step 7.
	NAL.	smooth, as shown in the fig-		
	1)Raise all four wheels off ground.	ure?		
	2)Turn the ignition switch to OFF.			
	3)Connect the oscilloscope to the connector.			
	4)Turn the ignition switch to ON. 5)Rotate the wheels and measure voltage at			
	specified frequency. <ref. abs-15,="" th="" to="" wave-<=""><th></th><th></th><th></th></ref.>			
	FORM, Control Module I/O Signal.>			
	NOTE:			
	When this inspection is completed, the ABS			
	control module sometimes stores DTC 29 or			
	DTC 56.			
	Connector & terminal			
	DTC 22			
	(B15) No. 1 (+) — No. 2 (–):			
	DTC 24 (F45) No. 20 (+) — No. 24 (–):			
	DTC 26			
	(B99) No. 10 (+) — No. 9 (–):			
	DTC 28			
	(B99) No. 5 (+) — No. 4 (–):			
5	CHECK CONTAMINATION OF ABS WHEEL	Is the ABS wheel speed sen-	Thoroughly	Go to step 6.
	SPEED SENSOR OR TONE WHEEL.	sor piece or the tone wheel	remove dirt or	
	Remove the disc rotor or drum from hub in	contaminated by dirt or other	other foreign mat-	
	accordance with DTC.	foreign matter?	ter.	
6	CHECK DAMAGE OF ABS WHEEL SPEED	Are there broken or damaged	Replace the ABS	Go to step 7.
	SENSOR OR TONE WHEEL.	in the ABS wheel speed sen-	wheel speed sen-	
		sor piece or the tone wheel?	sor or tone wheel.	
			Front: <ref. to<br="">ABS-12, Front</ref.>	
			ABS Wheel Speed	
			Sensor.> Rear:	
			<ref. abs-15,<="" th="" to=""><th></th></ref.>	
			Rear ABS Wheel	
			Speed Sensor.>	
			and Front: <ref. th="" to<=""><th></th></ref.>	
			ABS-18, Front	
			Tone Wheel.>	
			Rear: <ref. to<br="">ABS-19, Rear</ref.>	
			Tone Wheel.>	
			TOTIC VVIICEI.	

	Step	Check	Yes	No	Windows.
7	CHECK TONE WHEEL RUNOUT.	Is the runout less than 0.05		Replace the tone	Idia-
7	Measure the tone wheel runout.	mm (0.0020 in)?	Go to step 8.	wheel. Front: <ref. abs-18,="" front="" to="" tone="" wheel.=""> Rear: <ref. abs-19,="" rear="" td="" to="" tone<=""><td>4108</td></ref.></ref.>	4108
				Wheel.>	
8	CHECK RESISTANCE OF ABS WHEEL SPEED SENSOR. 1) Turn the ignition switch to OFF. 2) Disconnect the connector from ABS wheel speed sensor. 3) Measure the resistance between ABS wheel speed sensor connector terminals while shaking the harness lightly. Terminals Front RH No. 1 — No. 2: Front LH No. 1 — No. 2: Rear RH No. 1 — No. 2: Rear LH No. 1 — No. 2:	Is the resistance as following value? Front: 1 — 1.5 k Ω Rear: 1.025 — 1.265 k Ω	Go to step 9.	Replace the ABS wheel speed sen- sor. Front: <ref. to<br="">ABS-12, Front ABS Wheel Speed Sensor.> Rear: <ref. abs-15,<br="" to="">Rear ABS Wheel Speed Sensor.></ref.></ref.>	
9	CHECK GROUND SHORT OF ABS WHEEL SPEED SENSOR. Measure the resistance between ABS wheel speed sensor and chassis ground. Terminals Front RH No. 1 — Chassis ground: Front LH No. 1 — Chassis ground: Rear RH No. 1 — Chassis ground: Rear LH No. 1 — Chassis ground:	Is the resistance more than 1 $\mbox{M}\Omega ?$	Go to step 10.	Replace the ABS wheel speed sen- sor. Front: <ref. abs="" abs-12,="" front="" sensor.="" speed="" to="" wheel=""> Rear: <ref. abs="" abs-15,="" rear="" sensor.="" speed="" to="" wheel=""></ref.></ref.>	
10	CHECK HARNESS/CONNECTOR BETWEEN ABSCM&H/U AND ABS WHEEL SPEED SENSOR. 1) Connect the connector to ABS wheel speed sensor. 2) Disconnect the connector from ABSCM&H/U. 3) Measure the resistance at ABSCM&H/U connector terminals. Connector & terminal DTC 22 (B301) No. 11 — No. 12: DTC 24 (B301) No. 9 — No. 10: DTC 26 (B301) No. 14 — No. 15: DTC 28 (B301) No. 7 — No. 8:	Is the resistance as following value? Front: 1 — 1.5 k Ω Rear: 1.025 — 1.265 k Ω	Go to step 11.	Repair the har- ness/connector between ABSCM&H/U and ABS wheel speed sensor.	
11	CHECK GROUND SHORT OF HARNESS. Measure the resistance between ABSCM&H/U connector and chassis ground. Connector & terminal DTC 22 (B301) No. 11 — Chassis ground: DTC 24 (B301) No. 9 — Chassis ground: DTC 26 (B301) No. 14 — Chassis ground: DTC 28 (B301) No. 7 — Chassis ground:	Is the resistance more than 1 $\mbox{M}\Omega ?$	Go to step 12.	Repair the har- ness/connector between ABSCM&H/U and ABS wheel speed sensor.	

DIAGNOSTICS PROCEDURE WITHOUT SUBARU SELECT MONITOR ABS (DIAGNOSTICS)

			For	y Fria	-
	Step	Check	Yes	No St	Id:
12	CHECK GROUND CIRCUIT OF ABSCM&H/U. Measure the resistance between ABSCM&H/U and chassis ground. Connector & terminal (B301) No. 23 — Chassis ground:	Ω?	Go to step 13.	Repair the ABSCM&H/U ground harness.	10 _S
13	CHECK POOR CONTACT IN CONNECTORS.	Is there poor contact in con- nectors between ABSCM&H/U and ABS wheel speed sensor?	Go to step 14.	Repair the connector.	
14	CHECK SOURCES OF SIGNAL NOISE.	Is the car telephone or wireless transmitter properly installed?	Go to step 15.	Properly install the car telephone or wireless transmitter.	
15	CHECK SOURCES OF SIGNAL NOISE.	Are noise sources (such as an antenna) installed near the sensor harness?	Go to step 16.	Install the noise sources apart from sensor harness.	
16	CHECK SHIELD CIRCUIT. 1) Disconnect the connectors (B303). 2) Measure the resistance between shield connector and chassis ground. Connector & terminal DTC 22 (B303) No. 2 — Chassis ground: DTC 24 (B303) No. 1 — Chassis ground: NOTE: If the DTC is 26, 28: Go to YES.	Is the resistance less than 0.5 Ω ?	Go to step 17.	Repair the shield harness.	
17	CHECK ABSCM&H/U. 1)Connect all connectors. 2)Erase the memory. 3)Perform the inspection mode. 4)Read out the DTC.	Is the same DTC as in current diagnosis still being output?	Replace the ABSCM&H/U. <ref. abs-6,<br="" to="">ABS Control Mod- ule and Hydraulic Control Unit (ABSCM&H/U).></ref.>	Go to step 18.	
18	CHECK ANY OTHER DTC APPEARANCE.	Are other DTCs being output?	Proceed with the diagnosis corresponding to DTC.	A temporary noise interference. NOTE: Although the ABS warning light remains illuminating at this point, this is a normal condition. Vehicle must be driven at approx. 12 km/h (7.46 MPH) or faster to turn off ABS warning light. Make sure that the ABS warning light goes off after driving vehicle.	

ABS (DIAGNOSTICS)

M: DTC 29

is Studios — ABNORMAL ABS WHEEL SPEED SENSOR (ABNORMAL ABS WHEEL SPEED SENSOR SIGNAL) (ANY ONE OF FOUR) —

DIAGNOSIS:

- Faulty ABS wheel speed sensor signal (noise, irregular signal, etc.)
- Faulty tone wheel
- Wheels turning freely for a long time

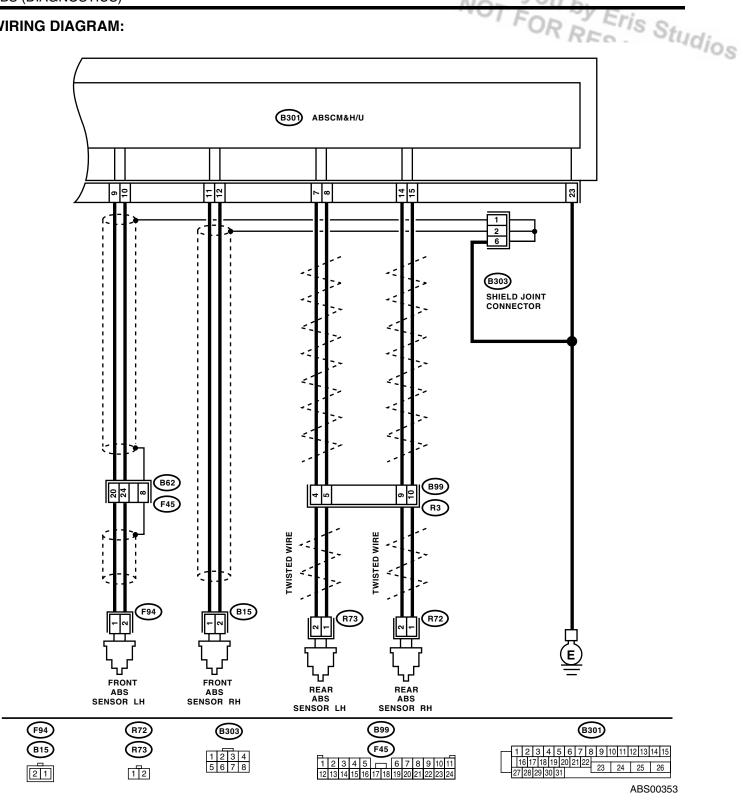
TROUBLE SYMPTOM:

- ABS does not operate.
- EBD does not operate.

NOTE:

In addition to the ABS warning light, brake warning light illuminates.

WIRING DIAGRAM:



			VI FOR	y Fri
	Step	Check	Yes	No St
1	CHECK IF THE WHEELS HAVE TURNED FREELY FOR A LONG TIME. Check if the wheels have been turned freely for more than 1 minute, such as when vehicle is jacked-up, under full-lock cornering or when tire is not in contact with road surface.		The ABS is normal. Erase the DTC. NOTE: When the wheels turn freely for a long time, such as when the vehicle is towed or jackedup, or when steering wheel is continuously turned all the way, this DTC may sometimes occur.	
2	CHECK TIRE SPECIFICATIONS. Turn the ignition switch to OFF.	Are the tire specifications correct?	Go to step 3.	Replace the tire.
3	CHECK WEAR OF TIRE.	Is the tire worn excessively?	Replace tire.	Go to step 4.
4	CHECK TIRE PRESSURE.	Is the tire pressure correct?	Go to step 5.	Adjust tire pressure.
5	CHECK INSTALLATION OF ABS WHEEL SPEED SENSOR.	Are the ABS wheel speed sensor installation bolts tightened 33 N·m (3.3 kgf-m, 24 ft-lb)?	Go to step 6.	Tighten the ABS wheel speed sensor installation bolts securely.
6	CHECK ABS WHEEL SPEED SENSOR GAP. Measure the tone wheel to ABS wheel speed sensor piece gap over entire perimeter of the wheel.	Is the gap as following value? Front wheel: 0.3 — 0.8 mm (0.012 — 0.031 in) Rear wheel: 0.7 — 1.2 mm (0.028 — 0.047 in)	Go to step 7.	Adjust the gap. NOTE: Adjust the gap using spacer (Part No. 26755AA000). If the spacer cannot correct gap, replace worn sensor or worn tone wheel.
7	PREPARE OSCILLOSCOPE.	Is an oscilloscope available?	Go to step 8.	Go to step 9.
8	CHECK ABS WHEEL SPEED SENSOR SIGNAL. 1)Raise all four wheels off ground. 2)Turn the ignition switch to OFF. 3)Connect the oscilloscope to the connector. 4)Turn the ignition switch to ON. 5)Rotate the wheels and measure voltage at specified frequency. <ref. abs-15,="" control="" i="" module="" o="" signal.="" to="" wave-form,=""> NOTE: When this inspection is completed, the AB-SCM&H/U sometimes stores the DTC 29. Connector & terminal Front RH (B15) No. 1 (+) — No. 2 (-): Front LH (F45) No. 20 (+) — No. 24 (-): Rear RH (B99) No. 10 (+) — No. 9 (-): Rear LH (B99) No. 5 (+) — No. 4 (-):</ref.>	Is an oscilloscope pattern smooth, as shown in the figure?	Go to step 12.	Go to step 9.

		673	For	y Eni-
	Step	Check	Yes	No St
9	CHECK CONTAMINATION OF ABS WHEEL SPEED SENSOR OR TONE WHEEL. Remove the disc rotor or drum from hub.	Is the ABS wheel speed sen- sor piece or the tone wheel contaminated by dirt or other foreign matter?	Thoroughly remove dirt or other foreign matter.	Go to step 10.
10	CHECK DAMAGE OF ABS WHEEL SPEED SENSOR OR TONE WHEEL.	Are there broken or damaged teeth in the ABS wheel speed sensor piece or the tone wheel?	Replace the ABS wheel speed sensor or tone wheel. Front: <ref. abs="" abs-12,="" front="" sensor.="" speed="" to="" wheel=""> Rear: <ref. abs="" abs-15,="" rear="" sensor.="" speed="" to="" wheel=""> and Front: <ref. abs-18,="" front="" to="" tone="" wheel.=""> Rear: <ref. abs-19,="" rear="" to="" tone="" wheel.=""></ref.></ref.></ref.></ref.>	Go to step 11.
11	CHECK TONE WHEEL RUNOUT. Measure the tone wheel runout.	Is the runout less than 0.05 mm (0.0020 in)?	Go to step 12.	Replace the tone wheel. Front: <ref. abs-18,<br="" to="">Front Tone Wheel.> Rear: <ref. abs-19,<br="" to="">Rear Tone Wheel.></ref.></ref.>
12	CHECK ABSCM&H/U. 1)Turn the ignition switch to OFF. 2)Connect all connectors. 3)Erase the memory. 4)Perform the inspection mode. 5)Read out the DTC.	Is the same DTC as in current diagnosis still being output?	Replace the ABSCM&H/U. <ref. abs-6,<br="" to="">ABS Control Mod- ule and Hydraulic Control Unit (ABSCM&H/U).></ref.>	Go to step 13.
13	CHECK ANY OTHER DTC APPEARANCE.	Are other DTCs being output?	Proceed with the diagnosis corresponding to DTC.	A temporary poor contact.

ABS (DIAGNOSTICS)

N: DTC 31

is Studios — ABNORMAL INLET SOLENOID VALVE CIRCUIT(S) IN ABSCM&H/U (FRONT RH) —

NOTE:

For the diagnostic procedure, refer to DTC 37. <Ref. to ABS-52, DTC 37 — ABNORMAL INLET SOLENOID VALVE CIRCUIT(S) IN ABSCM&H/U (REAR LH) —, Diagnostics Procedure without Subaru Select Monitor.>

O: DTC 33

— ABNORMAL INLET SOLENOID VALVE CIRCUIT(S) IN ABSCM&H/U (FRONT LH) —

NOTE:

For the diagnostic procedure, refer to DTC 37. <Ref. to ABS-52, DTC 37 — ABNORMAL INLET SOLENOID VALVE CIRCUIT(S) IN ABSCM&H/U (REAR LH) —, Diagnostics Procedure without Subaru Select Monitor.>

P: DTC 35

— ABNORMAL INLET SOLENOID VALVE CIRCUIT(S) IN ABSCM&H/U (REAR RH) —

NOTE:

For the diagnostic procedure, refer to DTC 37. <Ref. to ABS-52, DTC 37 — ABNORMAL INLET SOLENOID VALVE CIRCUIT(S) IN ABSCM&H/U (REAR LH) —, Diagnostics Procedure without Subaru Select Monitor.>

ABS (DIAGNOSTICS)

Q: DTC 37

Eris Studios — ABNORMAL INLET SOLENOID VALVE CIRCUIT(S) IN ABSCM&H/U (REAR LH) —

DIAGNOSIS:

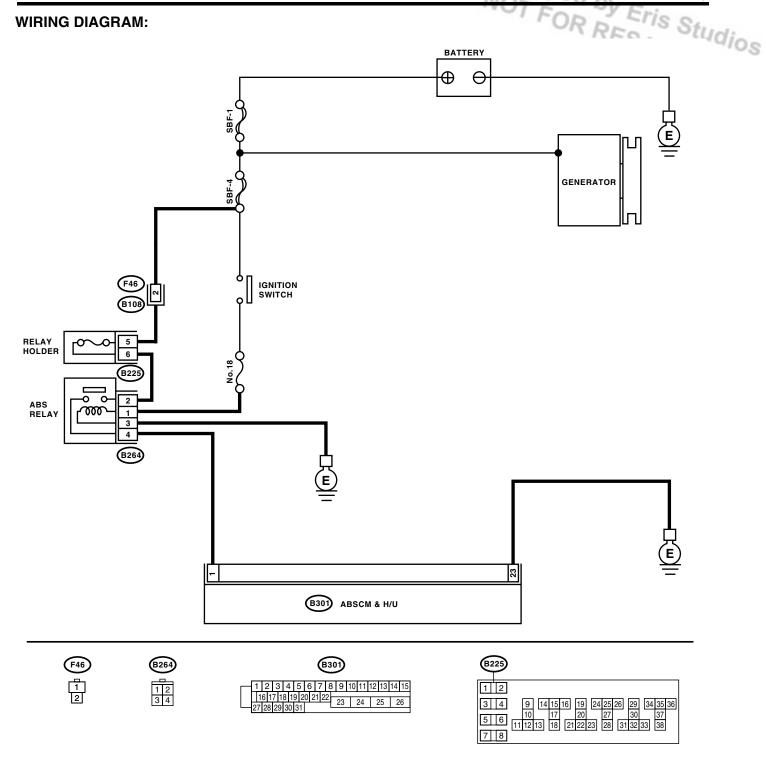
- Faulty harness/connector
- Faulty inlet solenoid valve in ABSCM&H/U

TROUBLE SYMPTOM:

- ABS does not operate.
- EBD does not operate.

In addition to the ABS warning light, brake warning light illuminates.

WIRING DIAGRAM:



ABS00322

ABS (DIAGNOSTICS)

	For y Fri				
	Step	Check	Yes	No	let:
1	CHECK INPUT VOLTAGE OF ABSCM&H/U. 1)Turn the ignition switch to OFF. 2)Disconnect the connector from ABSCM&H/U. 3)Run the engine at idle. 4)Measure the voltage between ABSCM&H/U connector and chassis ground. Connector & terminal (B301) No. 1 (+) — Chassis ground (-):	Is the voltage 10 — 15 V?	Go to step 2.	Repair the power supply circuit and ABSCM&H/U.	raios
2	CHECK GROUND CIRCUIT OF ABSCM&H/U. 1)Turn the ignition switch to OFF. 2)Measure the resistance between ABSCM&H/U connector and chassis ground. Connector & terminal (B301) No. 23 — Chassis ground:	Is the resistance less than 0.5 Ω ?	Go to step 3.	Repair the ABSCM&H/U ground harness.	
3	CHECK POOR CONTACT IN CONNECTORS.	Is there poor contact in con- nectors between generator, battery and ABSCM&H/U?	Repair the connector.	Go to step 4.	
4	CHECK ABSCM&H/U. 1)Connect all connectors. 2)Erase the memory. 3)Perform the inspection mode. 4)Read out the DTC.	Is the same DTC as in the cur- rent diagnosis still being out- put?	Replace the ABSCM&H/U. <ref. abs-6,<br="" to="">ABS Control Mod- ule and Hydraulic Control Unit (ABSCM&H/U).></ref.>	Go to step 5.	
5	CHECK ANY OTHER DTC APPEARANCE.	Are other DTCs being output?	Proceed with the diagnosis corresponding to DTC.	A temporary poor contact.	

R: DTC 32

— ABNORMAL OUTLET SOLENOID VALVE CIRCUIT(S) IN ABSCM&H/U (FRONT RH) —

NOTE

For the diagnostic procedure, refer to DTC 38. <Ref. to ABS-55, DTC 38 — ABNORMAL OUTLET SOLE-NOID VALVE CIRCUIT(S) IN ABSCM&H/U (REAR LH) —, Diagnostics Procedure without Subaru Select Monitor.>

S: DTC 34

— ABNORMAL OUTLET SOLENOID VALVE CIRCUIT(S) IN ABSCM&H/U (FRONT LH) —

NOTE:

For the diagnostic procedure, refer to DTC 38. <Ref. to ABS-55, DTC 38 — ABNORMAL OUTLET SOLE-NOID VALVE CIRCUIT(S) IN ABSCM&H/U (REAR LH) —, Diagnostics Procedure without Subaru Select Monitor.>

T: DTC 36

— ABNORMAL OUTLET SOLENOID VALVE CIRCUIT(S) IN ABSCM&H/U (REAR RH) —

NOTE:

For the diagnostic procedure, refer to DTC 38. <Ref. to ABS-55, DTC 38 — ABNORMAL OUTLET SOLE-NOID VALVE CIRCUIT(S) IN ABSCM&H/U (REAR LH) —, Diagnostics Procedure without Subaru Select Monitor.>

ABS (DIAGNOSTICS)

U: DTC 38

— ABNORMAL OUTLET SOLENOID VALVE CIRCUIT(S) IN ABSCM&H/U (REAR LH) —

DIAGNOSIS:

- Faulty harness/connector
- Faulty outlet solenoid valve in ABSCM&H/U

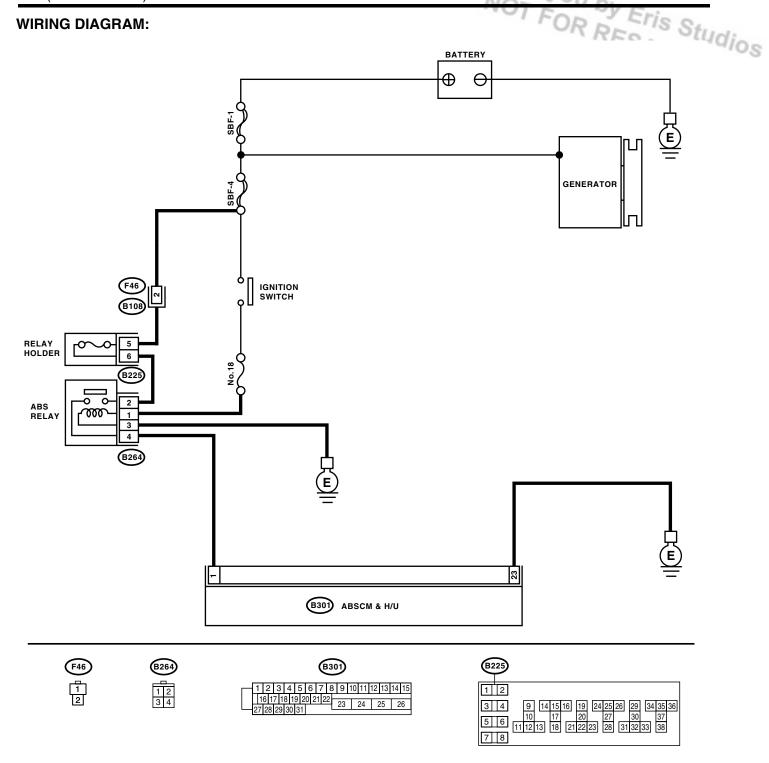
TROUBLE SYMPTOM:

- · ABS does not operate.
- EBD does not operate.

NOTE:

In addition to the ABS warning light, brake warning light illuminates.

WIRING DIAGRAM:



ABS00322

			FOR	J Fri
	Step	Check	Yes	No St
1	CHECK INPUT VOLTAGE OF ABSCM&H/U. 1) Turn the ignition switch to OFF. 2) Disconnect the connector from ABSCM&H/U. 3) Run the engine at idle. 4) Measure the voltage between ABSCM&H/U connector and chassis ground. Connector & terminal (B301) No. 1 (+) — Chassis ground (-):	Is the voltage 10 — 15 V?	Go to step 2.	Repair the power supply circuit and ABSCM&H/U.
2	CHECK GROUND CIRCUIT OF ABSCM&H/U. 1)Turn the ignition switch to OFF. 2)Measure the resistance between ABSCM&H/U connector and chassis ground. Connector & terminal (B301) No. 23 — Chassis ground:	Is the resistance less than 0.5 Ω ?	Go to step 3.	Repair the ABSCM&H/U ground harness.
3	CHECK POOR CONTACT IN CONNECTORS.	Is there poor contact in con- nectors between generator, battery and ABSCM&H/U?	Repair the connector.	Go to step 4.
4	CHECK ABSCM&H/U. 1)Connect all connectors. 2)Erase the memory. 3)Perform the inspection mode. 4)Read out the DTC.	Is the same DTC as in the cur- rent diagnosis still being out- put?	Replace the ABSCM&H/U. <ref. abs-6,<br="" to="">ABS Control Mod- ule and Hydraulic Control Unit (ABSCM&H/U).></ref.>	Go to step 5.
5	CHECK ANY OTHER DTC APPEARANCE.	Are other DTCs being output?	Proceed with the diagnosis corresponding to DTC.	A temporary poor contact.

ABS (DIAGNOSTICS)

V: DTC 41

- ABNORMAL ABS CONTROL MODULE -

DIAGNOSIS:

• Faulty ABSCM&H/U.

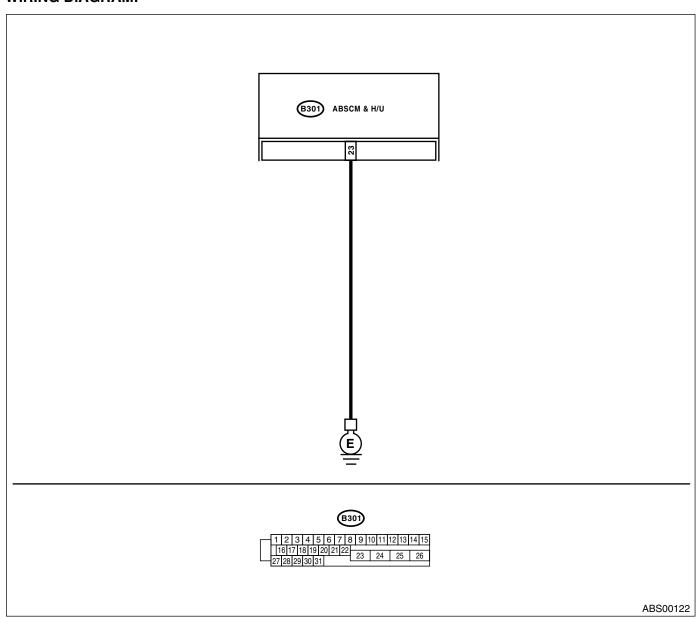
TROUBLE SYMPTOM:

- ABS does not operate.
- EBD does not operate.

NOTE:

In addition to the ABS warning light, brake warning light illuminates.

WIRING DIAGRAM:



		FOR Y EN		
	Step	Check	Yes	No St
1	CHECK GROUND CIRCUIT OF ABSCM&H/U. 1)Turn the ignition switch to OFF. 2)Disconnect the connector from ABSCM&H/U. 3)Measure the resistance between ABSCM&H/U and chassis ground. Connector & terminal (B301) No. 23 — Chassis ground:	Is the resistance less than 0.5 Ω ?	Go to step 2.	Repair the ABSCM&H/U ground harness.
2	CHECK POOR CONTACT IN CONNECTORS.	Is there poor contact in con- nectors between battery, igni- tion switch and ABSCM&H/U?	Repair the connector.	Go to step 3.
3	CHECK SOURCES OF SIGNAL NOISE.	Is the car telephone or the wireless transmitter properly installed?	Go to step 4.	Properly install the car telephone or wireless transmitter.
4	CHECK SOURCES OF SIGNAL NOISE.	Are noise sources (such as an antenna) installed near the sensor harness?	Install the noise sources apart from the sensor harness.	Go to step 5.
5	CHECK ABSCM&H/U. 1)Connect all connectors. 2)Erase the memory. 3)Perform the inspection mode. 4)Read out the DTC.	Is the same DTC as in current diagnosis still being output?	Replace the ABSCM&H/U. <ref. abs-6,<br="" to="">ABS Control Mod- ule and Hydraulic Control Unit (ABSCM&H/U).></ref.>	Go to step 6.
6	CHECK ANY OTHER DTC APPEARANCE.	Are other DTCs being output?	Proceed with the diagnosis corresponding to DTC.	A temporary poor contact.

DIAGNOSTICS PROCEDURE WITHOUT SUBARU SELECT MONITOR OT FOR RESALE

ABS (DIAGNOSTICS)

W: DTC 42

- SOURCE VOLTAGE IS ABNORMAL -

DIAGNOSIS:

• Power source voltage of the ABSCM&H/U is low or high.

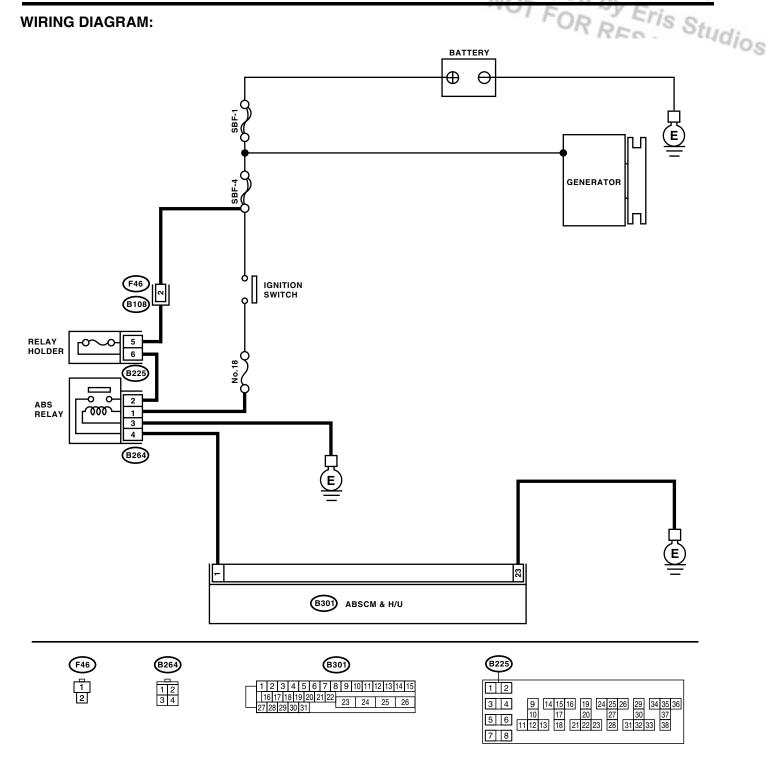
TROUBLE SYMPTOM:

- ABS does not operate.
- EBD does not operate.

NOTE:

In addition to the ABS warning light, brake warning light illuminates temporarily. Both warning lights go off on the recovery of voltage.

WIRING DIAGRAM:



ABS00322

	Step	Check	Yes	No St
1	CHECK GENERATOR. 1)Start the engine. 2)Idle after warm-up. 3)Measure the voltage between generator B terminal and chassis ground. Terminals Generator B terminal (+) — Chassis ground (-):	Is the voltage 10 — 17 V?	Go to step 2.	Repair the genera- tor. <ref. to<br="">SC(H4SO)-14, Generator.></ref.>
2	CHECK BATTERY TERMINAL. Turn the ignition switch to OFF.	Are the positive and negative battery terminals tightly clamped?	Go to step 3.	Tighten the clamp of terminal.
3	CHECK INPUT VOLTAGE OF ABSCM&H/U. 1)Disconnect the connector from ABSCM&H/U. 2)Run the engine at idle. 3)Operate the electric load applying devices, such as the headlight, A/C, and defogger. 4)Measure the voltage between ABSCM&H/U connector and chassis ground. Connector & terminal (B301) No. 1 (+) — Chassis ground (-):	Is the voltage 10 — 17 V?	Go to step 4.	Repair the power supply circuit and ABSCM&H/U.
4	CHECK GROUND CIRCUIT OF ABSCM&H/U. 1)Turn the ignition switch to OFF. 2)Measure the resistance between ABSCM&H/U connector and chassis ground. Connector & terminal (B301) No. 23 — Chassis ground:	Is the resistance less than 0.5 Ω ?	Go to step 5.	Repair the ABSCM&H/U ground harness.
5	CHECK POOR CONTACT IN CONNECTORS.	Is there poor contact in con- nectors between generator, battery and ABSCM&H/U?	Repair the con- nector.	Go to step 6.
6	CHECK ABSCM&H/U. 1)Connect all connectors. 2)Erase the memory. 3)Perform the inspection mode. 4)Read out the DTC.	Is the same DTC as in current diagnosis still being output?	Replace the ABSCM&H/U. <ref. abs-6,<br="" to="">ABS Control Mod- ule and Hydraulic Control Unit (ABSCM&H/U).></ref.>	Go to step 7.
7	CHECK ANY OTHER DTC APPEARANCE.	Are other DTCs being output?	Proceed with the diagnosis corresponding to DTC.	A temporary poor contact.

ABS (DIAGNOSTICS)

X: DTC 44

— A COMBINATION OF AT CONTROL ABNORMAL —

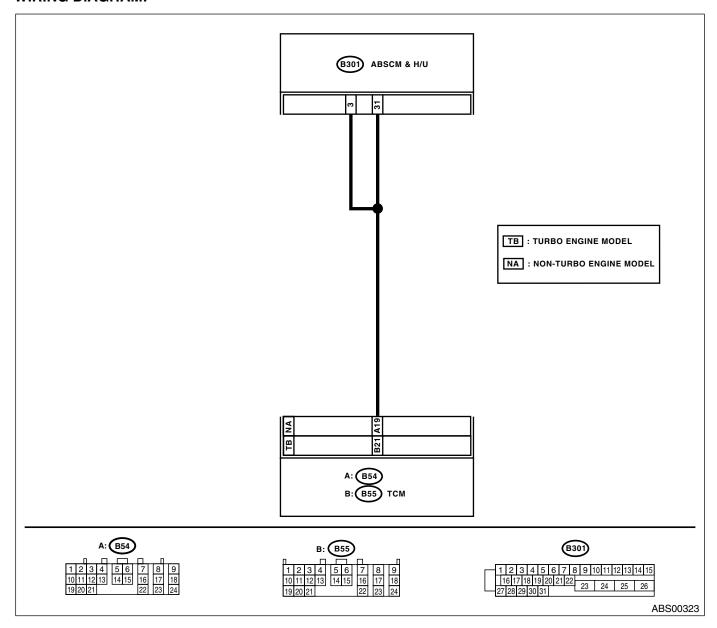
DIAGNOSIS:

· Combination of AT control faults

TROUBLE SYMPTOM:

• ABS does not operate.

WIRING DIAGRAM:



	Step	Check	Yes	No
1	CHECK SPECIFICATIONS OF THE AB- SCM&H/U. Check the specifications of mark on ABSCM&H/U. CU: AT CV: MT (Except STi model)	Specifications between vehi- cle and ABSCM&H/U are matched?		Replace the ABSCM&H/U. <ref. abs-6,<br="" to="">ABS Control Mod- ule and Hydraulic Control Unit</ref.>
	CY: MT (STi model)			(ABSCM&H/U).>

DIAGNOSTICS PROCEDURE WITHOUT SUBARU SELECT MONITOR ABS (DIAGNOSTICS)

			O Fan	y Erica
	Step	Check	Yes	No St
2	CHECK GROUND SHORT OF HARNESS. 1)Turn the ignition switch to OFF. 2)Disconnect all connectors from TCM. 3)Disconnect the connector from ABSCM& H/U. 4)Measure the resistance between ABSCM&H/U connector and chassis ground. Connector & terminal (B301) No. 3 — Chassis ground:	Is the resistance more than 1 $\mbox{M}\Omega ?$	Go to step 3.	Repair the har- ness between TCM and ABSCM&H/U.
3	CHECK BATTERY SHORT OF HARNESS. Measure the voltage between ABSCM&H/U connector and chassis ground. Connector & terminal (B301) No. 3 (+) — Chassis ground (-):	Is the voltage less than 1 V?	Go to step 4.	Repair the har- ness between TCM and ABSCM&H/U.
4	CHECK BATTERY SHORT OF HARNESS. 1)Turn the ignition switch to ON. 2)Measure the voltage between ABSCM&H/U connector and chassis ground. Connector & terminal (B301) No. 3 (+) — Chassis ground (-):	Is the voltage less than 1 V?	Go to step 5.	Repair the har- ness between TCM and ABSCM&H/U.
5	CHECK TCM. 1)Turn the ignition switch to OFF. 2)Connect all connectors to TCM. 3)Turn the ignition switch to ON. 4)Measure the voltage between TCM connector terminal and chassis ground. Connector & terminal Non-turbo model (B54) No. 19 (+) — Chassis ground (-): Turbo model (B55) No. 21 (+) — Chassis ground (-):	Is the voltage 10 — 15 V?	Go to step 7.	Go to step 6.
6	CHECK AT.	Is the AT functioning normally?	Replace the TCM.	Repair the AT.
7	CHECK OPEN CIRCUIT OF HARNESS. Measure the voltage between ABSCM&H/U connector and chassis ground. Connector & terminal (B301) No. 3 (+) — Chassis ground (-): (B301) No. 31 (+) — Chassis ground (-):	Is the voltage 10 — 15 V?	Go to step 8.	Repair the har- ness/connector between TCM and ABSCM&H/U.
8	CHECK POOR CONTACT IN CONNECTORS.	Is there poor contact in con- nectors between TCM and ABSCM&H/U?	Repair the con- nector.	Go to step 9.
9	CHECK ABSCM&H/U. 1)Turn the ignition switch to OFF. 2)Connect all connectors. 3)Erase the memory. 4)Perform the inspection mode. 5)Read out the DTC.	Is the same DTC as in the cur- rent diagnosis still being out- put?	Replace the ABSCM&H/U. <ref. abs-6,<br="" to="">ABS Control Mod- ule and Hydraulic Control Unit (ABSCM&H/U).></ref.>	Go to step 10.
10	CHECK ANY OTHER DTC APPEARANCE.	Are other DTCs being output?	Proceed with the diagnosis corresponding to DTC.	A temporary poor contact.

Y: DTC 51

- ABNORMAL VALVE RELAY -

DIAGNOSIS:

· Faulty valve relay

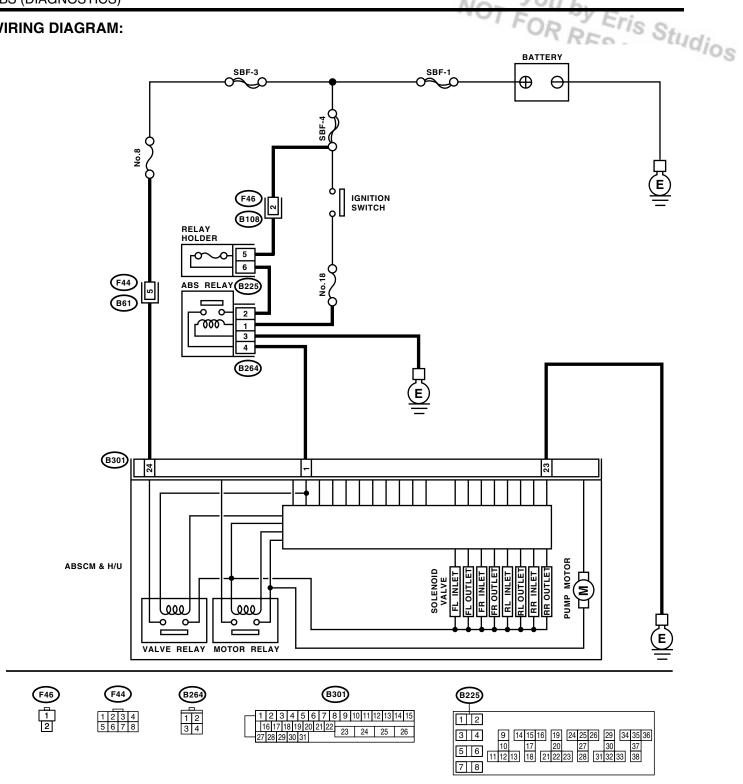
TROUBLE SYMPTOM:

- ABS does not operate.
- EBD does not operate in some malfunctions.

NOTE:

In addition to the ABS warning light, brake warning light illuminates, if the EBD does not operate.

WIRING DIAGRAM:



ABS00377

			FAL	y Erica
	Step	Check	Yes	No St
1	CHECK INPUT VOLTAGE OF ABSCM&H/U. 1)Turn the ignition switch to OFF. 2)Disconnect the connector from ABSCM&H/U. 3)Run the engine at idle. 4)Measure the voltage between ABSCM&H/U connector and chassis ground. Connector & terminal (B301) No. 1 (+) — Chassis ground (-): (B301) No. 24 (+) — Chassis ground (-):	Is the voltage 10 — 15 V?	Go to step 2.	Repair the har- ness connector between battery, ABS relay and ABSCM&H/U.
2	CHECK GROUND CIRCUIT OF ABSCM&H/U. 1)Turn the ignition switch to OFF. 2)Measure the resistance between ABSCM&H/U connector and chassis ground. Connector & terminal (B301) No. 23 — Chassis ground:	Is the resistance less than 0.5 Ω ?	Go to step 3.	Repair the ABSCM&H/U ground harness.
3	CHECK VALVE RELAY IN ABSCM&H/U. Measure the resistance between ABSCM&H/U and terminals. Terminals No. 23 — No. 24:	Is the resistance more than 1 $\mbox{M}\Omega ?$	Go to step 4.	Replace the ABSCM&H/U. <ref. abs-6,<br="" to="">ABS Control Mod- ule and Hydraulic Control Unit (ABSCM&H/U).></ref.>
4	CHECK POOR CONTACT IN CONNECTORS.	nectors between generator, battery and ABSCM&H/U?	Repair the con- nector.	Go to step 5.
5	CHECK ABSCM&H/U. 1)Connect all connectors. 2)Erase the memory. 3)Perform the inspection mode. 4)Read out the DTC.	Is the same DTC as in the cur- rent diagnosis still being out- put?	Replace the ABSCM&H/U. <ref. abs-6,<br="" to="">ABS Control Mod- ule and Hydraulic Control Unit (ABSCM&H/U).></ref.>	Go to step 6.
6	CHECK ANY OTHER DTC APPEARANCE.	Are other DTCs being output?	Proceed with the diagnosis corresponding to DTC.	A temporary poor contact.

Eris Studios

ABS (DIAGNOSTICS)

Z: DTC 52

— ABNORMAL MOTOR AND/OR MOTOR RELAY —

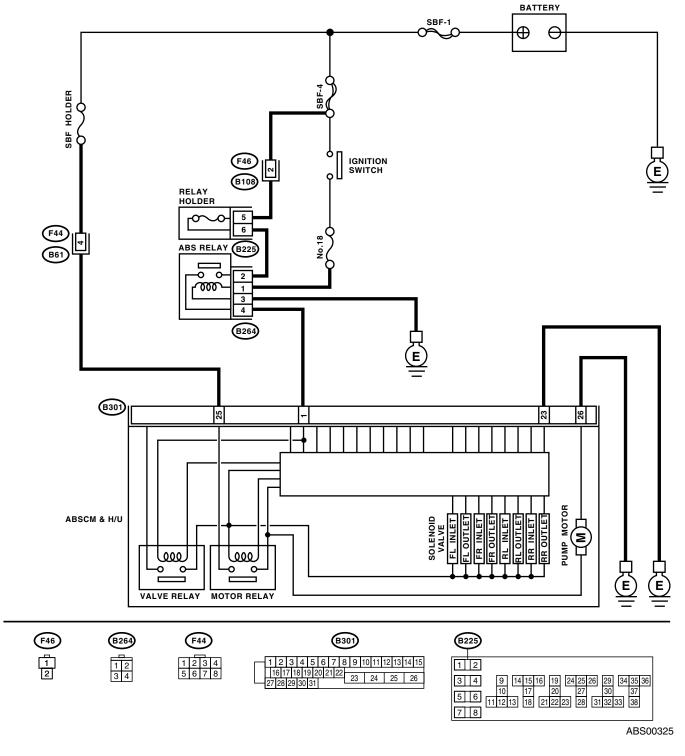
DIAGNOSIS:

- · Faulty motor
- Faulty motor relay
- Faulty harness connector

TROUBLE SYMPTOM:

· ABS does not operate.

WIRING DIAGRAM:



			FOR	y Erica
	Step	Check	Yes	No St
1	CHECK INPUT VOLTAGE OF ABSCM&H/U. 1) Turn the ignition switch to OFF. 2) Disconnect the connector from ABSCM&H/U. 3) Turn the ignition switch to ON. 4) Measure the voltage between ABSCM&H/U connector and chassis ground. Connector & terminal (B301) No. 25 (+) — Chassis ground (-):	Is the voltage 10 — 15 V?	Go to step 2.	Repair the har- ness/connector between battery and ABSCM&H/U and check fuse SBF-holder.
2	CHECK GROUND CIRCUIT OF MOTOR. 1)Turn the ignition switch to OFF. 2)Measure the resistance between ABSCM&H/U connector and chassis ground. Connector & terminal (B301) No. 26 — Chassis ground:	Is the resistance less than 0.5 Ω ?	Go to step 3.	Repair the ABSCM&H/U ground harness.
3	CHECK INPUT VOLTAGE OF ABSCM&H/U. 1)Run the engine at idle. 2)Measure the voltage between ABSCM&H/U connector and chassis ground. Connector & terminal (B301) No. 1 (+) — Chassis ground (-):	Is the voltage 10 — 15 V?	Go to step 4.	Repair the har- ness connector between battery, ignition switch and ABSCM&H/U.
4	CHECK GROUND CIRCUIT OF ABSCM&H/U. 1)Turn the ignition switch to OFF. 2)Measure the resistance between ABSCM&H/U connector and chassis ground. Connector & terminal (B301) No. 23 — Chassis ground:	Is the resistance less than 0.5 Ω ?	Go to step 5.	Repair the ABSCM&H/U ground harness.
5	CHECK MOTOR OPERATION. Operate the sequence control. <ref. abs="" abs-9,="" control.="" sequence="" to=""> NOTE: Use the diagnosis connector to operate the sequence control.</ref.>	Can motor revolution noise (buzz) be heard when carrying out the sequence control?	Go to step 6.	Replace the ABSCM&H/U. <ref. abs-6,<br="" to="">ABS Control Mod- ule and Hydraulic Control Unit (ABSCM&H/U).></ref.>
6	CHECK POOR CONTACT IN CONNECTORS. Turn the ignition switch to OFF.	nector between generator, battery and ABSCM&H/U?		Go to step 7.
7	CHECK ABSCM&H/U. 1)Connect all connectors. 2)Erase the memory. 3)Perform the inspection mode. 4)Read out the DTC.	Is the same DTC as in the cur- rent diagnosis still being out- put?	Replace the ABSCM&H/U. <ref. abs-6,<br="" to="">ABS Control Mod- ule and Hydraulic Control Unit (ABSCM&H/U).></ref.>	Go to step 8.

	Step	Check	Yes	No S
8	CHECK ANY OTHER DTC APPEARANCE.	Are other DTCs being output?	Proceed with the diagnosis corresponding to DTC.	A temporary poor contact. NOTE: Although the ABS warning light remains illuminating at this point, this is a normal condition Vehicle must be driven at approx 12 km/h (7.44 MPH) or faster to turn off ABS warning light. Make sure that the ABS warning light goes off after driving vehicle.

ABS (DIAGNOSTICS)

AA:DTC 54

- ABNORMAL STOP LIGHT SWITCH -

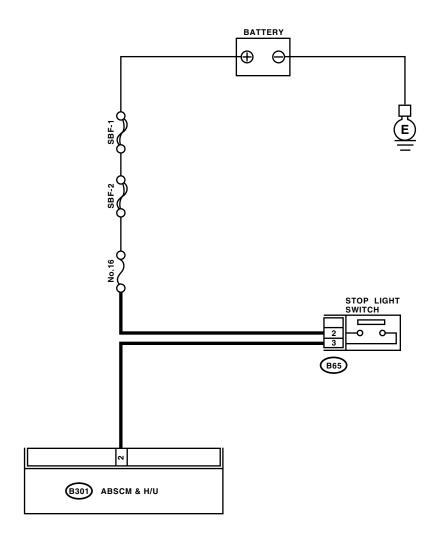
DIAGNOSIS:

Faulty stop light switch

TROUBLE SYMPTOM:

• ABS does not operate.

WIRING DIAGRAM:







ABS00378

DIAGNOSTICS PROCEDURE WITHOUT SUBARU SELECT MONITOR ABS (DIAGNOSTICS)

			VI For	y Eri-
	Step	Check	Yes	No St
1	CHECK STOP LIGHTS COME ON. Depress the brake pedal.	Do the stop lights come on?	Go to step 2.	Repair the stop lights circuit.
2	CHECK OPEN CIRCUIT IN HARNESS. 1)Turn the ignition switch to OFF. 2)Disconnect the connector from ABSCM& H/U. 3)Depress the brake pedal. 4)Measure the voltage between ABSCM&H/U connector and chassis ground. Connector & terminal (B301) No. 2 (+) — Chassis ground (-):	Is the voltage 10 — 15 V?	Go to step 3.	Repair the har- ness between stop light switch and ABSCM&H/U.
3	CHECK POOR CONTACT IN CONNECTORS.	Is there poor contact in con- nector between stop light switch and ABSCM&H/U?	Repair the con- nector.	Go to step 4.
4	CHECK ABSCM&H/U. 1)Connect all connectors. 2)Erase the memory. 3)Perform the inspection mode. 4)Read out the DTC.	Is the same DTC as in the cur- rent diagnosis still being out- put?	Replace the ABSCM&H/U. <ref. abs-6,<br="" to="">ABS Control Mod- ule and Hydraulic Control Unit (ABSCM&H/U).></ref.>	Go to step 5.
5	CHECK ANY OTHER DTC APPEARANCE.	Are other DTCs being output?	Proceed with the diagnosis corresponding to DTC.	A temporary poor contact.

ABS (DIAGNOSTICS)

AB:DTC 56

- ABNORMAL G SENSOR OUTPUT VOLTAGE -

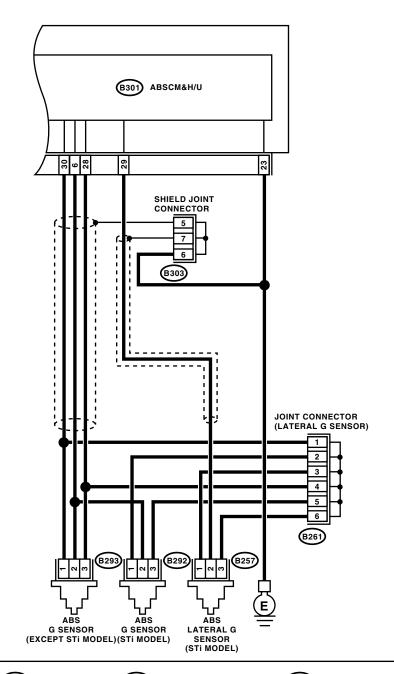
DIAGNOSIS:

Faulty G sensor output voltage

TROUBLE SYMPTOM:

• ABS does not operate.

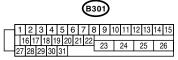
WIRING DIAGRAM:











ABS00368

			FOR	y Erie
	Step	Check	Yes	No St
1	CHECK ALL FOUR WHEELS FOR FREE	Have the wheels been turned	The ABS is nor-	Go to step 2.
	TURNING.	freely such as when the vehi-	mal. Erase the	
Ī		cle is lifted up, or operated on	DTC.	
	OUTON OPPOSITION	a free roller or rolling road?		<u> </u>
2		Does the vehicle specification	Go to step 3.	Replace the
	Check the specifications of mark on ABSCM&H/U.	and ABSCM&H/U specifica- tion match?		ABSCM&H/U.
	ABSCM&H/U. CU: AT	non materi?		<ref. abs-6,<br="" to="">ABS Control Mod-</ref.>
	CV: MT (Except STi model)			ule and Hydraulic
Ī	CY: MT (Except 311 model) CY: MT (STi model)			Control Unit
Ī	,			(ABSCM&H/U).>
3	CHECK INPUT VOLTAGE OF G SENSOR.	Is the voltage 4.75 — 5.25 V?	Go to step 4.	Repair the har-
	1)Turn the ignition switch to OFF.			ness/connector
Ī	2)Remove the console box.			between G sensor
Ī	3)Remove the G sensor from vehicle. (Do not			and ABSCM&H/U.
	disconnect the connector.)			
	4)Turn the ignition switch to ON.			
Ī	5)Measure the voltage between G sensor con-			
	nector terminals. Connector & terminal			
	(B292) No. 1 (+) — No. 3 (–):			
4	CHECK OPEN CIRCUIT IN G SENSOR OUT-	Is the resistance 5.0 — 5.6	Go to step 5.	Repair the har-
]	PUT HARNESS AND GROUND HARNESS.	k Ω ?	ωο το στ ο μ σ.	ness/connector
Ī	1)Turn the ignition switch to OFF.			between G sensor
Ī	2)Disconnect the connector from ABSCM&			and ABSCM&H/U.
	H/U.			
	3)Measure the resistance between			
	ABSCM&H/U connector terminals.			
	Connector & terminal			
<u> </u>	(B301) No. 6 — No. 28:	La da a	0-1 -	Dan : ::
5	CHECK GROUND SHORT IN G SENSOR	Is the resistance more than 1	Go to step 6.	Repair the har-
	OUTPUT HARNESS. 1)Disconnect the connector from G sensor.	ΜΩ?		ness between G sensor and
	2)Measure the resistance between			ABSCM&H/U.
	ABSCM&H/U connector and chassis ground.			55//// // 0.
	Connector & terminal			
	(B301) No. 6 — Chassis ground:			
6	CHECK BATTERY SHORT OF HARNESS.	Is the voltage less than 1 V?	Go to step 7.	Repair the har-
1	Measure the voltage between ABSCM&H/U			ness between G
1	connector and chassis ground.			sensor and
	Connector & terminal			ABSCM&H/U.
<u> </u>	(B301) No. 6 (+) — Chassis ground (-):			
7	CHECK BATTERY SHORT OF HARNESS.	Is the voltage less than 1 V?	Go to step 8.	Repair the har-
	1)Turn the ignition switch to ON.			ness between G
1	2)Measure the voltage between ABSCM&H/U connector and chassis ground.			sensor and ABSCM&H/U.
1	Connector & terminal			, LOOOIVICI I/U.
	(B301) No. 6 (+) — Chassis ground (–):			
8	CHECK GROUND SHORT OF HARNESS.	Is the resistance more than 1	Go to step 9.	Repair the har-
-		$M\Omega$?		ness between G
	connector and chassis ground.			sensor and
	Connector & terminal			ABSCM&H/U.
1	(B301) No. 28 — Chassis ground:			Replace the
1	-			ABSCM&H/U.
1				<ref. abs-6,<="" td="" to=""></ref.>
1				ABS Control Mod-
				ule and Hydraulic
				Control Unit (ABSCM&H/U).>
		<u> </u>		(นทวดเกเซน/ก):>

V For Y Fring				y Fri
	Step	Check	Yes	No St
9	CHECK G SENSOR. 1)Turn the ignition switch to OFF. 2)Remove the G sensor from vehicle. 3)Connect the connector to G sensor. 4)Connect the connector to ABSCM&H/U. 5)Turn the ignition switch to ON. 6)Measure the voltage between G sensor connector terminals. Connector & terminal (B292) No. 2 (+) — No. 3 (-):	Is the voltage 2.1 — 2.4 V when G sensor is horizontal?	Go to step 10.	Replace the G sensor. <ref. to<br="">ABS-20, G Sen- sor.></ref.>
10	CHECK G SENSOR. Measure the voltage between G sensor connector terminals. Connector & terminal (B292) No. 2 (+) — No. 3 (-):	Is the voltage 3.7 — 4.1 V when G sensor is inclined forwards to 90°?	Go to step 11.	Replace the G sensor. <ref. to<br="">ABS-20, G Sen- sor.></ref.>
11	CHECK G SENSOR. Measure the voltage between G sensor connector terminals. Connector & terminal (B292) No. 2 (+) — No. 3 (-):	Is the voltage 0.5 — 0.9 V when G sensor is inclined backwards to 90°?	Go to step 12.	Replace the G sensor. <ref. to<br="">ABS-20, G Sen- sor.></ref.>
12	CHECK POOR CONTACT IN CONNECTORS.	Is there poor contact in con- nector between ABSCM&H/U and G sensor?	Repair the connector.	Go to step 13.
13	CHECK ABSCM&H/U. 1)Connect all connectors. 2)Erase the memory. 3)Perform inspection mode. 4)Read out the DTC.	Is the same DTC as in the cur- rent diagnosis still being out- put?	Replace the ABSCM&H/U. <ref. (abscm&h="" abs="" abs-6,="" and="" control="" hydraulic="" mod-="" to="" u).="" ule="" unit=""></ref.>	Go to step 14.
14	CHECK ANY OTHER DTC APPEARANCE.	Are other DTCs being output?	Proceed with the diagnosis corresponding to DTC.	A temporary poor contact.

ABS (DIAGNOSTICS)

AC:DTC 73

OR RESALE — ABNORMAL LATERAL G SENSOR OUTPUT VOLTAGE —

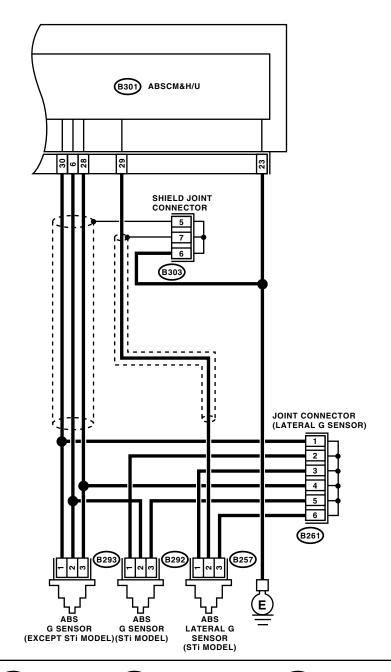
DIAGNOSIS:

Faulty Lateral G sensor output voltage

TROUBLE SYMPTOM:

• ABS does not operate.

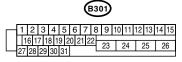
WIRING DIAGRAM:











ABS00368

			FOR	J Erie
	Step	Check	Yes	No St
1	CHECK ALL FOUR WHEELS FOR FREE TURNING.	Have the wheels been turned freely such as when the vehicle is lifted up, or operated on a free roller or rolling road?	The ABS is normal. Erase the DTC.	Go to step 2.
2	CHECK SPECIFICATIONS OF ABSCM&H/U. Check the specifications of mark on ABSCM&H/U. CU: AT CV: MT (Except STi model) CY: MT (STi model)	Does the vehicle specification and ABSCM&H/U specification match?	Go to step 3.	Replace the ABSCM&H/U. <ref. abs-6,<br="" to="">ABS Control Mod- ule and Hydraulic Control Unit (ABSCM&H/U).></ref.>
3	CHECK INPUT VOLTAGE OF LATERAL G SENSOR. 1) Turn the ignition switch to OFF. 2) Remove the console box. 3) Remove the lateral G sensor from vehicle. (Do not disconnect the connector.) 4) Turn the ignition switch to ON. 5) Measure the voltage between lateral G sensor connector terminals. Connector & terminal (B257) No. 1 (+) — No. 3 (-):	Is the voltage 4.75 — 5.25 V?	Go to step 4.	Repair the har- ness/connector between lateral G sensor and ABSCM&H/U.
4	CHECK OPEN CIRCUIT IN LATERAL G SENSOR OUTPUT HARNESS AND GROUND HARNESS. 1) Turn the ignition switch to OFF. 2) Disconnect the connector from ABSCM& H/U. 3) Measure the resistance between ABSCM&H/U connector terminals. Connector & terminal (B301) No. 29 — No. 28:	Is the resistance 5.0 — 5.6 k Ω ?	Go to step 5.	Repair the har- ness/connector between lateral G sensor and ABSCM&H/U.
5	CHECK GROUND SHORT IN LATERAL G SENSOR OUTPUT HARNESS. 1)Disconnect the connector from lateral G sensor. 2)Measure the resistance between ABSCM&H/U connector and chassis ground. Connector & terminal (B301) No. 29 — Chassis ground:	Is the resistance more than 1 $\mbox{M}\Omega ?$	Go to step 6.	Repair the har- ness between lat- eral G sensor and ABSCM&H/U.
6	CHECK BATTERY SHORT OF HARNESS. Measure the voltage between ABSCM&H/U connector and chassis ground. Connector & terminal (B301) No. 29 (+) — Chassis ground (-):	Is the voltage less than 1 V?	Go to step 7.	Repair the har- ness between lat- eral G sensor and ABSCM&H/U.
7	CHECK BATTERY SHORT OF HARNESS. 1)Turn the ignition switch to ON. 2)Measure the voltage between ABSCM&H/U connector and chassis ground. Connector & terminal (B301) No. 29 (+) — Chassis ground (-):	Is the voltage less than 1 V?	Go to step 8.	Repair the har- ness between lat- eral G sensor and ABSCM&H/U.

For Y Eric				J Fri
	Step	Check	Yes	No St
8	CHECK GROUND SHORT OF HARNESS. Measure the resistance between ABSCM&H/U connector and chassis ground. Connector & terminal (B301) No. 28 — Chassis ground:	Is the resistance more than 1 $\mbox{M}\Omega ?$	Go to step 9.	Repair the har- ness between lat- eral G sensor and ABSCM&H/U. Replace the ABSCM&H/U. <ref. abs-6,<br="" to="">ABS Control Mod- ule and Hydraulic Control Unit (ABSCM&H/U).></ref.>
9	CHECK LATERAL G SENSOR. 1)Turn the ignition switch to OFF. 2)Remove the lateral G sensor from vehicle. 3)Connect the connector to lateral G sensor. 4)Connect the connector to ABSCM&H/U. 5)Turn the ignition switch to ON. 6)Measure the voltage between lateral G sensor connector terminals. Connector & terminal (B257) No. 2 (+) — No. 3 (-):	Is the voltage 2.3 — 2.7 V when lateral G sensor is horizontal?	Go to step 10.	Replace the lateral G sensor. <ref. to<br="">ABS-20, G Sen- sor.></ref.>
10	CHECK LATERAL G SENSOR. Measure the voltage between lateral G sensor connector terminals. Connector & terminal (B257) No. 2 (+) — No. 3 (-):	Is the voltage between 3.7 — 4.1 V when lateral G sensor is inclined right to 90°?	Go to step 11.	Replace the lateral G sensor. <ref. to<br="">ABS-20, G Sen- sor.></ref.>
11	CHECK LATERAL G SENSOR. Measure the voltage between lateral G sensor connector terminals. Connector & terminal (B257) No. 2 (+) — No. 3 (-):	Is the voltage between 0.5 — 0.9 V when lateral G sensor is inclined left to 90°?	Go to step 12.	Replace the lateral G sensor. <ref. to<br="">ABS-20, G Sen- sor.></ref.>
12	CHECK POOR CONTACT IN CONNECTORS.	Is there poor contact in con- nector between ABSCM&H/U and lateral G sensor?	Repair the con- nector.	Go to step 13.
13	CHECK ABSCM&H/U. 1)Connect all connectors. 2)Erase the memory. 3)Perform inspection mode. 4)Read out the DTC.	Is the same DTC as in the cur- rent diagnosis still being out- put?	Replace the ABSCM&H/U. <ref. abs-6,<br="" to="">ABS Control Mod- ule and Hydraulic Control Unit (ABSCM&H/U).></ref.>	Go to step 14.
14	CHECK ANY OTHER DTC APPEARANCE.	Are other DTCs being output?	Proceed with the diagnosis corresponding to DTC.	A temporary poor contact.

ABS (DIAGNOSTICS) Eris Studios

13.Diagnostics Procedure with Subaru Select Monitor

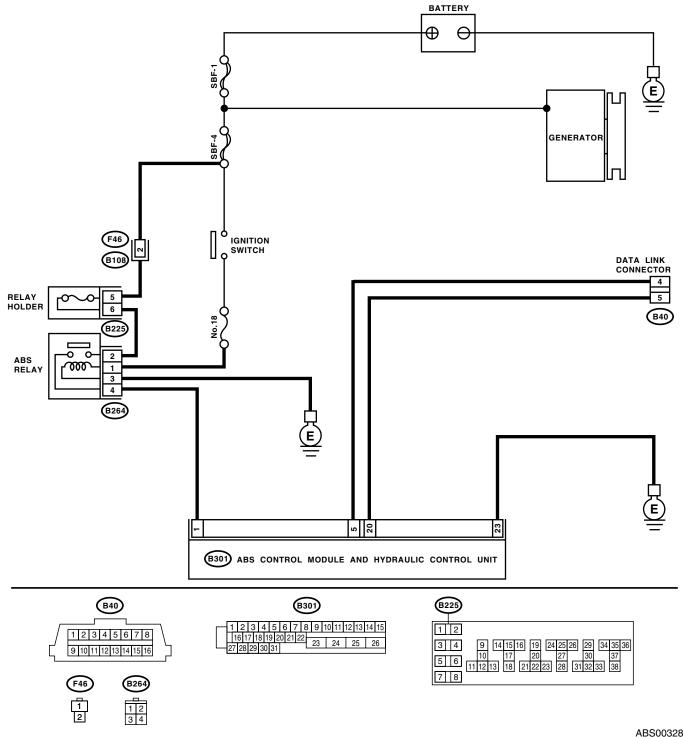
DIAGNOSIS:

· Faulty harness connector

TROUBLE SYMPTOM:

Communication cannot be executed between ABS and Subaru select monitor.

WIRING DIAGRAM:



		- 1	O For	y Fri
	Step	Check	Yes	No St
1	CHECK IGNITION SWITCH.	Is the ignition switch turned to ON?	Go to step 2.	Turn the ignition switch to ON, and select ABS mode using Subaru Select Monitor.
2	CHECK BATTERY. 1)Turn the ignition switch to OFF. 2)Measure the battery voltage.	Is the voltage or more 11 V?	Go to step 3.	Charge or replace the battery.
3	CHECK BATTERY TERMINAL.	Is there poor contact at battery terminal?	Repair or tighten the battery terminal.	Go to step 4.
4	CHECK COMMUNICATION OF SUBARU SE- LECT MONITOR. 1)Turn the ignition switch to ON. 2)Using the Subaru Select Monitor, check whether communication to other system can be executed normally.	Are the name and year of system displayed on Subaru Select Monitor?	Go to step 8.	Go to step 5.
5	CHECK COMMUNICATION OF SUBARU SE- LECT MONITOR. 1)Turn the ignition switch to OFF. 2)Disconnect the ABSCM&H/U connector. 3)Turn the ignition switch to ON. 4)Check whether communication to other systems can be executed normally.	Are the name and year of system displayed on Subaru Select Monitor?	Replace the ABSCM&H/U. <ref. abs-6,<br="" to="">ABS Control Mod- ule and Hydraulic Control Unit (ABSCM&H/U).></ref.>	Go to step 6.
6	CHECK HARNESS CONNECTOR BETWEEN EACH CONTROL MODULE AND DATA LINK CONNECTOR. 1) Turn the ignition switch to OFF. 2) Disconnect the ABSCM&H/U, ECM and TCM connectors. 3) Measure the resistance between data link connector and chassis ground. Connector & terminal (B40) No. 5 — Chassis ground: (B40) No. 4 — Chassis ground:		Go to step 7.	Repair the har- ness and connec- tor between each control module and data link con- nector.
7	CHECK OUTPUT SIGNAL FOR ABSCM& H/U. 1)Turn the ignition switch to ON. 2)Measure the voltage between ABSCM&H/U and chassis ground. Connector & terminal (B40) No. 5 (+) — Chassis ground (-): (B40) No. 4 (+) — Chassis ground (-):	Is the voltage less than 1 V?	Go to step 8.	Repair the har- ness and connec- tor between each control module and data link con- nector.
8	CHECK HARNESS/CONNECTOR BETWEEN ABSCM&H/U AND DATA LINK CONNECTOR. Measure the resistance between ABSCM&H/U connector and data link connector. Connector & terminal (B301) No. 20 — (B40) No. 5: (B301) No. 5 — (B40) No. 4:	Ω?	Go to step 9.	Repair the har- ness and connec- tor between ABSCM&H/U and data link connec- tor.
9	CHECK INSTALLATION OF ABSCM&H/U CONNECTOR. Turn the ignition switch to OFF.	Is the ABSCM&H/U connector inserted into ABSCM&H/U until the clamp locks onto it?	Go to step 10.	Insert the ABSCM&H/U con- nector into ABSCM&H/U.

	For Veri			
	Step	Check	Yes	No St
10	CHECK POWER SUPPLY CIRCUIT. 1) Turn the ignition switch to ON (engine OFF). 2) Measure the ignition power supply voltage between ABSCM&H/U connector and chassis ground. Connector & terminal (B301) No. 1 (+) — Chassis ground (-):	Is the voltage 10 — 15 V?	Go to step 11.	Repair the open circuit in harness between ABSCM&H/U and battery.
11	CHECK HARNESS CONNECTOR BETWEEN ABSCM&H/U AND CHASSIS GROUND. 1) Turn the ignition switch to OFF. 2) Disconnect the connector from ABSCM&H/U and transmission. 3) Measure the resistance of harness between ABSCM&H/U and chassis ground. Connector & terminal (B301) No. 23 — Chassis ground:	Is the resistance less than 0.5 Ω ?	Go to step 12.	Repair the open circuit in harness between ABSCM&H/U and inhibitor side connector, and poor contact in coupling connector.
12	CHECK POOR CONTACT IN CONNECTORS.	Is there poor contact in control module power supply, ground line and data link connector?	Repair the con- nector.	Replace the ABSCM&H/U. <ref. (abscm&h="" abs="" abs-6,="" and="" control="" hydraulic="" module="" to="" u).="" unit=""></ref.>

DIAGNOSTICS PROCEDURE WITH SUBARU SELECT MONITOR OT FOR RESALE

ABS (DIAGNOSTICS)

B: NO TROUBLE CODE

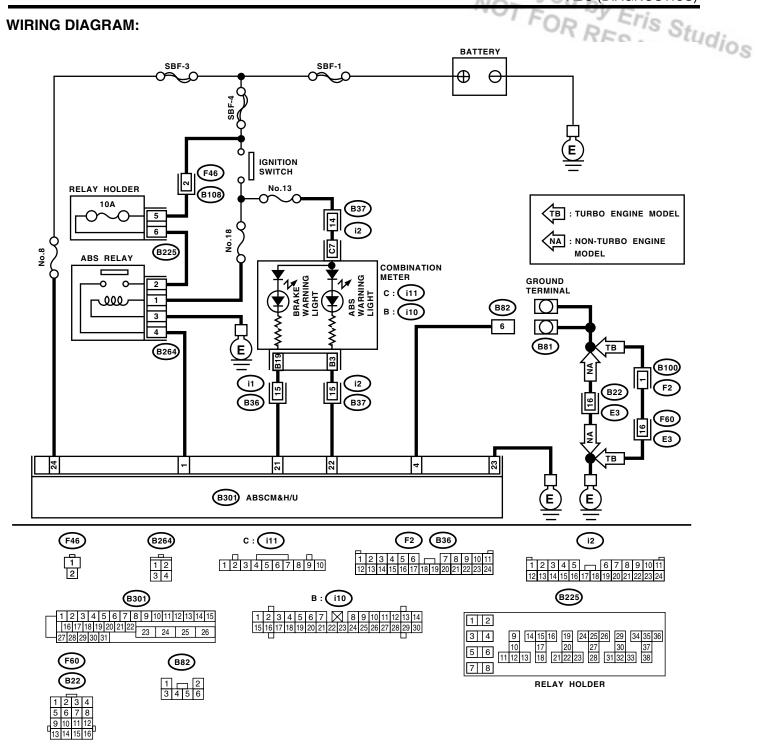
DIAGNOSIS:

• ABS warning light circuit is shorted. **TROUBLE SYMPTOM:**

- ABS warning light remains on.
- NO TROUBLE CODE displayed on the Subaru Select Monitor.

When the ABS warning light is OFF and "NO TROUBLE CODE" is displayed on Subaru Select Monitor, the system is in normal condition.

WIRING DIAGRAM:



ABS00347

	Step	Check	Yes	No
1	CHECK WIRING HARNESS. 1)Turn the ignition switch to OFF. 2)Disconnect the connector (i2) from connector (B37). 3)Turn the ignition switch to ON.	Does the ABS warning light turn on?	Go to step 2.	Repair the front wiring harness.

0				Sile o
	Step	Check	Yes	No St
2	CHECK PROJECTION AT ABSCM&H/U. 1)Turn the ignition switch to OFF. 2)Disconnect the connector from ABSCM&H/U. NOTE: For detail of connector switch, refer to following. <ref. abs-12,="" control="" electrical="" i="" module="" o="" signal.="" specification,="" to=""></ref.>	Is there any damage on projection which switches connector switch?	Go to step 3.	Replace the ABSCM&H/U. <ref. abs-6,<br="" to="">ABS Control Mod- ule and Hydraulic Control Unit (ABSCM&H/U).></ref.>
3	CHECK ABSCM&H/U. Measure the resistance between ABSCM&H/U terminals. Terminals No. 22 — No. 23:	Is the resistance more than 1 $\mbox{M}\Omega ?$	Go to step 4.	Replace the ABSCM&H/U. <ref. abs-6,<br="" to="">ABS Control Mod- ule and Hydraulic Control Unit (ABSCM&H/U).></ref.>
4	CHECK WIRING HARNESS. Measure the resistance between connector and chassis ground. Connector & terminal (B301) No. 22 — Chassis ground:	Is the resistance less than 0.5 Ω ?	Go to step 5.	Repair the harness.
5	CHECK WIRING HARNESS. 1)Connect the connector to ABSCM&H/U. 2)Measure the resistance between connector and chassis ground. Connector & terminal (B301) No. 22 — Chassis ground:	Is the resistance more than 1 $\mbox{M}\Omega ?$	Go to step 6.	Repair the harness.
6	CHECK POOR CONTACT IN ABSCM&H/U CONNECTOR.	Is there poor contact in ABSCM&H/U connector?	Repair the connector.	Replace the ABSCM&H/U. <ref. abs-6,<br="" to="">ABS Control Mod- ule and Hydraulic Control Unit (ABSCM&H/U).></ref.>

ABS (DIAGNOSTICS)

C: DTC 21

— OPEN OR SHORT CIRCUIT IN FRONT RIGHT ABS WHEEL SPEED SENSOR CIRCUIT —

NOTE:

For the diagnostic procedure, refer to DTC 27. <Ref. to ABS-86, DTC 27 — OPEN OR SHORT CIRCUIT IN REAR LEFT ABS WHEEL SPEED SENSOR CIRCUIT —, Diagnostics Procedure with Subaru Select Monitor.>

D: DTC 23

— OPEN OR SHORT CIRCUIT IN FRONT LEFT ABS WHEEL SPEED SENSOR CIRCUIT —

NOTE:

For the diagnostic procedure, refer to DTC 27. <Ref. to ABS-86, DTC 27 — OPEN OR SHORT CIRCUIT IN REAR LEFT ABS WHEEL SPEED SENSOR CIRCUIT —, Diagnostics Procedure with Subaru Select Monitor.>

E: DTC 25

— OPEN OR SHORT CIRCUIT IN REAR RIGHT ABS WHEEL SPEED SENSOR CIRCUIT —

NOTE:

For the diagnostic procedure, refer to DTC 27. <Ref. to ABS-86, DTC 27 — OPEN OR SHORT CIRCUIT IN REAR LEFT ABS WHEEL SPEED SENSOR CIRCUIT —, Diagnostics Procedure with Subaru Select Monitor.>

ABS (DIAGNOSTICS)

F: DTC 27

— OPEN OR SHORT CIRCUIT IN REAR LEFT ABS WHEEL SPEED SENSOR CIRCUIT —

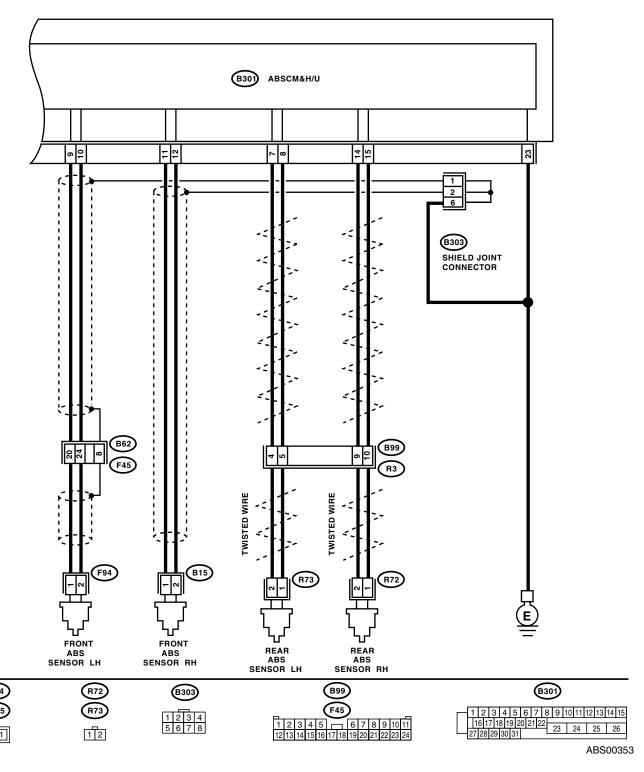
DIAGNOSIS:

- Faulty ABS wheel speed sensor (Broken wire, input voltage too high)
- · Faulty harness connector

TROUBLE SYMPTOM:

ABS does not operate.

WIRING DIAGRAM:



	Ston	Chook	Yes	Erise	1
1	Step CHECK OUTPUT OF ABS WHEEL SPEED SENSOR USING SUBARU SELECT MONITOR. 1)Select "Current data display & Save" on the Subaru Select Monitor. 2)Read the ABS wheel speed sensor output corresponding to faulty system in the Subaru Select Monitor data display mode.	Check Does the speed indicated on display change in response to speedometer reading during acceleration/deceleration when the steering wheel is in straight-ahead position?	Go to step 2.	No Go to step 8.	Id _{io}
2	CHECK INSTALLATION OF ABS WHEEL SPEED SENSOR.	Are the ABS wheel speed sensor installation bolts tightened 33 N·m (3.3 kgf-m, 24 ft-lb)?	Go to step 3.	Tighten the ABS wheel speed sensor installation bolts securely.	
3	CHECK ABS WHEEL SPEED SENSOR GAP. Measure the tone wheel to ABS wheel speed sensor piece gap over entire perimeter of the wheel.	Is the gap as following value? Front wheel: 0.3 — 0.8 mm (0.012 — 0.031 in) Rear wheel 0.7 — 1.2 mm (0.028 — 0.047 in)	Go to step 4.	Adjust the gap. NOTE: Adjust the gap using spacers (Part No. 26755AA000). If the spacers cannot correct gap, replace worn sensor or worn tone wheel.	
4	CHECK TONE WHEEL RUNOUT. Measure the tone wheel runout.	Is the runout less than 0.05 mm (0.0020 in)?	Go to step 5.	Replace the tone wheel. Front: <ref. abs-18,<br="" to="">Front Tone Wheel.> Rear: <ref. abs-19,<br="" to="">Rear Tone Wheel.></ref.></ref.>	
5	CHECK POOR CONTACT IN CONNECTORS. Turn the ignition switch to OFF.	Is there poor contact in con- nectors between ABSCM&H/U and ABS wheel speed sensor?	Repair the connector.	Go to step 6.	
6	CHECK ABSCM&H/U. 1)Connect all connectors. 2)Erase the memory. 3)Perform the inspection mode. 4)Read out the DTC.	Is the same DTC as in the current diagnosis still being output?	Replace the ABSCM&H/U. <ref. abs-6,<br="" to="">ABS Control Mod- ule and Hydraulic Control Unit (ABSCM&H/U).></ref.>	Go to step 7.	
7	CHECK ANY OTHER DTC APPEARANCE.	Are other DTCs being output?	Proceed with the diagnosis corresponding to DTC.	A temporary poor contact. NOTE: Check the harness and connectors between AB-SCM&H/U and ABS wheel speed sensor.	

			O Fa-	y Fri
	Step	Check	Yes	No St
8	CHECK ABS WHEEL SPEED SENSOR.	Is the resistance as following	Go to step 9.	Replace the ABS
	1)Turn the ignition switch to OFF.	value?		wheel speed sen-
	2)Disconnect the connector from ABS wheel	Front: 1 — 1.5 kΩ		sor. Front: <ref. td="" to<=""></ref.>
	speed sensor.	Rear: 1.025 — 1.265 kΩ		ABS-12, Front
	3)Measure the resistance of ABS wheel speed			ABS Wheel Speed
	sensor connector terminals while shaking the			Sensor.> Rear:
	harness lightly.			<ref. abs-15,<="" td="" to=""></ref.>
	Terminals			Rear ABS Wheel
	Front RH No. 1 — No. 2:			Speed Sensor.>
	Front LH No. 1 — No. 2:			
	Rear RH No. 1 — No. 2:			
	Rear LH No. 1 — No. 2:	1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1		D 1 11 ADO
9		Is the voltage less than 1 V?	Go to step 10.	Replace the ABS
	SPEED SENSOR.			wheel speed sen-
	1)Disconnect the connector from ABSCM& H/U.			sor. Front: <ref. to<br="">ABS-12, Front</ref.>
	2)Measure the voltage between ABS wheel			ABS Wheel Speed
	speed sensor and chassis ground.			Sensor.> Rear:
	Terminals			<ref. abs-15,<="" td="" to=""></ref.>
	Front RH No. 1 (+) — Chassis ground (–):			Rear ABS Wheel
	Front LH No. 1 (+) — Chassis ground (–):			Speed Sensor.>
	Rear RH No. 1 (+) — Chassis ground (-):			opeca consons
	Rear LH No. 1 (+) — Chassis ground (-):			
10		Is the voltage less than 1 V?	Go to step 11.	Replace the ABS
	SPEED SENSOR.	ŭ	'	wheel speed sen-
	1)Turn the ignition switch to ON.			sor. Front: <ref. td="" to<=""></ref.>
	2)Measure the voltage between ABS wheel			ABS-12, Front
	speed sensor and chassis ground.			ABS Wheel Speed
	Terminals			Sensor.> Rear:
	Front RH No. 1 (+) — Chassis ground (–):			<ref. abs-15,<="" td="" to=""></ref.>
	Front LH No. 1 (+) — Chassis ground (–):			Rear ABS Wheel
	Rear RH No. 1 (+) — Chassis ground (–):			Speed Sensor.>
	Rear LH No. 1 (+) — Chassis ground (–):			
11	CHECK HARNESS/CONNECTOR BETWEEN		Go to step 12.	Repair the har-
	ABSCM&H/U AND ABS WHEEL SPEED	value?		ness/connector
	SENSOR.	Front: 1 — 1.5 k Ω		between
	1)Turn the ignition switch to OFF.	Rear: 1.025 — 1.265 kΩ		ABSCM&H/U and
	2)Connect the connector to ABS wheel speed			ABS wheel speed
	sensor. 3)Measure the resistance between			sensor.
	ABSCM&H/U connector terminals.			
	Connector & terminal			
	DTC 21			
	(B301) No. 11 — No. 12:			
	DTC 23			
	(B301) No. 9 — No. 10:			
	DTC 25			
	(B301) No. 14 — No. 15:			
	DTC 27			
	(B301) No. 7 — No. 8:			

			FOR	Ty Etie o.	1
	Step	Check	Yes	No St	Id:
12	CHECK BATTERY SHORT OF HARNESS. Measure the voltage between ABSCM&H/U connector and chassis ground. Connector & terminal	Is the voltage less than 1 V?	Go to step 13.	Repair the har- ness between ABSCM&H/U and ABS wheel speed	HIOS
	DTC 21 (B301) No. 11 (+) — Chassis ground (–): DTC 23			sensor.	
	(B301) No. 9 (+) — Chassis ground (–): DTC 25 (B301) No. 14 (+) — Chassis ground (–): DTC 27				
	(B301) No. 7 (+) — Chassis ground (–):				1
13	CHECK BATTERY SHORT OF HARNESS. 1) Turn the ignition switch to ON. 2) Measure the voltage between ABSCM&H/U connector and chassis ground. Connector & terminal DTC 21 (B301) No. 11 (+) — Chassis ground (-): DTC 23 (B301) No. 9 (+) — Chassis ground (-): DTC 25 (B301) No. 14 (+) — Chassis ground (-): DTC 27 (B301) No. 7 (+) — Chassis ground (-):	Is the voltage less than 1 V?	Go to step 14.	Repair the harness between ABSCM&H/U and ABS wheel speed sensor.	
14	CHECK INSTALLATION OF ABS WHEEL SPEED SENSOR.	sor installation bolts tightened 33 N⋅m (3.3 kgf-m, 24 ft-lb)?	·	Tighten the ABS wheel speed sensor installation bolts securely.	
15	CHECK ABS WHEEL SPEED SENSOR GAP. Measure the tone wheel to ABS wheel speed sensor piece gap over entire perimeter of the wheel.	Is the gap as following value? Front wheel: 0.3 — 0.8 mm (0.012 — 0.031 in) Rear wheel: 0.7 — 1.2 mm (0.028 — 0.047 in)	Go to step 16.	Adjust the gap. NOTE: Adjust the gap using spacers (Part No. 26755AA000). If the spacers cannot correct gap, replace worn sensor or worn tone wheel.	
16	CHECK TONE WHEEL RUNOUT. Measure the tone wheel runout.	Is the runout less than 0.05 mm (0.0020 in)?	Go to step 17.	Replace the tone wheel. Front: <ref. abs-18,<br="" to="">Front Tone Wheel.> Rear: <ref. abs-19,<br="" to="">Rear Tone Wheel.></ref.></ref.>	

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	Step	Check	Yes	No St
17	CHECK GROUND SHORT OF ABS WHEEL SPEED SENSOR. 1) Turn the ignition switch to ON. 2) Measure the resistance between ABS wheel speed sensor and chassis ground. Terminals Front RH No. 1 — Chassis ground: Front LH No. 1 — Chassis ground: Rear RH No. 1 — Chassis ground: Rear LH No. 1 — Chassis ground:	Is the resistance more than 1 $M\Omega$?	Go to step 18.	Replace the ABS wheel speed sensor and ABSCM&H/U. Front: <ref. abs="" abs-12,="" front="" sensor.="" speed="" to="" wheel=""> Rear: <ref. abs="" abs-15,="" rear="" sensor.="" speed="" to="" wheel=""> and <ref. (abscm&h="" abs="" abs-6,="" and="" control="" hydraulic="" module="" to="" u).="" unit=""></ref.></ref.></ref.>
18	CHECK GROUND SHORT OF HARNESS. 1) Turn the ignition switch to OFF. 2) Connect the connector to ABS wheel speed sensor. 3) Measure the resistance between ABSCM&H/U connector terminal and chassis ground. Connector & terminal DTC 21 (B301) No. 11 — Chassis ground: DTC 23 (B301) No. 9 — Chassis ground: DTC 25 (B301) No. 14 — Chassis ground: DTC 27 (B301) No. 7 — Chassis ground:	Is the resistance more than 1 $\mbox{M}\Omega\mbox{?}$	Go to step 19.	Repair the harness between ABSCM&H/U and ABS wheel speed sensor. And replace the ABSCM&H/U. <ref. (abscm&h="" abs="" abs-6,="" and="" control="" hydraulic="" module="" to="" u).="" unit=""></ref.>
19		Is there poor contact in con- nectors between ABSCM&H/U and ABS wheel speed sensor?	Repair the connector.	Go to step 20.
20	CHECK ABSCM&H/U. 1)Connect all connectors. 2)Erase the memory. 3)Perform the inspection mode. 4)Read out the DTC.	Is the same DTC as in current diagnosis still being output?	Replace the ABSCM&H/U.	Go to step 21.
21	CHECK ANY OTHER DTC APPEARANCE.	Are other DTCs being output?	Proceed with the diagnosis corresponding to DTC.	A temporary poor contact. NOTE: Check the harness and connectors between AB-SCM&H/U and ABS wheel speed sensor.

ABS (DIAGNOSTICS)

G: DTC 22

is Studios — FRONT RIGHT ABNORMAL ABS WHEEL SPEED SENSOR SIGNAL

NOTE:

For the diagnostic procedure, refer to DTC 28. <Ref. to ABS-92, DTC 28 — REAR LEFT ABNORMAL ABS WHEEL SPEED SENSOR SIGNAL —, Diagnostics Procedure with Subaru Select Monitor.>

H: DTC 24

— FRONT LEFT ABNORMAL ABS WHEEL SPEED SENSOR SIGNAL —

NOTE:

For the diagnostic procedure, refer to DTC 28. <Ref. to ABS-92, DTC 28 — REAR LEFT ABNORMAL ABS WHEEL SPEED SENSOR SIGNAL —, Diagnostics Procedure with Subaru Select Monitor.>

DTC 26

— REAR RIGHT ABNORMAL ABS WHEEL SPEED SENSOR SIGNAL —

NOTE:

For the diagnostic procedure, refer to DTC 28. <Ref. to ABS-92, DTC 28 — REAR LEFT ABNORMAL ABS WHEEL SPEED SENSOR SIGNAL —, Diagnostics Procedure with Subaru Select Monitor.>

ABS (DIAGNOSTICS)

J: DTC 28

Eris Studios — REAR LEFT ABNORMAL ABS WHEEL SPEED SENSOR SIGNAL —

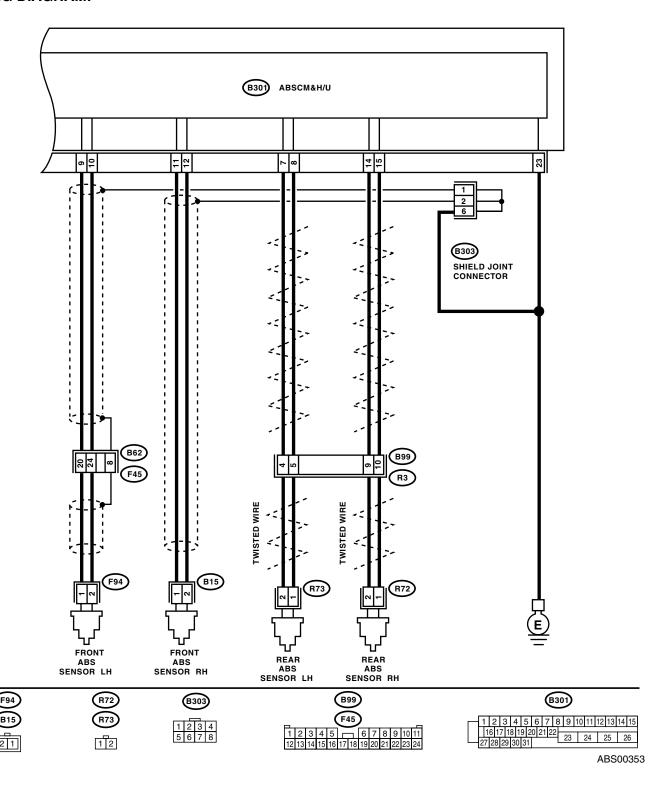
DIAGNOSIS:

- Faulty ABS wheel speed sensor signal (noise, irregular signal, etc.)
- Faulty harness/connector

TROUBLE SYMPTOM:

· ABS does not operate.

WIRING DIAGRAM:



CHECK OUTPUT OF ABS WHEEL SPEED SENSOR USING SUBARU SELECT MONITOR. 1)Select "Current data display & Save" on the Subaru Select Monitor. 2)Read the ABS wheel speed sensor output corresponding to faulty system in the Subaru Select Monitor data display mode. CHECK POOR CONTACT IN CONNECTORS. Turn the ignition switch to OFF. CHECK SOURCES OF SIGNAL NOISE. Is there poor contact in connectors between ABSCM&H/IU and ABS wheel speed sensor? Is the car telephone or wireless transmitter properly installed? CHECK SOURCES OF SIGNAL NOISE. Are noise sources (such as an antenna) installed near the sensor harmess? CHECK SHIELD CIRCUIT. 1)Turn the ignition switch to OFF. 2)Connect all connectors. 3)Measure the resistance between shield connector and chassis ground. Connector & terminal DTC 22 (B303) No. 2 — Chassis ground: OTC 22 (B303) No. 1 — Chassis ground: OTC 22 (B303) No. 1 — Chassis ground: OTC 22 (B303) No. 1 — Chassis ground: OTC 24 (B303) No. 1 — Chassis ground: OTC 25 (B403) No. 1 — Chassis ground: OTC 26 (B303) No. 1 — Chassis ground: OTC 27 (B303) No. 1 — Chassis ground: OTC 28 (B303) No. 1 — Chassis ground: OTC 29 (B303) No. 2 — Chassis ground: OTC 29 (B303) No. 2 — Chassis ground: OTC 29 (B303) No. 3 — Chassis ground: OTC 29 (B303) No. 4 — Chassis ground: OTC 29 (B303) No. 5 — Chassis ground: OTC 29 (B303) No. 6 — Chassis ground: OTC 29 (B303) No. 7 — Chassis ground: OTC 29 (B303) No. 8 — Chassis ground: OTC 29 (B303) No. 9 — Chassis ground: OTC 20 (B		T	FAR	Spie	1
SENSOR USING SUBARU SELECT MONITOR. 1)Select "Current data display & Save" on the Subaru Select Monitor. 2)Read the ABS wheel speed sensor output corresponding to faulty system in the Subaru Select Monitor data display mode. CHECK POOR CONTACT IN CONNECTORS. Turn the ignition switch to OFF. Turn the ignition switch to OFF. CHECK SOURCES OF SIGNAL NOISE. CHECK SOURCES OF SIGNAL NOISE. Are noise sources (such as an antenna) installed near the sensor harmses? CHECK SHIELD CIRCUIT. 1)Turn the ignition switch to OFF. 2)Connect all connectors. 3)Measure the resistance between shield connector at tentinal DTC 22 (B303) No. 1 — Chassis ground: CONDECTOR & BSCMAH/U. 1)Connect all connectors. 2)Erase the memory. 3)Perform the inspection mode. 4)Read out the DTC. CHECK ANY OTHER DTC APPEARANCE. CHECK ANY OTHER DTC APPEARANCE. Are other DTCs being output? CHECK ANY OTHER DTC APPEARANCE. Are other DTCs being output? CHECK ANY OTHER DTC APPEARANCE. Are other DTCs being output? CHECK ANY OTHER DTC APPEARANCE. Are the ABS wheel speed sensor installation bolts tightened and hydraulic control Unit (ABSCMB-H/U). CHECK ANY OTHER DTC APPEARANCE. Are the ABS wheel speed sensor installation bolts tightened sensor piace gap over entire perimeter of wheel. CHECK ABS WHEEL SPEED SENSOR GAP. Measure the lot selected the speed sensor piace gap over entire perimeter of wheel. O, 7 — 1.2 mm (0.028 — 0.047 in) Part of the ABS wheel speed sensor piace gap over entire perimeter of wheel. O, 7 — 1.2 mm (0.028 — 0.047 in) Agist the gap using spacer (Part No. 26755AA000). If the spacers cannot order daps, replace worm sensor or worm fone	·		Yes	No St	Id:
CHECK SOURCES OF SIGNAL NOISE. Is the car telephone or wireless transmitter properly installed? Is the car telephone or wireless transmitter properly installed? Is the car telephone or wireless transmitter.	SENSOR USING SUBARU SELECT MONITOR. 1)Select "Current data display & Save" on the Subaru Select Monitor. 2)Read the ABS wheel speed sensor output corresponding to faulty system in the Subaru Select Monitor data display mode.	display change in response to speedometer reading during acceleration/deceleration when the steering wheel is in straight-ahead position?	Go to step 2.	Go to step 8.	4105
transmitter properly installed? CHECK SOURCES OF SIGNAL NOISE. Are noise sources (such as an antenna) installed near the sensor harness? CHECK SHIELD CIRCUIT. 1)Turn the ignition switch to OFF. 2)Connect all connectors. 3)Measure the resistance between shield connector and chassis ground. Connector a terminal DTC 22 (B303) No. 1 — Chassis ground: DTC 24 (B303) No. 2 — Chassis ground: DTC 25 (B403) No. 2 — Chassis ground: DTC 26 (B403) No. 1 — Chassis ground: DTC 27 (B403) No. 1 — Chassis ground: DTC 28 (B403) No. 2 — Chassis ground: DTC 29 (B403) No. 1 — Chassis ground: DTC 29 (B403) No. 1 — Chassis ground: DTC 29 (B403) No. 1 — Chassis ground: DTC 29 (B403) No. 2 — Chassis ground: DTC 29 (B403) No. 1 — Chassis ground: DTC 29 (B403) No. 2 — Chassis ground: DTC 29 (B403) No. 1 — Chassis ground: DTC 29 (B403) No. 2 — Chassis ground: DTC 29 (B403) No. 1 — Chassis ground: DTC 29 (B403) No. 2 — Chassis ground: DTC 29 (B403) No. 2 — Chassis ground: DTC 29 (B403) No. 3 — Chassis ground: DTC 20 (B403) No. 4 — Chassis ground: DTC 20 (B403) No. 5 — Chassis ground: DTC 20 (B403) No. 6 — Chassis ground: DTC 20 (B403) No. 1 — Chassis ground: DTC 20 (B405) No. 1 — Chassis ground: DTC 20 (B405)		nectors between ABSCM&H/U	· ·	Go to step 3.	
antenna) installed near the sensor harmess? CHECK SHIELD CIRCUIT. 1) Turn the ignition switch to OFF. 2) Connect all connectors. 3) Measure the resistance between shield connector and chassis ground. Connector & terminal DTC 22 (B303) No. 1 — Chassis ground: DTC 24 (B303) No. 1 — Chassis ground: NOTE: If the DTC is 26, 28: Go to YES. CHECK ABSCM&H/U. 1) Connect all connectors. 2) Person the inspection mode. 4) Read out the DTC. CHECK ANY OTHER DTC APPEARANCE. CHECK NAY OTHER DTC APPEARANCE. Are other DTCs being output? CHECK NAY OTHER DTC APPEARANCE. Are other DTCs being output? Are other DTCs being output? CHECK NAY OTHER DTC APPEARANCE. Are other DTCs being output? CHECK NAY OTHER DTC APPEARANCE. Are other DTCs being output? CHECK NAY OTHER DTC APPEARANCE. Are other DTCs being output? CHECK ABS WHEEL SPEED SENSOR GAP: Measure the tone wheel to ABS wheel speed sensor installation bolts tightened 33 N·m (3.3 kgf-m, 24 ft-ib)? CHECK ABS WHEEL SPEED SENSOR GAP: Measure the tone wheel to ABS wheel speed sensor piece gap over entire perimeter of wheel. CHECK ABS WHEEL SPEED SENSOR GAP: Measure the tone wheel to ABS wheel speed sensor piece gap over entire perimeter of wheel. CHECK ABS WHEEL SPEED SENSOR GAP: Measure the tone wheel to ABS wheel speed sensor installation bolts tightened 33 N·m (3.3 kgf-m, 24 ft-ib)? CHECK ABS WHEEL SPEED SENSOR GAP: Measure the tone wheel to ABS wheel speed sensor installation bolts sightlened 30 N·m (0.012 — 0.031 in) Rear wheel: 0.7 — 1.2 mm (0.028 — 0.047 in) Rear wheel: 0.7 — 1.2 mm (0.028 — 0.047 in)			Go to step 4.	car telephone or wireless transmitter.	
1)Turn the ignition switch to OFF. 2)Connect all connectors. 3)Measure the resistance between shield connector at chassis ground. Connector & terminal DTC 22 (B303) No. 2 — Chassis ground: DTC 24 (B303) No. 1 — Chassis ground: NOTE: If the DTC is 26, 28: Go to YES. CHECK ABSCM&H/U. 1)Connect all connectors. 2)Erase the memory. 3)Perform the inspection mode. 4)Read out the DTC. CHECK ANY OTHER DTC APPEARANCE. CHECK ANY OTHER DTC APPEARANCE. CHECK INSTALLATION OF ABS WHEEL SPEED SENSOR. Are other DTCs being output? CHECK ABS WHEEL SPEED SENSOR GAP. Measure the tone wheel to ABS wheel speed sensor piece gap over entire perimeter of wheel. CHECK ABS WHEEL SPEED SENSOR GAP. Measure the tone wheel to ABS wheel speed sensor piece gap over entire perimeter of wheel. CHECK ABS WHEEL SPEED SENSOR GAP. Measure the tone wheel to ABS wheel speed sensor piece gap over entire perimeter of wheel. CHECK ABS WHEEL SPEED SENSOR GAP. Measure the tone wheel to ABS wheel speed sensor piece gap over entire perimeter of wheel. CHECK ABS WHEEL SPEED SENSOR GAP. Measure the tone wheel to ABS wheel speed sensor piece gap over entire perimeter of wheel. CHECK ABS WHEEL SPEED SENSOR GAP. Measure the tone wheel to ABS wheel speed sensor piece gap over entire perimeter of wheel. CHECK ABS WHEEL SPEED SENSOR GAP. Measure the tone wheel to ABS wheel speed sensor piece gap over entire perimeter of wheel. O.7 — 1.2 mm (0.028 — 0.047 in) If the spacers cannot correct gap, replace worm sensor or worm tone	CHECK SOURCES OF SIGNAL NOISE.	antenna) installed near the	sources apart from	<u> </u>	
1)Connect all connectors. 2)Erase the memory. 3)Perform the inspection mode. 4)Read out the DTC. CHECK ANY OTHER DTC APPEARANCE. Are other DTCs being output? Are other DTCs being output? CHECK INSTALLATION OF ABS WHEEL SPEED SENSOR. Are the ABS wheel speed sensor installation bolts tightened 33 N·m (3.3 kgf-m, 24 ft-lb)? CHECK ABS WHEEL SPEED SENSOR GAP. Measure the tone wheel to ABS wheel speed sensor piece gap over entire perimeter of wheel. CHECK ABS WHEEL SPEED SENSOR GAP. Is the gap as following value? Front wheel: 0.3 — 0.8 mm (0.012 — 0.031 in) Rear wheel: 0.7 — 1.2 mm (0.028 — 0.047 in) A temporary noise interference. Tighten the ABS wheel speed sensor installation bolts securely. A temporary noise interference. So to step 9. Tighten the ABS wheel speed sensor installation bolts securely. A temporary noise interference. So to step 9. Tighten the ABS wheel speed sensor installation bolts securely. A temporary noise interference. So to step 9. Tighten the ABS wheel speed sensor installation bolts securely. Adjust the gap. NOTE: Adjust the gap using spacer (Part No. 26755AA000). If the spacers cannot correct gap, replace worn sensor or worn tone	1)Turn the ignition switch to OFF. 2)Connect all connectors. 3)Measure the resistance between shield connector and chassis ground. Connector & terminal DTC 22 (B303) No. 2 — Chassis ground: DTC 24 (B303) No. 1 — Chassis ground: NOTE:		Go to step 6.	1 -	
CHECK INSTALLATION OF ABS WHEEL SPEED SENSOR. Are the ABS wheel speed sensor installation bolts tightened 33 N·m (3.3 kgf-m, 24 ft-lb)? CHECK ABS WHEEL SPEED SENSOR GAP. Measure the tone wheel to ABS wheel speed sensor piece gap over entire perimeter of wheel. Sensor piece gap over entire perimeter of wheel: 0.3 — 0.8 mm (0.012 — 0.031 in) Rear wheel: 0.7 — 1.2 mm (0.028 — 0.047 in) diagnosis corresponding to DTC. Go to step 9. Tighten the ABS wheel speed sensor installation bolts securely. Adjust the gap. NOTE: Adjust the gap using spacer (Part No. 26755AA000). If the spacers cannot correct gap, replace worn sensor or worn tone	CHECK ABSCM&H/U. 1)Connect all connectors. 2)Erase the memory. 3)Perform the inspection mode.	rent diagnosis still being out-	ABSCM&H/U. <ref. abs-6,<br="" to="">ABS Control Mod- ule and Hydraulic Control Unit</ref.>	Go to step 7.	
SPEED SENSOR. sor installation bolts tightened 33 N·m (3.3 kgf-m, 24 ft-lb)? CHECK ABS WHEEL SPEED SENSOR GAP. Measure the tone wheel to ABS wheel speed sensor piece gap over entire perimeter of wheel. Sensor piece gap over entire perimeter of wheel: 0.3 — 0.8 mm (0.012 — 0.031 in) Rear wheel: 0.7 — 1.2 mm (0.028 — 0.047 in) Rear wheel: 0.7 — 1.2 mm (0.028 — 0.047 in) Rear wheel: 0.8 — 0.047 in) Rear wheel: 0.9 — 0.047 in)	CHECK ANY OTHER DTC APPEARANCE.	Are other DTCs being output?	diagnosis corre-	•	
Measure the tone wheel to ABS wheel speed sensor piece gap over entire perimeter of wheel. Front wheel: 0.3 — 0.8 mm (0.012 — 0.031 in) Rear wheel: 0.7 — 1.2 mm (0.028 — 0.047 in) If the spacers cannot correct gap, replace worn sensor or worn tone		sor installation bolts tightened	Go to step 9.	wheel speed sensor installation bolts securely.	
	Measure the tone wheel to ABS wheel speed sensor piece gap over entire perimeter of	Front wheel: 0.3 — 0.8 mm (0.012 — 0.031 in) Rear wheel: 0.7 — 1.2 mm (0.028 — 0.047 in)	Go to step 10.	NOTE: Adjust the gap using spacer (Part No. 26755AA000). If the spacers cannot correct gap, replace worn sensor or worn tone	
O PREPARE OSCILLOSCOPE. Is an oscilloscope available? Go to step 11. Go to step 12.	10 PREPARE OSCILLOSCOPE.	Is an oscilloscope available?	Go to step 11.	Go to step 12.	

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	Step	Check	Yes	REO NO STI
11	CHECK ABS WHEEL SPEED SENSOR SIGNAL. 1) Raise all four wheels off ground. 2) Turn the ignition switch to OFF. 3) Connect the oscilloscope to the connector. 4) Turn the ignition switch to ON. 5) Rotate the wheels and measure voltage at specified frequency. <ref. abs-15,="" control="" i="" module="" o="" signal.="" to="" wave-form,=""> NOTE: When this inspection is completed, the ABSCM&H/U sometimes stores DTC 29 or DTC 56. Connector & terminal DTC 22 (B15) No. 1 (+) — No. 2 (-): DTC 24 (B62) No. 20 (+) — No. 24 (-): DTC 26 (B99) No. 10 (+) — No. 9 (-): DTC 28 (B99) No. 5 (+) — No. 4 (-):</ref.>	Is an oscilloscope pattern smooth, as shown in the figure?	Go to step 15.	Go to step 12.
12	CHECK CONTAMINATION OF ABS WHEEL SPEED SENSOR OR TONE WHEEL. Remove the disc rotor or drum from hub in accordance with DTC.	Is the ABS wheel speed sensor piece or tone wheel contaminated by dirt or other foreign matter?	Thoroughly remove dirt or other foreign matter.	Go to step 13.
13	CHECK DAMAGE OF ABS WHEEL SPEED SENSOR OR TONE WHEEL.	Are there broken or damaged in the ABS wheel speed sensor piece or tone wheel?	Go to step 14.	Replace the ABS wheel speed sensor or tone wheel. Front: <ref. abs="" abs-12,="" front="" sensor.="" speed="" to="" wheel=""> Rear: <ref. abs="" abs-15,="" rear="" sensor.="" speed="" to="" wheel=""> and Front: <ref. abs-18,="" front="" to="" tone="" wheel.=""> Rear: <ref. abs-19,="" rear="" to="" tone="" wheel.=""></ref.></ref.></ref.></ref.>
14	CHECK TONE WHEEL RUNOUT. Measure the tone wheel runout.	Is the runout less than 0.05 mm (0.0020 in)?	Go to step 15.	Replace the tone wheel. Front: <ref. abs-18,="" front="" to="" tone="" wheel.=""> Rear: <ref. abs-19,="" rear="" to="" tone="" wheel.=""></ref.></ref.>

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Step	Chec		No Star
15 CHECK RESISTANCE OF ABS WI SPEED SENSOR.	value?		Replace the ABS wheel speed sen-
1)Turn the ignition switch to OFF.2)Disconnect the connector from AE speed sensor.			sor. Front: <ref. abs="" abs-12,="" front="" speed<="" td="" to="" wheel=""></ref.>
3)Measure the resistance between a speed sensor connector terminals wing the harness lightly. Terminals			Sensor.> Rear: <ref. abs="" abs-15,="" rear="" sensor.="" speed="" to="" wheel=""></ref.>
Front RH No. 1 — No. 2: Front LH No. 1 — No. 2: Rear RH No. 1 — No. 2: Rear LH No. 1 — No. 2:			
16 CHECK GROUND SHORT OF ABS SPEED SENSOR. Measure the resistance between AB speed sensor and chassis ground. Terminals Front RH No. 1 — Chassis ground Front LH No. 1 — Chassis ground Rear RH No. 1 — Chassis ground	MΩ? BS wheel aund: und: und: und:		Replace the ABS wheel speed sen- sor. Front: <ref. abs="" abs-12,="" front="" sensor.="" speed="" to="" wheel=""> Rear: <ref. abs="" abs-15,="" rear="" sensor.="" speed="" to="" wheel=""></ref.></ref.>
17 CHECK HARNESS/CONNECTOR I ABSCM&H/U AND ABS WHEEL S SENSOR. 1)Connect the connector to ABS wh sensor.	value? Front: 1 — 1.5 ks Rear: 1.025 — 1.	2	Repair the har- ness/connector between ABSCM&H/U and ABS wheel speed
2)Disconnect the connector from AE H/U. 3)Measure the resistance at ABSCN connector terminals. Connector & terminal DTC 22 (B301) No. 11 — No. 12: DTC 24 (B301) No. 9 — No. 10: DTC 26 (B301) No. 14 — No. 15: DTC 28 (B301) No. 7 — No. 8:	M&H/U		sensor.
18 CHECK GROUND SHORT OF HAI Measure the resistance between AB connector and chassis ground. Connector & terminal DTC 22 (B301) No. 11 — Chassis ground DTC 24 (B301) No. 9 — Chassis ground DTC 26 (B301) No. 14 — Chassis ground DTC 28 (B301) No. 7 — Chassis ground	nd: nd:	more than 1 Go to step 19.	Repair the har- ness/connector between ABSCM&H/U and ABS wheel speed sensor.
19 CHECK GROUND CIRCUIT OF AB Measure the resistance between AB and chassis ground. Connector & terminal (B301) No. 23 — Chassis ground	SCM&H/U. Is the resistance Ω?	less than 0.5 Go to step 20.	Repair the ABSCM&H/U ground harness.
20 CHECK POOR CONTACT IN CONI		ABSCM&H/U nector.	Go to step 21.

	Step	Check	Yes	No St
21	CHECK SOURCES OF SIGNAL NOISE.	Is the car telephone or the wireless transmitter properly installed?	Go to step 22.	Properly install the car telephone or wireless transmitter.
22	CHECK SOURCES OF SIGNAL NOISE.	Are noise sources (such as an antenna) installed near the sensor harness?	Install the noise sources apart from sensor harness.	Go to step 23.
23	CHECK SHIELD CIRCUIT. 1) Connect all connectors. 2) Measure the resistance between shield connector and chassis ground. Connector & terminal DTC 22 (B303) No. 2 — Chassis ground: DTC 24 (B303) No. 1 — Chassis ground: NOTE: If the DTC is 26, 28: Go to YES.	Is the resistance less than 0.5 Ω ?	Go to step 24.	Repair the shield harness.
24	CHECK ABSCM&H/U. 1)Connect all connectors. 2)Erase the memory. 3)Perform the inspection mode. 4)Read out the DTC.	Is the same DTC as in the current diagnosis still being output?	Replace the ABSCM&H/U. <ref. abs-6,<br="" to="">ABS Control Mod- ule and Hydraulic Control Unit (ABSCM&H/U).></ref.>	Go to step 25.
25	CHECK ANY OTHER DTC APPEARANCE.	Are other DTCs being output?	Proceed with the diagnosis corresponding to DTC.	A temporary noise interference. NOTE: Although the ABS warning light remains illuminating at this point, this is a normal condition. Vehicle must be driven at approx. 12 km/h (7.46 MPH) or faster to turn off ABS warning light. Make sure that the ABS warning light goes off after driving vehicle.

ABS (DIAGNOSTICS)

K: DTC 29

S_{tudios} — ABNORMAL ABS WHEEL SPEED SENSOR SIGNAL ON ANY ONE OF FOUR SENSOR —

DIAGNOSIS:

- Faulty ABS wheel speed sensor signal (noise, irregular signal, etc.)
- Faulty tone wheel
- Wheels turning freely for a long time

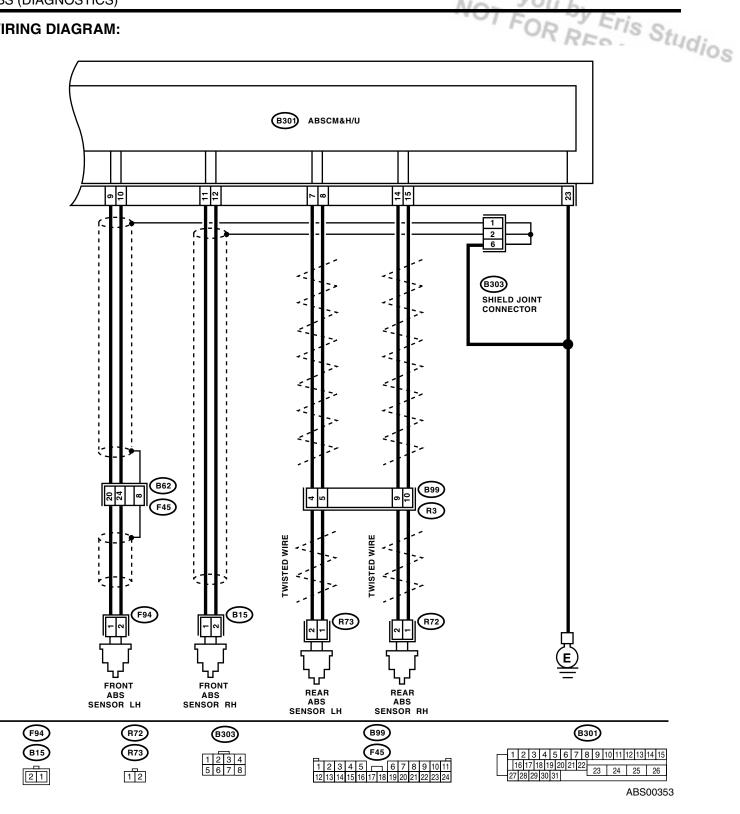
TROUBLE SYMPTOM:

- ABS does not operate.
- EBD does not operate.

NOTE:

In addition to the ABS warning light, brake warning light illuminates.

WIRING DIAGRAM:



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	Step	Check	Yes	No Stu	di.
1	CHECK IF THE WHEELS HAVE TURNED FREELY FOR A LONG TIME.	Is the wheels have been turned freely for more than one minute, such as when vehicle is jacked-up, under full-lock cornering or the tires not in contact with road surface?	Go to step 2.	The ABS is normal. Erase the DTC. NOTE: When the wheels turn freely for a long time, such as when vehicle is towed or jackedup, or when steering wheel is continuously turned all way, this DTC may sometimes occur.	4105
2	CHECK TIRE SPECIFICATIONS. Turn the ignition switch to OFF.	Are the tire specifications correct?	Go to step 3.	Replace the tire.	
3	CHECK WEAR OF TIRE.	Is the tire worn excessively?	Replace the tire.	Go to step 4.	
4	CHECK TIRE PRESSURE.	Is the tire pressure correct?	Go to step 5.	Adjust the tire pressure.	
5	CHECK INSTALLATION OF ABS WHEEL SPEED SENSOR.	sor installation bolts tightened 33 N·m (3.3 kgf-m, 24 ft-lb)?	Go to step 6.	Tighten the ABS wheel speed sensor installation bolts securely.	
6	CHECK ABS WHEEL SPEED SENSOR GAP. Measure the tone wheel to ABS wheel speed sensor piece gap over entire perimeter of the wheel.	Is the gap as following value? Front wheel: 0.3 — 0.8 mm (0.012 — 0.031 in) Rear wheel: 0.7 — 1.2 mm (0.028 — 0.047 in)	Go to step 7.	Adjust the gap. NOTE: Adjust the gap using spacer (Part No. 26755AA000). If the spacers cannot correct gap, replace worn sensor or worn tone wheel.	
7	PREPARE OSCILLOSCOPE.	Is an oscilloscope available?	Go to step 8.	Go to step 9.	
8	CHECK ABS WHEEL SPEED SENSOR SIGNAL. 1) Raise all four wheels off ground. 2) Turn the ignition switch to OFF. 3) Connect the oscilloscope to the connector. 4) Turn the ignition switch to ON. 5) Rotate the wheels and measure voltage at specified frequency. <ref. abs-15,="" control="" i="" module="" o="" signal.="" to="" wave-form,=""></ref.>	Is an oscilloscope pattern smooth, as shown in the fig- ure?	Go to step 12.	Go to step 9.	
	NOTE: When this inspection is completed, ABSCM& H/U sometimes stores the DTC 29. Connector & terminal Front RH (B15) No. 1 (+) — No. 2 (-): Front LH (B62) No. 20 (+) — No. 24 (-): Rear RH (B99) No. 10 (+) — No. 9 (-): Rear LH (B99) No. 5 (+) — No. 4 (-):				
9	CHECK CONTAMINATION OF ABS WHEEL SPEED SENSOR OR TONE WHEEL. Remove the disc rotor or drum from hub.	Is the ABS wheel speed sen- sor piece or tone wheel con- taminated by dirt or other foreign matter?	Thoroughly remove dirt or other foreign matter.	Go to step 10.	

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	Step	Check	Yes	No St
10	CHECK TONE WHEEL PLINOUT	Are there broken or damaged teeth in the ABS wheel speed sensor piece or tone wheel?	Replace the ABS wheel speed sensor or tone wheel. Front: <ref. abs="" abs-12,="" front="" sensor.="" speed="" to="" wheel=""> Rear: <ref. abs="" abs-15,="" rear="" sensor.="" speed="" to="" wheel=""> and Front: <ref. abs-18,="" front="" to="" tone="" wheel.=""> Rear: <ref. abs-19,="" rear="" to="" tone="" wheel.=""></ref.></ref.></ref.></ref.>	Go to step 11.
11	CHECK TONE WHEEL RUNOUT. Measure the tone wheel runout.	Is the runout less than 0.05 mm (0.0020 in)?	Go to step 12.	Replace the tone wheel. Front: <ref. abs-18,<br="" to="">Front Tone Wheel.> Rear: <ref. abs-19,<br="" to="">Rear Tone Wheel.></ref.></ref.>
12	CHECK ABSCM&H/U. 1)Turn the ignition switch to OFF. 2)Connect all connectors. 3)Erase the memory. 4)Perform the inspection mode. 5)Read out the DTC.	Is the same DTC as in the cur- rent diagnosis still being out- put?	Replace the ABSCM&H/U. <ref. (abscm&h="" abs="" abs-6,="" and="" control="" hydraulic="" module="" to="" u).="" unit=""></ref.>	Go to step 13.
13	CHECK ANY OTHER DTC APPEARANCE.	Are other DTCs being output?	Proceed with the diagnosis corresponding to DTC.	A temporary poor contact.

ABS (DIAGNOSTICS)

L: DTC 31

— FRONT RIGHT INLET VALVE MALFUNCTION —

NOTE:

For the diagnostic procedure, refer to DTC 37. <Ref. to ABS-102, DTC 37 — REAR LEFT INLET VALVE MALFUNCTION —, Diagnostics Procedure with Subaru Select Monitor.>

M: DTC 33

— FRONT LEFT INLET VALVE MALFUNCTION —

NOTE:

For the diagnostic procedure, refer to DTC 37. <Ref. to ABS-102, DTC 37 — REAR LEFT INLET VALVE MALFUNCTION —, Diagnostics Procedure with Subaru Select Monitor.>

N: DTC 35

— REAR RIGHT INLET VALVE MALFUNCTION —

NOTE:

For the diagnostic procedure, refer to DTC 37. <Ref. to ABS-102, DTC 37 — REAR LEFT INLET VALVE MALFUNCTION —, Diagnostics Procedure with Subaru Select Monitor.>

OT FOR RESALE DIAGNOSTICS PROCEDURE WITH SUBARU SELECT MONITOR

ABS (DIAGNOSTICS)

O: DTC 37

— REAR LEFT INLET VALVE MALFUNCTION —

DIAGNOSIS:

- Faulty harness/connector
- Faulty inlet solenoid valve

TROUBLE SYMPTOM:

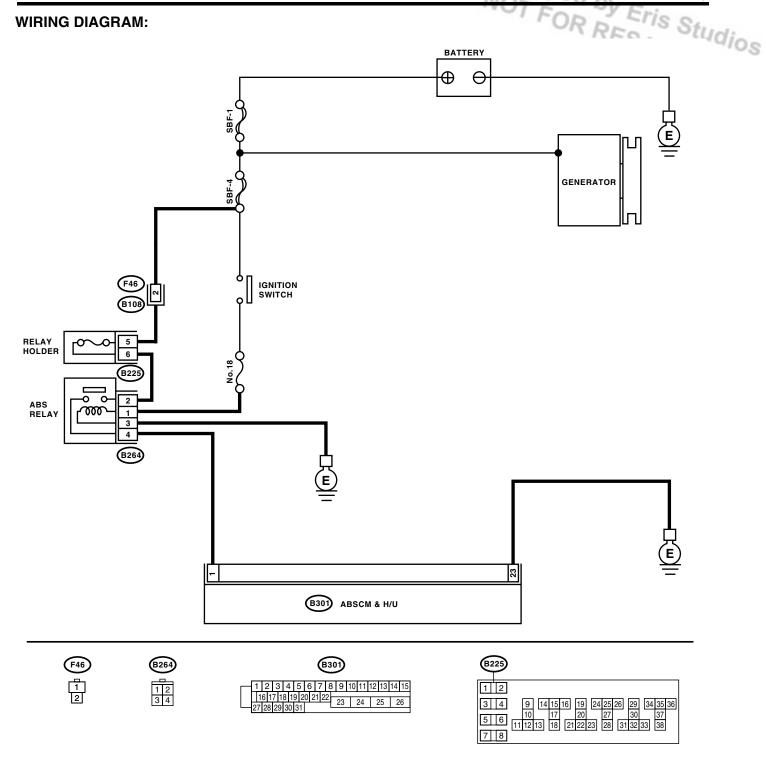
- ABS does not operate.
- EBD does not operate.

NOTE:

In addition to the ABS warning light, brake warning light illuminates.

ABS (DIAGNOSTICS)

WIRING DIAGRAM:



ABS00322

ABS (DIAGNOSTICS)

	Step	Check	Yes	No S	lal.
1	CHECK INPUT VOLTAGE OF ABSCM&H/U. 1)Turn the ignition switch to OFF. 2)Disconnect the connector from ABSCM&H/U. 3)Run the engine at idle. 4)Measure the voltage between ABSCM&H/U connector and chassis ground. Connector & terminal (B301) No. 1 (+) — Chassis ground (-):	Is the voltage 10 — 15 V?	Go to step 2.	Repair the har- ness connector between battery, ignition switch and ABSCM&H/U.	^{IQ} iOS
2	CHECK GROUND CIRCUIT OF ABSCM&H/U. 1)Turn the ignition switch to OFF. 2)Measure the resistance between ABSCM&H/U connector and chassis ground. Connector & terminal (B301) No. 23 — Chassis ground:	Is the resistance less than 0.5 Ω ?	Go to step 3.	Repair the ABSCM&H/U ground harness.	
3	CHECK POOR CONTACT IN CONNECTORS.	Is there poor contact in con- nectors between generator, battery and ABSCM&H/U?	Repair the connector.	Go to step 4.	
4	CHECK ABSCM&H/U. 1)Connect all connectors. 2)Erase the memory. 3)Perform the inspection mode. 4)Read out the DTC.	Is the same DTC as in the current diagnosis still being output?	Replace the ABSCM&H/U. <ref. abs-6,<br="" to="">ABS Control Mod- ule and Hydraulic Control Unit (ABSCM&H/U).></ref.>	Go to step 5.	
5	CHECK ANY OTHER DTC APPEARANCE.	Are other DTCs being output?	Proceed with the diagnosis corresponding to DTC.	A temporary poor contact.	

P: DTC 32

— FRONT RIGHT OUTLET VALVE MALFUNCTION —

NOTE:

For the diagnostic procedure, refer to DTC 38. <Ref. to ABS-105, DTC 38 — REAR LEFT OUTLET VALVE MALFUNCTION —, Diagnostics Procedure with Subaru Select Monitor.>

Q: DTC 34

— FRONT LEFT OUTLET VALVE MALFUNCTION —

NOTE:

For the diagnostic procedure, refer to DTC 38. <Ref. to ABS-105, DTC 38 — REAR LEFT OUTLET VALVE MALFUNCTION —, Diagnostics Procedure with Subaru Select Monitor.>

R: DTC 36

— REAR RIGHT OUTLET VALVE MALFUNCTION —

NOTE:

For the diagnostic procedure, refer to DTC 38. <Ref. to ABS-105, DTC 38 — REAR LEFT OUTLET VALVE MALFUNCTION —, Diagnostics Procedure with Subaru Select Monitor.>

S: DTC 38

— REAR LEFT OUTLET VALVE MALFUNCTION —

DIAGNOSIS:

- Faulty harness/connector
- Faulty outlet solenoid valve

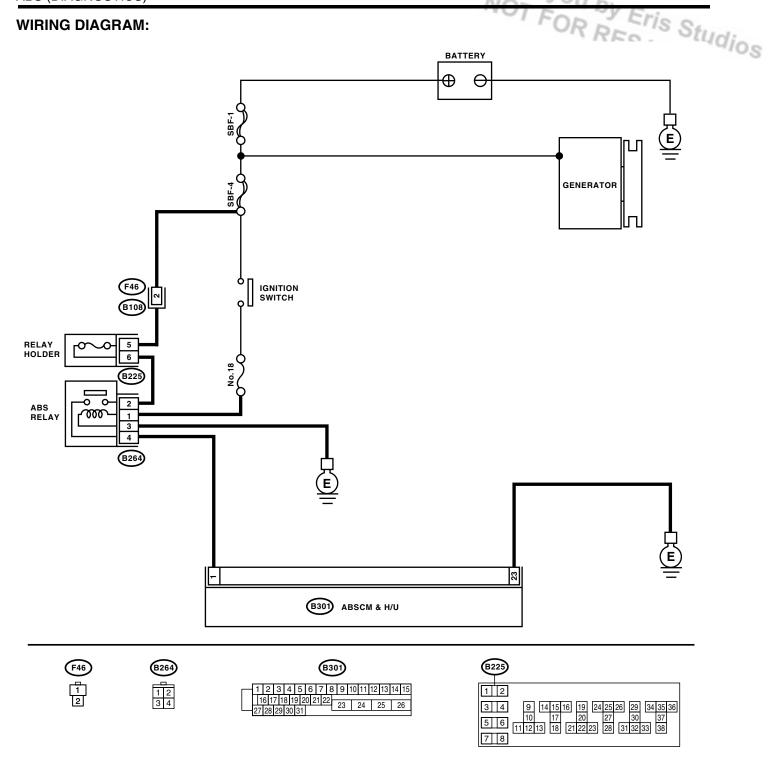
TROUBLE SYMPTOM:

- ABS does not operate.
- EBD does not operate.

NOTE:

In addition to the ABS warning light, brake warning light illuminates.

WIRING DIAGRAM:



ABS00322

10/ 50				J Fri
	Step	Check	Yes	No St
1	CHECK INPUT VOLTAGE OF ABSCM&H/U. 1)Turn the ignition switch to OFF. 2)Disconnect the connector from ABSCM&H/U. 3)Run the engine at idle. 4)Measure the voltage between ABSCM&H/U connector and chassis ground. Connector & terminal (B301) No. 1 (+) — Chassis ground (-):	Is the voltage 10 — 15 V?	Go to step 2.	Repair the har- ness connector between battery, ignition switch and ABSCM&H/U.
2	CHECK GROUND CIRCUIT OF ABSCM&H/U. 1)Turn the ignition switch to OFF. 2)Measure the resistance between ABSCM&H/U connector and chassis ground. Connector & terminal (B301) No. 23 — Chassis ground:	Is the resistance less than 0.5 Ω ?	Go to step 3.	Repair the ABSCM&H/U ground harness.
3	CHECK POOR CONTACT IN CONNECTORS.	Is there poor contact in con- nectors between generator, battery and ABSCM&H/U?	Repair the connector.	Go to step 4.
4	CHECK ABSCM&H/U. 1)Connect all connectors. 2)Erase the memory. 3)Perform the inspection mode. 4)Read out the DTC.	Is the same DTC as in the cur- rent diagnosis still being out- put?	Replace the ABSCM&H/U. <ref. abs-6,<br="" to="">ABS Control Mod- ule and Hydraulic Control Unit (ABSCM&H/U).></ref.>	Go to step 5.
5	CHECK ANY OTHER DTC APPEARANCE.	Are other DTCs being output?	Proceed with the diagnosis corresponding to DTC.	A temporary poor contact.

ABS (DIAGNOSTICS)

T: DTC 41

— ABS CONTROL MODULE MALFUNCTION —

DIAGNOSIS:

• Faulty ABSCM&H/U

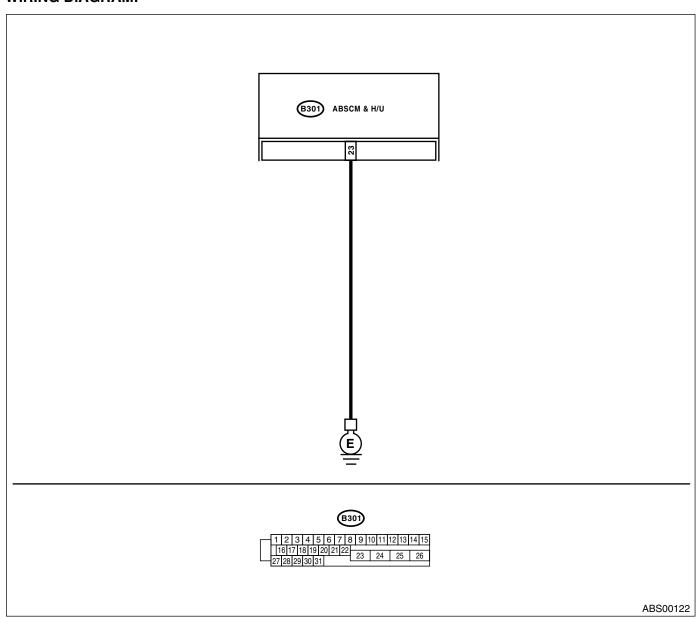
TROUBLE SYMPTOM:

- ABS does not operate.
- EBD does not operate.

NOTE:

In addition to the ABS warning light, brake warning light illuminates.

WIRING DIAGRAM:



			For	y Fri
	Step	Check	Yes	No St
1	CHECK GROUND CIRCUIT OF ABSCM&H/U. 1)Turn the ignition switch to OFF. 2)Disconnect the connector from ABSCM&H/U. 3)Measure the resistance between ABSCM&H/U and chassis ground. Connector & terminal (B301) No. 23 — Chassis ground:	Is the resistance less than 0.5 Ω ?	Go to step 2.	Repair the ABSCM&H/U ground harness.
2	CHECK POOR CONTACT IN CONNECTORS.	Is there poor contact in con- nectors between battery, igni- tion switch and ABSCM&H/U?	Repair the connector.	Go to step 3.
3	CHECK SOURCES OF SIGNAL NOISE.	Is the car telephone or wireless transmitter properly installed?	Go to step 4.	Properly install the car telephone or wireless transmitter.
4	CHECK SOURCES OF SIGNAL NOISE.	Are noise sources (such as an antenna) installed near the sensor harness?	Install the noise sources apart from sensor harness.	Go to step 5.
5	CHECK ABSCM&H/U. 1)Turn the ignition switch to OFF. 2)Connect all connectors. 3)Erase the memory. 4)Perform the inspection mode. 5)Read out the DTC.	Is the same DTC as in current diagnosis still being output?	Replace the ABSCM&H/U. <ref. abs-6,<br="" to="">ABS Control Mod- ule and Hydraulic Control Unit (ABSCM&H/U).></ref.>	Go to step 6.
6	CHECK ANY OTHER DTC APPEARANCE.	Are other DTCs being output?	Proceed with the diagnosis corresponding to DTC.	A temporary poor contact.

ABS (DIAGNOSTICS)

U: DTC 42

— POWER SUPPLY VOLTAGE TOO LOW —

DIAGNOSIS:

• Power source voltage of the ABSCM&H/U is low.

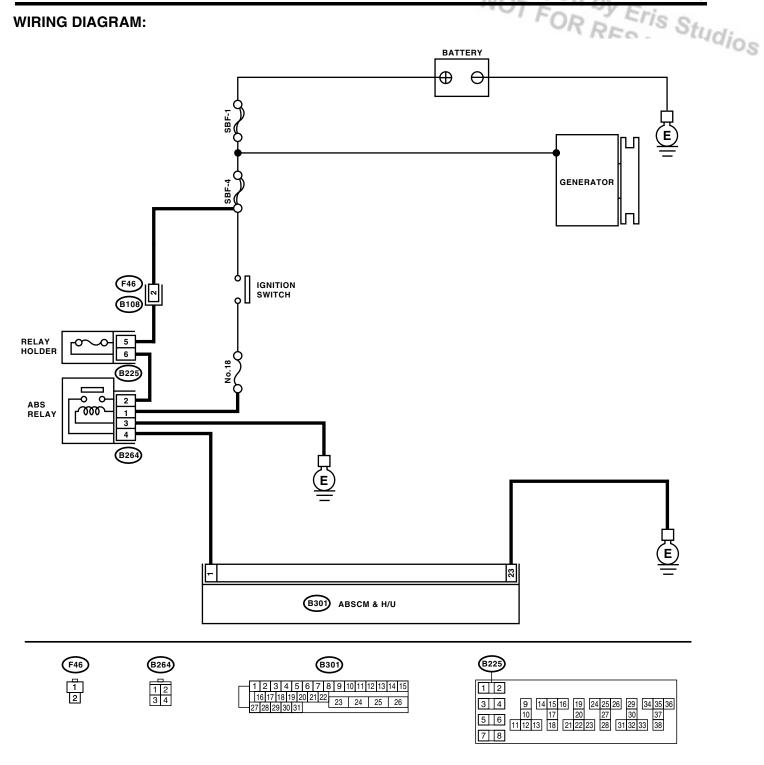
TROUBLE SYMPTOM:

- ABS does not operate.
- EBD does not operate.

NOTE:

In addition to the ABS warning light, brake warning light illuminates temporarily. Both warning lights go off on the recovery of voltage.

WIRING DIAGRAM:



ABS00322

	Step	Check	Yes	No St
1	CHECK GENERATOR. 1)Start the engine. 2)Idle after warm-up. 3)Measure the voltage between generator B terminal and chassis ground. Terminals Generator B terminal (+) — Chassis ground (-):	Is the voltage 10 — 17 V?	Go to step 2.	Repair the genera- tor. <ref. to<br="">SC(H4SO)-14, Generator.></ref.>
2	CHECK BATTERY TERMINAL. Turn the ignition switch to OFF.	Are the positive and negative battery terminals tightly clamped?	Go to step 3.	Tighten the clamp of terminal.
3	CHECK INPUT VOLTAGE OF ABSCM&H/U. 1)Disconnect the connector from ABSCM&H/U. 2)Run the engine at idle. 3)Operate the electric load applying devices, such as the headlight, A/C, and defogger. 4)Measure the voltage between ABSCM&H/U connector and chassis ground. Connector & terminal (B301) No. 1 (+) — Chassis ground (-):	Is the voltage 10 — 17 V?	Go to step 4.	Repair the har- ness connector between battery, ignition switch and ABSCM&H/U.
4	CHECK GROUND CIRCUIT OF ABSCM&H/U. 1)Turn the ignition switch to OFF. 2)Measure the resistance between ABSCM&H/U connector and chassis ground. Connector & terminal (B301) No. 23 — Chassis ground:	Is the resistance less than 0.5 Ω ?	Go to step 5.	Repair the ABSCM&H/U ground harness.
5	CHECK POOR CONTACT IN CONNECTORS.	Is there poor contact in con- nectors between generator, battery and ABSCM&H/U?	Repair the connector.	Go to step 6.
6	CHECK ABSCM&H/U. 1)Connect all connectors. 2)Erase the memory. 3)Perform the inspection mode. 4)Read out the DTC.	Is the same DTC as in the cur- rent diagnosis still being out- put?	Replace the ABSCM&H/U. <ref. abs-6,<br="" to="">ABS Control Mod- ule and Hydraulic Control Unit (ABSCM&H/U).></ref.>	Go to step 7.
7	CHECK ANY OTHER DTC APPEARANCE.	Are other DTCs being output?	Proceed with the diagnosis corresponding to DTC.	A temporary poor contact.

V: DTC 42

— POWER SUPPLY VOLTAGE TOO HIGH —

DIAGNOSIS:

• Power source voltage of the ABSCM&H/U is high.

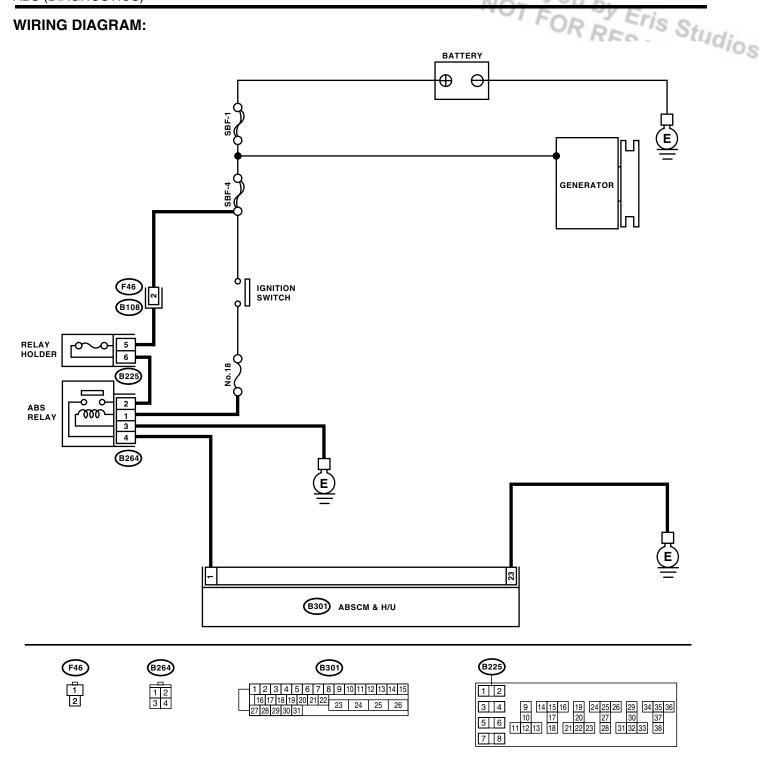
TROUBLE SYMPTOM:

- ABS does not operate.
- EBD does not operate.

NOTE:

In addition to the ABS warning light, brake warning light illuminates temporarily. Both warning lights go off on the recovery of voltage.

WIRING DIAGRAM:



ABS00322

	Step	Check	Yes	No St
1	CHECK GENERATOR. 1)Start the engine. 2)Idle after warm-up. 3)Measure the voltage between generator B terminal and chassis ground. Terminals Generator B terminal (+) — Chassis ground (-):	Is the voltage 10 — 17 V?	Go to step 2.	Repair the genera- tor. <ref. to<br="">SC(H4SO)-14, Generator.></ref.>
2	CHECK BATTERY TERMINAL. Turn the ignition switch to OFF.	Are the positive and negative battery terminals tightly clamped?	Go to step 3.	Tighten the clamp of terminal.
3	CHECK INPUT VOLTAGE OF ABSCM&H/U. 1)Disconnect the connector from ABSCM&H/U. 2)Run the engine at idle. 3)Operate the electric load applying devices, such as the headlight, A/C, and defogger. 4)Measure the voltage between ABSCM&H/U connector and chassis ground. Connector & terminal (B301) No. 1 (+) — Chassis ground (-):	Is the voltage 10 and 17 V?	Go to step 4.	Repair the har- ness connector between battery, ignition switch and ABSCM&H/U.
4	CHECK GROUND CIRCUIT OF ABSCM&H/U. 1)Turn the ignition switch to OFF. 2)Measure the resistance between ABSCM&H/U connector and chassis ground. Connector & terminal (B301) No. 23 — Chassis ground:	Is the resistance less than 0.5 Ω ?	Go to step 5.	Repair the ABSCM&H/U ground harness.
5	CHECK POOR CONTACT IN CONNECTORS.	Is there poor contact in con- nectors between generator, battery and ABSCM&H/U?	Repair the connector.	Go to step 6.
6	CHECK ABSCM&H/U. 1)Connect all connectors. 2)Erase the memory. 3)Perform the inspection mode. 4)Read out the DTC.	Is the same DTC as in the cur- rent diagnosis still being out- put?	Replace the ABSCM&H/U. <ref. abs-6,<br="" to="">ABS Control Mod- ule and Hydraulic Control Unit (ABSCM&H/U).></ref.>	Go to step 7.
7	CHECK ANY OTHER DTC APPEARANCE.	Are other DTCs being output?	Proceed with the diagnosis corresponding to DTC.	A temporary poor contact.

W: DTC 44

— ABS-AT CONTROL (NON CONTROLLED) —

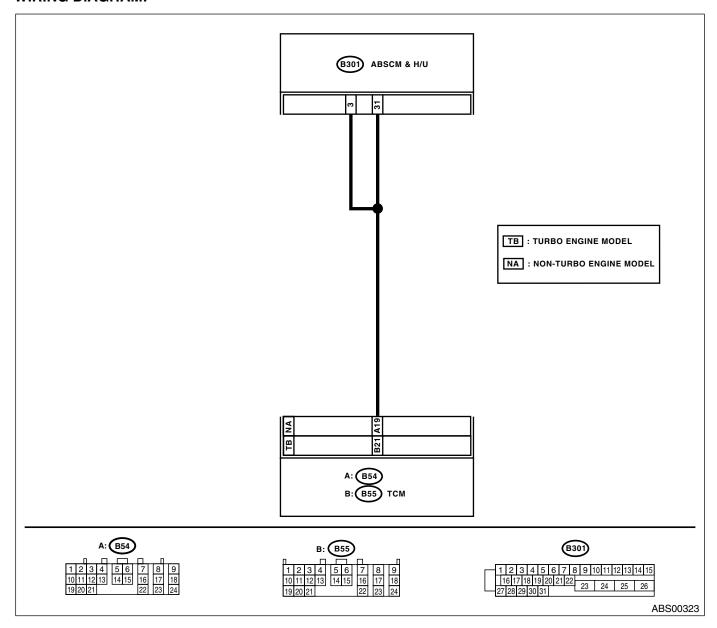
DIAGNOSIS:

· Combination of AT control faults

TROUBLE SYMPTOM:

• ABS does not operate.

WIRING DIAGRAM:



Step	Check	Yes	No
1 CHECK SPECIFICATIONS OF THE AB- SCM&H/U. Check specifications of mark on ABSCM&H/U. CU: AT CV: MT (Except STi model) CY: MT (STi model)	and ABSCM&H/U specifica-	,	Replace the ABSCM&H/U. <ref. abs-6,<br="" to="">ABS Control Mod- ule and Hydraulic Control Unit (ABSCM&H/U).></ref.>

	Step	Check	Yes	No S
2	CHECK GROUND SHORT OF HARNESS. 1)Turn the ignition switch to OFF. 2)Disconnect the two connectors from TCM. 3)Disconnect the connector from ABSCM& H/U. 4)Measure the resistance between ABSCM&H/U connector and chassis ground. Connector & terminal (B301) No. 3 — Chassis ground:	Is the resistance more than 1 $\mbox{M}\Omega\mbox{?}$	Go to step 3.	Repair the harness between TCM and ABSCM&H/U.
3	CHECK TCM. 1) Connect all connectors to TCM. 2) Turn the ignition switch to ON. 3) Measure the voltage between TCM connector terminal and chassis ground. Connector & terminal Non-turbo model (B54) No. 19 (+) — Chassis ground (-): Turbo model (B55) No. 21 (+) — Chassis ground (-):	Is the voltage 10 — 15 V?	Go to step 5.	Go to step 4.
4	CHECK AT.	Is the AT functioning normally?	Replace the TCM.	Repair the AT.
5	CHECK OPEN CIRCUIT OF HARNESS. Measure the voltage between ABSCM&H/U connector and chassis ground. Connector & terminal (B301) No. 3 (+) — Chassis ground (-): (B301) No. 31 (+) — Chassis ground (-):	Is the voltage 10 — 15 V?	Go to step 6.	Repair the har- ness/connector between TCM and ABSCM&H/U.
6	CHECK POOR CONTACT IN CONNECTORS.	Is there poor contact in con- nectors between TCM and ABSCM&H/U?	Repair the connector.	Go to step 7.
7	CHECK ABSCM&H/U. 1)Connect all connectors. 2)Erase the memory. 3)Perform the inspection mode. 4)Read out the DTC.	Is the same DTC as in the cur- rent diagnosis still being out- put?	Replace the ABSCM&H/U. <ref. abs-6,<br="" to="">ABS Control Mod- ule and Hydraulic Control Unit (ABSCM&H/U).></ref.>	Go to step 8.
8	CHECK ANY OTHER DTC APPEARANCE.	Are other DTCs being output?	Proceed with the diagnosis corresponding to DTC.	A temporary poor contact.

ABS (DIAGNOSTICS)

X: DTC 44

— ABS-AT CONTROL (CONTROLLED) —

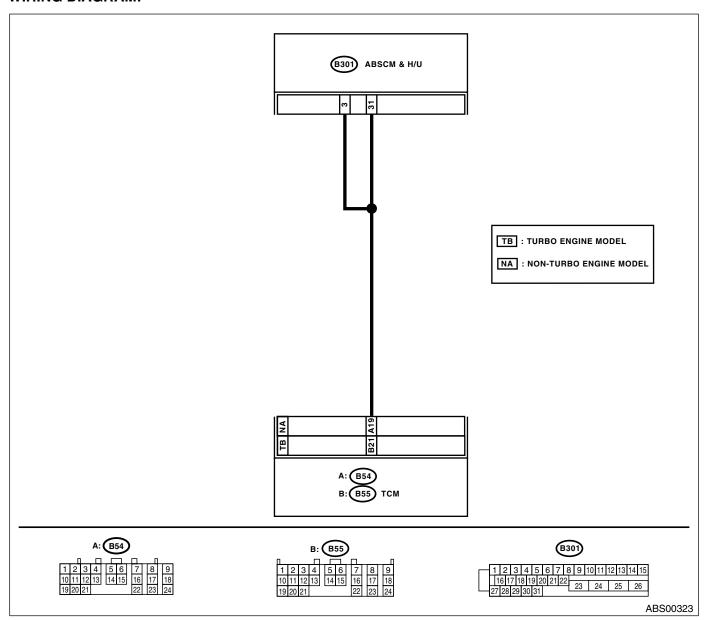
DIAGNOSIS:

· Combination of AT control faults

TROUBLE SYMPTOM:

• ABS does not operate.

WIRING DIAGRAM:



	Step	Check	Yes	No
1	CHECK BATTERY SHORT OF HARNESS. 1) Turn the ignition switch to OFF. 2) Disconnect all connectors from TCM. 3) Disconnect the connector from ABSCM& H/U. 4) Measure the voltage between ABSCM&H/U connector and chassis ground. Connector & terminal (B301) No. 3 (+) — Chassis ground (-):	Is the voltage less than 1 V?	Go to step 2.	Repair the har- ness between TCM and ABSCM&H/U.
2	CHECK BATTERY SHORT OF HARNESS. 1)Turn the ignition switch to ON. 2)Measure the voltage between ABSCM&H/U connector and chassis ground. Connector & terminal (B301) No. 3 (+) — Chassis ground (-):	Is the voltage less than 1 V?	Go to step 3.	Repair the har- ness between TCM and ABSCM&H/U.
3	CHECK OPEN CIRCUIT OF HARNESS. 1)Turn the ignition switch to OFF. 2)Connect all connectors to TCM. 3)Turn the ignition switch to ON. 4)Measure the voltage between ABSCM&H/U connector and chassis ground. Connector & terminal (B301) No. 3 (+) — Chassis ground (-): (B301) No. 31 (+) — Chassis ground (-):	Is the voltage 10 — 15 V?	Go to step 4.	Repair the har- ness/connector between TCM and ABSCM&H/U.
4	CHECK POOR CONTACT IN CONNECTORS. Turn the ignition switch to OFF.	Is there poor contact in con- nectors between TCM and ABSCM&H/U?	Repair the con- nector.	Go to step 5.
5	CHECK ABSCM&H/U. 1)Connect all connectors. 2)Erase the memory. 3)Perform the inspection mode. 4)Read out the DTC.	Is the same DTC as in current diagnosis still being output?	Replace the ABSCM&H/U. <ref. abs-6,<br="" to="">ABS Control Mod- ule and Hydraulic Control Unit (ABSCM&H/U).></ref.>	Go to step 6.
6	CHECK ANY OTHER DTC APPEARANCE.	Are other DTCs being output?	Proceed with the diagnosis corresponding to DTC.	A temporary poor contact.

OT FOR RESALE DIAGNOSTICS PROCEDURE WITH SUBARU SELECT MONITOR

ABS (DIAGNOSTICS)

Y: DTC 51

— VALVE RELAY MALFUNCTION —

DIAGNOSIS:

· Faulty valve relay

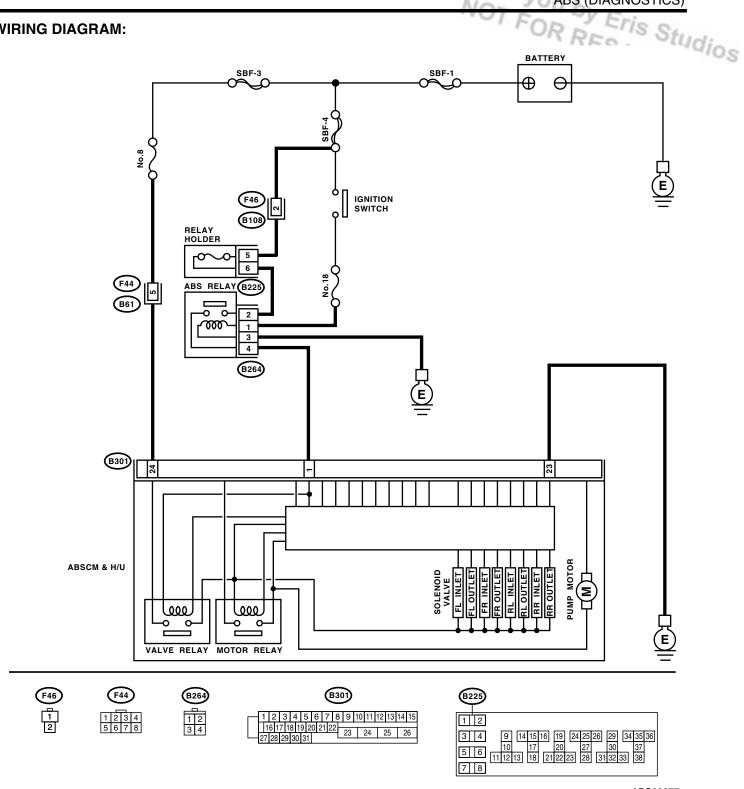
TROUBLE SYMPTOM:

- ABS does not operate.
- EBD does not operate.

NOTE:

In addition to the ABS warning light, brake warning light illuminates.

WIRING DIAGRAM:



-		FOD J EN		
	Step	Check	Yes	No St
1	CHECK INPUT VOLTAGE OF ABSCM&H/U. 1) Turn the ignition switch to OFF. 2) Disconnect the connector from ABSCM&H/U. 3) Run the engine at idle. 4) Measure the voltage between ABSCM&H/U connector and chassis ground. Connector & terminal (B301) No. 1 (+) — Chassis ground (-): (B301) No. 24 (+) — Chassis ground (-):	Is the voltage 10 — 15 V?	Go to step 2.	Repair the harness connector between battery and ABSCM&H/U.
2	CHECK GROUND CIRCUIT OF ABSCM&H/U. 1)Turn the ignition switch to OFF. 2)Measure the resistance between ABSCM&H/U connector and chassis ground. Connector & terminal (B301) No. 23 — Chassis ground:	Is the resistance less than 0.5 Ω ?	Go to step 3.	Repair the ABSCM&H/U ground harness.
3	CHECK POOR CONTACT IN CONNECTORS.	Is there poor contact in con- nectors between generator, battery and ABSCM&H/U?	Repair the connector.	Go to step 4.
4	CHECK ABSCM&H/U. 1)Connect all connectors. 2)Erase the memory. 3)Perform the inspection mode. 4)Read out the DTC.	Is the same DTC as in current diagnosis still being output?	Replace the ABSCM&H/U. <ref. abs-6,<br="" to="">ABS Control Mod- ule and Hydraulic Control Unit (ABSCM&H/U).></ref.>	Go to step 5.
5	CHECK ANY OTHER DTC APPEARANCE.	Are other DTCs being output?	Proceed with the diagnosis corresponding to DTC.	A temporary poor contact.

ABS (DIAGNOSTICS)

Z: DTC 51

- VALVE RELAY ON FAILURE -

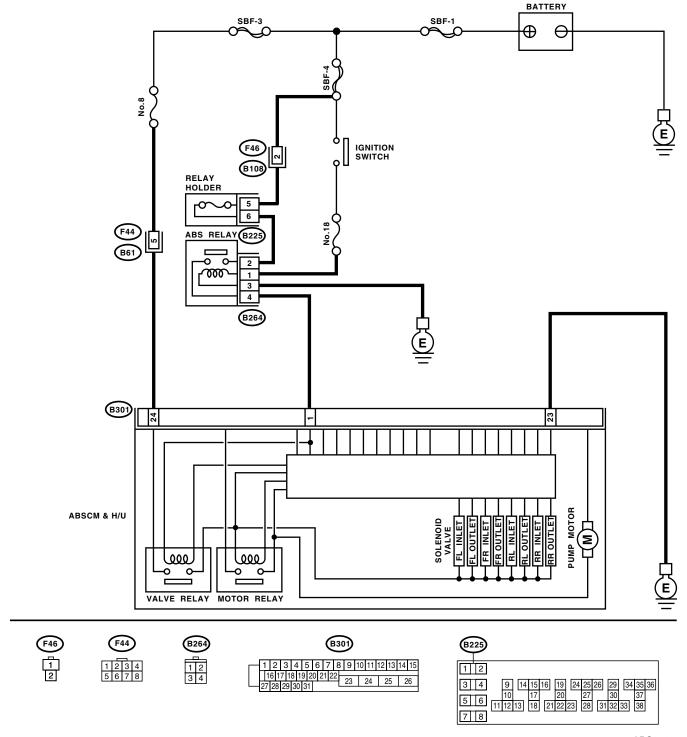
DIAGNOSIS:

Faulty valve relay

TROUBLE SYMPTOM:

ABS does not operate.

WIRING DIAGRAM:



	Step	Check	Yes	No St
1	CHECK VALVE RELAY IN ABSCM&H/U. 1)Disconnect the connector from ABSCM&H/U. 2)Measure the resistance between ABSCM&H/U terminals. Terminals No. 23 — No. 24:	Is the resistance more than 1 $\mbox{M}\Omega\mbox{?}$	Go to step 2.	Replace the ABSCM&H/U. <ref. abs-6,<br="" to="">ABS Control Mod- ule and Hydraulic Control Unit (ABSCM&H/U).></ref.>
2	CHECK POOR CONTACT IN CONNECTORS.	Is there poor contact in con- nectors between generator, battery and ABSCM&H/U?	Repair the con- nector.	Go to step 3.
3	CHECK ABSCM&H/U. 1)Connect all connectors. 2)Erase the memory. 3)Perform the inspection mode. 4)Read out the DTC.	Is the same DTC as in current diagnosis still being output?	Replace the ABSCM&H/U. <ref. abs-6,<br="" to="">ABS Control Mod- ule and Hydraulic Control Unit (ABSCM&H/U).></ref.>	Go to step 4.
4	CHECK ANY OTHER DTC APPEARANCE.	Are other DTCs being output?	Proceed with the diagnosis corresponding to DTC.	A temporary poor contact.

ABS (DIAGNOSTICS)

AA:DTC 52

- OPEN CIRCUIT IN MOTOR RELAY CIRCUIT -

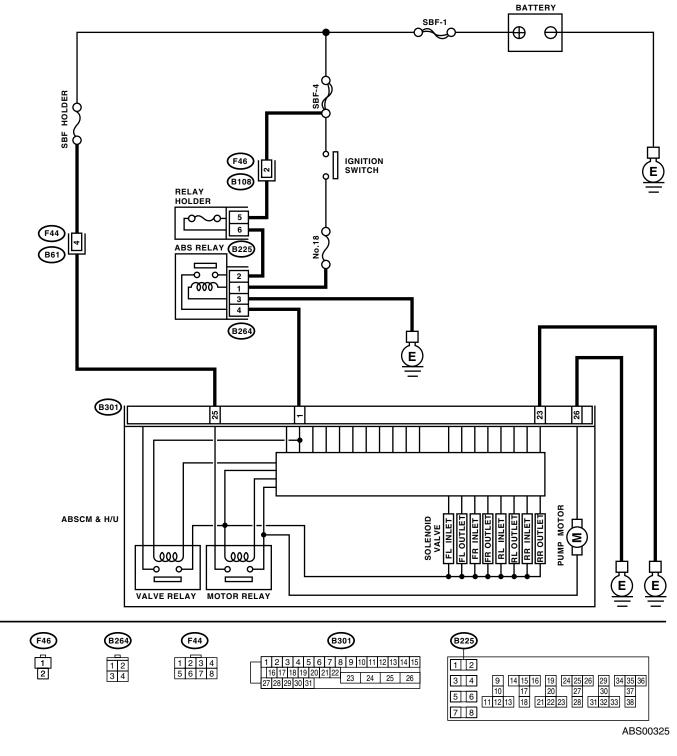
DIAGNOSIS:

- · Faulty motor
- Faulty motor relay
- Faulty harness connector

TROUBLE SYMPTOM:

· ABS does not operate.

WIRING DIAGRAM:



		FOR SER		
	Step	Check	Yes	No St
1	CHECK INPUT VOLTAGE OF ABSCM&H/U. 1)Turn the ignition switch to OFF. 2)Disconnect the connector from ABSCM&H/U. 3)Turn the ignition switch to ON. 4)Measure the voltage between ABSCM&H/U connector and chassis ground. Connector & terminal (B301) No. 25 (+) — Chassis ground (-):	Is the voltage 10 — 15 V?	Go to step 2.	Repair the har- ness/connector between battery and ABSCM&H/U and check fuse SBF8.
2	CHECK GROUND CIRCUIT OF MOTOR. 1)Turn the ignition switch to OFF. 2)Measure the resistance between ABSCM&H/U connector and chassis ground. Connector & terminal (B301) No. 26 — Chassis ground:	Is the resistance less than 0.5 Ω ?	Go to step 3.	Repair the ABSCM&H/U ground harness.
3	CHECK MOTOR OPERATION. Operate the sequence control. <ref. abs="" abs-9,="" control.="" sequence="" to=""> NOTE: Use the diagnosis connector to operate sequence control.</ref.>	Can motor revolution noise (buzz) be heard when carrying out the check sequence?	Go to step 4.	Replace the ABSCM&H/U. <ref. abs-6,<br="" to="">ABS Control Mod- ule and Hydraulic Control Unit (ABSCM&H/U).></ref.>
4	CHECK POOR CONTACT IN CONNECTORS. Turn the ignition switch to OFF.	Is there poor contact in con- nector between generator, bat- tery and ABSCM&H/U?	Repair the con- nector.	Go to step 5.
5	CHECK ABSCM&H/U. 1)Connect all connectors. 2)Erase the memory. 3)Perform the inspection mode. 4)Read out the DTC.	Is the same DTC as in current diagnosis still being output?	Replace the ABSCM&H/U. <ref. (abscm&h="" abs="" abs-6,="" and="" control="" hydraulic="" mod-="" to="" u).="" ule="" unit=""></ref.>	Go to step 6.
6	CHECK ANY OTHER DTC APPEARANCE.	Are other DTCs being output?	Proceed with the diagnosis corresponding to DTC.	A temporary poor contact.

ABS (DIAGNOSTICS)

AB:DTC 52

- MOTOR RELAY ON FAILURE -

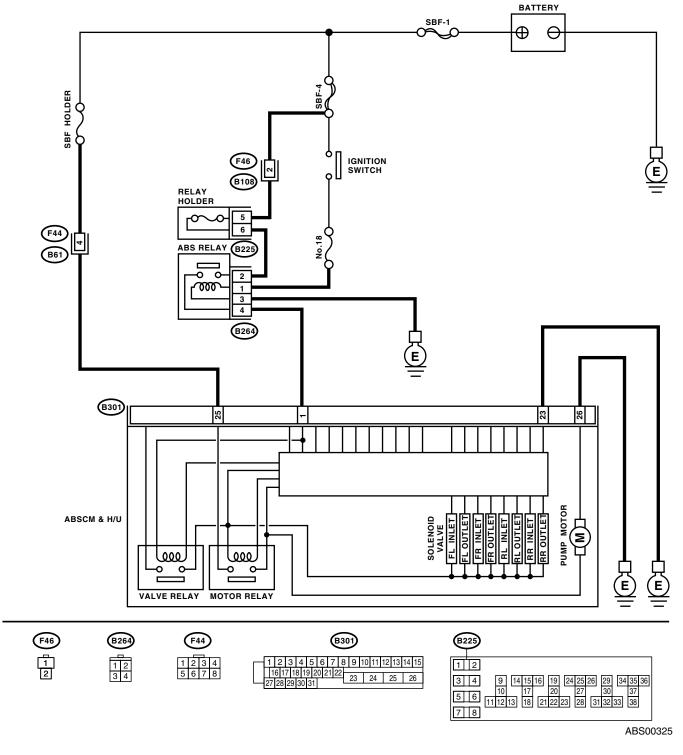
DIAGNOSIS:

- · Faulty motor
- Faulty motor relay
- Faulty harness connector

TROUBLE SYMPTOM:

· ABS does not operate.

WIRING DIAGRAM:



1	Ston	Check	Yes	No
	Step			160 - 41
1	CHECK MOTOR RELAY IN ABSCM&H/U. 1)Disconnect the connector from ABSCM&H/U. 2)Measure the resistance between ABSCM&H/U terminals. Terminals No. 25 — No. 26:	Is the resistance more than 1 $\mbox{M}\Omega\mbox{?}$	Go to step 2.	Replace the ABSCM&H/U. <ref. abs-6,<br="" to="">ABS Control Mod- ule and Hydraulic Control Unit (ABSCM&H/U).></ref.>
2	CHECK MOTOR OPERATION. Operate the sequence control. <ref. abs="" abs-9,="" control.="" sequence="" to=""> NOTE: Use the diagnosis connector to operate sequence control.</ref.>	Can motor revolution noise (buzz) be heard when carrying out the sequence control?	Go to step 3.	Replace the ABSCM&H/U. <ref. abs-6,<br="" to="">ABS Control Mod- ule and Hydraulic Control Unit (ABSCM&H/U).></ref.>
3	CHECK POOR CONTACT IN CONNECTORS. Turn the ignition switch to OFF.	Is there poor contact in con- nector between generator, bat- tery and ABSCM&H/U?	Repair the connector.	Go to step 4.
4	CHECK ABSCM&H/U. 1)Connect all connectors. 2)Erase the memory. 3)Perform the inspection mode. 4)Read out the DTC.	Is the same DTC as in current diagnosis still being output?	Replace the ABSCM&H/U. <ref. abs-6,<br="" to="">ABS Control Mod- ule and Hydraulic Control Unit (ABSCM&H/U).></ref.>	Go to step 5.
5	CHECK ANY OTHER DTC APPEARANCE.	Are other DTCs being output?	Proceed with the diagnosis corresponding to DTC.	A temporary poor contact. NOTE: Although the ABS warning light remains illuminating at this point, this is a normal condition. Vehicle must be driven at approx. 12 km/h (7.46 MPH) or faster to turn off ABS warning light. Make sure that the ABS warning light goes off after driving vehicle.

ABS (DIAGNOSTICS)

AC:DTC 52

- MOTOR MALFUNCTION -

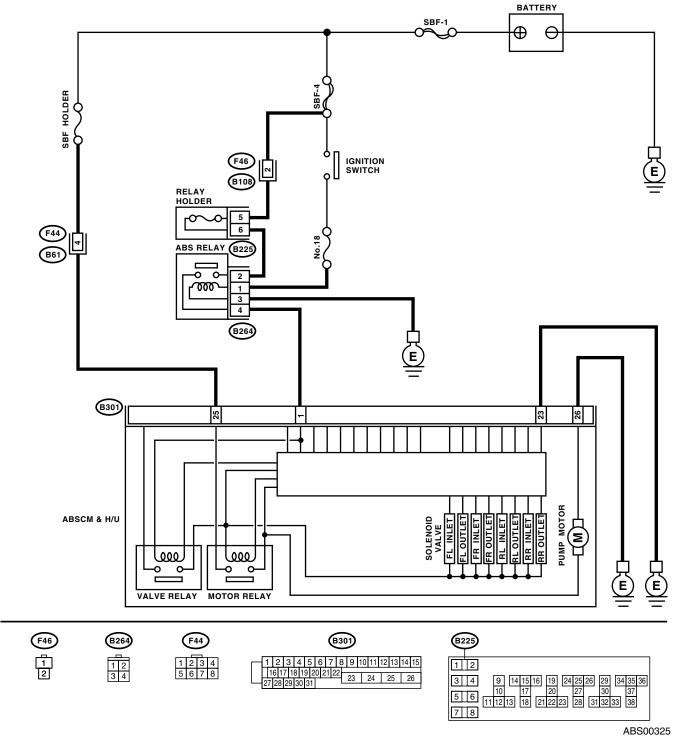
DIAGNOSIS:

- · Faulty motor
- Faulty motor relay
- Faulty harness connector

TROUBLE SYMPTOM:

· ABS does not operate.

WIRING DIAGRAM:



1			For	y Erica
	Step	Check	Yes	REO NO ST
1	CHECK INPUT VOLTAGE OF ABSCM&H/U. 1)Turn the ignition switch to OFF. 2)Disconnect the connector from ABSCM&H/U. 3)Turn the ignition switch to ON. 4)Measure the voltage between ABSCM&H/U connector and chassis ground. Connector & terminal	Is the voltage 10 — 15 V?	Go to step 2.	Repair the har- ness/connector between battery and ABSCM&H/U and check fuse SBF8.
2	(B301) No. 25 (+) — Chassis ground (-): CHECK GROUND CIRCUIT OF MOTOR. 1)Turn the ignition switch to OFF. 2)Measure the resistance between ABSCM&H/U connector and chassis ground. Connector & terminal (B301) No. 26 — Chassis ground:	Is the resistance less than 0.5 Ω ?	Go to step 3.	Repair the ABSCM&H/U ground harness.
3	CHECK INPUT VOLTAGE OF ABSCM&H/U. 1)Run the engine at idle. 2)Measure the voltage between ABSCM&H/U connector and chassis ground. Connector & terminal (B301) No. 1 (+) — Chassis ground (-):	Is the voltage 10 — 15 V?	Go to step 4.	Repair the har- ness connector between battery, ignition switch and ABSCM&H/U.
4	CHECK GROUND CIRCUIT OF ABSCM&H/U. 1)Turn the ignition switch to OFF. 2)Measure the resistance between ABSCM&H/U connector and chassis ground. Connector & terminal (B301) No. 23 — Chassis ground:	Is the resistance less than 0.5 Ω ?	Go to step 5.	Repair the ABSCM&H/U ground harness.
5	CHECK MOTOR OPERATION. Operate the sequence control. <ref. abs="" abs-9,="" control.="" sequence="" to=""> NOTE: Use the diagnosis connector to operate sequence control.</ref.>	Can motor revolution noise (buzz) be heard when carrying out the sequence control?	Go to step 6.	Replace the ABSCM&H/U. <ref. abs-6,<br="" to="">ABS Control Mod- ule and Hydraulic Control Unit (ABSCM&H/U).></ref.>
6	CHECK POOR CONTACT IN CONNECTORS. Turn the ignition switch to OFF.	Is there poor contact in con- nector between generator, bat- tery and ABSCM&H/U?	Repair the connector.	Go to step 7.
7	CHECK ABSCM&H/U. 1)Connect all connectors. 2)Erase the memory. 3)Perform the inspection mode. 4)Read out the DTC.	Is the same DTC as in current diagnosis still being output?	Replace the ABSCM&H/U. <ref. abs-6,<br="" to="">ABS Control Mod- ule and Hydraulic Control Unit (ABSCM&H/U).></ref.>	Go to step 8.
8	CHECK ANY OTHER DTC APPEARANCE.	Are other DTCs being output?	Proceed with the diagnosis corresponding to DTC.	A temporary poor contact.

ABS (DIAGNOSTICS)

AD:DTC 54

- STOP LIGHT SWITCH SIGNAL CIRCUIT MALFUNCTION -

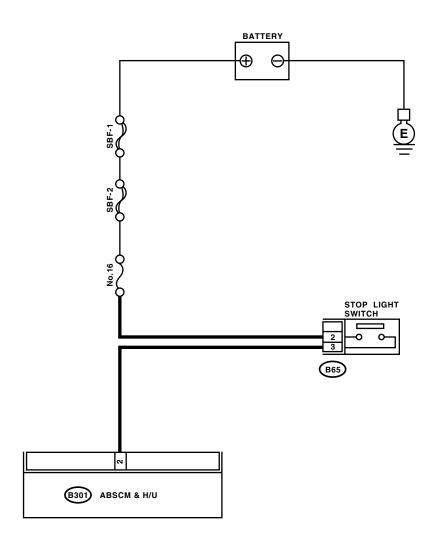
DIAGNOSIS:

Faulty stop light switch

TROUBLE SYMPTOM:

• ABS does not operate.

WIRING DIAGRAM:







ABS00378

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	Step	Check	Yes	No St
1	CHECK OUTPUT OF STOP LIGHT SWITCH USING SUBARU SELECT MONITOR. 1) Select "Current data display & Save" on the Subaru Select Monitor. 2) Release the brake pedal. 3) Read the stop light switch output in Subaru Select Monitor data display.	Is the reading indicated on monitor display less than 1.5 V?	Go to step 2.	Go to step 3.
2	CHECK OUTPUT OF STOP LIGHT SWITCH USING SUBARU SELECT MONITOR. 1)Depress the brake pedal. 2)Read the stop light switch output in Subaru Select Monitor data display.	Is the reading indicated on monitor display 10 — 15 V?	Go to step 5.	Go to step 3.
3	CHECK IF STOP LIGHTS COME ON. Depress the brake pedal.	Do the stop lights turn on?	Go to step 4.	Repair the stop lights circuit.
4	CHECK OPEN CIRCUIT IN HARNESS. 1)Turn the ignition switch to OFF. 2)Disconnect the connector from ABSCM& H/U. 3)Depress the brake pedal. 4)Measure the voltage between ABSCM&H/U connector and chassis ground. Connector & terminal (B301) No. 2 (+) — Chassis ground (-):	Is the voltage 10 — 15 V?	Go to step 5.	Repair the har- ness between stop light switch and ABSCM&H/U con- nector.
5	CHECK POOR CONTACT IN CONNECTORS.	Is there poor contact in con- nector between stop light switch and ABSCM&H/U?	Go to step 6.	Repair the connector.
6	CHECK ABSCM&H/U. 1)Connect all connectors. 2)Erase the memory. 3)Perform the inspection mode. 4)Read out the DTC.	Is the same DTC as in current diagnosis still being output?	Replace the ABSCM&H/U. <ref. abs-6,<br="" to="">ABS Control Mod- ule and Hydraulic Control Unit (ABSCM&H/U).></ref.>	Go to step 7.
7	CHECK ANY OTHER DTC APPEARANCE.	Are other DTCs being output?	Proceed with the diagnosis corresponding to DTC.	A temporary poor contact.

ABS (DIAGNOSTICS)

AE:DTC 56

- OPEN OR SHORT CIRCUIT IN G SENSOR CIRCUIT -

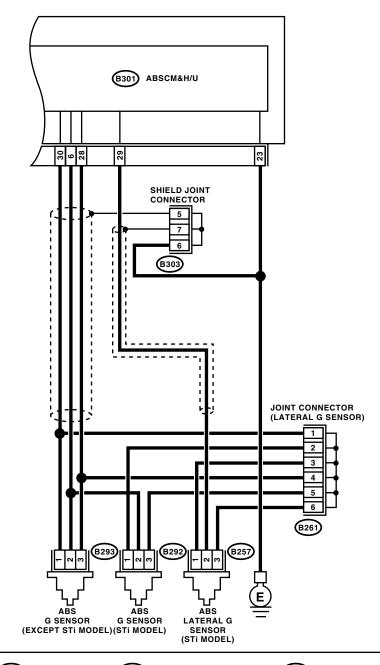
DIAGNOSIS:

Faulty G sensor output voltage

TROUBLE SYMPTOM:

• ABS does not operate.

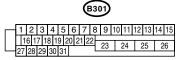
WIRING DIAGRAM:











ABS00368

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	Step	Check	Yes	No St
1	CHECK OUTPUT OF G SENSOR USING SUBARU SELECT MONITOR. 1)Select "Current data display & Save" on the Subaru Select Monitor. 2)Read the G sensor output in Subaru Select Monitor data display.	Is the G sensor output on monitor display 2.1 — 2.5 V when G sensor is in horizontal position?	Go to step 2.	Go to step 5.
2	CHECK POOR CONTACT IN CONNECTORS.	Is there poor contact in con- nector between ABSCM&H/U and G sensor?	Repair the con- nector.	Go to step 3.
3	CHECK ABSCM&H/U. 1)Connect all connectors. 2)Erase the memory. 3)Perform the inspection mode. 4)Read out the DTC.	Is the same DTC as in the cur- rent diagnosis still being out- put?	Replace the ABSCM&H/U. <ref. (abscm&h="" abs="" abs-6,="" and="" control="" hydraulic="" mod-="" to="" u).="" ule="" unit=""></ref.>	Go to step 4.
4	CHECK ANY OTHER DTC APPEARANCE.	Are other DTCs being output?	Proceed with the diagnosis corresponding to DTC.	A temporary poor contact.
5	1)Turn the ignition switch to OFF. 2)Remove the console box. 3)Remove the G sensor from vehicle. (Do not disconnect connector.) 4)Turn the ignition switch to ON. 5)Measure the voltage between G sensor connector terminals. Connector & terminal (B292) No. 1 (+) — No. 3 (-):	Is the voltage 4.75 — 5.25 V?	Go to step 6.	Repair the har- ness/connector between G sensor and ABSCM&H/U.
6	CHECK OPEN CIRCUIT IN G SENSOR OUT-PUT HARNESS AND GROUND HARNESS. 1)Turn the ignition switch to OFF. 2)Disconnect the connector from ABSCM& H/U. 3)Measure the resistance between ABSCM&H/U connector terminals. Connector & terminal (B301) No. 6 — No. 28:	Is the resistance 5.0 — 5.6 $k\Omega$?	Go to step 7.	Repair the har- ness/connector between G sensor and ABSCM&H/U.
7	CHECK GROUND SHORT IN G SENSOR OUTPUT HARNESS. 1)Disconnect the connector from G sensor. 2)Measure the resistance between ABSCM&H/U connector and chassis ground. Connector & terminal (B301) No. 6 — Chassis ground:	Is the resistance more than 1 $\mbox{M}\Omega\mbox{?}$	Go to step 8.	Repair the har- ness between G sensor and ABSCM&H/U.
8	CHECK G SENSOR. 1)Connect the connector to G sensor. 2)Connect the connector to ABSCM&H/U. 3)Turn the ignition switch to ON. 4)Measure the voltage between G sensor connector terminals. Connector & terminal (B292) No. 2 (+) — No. 3 (-):	Is the voltage 2.1 — 2.5 V when G sensor is in horizontal position?	Go to step 9.	Replace the G sensor. <ref. to<br="">ABS-20, G Sen- sor.></ref.>
9	CHECK G SENSOR. Measure the voltage between G sensor connector terminals. Connector & terminal (B292) No. 2 (+) — No. 3 (-):	Is the voltage 3.7 — 4.1 V when G sensor is inclined forwards to 90°?	Go to step 10.	Replace the G sensor. <ref. to<br="">ABS-20, G Sen- sor.></ref.>

	Step	Check	Yes	No St
10	CHECK G SENSOR. Measure the voltage between G sensor connector terminals. Connector & terminal (B292) No. 2 (+) — No. 3 (-):	Is the voltage 0.5 — 0.9 V when G sensor is inclined backwards to 90°?	Go to step 11.	Replace the G sensor. <ref. to<br="">ABS-20, G Sen- sor.></ref.>
11	CHECK POOR CONTACT IN CONNECTORS. Turn the ignition switch to OFF.	Is there poor contact in con- nector between ABSCM&H/U and G sensor?	Repair the con- nector.	Go to step 12.
12	CHECK ABSCM&H/U. 1)Connect all connectors. 2)Erase the memory. 3)Perform the inspection mode. 4)Read out the DTC.	Is the same DTC as in current diagnosis still being output?	Replace the ABSCM&H/U. <ref. abs-6,<br="" to="">ABS Control Mod- ule and Hydraulic Control Unit (ABSCM&H/U).></ref.>	Go to step 13.
13	CHECK ANY OTHER DTC APPEARANCE.	Are other DTCs being output?	Proceed with the diagnosis corresponding to DTC.	A temporary poor contact.

AF:DTC 56

- BATTERY SHORT IN G SENSOR CIRCUIT -

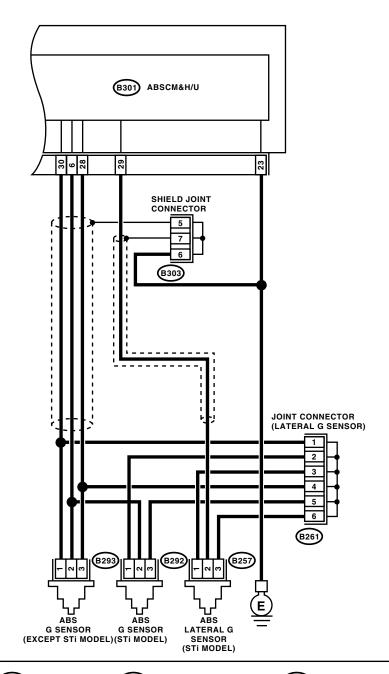
DIAGNOSIS:

Faulty G sensor output voltage

TROUBLE SYMPTOM:

• ABS does not operate.

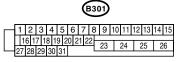
WIRING DIAGRAM:











ABS00368

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	Step	Check	Yes	No St	Id:
1	Subaru Select Monitor. 2)Read the G sensor output in Subaru Select Monitor data display.	Is the voltage 2.1 — 2.5 V when G sensor is in horizontal position?	Go to step 2.	Go to step 5.	^{Idios}
2	CHECK POOR CONTACT IN CONNECTORS.	Is there poor contact in con- nector between ABSCM&H/U and G sensor?	Repair the connector.	Go to step 3.	
3	CHECK ABSCM&H/U. 1)Connect all connectors. 2)Erase the memory. 3)Perform the inspection mode. 4)Read out the DTC.	Is the same DTC as in current diagnosis still being output?	Replace the ABSCM&H/U. <ref. abs-6,<br="" to="">ABS Control Mod- ule and Hydraulic Control Unit (ABSCM&H/U).></ref.>	Go to step 4.	
4	CHECK ANY OTHER DTC APPEARANCE.	Are other DTCs being output?	Proceed with the diagnosis corresponding to DTC.	A temporary poor contact.	
5	CHECK FREEZE FRAME DATA. 1)Select "Freeze frame data" on the Subaru Select Monitor. 2)Read front right wheel speed on the Subaru Select Monitor display.	Is the front right wheel speed on monitor display 0 km/h (0 MPH)?	Go to step 6.	Go to step 16.	
6	CHECK FREEZE FRAME DATA. Read front left wheel speed on the Subaru Select Monitor display.	Is the front left wheel speed on monitor display 0 km/h (0 MPH)?	Go to step 7.	Go to step 16.	
7	CHECK FREEZE FRAME DATA. Read rear right wheel speed on the Subaru Select Monitor display.	Is the rear right wheel speed on monitor display 0 km/h (0 MPH)?	Go to step 8.	Go to step 16.	
8	CHECK FREEZE FRAME DATA. Read rear left wheel speed on the Subaru Select Monitor display.	Is the rear left wheel speed on monitor display 0 km/h (0 MPH)?	Go to step 9.	Go to step 16.	
9	CHECK FREEZE FRAME DATA. Read G sensor output on the Subaru Select Monitor display.	Is the G sensor output on monitor display more than 3.65 V?	Go to step 10.	Go to step 16.	
10	CHECK OPEN CIRCUIT IN G SENSOR OUT-PUT HARNESS AND GROUND HARNESS. 1)Turn the ignition switch to OFF. 2)Disconnect the connector from ABSCM& H/U. 3)Measure the resistance between ABSCM&H/U connector terminals. Connector & terminal (B301) No. 6 — No. 28:	Is the resistance 4.3 — 4.9 k Ω ?	Go to step 11.	Repair the har- ness/connector between G sensor and ABSCM&H/U.	
11	CHECK BATTERY SHORT OF HARNESS. 1)Turn the ignition switch to OFF. 2)Remove the console box. 3)Disconnect the connector from G sensor. 4)Disconnect the connector from ABSCM& H/U. 5)Measure the voltage between ABSCM&H/U connector and chassis ground. Connector & terminal (B301) No. 6 (+) — Chassis ground (-):	Is the voltage less than 1 V?	Go to step 12.	Repair the har- ness between G sensor and ABSCM&H/U.	

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	Step	Check	Yes	No St
12	CHECK BATTERY SHORT OF HARNESS. 1)Turn the ignition switch to ON. 2)Measure the voltage between ABSCM&H/U connector and chassis ground. Connector & terminal (B301) No. 6 (+) — Chassis ground (-):	Is the voltage less than 1 V?	Go to step 13.	Repair the har- ness between G sensor and ABSCM&H/U.
13	CHECK POOR CONTACT IN CONNECTORS.	Is there poor contact in con- nector between ABSCM&H/U and G sensor?	Repair the con- nector.	Go to step 14.
14	CHECK ABSCM&H/U. 1)Connect all connectors. 2)Erase the memory. 3)Perform the inspection mode. 4)Read out the DTC.	Is the same DTC as in current diagnosis still being output?	Replace the ABSCM&H/U. <ref. abs-6,<br="" to="">ABS Control Mod- ule and Hydraulic Control Unit (ABSCM&H/U).></ref.>	Go to step 15.
15	CHECK ANY OTHER DTC APPEARANCE.	Are other DTCs being output?	Proceed with the diagnosis corresponding to DTC.	A temporary poor contact.
16	CHECK INPUT VOLTAGE OF G SENSOR. 1) Turn the ignition switch to OFF. 2) Remove the console box. 3) Remove the G sensor from vehicle. (Do not disconnect connector.) 4) Turn the ignition switch to ON. 5) Measure the voltage between G sensor connector terminals. Connector & terminal (B292) No. 1 (+) — No. 3 (-):	Is the voltage 4.75 — 5.25 V?	Go to step 17.	Repair the har- ness/connector between G sensor and ABSCM&H/U.
17	CHECK OPEN CIRCUIT IN G SENSOR OUT-PUT HARNESS AND GROUND HARNESS. 1)Turn the ignition switch to OFF. 2)Disconnect the connector from ABSCM& H/U. 3)Measure the resistance between ABSCM&H/U connector terminals. Connector & terminal (B301) No. 6 — No. 28:	Is the resistance 5.0 — 5.6 $k\Omega$?	Go to step 18.	Repair the har- ness/connector between G sensor and ABSCM&H/U.
18	CHECK G SENSOR. 1) Connect the connector to G sensor. 2) Connect the connector to ABSCM&H/U. 3) Turn the ignition switch to ON. 4) Measure the voltage between G sensor connector terminals. Connector & terminal (B292) No. 2 (+) — No. 3 (-):	Is the voltage 2.1 — 2.5 V when G sensor is in horizontal position?	Go to step 19.	Replace the G sensor. <ref. to<br="">ABS-20, G Sen- sor.></ref.>
19	CHECK G SENSOR. Measure the voltage between G sensor connector terminals. Connector & terminal (B292) No. 2 (+) — No. 3 (-):	Is the voltage 3.7 — 4.1 V when G sensor is inclined forwards to 90°?	Go to step 20.	Replace the G sensor. <ref. to<br="">ABS-20, G Sen- sor.></ref.>
20	CHECK G SENSOR. Measure the voltage between G sensor connector terminals. Connector & terminal (B292) No. 2 (+) — No. 3 (-):	Is the voltage 0.5 — 0.9 V when G sensor is inclined backwards to 90°?	Go to step 21.	Replace the G sensor. <ref. to<br="">ABS-20, G Sen- sor.></ref.>
21	CHECK POOR CONTACT IN CONNECTORS. Turn the ignition switch to OFF.	Is there poor contact in con- nector between ABSCM&H/U and G sensor?	Repair the con- nector.	Go to step 22.

	Step	Check	Yes	No St
22	CHECK ABSCM&H/U. 1)Connect all connectors. 2)Erase the memory. 3)Perform the inspection mode. 4)Read out the DTC.	Is the same DTC as in current diagnosis still being output?	Replace the ABSCM&H/U. <ref. abs-6,<br="" to="">ABS Control Mod- ule and Hydraulic Control Unit (ABSCM&H/U).></ref.>	Go to step 23.
23	CHECK ANY OTHER DTC APPEARANCE.	Are other DTCs being output?	Proceed with the diagnosis corresponding to DTC.	A temporary poor contact.

ABS (DIAGNOSTICS)

AG:DTC 56

— ABNORMAL G SENSOR HIGH μ OUTPUT —

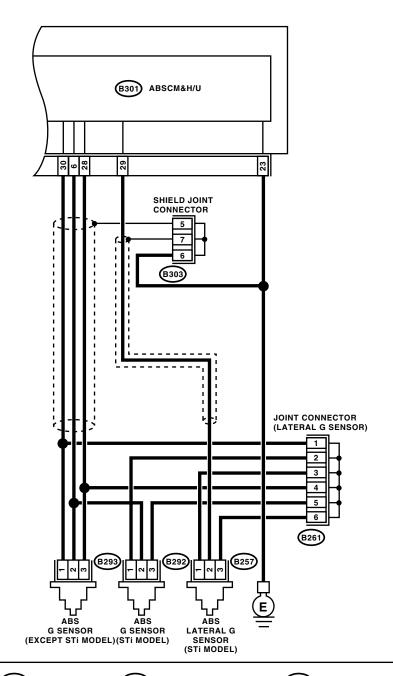
DIAGNOSIS:

Faulty G sensor output voltage

TROUBLE SYMPTOM:

• ABS does not operate.

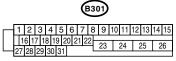
WIRING DIAGRAM:











ABS00368

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	Step	Check	Yes	No St	Id:
1	CHECK OUTPUT OF G SENSOR USING SUBARU SELECT MONITOR. 1)Select "Current data display & Save" on the Subaru Select Monitor. 2)Read G sensor output on the Subaru Select Monitor display.	Is the voltage 2.1 — 2.5 V when G sensor is in horizontal position?	Go to step 2.	Go to step 6.	Idios
2	CHECK POOR CONTACT IN CONNECTORS. Turn the ignition switch to OFF.	Is there poor contact in con- nector between ABSCM&H/U and G sensor?	Repair the connector.	Go to step 3.	
3	CHECK ABSCM&H/U. 1)Connect all connectors. 2)Erase the memory. 3)Perform the inspection mode. 4)Read out the DTC.	Is the same DTC as in current diagnosis still being output?	Replace the ABSCM&H/U. <ref. abs-6,<br="" to="">ABS Control Mod- ule and Hydraulic Control Unit (ABSCM&H/U).></ref.>	Go to step 4.	
4	CHECK ANY OTHER DTC APPEARANCE.	Are other DTCs being output?	Proceed with the diagnosis corresponding to DTC.	A temporary poor contact.	
5	CHECK OPEN CIRCUIT IN G SENSOR OUT-PUT HARNESS AND GROUND HARNESS. 1) Turn the ignition switch to OFF. 2) Disconnect the connector from ABSCM& H/U. 3) Measure the resistance between ABSCM&H/U connector terminals. Connector & terminal (B301) No. 6 — No. 28:	Is the resistance 5.0 — 5.6 $k\Omega$?	Go to step 6.	Repair the har- ness/connector between G sensor and ABSCM&H/U.	
6	CHECK GROUND SHORT OF HARNESS. Measure the resistance between ABSCM&H/U connector and chassis ground. Connector & terminal (B301) No. 28 — Chassis ground:	Is the resistance more than 1 $\mbox{M}\Omega ?$	Go to step 7.	Repair the har- ness between G sensor and ABSCM&H/U. Replace the ABSCM&H/U. <ref. abs-6,<br="" to="">ABS Control Mod- ule and Hydraulic Control Unit (ABSCM&H/U).></ref.>	
7	CHECK G SENSOR. 1)Remove the console box. 2)Remove the G sensor from vehicle. 3)Connect the connector to G sensor. 4)Connect the connector to ABSCM&H/U. 5)Turn the ignition switch to ON. 6)Measure the voltage between G sensor connector terminals. Connector & terminal (B292) No. 2 (+) — No. 3 (-):	Is the voltage 2.1 — 2.5 V when G sensor is in horizontal position?	Go to step 8.	Replace the G sensor. <ref. to<br="">ABS-20, G Sen- sor.></ref.>	
8	CHECK G SENSOR. Measure the voltage between G sensor connector terminals. Connector & terminal (B292) No. 2 (+) — No. 3 (-):	Is the voltage 3.7 — 4.1 V when G sensor is inclined forwards to 90°?	Go to step 9.	Replace the G sensor. <ref. to<br="">ABS-20, G Sen- sor.></ref.>	
9	CHECK G SENSOR. Measure the voltage between G sensor connector terminals. Connector & terminal (B292) No. 2 (+) — No. 3 (-):	Is the voltage 0.5 — 0.9 V when G sensor is inclined backwards to 90°?	Go to step 10.	Replace the G sensor. <ref. to<br="">ABS-20, G Sen- sor.></ref.>	

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	Step	Check	Yes	No St
10	CHECK ABSCM&H/U. 1)Turn the ignition switch to OFF. 2)Connect all connectors. 3)Erase the memory. 4)Perform the inspection mode. 5)Read out the DTC.	Is the same DTC as in current diagnosis still being output?	Replace the ABSCM&H/U. <ref. abs-6,<br="" to="">ABS Control Mod- ule and Hydraulic Control Unit (ABSCM&H/U).></ref.>	Go to step 11.
11	CHECK ANY OTHER DTC APPEARANCE.	Are other DTCs being output?	Proceed with the diagnosis corresponding to DTC.	A temporary poor contact.

ABS (DIAGNOSTICS)

AH:DTC 56

— DETECTION OF G SENSOR STICK —

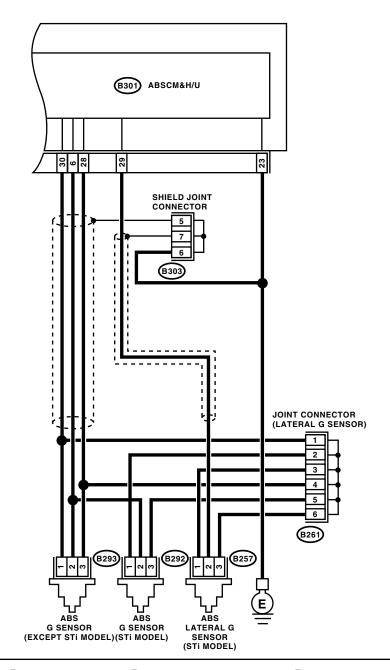
DIAGNOSIS:

Faulty G sensor output voltage

TROUBLE SYMPTOM:

• ABS does not operate.

WIRING DIAGRAM:







B303 1 2 3 5 6 7 1



ABS00368

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	Step	Check	Yes	No St	lel:
1	CHECK ALL FOUR WHEELS FOR FREE TURNING.	Have the wheels been turned freely such as when vehicle is lifted up, or operated on a rolling road?	The ABS is nor- mal. Erase the DTC.	Go to step 2.	Idio
2	CHECK OUTPUT OF G SENSOR USING SUBARU SELECT MONITOR. 1)Select "Current data display & Save" on the Subaru Select Monitor. 2)Read the Subaru Select Monitor display.	Is the G sensor output on monitor display 2.1 — 2.5 V when the vehicle is in horizontal position?	Go to step 3.	Go to step 8.	
3	CHECK OUTPUT OF G SENSOR USING SUBARU SELECT MONITOR. 1) Turn the ignition switch to OFF. 2) Remove the console box. 3) Remove the G sensor from vehicle. (Do not disconnect the connector.) 4) Turn the ignition switch to ON. 5) Select "Current data display & Save" on the Subaru Select Monitor. 6) Read the Subaru Select Monitor display.	Is the voltage 3.7 — 4.1 V when G sensor is inclined forwards to 90°?	Go to step 4.	Replace the G sensor. <ref. to<br="">ABS-20, G Sen- sor.></ref.>	
4	CHECK OUTPUT OF G SENSOR USING SUBARU SELECT MONITOR. Read the Subaru Select Monitor display.	Is the voltage 0.5 — 0.9 V when G sensor is inclined backwards to 90°?	Go to step 5.	Replace the G sensor. <ref. to<br="">ABS-20, G Sen- sor.></ref.>	
5	CHECK POOR CONTACT IN CONNECTORS. Turn the ignition switch to OFF.	Is there poor contact in con- nector between ABSCM&H/U and G sensor?	Repair the connector.	Go to step 6.	
6	CHECK ABSCM&H/U. 1)Connect all connectors. 2)Erase the memory. 3)Perform the inspection mode. 4)Read out the DTC.	Is the same DTC as in current diagnosis still being output?	Replace the ABSCM&H/U. <ref. abs-6,<br="" to="">ABS Control Mod- ule and Hydraulic Control Unit (ABSCM&H/U).></ref.>	Go to step 7.	
7	CHECK ANY OTHER DTC APPEARANCE.	Are other DTCs being output?	Proceed with the diagnosis corresponding to DTC.	A temporary poor contact.	
8	CHECK OPEN CIRCUIT IN G SENSOR OUT-PUT HARNESS AND GROUND HARNESS. 1)Turn the ignition switch to OFF. 2)Disconnect the connector from ABSCM& H/U. 3)Measure the resistance between ABSCM&H/U connector terminals. Connector & terminal (B301) No. 6 — No. 28:	kΩ?	Go to step 9.	Repair the har- ness/connector between G sensor and ABSCM&H/U.	
9	CHECK G SENSOR. 1)Remove the console box. 2)Remove the G sensor from vehicle. 3)Connect the connector to G sensor. 4)Connect the connector to ABSCM&H/U. 5)Turn the ignition switch to ON. 6)Measure the voltage between G sensor connector terminals. Connector & terminal (B292) No. 2 (+) — No. 3 (-):	Is the voltage 2.1 — 2.5 V when G sensor is in horizontal position?	Go to step 10.	Replace the G sensor. <ref. to<br="">ABS-20, G Sen- sor.></ref.>	

	Step	Check	Yes	No S
10	CHECK G SENSOR. Measure the voltage between G sensor connector terminals. Connector & terminal (B292) No. 2 (+) — No. 3 (-):	Is the voltage 3.7 — 4.1 V when G sensor is inclined forwards to 90°?	Go to step 11.	Replace the G sensor. <ref. to<br="">ABS-20, G Sen- sor.></ref.>
11	CHECK G SENSOR. Measure the voltage between G sensor connector terminals. Connector & terminal (B292) No. 2 (+) — No. 3 (-):	Is the voltage 0.5 — 0.9 V when G sensor is inclined backwards to 90°?	Go to step 12.	Replace the G sensor. <ref. to<br="">ABS-20, G Sen- sor.></ref.>
12	CHECK ABSCM&H/U. 1)Turn the ignition switch to OFF. 2)Connect all connectors. 3)Erase the memory. 4)Perform the inspection mode. 5)Read out the DTC.	Is the same DTC as in current diagnosis still being output?	Replace the ABSCM&H/U. <ref. abs-6,<br="" to="">ABS Control Mod- ule and Hydraulic Control Unit (ABSCM&H/U).></ref.>	Go to step 13.
13	CHECK ANY OTHER DTC APPEARANCE.	Are other DTCs being output?	Proceed with the diagnosis corresponding to DTC.	A temporary poor contact.

AI: DTC 73

DTC 73 — OPEN OR SHORT CIRCUIT IN LATERAL G SENSOR CIRCUIT —

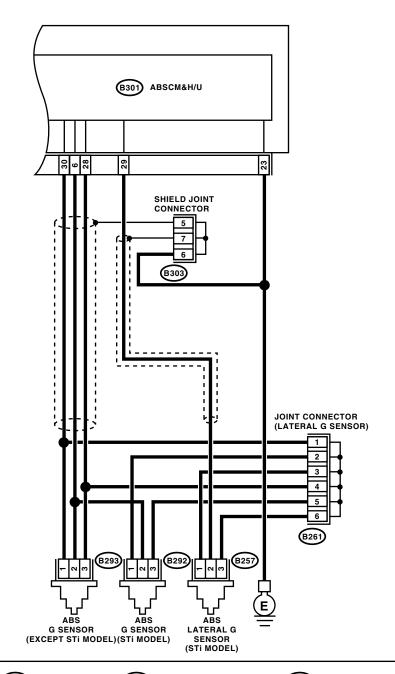
DIAGNOSIS:

Faulty Lateral G sensor output voltage

TROUBLE SYMPTOM:

• ABS does not operate.

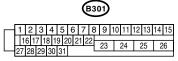
WIRING DIAGRAM:











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	Step	Check	Yes	No St	Id:
1	CHECK OUTPUT OF LATERAL G SENSOR USING SUBARU SELECT MONITOR. 1)Select "Current data display & Save" on the Subaru Select Monitor. 2)Read the lateral G sensor output in Subaru Select Monitor data display.	Is the lateral G sensor output on monitor display 2.3 — 2.7 V when lateral G sensor is in hor- izontal position?	Go to step 2.	Go to step 5.	14/0
2	CHECK POOR CONTACT IN CONNECTORS.	nector between ABSCM&H/U and lateral G sensor?	Repair the connector.	Go to step 3.	
3	CHECK ABSCM&H/U. 1)Connect all connectors. 2)Erase the memory. 3)Perform the inspection mode. 4)Read out the DTC.	Is the same DTC as in the cur- rent diagnosis still being out- put?	Replace the ABSCM&H/U. <ref. abs-6,<br="" to="">ABS Control Mod- ule and Hydraulic Control Unit (ABSCM&H/U).></ref.>	Go to step 4.	
4	CHECK ANY OTHER DTC APPEARANCE.	Are other DTCs being output?	Proceed with the diagnosis corresponding to DTC.	A temporary poor contact.	
5	CHECK INPUT VOLTAGE OF LATERAL G SENSOR. 1) Turn the ignition switch to OFF. 2) Remove the console box. 3) Remove the lateral G sensor from vehicle. (Do not disconnect connector.) 4) Turn the ignition switch to ON. 5) Measure the voltage between lateral G sensor connector terminals. Connector & terminal (B257) No. 1 (+) — No. 3 (-):	Is the voltage 4.75 — 5.25 V?	Go to step 6.	Repair the har- ness/connector between lateral G sensor and ABSCM&H/U.	
6	CHECK OPEN CIRCUIT IN LATERAL G SENSOR OUTPUT HARNESS AND GROUND HARNESS. 1) Turn the ignition switch to OFF. 2) Disconnect the connector from ABSCM& H/U. 3) Measure the resistance between ABSCM&H/U connector terminals. Connector & terminal (B301) No. 28 — No. 30:	Is the resistance 5.0 — 5.6 k Ω ?	Go to step 7.	Repair the har- ness/connector between lateral G sensor and ABSCM&H/U.	
7	CHECK GROUND SHORT IN LATERAL G SENSOR OUTPUT HARNESS. 1)Disconnect the connector from lateral G sensor. 2)Measure the resistance between ABSCM&H/U connector and chassis ground. Connector & terminal (B301) No. 29 — Chassis ground:	Is the resistance more than 1 $\mbox{M}\Omega ?$	Go to step 8.	Repair the har- ness between lat- eral G sensor and ABSCM&H/U.	
8	CHECK LATERAL G SENSOR. 1)Connect the connector to lateral G sensor. 2)Connect the connector to ABSCM&H/U. 3)Turn the ignition switch to ON. 4)Measure the voltage between lateral G sensor connector terminals. Connector & terminal (B257) No. 2 (+) — No. 3 (-):	Is the voltage 2.1 — 2.5 V when lateral G sensor is in horizontal position?	Go to step 9.	Replace the lateral G sensor. <ref. to<br="">ABS-22, Lateral G Sensor.></ref.>	

			FAL	J Eria
	Step	Check	Yes	No St
9	CHECK LATERAL G SENSOR. Measure the voltage between lateral G sensor connector terminals. Connector & terminal (B257) No. 2 (+) — No. 3 (-):	Is the voltage 3.7 — 4.1 V when lateral G sensor is inclined right to 90°?	Go to step 10.	Replace the lateral G sensor. <ref. to<br="">ABS-22, Lateral G Sensor.></ref.>
10	CHECK LATERAL G SENSOR. Measure the voltage between lateral G sensor connector terminals. Connector & terminal (B257) No. 2 (+) — No. 3 (-):	Is the voltage 0.5 — 0.9 V when lateral G sensor is inclined left to 90°?	Go to step 11.	Replace the lateral G sensor. <ref. to<br="">ABS-22, Lateral G Sensor.></ref.>
11	CHECK POOR CONTACT IN CONNECTORS. Turn the ignition switch to OFF.	Is there poor contact in con- nector between ABSCM&H/U and lateral G sensor?	Repair the con- nector.	Go to step 12.
12	CHECK ABSCM&H/U. 1)Connect all connectors. 2)Erase the memory. 3)Perform the inspection mode. 4)Read out the DTC.	Is the same DTC as in current diagnosis still being output?	Replace the ABSCM&H/U. <ref. abs-6,<br="" to="">ABS Control Mod- ule and Hydraulic Control Unit (ABSCM&H/U).></ref.>	Go to step 13.
13	CHECK ANY OTHER DTC APPEARANCE.	Are other DTCs being output?	Proceed with the diagnosis corresponding to DTC.	A temporary poor contact.

ABS (DIAGNOSTICS)

AJ:DTC 73

— BATTERY SHORT IN LATERAL G SENSOR CIRCUIT —

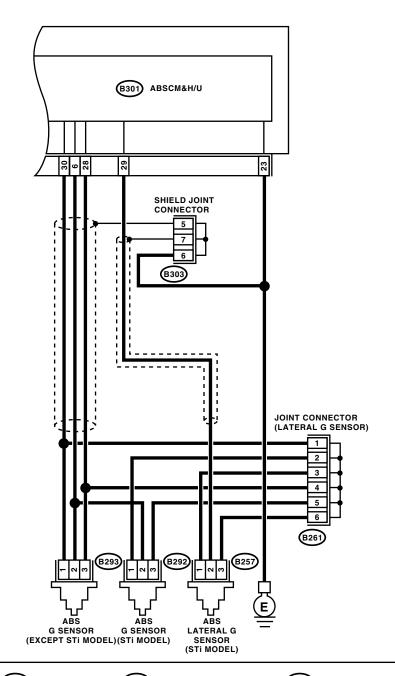
DIAGNOSIS:

Faulty Lateral G sensor output voltage

TROUBLE SYMPTOM:

• ABS does not operate.

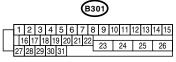
WIRING DIAGRAM:











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	Step	Check	Yes	No St
1	CHECK OUTPUT OF LATERAL G SENSOR	Is the voltage 2.3 — 2.7 V	Go to step 2.	Go to step 5.
	USING SUBARU SELECT MONITOR. 1) Select "Current data display & Save" on the Subaru Select Monitor. 2) Read the lateral G sensor output in Subaru Select Monitor data display.	when lateral G sensor is in horizontal position?	2.0 to 0.0p 2.	
2	CHECK POOR CONTACT IN CONNECTORS.	nector between ABSCM&H/U and lateral G sensor?	Repair the con- nector.	Go to step 3.
3	CHECK ABSCM&H/U. 1)Connect all connectors. 2)Erase the memory. 3)Perform the inspection mode. 4)Read out the DTC.	Is the same DTC as in current diagnosis still being output?	Replace the ABSCM&H/U. <ref. abs-6,<br="" to="">ABS Control Mod- ule and Hydraulic Control Unit (ABSCM&H/U).></ref.>	Go to step 4.
4	CHECK ANY OTHER DTC APPEARANCE.	Are other DTCs being output?	Proceed with the diagnosis corresponding to DTC.	A temporary poor contact.
5	CHECK FREEZE FRAME DATA. 1)Select "Freeze frame data" on the Subaru Select Monitor. 2)Read front right wheel speed on the Subaru Select Monitor display.	Is the front right wheel speed on monitor display 0 km/h (0 MPH)?	Go to step 6.	Go to step 16.
6	CHECK FREEZE FRAME DATA. Read front left wheel speed on the Subaru Select Monitor display.	Is the front left wheel speed on monitor display 0 km/h (0 MPH)?	Go to step 7.	Go to step 16.
7	CHECK FREEZE FRAME DATA. Read rear right wheel speed on the Subaru Select Monitor display.	Is the rear right wheel speed on monitor display 0 km/h (0 MPH)?	Go to step 8.	Go to step 16.
8	CHECK FREEZE FRAME DATA. Read rear left wheel speed on the Subaru Select Monitor display.	Is the rear left wheel speed on monitor display 0 km/h (0 MPH)?	Go to step 9.	Go to step 16.
9	CHECK FREEZE FRAME DATA. Read lateral G sensor output on the Subaru Select Monitor display.	Is the lateral G sensor output on monitor display more than 3.65 V?	Go to step 10.	Go to step 16.
10	CHECK OPEN CIRCUIT IN LATERAL G SENSOR OUTPUT HARNESS AND GROUND HARNESS. 1) Turn the ignition switch to OFF. 2) Disconnect the connector from ABSCM& H/U. 3) Measure the resistance between ABSCM&H/U connector terminals. Connector & terminal (B301) No. 29 — No. 28:	Is the resistance 4.3 — 4.9 $k\Omega$?	Go to step 11.	Repair the har- ness/connector between Lateral G sensor and ABSCM&H/U.
11	CHECK BATTERY SHORT OF HARNESS. 1) Turn the ignition switch to OFF. 2) Remove the console box. 3) Disconnect the connector from lateral G sensor. 4) Disconnect the connector from ABSCM& H/U. 5) Measure the voltage between ABSCM&H/U connector and chassis ground. Connector & terminal (B301) No. 29 (+) — Chassis ground (-):	Is the voltage less than 1 V?	Go to step 12.	Repair the har- ness between lat- eral G sensor and ABSCM&H/U.

		FO	J Fri
Step	Check	Yes	No St
12 CHECK BATTERY SHORT OF HARNESS. 1)Turn the ignition switch to ON. 2)Measure the voltage between ABSCM&H/U connector and chassis ground. Connector & terminal (B301) No. 29 (+) — Chassis ground (-):	Is the voltage less than 1 V?	Go to step 13.	Repair the har- ness between lat- eral G sensor and ABSCM&H/U.
	Is there poor contact in con- nector between ABSCM&H/U and lateral G sensor?	Repair the connector.	Go to step 14.
	Is the same DTC as in current diagnosis still being output?	Replace the ABSCM&H/U. <ref. abs-6,<br="" to="">ABS Control Mod- ule and Hydraulic Control Unit (ABSCM&H/U).></ref.>	Go to step 15.
15 CHECK ANY OTHER DTC APPEARANCE.	Are other DTCs being output?	Proceed with the diagnosis corresponding to DTC.	A temporary poor contact.
16 CHECK INPUT VOLTAGE OF LATERAL G SENSOR. 1)Turn the ignition switch to OFF. 2)Remove the console box. 3)Remove the lateral G sensor from vehicle. (Do not disconnect connector.) 4)Turn the ignition switch to ON. 5)Measure the voltage between lateral G sensor connector terminals. Connector & terminal (B257) No. 1 (+) — No. 3 (-):	Is the voltage 4.75 — 5.25 V?	Go to step 17.	Repair the har- ness/connector between Lateral G sensor and ABSCM&H/U.
17 CHECK OPEN CIRCUIT IN LATERAL G SENSOR OUTPUT HARNESS AND GROUND HARNESS. 1)Turn the ignition switch to OFF. 2)Disconnect the connector from ABSCM&H/U. 3)Measure the resistance between ABSCM&H/U connector terminals. Connector & terminal (B301) No. 29 — No. 28:	kΩ?	Go to step 18.	Repair the har- ness/connector between lateral G sensor and ABSCM&H/U.
1)Connect the connector to lateral G sensor. 2)Connect the connector to ABSCM&H/U. 3)Turn the ignition switch to ON. 4)Measure the voltage between lateral G sensor connector terminals. Connector & terminal (B257) No. 2 (+) — No. 3 (-):	Is the voltage 2.1 — 2.5 V when lateral G sensor is in horizontal position?	Go to step 19.	Replace the lateral G sensor. <ref. to<br="">ABS-22, Lateral G Sensor.></ref.>
19 CHECK LATERAL G SENSOR. Measure the voltage between lateral G sensor	Is the voltage 3.3 — 3.7 V when lateral G sensor is inclined right to 90°?	Go to step 20.	Replace the lateral G sensor. <ref. to<br="">ABS-22, Lateral G Sensor.></ref.>
Measure the voltage between lateral G sensor	Is the voltage 0.5 — 0.9 V when lateral G sensor is inclined left to 90°?	Go to step 21.	Replace the lateral G sensor. <ref. to<br="">ABS-22, Lateral G Sensor.></ref.>

	Step	Check	Yes	No S
21	CHECK POOR CONTACT IN CONNECTORS. Turn the ignition switch to OFF.	Is there poor contact in con- nector between ABSCM&H/U and lateral G sensor?	Repair the connector.	Go to step 22.
22	CHECK ABSCM&H/U. 1)Connect all connectors. 2)Erase the memory. 3)Perform the inspection mode. 4)Read out the DTC.	Is the same DTC as in current diagnosis still being output?	Replace the ABSCM&H/U. <ref. abs-6,<br="" to="">ABS Control Mod- ule and Hydraulic Control Unit (ABSCM&H/U).></ref.>	Go to step 23.
23	CHECK ANY OTHER DTC APPEARANCE.	Are other DTCs being output?	Proceed with the diagnosis corresponding to DTC.	A temporary poor contact.

ABS (DIAGNOSTICS)

AK:DTC 73

— ABNORMAL LATERAL G SENSOR HIGH μ OUTPUT —

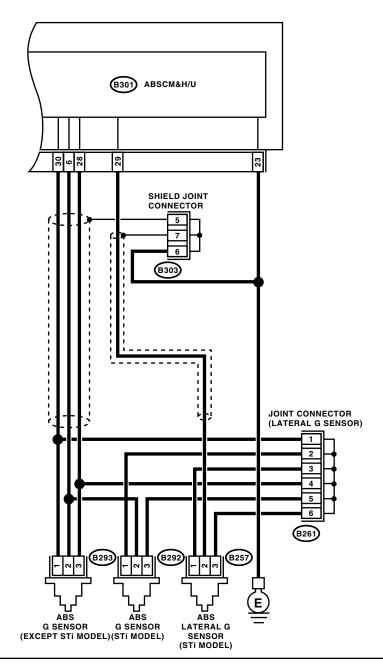
DIAGNOSIS:

Faulty Lateral G sensor output voltage

TROUBLE SYMPTOM:

• ABS does not operate.

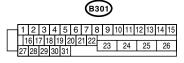
WIRING DIAGRAM:







1 2 3 4 5 6 7 8



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	Step	Check	Yes	No St
1	CHECK OUTPUT OF LATERAL G SENSOR USING SUBARU SELECT MONITOR. 1)Select "Current data display & Save" on the Subaru Select Monitor. 2)Read Lateral G sensor output on the Subaru Select Monitor display.	Is the voltage 2.3 — 2.7 V when Lateral G sensor is in horizontal position?	Go to step 2.	Go to step 6.
2	CHECK POOR CONTACT IN CONNECTORS. Turn the ignition switch to OFF.	Is there poor contact in con- nector between ABSCM&H/U and lateral G sensor?	Repair the connector.	Go to step 3.
3	CHECK ABSCM&H/U. 1)Connect all connectors. 2)Erase the memory. 3)Perform the inspection mode. 4)Read out the DTC.	Is the same DTC as in current diagnosis still being output?	Replace the ABSCM&H/U. <ref. abs-6,<br="" to="">ABS Control Mod- ule and Hydraulic Control Unit (ABSCM&H/U).></ref.>	Go to step 4.
4	CHECK ANY OTHER DTC APPEARANCE.	Are other DTCs being output?	Proceed with the diagnosis corresponding to DTC.	A temporary poor contact.
5	CHECK OPEN CIRCUIT IN LATERAL G SENSOR OUTPUT HARNESS AND GROUND HARNESS. 1) Turn the ignition switch to OFF. 2) Disconnect the connector from ABSCM& H/U. 3) Measure the resistance between ABSCM&H/U connector terminals. Connector & terminal (B301) No. 29 — No. 28:	Is the resistance 5.0 — 5.6 k Ω ?	Go to step 6.	Repair the har- ness/connector between lateral G sensor and ABSCM&H/U.
6	CHECK GROUND SHORT OF HARNESS. Measure the resistance between ABSCM&H/U connector and chassis ground. Connector & terminal (B301) No. 28 — Chassis ground:	Is the resistance more than 1 $\mbox{M}\Omega ?$	Go to step 7.	Repair the har- ness between lat- eral G sensor and ABSCM&H/U. Replace the ABSCM&H/U. <ref. (abscm&h="" abs="" abs-6,="" and="" control="" hydraulic="" mod-="" to="" u).="" ule="" unit=""></ref.>
7	CHECK LATERAL G SENSOR. 1)Remove the console box. 2)Remove the lateral G sensor from vehicle. 3)Connect the connector to lateral G sensor. 4)Connect the connector to ABSCM&H/U. 5)Turn the ignition switch to ON. 6)Measure the voltage between lateral G sensor connector terminals. Connector & terminal (B257) No. 2 (+) — No. 3 (-):	Is the voltage 2.1 — 2.5 V when lateral G sensor is in horizontal position?	Go to step 8.	Replace the lateral G sensor. <ref. to<br="">ABS-22, Lateral G Sensor.></ref.>
8	CHECK LATERAL G SENSOR. Measure the voltage between lateral G sensor connector terminals. Connector & terminal (B257) No. 2 (+) — No. 3 (-):	Is the voltage 3.3 — 3.7 V when lateral G sensor is inclined right to 90°?	Go to step 9.	Replace the lateral G sensor. <ref. to<br="">ABS-22, Lateral G Sensor.></ref.>

	Thom I Stie o				
	Step	Check	Yes	No St	
9	CHECK LATERAL G SENSOR. Measure the voltage between lateral G sensor connector terminals. Connector & terminal (B257) No. 2 (+) — No. 3 (-):	Is the voltage 0.5 — 0.9 V when lateral G sensor is inclined left to 90°?	Go to step 10.	Replace the lateral G sensor. <ref. to<br="">ABS-22, Lateral G Sensor.></ref.>	
10	CHECK ABSCM&H/U. 1)Turn the ignition switch to OFF. 2)Connect all connectors. 3)Erase the memory. 4)Perform the inspection mode. 5)Read out the DTC.	Is the same DTC as in current diagnosis still being output?	Replace the ABSCM&H/U. <ref. abs-6,<br="" to="">ABS Control Mod- ule and Hydraulic Control Unit (ABSCM&H/U).></ref.>	Go to step 11.	
11	CHECK ANY OTHER DTC APPEARANCE.	Are other DTCs being output?	Proceed with the diagnosis corresponding to DTC.	A temporary poor contact.	

AL:DTC 73

— DETECTION OF LATERAL G SENSOR STICK —

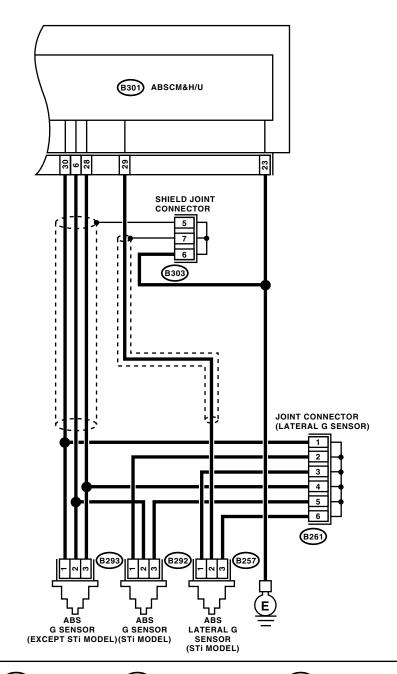
DIAGNOSIS:

Faulty Lateral G sensor output voltage

TROUBLE SYMPTOM:

• ABS does not operate.

WIRING DIAGRAM:







(B303)



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	Step	Check	Yes	No St	Id:
1	CHECK ALL FOUR WHEELS FOR FREE TURNING.	Have the wheels been turned freely such as when vehicle is lifted up, or operated on a rolling road?	The ABS is normal. Erase the DTC.	Go to step 2.	Idio
2	CHECK OUTPUT OF LATERAL G SENSOR USING SUBARU SELECT MONITOR. 1)Select "Current data display & Save" on the Subaru Select Monitor. 2)Read the Subaru Select Monitor display.	Is the lateral G sensor output on monitor display 2.3 — 2.7 V when the vehicle is in horizon- tal position?	Go to step 3.	Go to step 8.	1
3	CHECK OUTPUT OF LATERAL G SENSOR USING SUBARU SELECT MONITOR. 1)Turn the ignition switch to OFF. 2)Remove the console box. 3)Remove the lateral G sensor from vehicle. (Do not disconnect the connector.) 4)Turn the ignition switch to ON. 5)Select "Current data display & Save" on the Subaru Select Monitor. 6)Read the Subaru Select Monitor display.	Is the voltage 3.7 — 4.1 V when lateral G sensor is inclined right to 90°?	Go to step 4.	Replace the lateral G sensor. <ref. to<br="">ABS-22, Lateral G Sensor.></ref.>	
4	CHECK OUTPUT OF LATERAL G SENSOR USING SUBARU SELECT MONITOR. Read the Subaru Select Monitor display.	Is the voltage 0.5 — 0.9 V when lateral G sensor is inclined left to 90°?	Go to step 5.	Replace the lateral G sensor. <ref. to<br="">ABS-22, Lateral G Sensor.></ref.>	1
5	CHECK POOR CONTACT IN CONNECTORS. Turn the ignition switch to OFF.	nector between ABSCM&H/U and lateral G sensor?	Repair the connector.	Go to step 6.	
6	CHECK ABSCM&H/U. 1)Connect all connectors. 2)Erase the memory. 3)Perform the inspection mode. 4)Read out the DTC.	Is the same DTC as in current diagnosis still being output?	Replace the ABSCM&H/U. <ref. abs-6,<br="" to="">ABS Control Mod- ule and Hydraulic Control Unit (ABSCM&H/U).></ref.>	Go to step 7.	
7	CHECK ANY OTHER DTC APPEARANCE.	Are other DTCs being output?	Proceed with the diagnosis corresponding to DTC.	A temporary poor contact.	
8	HARNESS. 1)Turn the ignition switch to OFF. 2)Disconnect the connector from ABSCM& H/U. 3)Measure the resistance between ABSCM&H/U connector terminals. Connector & terminal (B301) No. 29 — No. 28:	kΩ?	Go to step 9.	Repair the har- ness/connector between lateral G sensor and ABSCM&H/U.	
9	CHECK LATERAL G SENSOR. 1)Remove the console box. 2)Remove the lateral G sensor from vehicle. 3)Connect the connector to lateral G sensor. 4)Connect the connector to ABSCM&H/U. 5)Turn the ignition switch to ON. 6)Measure the voltage between lateral G sensor connector terminals. Connector & terminal (B257) No. 2 (+) — No. 3 (-):	Is the voltage 2.1 — 2.5 V when lateral G sensor is in horizontal position?	Go to step 10.	Replace the lateral G sensor. <ref. to<br="">ABS-22, Lateral G Sensor.></ref.>	

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	Step	Check	Yes	No St
10	CHECK LATERAL G SENSOR. Measure the voltage between lateral G sensor connector terminals. Connector & terminal (B257) No. 2 (+) — No. 3 (-):	Is the voltage 3.3 — 3.7 V when lateral G sensor is inclined right to 90°?	Go to step 11.	Replace the lateral G sensor. <ref. to<br="">ABS-22, Lateral G Sensor.></ref.>
11	CHECK LATERAL G SENSOR. Measure the voltage between lateral G sensor connector terminals. Connector & terminal (B257) No. 2 (+) — No. 3 (-):	Is the voltage 0.5 — 0.9 V when lateral G sensor is inclined left to 90°?	Go to step 12.	Replace the lateral G sensor. <ref. to<br="">ABS-22, Lateral G Sensor.></ref.>
12	CHECK ABSCM&H/U. 1)Turn the ignition switch to OFF. 2)Connect all connectors. 3)Erase the memory. 4)Perform the inspection mode. 5)Read out the DTC.	Is the same DTC as in current diagnosis still being output?	Replace the ABSCM&H/U. <ref. abs-6,<br="" to="">ABS Control Mod- ule and Hydraulic Control Unit (ABSCM&H/U).></ref.>	Go to step 13.
13	CHECK ANY OTHER DTC APPEARANCE.	Are other DTCs being output?	Proceed with the diagnosis corresponding to DTC.	A temporary poor contact.

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14.General Diagnostics Table

A: INSPECTION

Symp	tom	Probable faulty units/parts
Vehicle instability during braking	Vehicle pulls to either side.	ABSCM&H/U (solenoid valve) ABS wheel speed sensor Brake (caliper & piston, pads) Wheel alignment Tire specifications, tire wear and air pressures Incorrect wiring or piping connections Road surface (uneven, camber)
	Vehicle spins.	 ABSCM&H/U (solenoid valve) ABS wheel speed sensor Brake (pads) Tire specifications, tire wear and air pressures Incorrect wiring or piping connections
	Long braking/stopping distance	 ABSCM&H/U (solenoid valve) Brake (pads) Air in brake line Tire specifications, tire wear and air pressures Incorrect wiring or piping connections
	Wheel locks.	 ABSCM&H/U (solenoid valve, motor) ABS wheel speed sensor Incorrect wiring or piping connections
Poor braking	Brake dragging	 ABSCM&H/U (solenoid valve) ABS wheel speed sensor Master cylinder Brake (caliper & piston) Parking brake Axle & wheels Brake pedal play
	Long brake pedal stroke	 Air in brake line Brake pedal play
	Vehicle pitching	 Suspension play or fatigue (reduced damping) Incorrect wiring or piping connections Road surface (uneven)
	Unstable or uneven braking	 ABSCM&H/U (solenoid valve) ABS wheel speed sensor Brake (caliper & piston, pads) Tire specifications, tire wear and air pressures Incorrect wiring or piping connections Road surface (uneven)
	Excessive pedal vibration	Incorrect wiring or piping connections Road surface (uneven)
	Noise from ABSCM&H/U	ABSCM&H/U (mount bushing) ABS wheel speed sensor Brake piping
Vibration and/or noise (while driving on slippery roads)	Noise from front of vehicle	 ABSCM&H/U (mount bushing) ABS wheel speed sensor Master cylinder Brake (caliper & piston, pads, rotor) Brake piping Brake booster & check valve Suspension play or fatigue
	Noise from rear of vehicle	 ABS wheel speed sensor Brake (caliper & piston, pads, rotor) Parking brake Brake piping Suspension play or fatigue

ABS (DIAGNOSTICS)

GENERAL DIAGNOSTICS TABLE to your by Eris Studios

ABS-160