

**ATTENTION:**
 GENERAL MANAGER  PARTS MANAGER   
 CLAIMS PERSONNEL  SERVICE MANAGER 

IMPORTANT - All Service Personnel Should Read and Initial


**SUBARU** 
**SERVICE BULLETIN**
**APPLICABILITY:** 1995-2000 Legacy Service Manual

**NUMBER:** 18-57-00

**SUBJECT:** Service Manual Corrections

**DATE:** 01/27/00

Replace the following revised pages into the applicable Service Manuals listed below:

YEAR	VOL #	MSA #	SECTION	PAGES	REFERENCE
1995	2	MSA5T9407A	3-1	53-54	[W5B3] / [W5B4]
1996	5	MSA5T9607A	6-3	19	[D804]
1996	5	MSA5T9607A	6-3	25	[D804]
1997	6	MSA5T9701A	2-3b	13-14	[W3C1] / [W3C1]
1997	6	MSA5T9701A	6-3	67	[D804]
1997	7	MSA5T9712A	4-4d	105-106	[T10C4] / [T10C5]
1997	7	MSA5T9712A	4-4d	107-108	[T10C8] / [T10D0]
1998	9	MSA5T9802A	4-4d	81-82	[T10C6] / [T10C7]
1998	9	MSA5T9802A	6-3	113	[D8D1]
1999	11	MSA5T9902A	3-1	37-38	[W5C1] / [W7A1]
1999	12	MSA5T9903A	6-3	73	[D8D1]

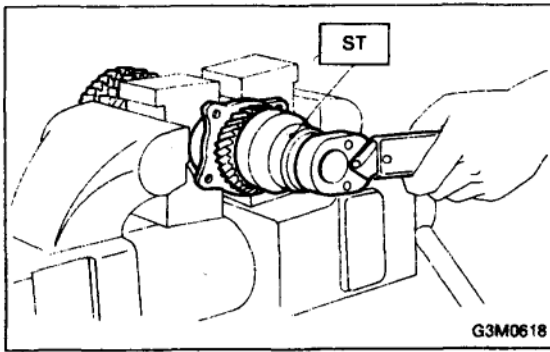
*continued on next page*
**CAUTION**
**VEHICLE SERVICING PERFORMED BY UNTRAINED PERSONS COULD RESULT IN SERIOUS INJURY TO THOSE PERSONS OR TO OTHERS.**

Subaru Service Bulletins are intended for use by professional technicians ONLY. They are written to inform those technicians of conditions that may occur in some vehicles, or to provide information that could assist in the proper servicing of the vehicle. Properly trained technicians have the equipment, tools, safety instructions, and know-how to do the job correctly and safely. If a condition is described, DO NOT assume that this Service Bulletin applies to your vehicle, or that your vehicle will have that condition.

The following pages are revised from your 2000 Legacy Service Manuals.  
 Place a revised label on the indicated page in your original Service Manual and then place your corrected page into your Legacy Correction Binder. Keep your Service Manuals and Correction Binders together for quick reference.

<b>YEAR</b>	<b>BOOK#</b>	<b>MSA#</b>	<b>SECTION</b>	<b>PAGES</b>	<b>REFERENCE</b>
2000	4	MSA5T0004A	2-7	324	[T11A0]
2000	4	MSA5T0004A	2-7	502	[T11BY0]
2000	4	MSA5T0004A	2-7	503	[T11BY4]
2000	4	MSA5T0004A	2-7	504	[T11BY5]
2000	4	MSA5T0004A	2-7	505	[T11BZ1]
2000	4	MSA5T0004A	2-7	506	[T11BZ2]
2000	4	MSA5T0004A	2-7	507	[T11BZ7]
2000	4	MSA5T0004A	2-7	508	[T11BY8]
2000	5	MSA5T0005A	3-1	33	[W3C1]
2000	6	MSA5T0006A	4-4	73	[T8Y3]

Please perform these corrections promptly to ensure that the most recent information is conveyed when the Service Manual is used.



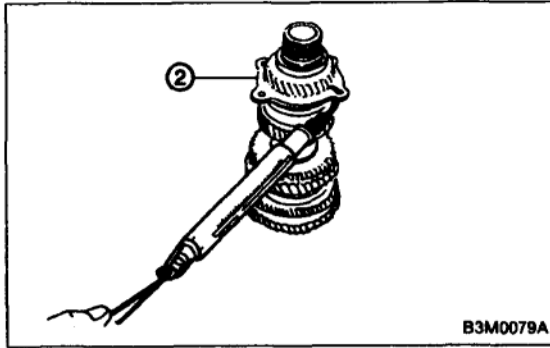
G3M0618

6) Install lock washer (42 x 53 x 2). Install lock nut (42 x 13) and tighten to the specified torque using ST.

ST 499987300 SOCKET WRENCH (50)

**Tightening torque:**

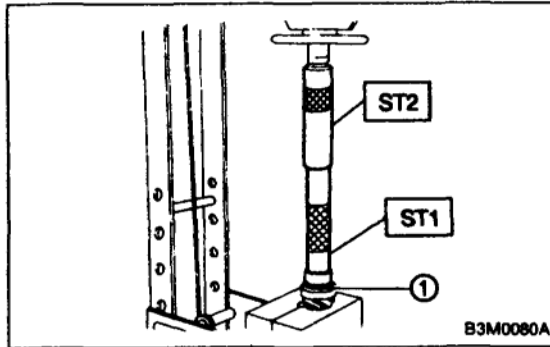
**245 ± 10 N·m (25 ± 1 kg·m, 181 ± 7 ft·lb)**



B3M0079A

**NOTE:**

- Stake lock nut at two points.
- Using spring balancer, check that starting torque of roller bearing ② is 0.1 to 1.5 N·m (1 to 15 kg·cm, 0.9 to 13.0 in·lb).



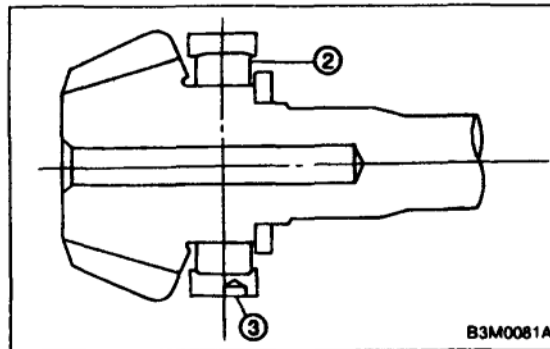
B3M0080A

**3. DRIVE PINION SHAFT**

1) Install roller bearing onto drive pinion. Install washer ① (33 x 50 x 5) using ST1, ST2 and press.

ST1 499277100 BUSH 1-2 INSTALLER

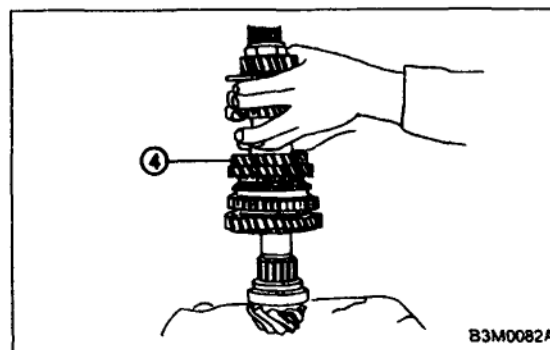
ST2 499277200 INSTALLER



B3M0081A

**NOTE:**

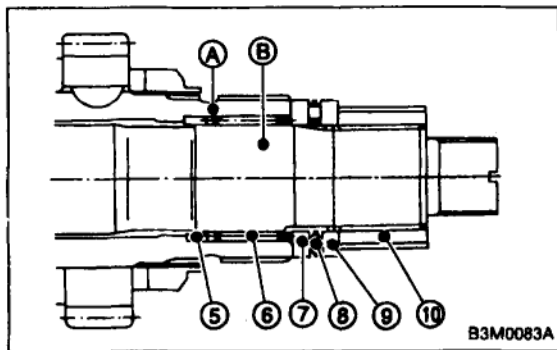
When installing roller bearing ②, note its directions (front and rear) because knock pin hole ③ in outer race is off-set.



B3M0082A

2) Install thrust bearing (33 x 50 x 3) and needle bearing (30 x 37 x 23). Install driven shaft assembly ④.

## 5. Drive Pinion Assembly (AWD Model)



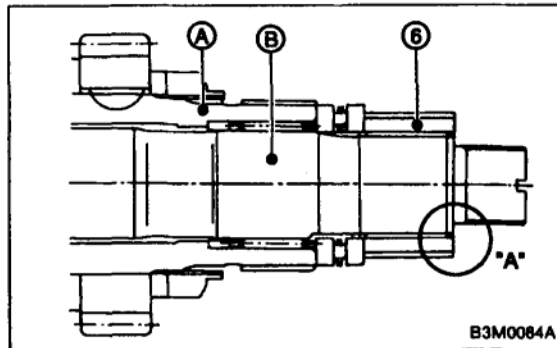
3) Install drive pinion collar ⑤, needle bearing ⑥ (25 x 30 x 20), adjusting washer No. 2 ⑦ (25 x 36 x 4), thrust bearing ⑧ (25 x 37.5 x 3), adjusting washer No. 1 ⑨ (25 x 36 x t) and differential bevel gear sleeve ⑩ in that order.

## NOTE:

Be careful because spacer must be installed in proper direction.

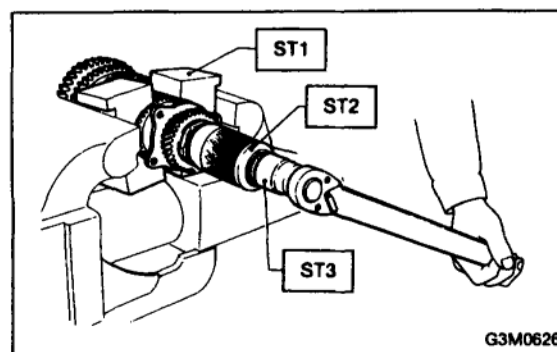
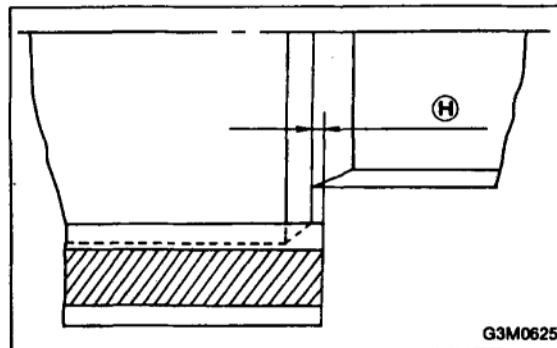
Ⓐ: Driven shaft

Ⓑ: Driven pinion shaft



## 4. ADJUSTMENT OF THRUST BEARING PRELOAD

1) After completing the preceding steps 1) through 3), select adjusting washer No. 2 so that dimension ① is zero through visual check. Position washer (18.3 x 30 x 4) and lock washer (18 x 30 x 2) and install lock nut (18 x 13.5).



2) Using ST1, ST2 and ST3, tighten lock nut to the specified torque.

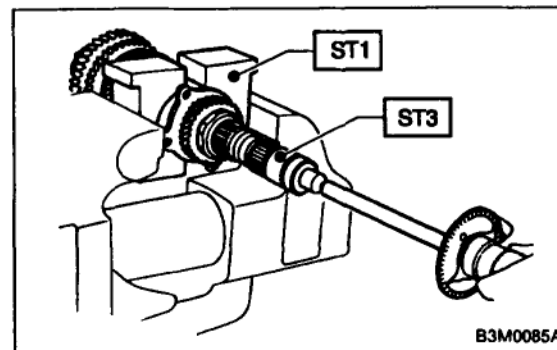
ST1 899884100 HOLDER

ST2 498427100 STOPPER

ST3 899988608 SOCKET WRENCH (27)

**Tightening torque:**

**118 ± 8 N·m (12 ± 0.8 kg-m, 86.8 ± 5.8 ft-lb)**



3) After removing ST2, measure starting torque using torque driver.

ST1 899884100 HOLDER

ST3 899988608 SOCKET WRENCH (27)

**Starting torque:**

**0.3-0.8 N·m (3-8 kg-cm, 2.6-6.9 in-lb)**

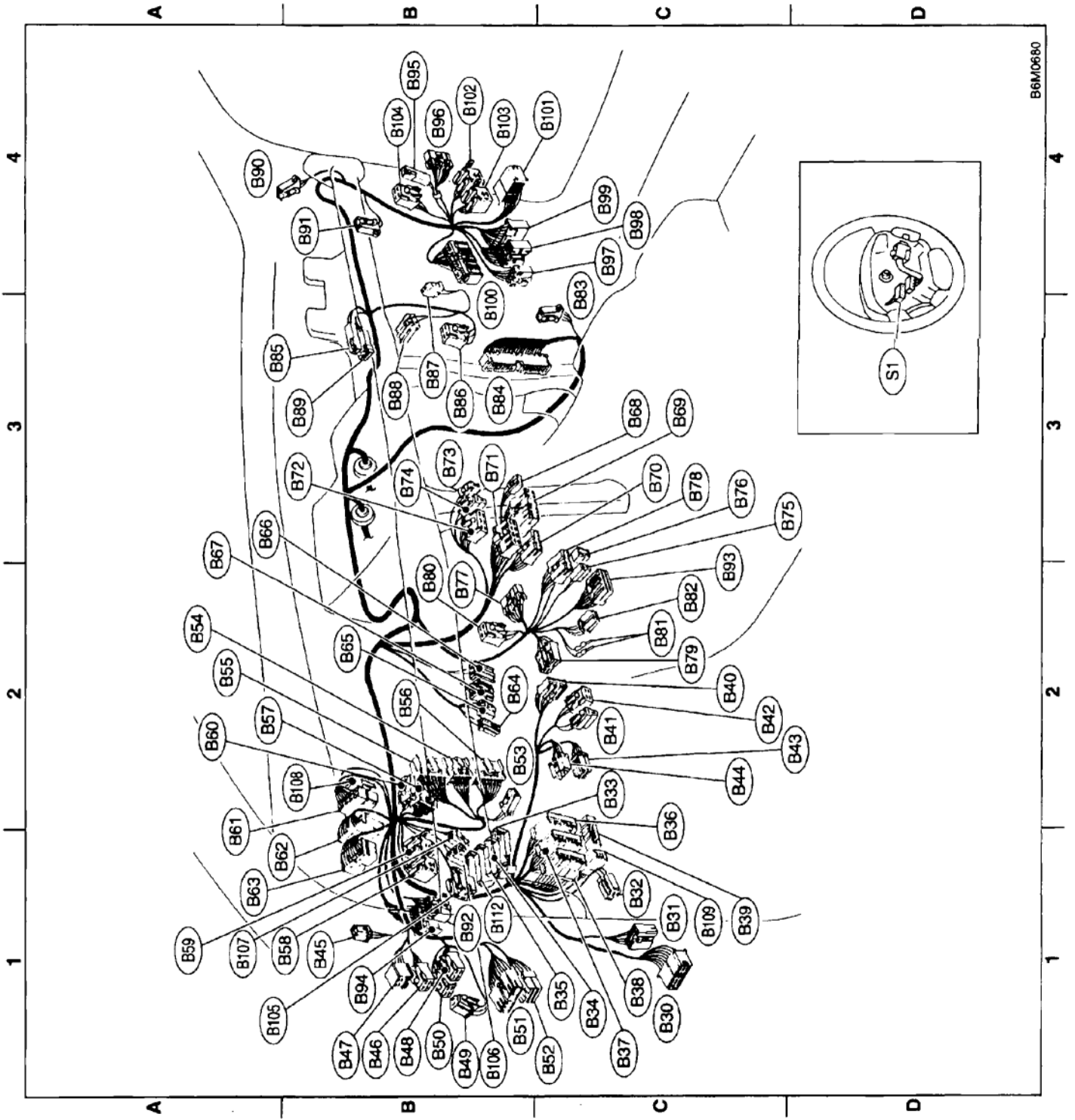
Connector				Connecting to	
No.	Pole	Color	Area	No.	Name
B30	24	*	C-1	D1	Front door cord LH
B31	7	Yellow	C-1	AB1	SRS (Airbag) harness
B32	3	Black	C-1		Turn & hazard module
B33	4	Brown	B-1		Diode (TCS)
B34	3	*	B-1		Diode (Door warning)
B35	2	Black	B-1		Diode (Step light)
B36	22	Black	C-1	i1	Instrument panel wiring harness
B37	22	*	C-1	i2	
B38	22	Brown	C-1	i3	
B39	20	Blue	C-1	i4	
B40	16	Gray	C-2		OBD-II service connector
B41	2	*	C-2		Power window circuit breaker
B42	4	*	C-2		Power window and sunroof relay
B43	6	Black	C-2		Illumination control module
B44	8	*	C-2		Seat belt timer
B45	4	*	B-1	R53	Sunroof cord
B46	4	Green	B-1		Fuel pump relay
B47	6	Brown	B-1		Main relay
B48	4	Blue	B-1		Front fog light relay
B49	3	Black	B-1		Horn relay
B50	4	*	B-1		Blower relay
B51	11	Gray	B-1		F/B
B52	12	Gray	B-1		
B53	4	*	B-2		Shield joint connector (AT)
B54	12	Black	B-2		Transmission control module
B55	16	Black	B-2		
B56	20	Black	B-2		
B57	12	Black	B-2		Shift-lock control module
B58	5	Black	B-1		Headlight alarm relay (Security)
B59	5	Black	B-1		Interrupt relay (Security)
B60	4	*	B-2		Shield joint connector (With TCS model)
B61	8	*	B-2	F44	Front wiring harness
B62	20	*	B-1	F45	
B63	40	Gray	B-1	P10	Floor harness (With TCS model)
B64	2	Black	B-2		Stop light switch
B65	4	Black	B-2		Stop & brake switch (With cruise control)
B66	3	Black	B-2		Pedal stroke sensor (TCS)
B67	4	Black	B-2		Pedal stroke switch (TCS)
B68	5	Black	B-3		Slip ring
B69	11	Black	B-3		Combination switch
B70	9	*	B-3		
B71	8	*	B-3		
B72	6	Black	B-3		Ignition switch

Connector				Connecting to	
No.	Pole	Color	Area	No.	Name
B73	2	Black	B-3		Key lock solenoid (AT)
B74	2	Black	B-3		Key warning switch
B75	2	Green	C-2	B76	Test mode connector
B76	2	Green	C-3	B75	
B77	10	Brown	B-2		Mode actuator
B78	9	Yellow	C-2		Data link connector
B79	14	Gray	C-2		Check connector
B80	4	Blue	B-2	i20	Instrument panel wiring harness
B81	1 x 2	*	C-2		Diagnosis terminal (Ground)
B82	6	Black	C-2		Diagnosis connector
B83	4	*	C-3		Shield joint connector (E/G)
B84	96	Light blue	B-3		Engine control module
B85	2	Black	B-3		Diode (Lighting)
B86	4	*	B-3		Blower motor resistor
B87	2	*	B-3		Blower motor
B88	3	Black	B-3		Evaporator thermostatswitch
B89	4	Brown	B-3		Diode (Security)
B90	4	*	B-4	R50	Room light cord
B91	4	*	B-4		FRESH/RECIRC actuator
B92	8	*	B-1		Door lock timer
B93	16	Black	B-4		Security control module
B94	20	Black	B-4		Cruise control module
B95	2	Black	B-4		Diode (Daytime running light)
B96	10	*	B-4		Daytime running light control module
B97	8	*	B-4	R1	Rear wiring harness
B98	16	Black	B-4	R2	
B99	24	*	B-4	R3	
B100	20	*	B-4	F2	Front wiring harness (With ABS model)
B101	24	*	B-4	D11	Front door cord RH
B102	5	Black	B-4		Daytime running light relay
B103	4	Blue	B-4		High-beam relay (Daytime running light)
B104	4	Pink	B-4		Rear power supply relay
B105	4	Blue	B-1		Starter interlock relay (MT)
B106	2	*	B-1		Clutch switch (MT)
B107	2	Blue	B-1		Clutch switch (Cruise control)
B108	2	Black	B-2	F46	Front wiring harness (Outback)
B109	4	Black	C-1		Fuse holder (Outback)
B112	2	Black	B-1		Diode (Front fog light)

\*: Non-colored

Connector				Connecting to	
No.	Pole	Color	Area	No.	Name
S1	3	White	D-3		Cruise control sub switch

### 4. BULKHEAD WIRING HARNESS (IN COMPARTMENT)



## 8. Electrical Wiring Harness and Ground Point

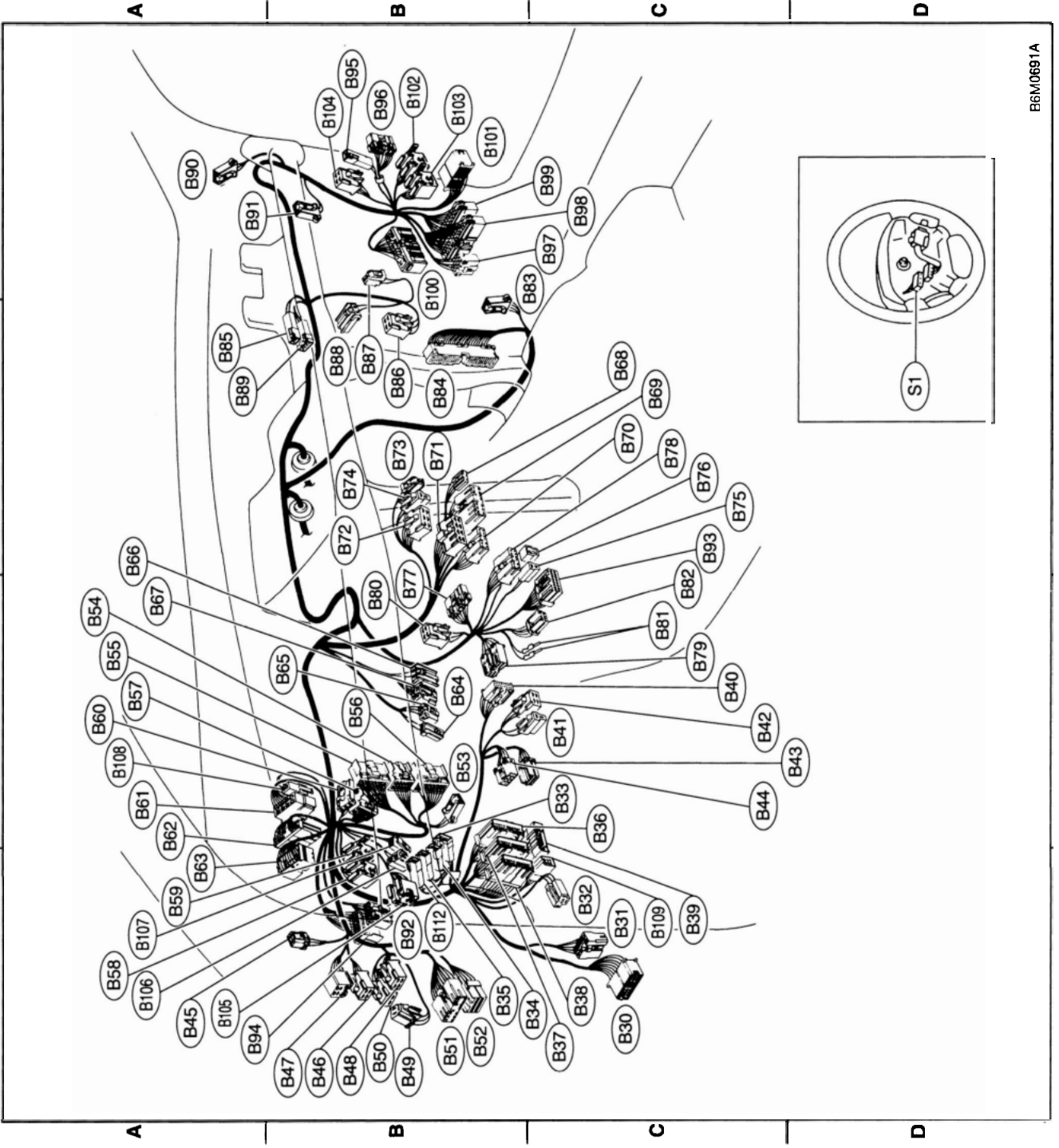
Connector				Connecting to	
No.	Pole	Color	Area	No.	Name
B30	24	*	C-1	D1	Front door cord LH
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B33	4	Brown	B-1		Diode (Brake fluid level)
B34	3	*	B-1		Diode (Door warning)
B35	2	Black	B-1		Diode (Step light)
B36	22	Black	C-1	i1	Instrument panel wiring harness
B37	22	*	C-1	i2	
B38	22	Brown	C-1	i3	
B39	20	Blue	C-1	i4	
B40	16	Gray	C-2		OBD-II service connector
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B42	4	*	C-2		Power window and sunroof relay
B43	6	Black	C-2		Illumination control module
B44	8	*	C-2		Seat belt timer
B45	4	*	B-1	R53	Sunroof cord
B46	4	Green	B-1		Fuel pump relay
B47	6	Brown	B-1		Main relay
B48	4	Blue	B-1		Front fog light relay
B49	3	Black	B-1		Horn relay
B50	4	*	B-1		Blower relay
B51	11	Gray	B-1		F/B
B52	12	Gray	B-1		
B53	4	*	B-2		Shield joint connector (AT)
B54	12	Black	B-2		Transmission control module
B55	16	Black	B-2		
B56	20	Black	B-2		
B57	12	Black	B-2		Shift-lock control module
B58	5	Black	B-1		Headlight alarm relay (Security)
B59	5	Black	B-1		Interrupt relay (Security)
B60	4	*	B-2		Shield joint connector (With TCS model)
B61	8	*	B-2	F44	Front wiring harness
B62	20	*	B-1	F45	
B63	40	Gray	B-1	P10	Floor harness (With TCS model)
B64	2	Black	B-2		Stop light switch
B65	4	Black	B-2		Stop & brake switch (With cruise control)
B66	3	Black	B-2		Pedal stroke sensor (TCS)
B67	4	Black	B-2		Pedal stroke switch (TCS)
B68	5	Black	B-3		Slip ring
B69	11	Black	B-3		Combination switch
B70	9	*	B-3		
B71	8	*	B-3		
B72	6	Black	B-3		Ignition switch

Connector				Connecting to	
No.	Pole	Color	Area	No.	Name
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B74	2	Black	B-3		Key warning switch
B75	2	Green	C-2	B76	Test mode connector
B76	2	Green	C-3	B75	
B77	10	Brown	B-2		Mode actuator
B78	9	Yellow	C-2		Data link connector
B79	14	Gray	C-2		Check connector
B80	4	Blue	B-2	i20	Instrument panel wiring harness
B81	1 x 2	*	C-2		Diagnosis terminal (Ground)
B82	6	Black	C-2		Diagnosis connector
B83	4	*	C-3		Shield joint connector (E/G)
B84	96	Light blue	B-3		Engine control module
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B86	4	*	B-3		Blower motor resistor
B87	2	*	B-3		Blower motor
B88	3	Black	B-3		Evaporator thermoswitch
B89	4	Brown	B-3		Diode (Security)
B90	4	*	B-4	R50	Room light cord
B91	4	*	B-4		FRESH/RECIRC actuator
B92	8	*	B-1		Door lock timer
B93	16	Black	B-4		Security control module
B94	20	Black	B-4		Cruise control module
B95	2	Black	B-4		Diode (Daytime running light)
B96	10	*	B-4		Daytime running light control module
B97	8	*	B-4	R1	Rear wiring harness
B98	24	Black	B-4	R2	
B99	24	*	B-4	R3	
B100	20	Blue	B-4	F2	Front wiring harness (With ABS model)
B101	24	*	B-4	D11	Front door cord RH
B102	5	Black	B-4		Daytime running light relay
B103	4	Blue	B-4		High-beam relay (Daytime running light)
B104	4	Pink	B-4		Rear power supply relay
B105	4	Blue	B-1		Starter interlock relay (MT)
B106	2	*	B-1		Clutch switch (MT)
B107	2	Blue	B-1		Clutch switch (Cruise control)
B108	2	Black	B-2	F46	Front wiring harness (Outback)
B109	4	Black	C-1		Fuse holder (Outback)
B112	2	Black	B-1		Diode (Front fog light)

\*: Non-colored

Connector				Connecting to	
No.	Pole	Color	Area	No.	Name
S1	3	White	D-3		Cruise control sub switch

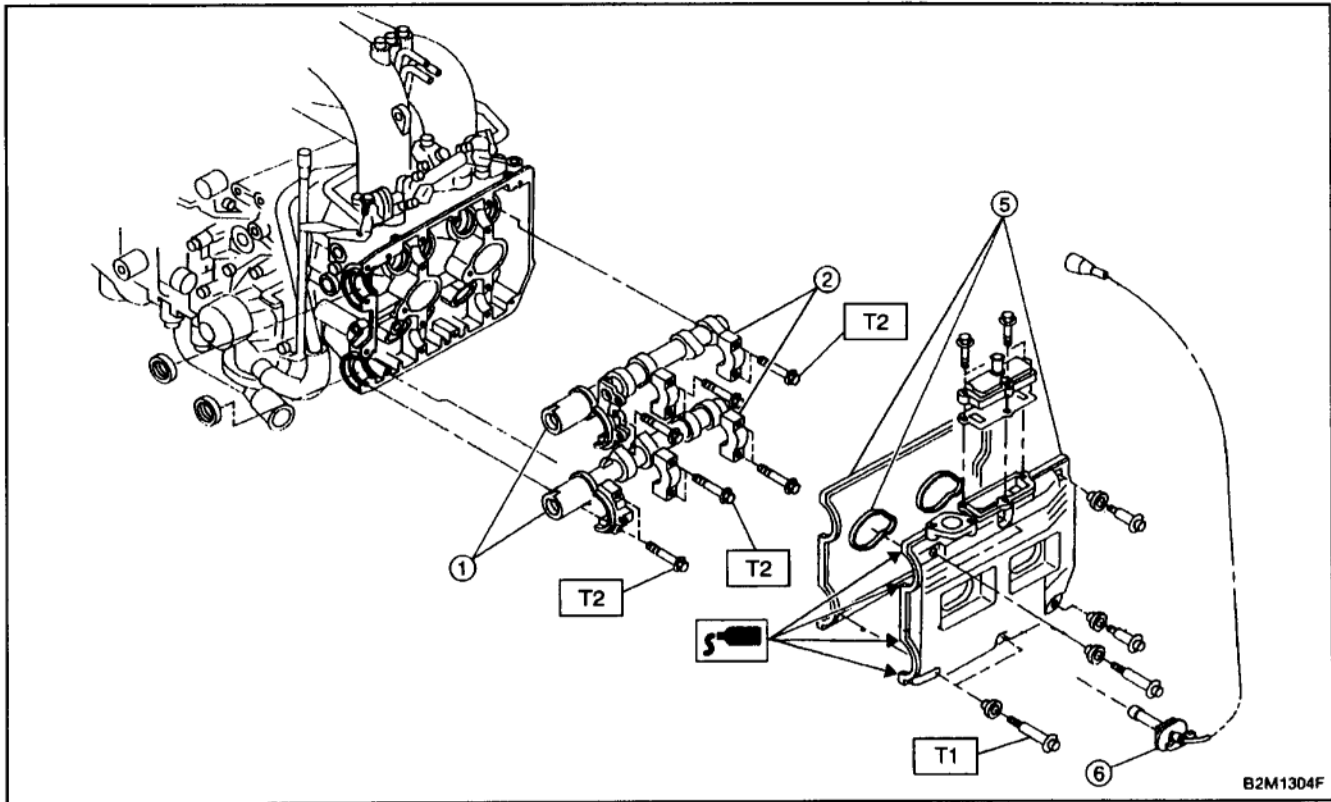
4. BULKHEAD WIRING HARNESS (IN COMPARTMENT)





C: INSTALLATION

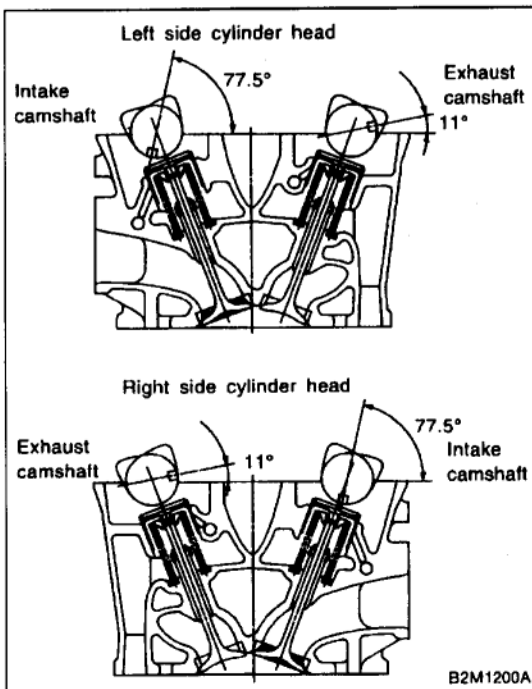
1. CAMSHAFT



Tightening torque: N·m (kg·m, ft·lb)

T1:  $5 \pm 0.5$  ( $0.5 \pm 0.05$ ,  $3.6 \pm 0.4$ )

T2:  $10 \pm 0.7$  ( $1.0 \pm 0.07$ ,  $7.2 \pm 0.5$ )



1) Camshaft installation

Apply engine oil to cylinder head at camshaft bearing location before installing camshaft. Install camshaft so that rocker arm is close to or in contact with "base circle" of cam lobe.

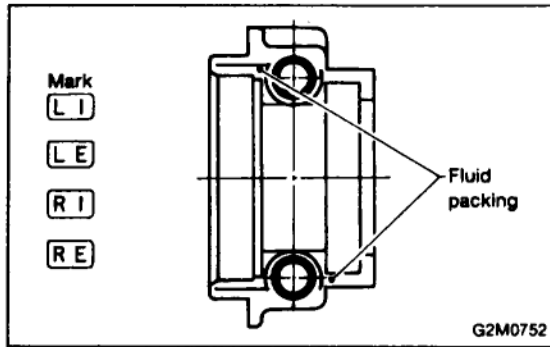
**CAUTION:**

- When camshafts are positioned as shown in figure, camshafts need to be rotated at a minimum to align with timing belt during installation.

- Right-hand camshaft need not be rotated when set at position shown in figure.

Left-hand intake camshaft: Rotate 80° clockwise.

Left-hand exhaust camshaft: Rotate 45° counter-clockwise.



2) Camshaft cap installation

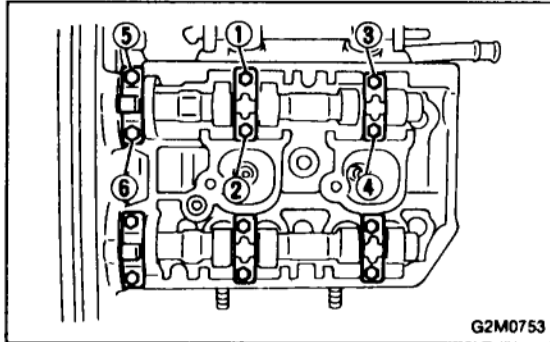
- (1) Apply fluid packing sparingly to cap mating surface.

**CAUTION:**

**Do not apply fluid packing excessively. Failure to do so may cause excess packing to come out and flow toward oil seal, resulting in oil leaks.**

**Fluid packing:**

**THREE BOND 1215 or equivalent**

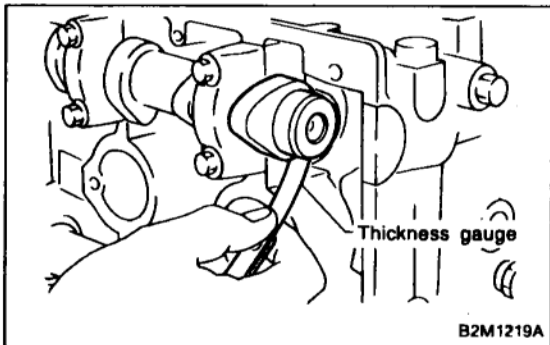


- (2) Apply engine oil to cap bearing surface and install cap on camshaft as shown by identification mark.

- (3) Gradually tighten cap in at least two stages in the numerical order shown in figure, and then tighten to specified torque.

- (4) Similarly, tighten cap on exhaust side.

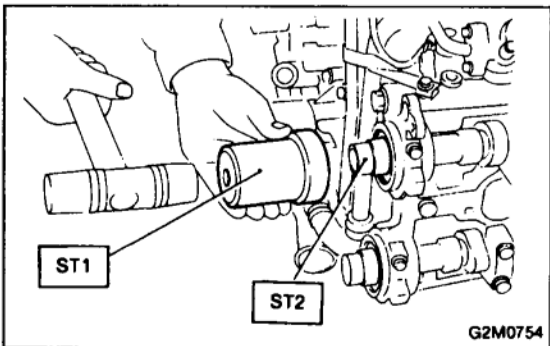
After tightening cap, ensure camshaft rotates only slightly while holding it at "base" circle.



3) Inspect for valve clearance.

Measure valve clearances using thickness gauge. <Ref. to 2-2 [07A2].☆8>

If necessary, adjust valve clearances. <Ref. to 2-2 [07B2].☆8>



4) Camshaft oil seal installation

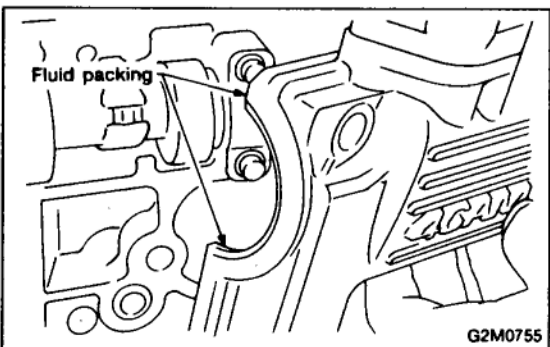
Apply grease to new oil seal lips and press onto front end of camshaft by using ST1 and ST2.

**CAUTION:**

**Use a new oil seal.**

ST1 499587100 OIL SEAL INSTALLER

ST2 499597000 OIL SEAL GUIDE



5) Rocker cover installation

- (1) Install gaskets on rocker cover.

Install peripheral rocker cover gaskets.

- (2) Apply fluid packing to four front open edges of peripheral gasket.

**Fluid packing:**

**THREE BOND 1215 or equivalent**

- (3) Install rocker cover on cylinder head. Ensure gasket is properly positioned during installation.

Connector				Connecting to	
No.	Pole	Color	Area	No.	Name
B30	24	*	C-1	D1	Front door cord LH
B31	7	Yellow	C-1	AB1	SRS (Airbag) harness
B32	3	Black	C-1		Turn & hazard module
B33	4	Brown	B-1		Diode (Brake fluid level)
B35	2	Black	B-1		Diode (Without step light)
	4	Brown	B-1		Diode (With step light)
B36	22	Black	C-1	i1	Instrument panel wiring harness
B37	22	*	C-1	i2	
B38	22	Brown	C-1	i3	
B39	20	Blue	C-1	i4	
B40	16	Gray	C-2		OBD-II service connector
B41	2	*	C-2		Power window circuit breaker
B42	4	*	C-2		Power window and sunroof relay
B43	6	Black	C-2		Illumination control module
B44	8	*	C-2		Seat belt timer
B45	4	*	B-1	R53	Sunroof cord
B46	4	Green	B-1		Fuel pump relay
B47	6	Brown	B-1		Main relay
B48	4	Blue	B-1		Front fog light relay
B49	3	Black	B-1		Horn relay
B50	4	*	B-1		Blower relay
B51	11	Gray	B-1		F/B
B52	12	Gray	B-1		
B53	4	*	B-2		Shield joint connector (AT)
B54	12	Black	B-2		Transmission control module
B55	16	Black	B-2		
B56	20	Black	B-2		
B57	12	Black	B-2		Shift-lock control module
B58	5	Black	B-1		Headlight alarm relay (Security)
B59	5	Black	B-1		Interrupt relay (Security)
B60	4	*	B-2		Shield joint connector (With TCS model)
B61	8	*	B-2	F44	Front wiring harness
B62	20	*	B-1	F45	
B63	40	Gray	B-1	P10	Floor harness (With TCS model)
B64	2	Black	B-2		Stop light switch
B65	4	Black	B-2		Stop & brake switch (With cruise control)
B66	3	Black	B-2		Pedal stroke sensor (TCS)
B67	4	Black	B-2		Pedal stroke switch (TCS)
B68	5	Black	B-3		Slip ring
B69	11	Black	B-3		Combination switch
B70	9	*	B-3		
B71	8	*	B-3		
B72	6	Black	B-3		Ignition switch
B73	2	Black	B-3		Key lock solenoid (AT)

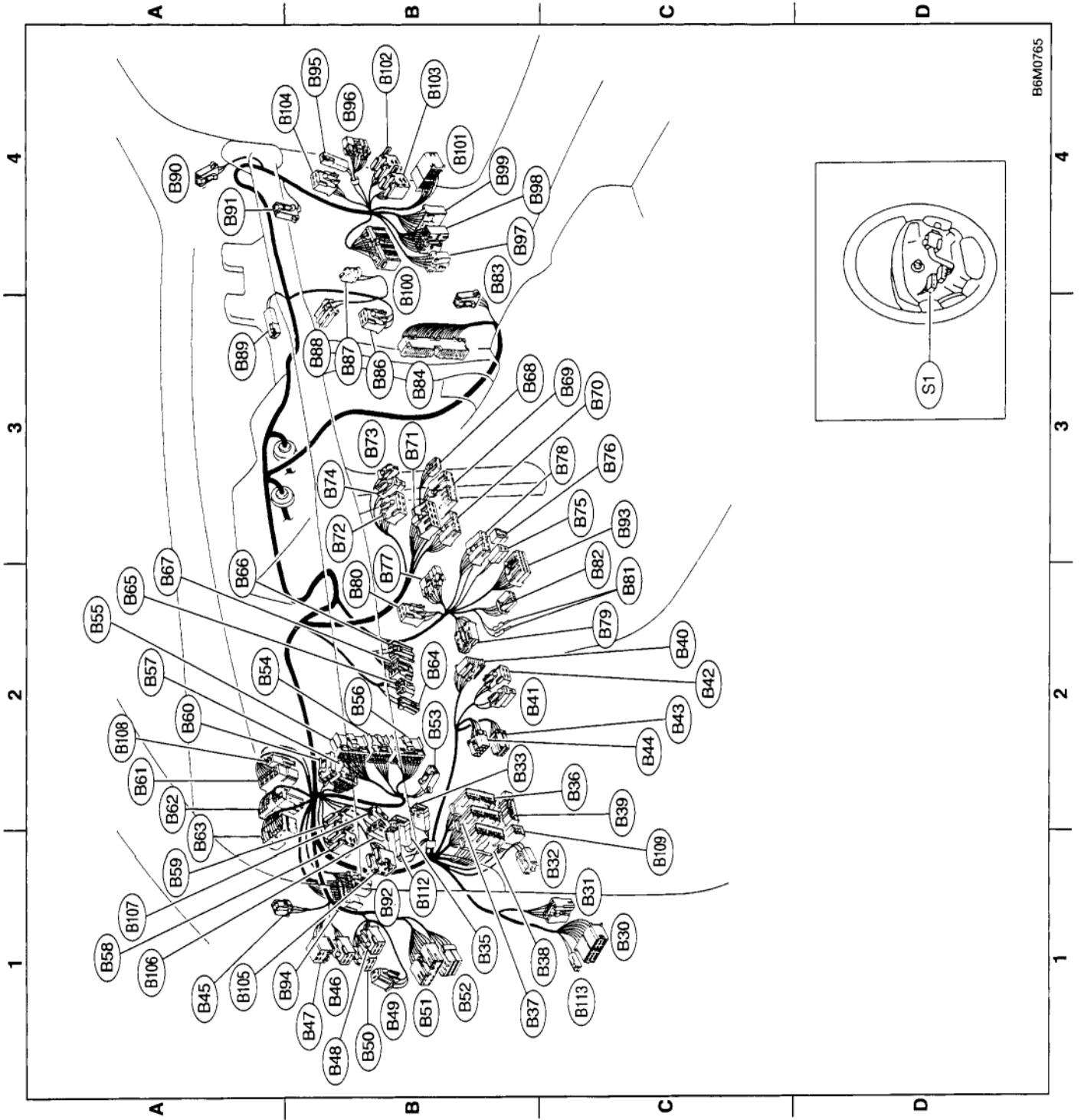
Connector				Connecting to	
No.	Pole	Color	Area	No.	Name
B74	2	Black	B-3		Key warning switch
B75	2	Green	C-2	B76	Test mode connector
B76	2	Green	C-3	B75	
B77	10	Brown	B-2		Mode actuator
B78	9	Yellow	C-2		Data link connector
B79	14	Gray	C-2		Check connector
B80	4	Blue	B-2	i20	Instrument panel wiring harness
B81	1 x 2	*	C-2		Diagnosis terminal (Ground)
B82	6	Black	C-2		Diagnosis connector
B83	4	*	C-3		Shield joint connector (E/G)
B84	96	Light blue	B-3		Engine control module
B86	4	*	B-3		Blower motor resistor
B87	2	*	B-3		Blower motor
B88	3	Black	B-3		Evaporator thermostats
B89	2	Black	B-3		Diode (Security)
B90	4	*	B-4	R50	Room light cord
B91	4	*	B-4		FRESH/RECIRC actuator
B92	8	*	B-1		Door lock timer
B93	16	Black	B-4		Security control module
B94	20	Black	B-4		Cruise control module
B95	2	Black	B-4		Diode (Daytime running light)
B96	10	*	B-4		Daytime running light control module
B97	8	*	B-4	R1	Rear wiring harness
B98	20	*	B-4	R2	Rear wiring harness (Other models)
	24	Black	B-4	R2	Rear wiring harness (2200 cc engine AWD except Taiwan model)
B99	24	*	B-4	R3	Rear wiring harness
B100	20	Blue	B-4	F2	Front wiring harness (With ABS model)
B101	24	*	B-4	D11	Front door cord RH
B102	5	Black	B-4		Daytime running light relay
B103	4	Blue	B-4		High-beam relay (Daytime running light)
B104	4	Pink	B-4		Rear power supply relay
B105	4	Blue	B-1		Starter interlock relay (MT)
B106	2	*	B-1		Clutch switch (MT)
B107	2	Blue	B-1		Clutch switch (Cruise control)
B108	2	Black	B-2	F46	Front wiring harness (Outback)
B109	4	Black	C-1		Fuse holder (Outback)
B112	2	Black	B-1		Diode (Front fog light)
B113	2	*	C-1	D50	Front door cord LH

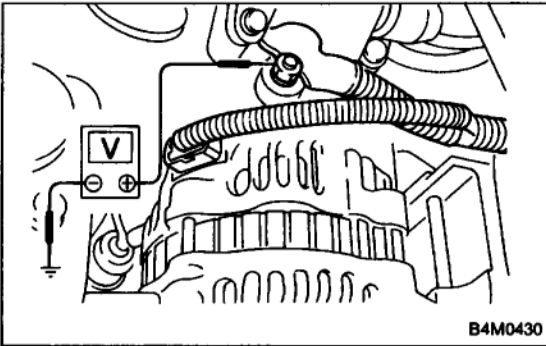
\*: Non-colored

Connector				Connecting to	
No.	Pole	Color	Area	No.	Name
S1	3	White	D-3		Cruise control sub switch

### 4. BULKHEAD WIRING HARNESS (IN COMPARTMENT)

● LHD model



**10C1 CHECK GENERATOR.**

- 1) Start the engine.
- 2) Idle the engine.
- 3) Measure voltage between generator and chassis ground.

**Terminal**

**Generator B terminal (+) — Chassis ground (-):**

**CHECK** : *Is the voltage between 10 and 15 V?*

**YES** : Go to step **10C2**.

**NO** : Repair generator.

**10C2 CHECK BATTERY TERMINAL.**

Turn ignition switch to OFF.

**CHECK** : *Is there poor contact at battery terminal?*

**YES** : Repair battery terminal.

**NO** : Go to step **10C3**.

**10C3 CHECK COMMUNICATION OF SELECT MONITOR.**

Using the select monitor, check whether communication to other system (such as engine, AT, etc.) can be executed normally.

**CHECK** : *Are the name and year of the system displayed on the select monitor?*

**YES** : Go to step **10C4**.

**NO** : Repair select monitor communication cable and connector.

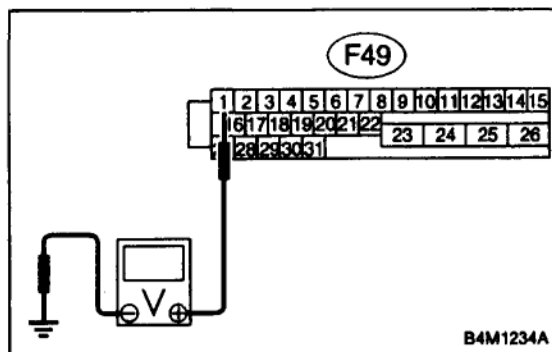
**10C4 CHECK INSTALLATION OF ABSCM&H/U CONNECTOR.**

Turn ignition switch to OFF.

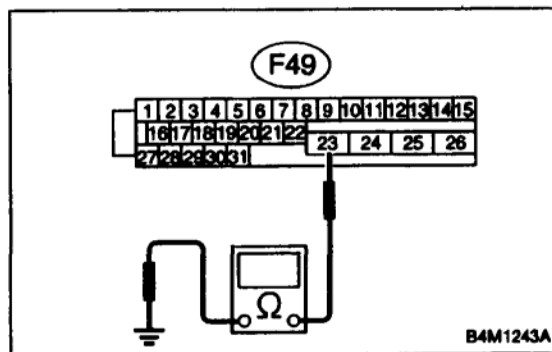
**CHECK** : *Is ABSCM&HIU connector inserted into ABSCM&HIU until the clamp locks onto it?*

**YES** : Go to step **10C5**.

**NO** : Insert ABSCM&H/U connector into ABSCM&H/U until the clamp locks onto it.

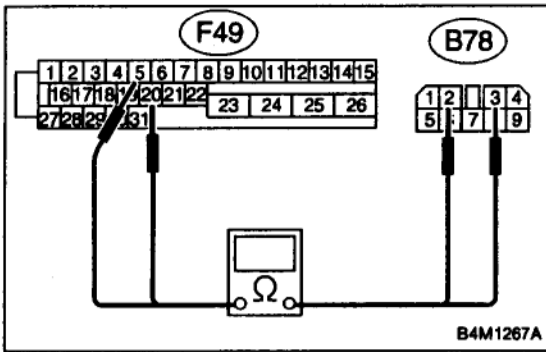
**10C5 CHECK POWER SUPPLY OF ABSCM&H/U.**

- 1) Disconnect connector from ABSCM&H/U.
- 2) Start engine.
- 3) Idle the engine.
- 4) Measure voltage between ABSCM&H/U connector and chassis ground.

**Connector & terminal****(F49) No. 1 (+) — Chassis ground (-):****(CHECK)** : Is the voltage between 10 and 15 V?**(YES)** : Go to step 10C6.**(NO)** : Repair ABSCM&H/U power supply circuit.**10C6 CHECK GROUND CIRCUIT OF ABSCM&H/U.**

- 1) Turn ignition switch to OFF.
- 2) Measure resistance between ABSCM&H/U connector and chassis ground.

**Connector & terminal****(F49) No. 23 — Chassis ground:****(CHECK)** : Is the resistance less than 0.5 Ω?**(YES)** : Go to step 10C7.**(NO)** : Repair harness/connector between ABSCM&H/U and select monitor.



**10C7 CHECK HARNESS/CONNECTOR BETWEEN ABSCM&H/U AND DATA LINK CONNECTOR.**

- 1) Turn ignition switch OFF.
- 2) Measure resistance between ABSCM&H/U connector and data link connector.

**Connector & terminal**

**(F49) No. 20 — (B78) No. 3:**

**(F49) No. 5 — (B78) No. 2:**

**CHECK** : **Is the resistance less than 0.5 Ω?**

**YES** : Go to step **10C8**.

**NO** : Repair harness and connector between ABSCM&H/U and data link connector.

**10C8 CHECK POOR CONTACT IN CONNECTORS.**

**CHECK** : **Is there poor contact in connectors between ABSCM&H/U and data link connector? <Ref. to FOREWORD [T3C1].☆10>**

**YES** : Repair connector.

**NO** : Replace ABSCM&H/U.

D•ALL 11 (FB1)  
NO TROUBLE

B4M0944

**D: NO TROUBLE**  
— ALTHOUGH NO TROUBLE APPEARS ON THE SELECT MONITOR DISPLAY, THE ABS WARNING LIGHT REMAINS ON —

**DIAGNOSIS:**

- ABS warning light circuit is shorted.

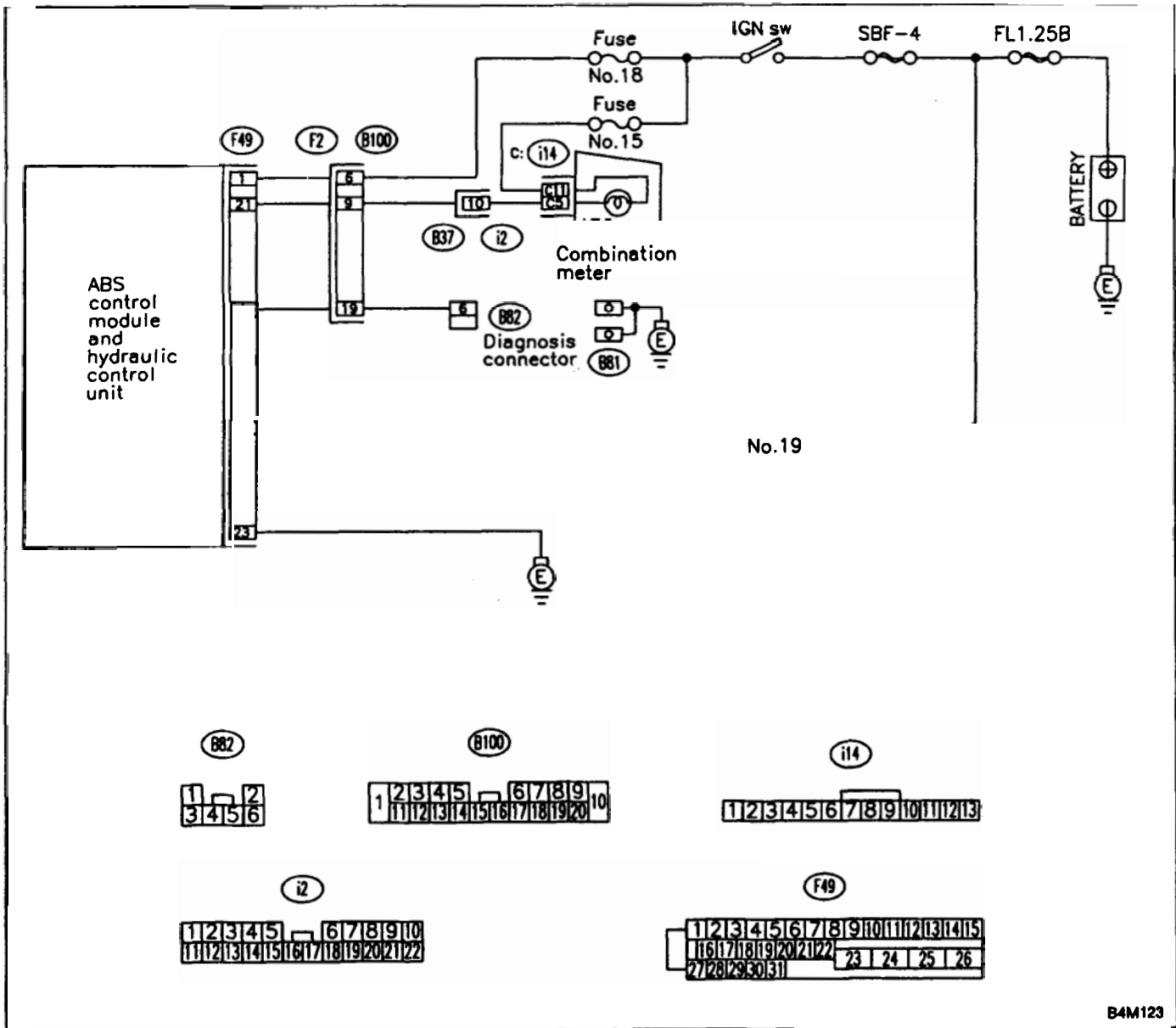
**TROUBLE SYMPTOM:**

- ABS warning light remains on.
- NO TROUBLE displayed on the select monitor.

**NOTE:**

When the ABS warning light is OFF and "NO TROUBLE" is displayed on the select monitor, the system is in normal condition.

**WIRING DIAGRAM:**





**10C1 : CHECK IGNITION SWITCH.**

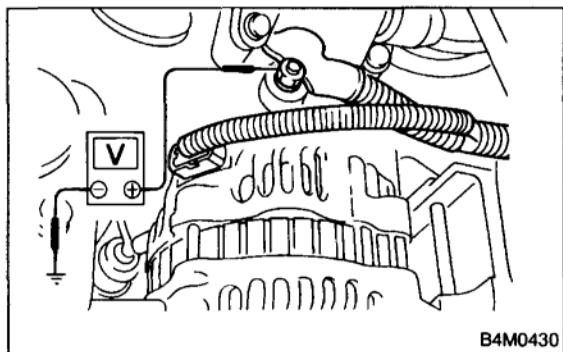
- CHECK** : *Is ignition switch ON?*
- YES** : Go to step **10C2**.
- NO** : Turn ignition switch ON, and select ABS/TCS mode using the select monitor.

**10C2 : CHECK GENERATOR.**

- 1) Start the engine.
- 2) Idle the engine.
- 3) Measure voltage between generator and chassis ground.

**Terminal**

**Generator B terminal (+) — Chassis ground (-):**



- CHECK** : *Is the voltage between 10 and 15 V?*
- YES** : Go to step **10C3**.
- NO** : Repair generator.

**10C3 : CHECK BATTERY TERMINAL.**

Turn ignition switch to OFF.

- CHECK** : *Is there poor contact at battery terminal?*
- YES** : Repair battery terminal.
- NO** : Go to step **10C4**.

**10C4 : CHECK COMMUNICATION OF SELECT MONITOR.**

Using the select monitor, check whether communication to other system (such as engine, AT, etc.) can be executed normally.

- CHECK** : *Are the name and year of the system displayed on the select monitor?*
- YES** : Go to step **10C5**.
- NO** : Repair select monitor communication cable and connector.

**10C5 : CHECK INSTALLATION OF ABSCM&H/U CONNECTOR.**

Turn ignition switch to OFF.

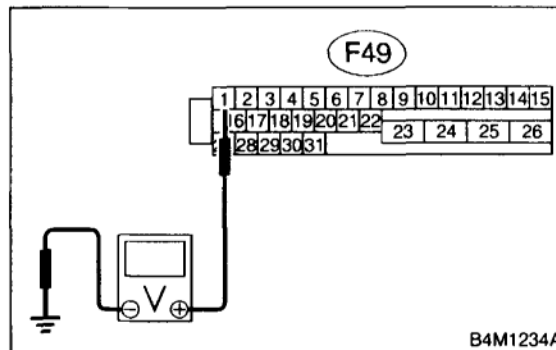
- CHECK** : *Is ABSCM&H/U connector inserted into ABSCM&H/U until the clamp locks onto it?*
- YES** : Go to step **10C6**.
- NO** : Insert ABSCM&H/U connector into ABSCM&H/U until the clamp locks onto it.

**10C6 : CHECK POWER SUPPLY OF ABSCM&H/U.**

- 1) Disconnect connector from ABSCM&H/U.
- 2) Start engine.
- 3) Idle the engine.
- 4) Measure voltage between ABSCM&H/U connector and chassis ground.

**Connector & terminal**

**(F49) No. 1 (+) — Chassis ground (-):**



- CHECK** : *Is the voltage between 10 and 15 V?*
- YES** : Go to step **10C7**.
- NO** : Repair ABSCM&H/U power supply circuit.

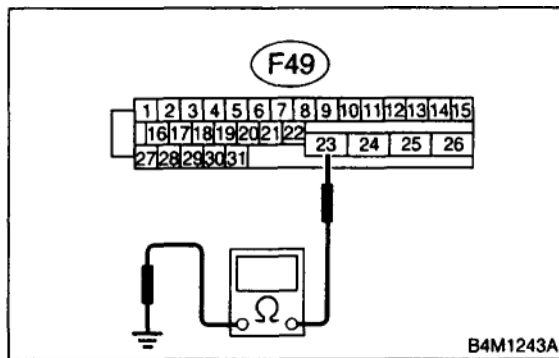
**10C7 : CHECK GROUND CIRCUIT OF ABSCM&H/U.**

**10C9 : CHECK POOR CONTACT IN CONNECTORS.**

connector and chassis ground.

**Connector & terminal**

**(F49) No. 23 — Chassis ground:**



**CHECK** : **Is the resistance less than 0.5 Ω?**

**YES** : Go to step 10C8.

**NO** : Repair harness/connector between ABSCM&H/U and select monitor.

**connector? <Ref. to FOREWORD [T3C1].☆12>**

**YES** : Repair connector.

**NO** : Replace ABSCM&H/U.

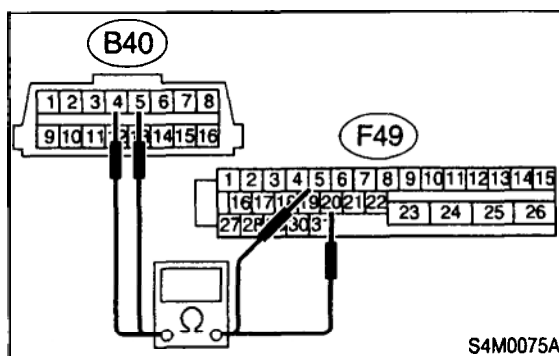
**10C8 : CHECK HARNESS/CONNECTOR BETWEEN ABSCM&H/U AND DATA LINK CONNECTOR.**

- 1) Turn ignition switch OFF.
- 2) Measure resistance between ABSCM&H/U connector and data link connector.

**Connector & terminal**

**(F49) No. 20 — (B40) No. 5:**

**(F49) No. 5 — (B40) No. 4:**



**CHECK** : **Is the resistance less than 0.5 Ω?**

**YES** : Go to step 10C9.

**NO** : Repair harness and connector between ABSCM&H/U and data link connector.

Connector				Connecting to	
No.	Pole	Color	Area	No.	Name
B30	24	*	C-1	D1	Front door cord LH
B31	7	Yellow	C-1	AB1	SRS (Airbag) harness
B32	3	Black	C-1		Turn & hazard module
B33	4	Brown	B-1		Diode (Brake fluid level)
B35	2	Black	B-1		Diode (Without step light)
	4	Brown	B-1		Diode (With step light)
B36	22	Black	C-1	i1	Instrument panel wiring harness
B37	22	*	C-1	i2	
B38	22	Brown	C-1	i3	
B39	20	Blue	C-1	i4	
B40	16	Gray	C-2		OBD-II service connector
B41	2	*	C-2		Power window circuit breaker
B42	4	*	C-2		Power window and sunroof relay
B43	6	Black	C-2		Illumination control module
B44	8	*	C-2		Seat belt timer
B45	4	*	B-1	R53	Sunroof cord
B46	4	Green	B-1		Fuel pump relay
B47	6	Brown	B-1		Main relay
B48	4	Blue	B-1		Front fog light relay
B49	3	Black	B-1		Horn relay
B50	4	*	B-1		Blower relay
B51	11	Gray	B-1		F/B
B52	12	Gray	B-1		
B53	4	*	B-2		Shield joint connector (AT)
B54	12	Black	B-2		Transmission control module
B55	16	Black	B-2		
B56	20	Black	B-2		
B57	12	Black	B-2		Shift-lock control module
B58	5	Black	B-1		Headlight alarm relay (Security)
B59	5	Black	B-1		Interrupt relay (Security)
B60	4	*	B-2		Shield joint connector (With TCS model)
B61	8	*	B-2	F44	Front wiring harness
B62	20	*	B-1	F45	
B63	40	Gray	B-1	P10	Floor harness (With TCS model)
B64	2	Black	B-2		Stop light switch
B65	4	Black	B-2		Stop & brake switch (With cruise control)
B66	3	Black	B-2		Pedal stroke sensor (TCS)
B67	4	Black	B-2		Pedal stroke switch (TCS)
B68	5	Black	B-3		Slip ring
B69	11	Black	B-3		Combination switch
B70	9	*	B-3		
B71	8	*	B-3		
B72	6	Black	B-3		Ignition switch
B73	2	Black	B-3		Key lock solenoid (AT)
B74	2	Black	B-3		Key warning switch
B75	2	Green	C-2	B76	Test mode connector
B76	2	Green	C-3	B75	
B77	10	Brown	B-2		Mode actuator

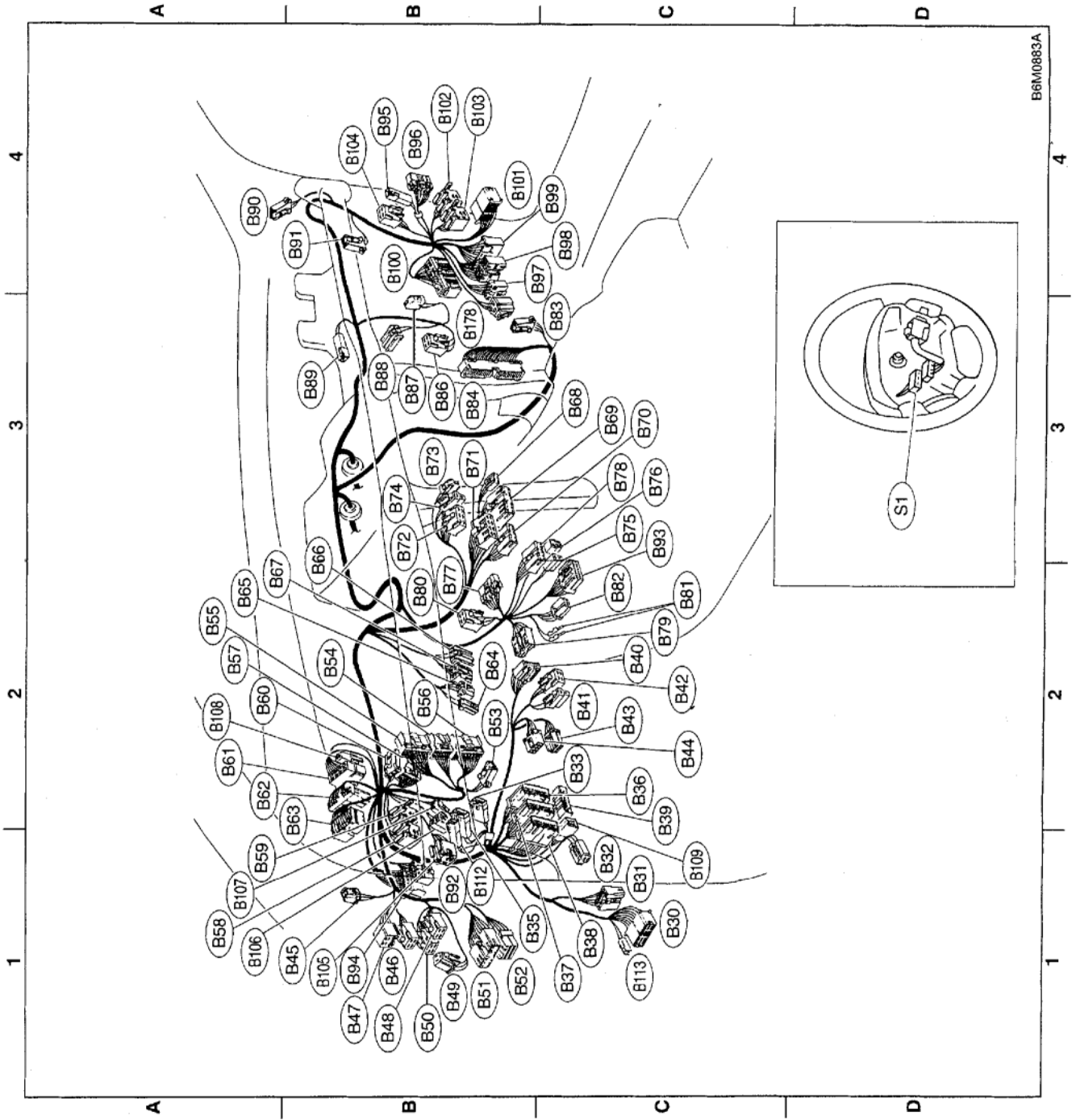
Connector				Connecting to	
No.	Pole	Color	Area	No.	Name
B78	9	Yellow	C-2		Data link connector
B79	14	Gray	C-2		Check connector
B80	4	Blue	B-2	i20	Instrument panel wiring harness
B81	1 x 2	*	C-2		Diagnosis terminal (Ground)
B82	6	Black	C-2		Diagnosis connector
B83	4	*	C-3		Shield joint connector (E/G)
B84	96	Light blue	B-3		Engine control module
B86	4	*	B-3		Blower motor resistor
B87	2	*	B-3		Blower motor
B88	3	Black	B-3		Evaporator thermostat
B89	2	Black	B-3		Diode (Security)
B90	4	*	B-4	R50	Room light cord
B91	4	*	B-4		FRESH/RECIRC actuator
B92	8	*	B-1		Door lock timer
B93	16	Black	B-4		Security control module
B94	20	Black	B-4		Cruise control module
B95	2	Black	B-4		Diode (Daytime running light)
B96	10	*	B-4		Daytime running light control module
B97	8	*	B-4	R1	Rear wiring harness
B98	20	*	B-4	R2	Rear wiring harness (Taiwan model)
	24	Black	B-4	R2	Rear wiring harness (Except Taiwan model)
B99	24	*	B-4	R3	Rear wiring harness
B100	20	Blue	B-4	F2	Front wiring harness (With ABS model)
B101	24	*	B-4	D11	Front door cord RH
B102	5	Black	B-4		Daytime running light relay
B103	4	Blue	B-4		High-beam relay (Daytime running light)
B104	4	Pink	B-4		Rear power supply relay
B105	4	Blue	B-1		Starter interlock relay (MT)
B106	2	*	B-1		Clutch switch (MT)
B107	2	Blue	B-1		Clutch switch (Cruise control)
B108	2	Black	B-2	F46	Front wiring harness (Outback)
B109	4	Black	C-1		Fuse holder (Outback)
B112	2	Black	B-1		Diode (Front fog light)
B113	2	*	C-1	D50	Front door cord LH
B178	3	*	B-4	R85	Rear wiring harness (Wiper deicer)

\*: Non-colored

Connector				Connecting to	
No.	Pole	Color	Area	No.	Name
S1	3	White	D-3		Cruise control sub switch

# D: BULKHEAD WIRING HARNESS (IN COMPARTMENT)

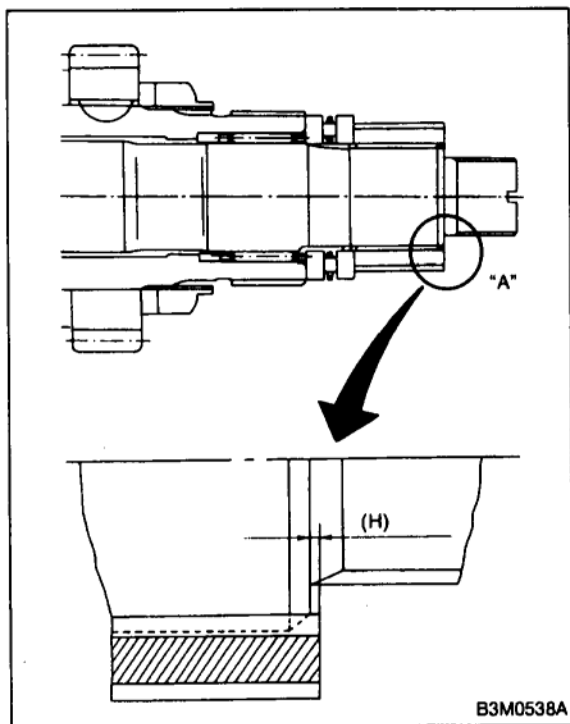
## 1. LHD MODEL



**C: ADJUSTMENT**

**1. THRUST BEARING PRELOAD**

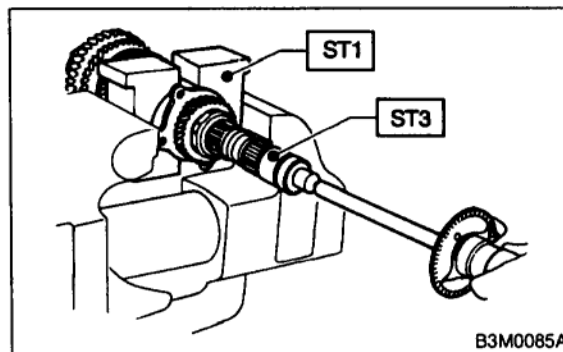
1) After completing the preceding steps 1) through 3), select adjusting washer No. 2 so that dimension (H) is zero through visual check. Position washer (18.3 × 30 × 4) and lock washer (18 × 30 × 2) and install lock nut (18 × 13.5).



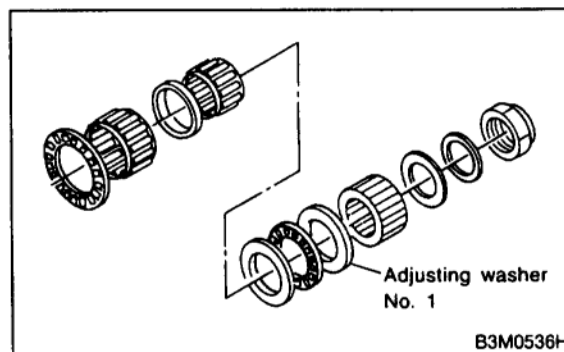
3) After removing ST2, measure starting torque using torque driver.

- ST1 899884100 HOLDER
- ST3 899988608 SOCKET WRENCH (27)

**Starting torque:**  
**0.3-0.8 N·m (3-8 kg-cm, 2.6-6.9 in-lb)**



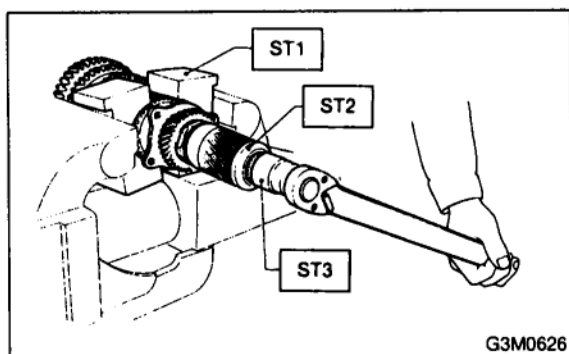
4) If starting torque is not within specified limit, select new adjusting washer No. 1 and recheck starting torque.



2) Using ST1, ST2 and ST3, tighten lock nut to the specified torque.

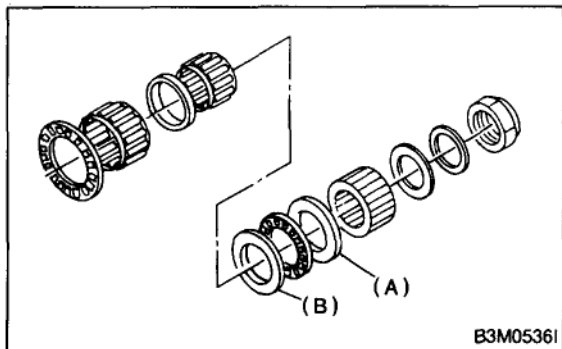
- ST1 899884100 HOLDER
- ST2 498427100 STOPPER
- ST3 899988608 SOCKET WRENCH (27)

**Tightening torque:**  
**118±8 N·m (12±0.8 kg-m, 86.8±5.8 ft-lb)**



Adjusting washer No. 1	
Part No.	Thickness mm (in)
803025051	3.925 (0.1545)
803025052	3.950 (0.1555)
803025053	3.975 (0.1565)
803025054	4.000 (0.1575)
803025055	4.025 (0.1585)
803025056	4.050 (0.1594)
803025057	4.075 (0.1604)

5) If specified starting torque range cannot be obtained when a No. 1 adjusting washer is used, then select a suitable No. 2 adjusting washer from those listed in the following table. Repeat steps 1) through 4) to adjust starting torque.



(A) Adjusting washer No. 1  
(B) Adjusting washer No. 2

Starting torque	Dimension H	Washer No. 2
Low	Small	Select thicker one.
High	Large	Select thinner one.

Adjusting washer No. 2	
Part No.	Thickness mm (in)
803025059	3.850 (0.1516)
803025054	4.000 (0.1575)
803025058	4.150 (0.1634)

6) Recheck that starting torque is within specified range, then clinch lock nut at four positions.

## 7. Main Shaft Assembly

### A: DISASSEMBLY

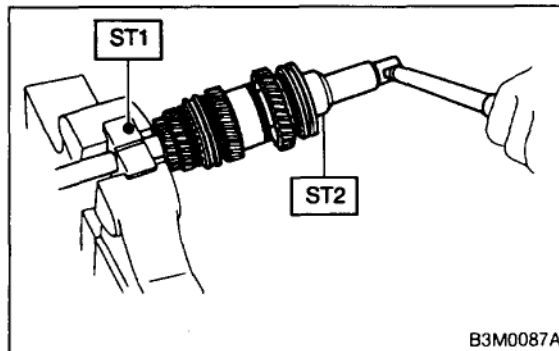
#### 1. 2200 cc MODEL

- 1) Put vinyl tape around main shaft splines to protect oil seal from damage. Then pull out oil seal and needle bearing by hand.
- 2) Remove lock nut from transmission main shaft assembly.

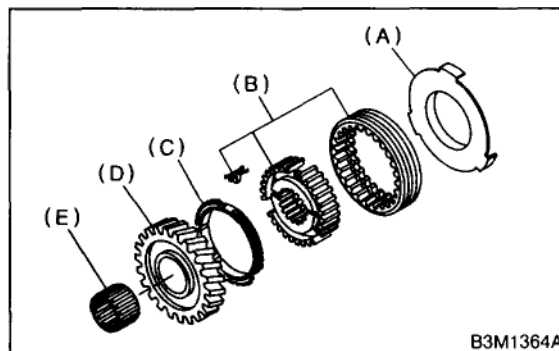
**NOTE:**

Remove caulking before taking off lock nut.

- ST1 498937000 TRANSMISSION HOLDER
- ST2 499987003 SOCKET WRENCH (35)



- 3) Remove insert stopper plate, sleeve and hub assembly No. 2, baulk ring, 5th drive gear, and needle bearing.



- (A) Insert stopper plate
- (B) Sleeve and hub assembly No. 2
- (C) Baulk ring
- (D) 5th drive gear
- (E) Needle bearing (32 x 36 x 25.7)

Connector				Connecting to	
No.	Pole	Color	Area	No.	Name
B30	24	*	C-1	D1	Front door cord LH
B31	7	Yellow	C-1	AB1	SRS (Airbag) harness
B32	3	Black	C-1		Turn & hazard module
B33	4	Brown	B-1		Diode (Brake fluid level)
B35	2	Black	B-1		Diode (Without step light)
	4	Brown	B-1		Diode (With step light)
B36	22	Black	C-1	i1	Instrument panel wiring harness
B37	22	*	C-1	i2	
B38	22	Brown	C-1	i3	
B39	20	Blue	C-1	i4	
B40	16	Gray	C-2		Data link connector
B41	2	*	C-2		Power window circuit breaker
B42	4	*	C-2		Power window and sunroof relay
B43	6	Black	C-2		Illumination control module
B44	8	*	C-2		Seat belt timer
B45	4	*	B-1	R53	Sunroof cord
B46	4	Green	B-1		Fuel pump relay
B47	6	Brown	B-1		Main relay
B48	4	Blue	B-1		Front fog light relay
B49	3	Black	B-1		Horn relay
B50	4	*	B-1		Blower relay
B51	11	Gray	B-1		F/B
B52	12	Gray	B-1		
B53	6	Gray	B-2		Shield joint connector (AT)
B54	24	*	B-2		Transmission control module
B55	24	Gray	B-2		
B57	12	Black	B-2		Shift-lock control module
B59	3	*	B-1		Interrupt relay (Security)
B60	4	*	B-2		Shield joint connector (With TCS model)
B61	8	*	B-2	F44	Front wiring harness
B62	20	*	B-1	F45	
B63	40	Gray	B-1	P10	Floor harness (With TCS model)
B64	2	Black	B-2		Stop light switch
B65	4	Black	B-2		Stop & brake switch (With cruise control)
B66	3	Black	B-2		Pedal stroke sensor (TCS)
B67	4	Black	B-2		Pedal stroke switch (TCS)
B68	5	Black	B-3		Slip ring
B69	11	Black	B-3		Combination switch
B70	9	*	B-3		
B71	8	*	B-3		
B72	6	Black	B-3		Ignition switch
B73	2	Black	B-3		Key lock solenoid (AT)
B74	2	Black	B-3		Key warning switch
B75	2	Green	C-2	B76	Test mode connector
B76	2	Green	C-3	B75	
B77	10	Brown	B-2		Mode actuator
B79	14	Gray	C-2		Check connector
B80	4	Blue	B-2	i20	Instrument panel wiring harness
B81	1 x 2	*	C-2		Diagnosis terminal (Ground)
B82	6	Black	C-2		Diagnosis connector

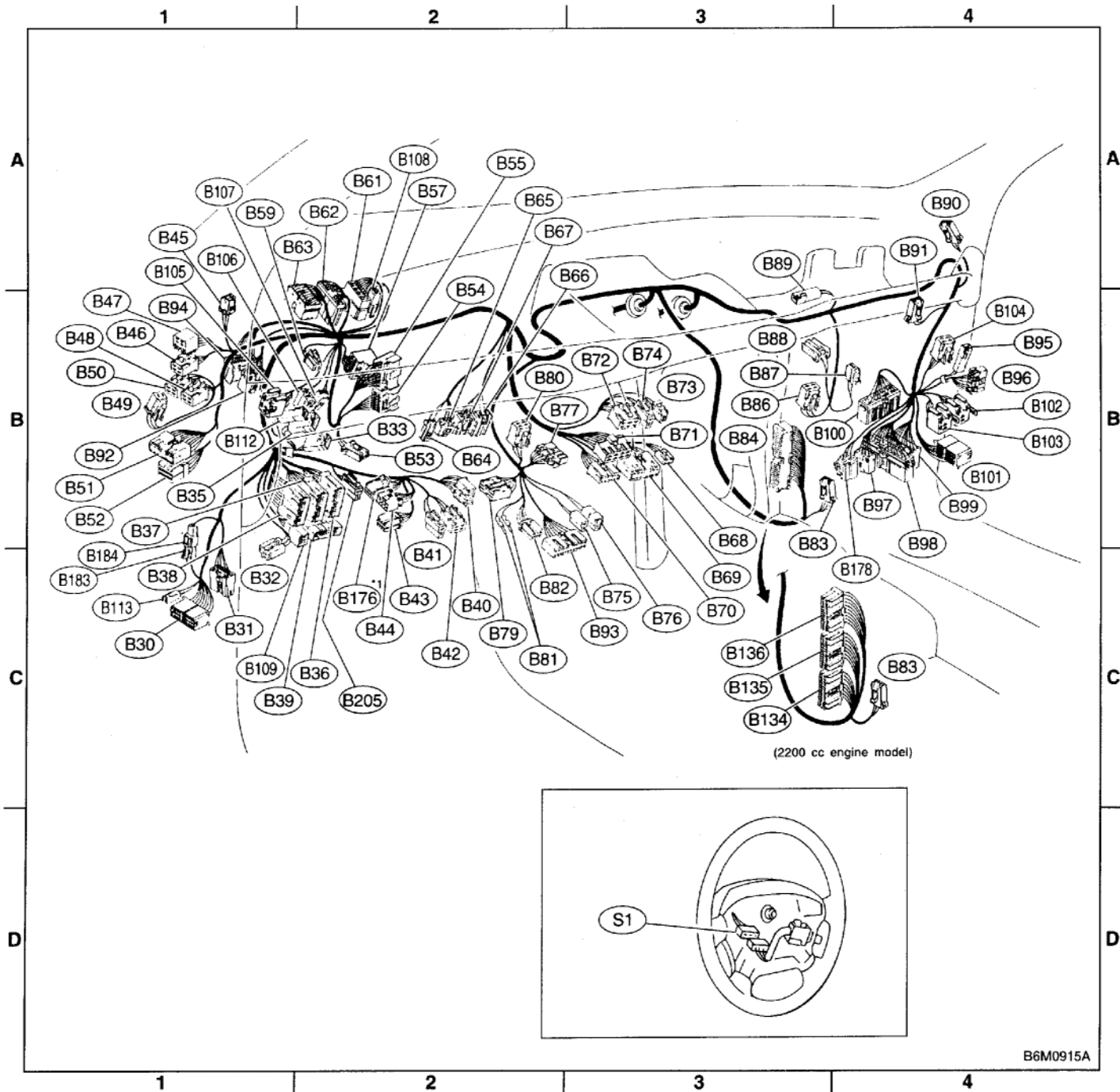
Connector				Connecting to	
No.	Pole	Color	Area	No.	Name
B83	4	*	C-3		Shield joint connector (2500 cc engine model)
	6	*	D-4		Shield joint connector (2200 cc engine model)
B84	96	Light blue	B-3		Engine control module (2500 cc engine model)
B86	4	*	B-3		Blower motor resistor
B87	2	*	B-3		Blower motor
B88	3	Black	B-3		Evaporator thermostat
B89	2	Black	B-3		Diode (Security)
B90	4	*	B-4	R50	Room light cord
B91	4	*	B-4		FRESH/RECIRC actuator
B92	8	*	B-1		Door lock timer
B93	18	*	C-2		Security control module
B94	20	Black	B-4		Cruise control module
B95	2	Black	B-4		Diode (Daytime running light)
B96	10	*	B-4		Daytime running light control module
B97	8	*	B-4	R1	Rear wiring harness
B98	24	Black	B-4	R2	Rear wiring harness
B99	24	*	B-4	R3	Rear wiring harness
B100	20	Blue	B-4	F2	Front wiring harness (With ABS model)
B101	24	*	B-4	D11	Front door cord RH
B102	5	Black	B-4		Daytime running light relay
B103	4	Blue	B-4		High-beam relay (Daytime running light)
B104	4	Pink	B-4		Rear power supply relay
B105	5	Green	B-1		Starter interlock relay (MT)
B106	2	*	B-1		Clutch switch (MT)
B107	2	Blue	B-1		Clutch switch (Cruise control)
B108	2	Black	B-2	F46	Front wiring harness (Outback)
B109	4	Black	C-1		Fuse holder (Outback)
B112	2	Black	B-1		Diode (Front fog light)
B113	2	*	C-1	D50	Front door cord LH
B134	35	*	D-4		Engine control module (2200 cc engine model)
B135	28	*	D-4		
B136	30	*	C-4		
B176	16	*	B-2		Keyless entry control module
B178	3	*	B-4	R85	Rear wiring harness (Wiper deicer)
B183	1	*	C-1	B184	Program connector (Security)
B184	1	*	C-1	B183	
B205	2	*	B-2		Keyless entry short connector

\*: Non-colored

Connector				Connecting to	
No.	Pole	Color	Area	No.	Name
S1	3	White	D-3		Cruise control sub switch

# D: BULKHEAD WIRING HARNESS (IN COMPARTMENT)

## 1. LHD MODEL





## 11. Diagnostics Chart with Trouble Code for AT Vehicles

DTC No.	Item	Index
P0725	Engine speed input circuit malfunction	<Ref. to 2-7 [T11BB0].>
P0731	Gear 1 incorrect ratio	<Ref. to 2-7 [T11BC0].>
P0732	Gear 2 incorrect ratio	<Ref. to 2-7 [T11BD0].>
P0733	Gear 3 incorrect ratio	<Ref. to 2-7 [T11BE0].>
P0734	Gear 4 incorrect ratio	<Ref. to 2-7 [T11BF0].>
P0740	Torque converter clutch system malfunction	<Ref. to 2-7 [T11BG0].>
P0743	Torque converter clutch system (Lock-up duty solenoid) electrical	<Ref. to 2-7 [T11BH0].>
P0748	Pressure control solenoid (Line pressure duty solenoid) electrical	<Ref. to 2-7 [T11BI0].>
P0753	Shift solenoid A (Shift solenoid 1) electrical	<Ref. to 2-7 [T11BJ0].>
P0758	Shift solenoid B (Shift solenoid 2) electrical	<Ref. to 2-7 [T11BK0].>
P1100	Starter switch circuit low input	<Ref. to 2-7 [T11BL0].>
P1101	Neutral position switch circuit high input	<Ref. to 2-7 [T11BM0].>
P1103	Engine torque control signal 1 circuit malfunction	<Ref. to 2-7 [T11BN0].>
P1106	Engine torque control signal 2 circuit malfunction	<Ref. to 2-7 [T11BO0].>
P1110	Atmospheric pressure sensor low input	<Ref. to 2-7 [T11BP0].>
P1111	Atmospheric pressure sensor high input	<Ref. to 2-7 [T11BQ0].>
P1112	Atmospheric pressure sensor range/performance problem	<Ref. to 2-7 [T11BR0].>
P1115	Engine torque control cut signal circuit high input	<Ref. to 2-7 [T11BS0].>
P1116	Engine torque control cut signal circuit low input	<Ref. to 2-7 [T11BT0].>
P1120	Starter switch circuit high input	<Ref. to 2-7 [T11BU0].>
P1121	Neutral position switch circuit low input	<Ref. to 2-7 [T11BV0].>
P1130	Front oxygen (A/F) sensor circuit malfunction (open circuit)	<Ref. to 2-7 [T11BW0].>
P1131	Front oxygen (A/F) sensor circuit malfunction (short circuit)	<Ref. to 2-7 [T11BX0].>
P1132	Front oxygen (A/F) sensor heater circuit high input	<Ref. to 2-7 [T11BY0].>
P1133	Front oxygen (A/F) sensor heater circuit low input	<Ref. to 2-7 [T11BZ0].>
P1142	Throttle position sensor circuit range/performance problem (low input)	<Ref. to 2-7 [T11CA0].>
P1151	Rear oxygen sensor heater circuit high input	<Ref. to 2-7 [T11CB0].>

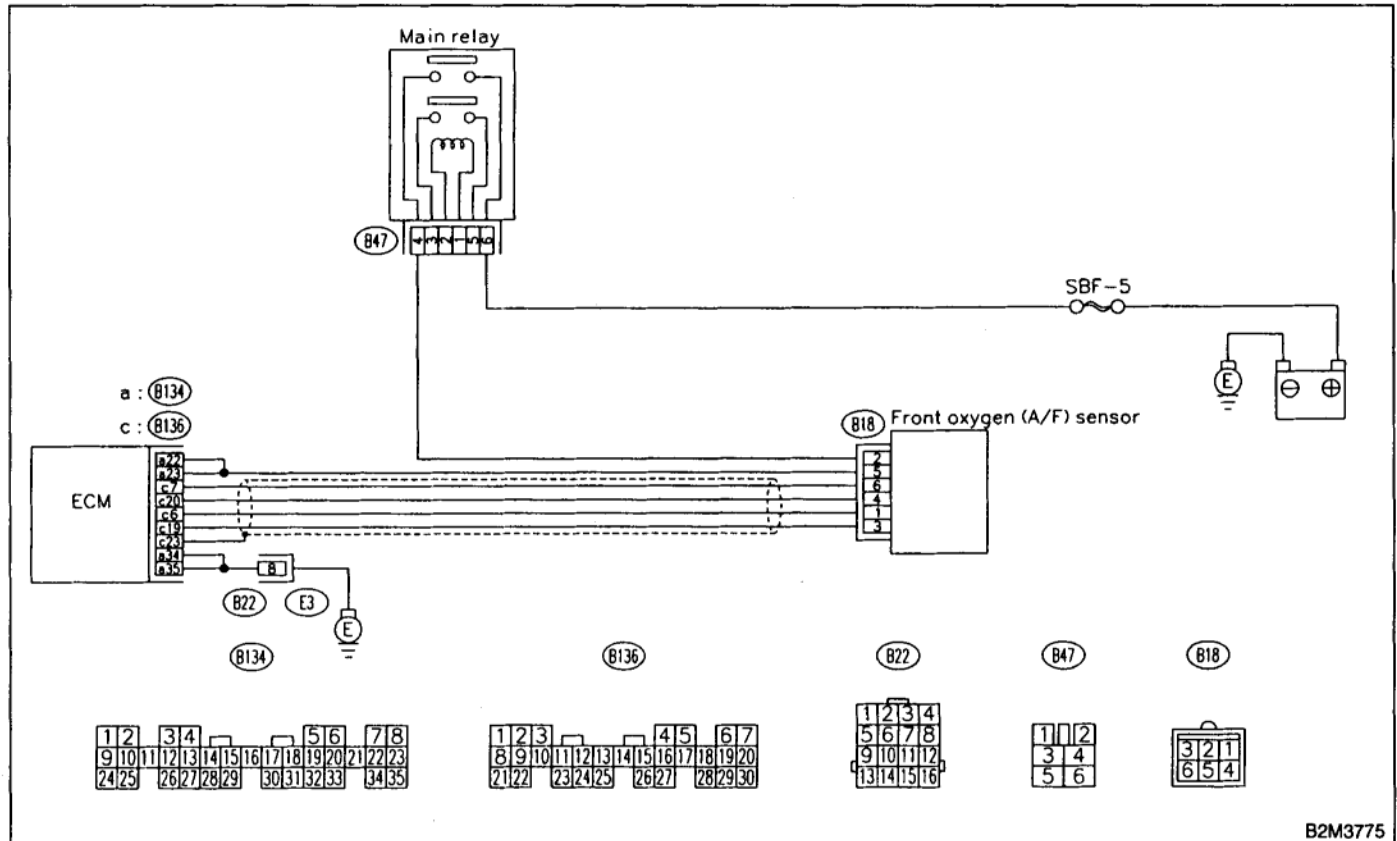
**BZ: DTC P1133 — FRONT OXYGEN (A/F) SENSOR HEATER CIRCUIT LOW INPUT —**

- **DTC DETECTING CONDITION:**
  - Two consecutive driving cycles with fault

**CAUTION:**

After repair or replacement of faulty parts, conduct CLEAR MEMORY MODE <Ref. to 2-7 [T3D0].> and INSPECTION MODE <Ref. to 2-7 [T3E0].>

● **WIRING DIAGRAM:**



B2M3775

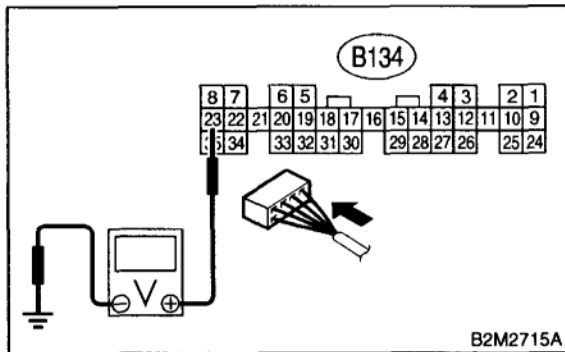
**11BZ1 : CHECK ANY OTHER DTC ON DISPLAY.**

- CHECK** : Does the Subaru Select Monitor or OBD-II general scan tool indicate DTC P1133 and P0141 at the same time?
- YES** : Go to step 11BZ2.
- NO** : Go to step 11BZ5.

**11BY1 : CHECK OUTPUT SIGNAL FROM ECM.**

- 1) Turn ignition switch to ON.
- 2) Measure voltage between ECM connector and chassis ground.

**Connector & terminal**  
(B134) No. 23 (+) — Chassis ground (-):

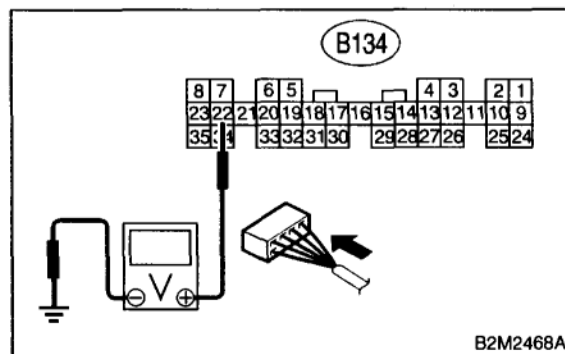


- CHECK** : *Is the voltage more than 8 V?*
- YES** : Go to step 11BY3.
- NO** : Go to step 11BY2.

**11BY2 : CHECK OUTPUT SIGNAL FROM ECM.**

Measure voltage between ECM connector and chassis ground.

**Connector & terminal**  
(B134) No. 22 (+) — Chassis ground (-):



- CHECK** : *Is the voltage more than 8 V?*
- YES** : Go to step 11BY3.
- NO** : Go to step 11BY4.

**11BY3 : CHECK FRONT OXYGEN (A/F) SENSOR HEATER CURRENT.**

- 1) Turn ignition switch to OFF.
- 2) Repair battery short circuit in harness between ECM and front oxygen (A/F) sensor connector.
- 3) Turn ignition switch to ON.
- 4) Read data of front oxygen (A/F) sensor heater current using Subaru Select Monitor or the OBD-II general scan tool.

NOTE:

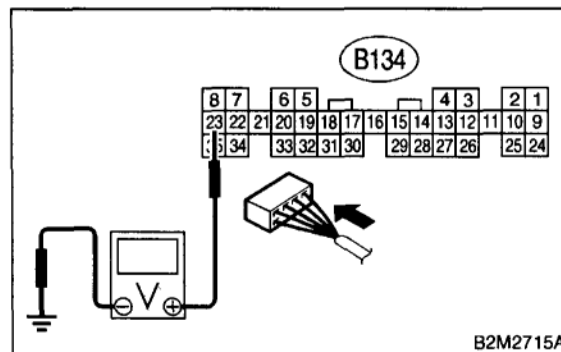
- Subaru Select Monitor  
For detailed operation procedure, refer to the "READ CURRENT DATA SHOWN ON DISPLAY FOR ENGINE". <Ref. to 2-7 [T3C4].>
- OBD-II general scan tool  
For detailed operation procedure, refer to the OBD-II General Scan Tool Instruction Manual.

- CHECK** : *Is the value more than 2.3 A?*
- YES** : Replace ECM. <Ref. to 2-7 [W19A0].>
- NO** : END

**11BY4 : CHECK OUTPUT SIGNAL FROM ECM.**

Measure voltage between ECM connector and chassis ground.

**Connector & terminal**  
(B134) No. 23 (+) — Chassis ground (-):



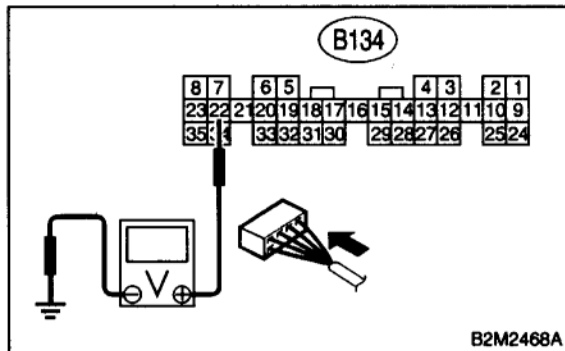
- CHECK** : *Does the voltage change more than 8 V by shaking harness and connector of ECM while monitoring the value with voltage meter?*
- YES** : Repair battery short circuit in harness between ECM and front oxygen (A/F) sensor connector.
- NO** : Go to step 11BY5.

**11BY5 : CHECK OUTPUT SIGNAL FROM ECM.**

Measure voltage between ECM connector and chassis ground.

**Connector & terminal**

**(B134) No. 22 (+) — Chassis ground (-):**



- CHECK** : **Does the voltage change more than 8 V by shaking harness and connector of ECM while monitoring the value with voltage meter?**
- YES** : Repair battery short circuit in harness between ECM and front oxygen (A/F) sensor connector.
- NO** : END

**BY: DTC P1132 — FRONT OXYGEN (A/F) SENSOR HEATER CIRCUIT HIGH INPUT —**

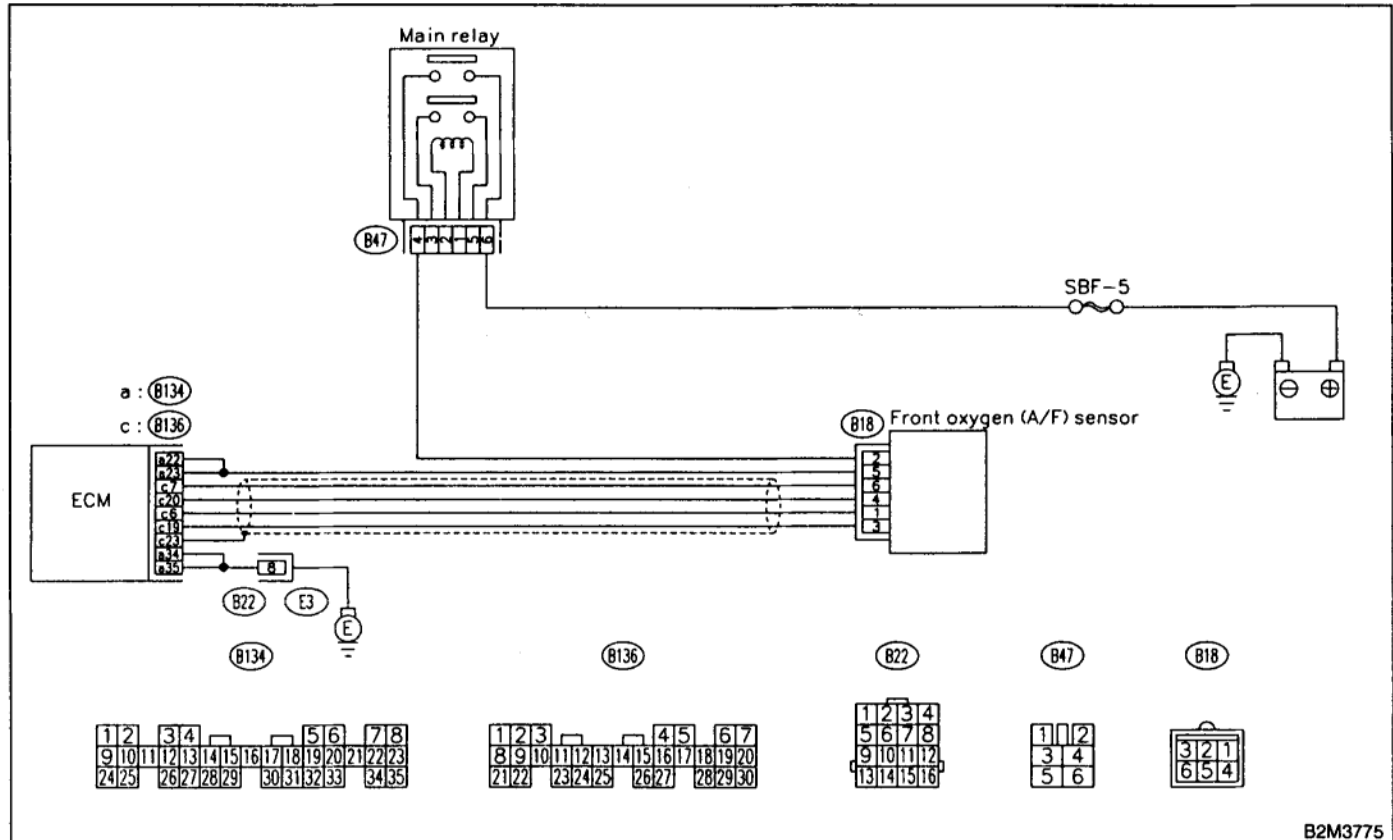
**● DTC DETECTING CONDITION:**

- Two consecutive driving cycles with fault

**CAUTION:**

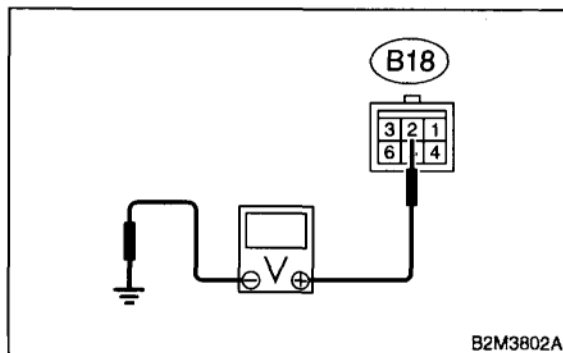
After repair or replacement of faulty parts, conduct CLEAR MEMORY MODE <Ref. to 2-7 [T3D0].> and INSPECTION MODE <Ref. to 2-7 [T3E0].>

**● WIRING DIAGRAM:**



**11BZ2 : CHECK POWER SUPPLY TO FRONT OXYGEN (A/F) SENSOR.**

- 1) Turn ignition switch to OFF.
- 2) Disconnect connector from front oxygen (A/F) sensor.
- 3) Turn ignition switch to ON.
- 4) Measure voltage between front oxygen (A/F) sensor connector and engine ground.

**Connector & terminal**
**(B18) No. 2 (+) — Engine ground (-):**

**CHECK** : **Is the voltage more than 10 V?**
**YES** : Go to step **11BZ3**.

**NO** : Repair power supply line.

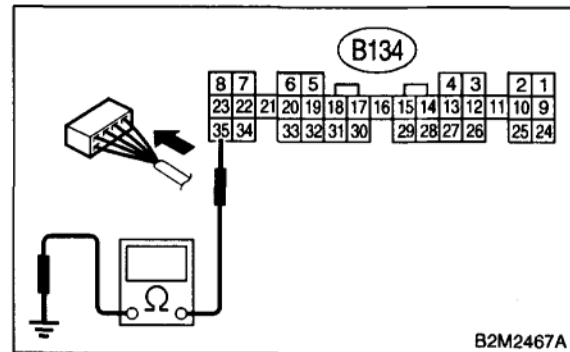
**NOTE:**

In this case, repair the following:

- Open circuit in harness between main relay and front oxygen (A/F) sensor connector
- Poor contact in front oxygen (A/F) sensor connector
- Poor contact in main relay connector

**11BZ3 : CHECK GROUND CIRCUIT OF ECM.**

Measure resistance of harness between ECM connector and chassis ground.

**Connector & terminal**
**(B134) No. 35 — Chassis ground:**

**CHECK** : **Is the resistance less than 5 Ω?**
**YES** : Go to step **11BZ4**.

**NO** : Repair harness and connector.

**NOTE:**

In this case, repair the following:

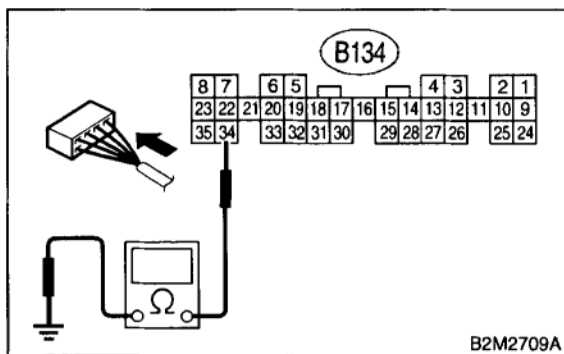
- Open circuit in harness between ECM and engine ground terminal
- Poor contact in ECM connector
- Poor contact in coupling connector (B22)

**11BZ4 : CHECK GROUND CIRCUIT OF ECM.**

1) Measure resistance of harness between ECM connector and chassis ground.

**Connector & terminal**

**(B134) No. 34 — Chassis ground:**



**CHECK** : **Is there resistance less than 5 Ω?**

**YES** : Go to step 11BZ5.

**NO** : Repair harness and connector.

**NOTE:**

In this case, repair the following:

- Open circuit in harness between ECM and engine ground terminal
- Poor contact in ECM connector
- Poor contact in coupling connector (B22)

**11BZ5 : CHECK CURRENT DATA.**

1) Start engine  
2) Read data of front oxygen (A/F) sensor heater current using Subaru Select Monitor or OBD-II general scan tool.

**NOTE:**

- Subaru Select Monitor

For detailed operation procedure, refer to the "READ CURRENT DATA SHOWN ON DISPLAY FOR ENGINE". <Ref. to 2-7 [T3C4].>

- OBD-II scan tool

For detailed operation procedures, refer to the OBD-II General Scan Tool Instruction Manual.

**CHECK** : **Is the value more than 0.2 A?**

**YES** : Repair poor contact in connector.

**NOTE:**

In this case, repair the following:

- Poor contact in front oxygen (A/F) sensor connector
- Poor contact in ECM connector

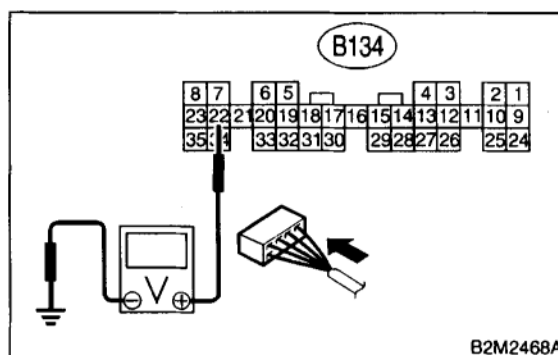
**NO** : Go to step 11BZ6.

**11BZ6 : CHECK OUTPUT SIGNAL FROM ECM.**

1) Start and idle the engine.  
2) Measure voltage between ECM connector and chassis ground.

**Connector & terminal**

**(B134) No. 22 (+) — Chassis ground (-):**



**CHECK** : **Is the voltage less than 1.0 V?**

**YES** : Go to step 11BZ8.

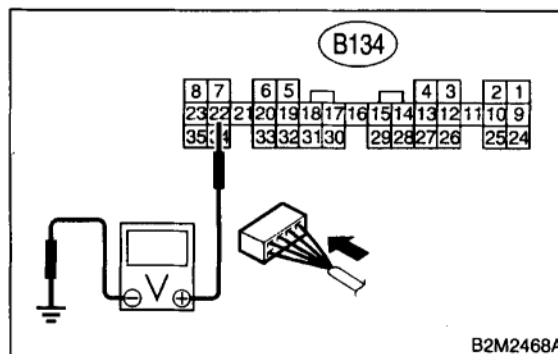
**NO** : Go to step 11BZ7.

**11BZ7 : CHECK OUTPUT SIGNAL FROM ECM.**

Measure voltage between ECM connector and chassis ground.

**Connector & terminal**

**(B134) No. 22 (+) — Chassis ground (-):**



**CHECK** : **Does the voltage change less than 1.0 V by shaking harness and connector of ECM while monitoring the value with voltage meter?**

**YES** : Repair poor contact in ECM connector.

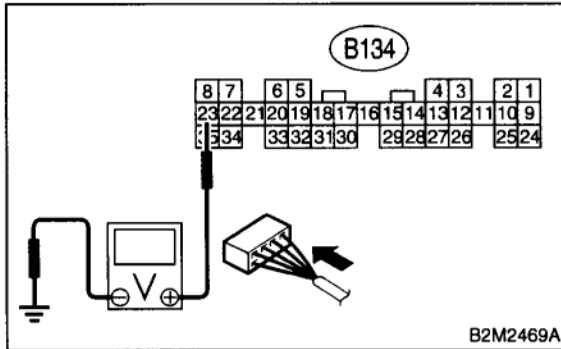
**NO** : Go to step 11BZ8.

**11BZ8 : CHECK OUTPUT SIGNAL FROM ECM.**

Measure voltage between ECM connector and chassis ground.

**Connector & terminal**

**(B134) No. 23 (+) — Chassis ground (-):**



**CHECK** : **Is the voltage less than 1.0 V?**

**YES** : Go to step 11BZ10.

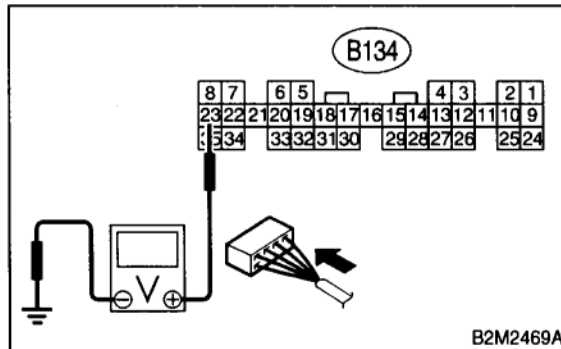
**NO** : Go to step 11BZ9.

**11BZ9 : CHECK OUTPUT SIGNAL FROM ECM.**

Measure voltage between ECM connector and chassis ground.

**Connector & terminal**

**(B134) No. 23 (+) — Chassis ground (-):**



**CHECK** : **Does the voltage change less than 1.0 V by shaking harness and connector of ECM while monitoring the value with voltage meter?**

**YES** : Repair poor contact in ECM connector.

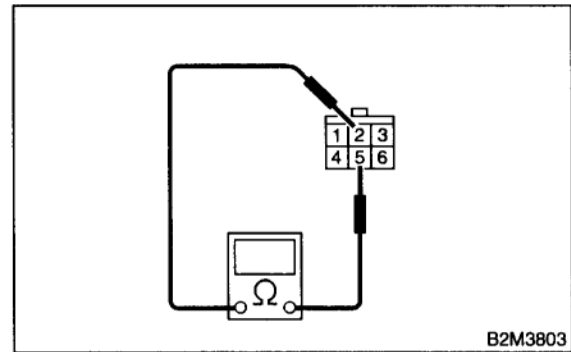
**NO** : Go to step 11BZ10.

**11BZ10 : CHECK FRONT OXYGEN (A/F) SENSOR.**

- 1) Turn ignition switch to OFF.
- 2) Measure resistance between front oxygen (A/F) sensor connector terminals.

**Terminals**

**No. 2 — No. 5:**



**CHECK** : **Is the resistance less than 10 Ω?**

**YES** : Repair harness and connector.

**NOTE:**

In this case, repair the following:

- Open or ground short circuit in harness between front oxygen (A/F) sensor and ECM connector
- Poor contact in front oxygen (A/F) sensor connector
- Poor contact in ECM connector

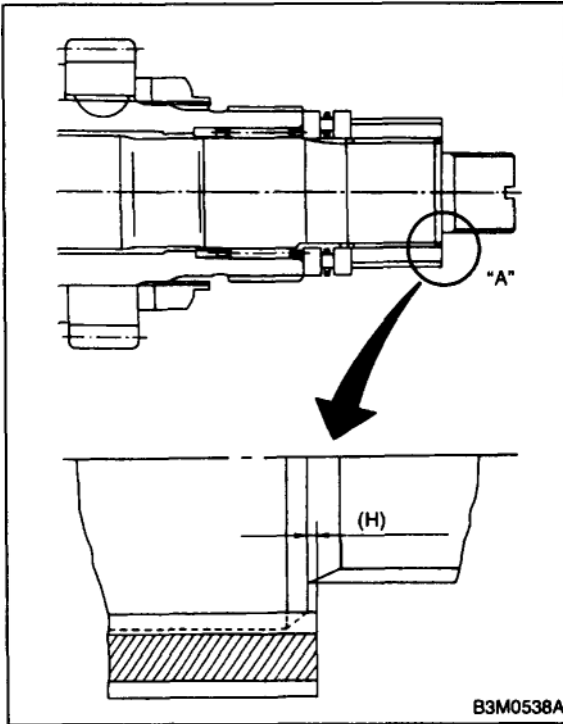
**NO** : Replace front oxygen (A/F) sensor.  
<Ref. to 2-7 [W8A0].>



**C: ADJUSTMENT**

**1. THRUST BEARING PRELOAD**

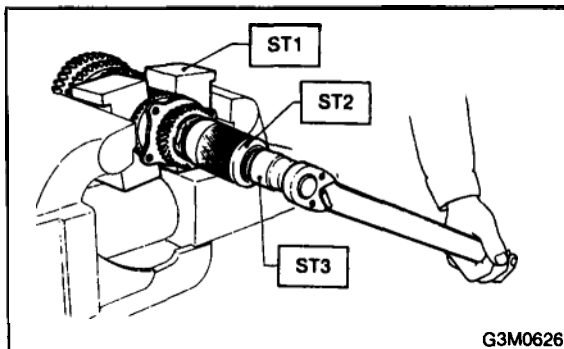
1) After completing the preceding steps 1) through 3), select adjusting washer No. 1 so that dimension (H) is zero through visual check. Position washer (18.3 × 30 × 4) and lock washer (18 × 30 × 2) and install lock nut (18 × 13.5).



2) Using ST1, ST2 and ST3, tighten lock nut to the specified torque.

- ST1 899884100 HOLDER
- ST2 498427100 STOPPER
- ST3 899988608 SOCKET WRENCH (27)

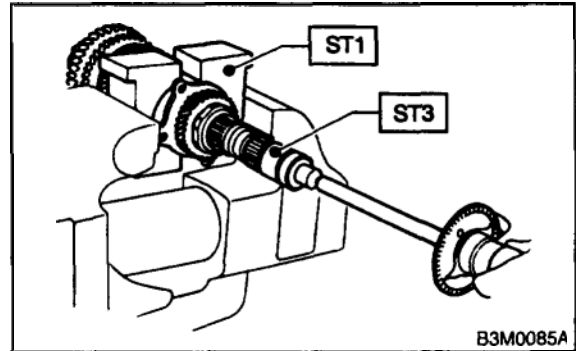
**Tightening torque:**  
**118±8 N·m (12±0.8 kg·m, 86.8±5.8 ft·lb)**



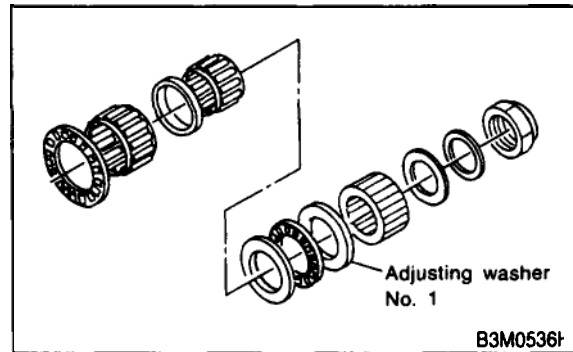
3) After removing ST2, measure starting torque using torque driver.

- ST1 899884100 HOLDER
- ST3 899988608 SOCKET WRENCH (27)

**Starting torque:**  
**0.3-0.8 N·m (0.03-0.08 kg·m, 0.2-0.6 ft·lb)**



4) If starting torque is not within specified limit, select new adjusting washer No. 1 and recheck starting torque.



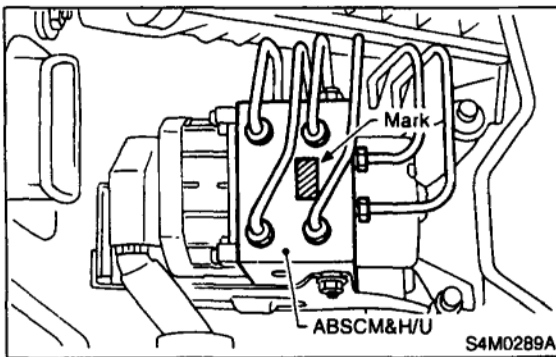
Adjusting washer No. 1	
Part No.	Thickness mm (in)
803025051	3.925 (0.1545)
803025052	3.950 (0.1555)
803025053	3.975 (0.1565)
803025054	4.000 (0.1575)
803025055	
803025056	4.050 (0.1594)
803025057	4.075 (0.1604)

**8Y1 : CHECK ALL FOUR WHEELS FOR FREE TURNING.**

- CHECK** : *Have the wheels been turned freely such as when the vehicle is lifted up, or operated on a rolling road?*
- YES** : The ABS is normal. Erase the trouble code.
- NO** : Go to step **8Y2**.

**8Y2 : CHECK SPECIFICATIONS OF ABSCM&H/U.**

Check specifications of the mark to the ABSCM&H/U.



Mark	Model
C5	AT (Except OUTBACK)
C6	MT (Except OUTBACK)
CE	AT (OUTBACK)
CF	MT (OUTBACK)

- CHECK** : *Does the vehicle specification and the ABSCM&H/U specification match?*
- YES** : Go to step **8Y3**.
- NO** : Replace ABSCM&H/U. <Ref. to 4-4 [W15A0].>

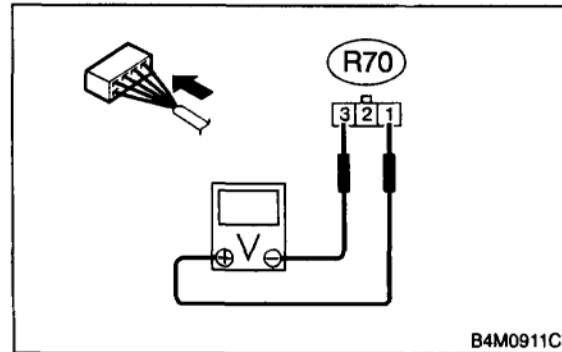
**CAUTION:**

Be sure to turn ignition switch to OFF when removing ABSCM&H/U.

**8Y3 : CHECK INPUT VOLTAGE OF G SENSOR.**

- 1) Turn ignition switch to OFF.
- 2) Remove console box.
- 3) Disconnect G sensor from body. (Do not disconnect connector.)
- 4) Turn ignition switch to ON.
- 5) Measure voltage between G sensor connector terminals.

**Connector & terminal**  
(R70) No. 1 (+) — No. 3 (-):



- CHECK** : *Is the voltage between 4.75 and 5.25 V?*
- YES** : Go to step **8Y4**.
- NO** : Repair harness/connector between G sensor and ABSCM&H/U.