

2004



NISSAN

TERRANO II model R20 series supplement



SERVICE MANUAL

Publication Number: SM7E-FD35G0

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GENERAL INFORMATION

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MODIFICATIONS

OUTLINE OF MODIFICATIONS

Applied from:

- For Africa and Russia: VSK★B★R20★0550000
- For Gulf Countries: VSKBR4★C★★A550000

★: Any of the possibilities. See Vehicle Identification Number arrangement.

Electrical

- Wiring diagrams have been changed.

Seat belts

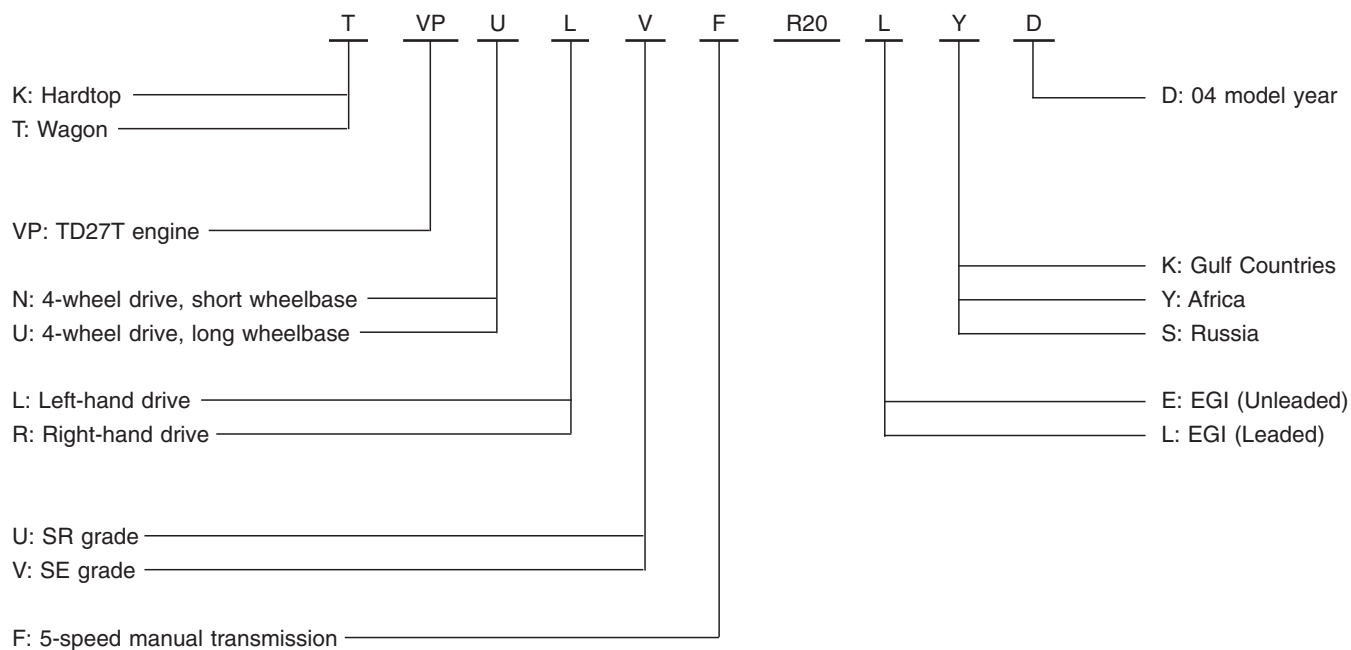
- The center seat belt on the 2nd seat has been changed from two-point type to three-point type.

IDENTIFICATION INFORMATION

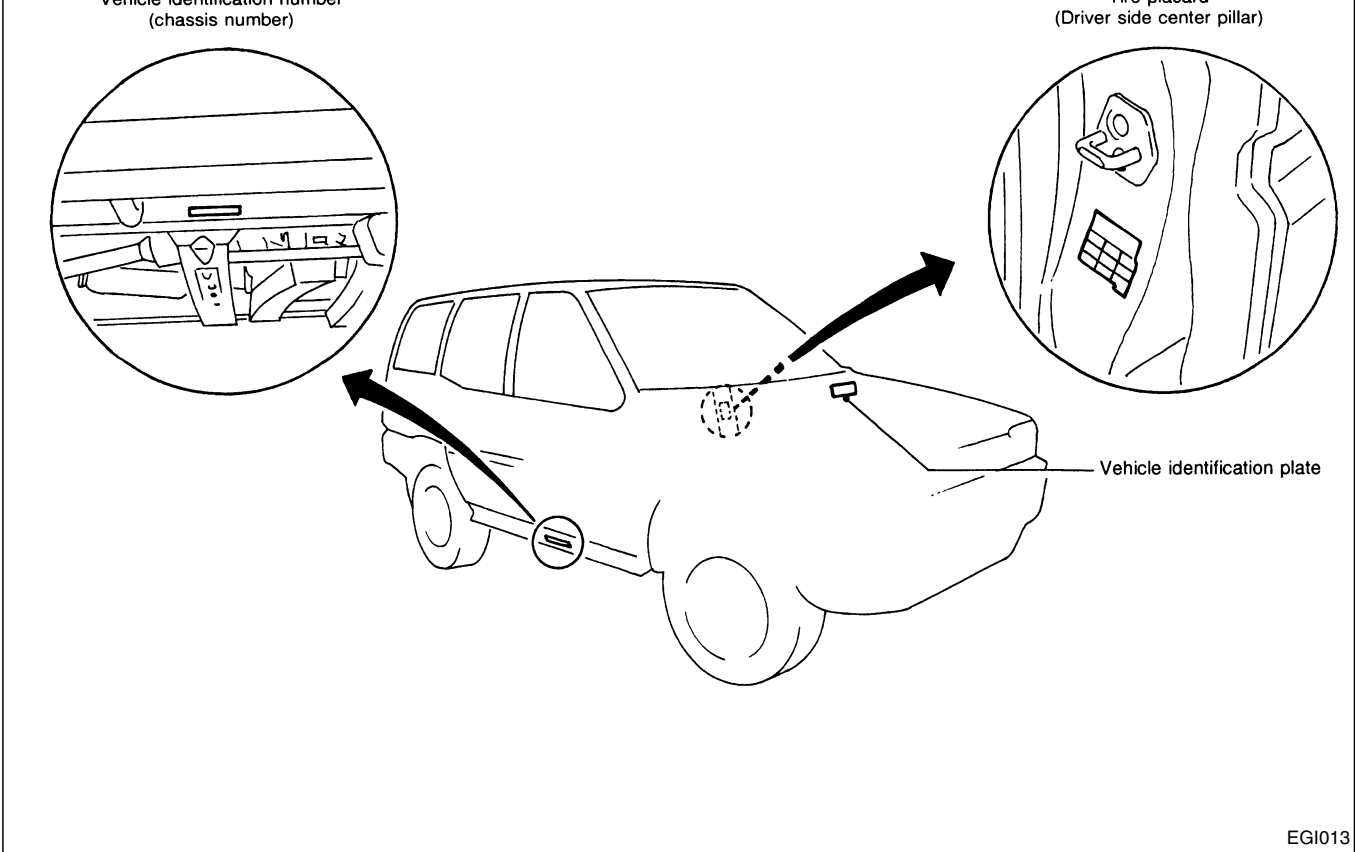
Model Variation

Body	Grade	Engine	Transmission	Africa (LHD)	Africa (RHD)	GCC	Russia
H/T	Luxury	KA24E	FS5W71C	—	—	KBFNLVF-EKD	—
	Sport	KA24E		—	—	KBFNLUF-EKD	—
Wagon	Luxury	KA24E	FS5W71C	TBFULVF-LYD	TBFURVF-LYD	TBFULVF-EKD	TBFULVF-ESD
	Sport	KA24E		TBFULUF-LYD	TBFURUF-LYD	TBFULUF-EKD	TBFULUF-ESD

Prefix and suffix designations:

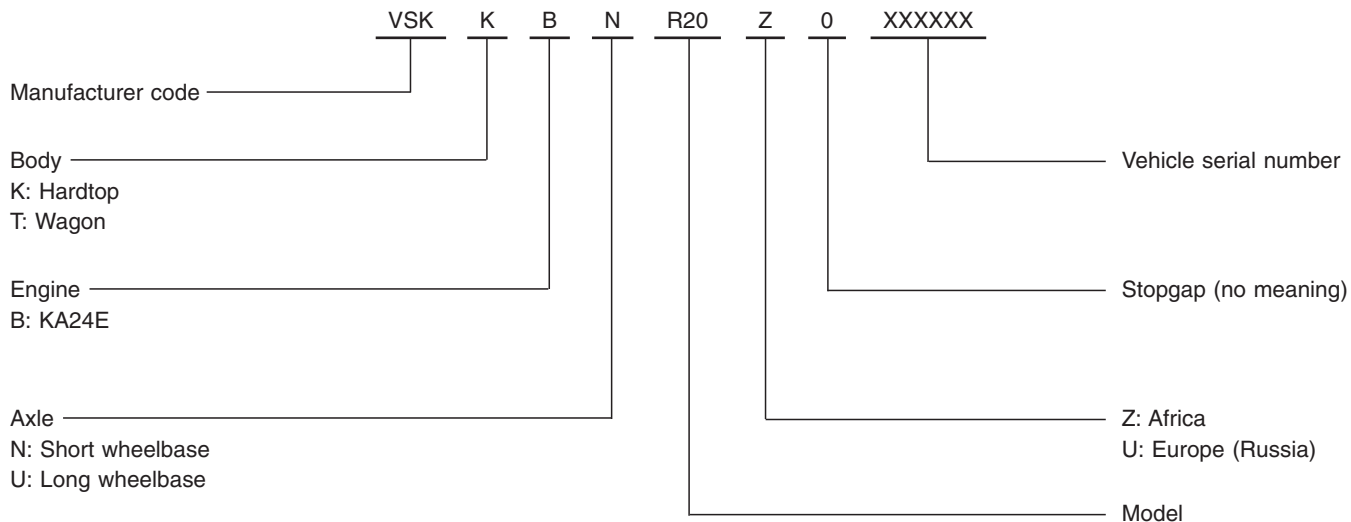


Vehicle identification number	Tire placard
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Prefix and suffix designations:

For Africa and Russia:



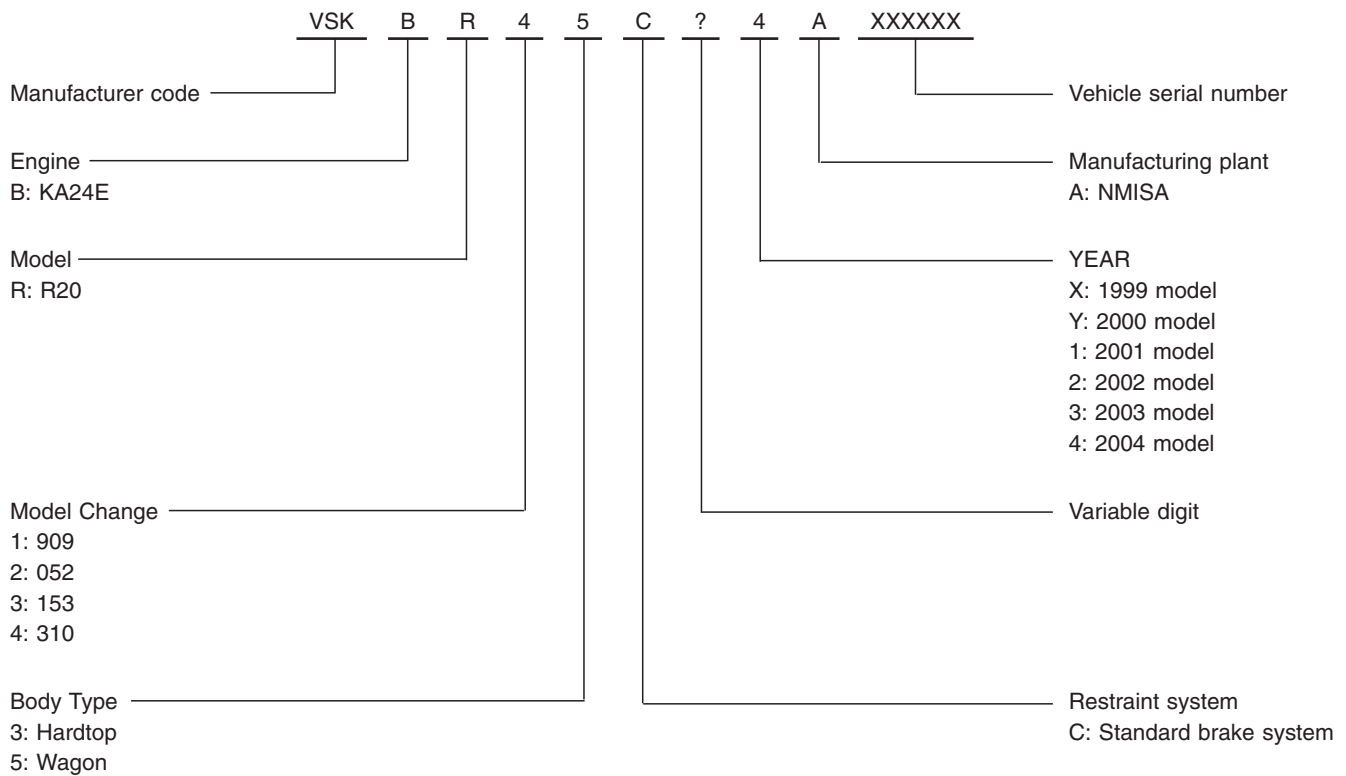
GI-13004

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NO CHANGES

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NO CHANGES

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NO CHANGES

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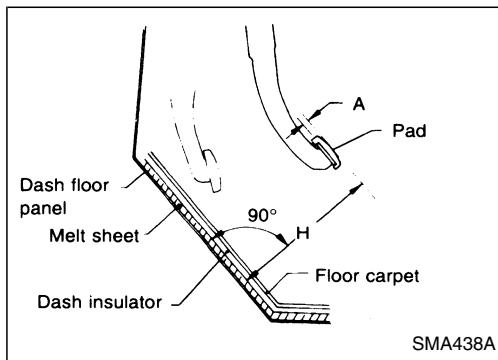
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Checking Clutch Operation

Check clutch pedal height, free play and smooth operation.

Pedal height "H":

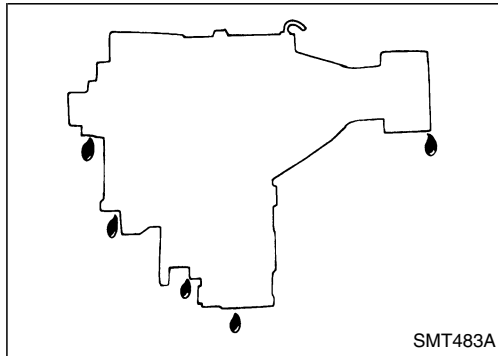
LHD: 217 - 227 mm (8.54 - 8.94 in)

RHD: 200 - 210 mm (7.87 - 8.27 in)

Pedal free play "A":

1 - 3 mm (0.039 - 0.118 in)

If necessary, adjust clutch pedal height and pedal free play. Refer to Section CL.



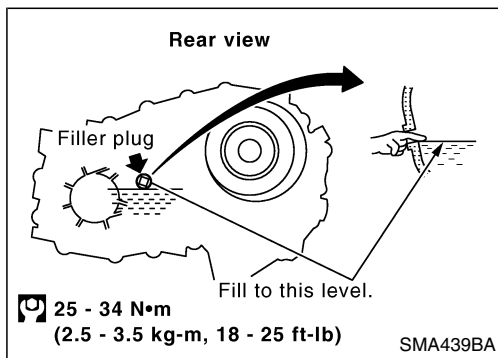
Checking Transfer Oil

1. Check transfer for leakage.

2. Check oil level.

Never start engine while checking oil level.

"DEXRON™" type Automatic Transmission Fluid is used for the transfer in the factory. Never add gear oil (API GL-4) to Automatic Transmission Fluid.



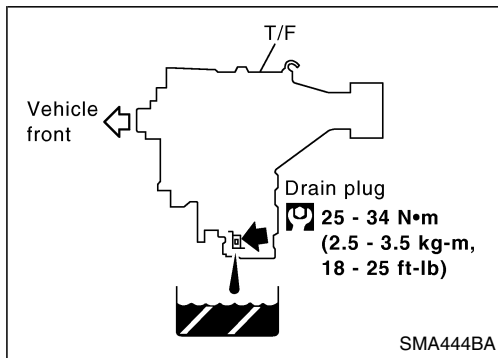
Changing Transfer Oil

Oil capacity:

2.3 liters (2 Imp qt)

When changing transfer oil completely, either "DEXRON™" type Automatic Transmission Fluid or gear oil (API GL-4) may be used.

Do not mix Automatic Transmission Fluid and gear oil.



Checking Foot Brake Pedal Operation

Check brake pedal free height, depressed height and for smooth operation.

H: Free height:

RHD: 196 - 206 mm (7.72 - 8.11 in)

LHD: 210 - 220 mm (8.27 - 8.66 in)

D: Depressed height:

Under force of 490 N (50 kg, 110 lb)

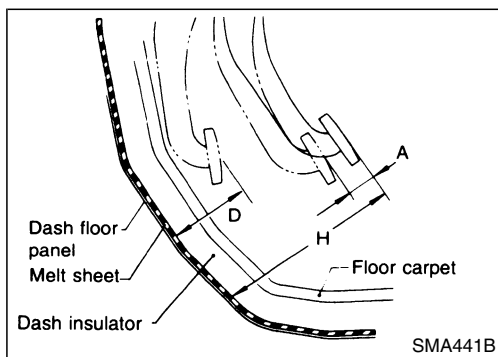
with engine running

RHD: 137.7 - 147.7 mm (5.42 - 5.81 in)

LHD: 142.5 - 152.5 mm (5.61 - 6.00 in)

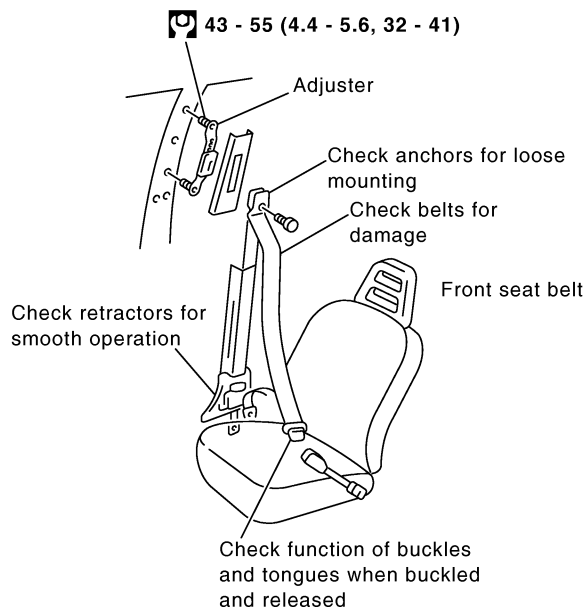
A: Pedal free play

1.0 - 3.0 mm (0.039 - 0.118 in)



Body

CHECKING SEAT BELTS, BUCKLES, RETRACTORS, ANCHORS AND ADJUSTERS

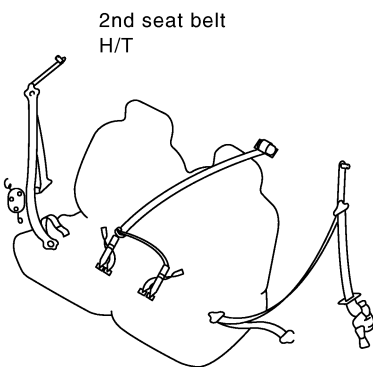


CAUTION:

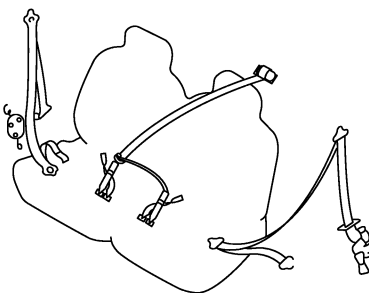
- After any collision, inspect all seat belt assemblies, including retractors and other attached hardware (i.e. anchor bolt, guide rail set). Nissan recommends to replace all seat belt assemblies in use during a collision, unless not damaged and properly operating after minor collision. Replace the seat belt assembly if any damage or improper operation were found even if the belt had not been used during a collision. Also inspect seat belt assemblies not in use during a collision, and replace if damaged or improperly operating. Front seat belt pre-tensioner should be replaced even if the seat belt are not in use during a frontal collision where the driver and passenger air bags are deployed.
- If any component of seat belt assembly is questionable, do not repair. Replace as seat belt assembly.
- If webbing is cut, frayed, or damaged, replace belt assembly.
- Do not spill drinks, oil etc. on inner lap belt buckle. Never oil tongue and buckle.
- Use a NISSAN genuine seat belt assembly.

Anchor bolt

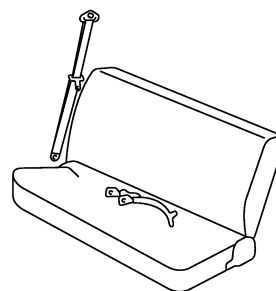
43.1 - 54.9 (4.4 - 5.6, 32 - 40)



2nd seat belt
Wagon



3rd seat belt



CAUTION:

When removing the seat belt and seat belt pre-tensioner retractor, be sure to make the seat belt pre-tensioner inoperative. Refer to "SUPPLEMENTAL RESTRAINT SYSTEM (SRS)" -Removal and Installation- Seat belt pre-tensioner in section BF.

: N•m (kg-m, ft-lb)

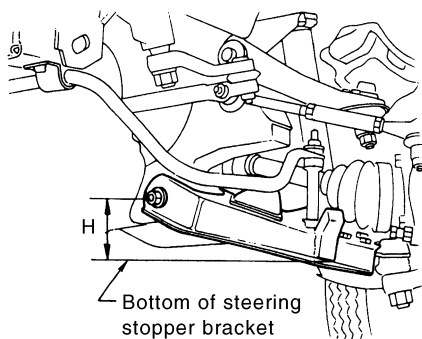
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Chassis and Body Maintenance

INSPECTION AND ADJUSTMENT

Front axle and front suspension (Unladen)*1

Applied model		Hardtop	Wagon
Camber	degree	0°38'±30'	
Caster	degree	1°45'±30'	1°48'±30'
Kingpin inclination	degree	8°03'±30'	
Total toe-in			
Radial tire	mm (in)	3.8 - 5.8 (0.15 - 0.23)	
Front wheel turning angle			
Full turn			
inside		33° - 35°	
outside		31° - 33°	
Vehicle posture			
Lower arm pivot height (H)	mm (in)	49 (1.93)	



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*1: Fuel, radiator coolant and engine oil full.

Spare tire, jack, hand tools and mats in designated positions.

*2: Wheel turning force (at circumference of steering wheel) of 98 to 147 N (10 to 15 kg, 22 to 33 lb) with engine idle.

TIGHTENING TORQUE

Unit	N·m	kg·m	ft·lb
Clutch			
Pedal stopper lock nut KA24E	12 - 15	1.3 - 1.5	9 - 11
Master cylinder push rod lock nut	8 - 11	0.8 - 1.1	5.8 - 8.0
Manual transmission			
Drain and filler plugs FS5W71C	25 - 34	2.5 - 3.5	18 - 25
FS5R30A	25 - 34	2.5 - 3.5	18 - 25
Front axle and front sus- pension			
Tie-rod lock nut	80 - 100	8.2 - 10.1	59 - 73
Brake system			
Air bleeder valve	7 - 9	0.7 - 0.9	5.1 - 6.5
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NO CHANGES

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<SUPPLEMENT-V> (For Australia)

NO CHANGES

<SUPPLEMENT-VI> (For Europe and Australia)

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NO CHANGES

<SUPPLEMENT-XI> (For Europe)

NO CHANGES

<SUPPLEMENT-XII> (For Africa, Gulf Countries and Central & South America)

NO CHANGES

<SUPPLEMENT-XIII> (For General)

KA24E

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TIMING CHAIN 13003

CYLINDER HEAD.....13004

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ENGINE MECHANICAL

SECTION **EM**

EM

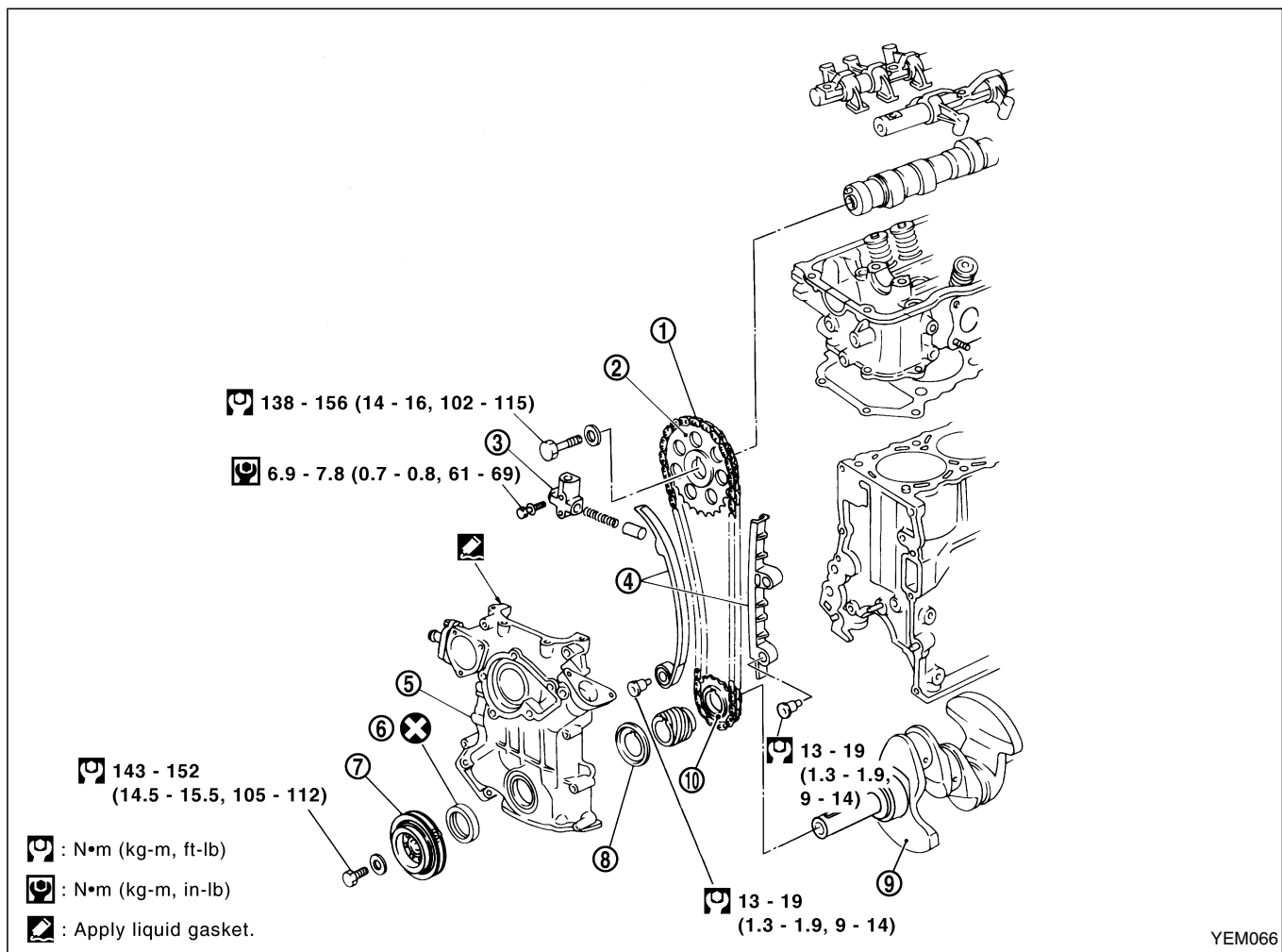
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OUTER COMPONENT PARTS 13002		
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- ⑳ Crank pulley
- ㉑ Crank pulley damper
- ㉒ Distributor
- ㉓ High-tension cable
- ㉔ Exhaust manifold
- ㉕ Cover
- ㉖ Oil level gauge

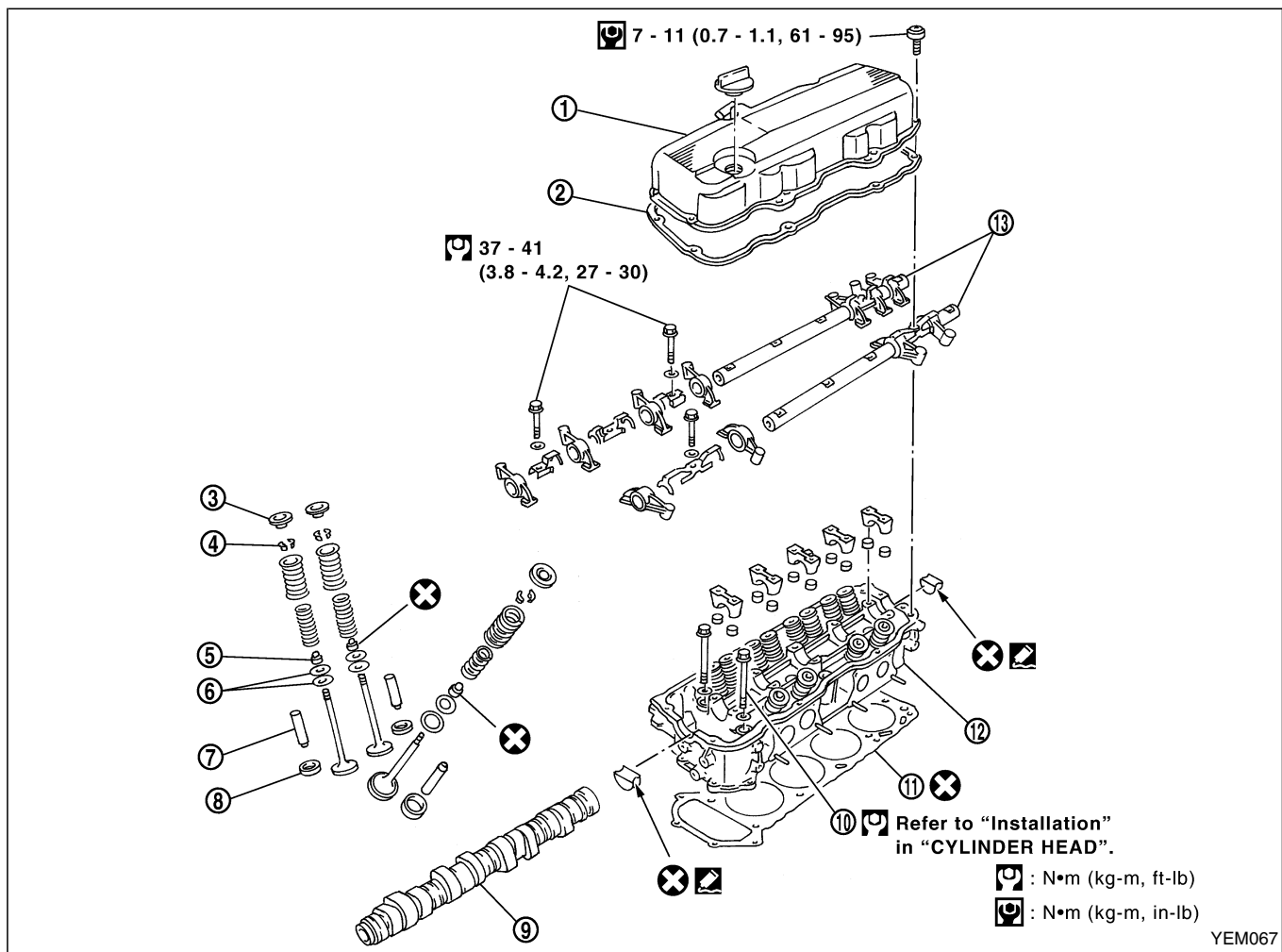


YEM066

- | | | |
|---------------------|------------------|-----------------------|
| ① Timing chain | ⑤ Front cover | ⑧ Oil thrower |
| ② Camshaft sprocket | ⑥ Front oil seal | ⑨ Crankshaft |
| ③ Chain tensioner | ⑦ Crank pulley | ⑩ Crankshaft sprocket |
| ④ Chain guide | | |

CAUTION:

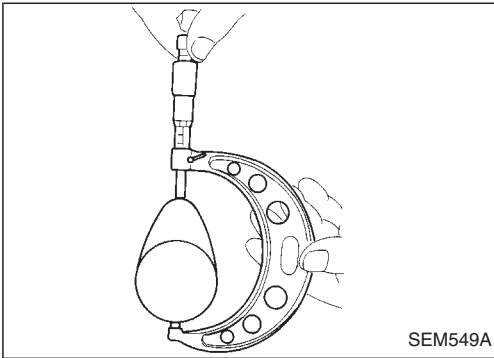
After removing timing chain, do not turn crankshaft and camshaft separately, or valves will strike piston heads.



- ① Valve rocker cover
- ② Rocker cover gasket
- ③ Spring retainer
- ④ Valve cotter
- ⑤ Oil seal

- ⑥ Spring seat
- ⑦ Valve guide
- ⑧ Valve seat
- ⑨ Camshaft

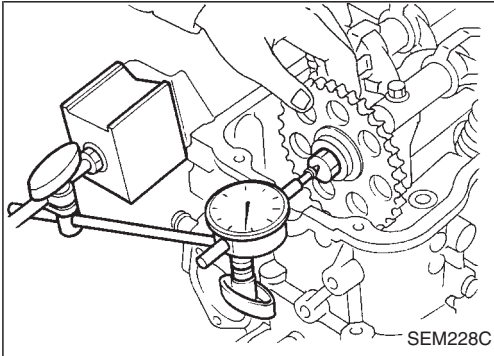
- ⑩ Head bolt
- ⑪ Cylinder head gasket
- ⑫ Cylinder head
- ⑬ Valve rocker and shaft assembly



Inspection

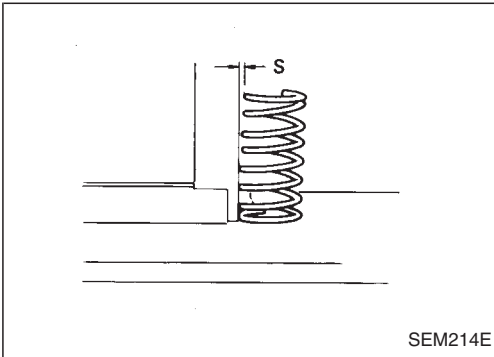
CAMSHAFT CAM HEIGHT

1. Measure camshaft cam height.
Standard cam height:
 44.410 - 44.600 mm (1.7484 - 1.7559 in)
Cam wear limit:
 0.2 mm (0.008 in)
2. If wear is beyond the limit, replace camshaft.



CAMSHAFT END PLAY

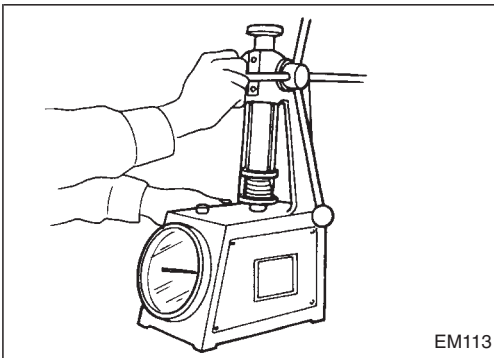
1. Install camshaft in cylinder head.
2. Measure camshaft end play.
Camshaft end play:
Standard
 0.070 - 0.148 mm (0.0028 - 0.0058 in)
Limit
 0.2 mm (0.008 in)



VALVE SPRING

Squareness

1. Measure "S" dimension.
Out-of-square:
Outer
 Intake: Less than 2.5 mm (0.098 in)
 Exhaust: Less than 2.3 mm (0.091 in)
Inner
 Intake: Less than 2.3 mm (0.091 in)
 Exhaust: Less than 2.1 mm (0.083 in)



2. If it exceeds the limit, replace spring.

Pressure

Check valve spring pressure.

Pressure: N (kg, lb) at height mm (in)

Standard

Outer

Intake 604 (61.6, 135.5) at 37.6 (1.480)
 Exhaust 640 (65.2, 143.5) at 34.1 (1.343)

Inner

Intake 284 (29.0, 63.7) at 32.6 (1.283)
 Exhaust 328 (33.4, 73.6) at 29.1 (1.146)

Limit

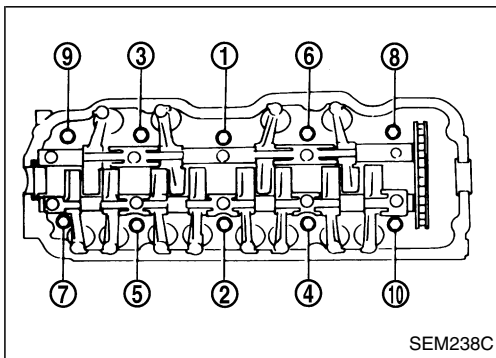
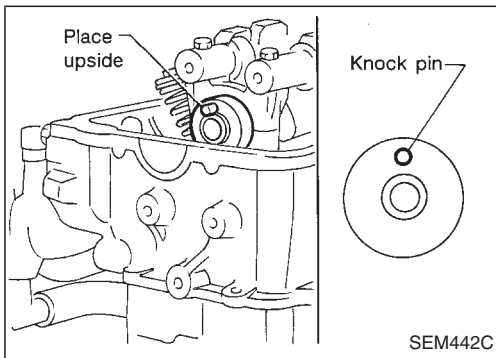
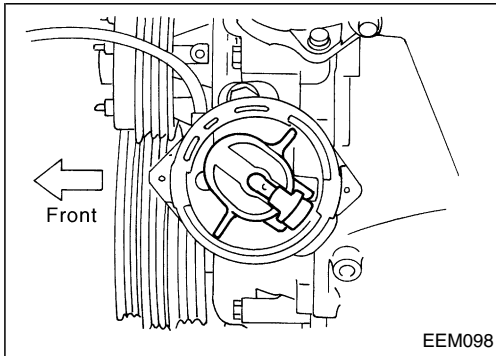
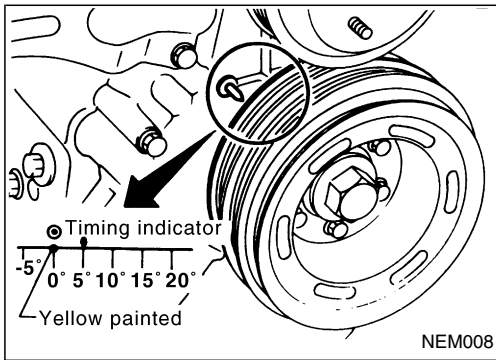
Outer

Intake 568 (57.9, 127.4) at 37.6 (1.480)
 Exhaust 621 (63.3, 139.3) at 34.1 (1.343)

Inner

Intake 267 (27.2, 59.9) at 32.6 (1.283)
 Exhaust 318 (32.4, 71.3) at 29.1 (1.146)

If it exceeds the limit, replace spring.



Installation

1. Confirm that No. 1 piston is set at TDC on its compression stroke.

2. Confirm that knock pin on camshaft is set at the top.

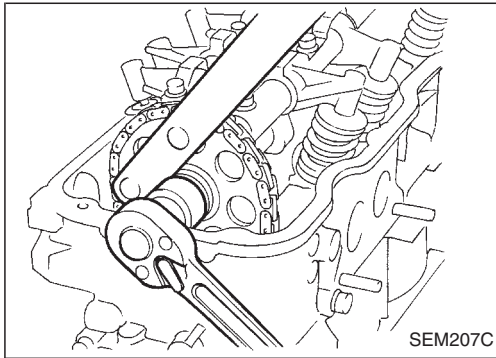
3. Install cylinder head with new gasket and tighten cylinder head bolts in numerical order.

- **Do not rotate crankshaft and camshaft separately, or valves will hit piston heads.**

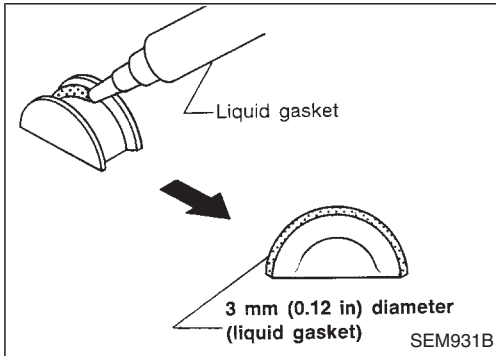
- **Tightening procedure**

- (1) Tighten all bolts to 29 N·m (3.0 kg-m, 22 ft-lb).
- (2) Tighten all bolts to 78 N·m (8.0 kg-m, 58 ft-lb).
- (3) Loosen all bolts completely.
- (4) Tighten all bolts to 29 N·m (3.0 kg-m, 22 ft-lb).
- (5) Turn all bolts 80 to 85 degrees clockwise with an angle wrench, or if an angle wrench is not available, tighten all bolts to between 74 and 83 N·m (7.5 to 8.5 kg-m, 54 to 61 ft-lb).
4. Install front cover tightening bolts to cylinder head.
5. Set chain on camshaft sprocket by aligning each mating mark. Then install camshaft sprocket to camshaft.
6. Remove wooden tool, used to avoid timing chain from falling down.

Installation (Cont'd)



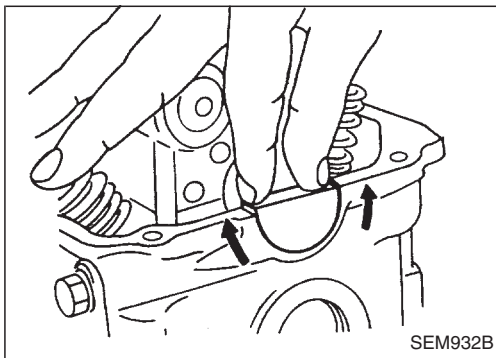
7. Tighten camshaft sprocket bolt.



8. Install rubber plugs as follows:

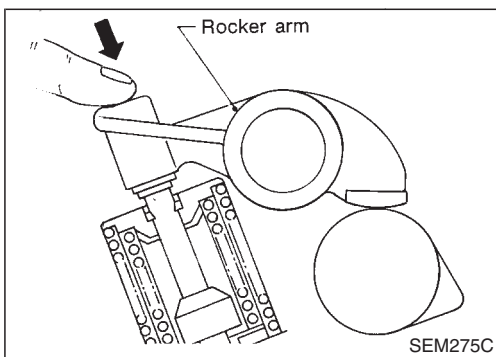
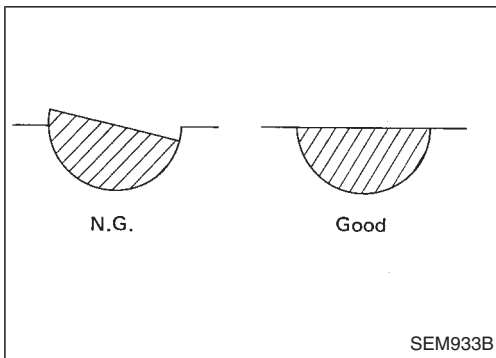
(1) Apply liquid gasket to rubber plugs.

- Rubber plugs should be replaced by new ones.
- Rubber plugs should be installed within 5 minutes of applying liquid gasket.



(2) Install rubber plugs, then move them with your fingers to uniformly spread the gasket on cylinder head surface.

- Rubber plugs should be installed flush with the surface.
- Do not start the engine for 30 minutes after installing rocker cover.
- Remove excessive liquid gasket from cylinder head top surface.



9. Check hydraulic valve lifter.

(1) Push hydraulic valve lifter forcefully with your finger.

- Be sure to check it with rocker arm in its free position.

(2) If valve lifter moves more than 1 mm (0.04 in), air may be inside of it.

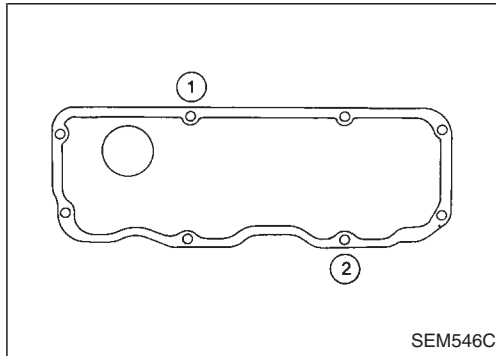
(3) Bleed air off by running engine at 1,000 rpm under no-load for about 20 minutes.

(4) If hydraulic valve lifters are still noisy, replace them and bleed air off again in the same manner as in step (3).

Installation (Cont'd)

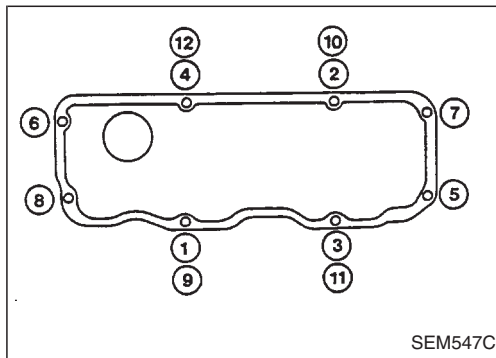
10. Install rocker cover.

- **Be sure to avoid interference between rocker cover and rocker arms.**



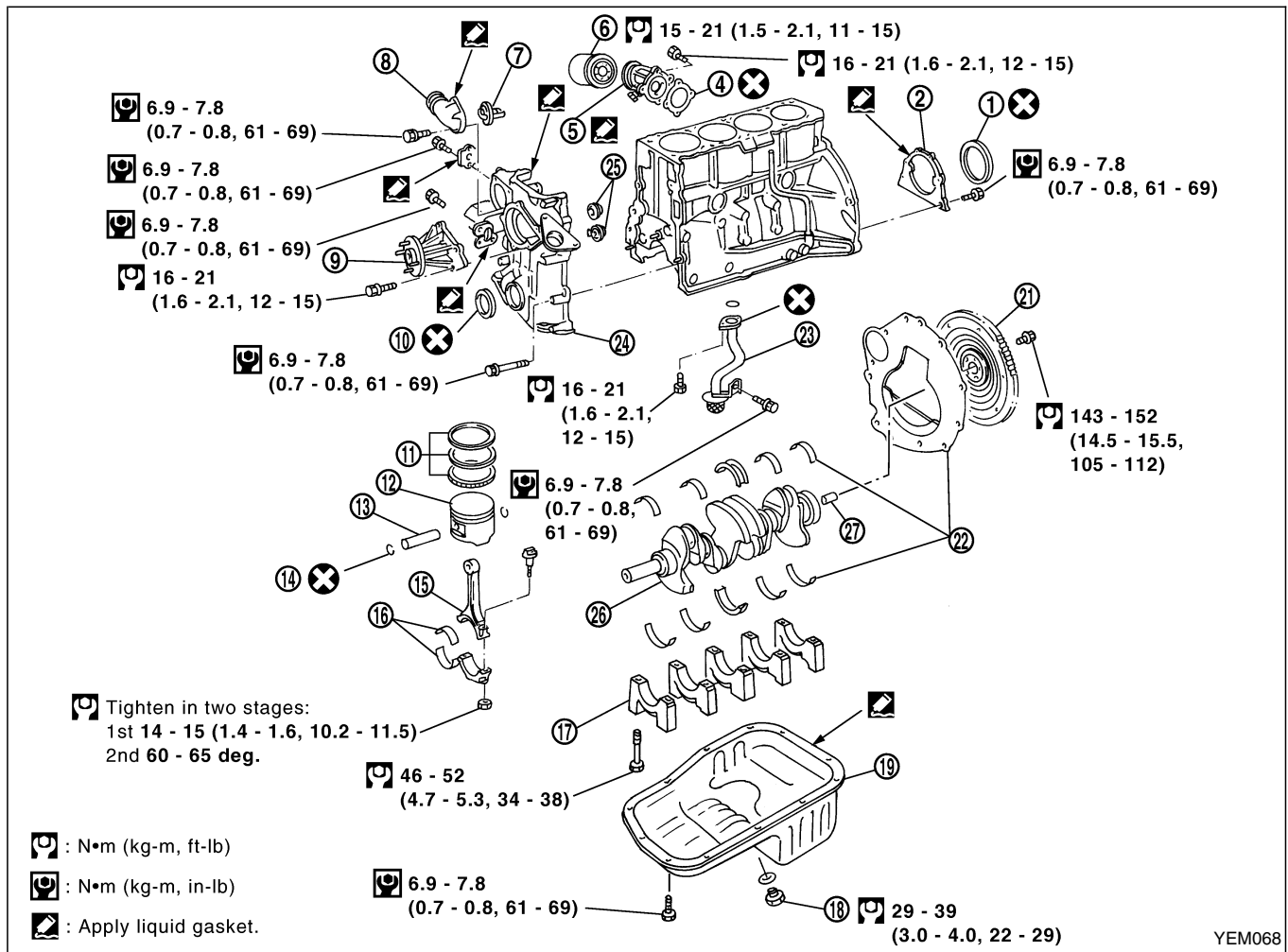
11. Tighten bolts as follows:

- (1) Tighten 2 bolts to 3 N·m (0.3 kg-m, 26 in-lb) temporarily in order shown in figure.



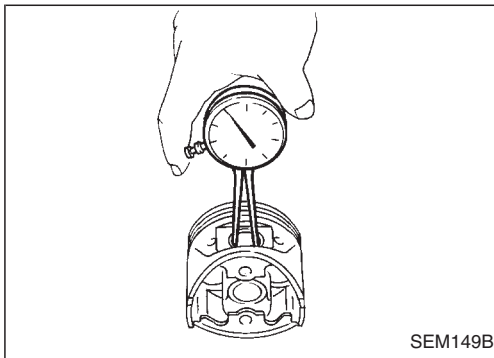
- (2) Then tighten all bolts to between 7 and 10 N·m (0.7 to 1.1 kg-m, 61 to 95 in-lb) in order shown in figure.

12. Install any remaining parts.



YEM068

- | | | |
|--------------------------|--------------------------|-----------------|
| ① Rear oil seal | ⑩ Front oil seal | ⑲ Oil pan |
| ② Rear oil seal retainer | ⑪ Piston rings | ⑳ Rear plate |
| ③ Cylinder block | ⑫ Piston | ㉑ Flywheel |
| ④ Gasket | ⑬ Piston pin | ㉒ Main bearing |
| ⑤ Oil filter bracket | ⑭ Snap ring | ㉓ Oil strainer |
| ⑥ Oil filter | ⑮ Connecting rod | ㉔ Front cover |
| ⑦ Thermostat | ⑯ Connecting rod bearing | ㉕ Oil seal |
| ⑧ Water inlet | ⑰ Main bearing cap | ㉖ Crankshaft |
| ⑨ Water pump | ⑱ Drain plug | ㉗ Pilot bushing |



Inspection

PISTON AND PISTON PIN CLEARANCE

- Confirm the fitting of piston pin into piston pin hole to such an extent that it can be pressed smoothly by finger at room temperature.

- Measure inner diameter of piston pin hole "dp".

Standard diameter "dp":

21.002 - 21.008 mm (0.8268 - 0.8271 in)

- Measure outer diameter of piston pin "Dp".

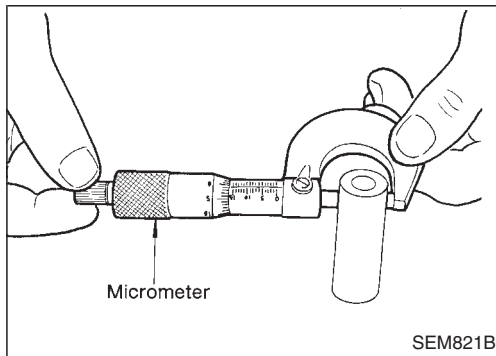
Standard diameter "Dp":

20.993 - 20.998 mm (0.8265 - 0.8267 in)

- Calculate interference fit of piston pin to piston.

dp - Dp = 0.004 - 0.015 mm (0.0002 - 0.0006 in)

If it exceeds the above value, replace piston assembly with pin.



RING SIDE CLEARANCE

Side clearance:

Top ring

0.040 - 0.080 mm (0.0016 - 0.0031 in)

2nd ring

0.030 - 0.070 mm (0.0012 - 0.0028 in)

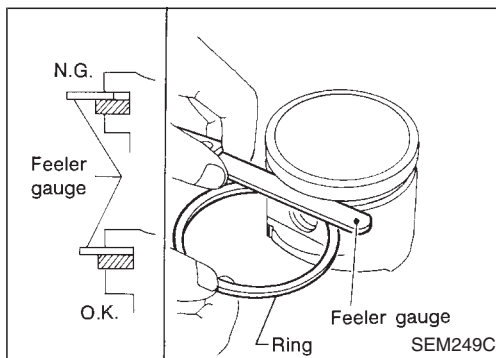
Oil ring

0.065 - 0.135 mm (0.0026 - 0.0053 in)

Max. limit of side clearance:

0.1 mm (0.004 in)

If out of specification, replace piston and/or piston ring assembly.



PISTON-TO-BORE CLEARANCE

- Using a bore gauge, measure cylinder bore for wear, out-of-round and taper.

Standard inner diameter:

89.000 - 89.030 mm (3.5039 - 3.5051 in)

Wear limit:

0.2 mm (0.008 in)

Out-of-round (X - Y) limit:

0.015 mm (0.0006 in)

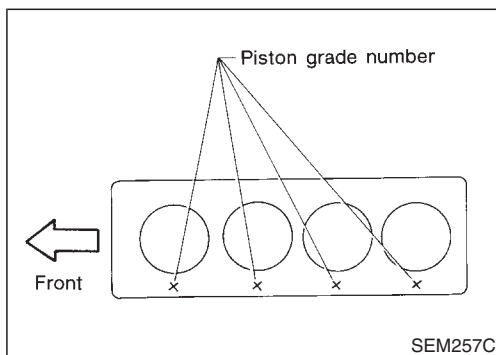
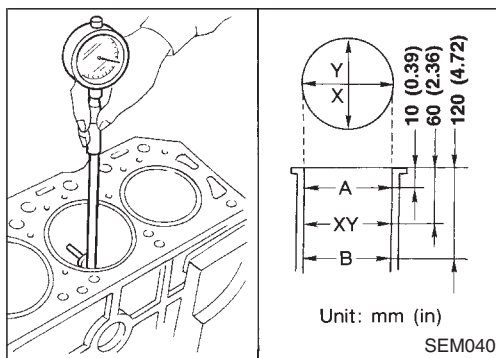
Taper (A - B) limit:

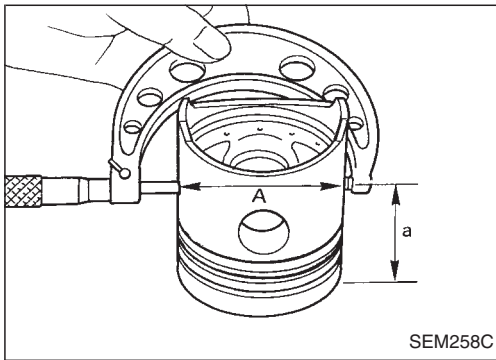
0.010 mm (0.0004 in)

If it exceeds the limit, rebore all cylinders. Replace cylinder block if necessary.

- Check for scratches and seizure. If seizure is found, hone it.

- If both cylinder block and piston are replaced with new ones, select piston of the same grade number punched on cylinder block upper surface.





Inspection (Cont'd)

3. Measure piston skirt diameter.

Piston diameter "A":

Refer to S.D.S.

Measuring point "a" (Distance from the top):

52 mm (2.05 in)

4. Check that piston-to-bore clearance is within specification.

Piston-to-bore clearance "B":

0.020 - 0.040 mm (0.0008 - 0.0016 in)

5. Determine piston oversize according to amount of cylinder wear.

Oversize pistons are available for service. Refer to S.D.S.

6. Cylinder bore size is determined by adding piston-to-bore clearance to piston diameter "A".

Rebored size calculation:

$$D = A + B - C$$

where,

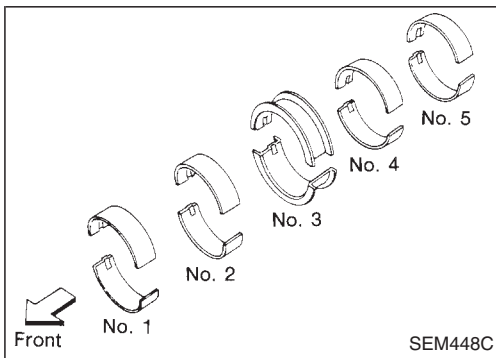
D: Bored diameter

A: Piston diameter as measured

B: Piston-to-bore clearance

C: Honing allowance 0.02 mm (0.0008 in)

7. Install main bearing caps, and tighten to the specified torque to prevent distortion of cylinder bores in final assembly.
8. Cut cylinder bores.
 - **When any cylinder needs boring, all other cylinders must also be bored.**
 - **Do not cut too much out of cylinder bore at a time. Cut only 0.05 mm (0.0020 in) or so in diameter at a time.**
- 9.hone cylinders to obtain specified piston-to-bore clearance.
10. Measure finished cylinder bore out-of-round and taper.
 - **Measurement should be done after cylinder bore cools down.**

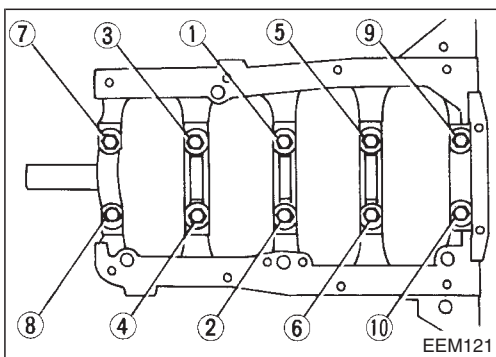


Assembly

CRANKSHAFT

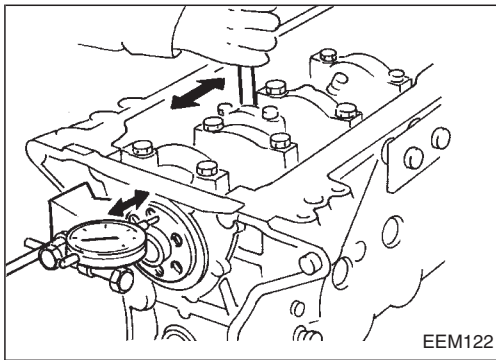
1. Set main bearings in their proper positions on cylinder block and main bearing beam.

- **Confirm that correct main bearings are used. Refer to "Inspection" of this section.**



2. Install crankshaft and main bearing beam and tighten bolts to the specified torque.

- **Prior to tightening bearing cap bolts, place bearing cap in its proper position by shifting crankshaft in the axial direction.**
- **Tighten bearing cap bolts gradually in two or three stages. Start with center bearing and move outward sequentially.**
- **After securing bearing cap bolts, make sure crankshaft turns smoothly by hand.**

Assembly (Cont'd)

3. Measure crankshaft end play.

Crankshaft end play:

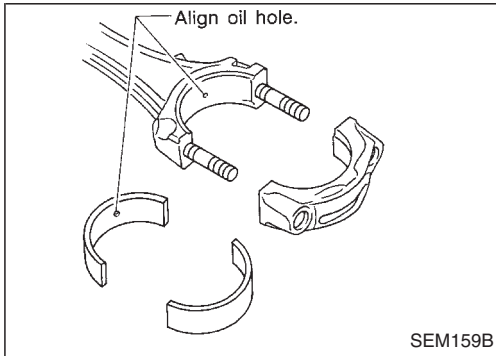
Stand

0.050 - 0.180 mm (0.0020 - 0.0071 in)

Limit

0.3 mm (0.012 in)

If beyond the limit, replace bearing with a new one.

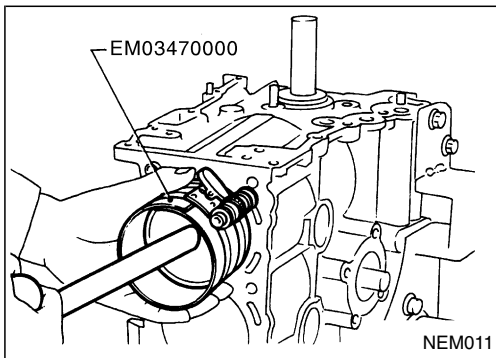


4. Install connecting rod bearings in connecting rods and connecting rod caps.

- Confirm that correct bearings are used.

Refer to "Inspection".

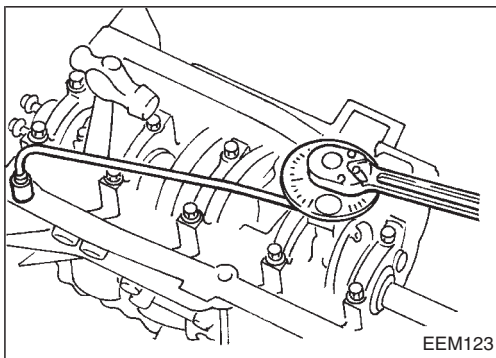
- Install bearings so that oil hole in connecting rod aligns with oil hole of bearing.



5. Install pistons with connecting rods.

a. Install them into corresponding cylinders with Tool.

- **Be careful not to scratch cylinder wall by connecting rod.**
- **Arrange so that front mark on piston head faces toward front of engine.**



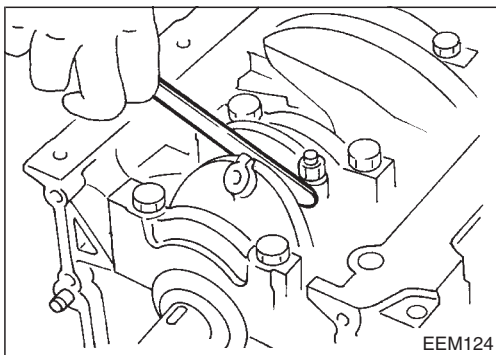
b. Install connecting rod bearing caps.

Tighten connecting rod bearing cap nuts to the specified torque.

Connecting rod bearing nut:

(1) Tighten to between 14 and 16 N·m
(1.4 to 1.6 kg-m, 10 to 12 ft-lb).

(2) Tighten bolts 60 to 65 degrees clockwise with an angle wrench, or if an angle wrench is not available, tighten them to between 38 and 44 N·m (3.9 to 4.5 kg-m, 28 to 33 ft-lb).



6. Measure connecting rod side clearance.

Connecting rod side clearance:

Standard

0.20 - 0.40 mm (0.0079 - 0.0157 in)

Limit

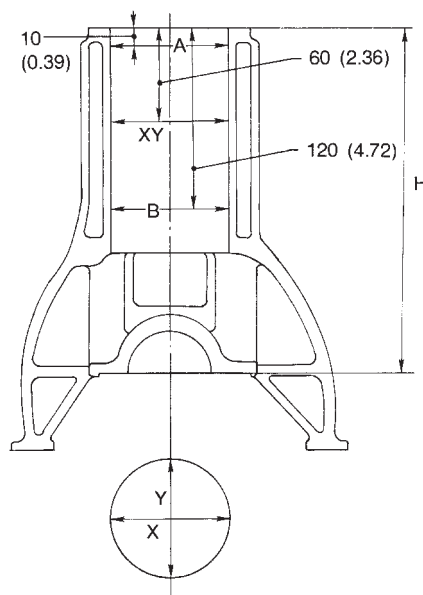
0.6 mm (0.024 in)

If beyond the limit, replace connecting rod and/or crankshaft.

7. Install remaining parts.

Inspection and Adjustment

CYLINDER BLOCK



SEM447C

Unit: mm (in)

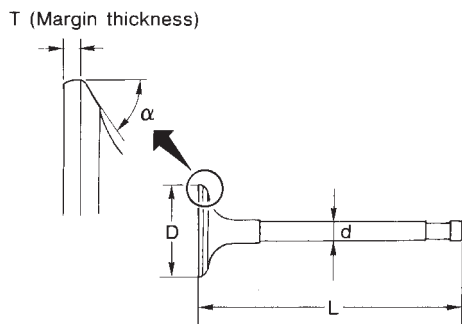
			Standard	Limit
Distortion			0.03 (0.0012)	0.1 (0.004)
Cylinder bore	Inner diameter	Grade 1	89.000 - 89.010 (3.5039 - 3.5043)	0.2 (0.008)**
		Grade 2	89.010 - 89.020 (3.5043 - 3.5047)	
		Grade 3	89.020 - 89.030 (3.5047 - 3.5051)	
	Out-of-round (X – Y)		Less than 0.015 (0.0006)	—
	Taper (A – B)		Less than 0.010 (0.0004)	—
Difference in inner diameter between cylinders			Less than 0.05 (0.0020)	0.2 (0.008)
Piston-to-cylinder clearance			0.020 - 0.040 (0.0008 - 0.0016)	—
Nominal height of cylinder block (From crankshaft center)			246.95 - 247.05 (9.7224 - 9.7264)	0.2 (0.008)**

* Wear limit

** Total amount of cylinder head resurfacing and cylinder block resurfacing

Inspection and Adjustment (Cont'd)

VALVE



SEM188A

Unit: mm (in)

		Standard	Limit
Valve head diameter (D)	In.	33.95 - 34.25 (1.337 - 1.348)	—
	Ex.	39.95 - 40.25 (1.573 - 1.585)	—
Valve length (L)	In.	119.9 - 120.2 (4.720 - 4.732)	—
	Ex.	120.67 - 120.97 (4.7508 - 4.7626)	—
Valve stem diameter (d)	In.	6.965 - 6.980 (0.2742 - 0.2748)	—
	Ex.	7.948 - 7.960 (0.3129 - 0.3134)	—
Valve seat angle (α)	In.	45°30'	—
	Ex.	45°30'	—
Valve seat margin (T)	In.	1.15 - 1.45 (0.0453 - 0.0571)	0.5 (0.020)
	Ex.	1.35 - 1.65 (0.0531 - 0.0650)	
Valve clearance		0 (0)	

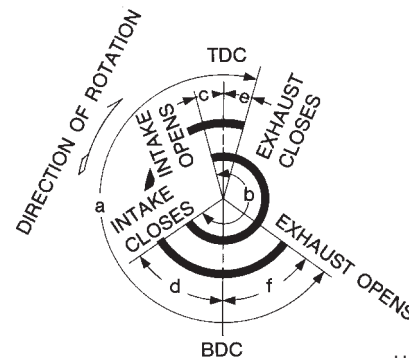
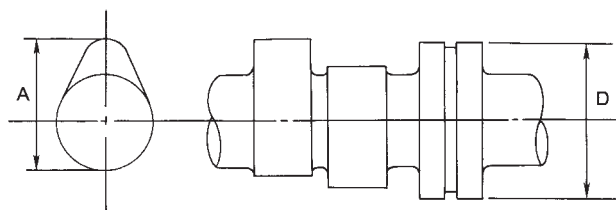
VALVE SPRING

Unit: mm (in)

		Standard		Limit	
		Intake	Exhaust	Intake	Exhaust
Free height	Outer	57.44 (2.2614)	53.21 (2.0949)	—	—
	Inner	53.34 (2.1000)	47.95 (1.8878)	—	—
Pressure N (kg, lb) at height	Outer	604 (61.6, 135.5) at 37.6 (1.480)	640 (65.2, 143.5) at 34.1 (1.343)	568 (57.9, 127.4) at 37.6 (1.480)	621 (63.3, 139.3) at 34.1 (1.343)
	Inner	284 (29.0, 63.7) at 32.6 (1.283)	328 (33.4, 73.6) at 29.1 (1.146)	267 (27.2, 59.9) at 32.6 (1.283)	318 (32.4, 71.3) at 29.1 (1.146)
Out-of-square	Outer	—	—	Less than 2.5 (0.098)	Less than 2.3 (0.091)
	Inner	—	—	Less than 2.3 (0.091)	Less than 2.1 (0.083)

Inspection and Adjustment (Cont'd)

CAMSHAFT AND CAMSHAFT BEARING



SEM568A

EM120

Unit: mm (in)

		Standard	Limit
Cam height (A)		44.410 - 44.600 (1.7484 - 1.7559)	—
Valve lift (h)		9.7 (0.382)	—
Wear limit of cam height		—	0.2 (0.008)
Camshaft journal to bearing clearance		0.045 - 0.090 (0.0018 - 0.0035)	0.12 (0.0047)
Inner diameter of camshaft bearing		33.000 - 33.025 (1.2992 - 1.3002)	—
Outer diameter of camshaft journal (D)		32.935 - 32.955 (1.2967 - 1.2974)	—
Camshaft runout		0 - 0.02 (0 - 0.0008)	—
Camshaft end play		0.070 - 0.148 (0.0028 - 0.0058)	0.2 (0.008)
Valve timing (Degree on crankshaft)	a	250	—
	b	242	—
	c	358	—
	d	57	—
	e	12	—
	f	56	—

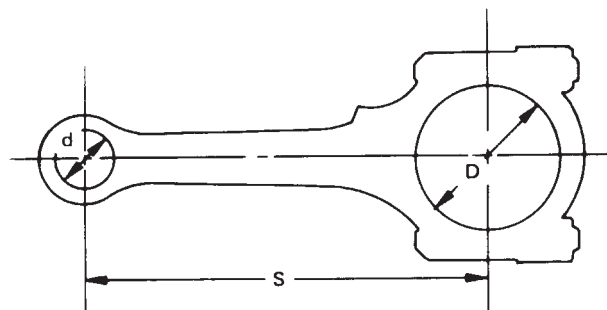
Inspection and Adjustment (Cont'd)

PISTONS, PISTON RING AND PISTON PIN

CONNECTING RODS

Piston pin

	Standard
Piston pin outer diameter	20.993 - 20.998 (0.8265 - 0.8267)
Pin to piston pin hole clearance	0.004 - 0.015 (0.0002 - 0.0006)
Piston pin to connecting rod clearance	-0.015 to -0.033 (-0.0006 to -0.0013)

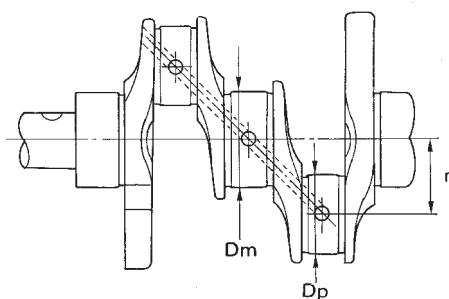


SEM216E
Unit: mm (in)

	Standard	Limit
Center distance (S)	164.95 - 165.05 (6.4941 - 6.4980)	—
Bend [per 100 mm (3.94 in)]	—	0.15 (0.0059)
Torsion [per 100 mm (3.94 in)]	—	0.30 (0.0118)
Small end inner diameter (d)	20.948 - 20.978 (0.8247 - 0.8259)	—
Connecting rod big end inner diameter (D)	53.000 - 53.013 (2.0866 - 2.0871)	—
Side clearance	0.20 - 0.40 (0.0079 - 0.0157)	0.6 (0.024)

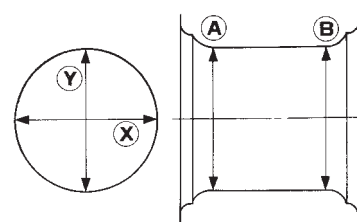
Inspection and Adjustment (Cont'd)

CRANKSHAFT



SEM394

Out-of-round (X) - (Y)
Taper (A) - (B)



EM715

Unit: mm (in)

Main journal diameter (Dm)	Grade	No. 0	59.967 - 59.975 (2.3609 - 2.3612)	
		No. 1	59.959 - 59.967 (2.3606 - 2.3609)	
		No. 2	59.951 - 59.959 (2.3603 - 2.3606)	
Pin journal diameter (Dp)	Grade	No. 0	49.968 - 49.974 (1.9672 - 1.9675)	
		No. 1	49.962 - 49.968 (1.9670 - 1.9672)	
		No. 2	49.956 - 49.962 (1.9668 - 1.9670)	
Center distance (r)		47.95 - 48.05 (1.8878 - 1.8917)		
		Standard		Limit
Taper of journal and pin [(A) – (B)]	Journal	—		Less than 0.01 (0.0004)
	Pin	—		Less than 0.005 (0.0002)
Out-of-round of journal and pin [(X) – (Y)]	Journal	—		Less than 0.01 (0.0004)
	Pin	—		Less than 0.005 (0.0002)
Runout [T.I.R.]*		—		Less than 0.10 (0.0039)
Free end play		0.050 - 0.180 (0.0020 - 0.0071)		0.3 (0.012)
Fillet roll		More than 0.1 (0.004)		

* Total indicator reading

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NO CHANGES

<SUPPLEMENT-II>

NO CHANGES

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NO CHANGES

<SUPPLEMENT-V> (For Australia)

NO CHANGES

<SUPPLEMENT-VI> (For Europe and Australia)

NO CHANGES

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NO CHANGES

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NO CHANGES

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NO CHANGES

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NO CHANGES

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NO CHANGES

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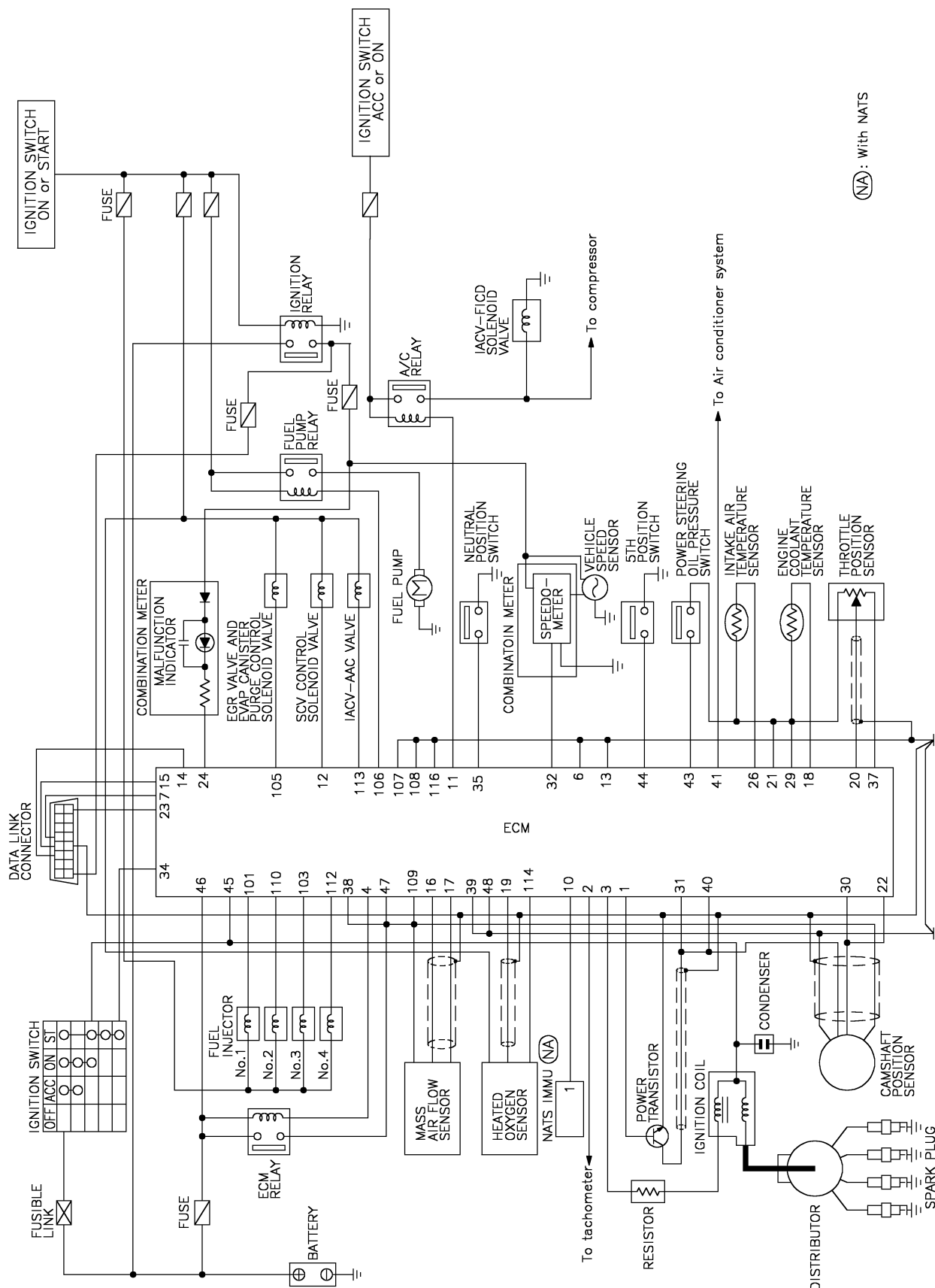
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When you read wiring diagrams:

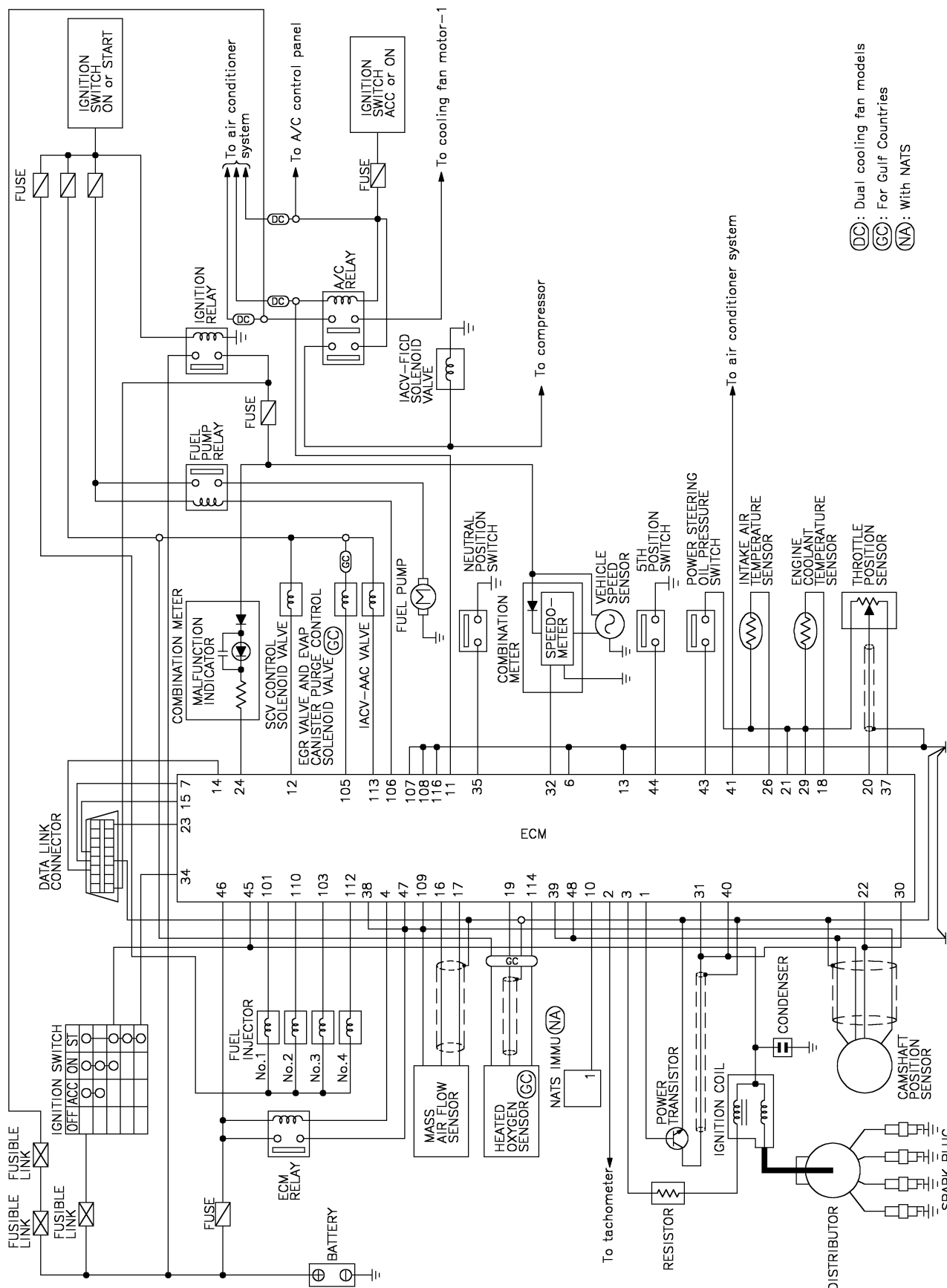
- Read GI section, "HOW TO READ WIRING DIAGRAMS".
- See EL section, "POWER SUPPLY ROUTING" for power distribution circuit.
- See EL section for NATS information and wiring diagram.

When you perform trouble diagnoses, read GI section, "HOW TO FOLLOW FLOW CHART IN TROUBLE DIAGNOSES".

Circuit Diagram/For Russia

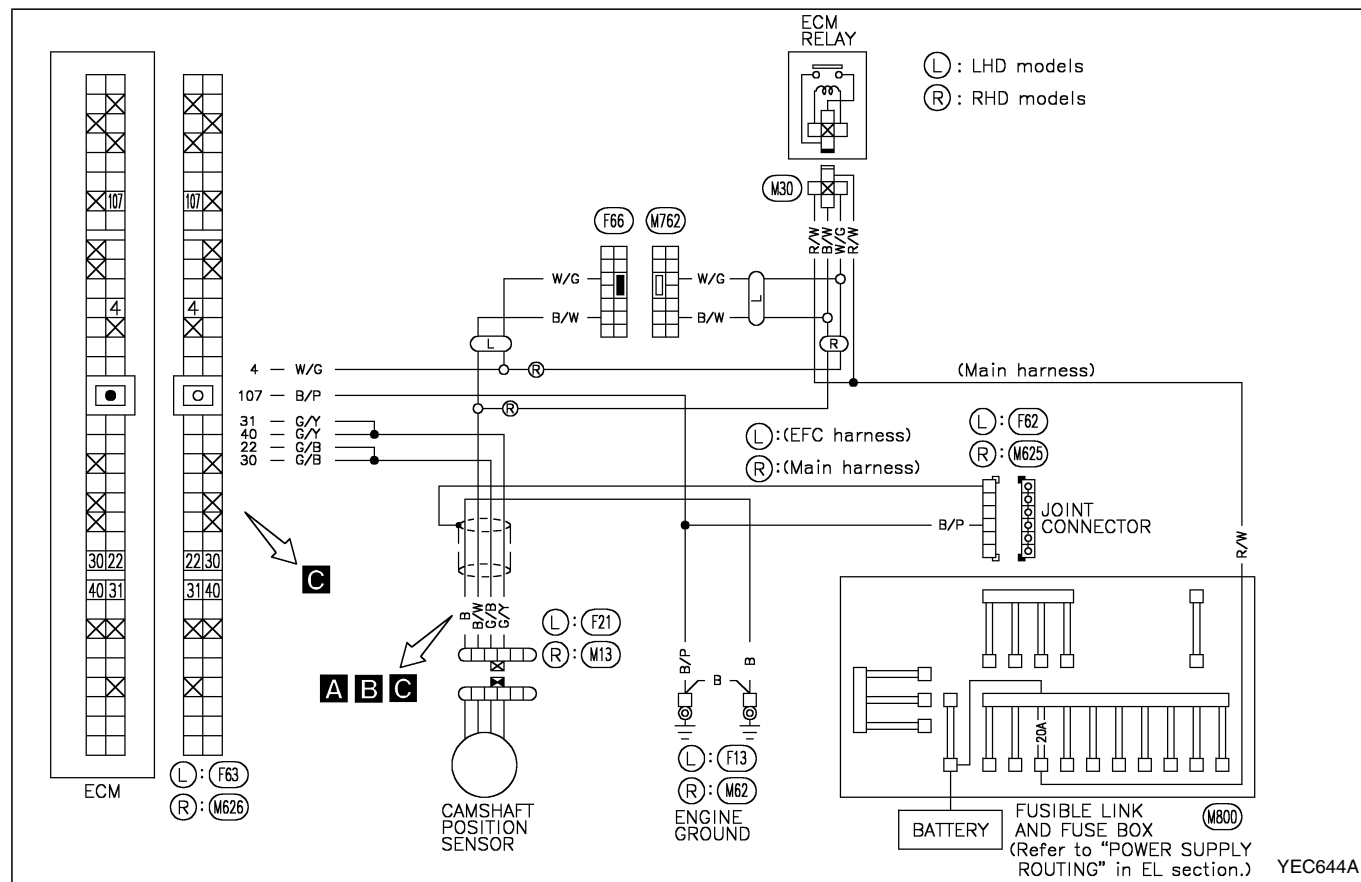


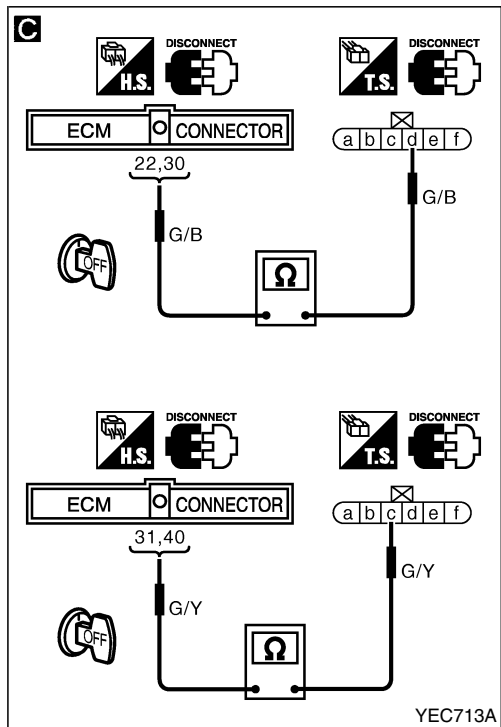
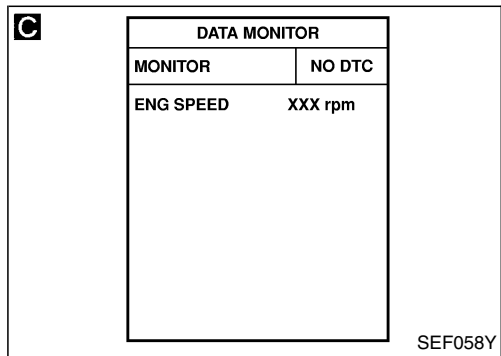
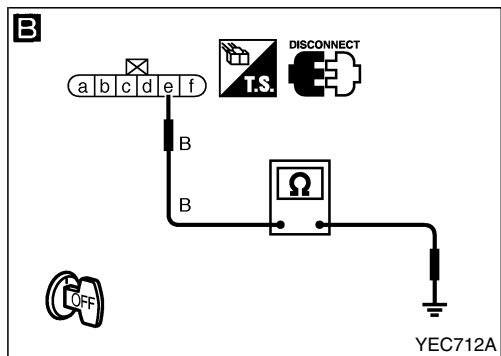
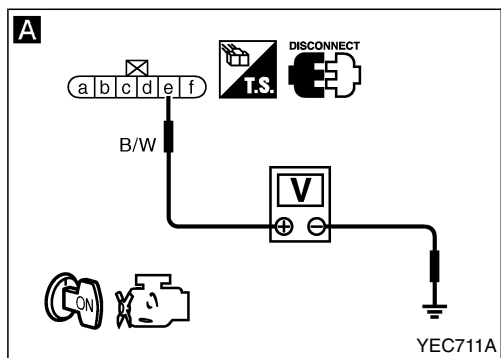
Circuit Diagram/Except For Russia



Diagnostic Procedure 23/Except For Russia

CAMSHAFT POSITION SENSOR (Code No. 11)



Diagnostic Procedure 23/Except For Russia
(Cont'd)

INSPECTION START

A**CHECK POWER SUPPLY.**

1. Disconnect camshaft position sensor harness connector.
2. Turn ignition switch to "ON" position.
3. Check voltage between camshaft position sensor connector terminal ⑤ and engine ground.

Voltage: Battery voltage

NG

Check the following:

- 20A fusible link
- ECM relay
- Harness continuity between camshaft position sensor and ECM relay

If NG, replace fusible link or ECM relay, or repair harness or connectors.

OK

B**CHECK GROUND CIRCUIT.**

1. Turn ignition switch to "LOCK" position.
2. Check harness continuity between camshaft position sensor connector terminal ① and engine ground.

Continuity should exist.

NG

Repair harness or connectors.

OK

C**CHECK INPUT SIGNAL CIRCUIT.**

1. Reconnect camshaft position sensor harness connector.
2. Start engine.
3. Read engine speed in "DATA MONITOR" mode with CONSULT-II.

rpm: 800±50**OR**

1. Disconnect ECM harness connector.
2. Check harness continuity between camshaft position sensor connector terminal ④ and ECM connector terminals ②②, ③③ (180° signal).
3. Check harness continuity between camshaft position sensor connector terminal ③ and ECM connector terminals ③①, ④④ (Position signal).

Continuity should exist.

NG

Repair harness or connectors.

OK

CHECK COMPONENT (CAMSHAFT POSITION SENSOR). Refer to "Electrical Components Inspection".

NG

Replace camshaft position sensor.

OK

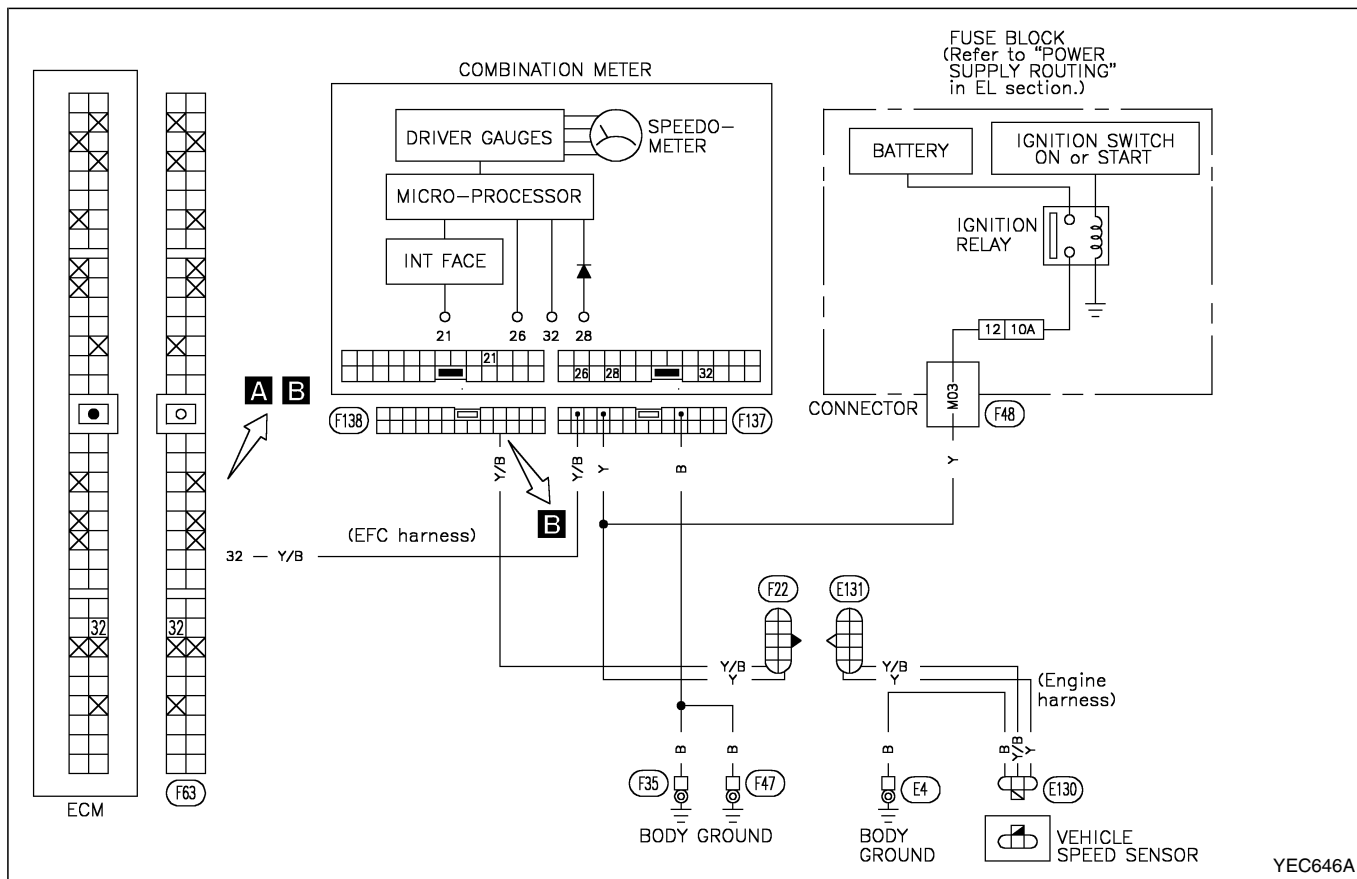
Check ECM pin terminals for damage or the connection of ECM harness connector.

IGNITION SIGNAL (Code No. 21)



Diagnostic Procedure 29/For Russia

VEHICLE SPEED SENSOR (Not self-diagnostic item)

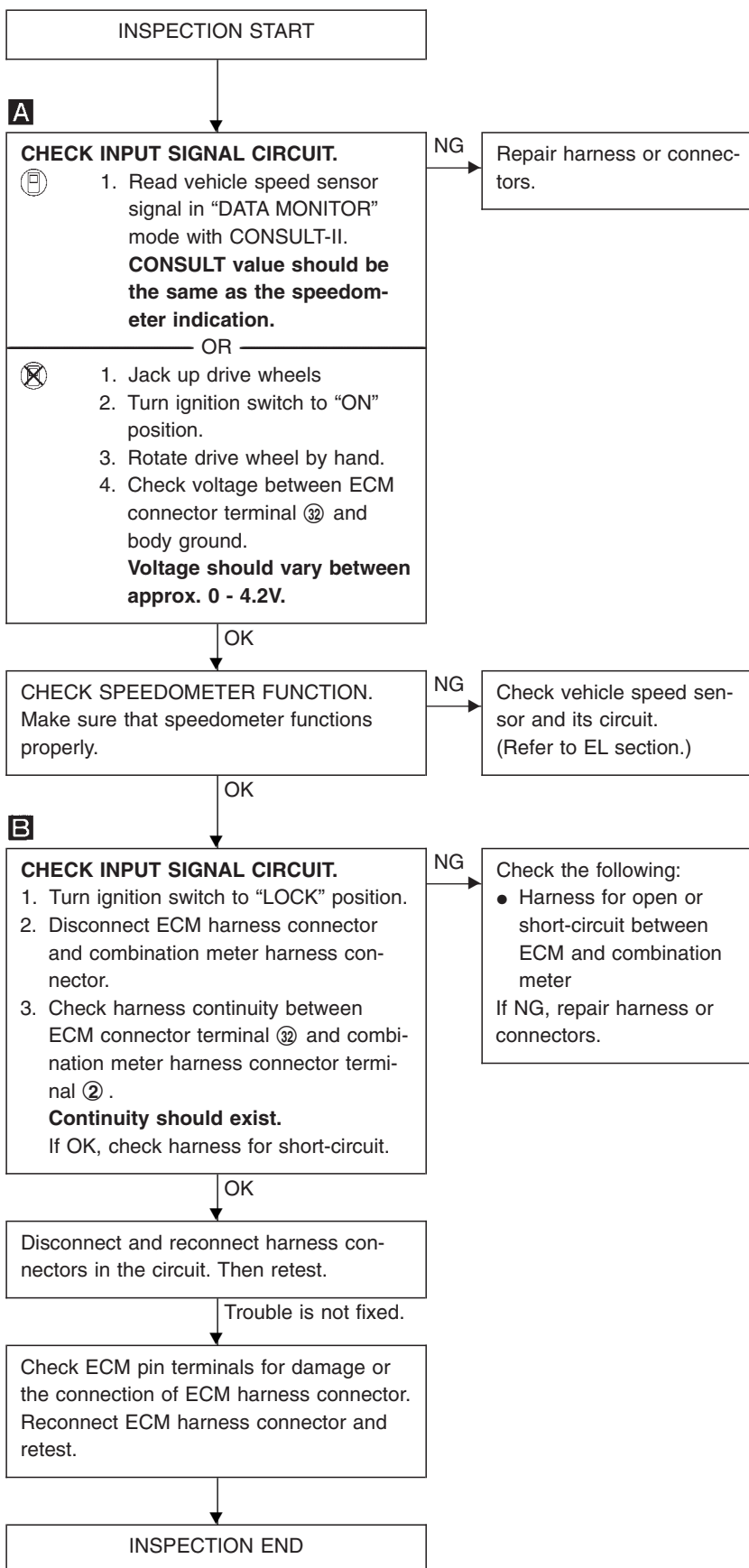
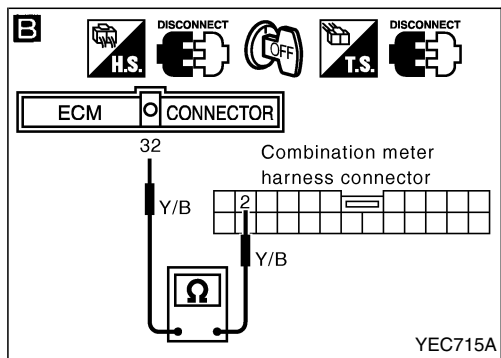
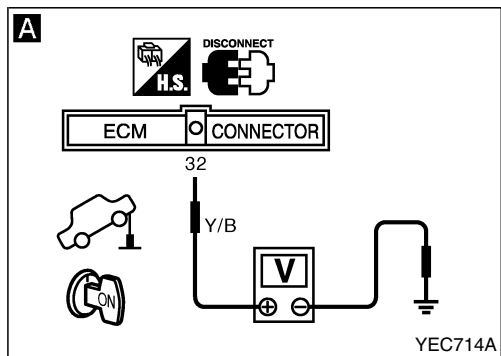


Diagnostic Procedure 29/For Russia (Cont'd)

A

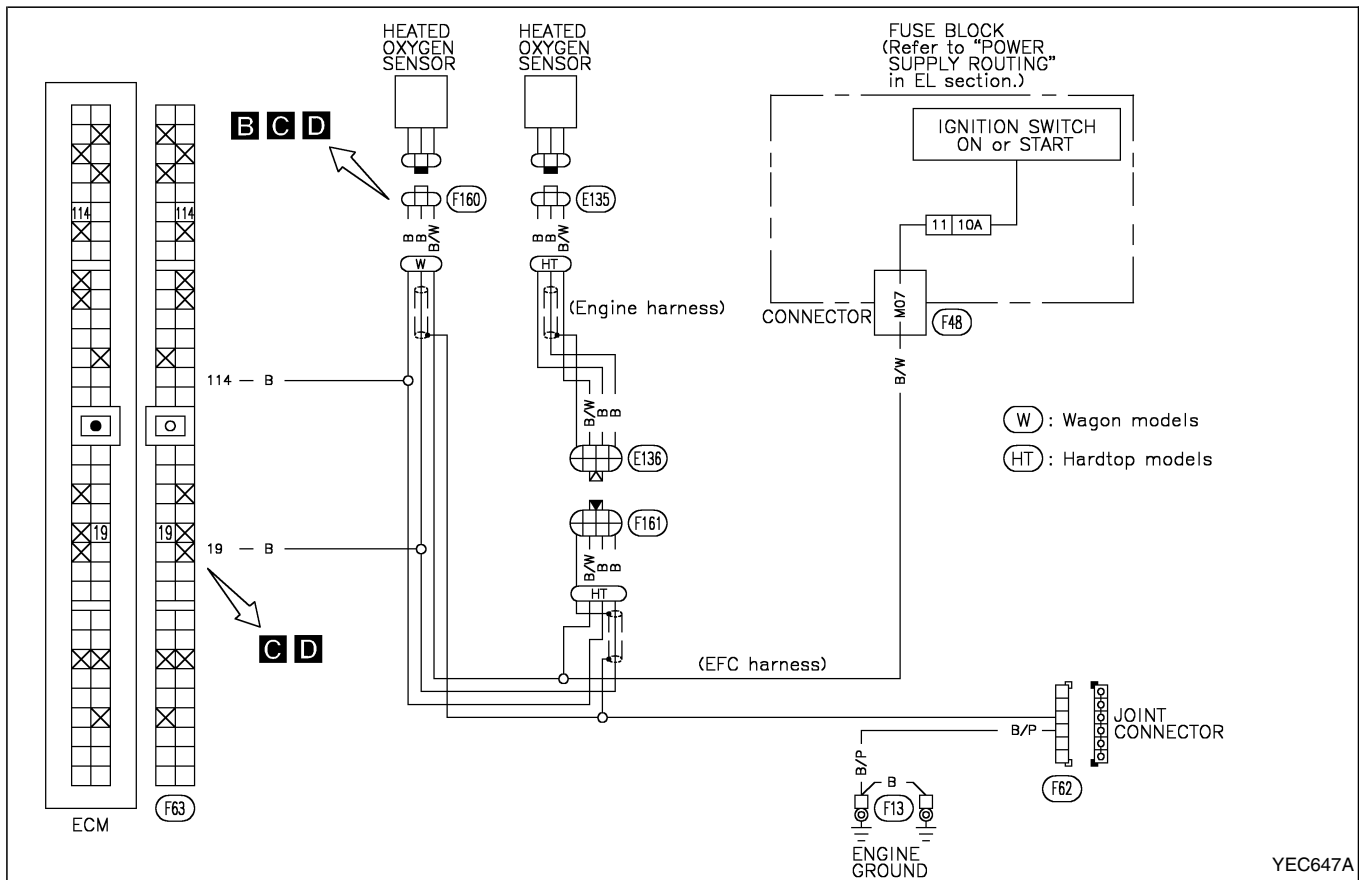
DATA MONITOR	
MONITORING	NO FAIL
ENG SPEED	XXX rpm
COOLAN TEMP/S	XXX °C
B/FUEL SCHDL	XXX msec
PW/ST SIGNAL	OFF
VHCL SPEED SE	XXX km/h

NEF112A

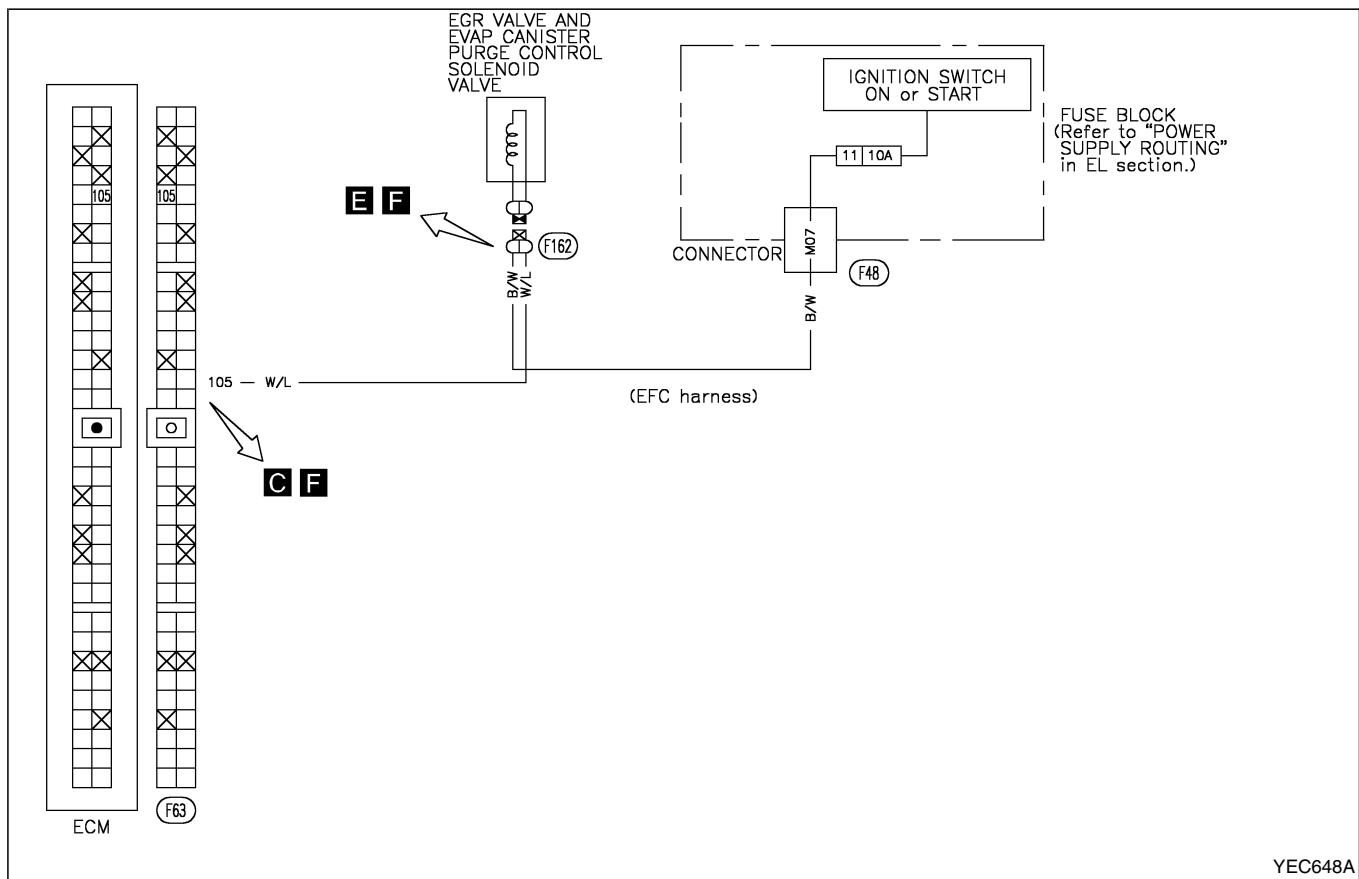


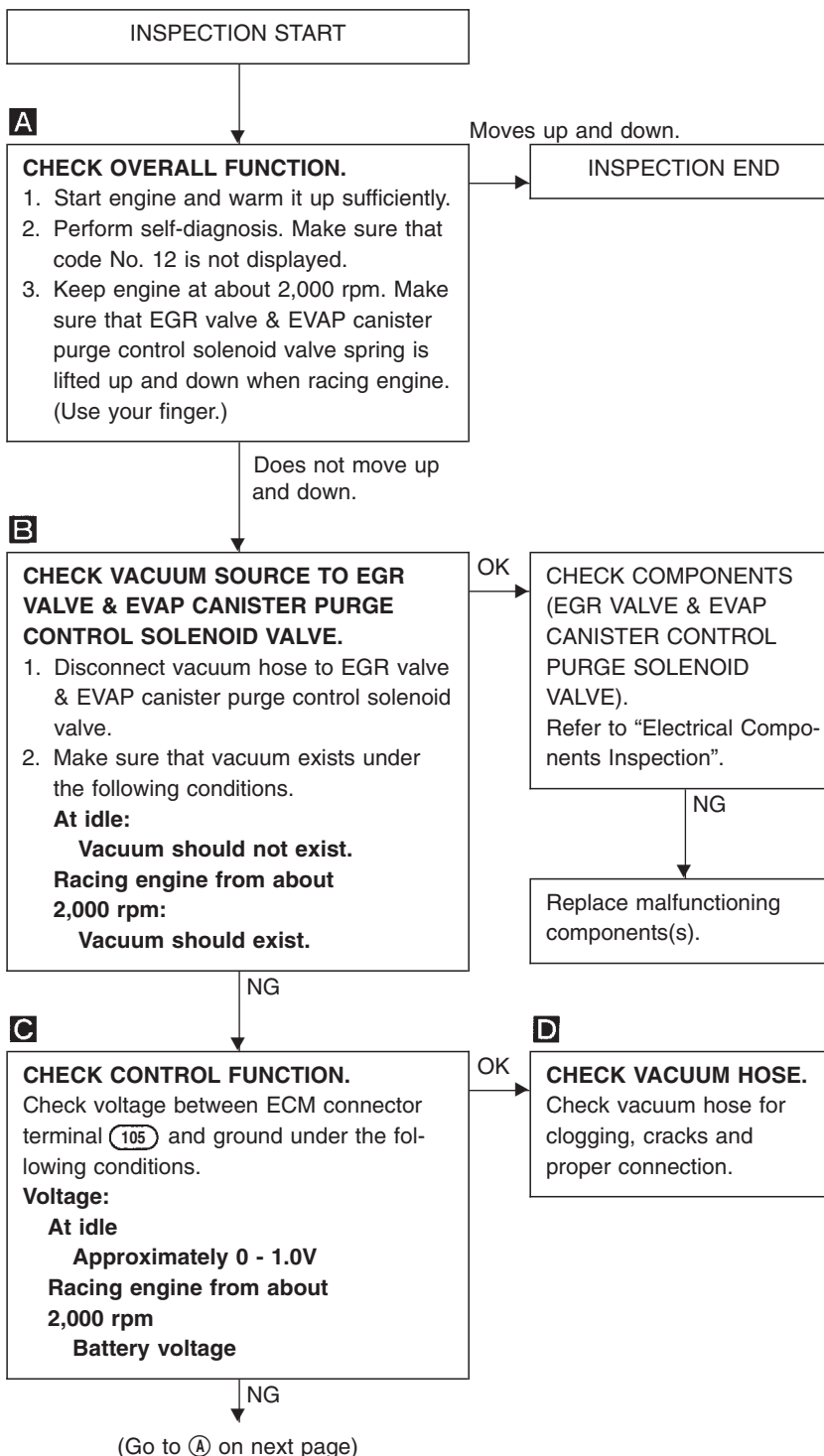
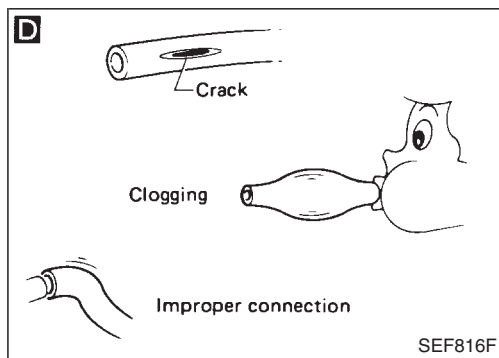
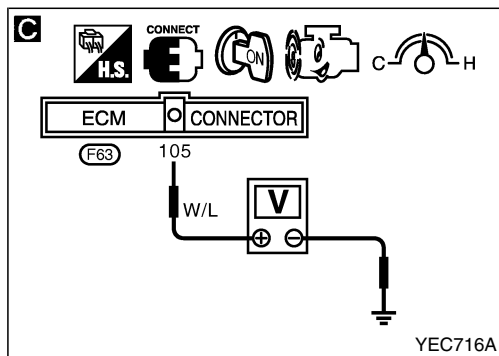
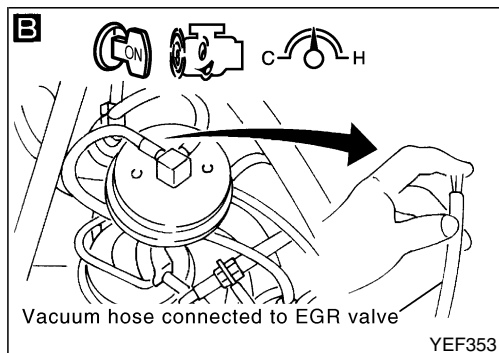
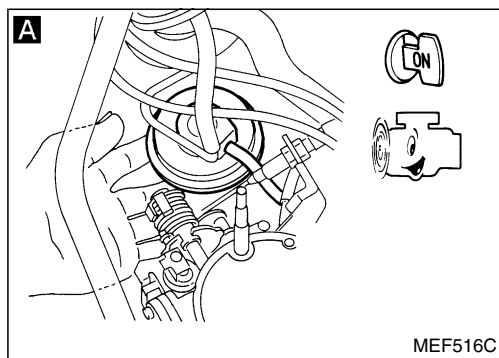
Diagnostic Procedure 31/For GCC Countries

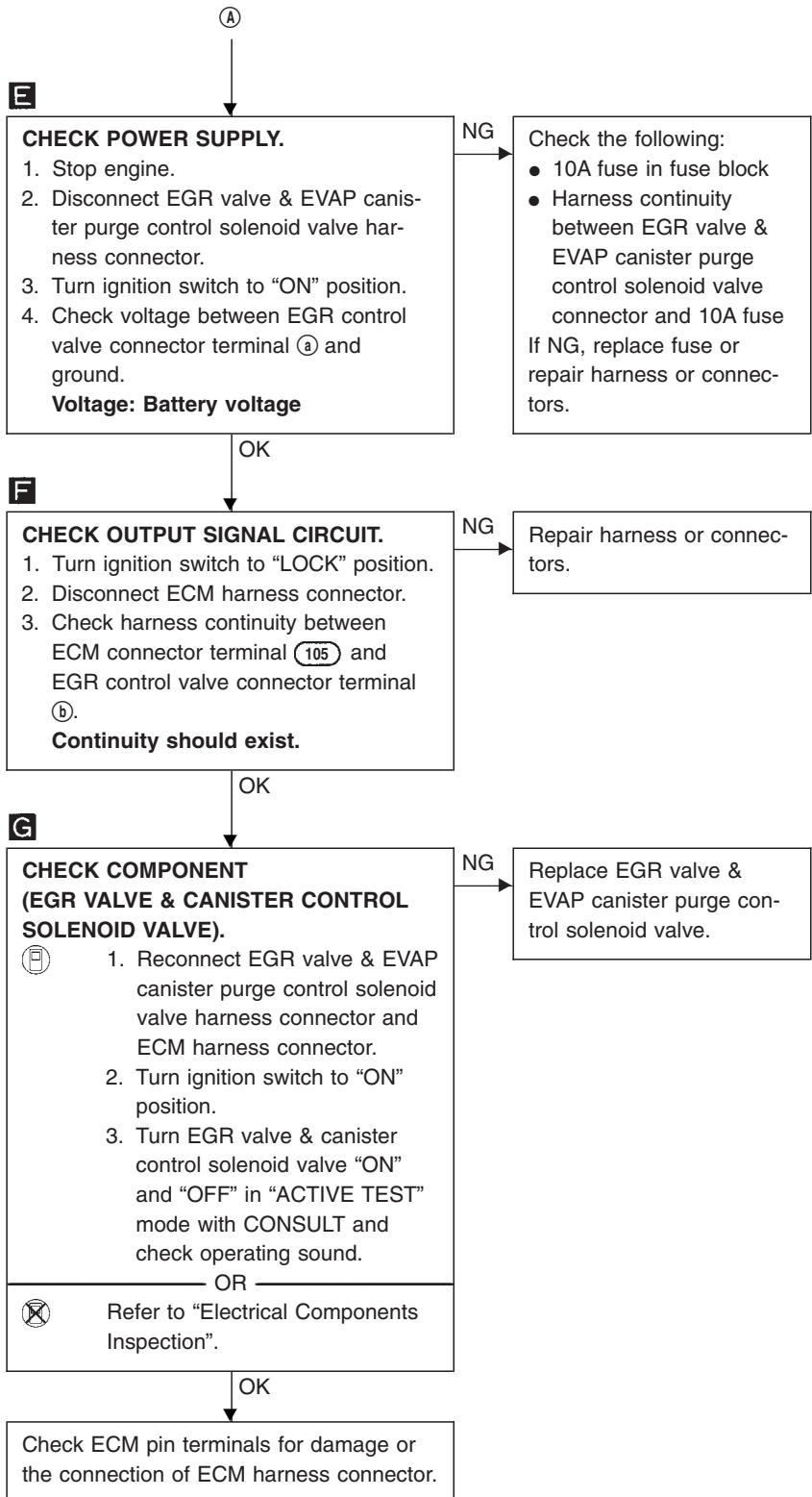
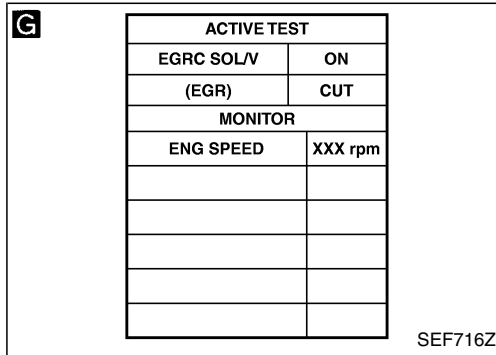
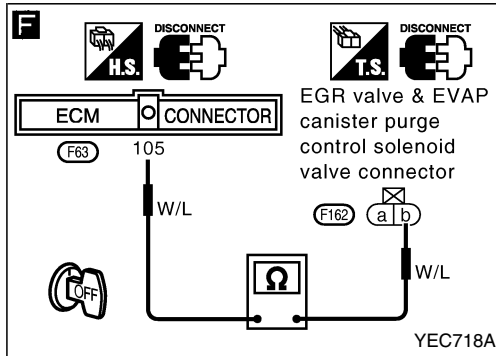
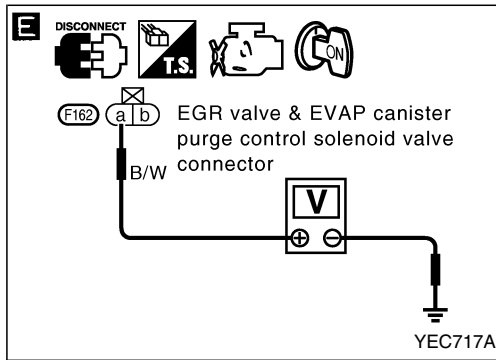
HEATED OXYGEN SENSOR (Not self-diagnostic item)



EGR CONTROL (Not self-diagnostic item)

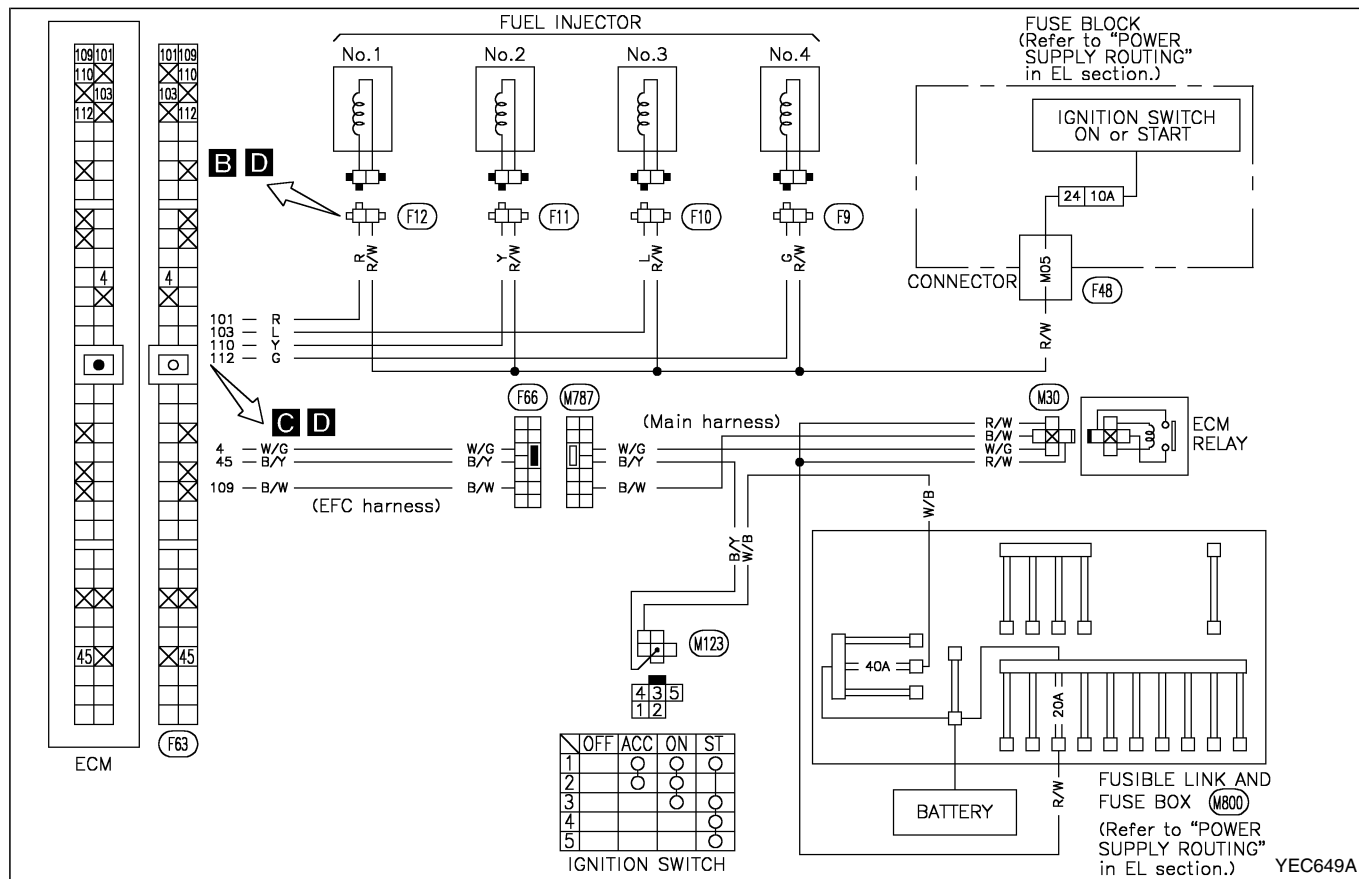


Diagnostic Procedure 32/For GCC Countries
(Cont'd)

Diagnostic Procedure 32/For GCC Countries
(Cont'd)

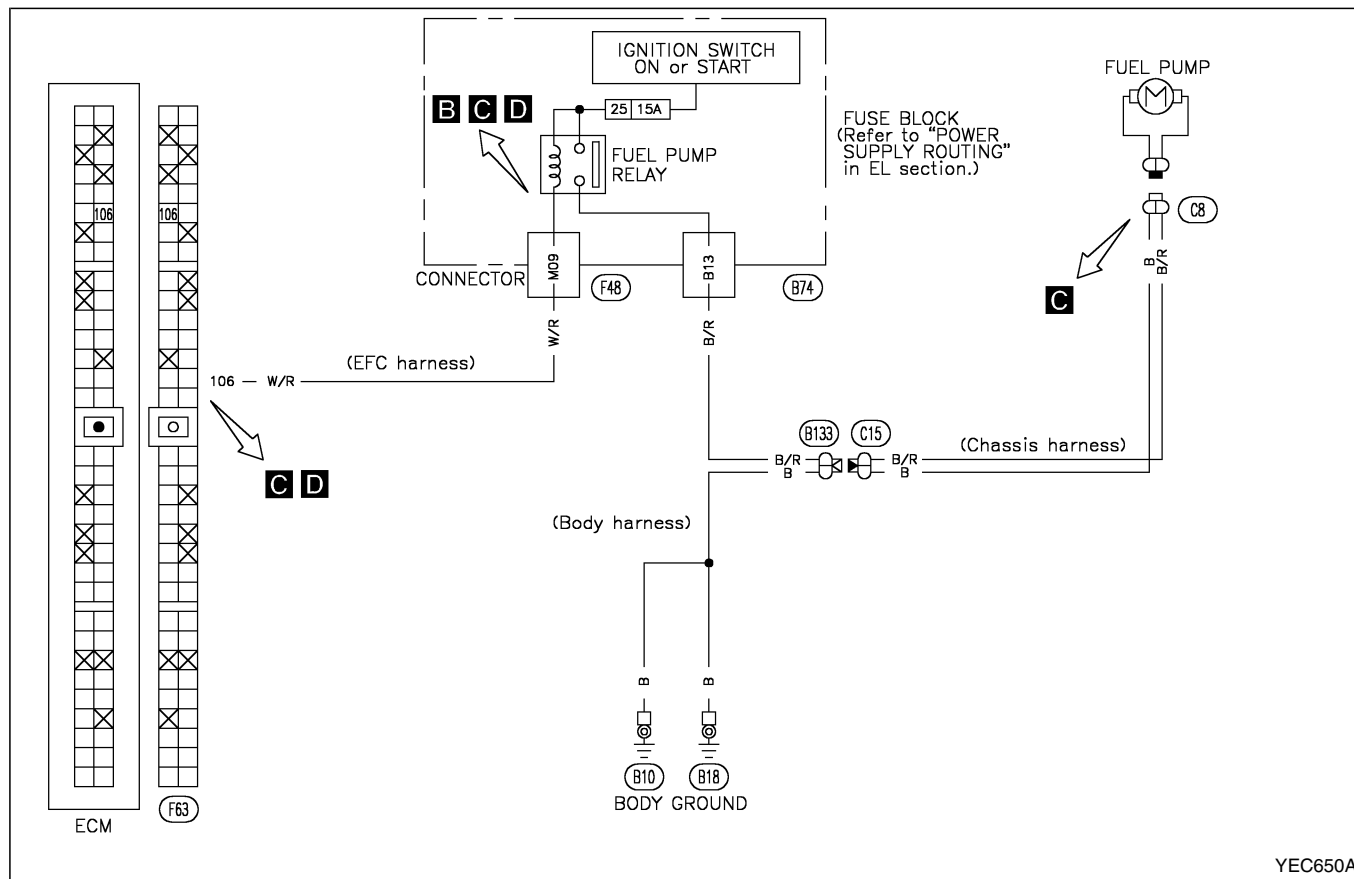
Diagnostic Procedure 34/For Russia

INJECTOR (Not self-diagnostic item)

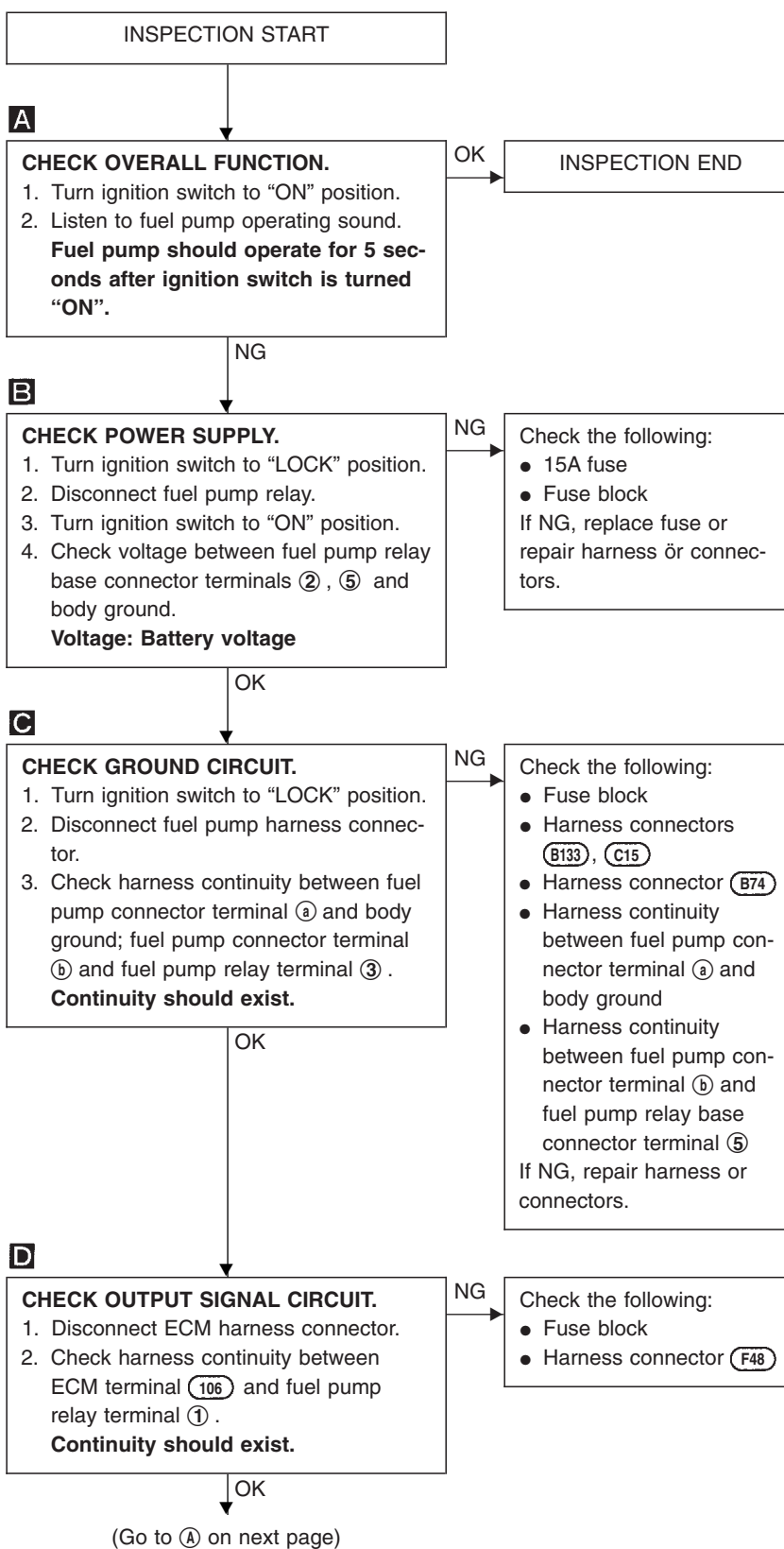
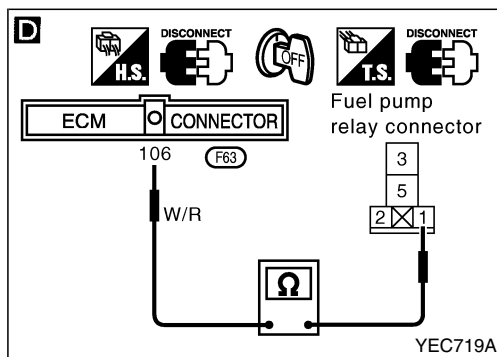
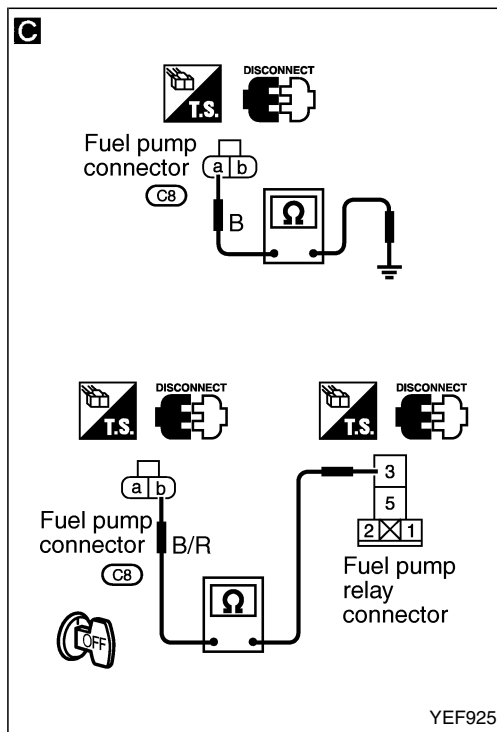
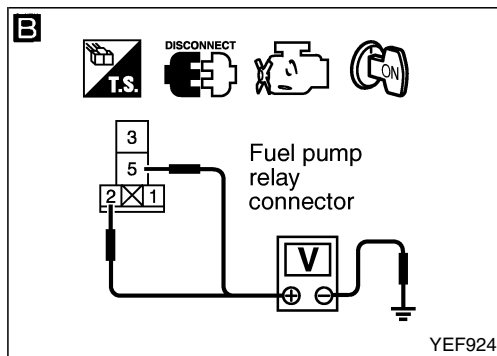
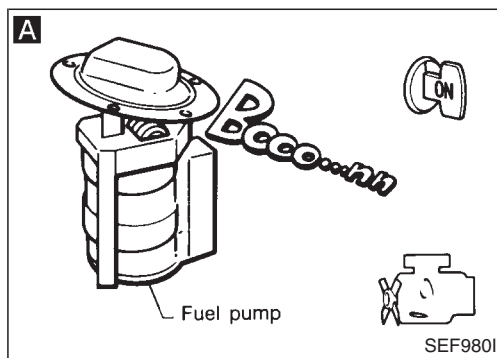


Diagnostic Procedure 35/For Russia

FUEL PUMP (Not self-diagnostic item)



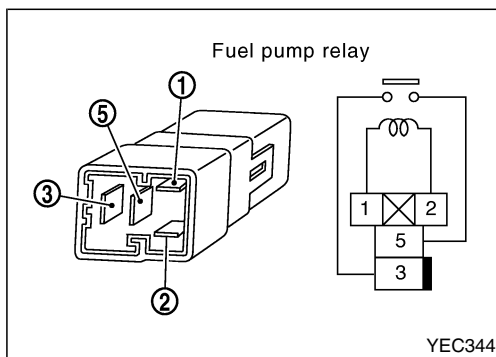
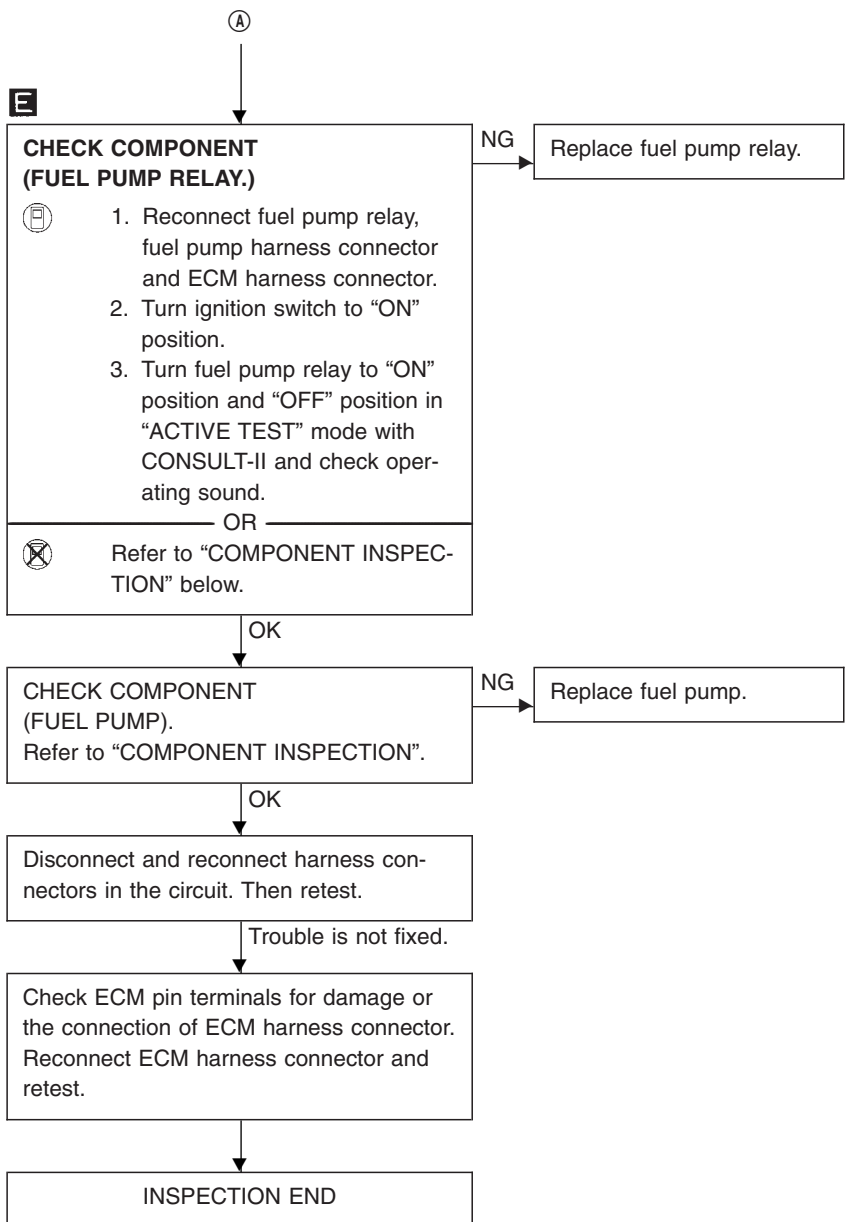
Diagnostic Procedure 35/For Russia (Cont'd)



Diagnostic Procedure 35/For Russia (Cont'd)

ACTIVE TEST	
FUEL PUMP RELAY	ON
MONITOR	
CMPS-RPM(REF)	775rpm

C2ATF01



COMPONENT INSPECTION

Fuel pump relay

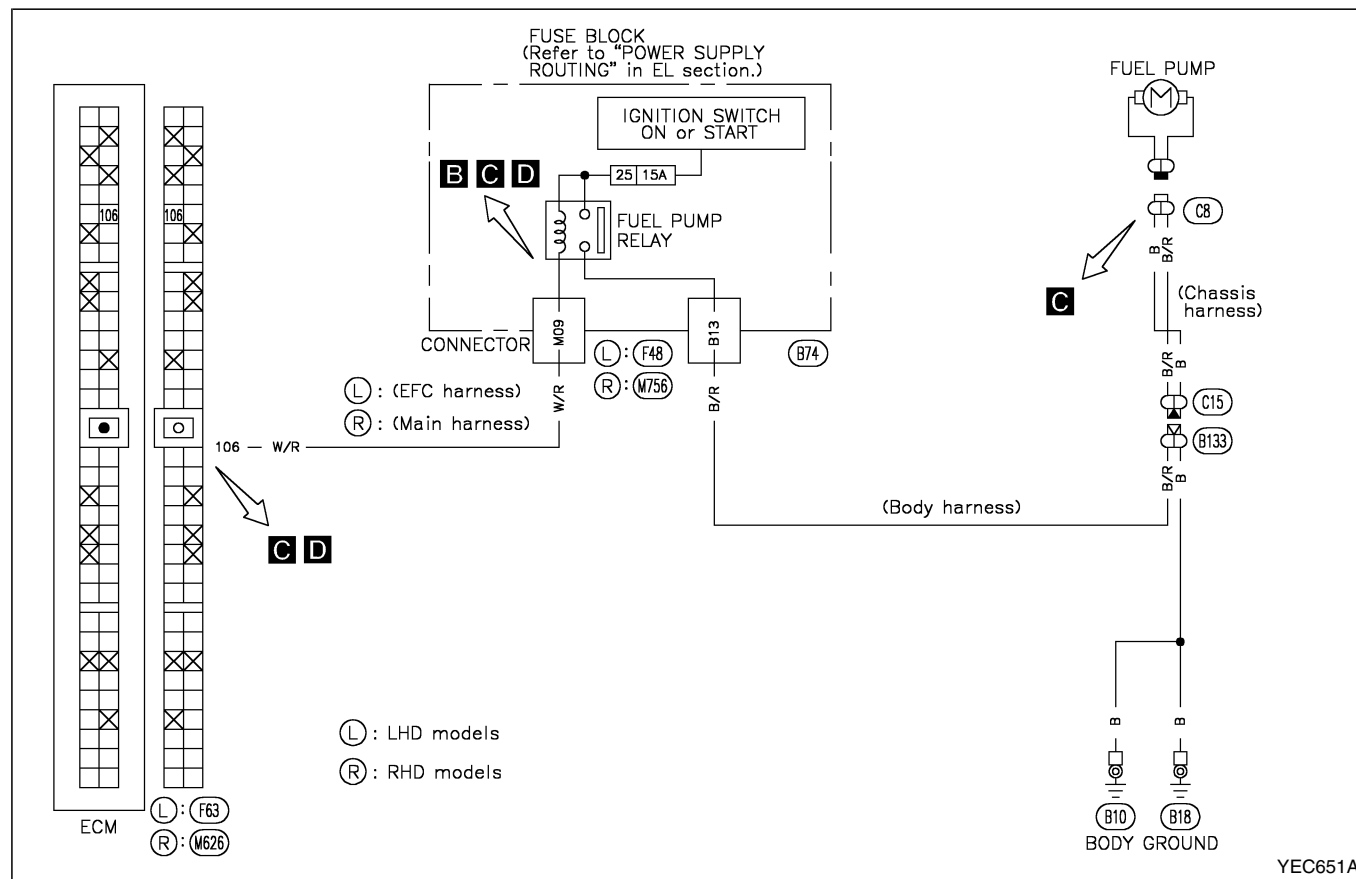
Check continuity between fuel pump relay terminals ③ and ⑤.

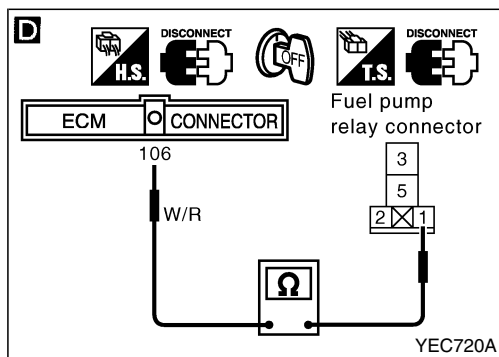
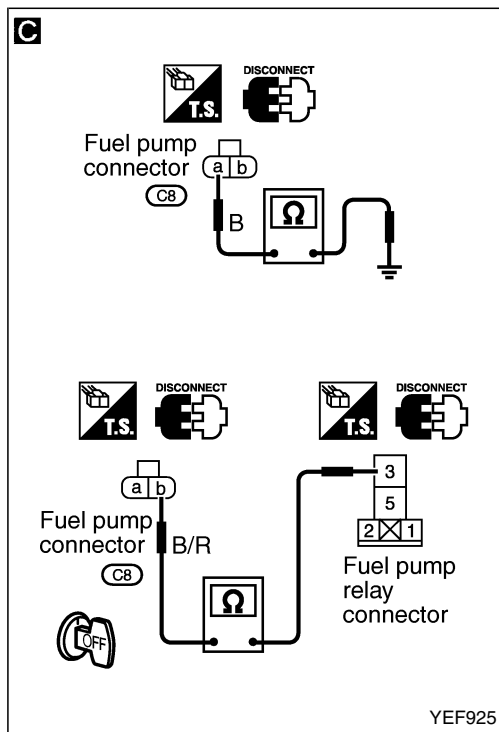
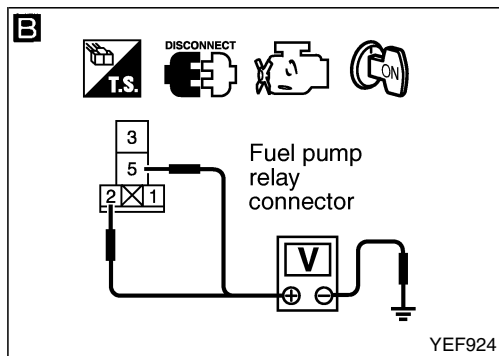
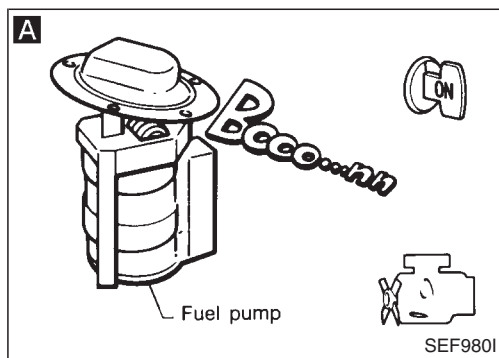
Conditions	Continuity
12V direct current supply between terminals ① and ②	Yes
No current supply	No

If NG, replace relay.

Diagnostic Procedure 35/Except For Russia

FUEL PUMP (Not self-diagnostic item)



Diagnostic Procedure 35/Except For Russia
(Cont'd)

INSPECTION START

A

CHECK OVERALL FUNCTION.

1. Turn ignition switch to "ON" position.
2. Listen to fuel pump operating sound.

Fuel pump should operate for 5 seconds after ignition switch is turned "ON".

OK

INSPECTION END

NG

B

CHECK POWER SUPPLY.

1. Turn ignition switch to "LOCK" position.
2. Disconnect fuel pump relay.
3. Turn ignition switch to "ON" position.
4. Check voltage between fuel pump relay base connector terminals ②, ⑤ and body ground.

Voltage: Battery voltage

NG

Check the following:

- 15A fuse
 - Fuse block
- If NG, replace fuse or repair harness or connectors.

OK

C

CHECK GROUND CIRCUIT.

1. Turn ignition switch to "LOCK" position.
2. Disconnect fuel pump harness connector.
3. Check harness continuity between fuel pump connector terminal ① and body ground; fuel connector terminal ② and fuel pump relay terminal ③.

Continuity should exist.

NG

Check the following:

- Fuse block
 - Harness connectors (C15), (B133)
 - Harness connector (B74)
 - Harness continuity between fuel pump connector terminal ① and body ground
 - Harness continuity between fuel pump connector terminal ② and fuel pump relay base connector terminal ⑤
- If NG, repair harness or connectors.

OK

D

CHECK OUTPUT SIGNAL CIRCUIT.

1. Disconnect ECM harness connector.
2. Check harness continuity between ECM connector terminal (106) and fuel pump relay terminal ①.

Continuity should exist.

NG

Check the following:

- Fuse block
- Harness connector (F48) (LHD models)
- (M746) (RHD models)

OK

(Go to (A) on next page)

Diagnostic Procedure 35/Except For Russia
(Cont'd)

ACTIVE TEST	
FUEL PUMP RELAY	ON
MONITOR	
CMPS-RPM(REF)	775rpm

C2ATF01

E**CHECK COMPONENT
(FUEL PUMP RELAY).**

1. Reconnect fuel pump relay, fuel pump harness connector and ECM harness connector.
2. Turn ignition switch to "ON" position.
3. Turn fuel pump relay to "ON" position and "OFF" position in "ACTIVE TEST" mode with CONSULT-II and check operating sound.

OR



Refer to "COMPONENT INSPECTION" below.

NG

Replace fuel pump relay.

OK

**CHECK COMPONENT
(FUEL PUMP).**

Refer to "COMPONENT INSPECTION".

NG

Replace fuel pump.

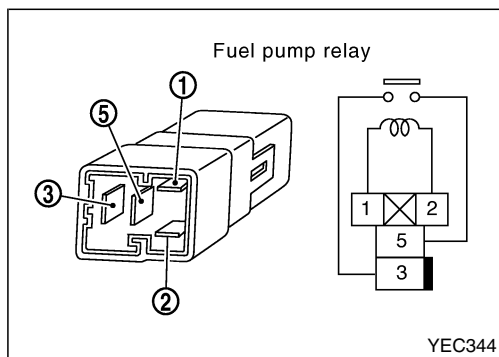
OK

Disconnect and reconnect harness connectors in the circuit. Then retest.

Trouble is not fixed.

Check ECM pin terminals for damage or the connection of ECM harness connector. Reconnect ECM harness connector and retest.

INSPECTION END

**COMPONENT INSPECTION****Fuel pump relay**

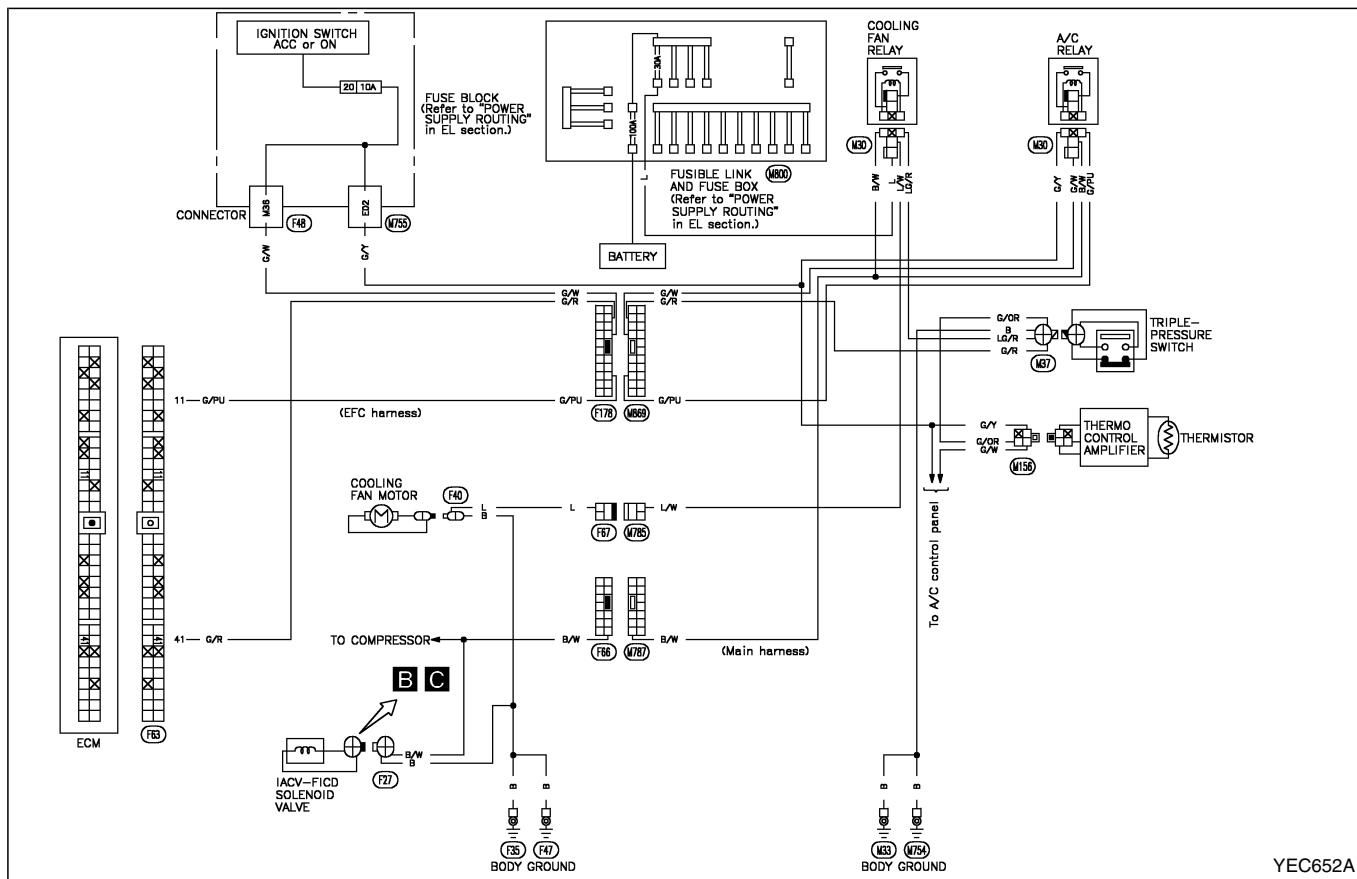
Check continuity between fuel pump relay terminals ③ and ⑤.

Conditions	Continuity
12V direct current supply between terminals ① and ②	Yes
No current supply	No

If NG, replace relay.

Diagnostic Procedure 38/For Russia

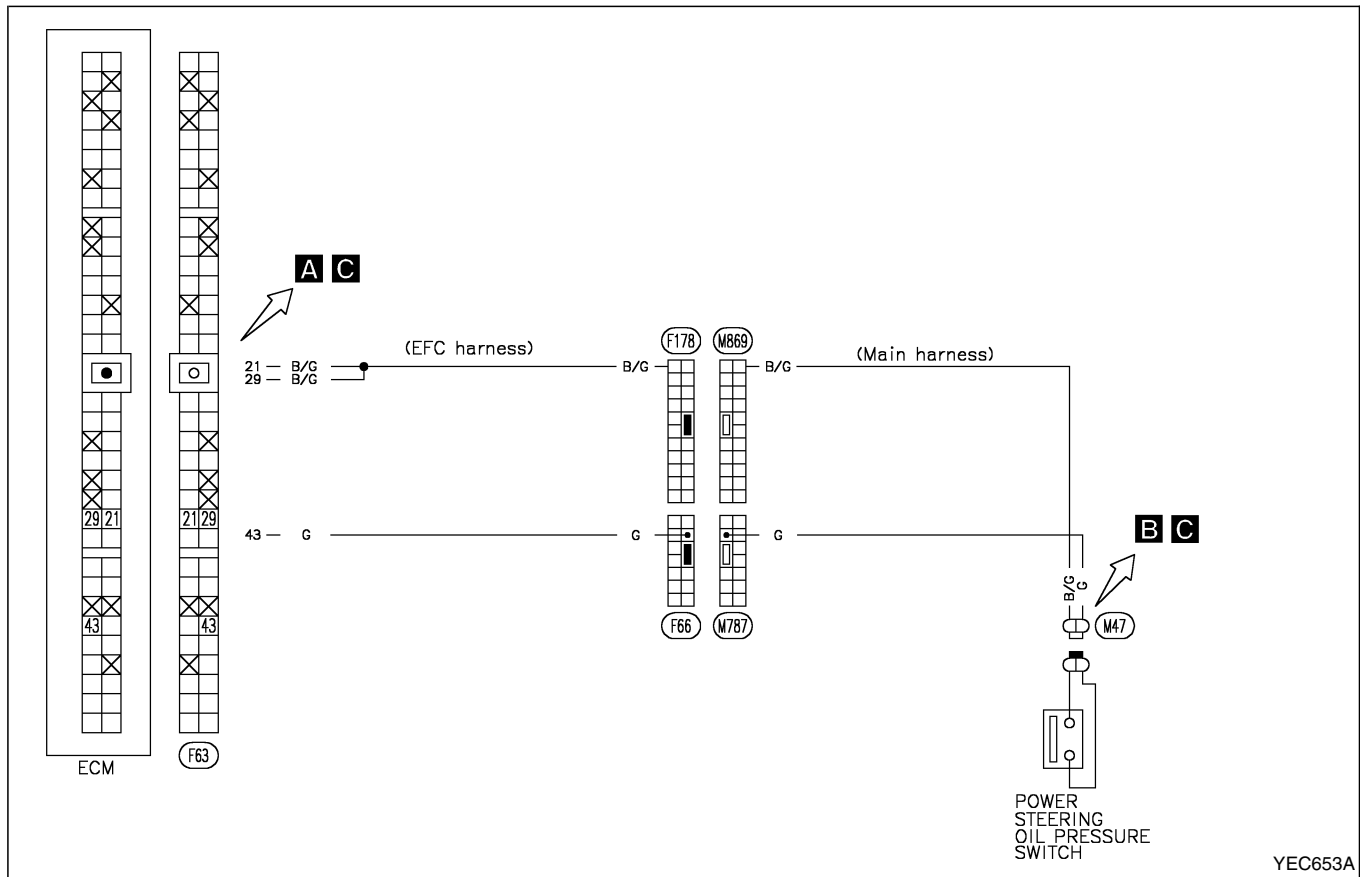
IACV-FICD SOLENOID VALVE (Not self-diagnostic item)



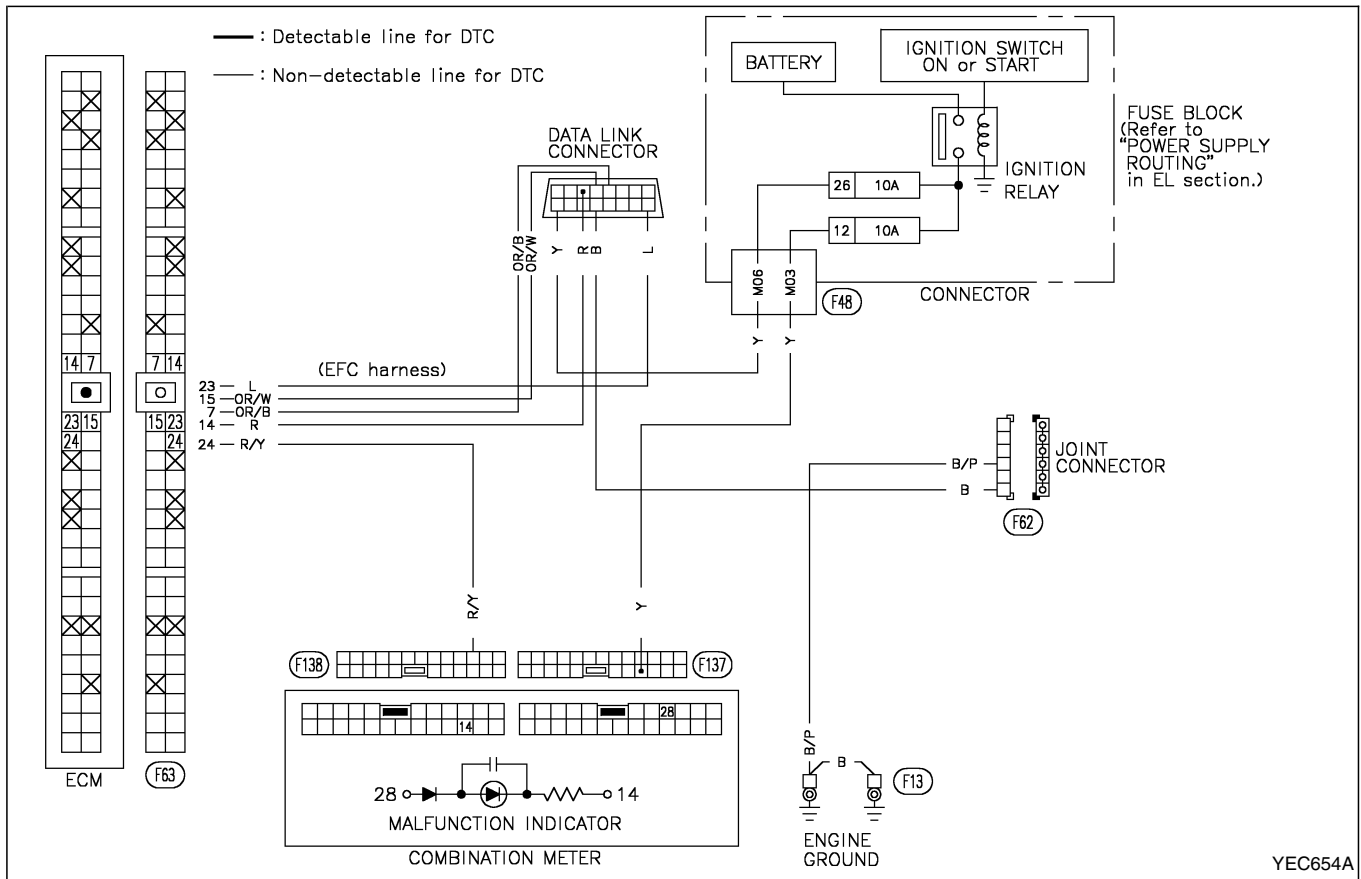
YEC652A

Diagnostic Procedure 39/For Russia

POWER STEERING OIL PRESSURE SWITCH (Not self-diagnostic item)



MIL & DATA LINK CONNECTORS (Not self-diagnostic item)



ACCELERATOR CONTROL, FUEL & EXHAUST SYSTEM

SECTION FE

CONTENTS

<COMBINED EDITION>

ACCELERATOR CONTROL SYSTEM	2	FUEL SYSTEM	5
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		EXHAUST SYSTEM	9

FE

<SUPPLEMENT-I>

NO CHANGES

<SUPPLEMENT-II>

NO CHANGES

<SUPPLEMENT-III>

ACCELERATOR CONTROL SYSTEM	3002	EXHAUST SYSTEM	3008
Adjusting Accelerator Cable (TD27Ti)	3002	KA24E Hardtop model	3008
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Fuel tank KA24E	3003	TD27Ti model	3010
Fuel tank TD27Ti	3004		
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Fuel Pump and Gauge TD27Ti	3006		

<SUPPLEMENT-IV> (For Africa and Gulf Countries)

EXHAUST SYSTEM	4002
-----------------------------	------

<SUPPLEMENT-V> (For Australia)

NO CHANGES

<SUPPLEMENT-VI> (For Europe and Australia)

ACCELERATOR CONTROL SYSTEM	6002	KA24E with pre-catalyst	6003
Adjusting Accelerator Cable (TD27Ti)	6002	KA24E Wagon model without pre-catalyst	6004
EXHAUST SYSTEM	6003	TD27Ti model	6005

CONTENTS (Cont'd)

<SUPPLEMENT-VII> (For Europe)

ACCELERATOR CONTROL SYSTEM	7002
Adjusting Accelerator Cable	7002

<SUPPLEMENT-VIII> (For Africa and Gulf Countries)

EXHAUST SYSTEM	8002	TD27T model	8003
KA24E model	8002		

<SUPPLEMENT-IX> (For Europe, Africa and Gulf Countries)

EXHAUST SYSTEM	9002
TD27T model	9002

<SUPPLEMENT-X> (For Africa and Gulf Countries)

NO CHANGES

<SUPPLEMENT-XI> (For Europe)

NO CHANGES

<SUPPLEMENT-XII> (For Africa, Gulf Countries and Central & South America)

NO CHANGES

<SUPPLEMENT-XIII> (For General)

FUEL SYSTEM	13002	EXHAUST SYSTEM	13003
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ACCELERATOR CONTROL, FUEL & EXHAUST SYSTEM

SECTION FE

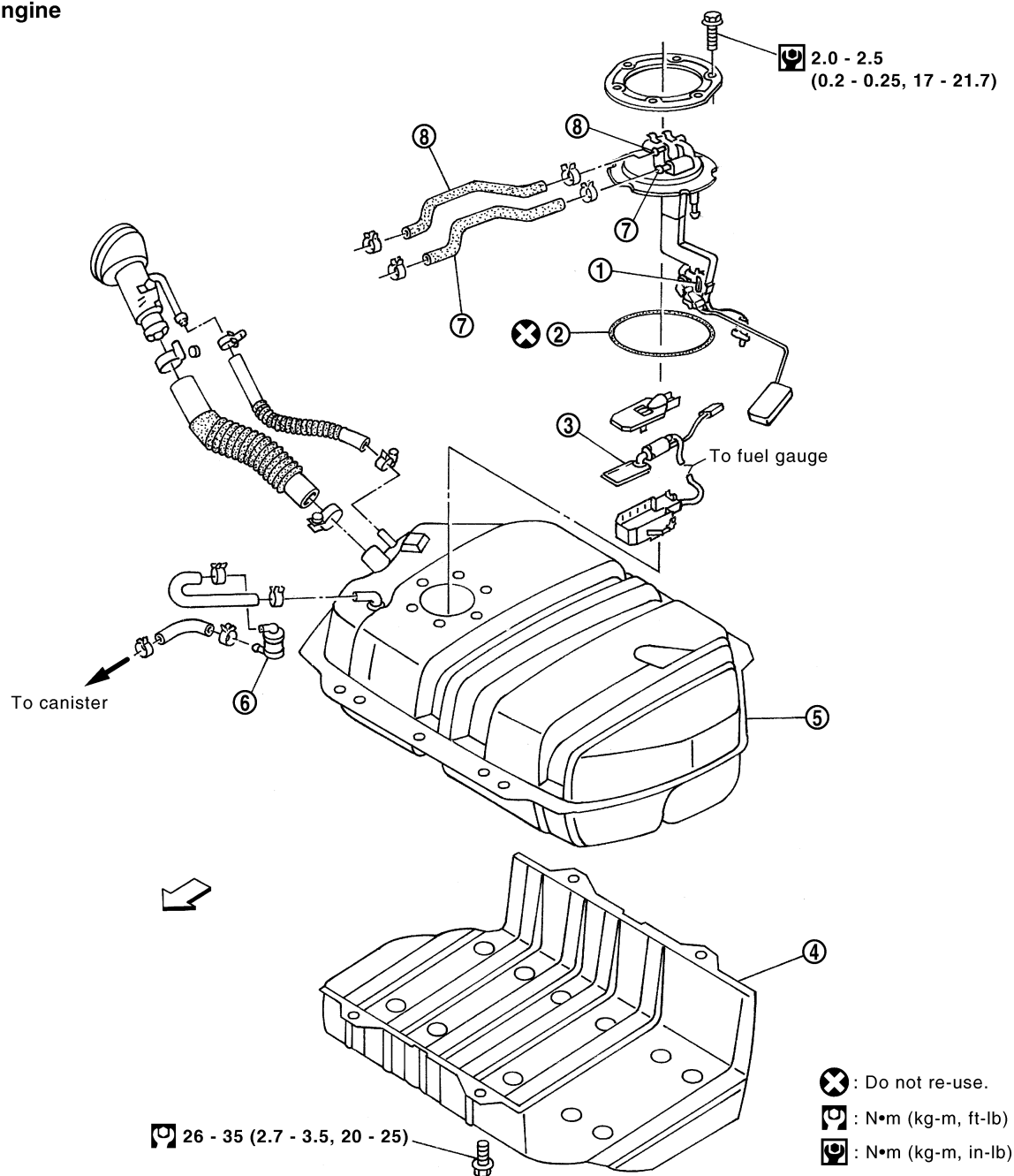
CONTENTS

FUEL SYSTEM	13002	EXHAUST SYSTEM	13003
-------------------	-------	----------------------	-------

FUEL SYSTEM

FUEL TANK

KA24E engine



YFE076

- ① Fuel gauge
- ② O-ring
- ③ Fuel pump

- ④ Fuel tank protector
- ⑤ Fuel tank
- ⑥ Fuel check valve

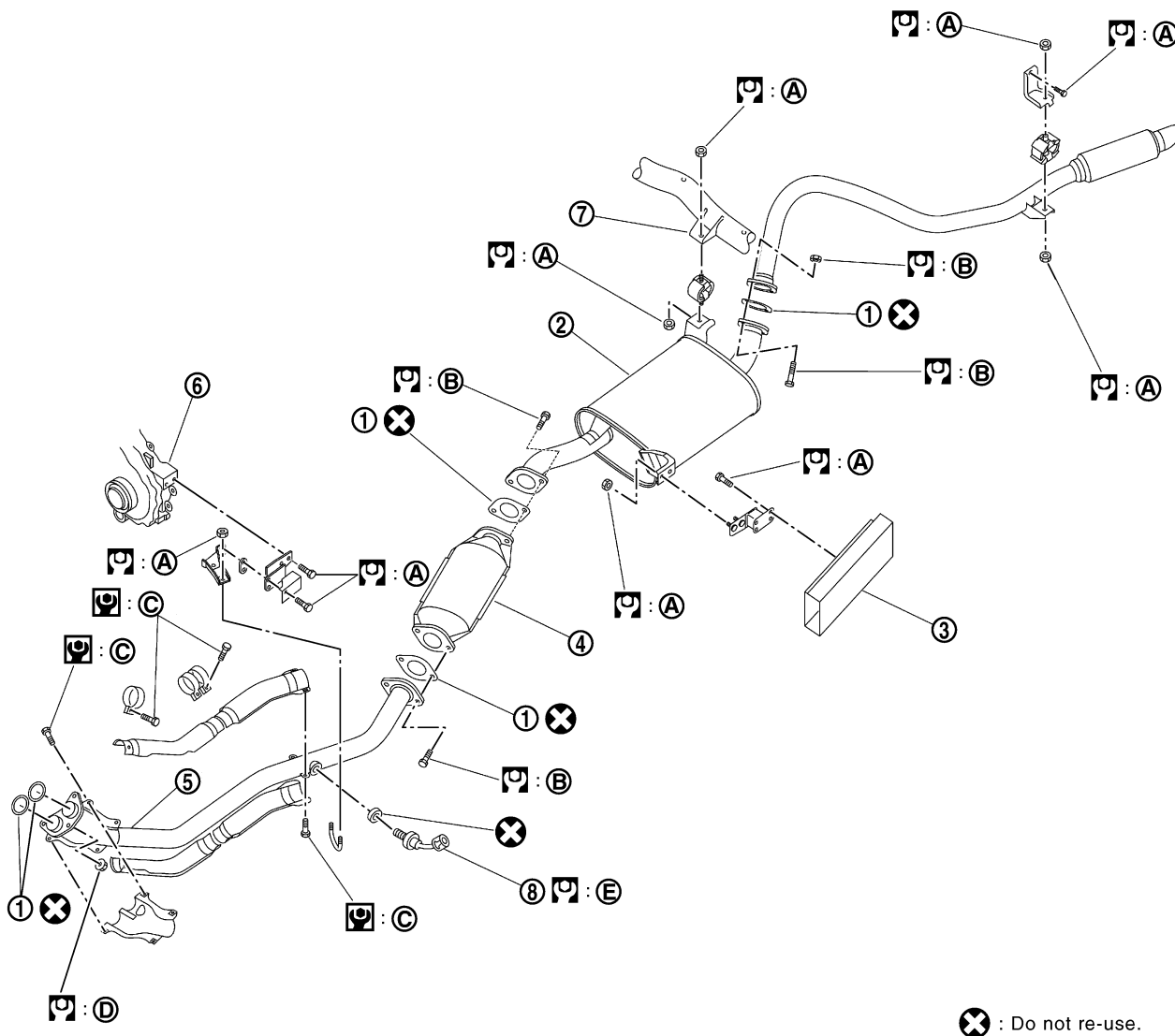
- ⑦ Fuel feed tube
- ⑧ Fuel return tube

FE-13002

<http://vnx.su/>

EXHAUST SYSTEM

KA24E engine models with catalytic converter



YFE077

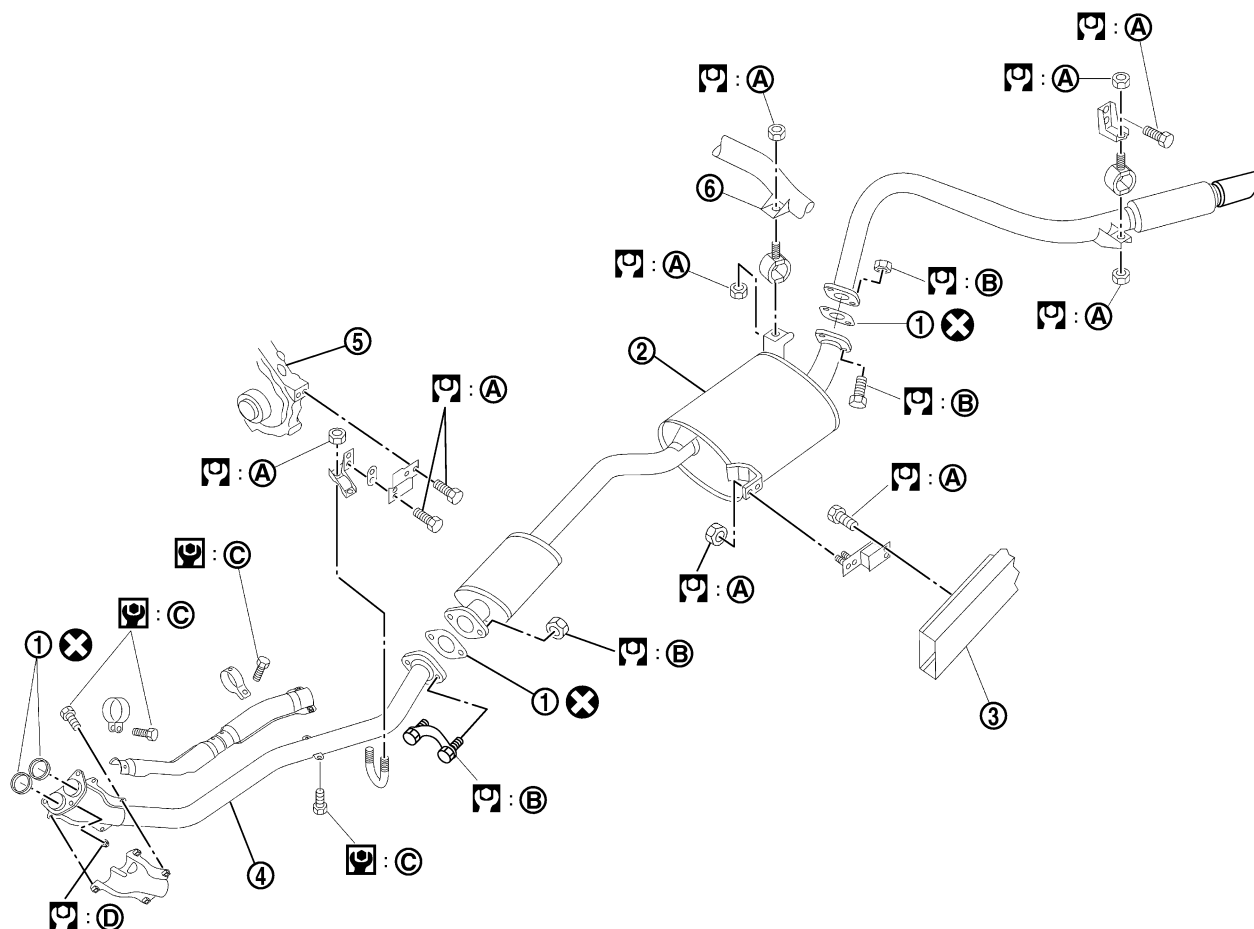
- ① Gasket
- ② Muffler assembly
- ③ Frame
- ④ Catalytic converter
- ⑤ Front tube
- ⑥ Transfer case

- ⑦ Cross member
- ⑧ Exhaust gas sensor
- : Tightening torques
- : Tightening torques
- (A): 13 - 16 N·m (1.3 - 1.6 kg-m, 9 - 12 ft-lb)

- (B): 43 - 55 N·m (4.4 - 5.6 kg-m, 32 - 41 ft-lb)
- (C): 5.1 - 6.5 N·m (0.52 - 0.66 kg-m, 46 - 57 in-lb)
- (D): 43 - 50 N·m (4.4 - 5.1 kg-m, 32 - 37 ft-lb)
- (E): 40 - 50 N·m (4.1 - 5.1 kg-m, 30 - 37 ft-lb)

EXHAUST SYSTEM

KA24E engine models without catalytic converter



⊗ : Do not re-use.

YFE078

- ① Gasket
- ② Muffler assembly
- ③ Frame
- ④ Front tube
- ⑤ Transfer case
- ⑥ Cross member

- ⊗ : Tightening torques
- Ⓐ: 13 - 16 N·m (1.3 - 1.6 kg-m,
9 - 12 ft-lb)
- Ⓑ: 43 - 55 N·m (4.4 - 5.6 kg-m,
32 - 41 ft-lb)
- Ⓓ: 43 - 50 N·m (4.4 - 5.1 kg-m,
32 - 37 ft-lb)

- ⊗ : Tightening torques
- Ⓒ: 5.1 - 6.5 N·m (0.52 - 0.66 kg-m,
46 - 57 in-lb)

FE-13004

<http://vnx.su/>

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Bleeding Procedure	5
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Clutch Master Cylinder	6
Clutch Operating Cylinder	7
Clutch Damper (LHD models)	8

CLUTCH RELEASE MECHANISM	9
CLUTCH DISC AND CLUTCH COVER	11
Clutch Disc	11
Clutch Cover and Flywheel	12
SERVICE DATA AND SPECIFICATIONS	
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General Specifications	14
Inspection and Adjustment	14

CL

<SUPPLEMENT-I>

NO CHANGES

<SUPPLEMENT-II>

NO CHANGES

<SUPPLEMENT-III>

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(TD27Ti)	3003
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(KA24E)	3004
(TD27Ti)	3005
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Bleeding Procedure (TD27Ti)	3008

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Clutch Disc	3011
Clutch Cover and Flywheel	3012
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General Specifications	3013
Inspection and Adjustment	3013

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<SUPPLEMENT-IV> (For Africa and Gulf Countries)

NO CHANGES

<SUPPLEMENT-V> (For Australia)

NO CHANGES

<SUPPLEMENT-VI> (For Europe and Australia)

NO CHANGES

<SUPPLEMENT-VII> (For Europe)

NO CHANGES

<SUPPLEMENT-VIII> (For Africa and Gulf Countries)

NO CHANGES

<SUPPLEMENT-IX> (For Europe, Africa and Gulf Countries)

CLUTCH SYSTEM	9002	SERVICE DATA AND SPECIFICATIONS	
Clutch Pedal	9002	(SDS)	9003
		Inspection and Adjustment	9003

<SUPPLEMENT-X> (For Africa and Gulf Countries)

NO CHANGES

<SUPPLEMENT-XI> (For Europe)

NO CHANGES

<SUPPLEMENT-XII> (For Africa, Gulf Countries and Central & South America)

NO CHANGES

<SUPPLEMENT-XIII> (For General)

CLUTCH SYSTEM	13002	SERVICE DATA AND SPECIFICATIONS (SDS)	13003
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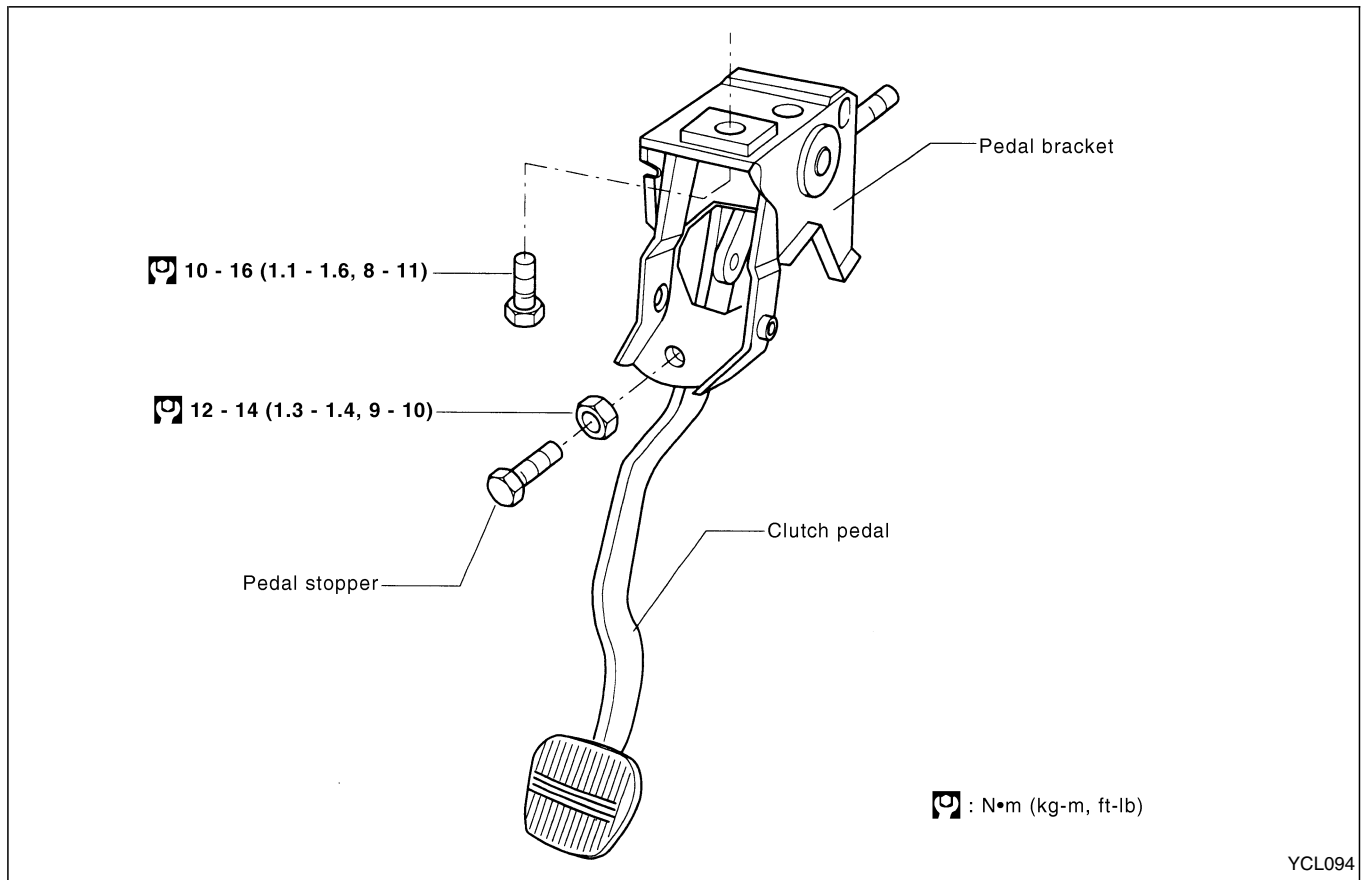
SECTION **CL**

CONTENTS

CLUTCH SYSTEM	13002	SERVICE DATA AND SPECIFICATIONS (SDS)	13003
Clutch Pedal	13002	General Specifications.....	13003

CLUTCH SYSTEM

Clutch Pedal



General Specifications

CLUTCH DISC

Unit: mm (in)

Engine	KA24E
Model	242
Facing size (Outer dia. x inner dia. x thickness)	242 x 162 x 3.5 (9.53 x 6.38 x 0.0138)
Thickness of disc assembly under load	6.8 - 7.2 (0.268 - 0.283) Under a load of 4750 N (484.3 kg, 1068 lb)

MANUAL TRANSMISSION

SECTION **MT**

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<SUPPLEMENT-I>

NO CHANGES

<SUPPLEMENT-II>

NO CHANGES

<SUPPLEMENT-III>

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<SUPPLEMENT-IV> (For Africa and Gulf Countries)

NO CHANGES

<SUPPLEMENT-V> (For Australia)

NO CHANGES

<SUPPLEMENT-VI> (For Europe and Australia)

	FS5R30A	
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Position Switch Check	6002	
REMOVAL AND INSTALLATION	6003	
MAJOR OVERHAUL	6006	
Case Components	6006	

	FS5W71C	
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<SUPPLEMENT-VII> (For Europe)

NO CHANGES

<SUPPLEMENT-VIII> (For Africa and Gulf Countries)

	FS5W71C	
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NO CHANGES

<SUPPLEMENT-X> (For Africa and Gulf Countries)

NO CHANGES

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NO CHANGES

<SUPPLEMENT-XII> (For Africa, Gulf Countries and Central & South America)

NO CHANGES

<SUPPLEMENT-XIII> (For General)

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MANUAL TRANSMISSION

SECTION **MT**

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FS5W71C

MT

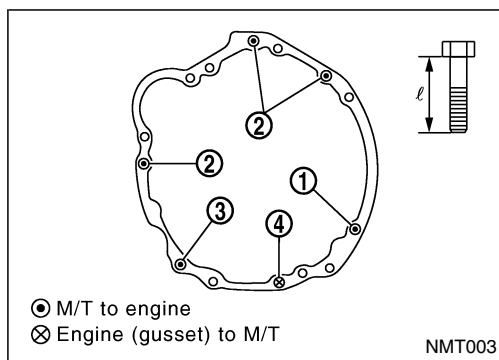
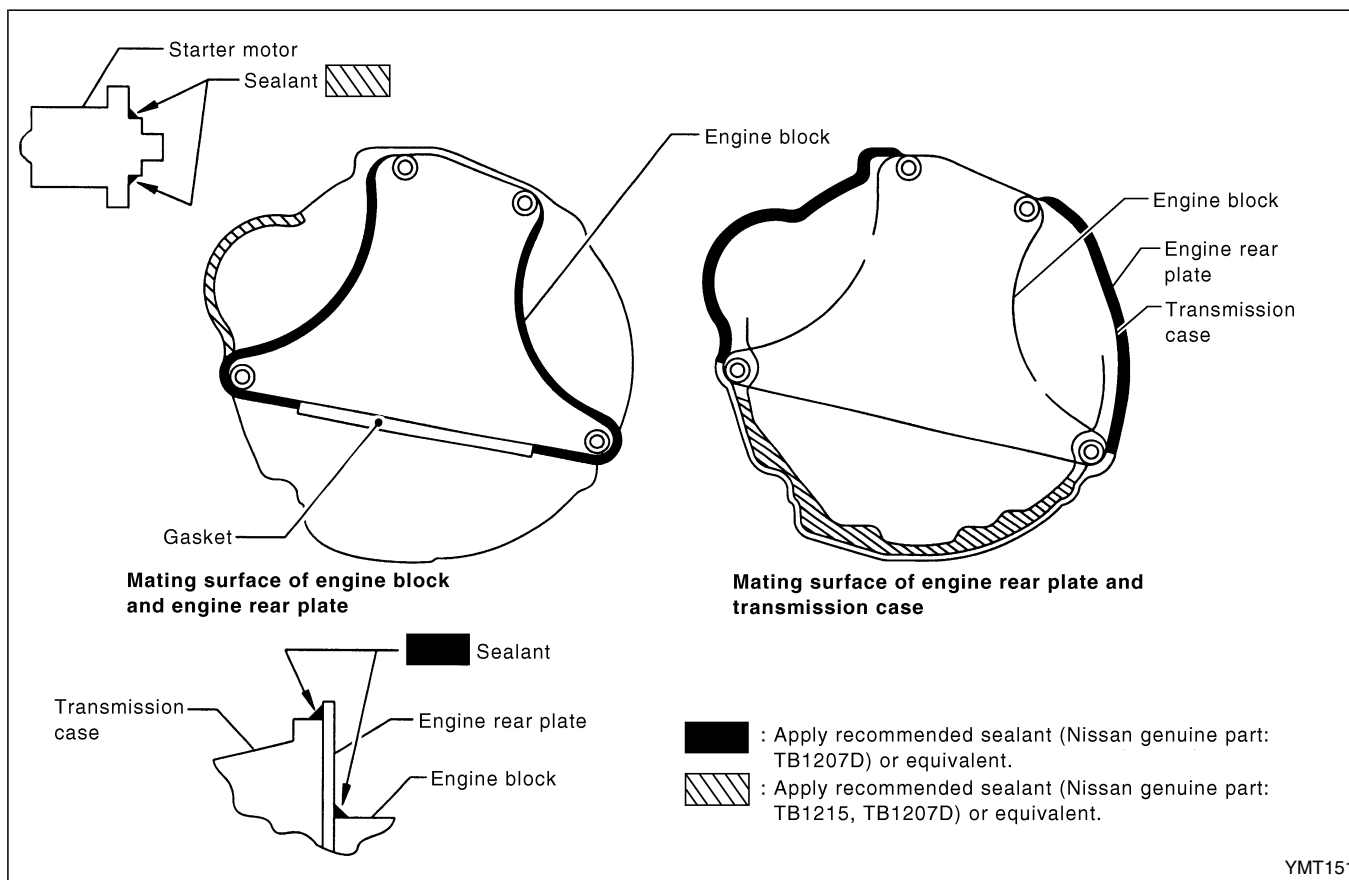
REMOVAL AND INSTALLATION

Installation

Transmission has to be installed as a unit together with transfer box.

Install transmission assembly as follows:

- Apply sealant as below:



- Tighten bolts securing transmission.
- **KA24E engine model**

Bolt No.	Tightening torque N·m (kg·m, ft·lb)	ℓ mm (in)
1	39 - 49 (4.0 - 5.0, 29 - 36)	65 (2.56)
2	39 - 49 (4.0 - 5.0, 29 - 36)	60 (2.36)
3	19 - 25 (1.9 - 2.5, 14 - 18)	25 (0.98)
4	19 - 25 (1.9 - 2.5, 14 - 18)	16 (0.63)

REMOVAL AND INSTALLATION

Installation (Cont'd)

- Disconnect negative battery terminal.
- Raise the unit with a hoist.
- Position the transmission assembly on a portable jack and secure it with a suitable tool.

Lift the assembly until the gearbox input shaft faces its housing.

Move the assembly towards the engine. The assembly must be rotated slightly so that the starter motor housing clears the projection on the companion floor. Insert input shaft into its housing (slightly raising the rear of the transfer box may facilitate the introduction of the shaft into its housing).

- Tighten the screws securing the gearbox to the engine.
: **39 - 49 N·m (4.0 - 5.0 kg-m, 29 - 36 ft-lb)**
- Connect the electrical wiring. Secure with the respective clips.
- Fit the exhaust pipe support bracket to the transfer box.
: **13 - 16 N·m (1.3 - 1.6 kg-m, 9 - 12 ft-lb)**
- Fit the starter motor. Secure the earth wire to the starter motor lower screw.

- : **31 - 41 N·m (3.2 - 4.2 kg-m, 23 - 30 ft-lb)**
- Fit the clutch slave cylinder.

- : **30 - 40 N·m (3.1 - 4.1 kg-m, 22 - 30 ft-lb)**
- Install fourth crossmember (Note the "front" mark).

Crossmember fixing bolts to chassis:

: **41 - 52 N·m (4.2 - 5.3 kg-m, 30 - 38 ft-lb)**

Crossmember fixing bolts to transmission:

: **68 - 87 N·m (6.9 - 8.9 kg-m, 50 - 64 ft-lb)**

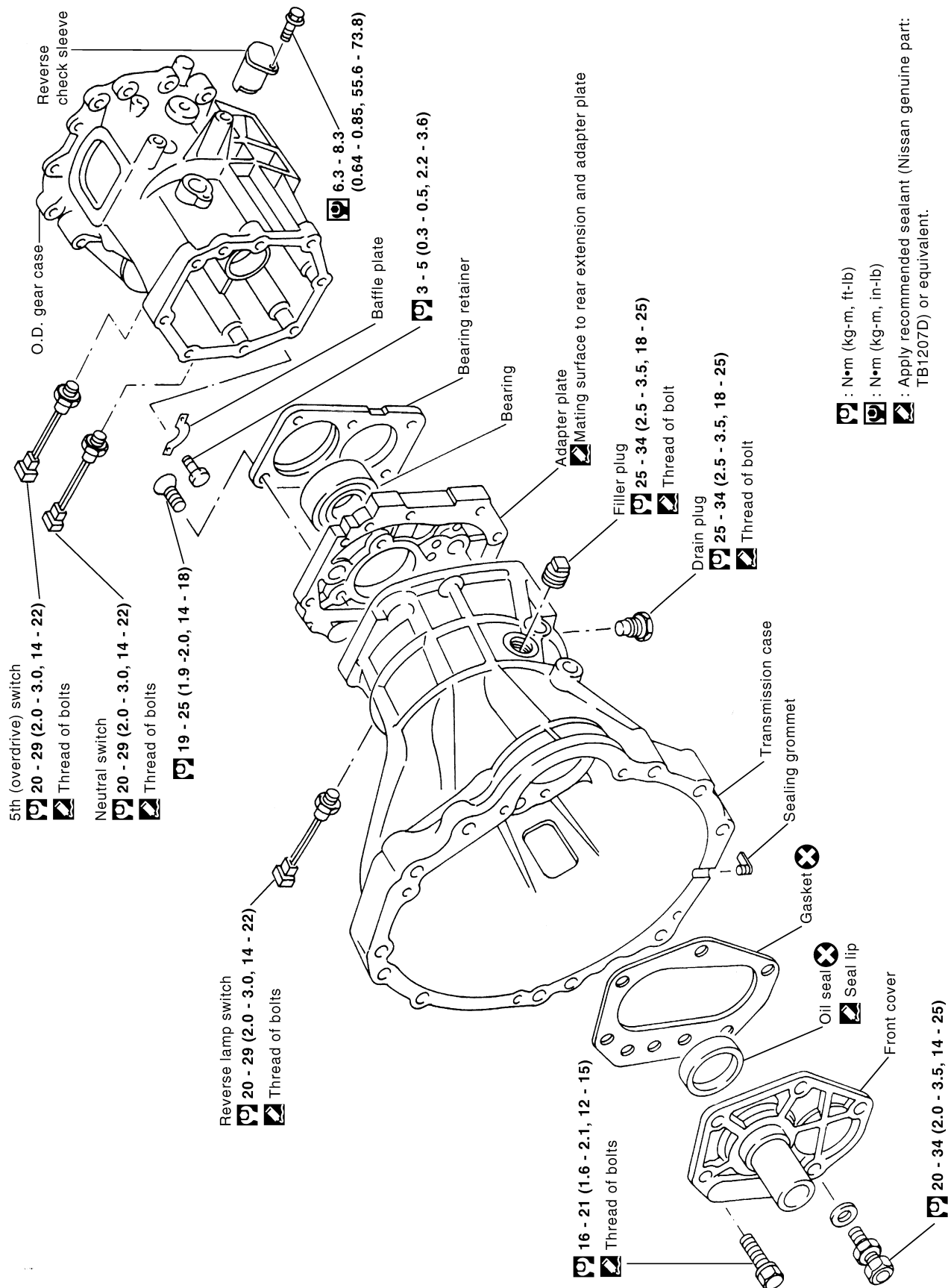
- Take away the portable jack holding boxes assembly.
- Install fifth crossmember.
: **59 - 78 N·m (6.0 - 8.0 kg-m, 43 - 58 ft-lb)**
- Install third crossmember.

: **Screws: 41 - 52 N·m (4.2 - 5.3 kg-m, 30 - 38 ft-lb)**

Nuts: 68 - 87 N·m (6.9 - 8.9 kg-m, 50 - 64 ft-lb)

- Install torsion bar springs. — Refer to FA section.
- Install front and rear propeller shafts. — Refer to PD section.
- Install shift levers of transmission and transfer.
: **14 - 18 N·m (1.4 - 1.8 kg-m, 10 - 13 ft-lb)**
- Connect negative battery terminal.

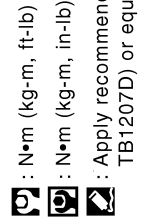
Case Components



MT-13004

<http://vnx.su/>

To avoid damage when replacing shift knob, remove control lever with knob, as assembled.



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<SUPPLEMENT-I>

NO CHANGES

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NO CHANGES

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NO CHANGES

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NO CHANGES

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NO CHANGES

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NO CHANGES

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NO CHANGES

<SUPPLEMENT-IX> (For Europe, Africa and Gulf Countries)
NO CHANGES

<SUPPLEMENT-X> (For Africa and Gulf Countries)
NO CHANGES

<SUPPLEMENT-XI> (For Europe)
NO CHANGES

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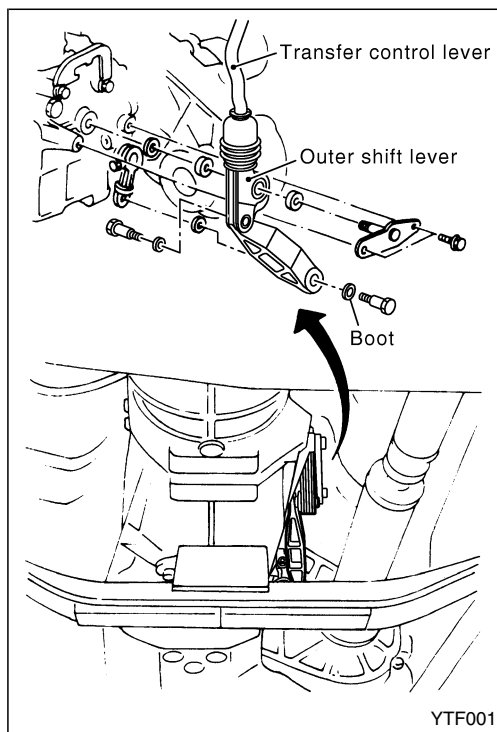
TRANSFER

SECTION **TF**

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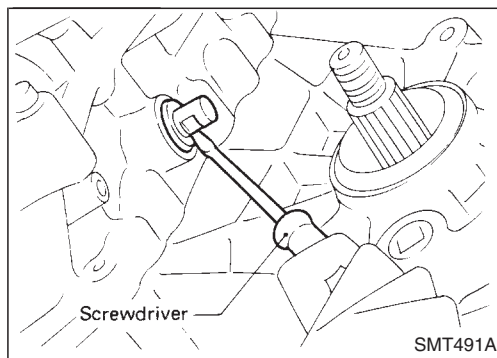
TF



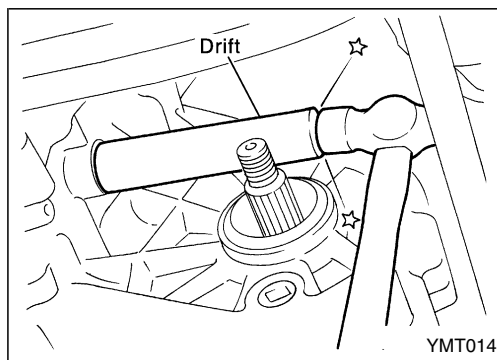
Replacing Oil Seal

SHIFT SHAFT OIL SEAL

1. Remove front propeller shaft — Refer to PD section.
2. Install companion flange — Refer to “CENTER CASE OIL SEAL”, TF-4.
3. Remove transfer control lever from transfer outer shift lever. Then remove outer shift lever.

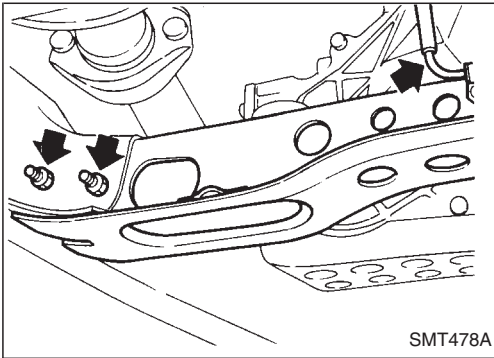


4. Remove shift shaft oil seal.
Be careful not to damage cross shaft.



5. Install shift shaft oil seal.
Before installing, apply multi-purpose grease to seal lip.
6. Install transfer control linkage.
7. Install companion flange — Refer to “CENTER CASE OIL SEAL”, TF-4.
8. Install front propeller shaft.

REMOVAL AND INSTALLATION



Removal

- Drain oil from transfer and transmission.
- Remove front and rear propeller shafts — Refer to PD section.
- Insert plug into oil seal after removing propeller shaft.

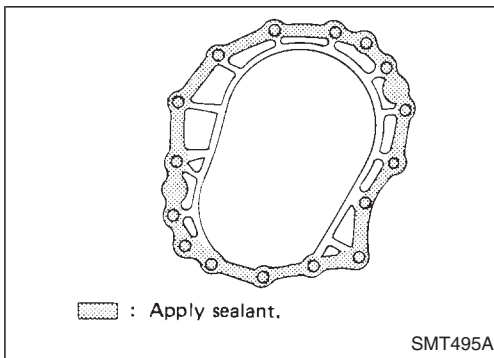
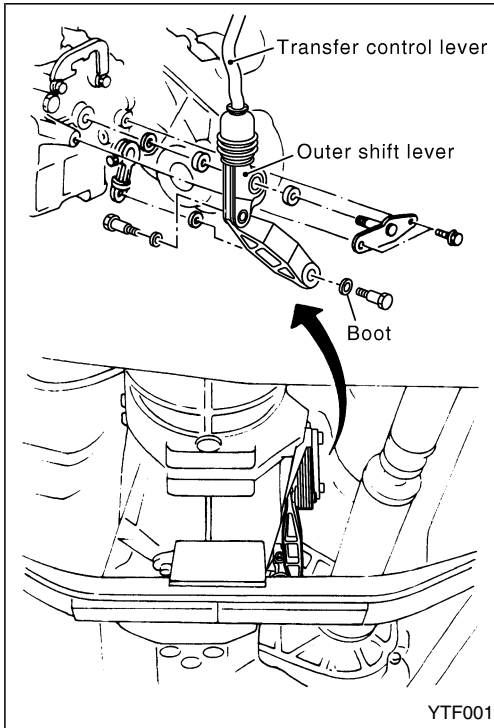
CAUTION:

Be careful not to damage spline, sleeve yoke and rear oil seal, when removing propeller shaft.

- Remove torsion bar spring — Refer to removal and installation of lower link in FA section. Then remove fifth crossmember.
- Remove transfer control lever from transfer outer shift lever.
- Remove transfer from transmission.

WARNING:

Support transfer while removing it.

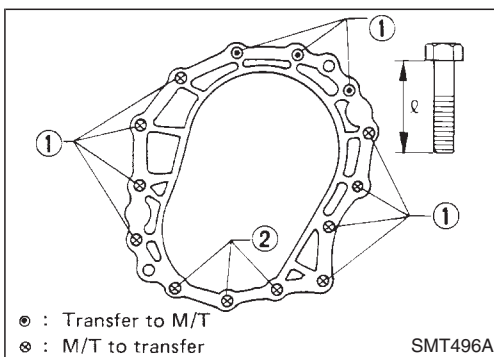


Installation

- Apply recommended sealant to mating surface to transmission.

Recommended sealant:

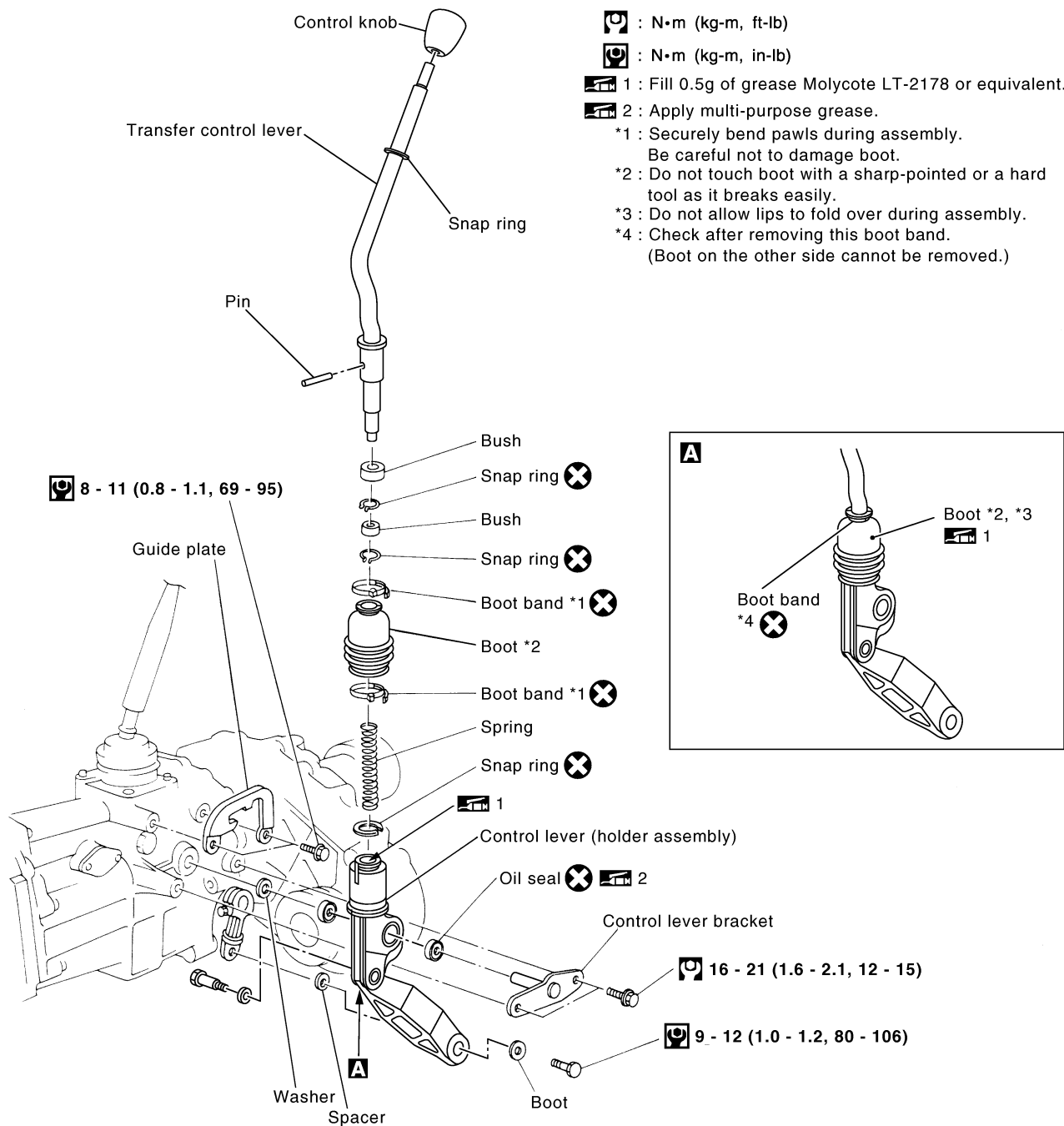
Nissan genuine part (KP610-00250) or equivalent



- Tighten bolts securing transfer.

Bolt No.	Tightening torque N·m (kg·m, ft·lb)	ℓ mm (in)
①	27 - 36 (2.8 - 3.6, 20 - 26)	45 (1.77)
②	27 - 36 (2.8 - 3.6, 20 - 26)	60 (2.36)

TRANSFER GEAR CONTROL



YTF002

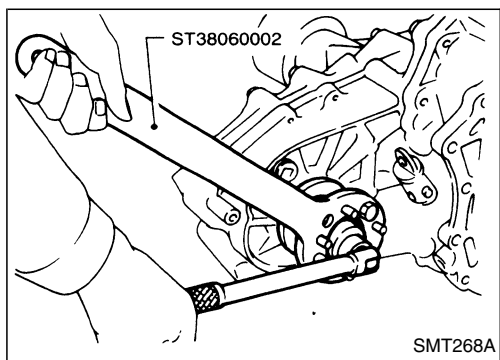
TF-13004

<http://vnx.su/>

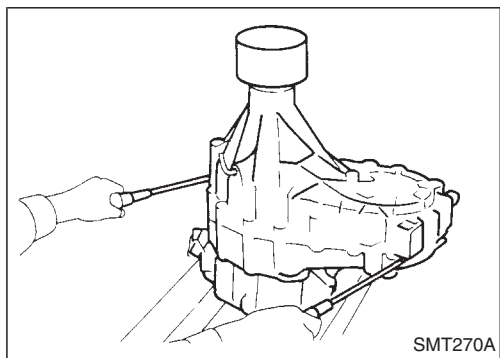
TF-13005



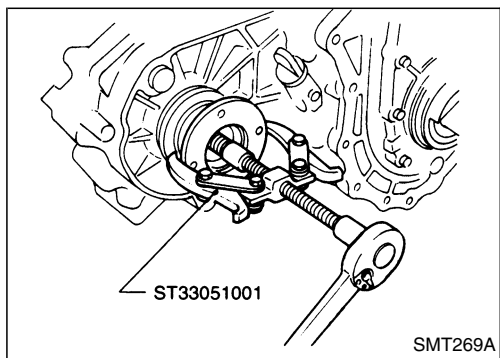
DISASSEMBLY



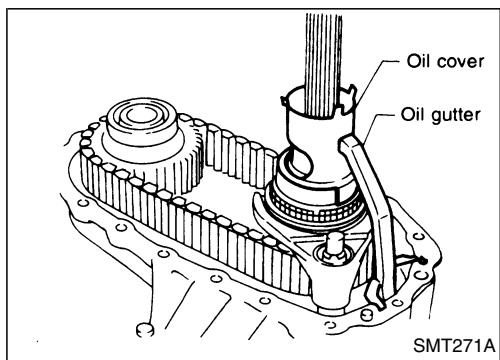
1. Remove nut of companion flange.



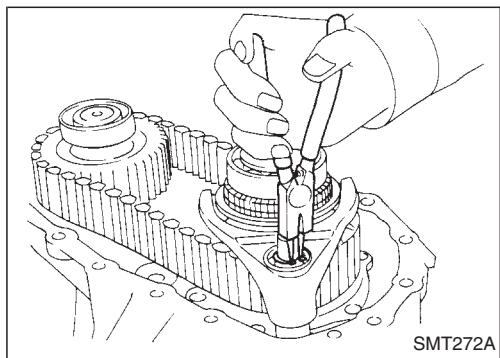
2. Remove rear case.
Be careful not to damage the mating surface.



3. Remove companion flange.

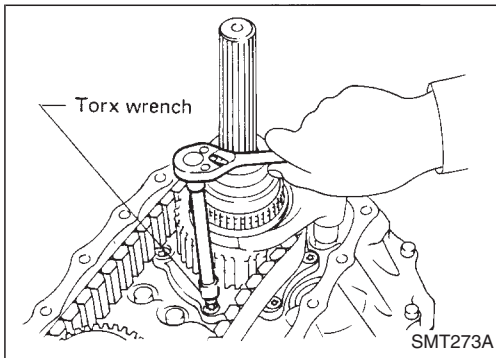


4. Remove oil cover and oil gutter.

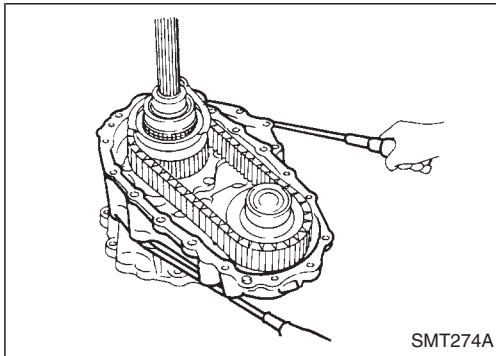


5. Remove snap ring from 2-4 shift rod.

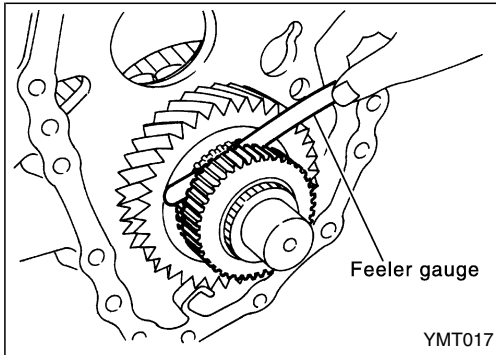
DISASSEMBLY



6. Remove bolts securing bearing retainer.
This step is necessary to remove mainshaft from center case.



7. Remove bolts securing center case to front case and then separate center case and front case.

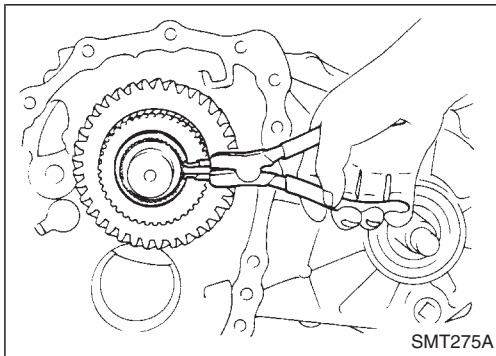


8. Measure end play of low gear.

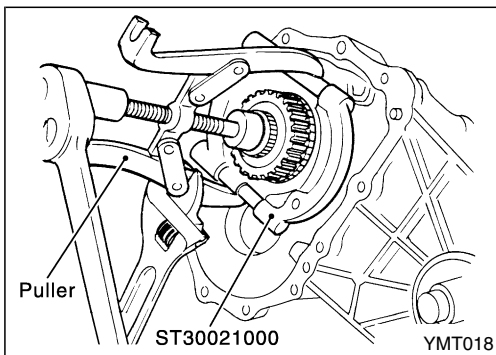
Standard:

0 - 0.15 mm (0 - 0.0059 in)

If end play is beyond the maximum value, check low gear and L & H hub for wear.

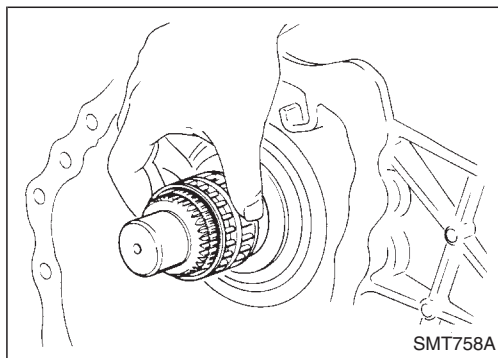


9. Disassemble center case assembly.
a. Remove snap ring from mainshaft.

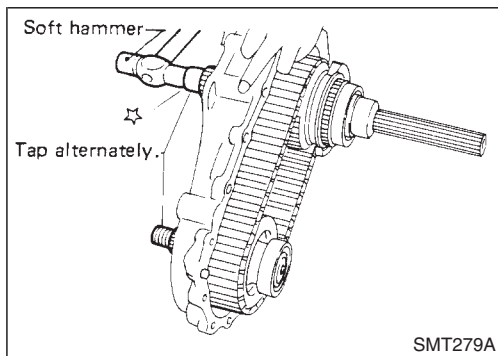


- b. Pull out low gear with L & H hub.

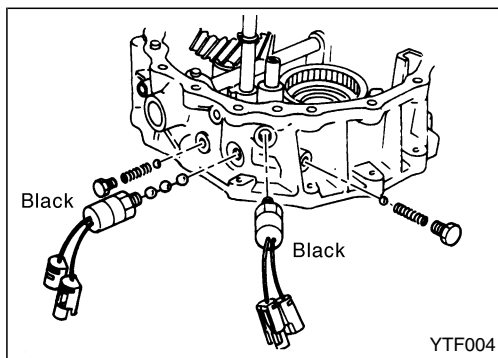
DISASSEMBLY



c. Remove needle bearing of low gear.

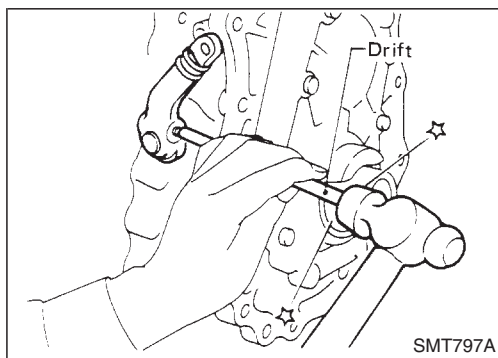


d. Remove mainshaft, front drive and drive chain as a set by tapping front end of mainshaft and front drive shaft alternately.
Be careful not to bend drive chain.

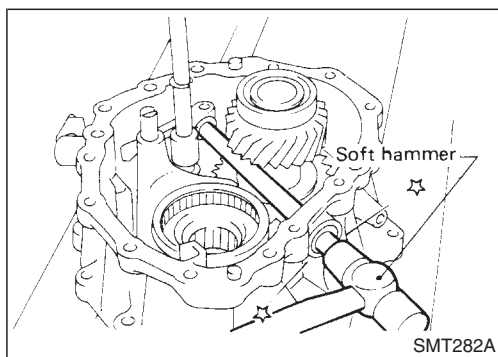


10. Disassemble front case assembly.

a. Remove switches, check plugs, check springs and check balls.

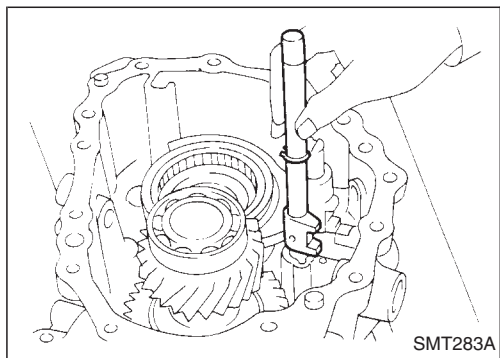


b. Remove outer shift lever.

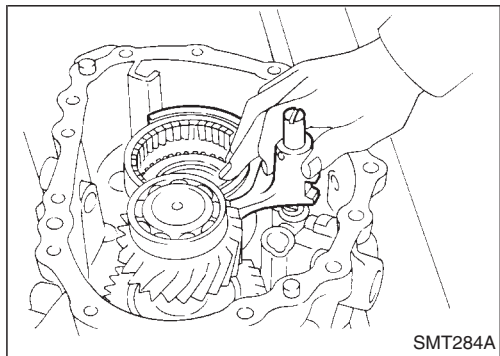


c. Remove lock pin of inner shift lever and drive out cross shaft with plug.

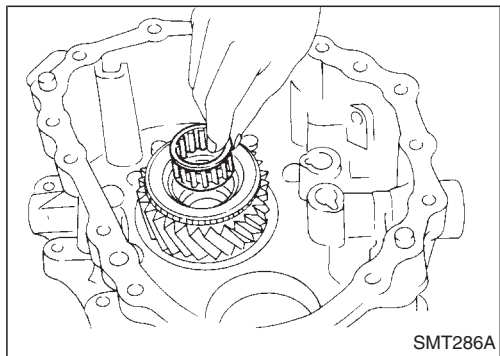
DISASSEMBLY



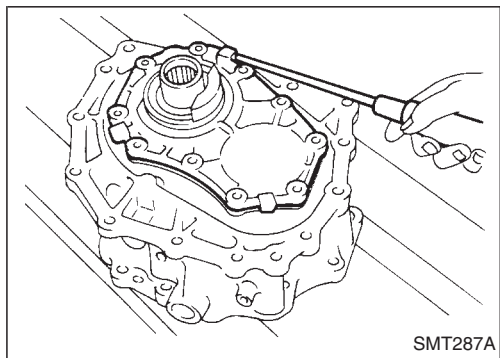
d. Remove 2-4 shift rod.



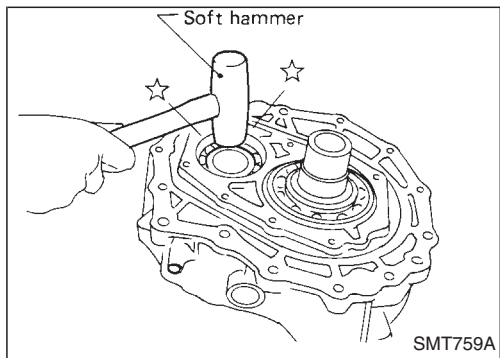
e. Remove L & H shift rod and fork assembly with coupling sleeve.



f. Remove needle bearing from main gear.

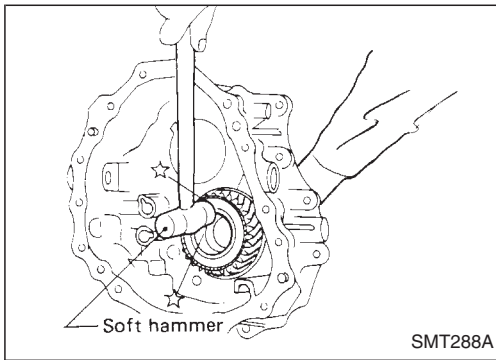


g. Remove bolts securing front case cover and then remove case.



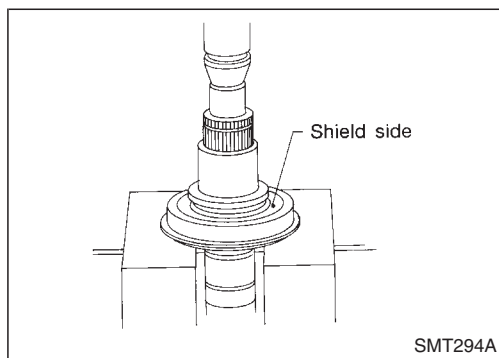
h. Remove counter gear by tapping lightly.

DISASSEMBLY



- i. Remove main gear by tapping lightly.

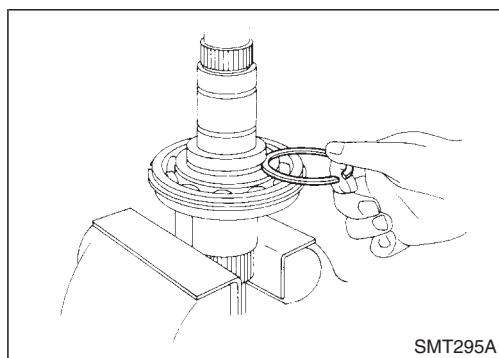
REPAIR FOR COMPONENT PARTS



Mainshaft

ASSEMBLY

1. Press mainshaft front bearing onto mainshaft.
Pay special attention to its direction.

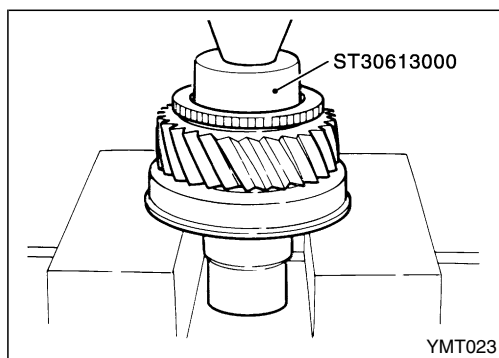


2. Install spacer.
3. Select snap ring with proper thickness and install it.
**Allowable clearance between snap ring and groove:
0 - 0.15 mm (0 - 0.0059 in)**

Available snap ring

Thickness mm (in)	Part number
3.1 (0.122)	33138-73P10
3.2 (0.126)	33138-73P11
3.3 (0.130)	33138-73P12

4. Regarding further procedures, refer to "ASSEMBLY" above.

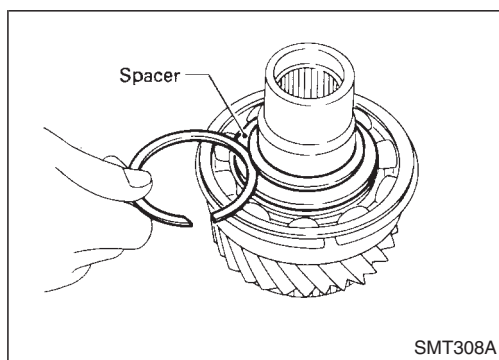


Main Gear

ASSEMBLY

Main gear bearing

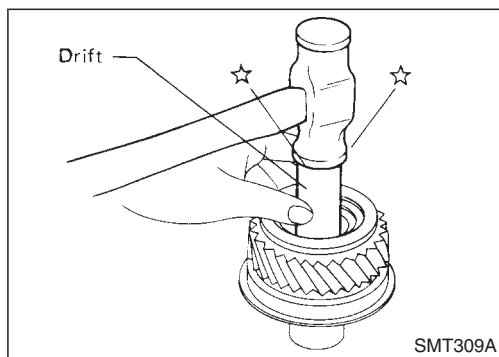
1. Press on main gear bearing.
2. Install spacer.



3. Select snap ring with proper thickness and install it.
**Allowable clearance between snap ring and groove:
0 - 0.15 mm (0 - 0.0059 in)**

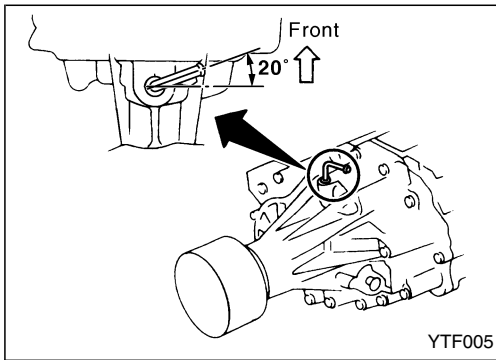
Available snap ring

Thickness mm (in)	Part number
2.6 (0.102)	33138-73P00
2.7 (0.106)	33138-73P01
2.8 (0.110)	33138-73P02



Plug

Apply sealant to plug and install it.

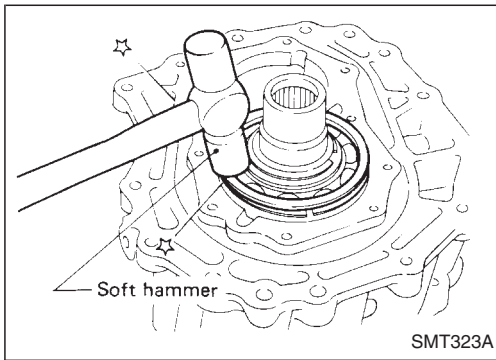


Rear Case

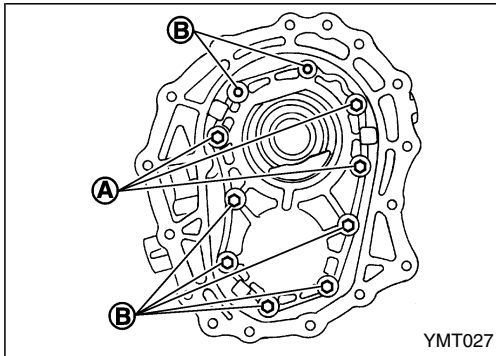
AIR BREATHER

Install as shown in the illustration.

ASSEMBLY



1. Assemble front case.
 - a. Install main gear assembly by tapping lightly.

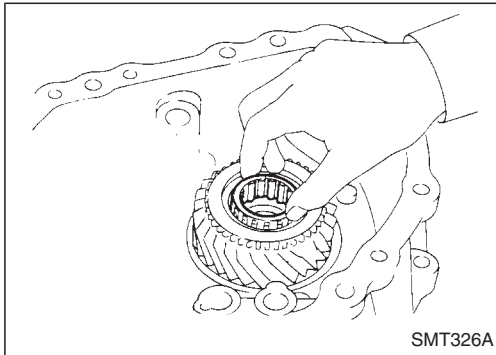


- b. Apply sealant to the mating surface and bolts of front case cover and install it on front case.

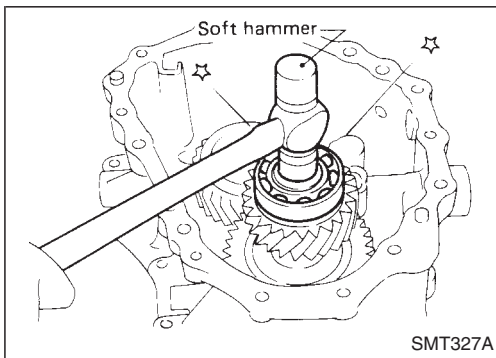
- **These ten bolts should be coated with sealant.**

Tightening torque

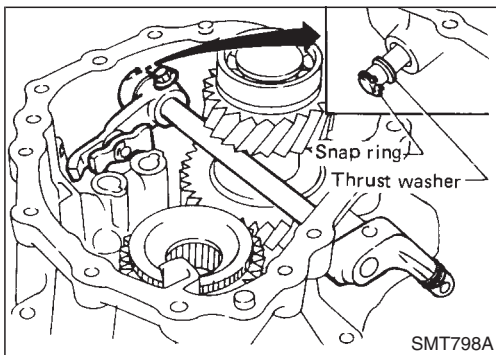
- Ⓐ: 20 - 23 N·m
(2.1 - 2.3 kg-m, 15 - 16 ft-lb)
- Ⓑ: 24 - 28 N·m
(2.5 - 2.8 kg-m, 18 - 20 ft-lb)



- c. Apply gear oil to needle bearing and install it into main gear.

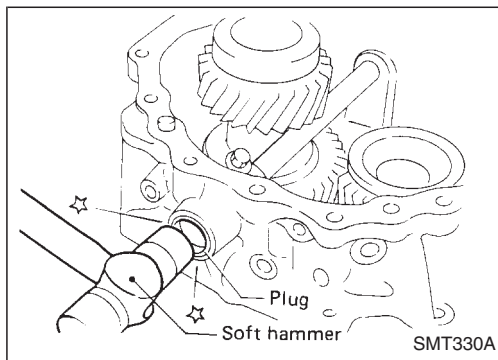


- d. Install counter gear assembly by tapping lightly.

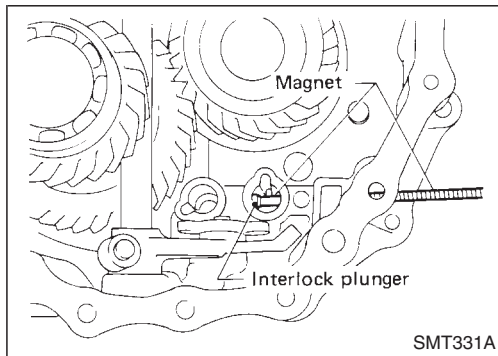


- e. Install cross shaft and inner shift lever.
When replacing cross shaft, outer shift lever of lock pin of outer shift lever, replace them as a set.

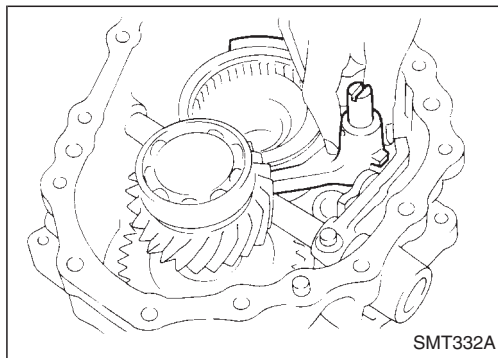
ASSEMBLY



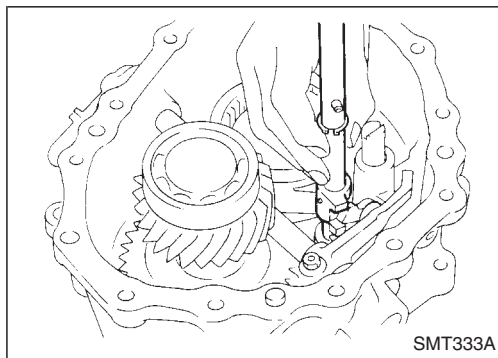
f. Apply sealant to plug and install it into front case.



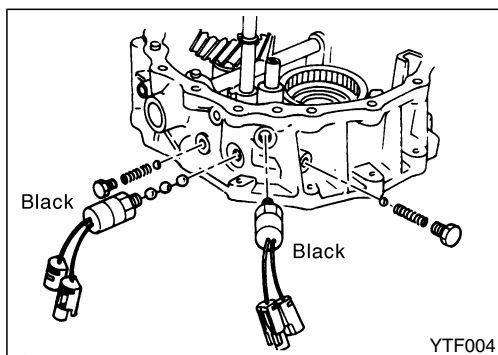
g. Insert interlock plunger into front case.



h. Install L & H shift rod and fork assembly with coupling sleeve.

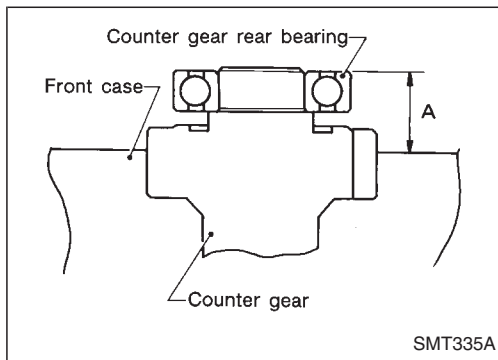


i. Install 2-4 shift rod.



j. Install switches, check balls, check springs and plugs.
Apply sealant to switches and plugs.

ASSEMBLY

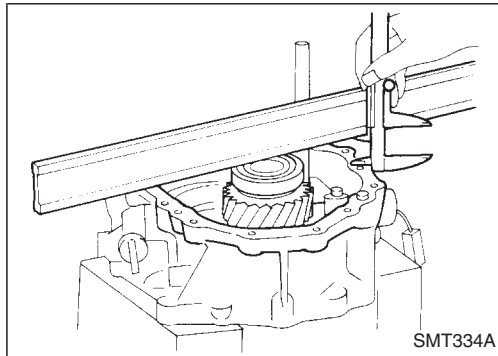


2. Select counter gear rear bearing shim.

Counter gear end play:

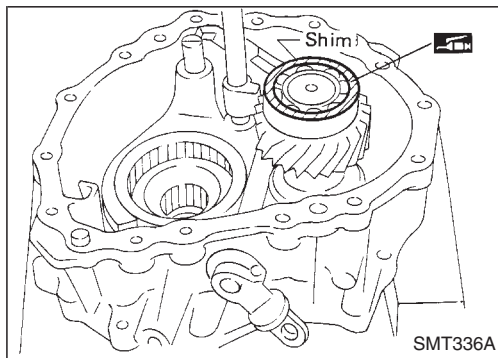
0 - 0.2 mm (0 - 0.008 in)

- a. Measure distance "A" between upper surface of counter gear rear bearing and mating surface of front case.

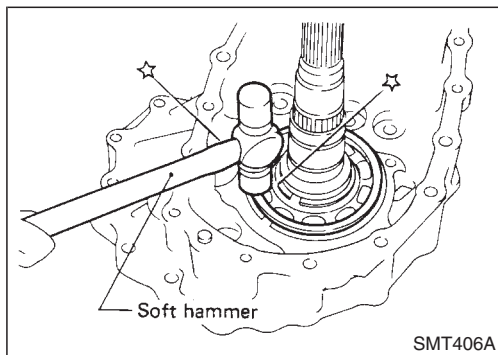


- b. Select suitable shim using chart below.

Distance "A" mm (in)	Suitable shim	
	Thickness mm (in)	Part number
32.65 - 32.55 (1.2854 - 1.2815)	Not necessary	
32.55 - 32.45 (1.2815 - 1.2776)	0.1 (0.004)	33112-C6900
32.45 - 32.35 (1.2776 - 1.2736)	0.2 (0.008)	33112-C6901
32.35 - 32.25 (1.2736 - 1.2697)	0.3 (0.012)	33112-C6902
32.25 - 32.15 (1.2697 - 1.2657)	0.4 (0.016)	33112-C6903
32.15 - 32.05 (1.2657 - 1.2618)	0.5 (0.020)	33112-33G00
32.05 - 31.95 (1.2618 - 1.2579)	0.6 (0.024)	33112-33G01



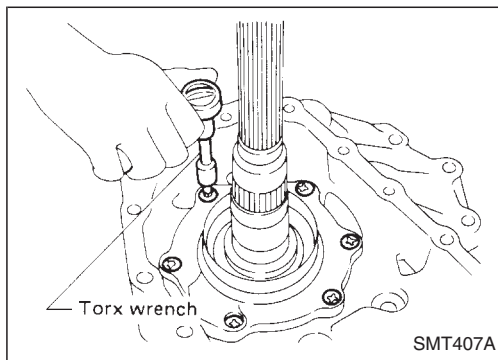
3. Place suitable shim on counter gear rear bearing with grease.
4. Apply gear oil to each part in front case.



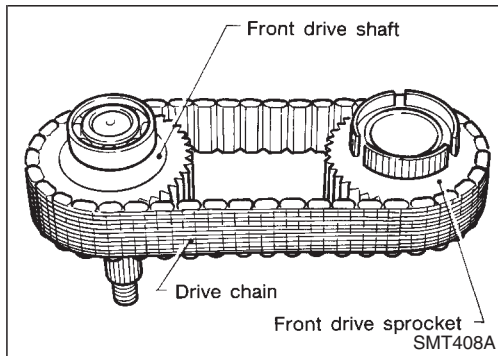
5. Assemble center case assembly.

- a. Install mainshaft on center case by tapping lightly.
Apply gear oil to mainshaft front bearing.

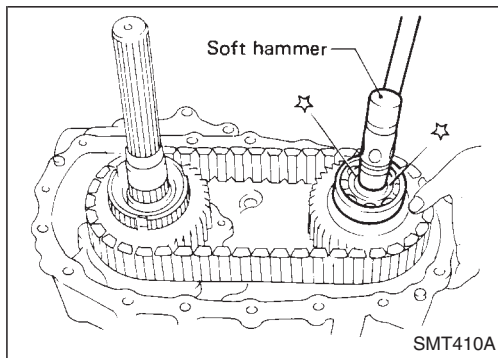
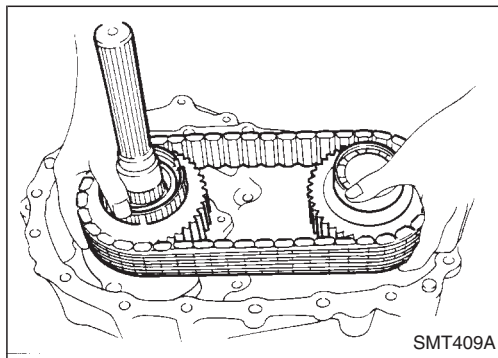
ASSEMBLY



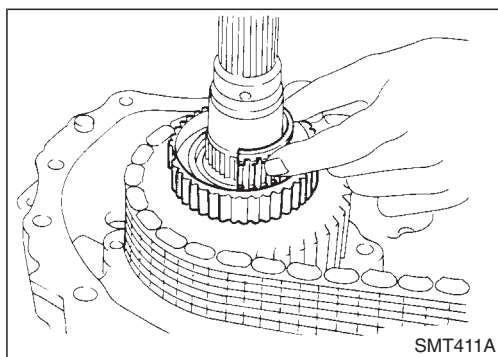
b. Install bearing retainer.



c. Put drive chain onto the front drive sprocket and front drive shaft, and then put them in center case.



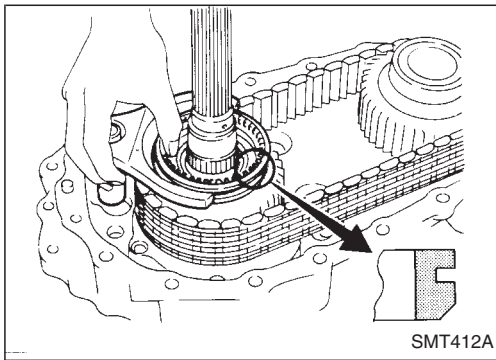
d. Install front drive shaft by tapping lightly.



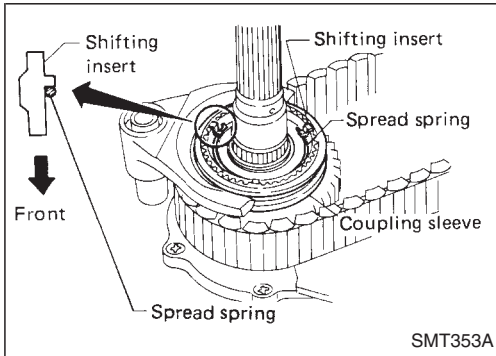
e. Apply gear oil to needle bearings and install them into front drive sprocket.

These needle bearings will be installed more easily if front drive sprocket is rotated while installing them.

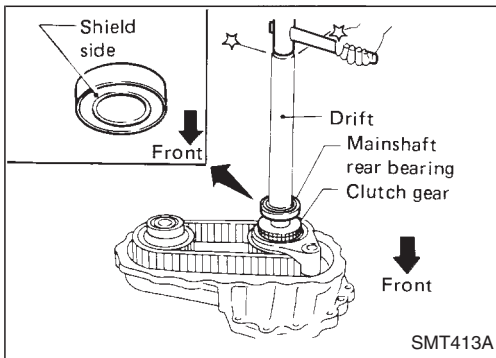
ASSEMBLY



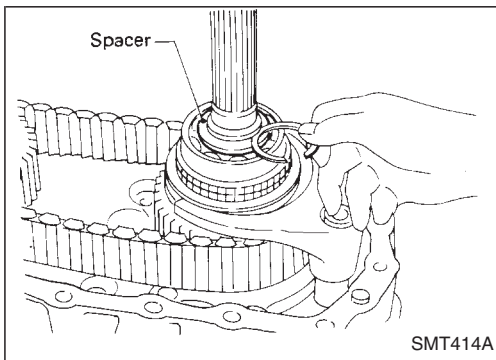
- f. Install 2-4 coupling sleeve with 2-4 shift fork.
Pay special attention to direction of coupling sleeve.



- g. Install shifting inserts and spread spring.
Pay special attention to direction of shifting inserts.



- h. Install baulk ring and then install clutch gear and mainshaft rear bearing.
Place wooden block under mainshaft in order to protect mainshaft front bearing.

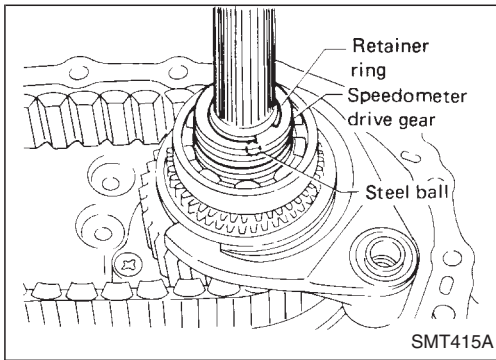


- i. Install spacer.
j. Select snap ring with proper thickness and install it.
Allowable clearance between snap ring and groove:
0 - 0.15 mm (0 - 0.0059 in)

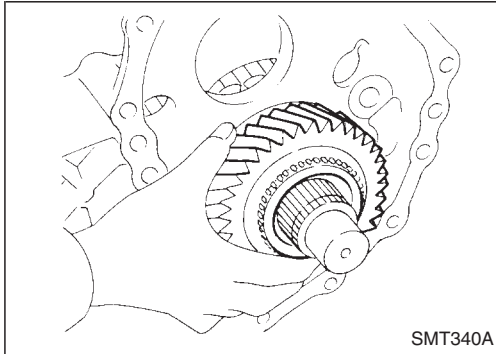
Available snap ring

Thickness mm (in)	Part number
1.8 (0.071)	33138-73P20
1.9 (0.075)	33138-73P21
2.0 (0.079)	33138-73P22
2.1 (0.083)	33138-73P23
2.2 (0.087)	33138-73P24

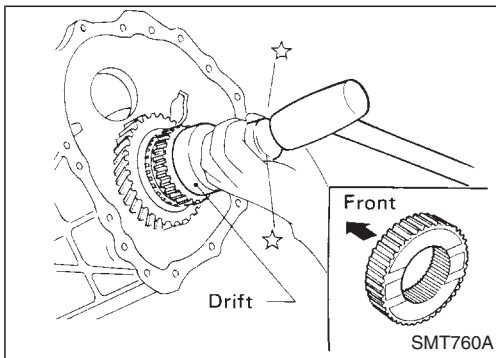
ASSEMBLY



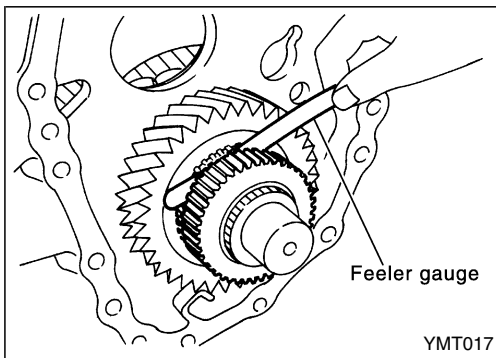
- k. Install steel ball, speedometer drive gear and retainer ring.
Steel ball is the smallest of check balls for this unit.



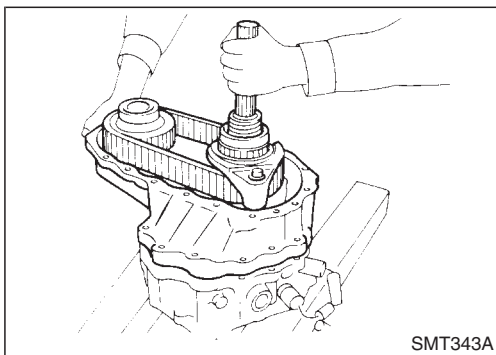
- l. Install low gear and its bearing to mainshaft.
Apply gear oil to needle bearing.



- m. Install L & H hub and snap ring to mainshaft.
Pay special attention to direction of L & H hub.

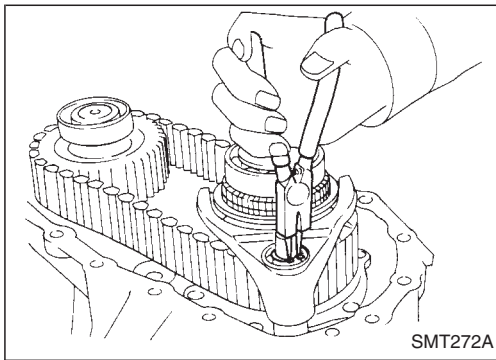


- n. Measure end play of low gear.
Standard:
0 - 0.15 mm (0 - 0.0059 in)

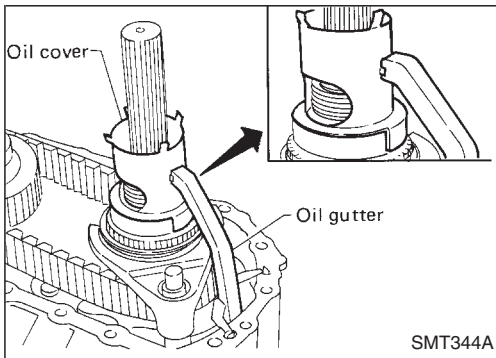


6. Apply sealant to mating surface and put center case assembly onto front case and tighten bolts.

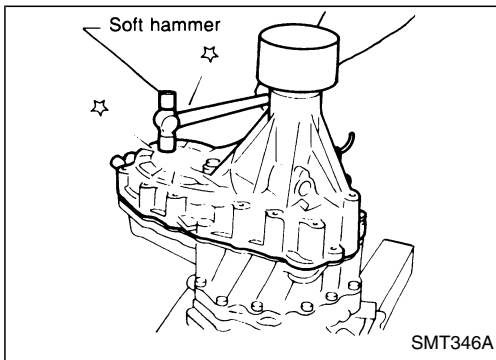
ASSEMBLY



7. Install snap ring to 2-4 shift rod.



8. Install oil gutter and oil cover.
9. Apply gear oil to each part in center case.



10. Apply sealant to mating surface and install rear case on center case.

SERVICE DATA AND SPECIFICATIONS (SDS)

Inspection and Adjustment

AVAILABLE SNAP RING

Mainshaft front bearing

Allowable clearance	0 - 0.15 mm (0 - 0.0059 in)
Thickness mm (in)	Part number
3.1 (0.122)	33138-73P10
3.2 (0.126)	33138-73P11
3.3 (0.130)	33138-73P12

Mainshaft rear bearing

Allowable clearance	0 - 0.15 mm (0 - 0.0059 in)
Thickness mm (in)	Part number
1.8 (0.071)	33138-73P20
1.9 (0.075)	33138-73P21
2.0 (0.079)	33138-73P22
2.1 (0.083)	33138-73P23
2.2 (0.087)	33138-73P24

Main gear bearing

Allowable clearance	0 - 0.15 mm (0.0059 in)
Thickness mm (in)	Part number
2.6 (0.102)	33138-73P00
2.7 (0.106)	33138-73P01
2.8 (0.110)	33138-73P02

PROPELLER SHAFT & DIFFERENTIAL CARRIER

SECTION PD

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NO CHANGES

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NO CHANGES

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NO CHANGES

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<SUPPLEMENT-X> (For Africa and Gulf Countries)

NO CHANGES

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NO CHANGES

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NO CHANGES

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PROPELLER SHAFT & DIFFERENTIAL CARRIER

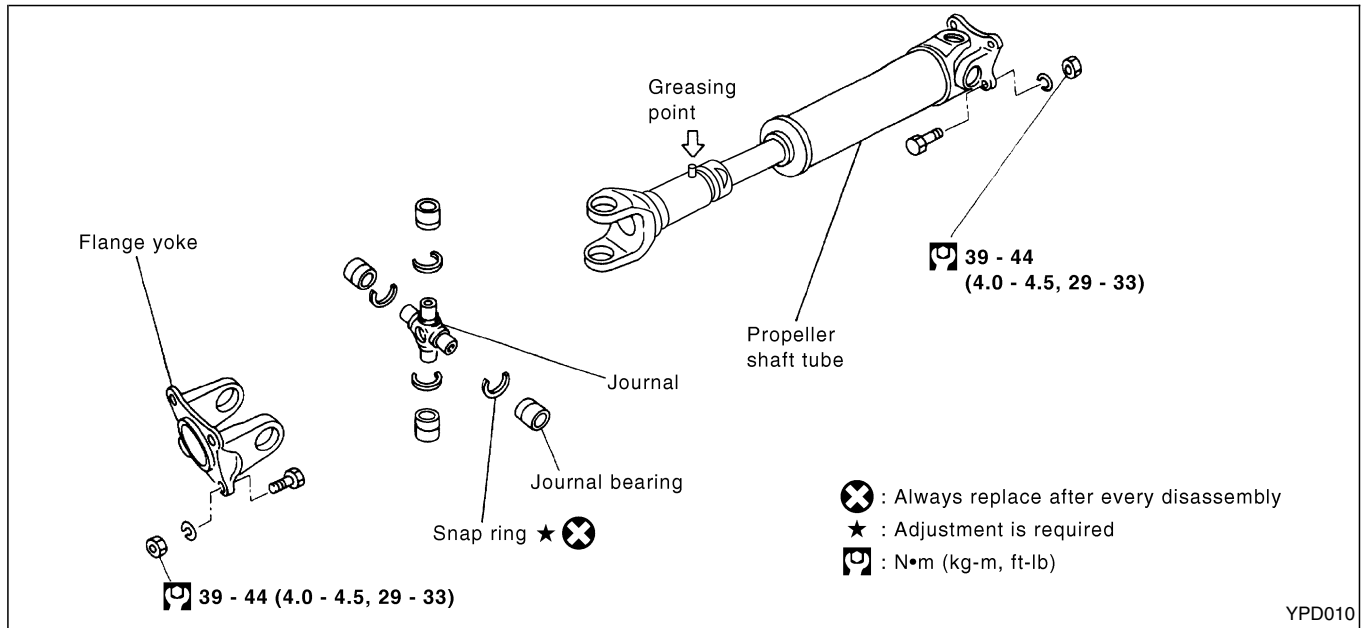
SECTION **PD**

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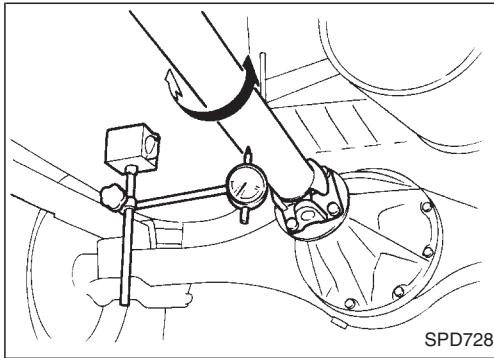
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PROPELLER SHAFT

Front propeller shaft (Model 0F71H)



PROPELLER SHAFT

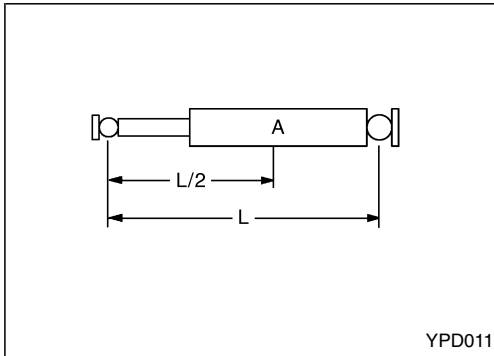


On-Vehicle Service

PROPELLER SHAFT VIBRATION

If vibration is present at high speed, inspect propeller shaft runout first.

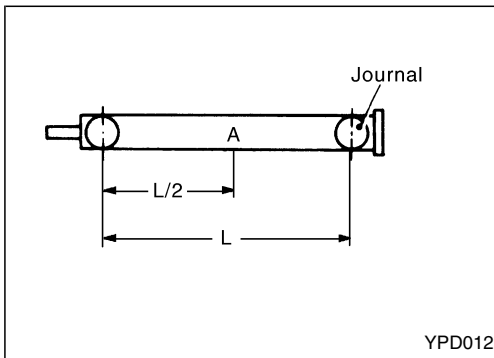
1. Raise rear wheels.
2. Measure propeller shaft runout at center of propeller shaft, between two yokes, by rotating final drive companion flange by hand.



Front propeller shaft

Unit: mm (in)

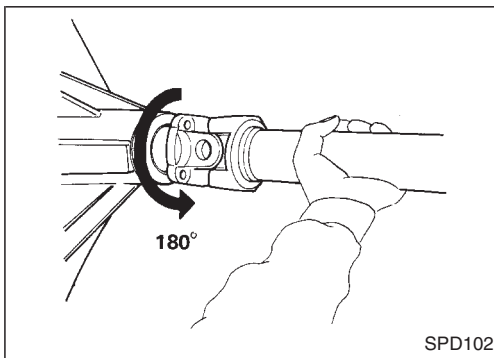
Propeller shaft model	0F71H
Measuring point A	L/2



Rear propeller shaft

Unit: mm (in)

Propeller shaft model	2S80B
Measuring point A	L/2



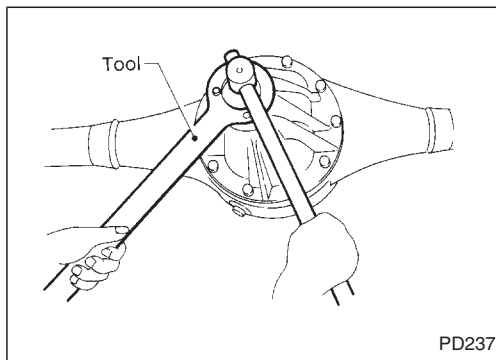
3. If runout exceeds specifications, disconnect propeller shaft at final drive companion flange; then rotate companion flange 180 degrees and reconnect propeller shaft.

Runout limit: 0.6 mm (0.024 in)

4. Check runout again. If runout still exceeds specifications, replace propeller shaft assembly.
5. Perform road test.

APPEARANCE CHECKING

- Inspect propeller shaft tube surface for dents or cracks. If damaged, replace shaft assembly.
- If center is noisy or damaged, replace center bearing.

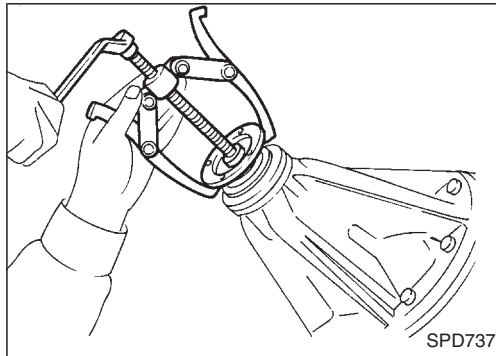


Front Oil Seal Replacement (Rear final drive: C200)

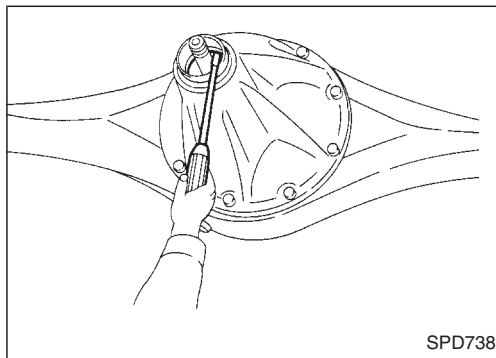
1. Remove rear propeller shaft.
2. Loosen drive pinion nut.

Tool number:

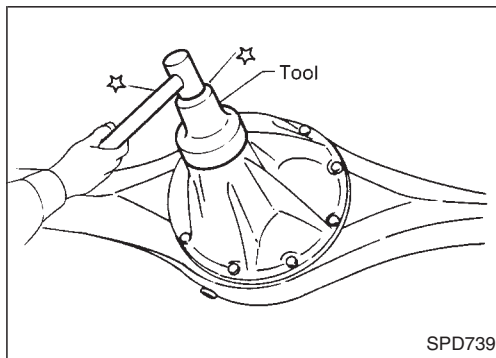
KV38104700



3. Remove companion flange.



4. Remove front oil seal.



5. Apply multi-purpose grease to cavity at sealing lips of oil seal. Press front oil seal into carrier.
6. Install companion flange and drive pinion nut in.
7. Install rear propeller shaft.

Tool number:

KV381025S0

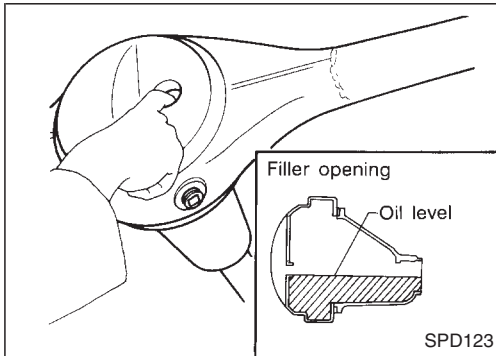
Removal

- Remove propeller shaft.
- Insert plug into transfer or transmission after removing propeller shaft.**

- Remove axle shaft. Refer to RA section.

CAUTION:

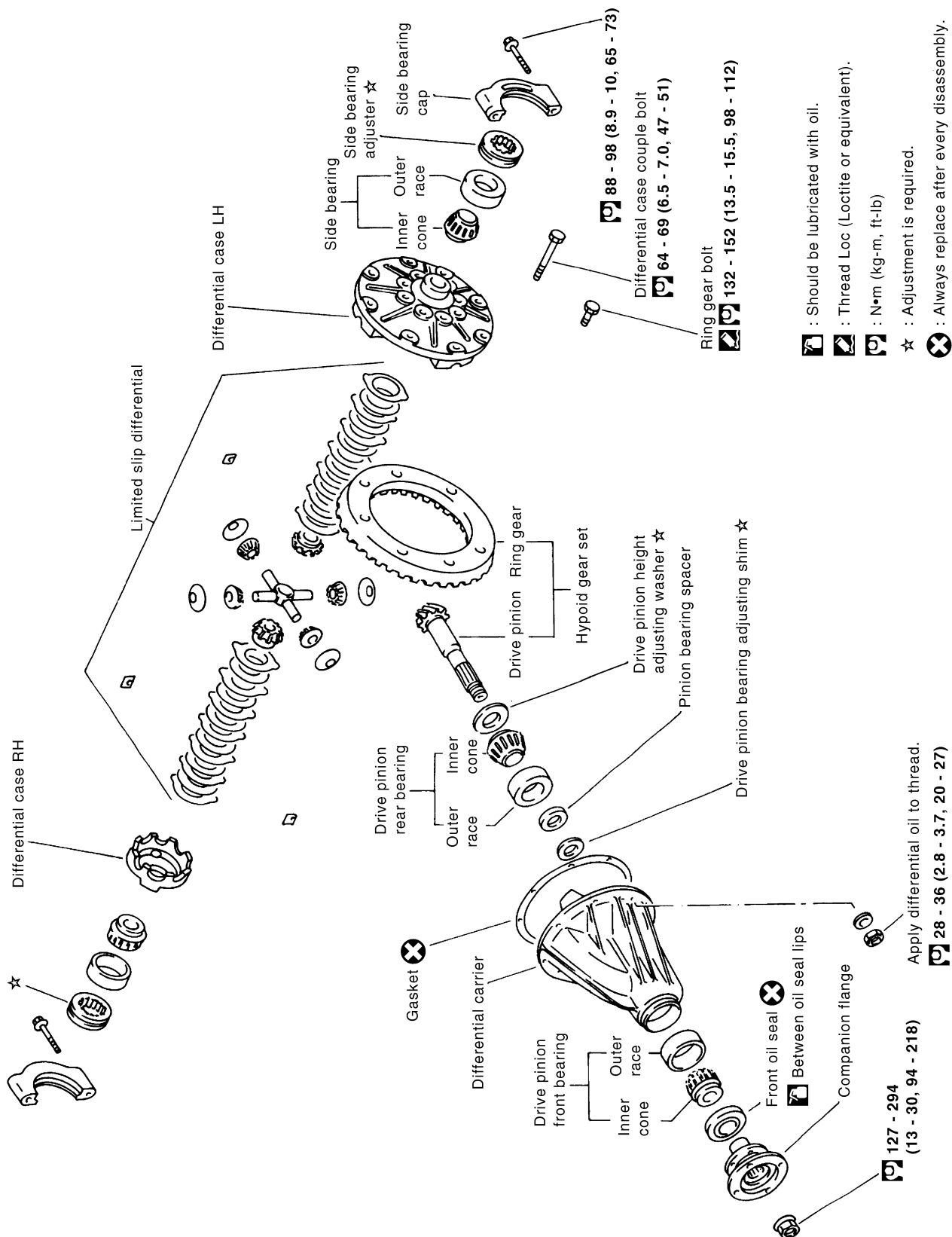
- **Be careful not to damage spline, sleeve yoke and front oil seal when removing propeller shaft.**



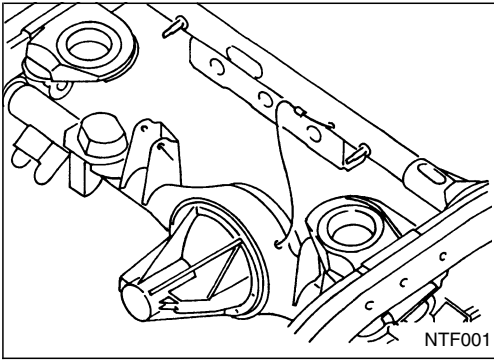
Installation

- Fill final drive with recommended gear oil.

REAR FINAL DRIVE (C200)



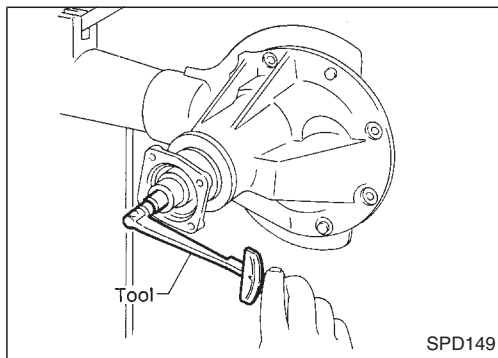
REAR FINAL DRIVE (C200)



Air Breather

Make sure air breather hose is situated as shown in the illustration.

DISASSEMBLY (C200)



Pre-inspection

Before disassembling final drive, perform the following inspection.

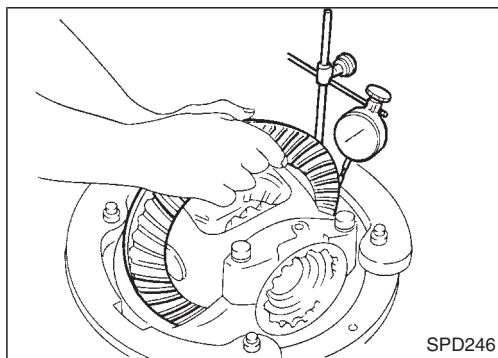
- Total preload
 - 1) Turn drive pinion in both directions several times to seat bearing rollers correctly.
 - 2) Check total preload with Tool.

Total preload:

1.7 - 2.5 N·m (17 - 25 kg-cm, 15 - 22 in-lb)

Tool number:

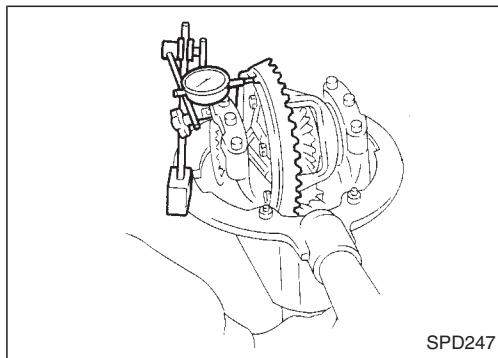
ST3127S000



- Ring gear to drive pinion backlash
Check backlash of ring gear with a dial indicator at several points.

Ring gear-to-drive pinion backlash:

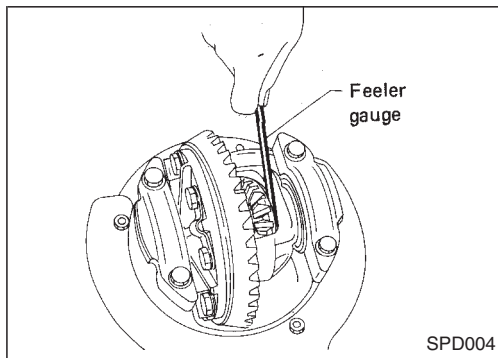
0.10 - 0.20 mm (0.0039 - 0.0079 in)



- Ring gear runout
Check runout of ring gear with a dial indicator.

Runout limit:

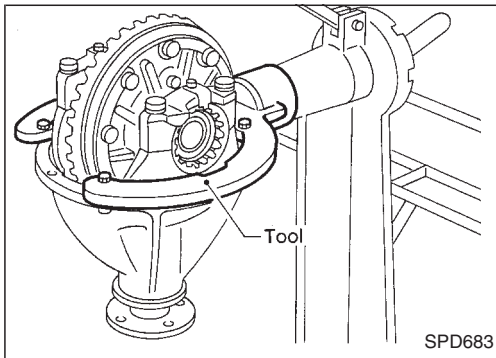
0.08 mm (0.0031 in)



- Tooth contact
Check tooth contact, referring to Adjustment.
- Side gear to pinion mate gear backlash
Measure clearance between side gear thrust washer and differential case with a feeler gauge.

Clearance between side gear thrust washer and differential case:

0.10 - 0.20 mm (0.0039 - 0.0079 in)

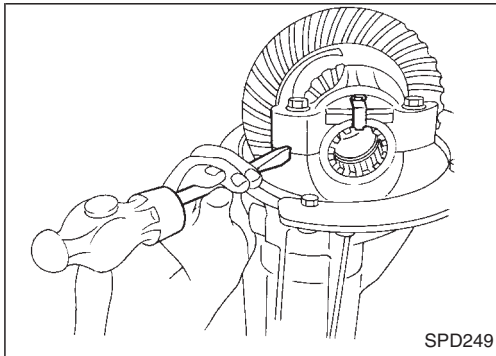


Differential Carrier

1. Mount final drive assembly on Tool.

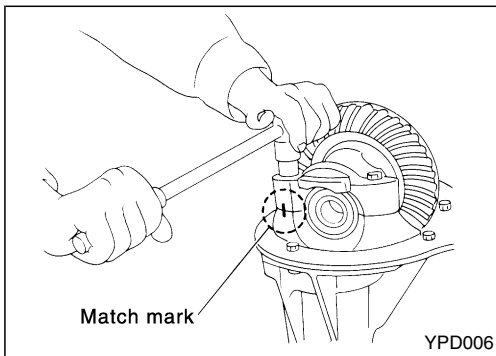
Tool number:

ST06340000

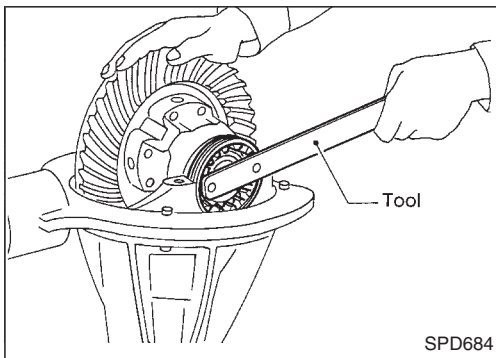


2. Put match marks on one side bearing cap with paint or punch to ensure that it is replaced in proper position during reassembly.

Bearing caps are line-bored during manufacture and should be put back in their original places.



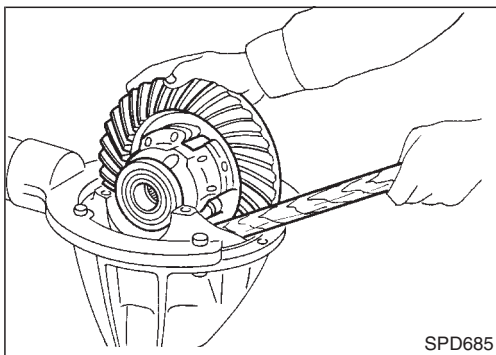
3. Remove side lock fingers and side bearing caps.



4. Remove side bearing adjuster with Tool.

Tool number:

ST32580000

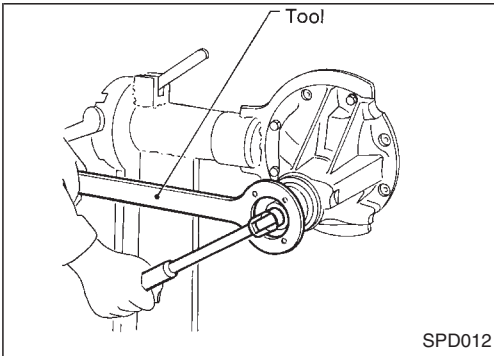
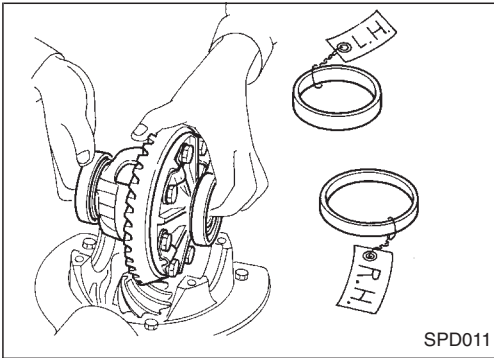


5. Remove differential case assembly with a pry bar.

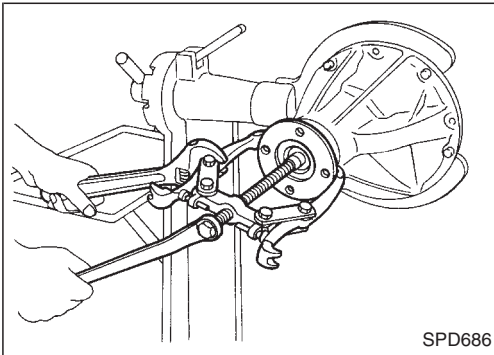
DISASSEMBLY (C200)

Differential Carrier (Cont'd)

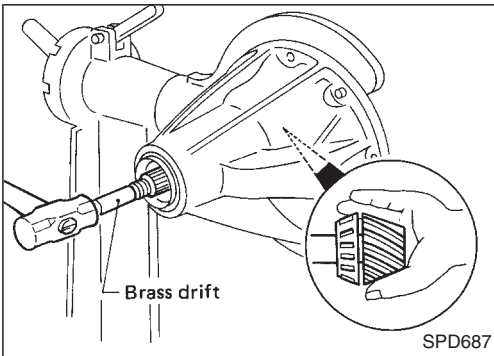
Be careful to keep the side bearing outer races together with their respective inner cones — do not mix them up.



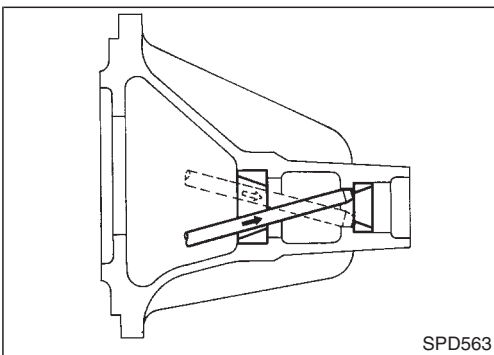
6. Remove drive pinion nut with Tool.
Tool number: KV38104700



7. Remove companion flange with puller.



8. Take out drive pinion together with pinion rear bearing inner cone, drive pinion bearing spacer and pinion bearing adjusting shim.



9. Remove front oil seal and pinion front bearing inner cone.
10. Remove pinion bearing outer races with a brass drift.

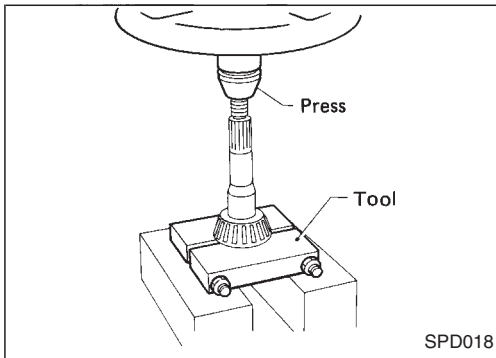
DISASSEMBLY (C200)

Differential Carrier (Cont'd)

11. Remove pinion rear bearing inner cone and drive pinion adjusting washer.

Tool number:

ST30031000



Differential Case

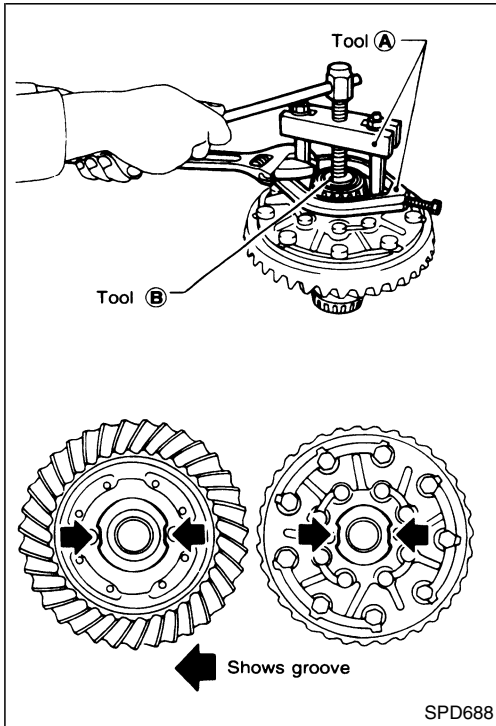
1. Remove side bearing inner cones.

To prevent damage to bearing, engage puller jaws in groove.

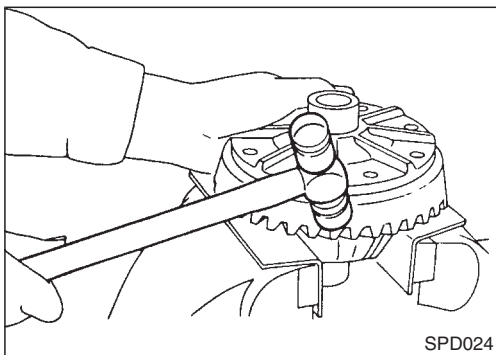
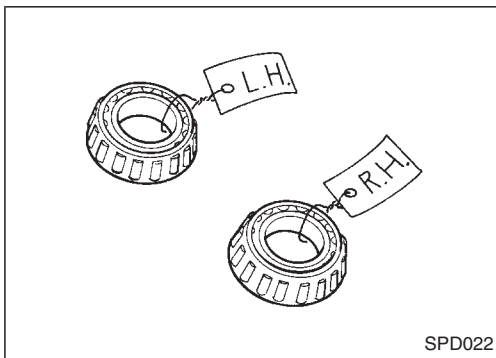
Tool number:

Ⓐ ST33051001

Ⓑ ST33061000



Be careful not to confuse left and right hand parts.



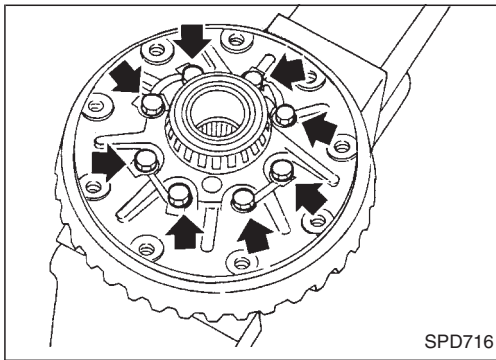
2. Loosen ring gear bolts in a criss-cross fashion.
 3. Tap ring gear off differential case with a soft hammer.
- Tap evenly all around to keep ring gear from binding.

DISASSEMBLY (C200)

Differential Case (Cont'd)

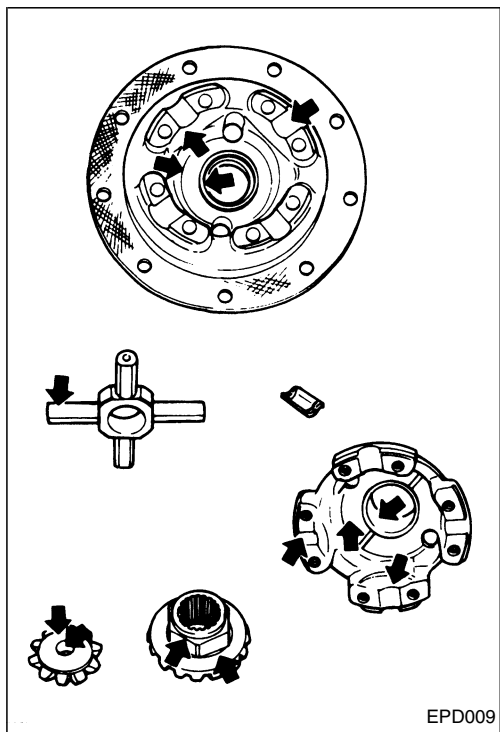
4. Separate differential case.

Put match marks on both LH and RH differential cases.



Ring Gear and Drive Pinion

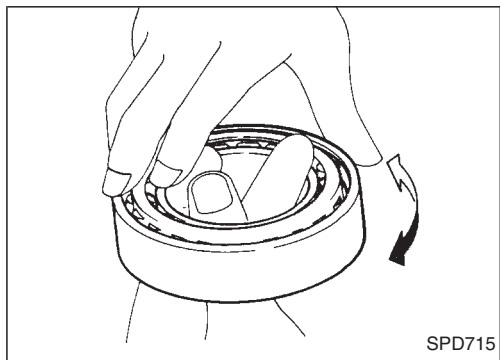
Check gear teeth for scoring, cracking or chipping.
If any damaged part is evident, replace ring gear and drive pinion as a set (hypoid gear set).



EPD009

Differential Case Assembly

Check mating surfaces of differential case, side gears, pinion mate gears, pinion mate shaft, and thrust washers.



SPD715

Bearing

1. Thoroughly clean bearing.
2. Check bearings for wear, scratches, pitting or flaking.
Check tapered roller bearing for smooth rotation. If damaged, replace outer race and inner cone as a set.

LIMITED SLIP DIFFERENTIAL (C200)

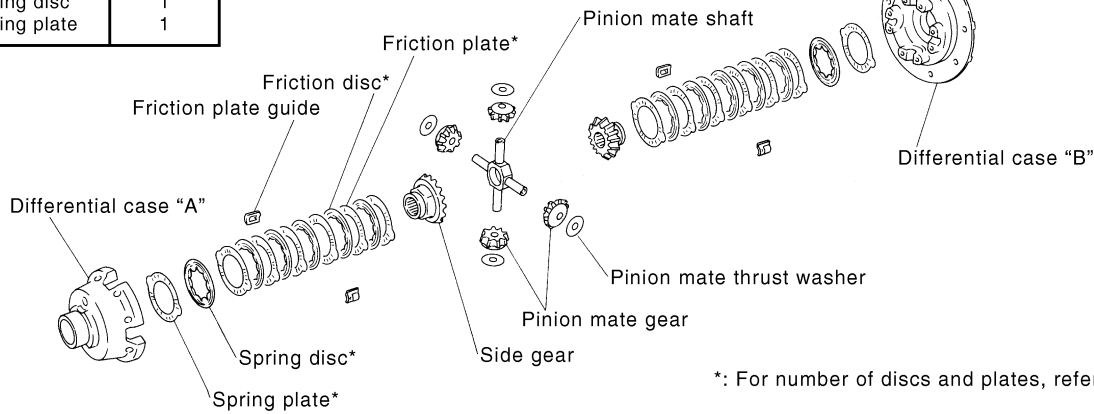
No. of discs and plates
(One side)

Model	C200
Friction disc	5
Friction plate	6
Spring disc	1
Spring plate	1

Differential case couple bolt

 **64 - 69 N·m**
(6.5 - 7.0 kg-m, 47 - 51 ft-lb)

Lock strap 

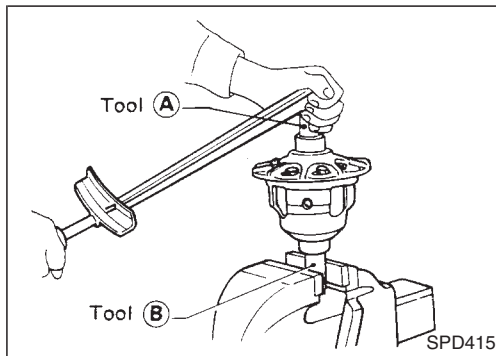


*: For number of discs and plates, refer to table.

YPD025

CAUTION:

Do not run engine when one rear wheel is off the ground.



Preparation for Disassembly

CHECKING DIFFERENTIAL TORQUE

Measure differential torque with Tool.

If it is not within the specifications, inspect components of limited slip differential.

Differential torque:

353 - 392 N·m (36 - 40 kg-m, 260 - 289 ft-lb)

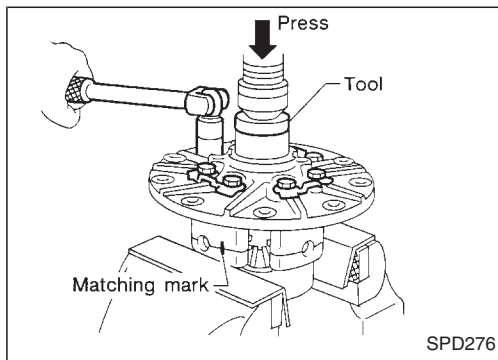
Assembly:

KV38105250

Tool number:

(A) KV38105210

(B) KV38105220



Disassembly

1. Spread out lock straps.
2. Remove couple bolts using a press.

Tool number: ST33081000

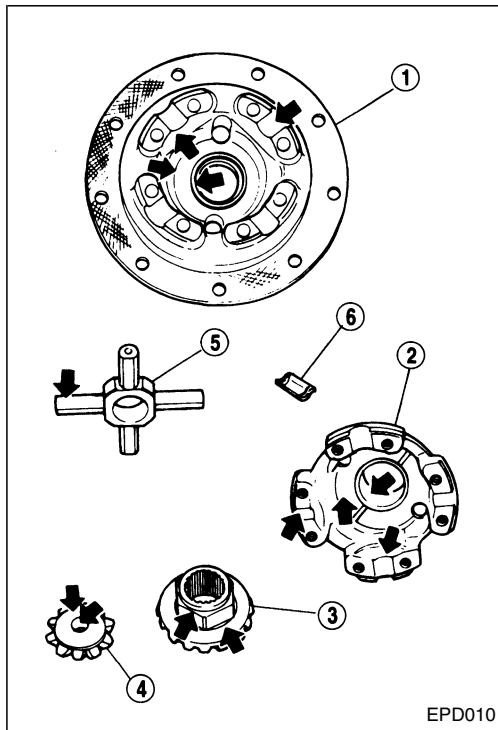
3. Separate differential case A and B.
Draw out component parts (discs and plates, etc.)

Put marks on gears and pressure rings so that they can be reinstalled in their original positions from which they were removed.

Inspection

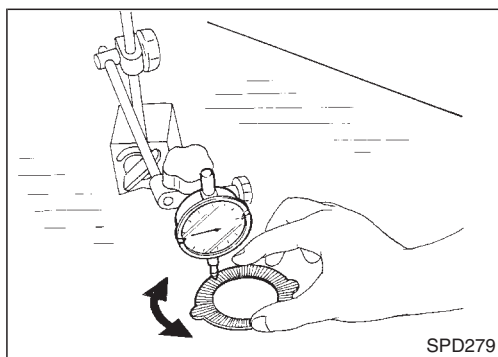
CONTACT SURFACES

1. Clean the disassembled parts in suitable solvent and blow dry with compressed air.
2. If following surfaces are found with burrs or scratches, smooth with oil stone.
 - ① Differential case B
 - ② Differential case A
 - ③ Side gear
 - ④ Pinion mate gear
 - ⑤ Pinion mate shaft
 - ⑥ Friction plate guide



DISC AND PLATE

1. Clean the discs and plates in suitable solvent and blow dry with compressed air.
2. Inspect discs and plates for wear, nicks and burrs.



3. To make sure that friction disc or plate is not distorted, place it on a surface plate and rotate it by hand with indicating finger of dial gauge resting against disc or plate surface. Check the warpage.

Allowable warpage:

0.05 - 0.15 mm (0.0020 - 0.0059 in)

If it exceeds limit, replace with a new plate to eliminate possibility of clutch slippage or sticking.

LIMITED SLIP DIFFERENTIAL (C200)

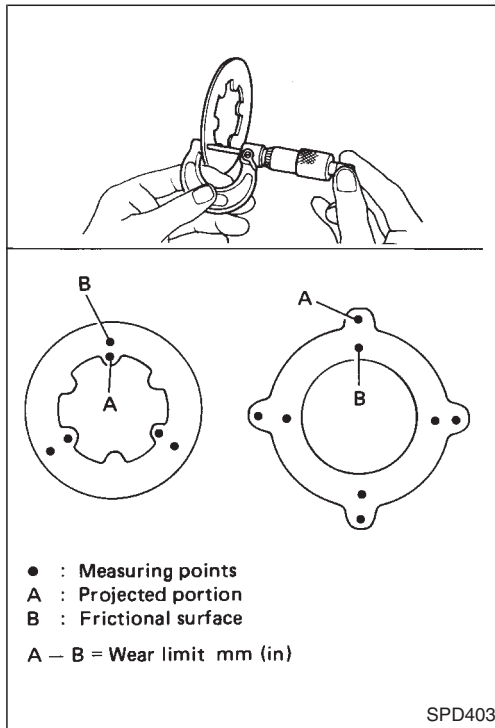
Inspection (Cont'd)

4. Measure frictional surfaces and projected portions of friction disc, friction plate and spring plate.

If any part has worn beyond the wear limit, replace it with a new one that is the same thickness as the projected portion.

Wear limit:

0.1 mm (0.004 in) or less



Adjustment

FRICION DISC AND FRICTION PLATE END PLAY

End play of friction disc and friction plate can be calculated by using the following equation and should be adjusted within the following range.

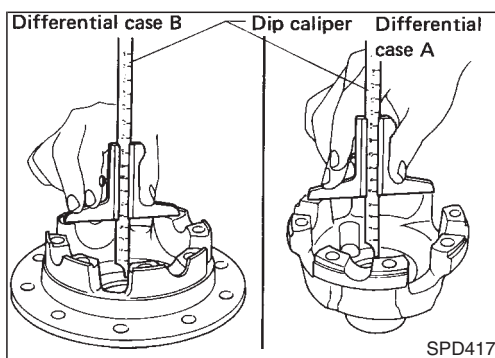
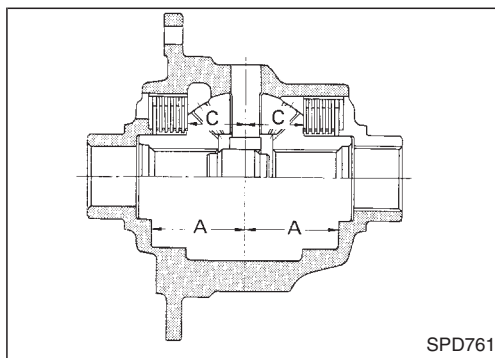
Adjustment can be made by selecting friction disc having two different thicknesses.

End play E:

0.05 - 0.15 mm (0.0020 - 0.0059 in)

$$E = A - (B + C)$$

- A: Length of differential case contact surface to differential case inner bottom.
- B: Total thickness of friction discs, friction plates, spring disc and spring plate in differential case on one side.
- C: Length of differential case contact surface to back side of side gear.



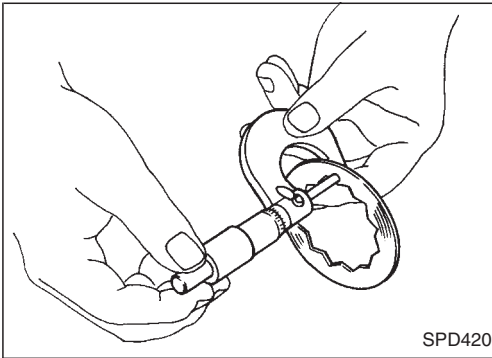
1. Measure values of "A".

Standard length A:

49.50 - 49.55 mm (1.9488 - 1.9508 in)

LIMITED SLIP DIFFERENTIAL (C200)

Adjustment (Cont'd)



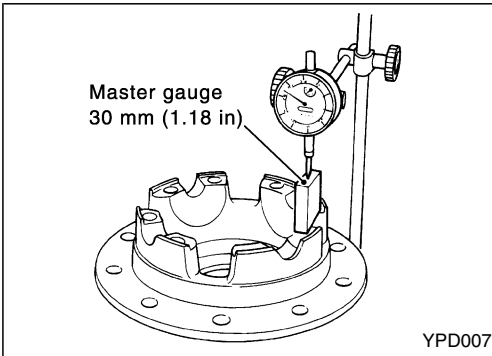
2. Measure thickness of each disc and plate.

Total thickness "B":

19.24 - 20.26 mm (0.7575 - 0.7976 in)

No. of discs and plates (One side):

Friction disc	5
Friction plate	6
Spring disc	1
Spring plate	1

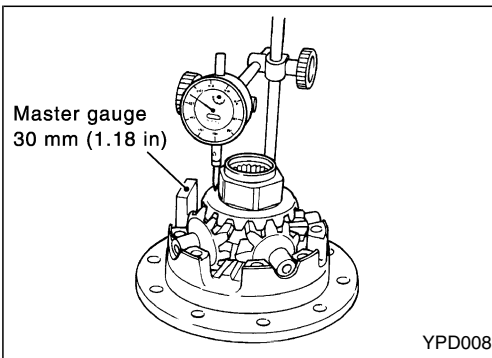


3. Measure values of "C".

(1) Attach a dial indicator to the base plate.

(2) Place differential case B on the base plate, and install a master gauge on case B.

Then adjust the dial indicator scale to zero with its tip on the master gauge.



(3) Install pinion mate gears, side gears and pinion mate shaft in differential case B.

(4) Set dial indicator's tip on the side gear, and read the indication.

Example:

$$\begin{aligned}
 E &= A - D \\
 &= A - (B + C) \\
 &= 0.05 \text{ to } 0.15 \text{ mm} \rightarrow \text{Specified range}
 \end{aligned}$$

$$A = 49.52 \text{ mm}$$

$$B = 19.45 \text{ mm}$$

$$C = 29.7 \text{ mm}$$

$$D = B + C$$

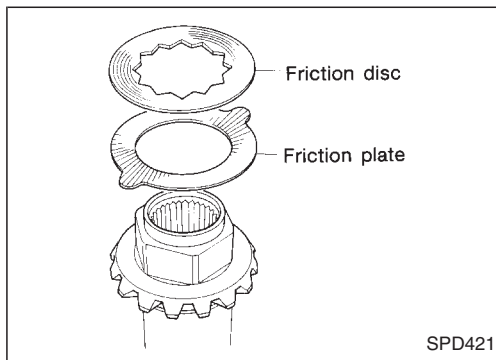
$$\begin{array}{r}
 B \dots\dots\dots 19.45 \\
 + C \dots\dots\dots 29.7 \\
 \hline
 49.15
 \end{array}$$

$$E = A - D$$

$$\begin{array}{r}
 A \dots\dots\dots 49.52 \\
 - D \dots\dots\dots 49.15 \\
 \hline
 0.37
 \end{array}$$

From the above equation, end play of 0.37 mm exceeds the specified range of 0.05 to 0.15 mm.

Select suitable discs and plates to adjust correctly. (Refer to PD-13028.)

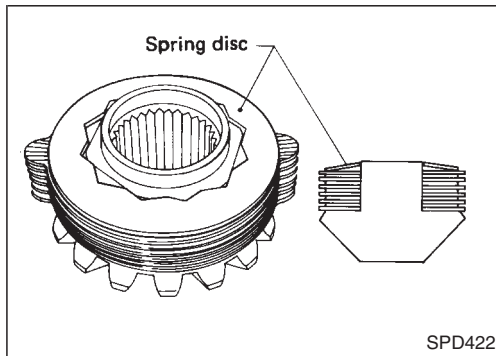


Assembly

Prior to assembling discs and plates, properly lubricate them by dipping them in limited slip differential oil.

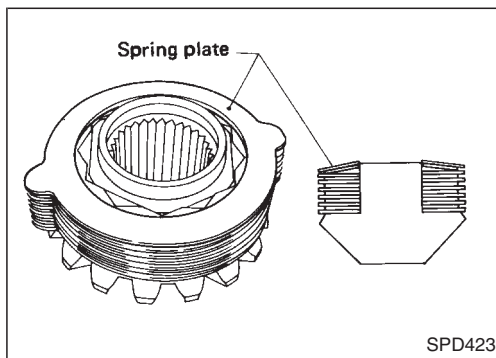
1. Alternately position specified number of friction plates and friction discs on rear of side gear.

Always position a friction plate first on rear of side gear.

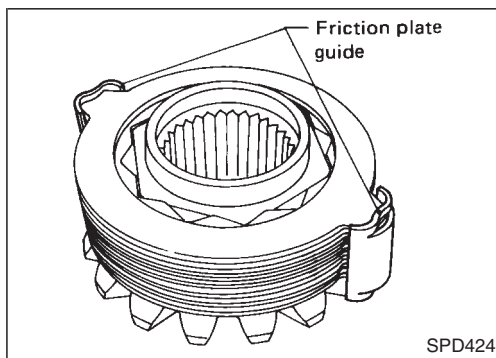


2. Install spring disc.

Align the twelve angular holes in spring disc with the hexagonal area of the side gear.

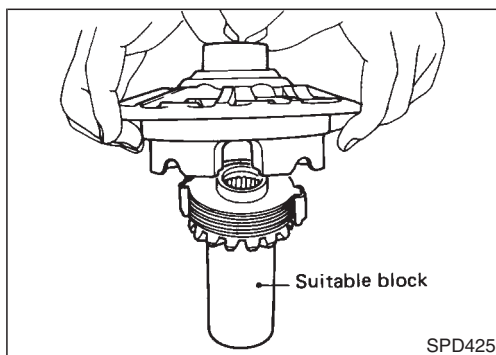


3. Install spring plate.



4. Install friction plate guides.

Correctly align the raised portions of friction plates, and apply grease to inner surfaces of friction plate guides to prevent them from falling.

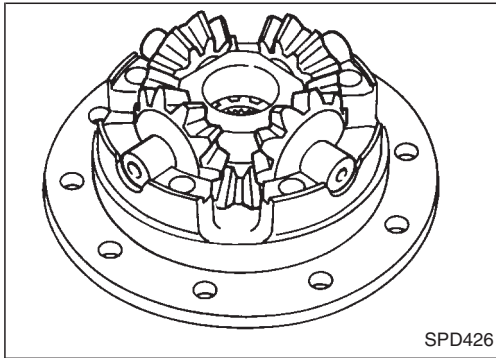


5. Install differential case B over side gear, discs, plates and friction plate guide assembly.

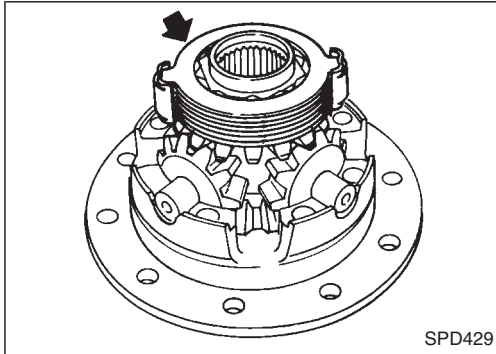
- **Install differential case B while supporting friction plate guides with your middle finger inserted through oil hole in differential case.**
- **Be careful not to detach spring disc from the hexagonal part of the side gear.**

LIMITED SLIP DIFFERENTIAL (C200)

Assembly (Cont'd)



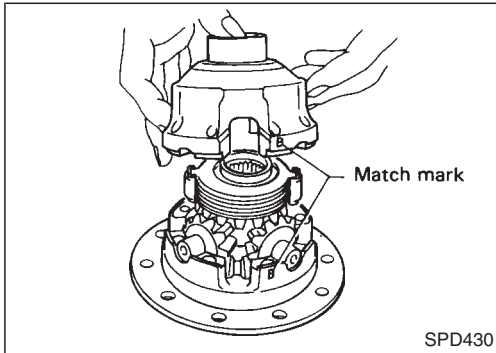
6. Install pinion mate gears and pinion shaft to differential case B.



7. Install side gear to pinion mate gears.

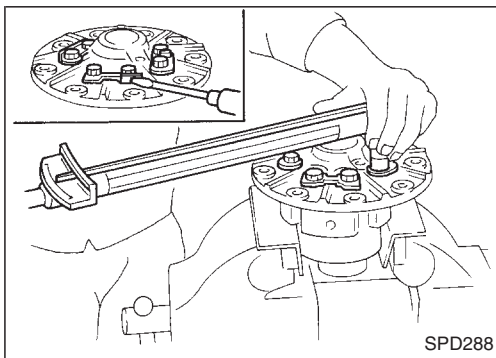
8. Install each disc and plate.

Use same procedures as outlined in steps 1. through 4. above.



9. Install differential case A.

Position differential cases A and B by correctly aligning marks stamped on cases.



10. Tighten differential case bolts.

: 64 - 69 N·m (6.5 - 7.0 kg-m, 47 - 51 ft-lb)

11. Place ring gear on differential case and install new lock straps and bolts.

Tighten bolts in a criss-cross fashion, lightly tapping bolt head with a hammer.

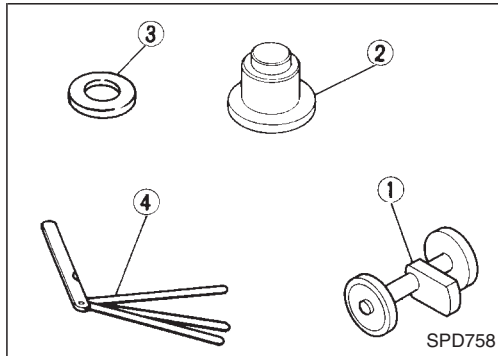
Then bend up lock straps to lock the bolts in place.

12. Install side bearing inner cone.

13. Check differential torque.

ADJUSTMENT (C200)

To avoid confusion while calculating bearing shims, it is absolutely necessary to stay with the metric system. If you measure anything in inches, the results **MUST** be converted to the metric system.



Drive Pinion Height

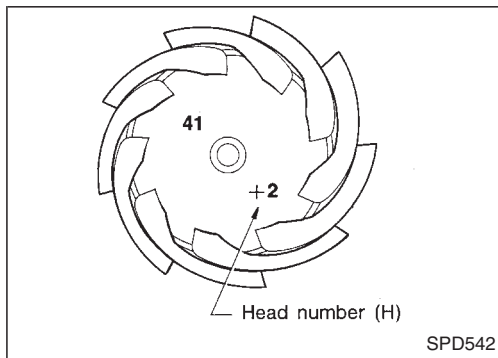
1. First prepare Tools for pinion height adjustment.

Assembly ① ② :

ST3125500

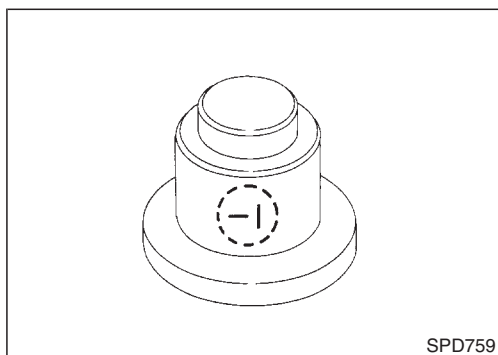
- ① Height Gauge (ST31251000)
 - ② Dummy Shaft (ST31181001)
 - ③ Spacer [thickness: 2.50 mm (0.0984 in)]
 - ④ Feeler Gauge
2. To simplify the job, make a chart, like the one below, to organize your calculations.

LETTERS	HUNDREDTHS OF A MILLIMETER
H: Head number	
D': Figure marked on dummy shaft	
S: Figure marked on height gauge	
N: Measuring clearance	



3. Write the following numbers down in the chart.
H: Head number

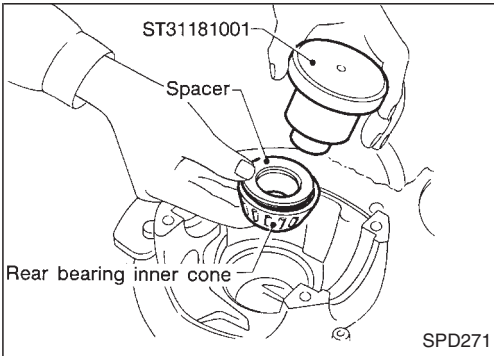
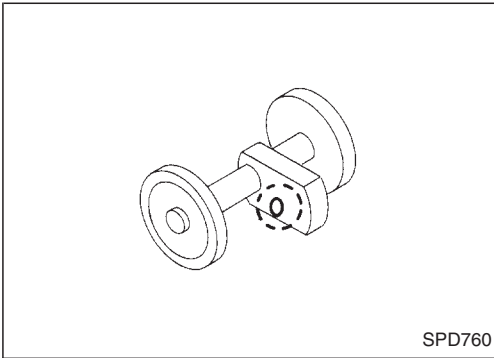
D': Figure marked on dummy shaft



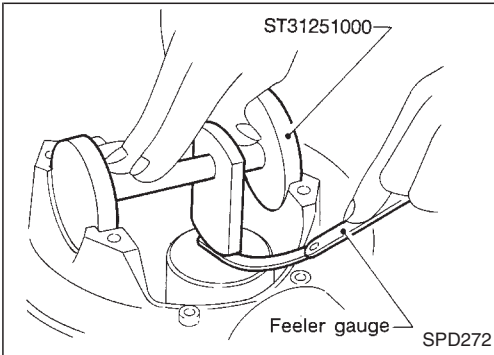
ADJUSTMENT (C200)

Drive Pinion Height (Cont'd)

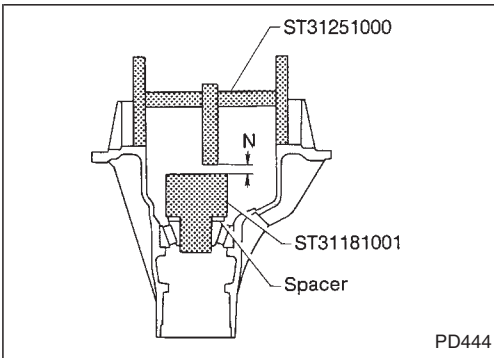
S: Figure marked on height gauge



4. Place pinion rear bearing inner race and Tools on gear carrier.



5. Attach Tool (Height gauge) to gear carrier, and measure the clearance between the height gauge tip and the dummy shaft face.



ADJUSTMENT (C200)

Drive Pinion Height (Cont'd)

6. Substitute these values into the equation to calculate the thickness of the washer.

If values signifying H, D' and S are not given, regard them as zero and calculate.

$$T \text{ (Thickness of washer)} = N - [(H - D' - S) \times 0.01] + 3.05$$

Example:

$$N = 0.30$$

$$H = 2$$

$$D' = -1$$

$$S = 0$$

$$\begin{aligned} T &= N - [(H - D' - S) \times 0.01] + 3.05 \\ &= 0.30 - [(2 - (-1) - 0) \times 0.01] + 3.05 \end{aligned}$$

(1)	H.....	2
	- D'	-(-1)
		3

	- S.....	-0
		3

(2)		3
		x 0.01
		0.03

(3)	N.....	0.30
		-0.03
		0.27

(4)		0.27
		+3.05
		3.32

$$\therefore T = 3.32$$

7. Select the proper washer. (Refer to PD-13028.)

If you cannot find the desired thickness of washer, use washer with thickness closest to the calculated value.

Example:

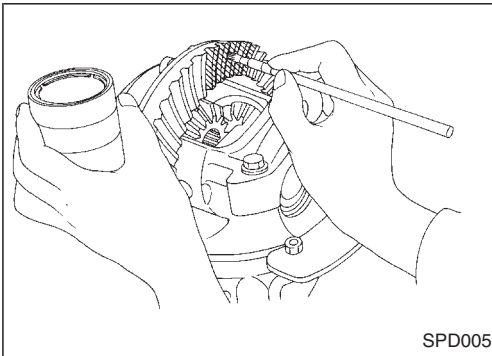
Calculated value ... T = 3.32 mm

Used washer ... T = 3.33 mm

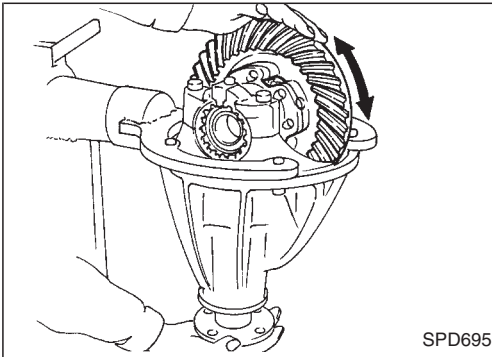
Tooth Contact

Gear tooth contact pattern check is necessary to verify correct relationship between ring gear and drive pinion.

Hypoid gear sets which are not positioned properly in relation to one another may be noisy, or have short life span or both. With a pattern check, the most desirable contact for low noise level and long life can be assured.



SPD005

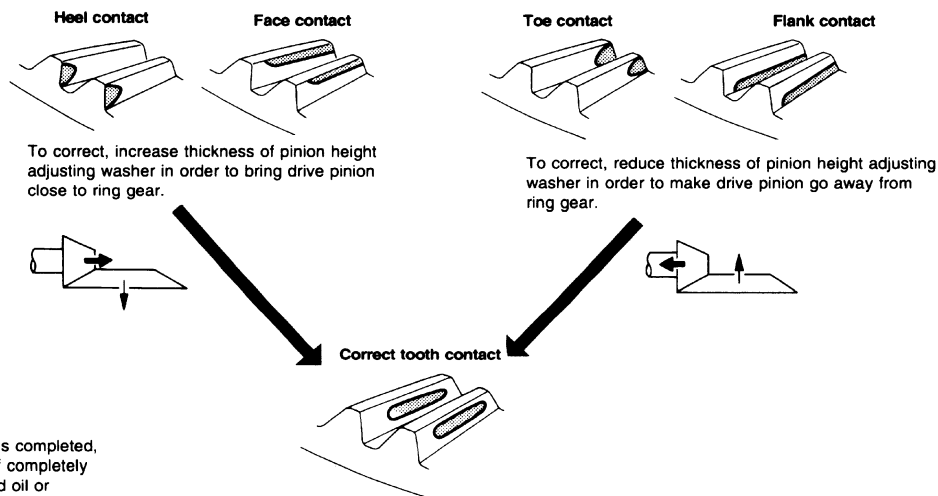


SPD695

1. Thoroughly clear ring gear and drive pinion teeth.
2. Sparingly apply a mixture of powdered ferric oxide and oil or equivalent to 3 or 4 teeth of ring gear drive side.

3. Hold companion flange steady by hand and rotate the ring gear in both directions.

Usually the pattern will be correct if you have calculated the shims correctly and the backlash is correct. However, in rare cases you may have to use trial-and-error processes until you get a good tooth contact pattern. The tooth pattern is the best indication of how well a differential has been set up.



When adjustment is completed, be sure to wipe off completely the ferric oxide and oil or their equivalent.

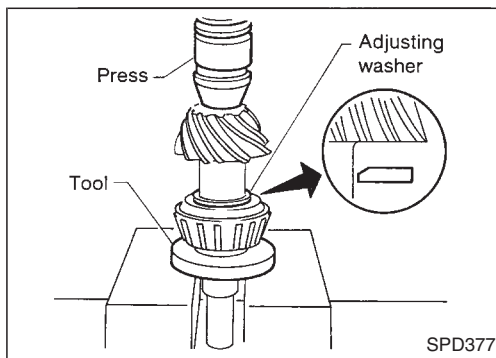
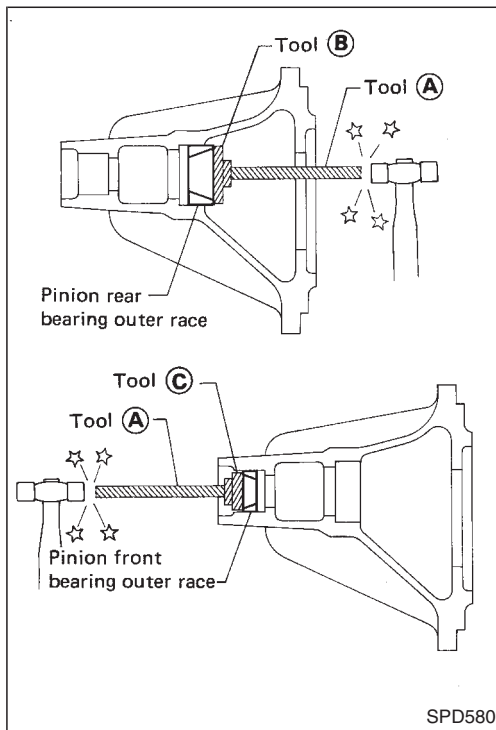
NPD003

Differential Carrier

1. Press-fit front and rear bearing outer races with Tools.

Tool number:

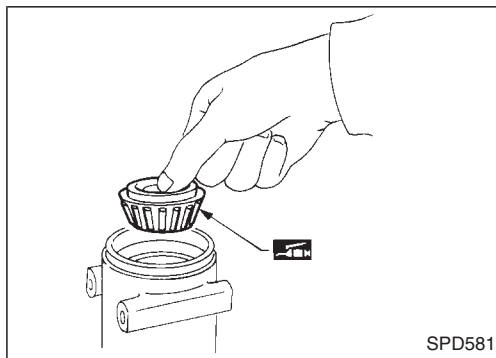
- Ⓐ ST30611000
- Ⓑ ST30621000
- Ⓒ ST30613000



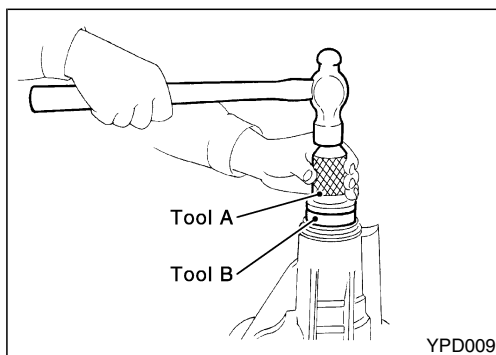
2. Select drive pinion height adjusting washer, referring to Adjustment.
3. Install drive pinion adjusting washer in drive pinion, and press-fit pinion rear bearing inner cone in it with press and Tool.

Tool number:

ST30901000



4. Place pinion front bearing inner cone in gear carrier.



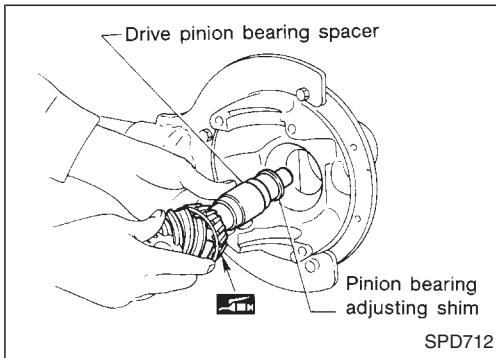
5. Apply multi-purpose grease to cavity at sealing lips of oil seal. Install front oil seal.

Tool number:

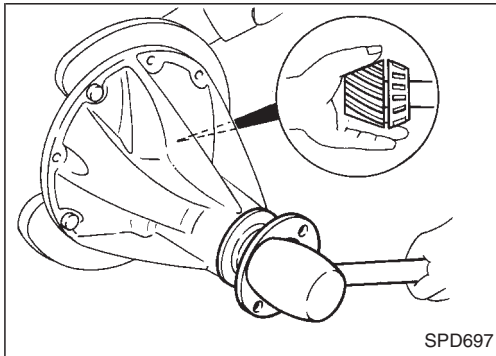
- Ⓐ ST30720000
- Ⓑ KV38102510

ASSEMBLY (C200)

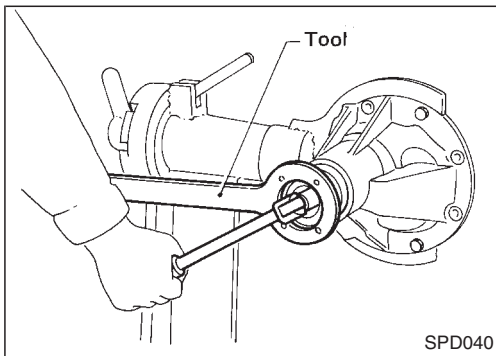
Differential Carrier (Cont'd)



6. Install drive pinion bearing spacer, pinion bearing adjusting shim and drive pinion in gear carrier.



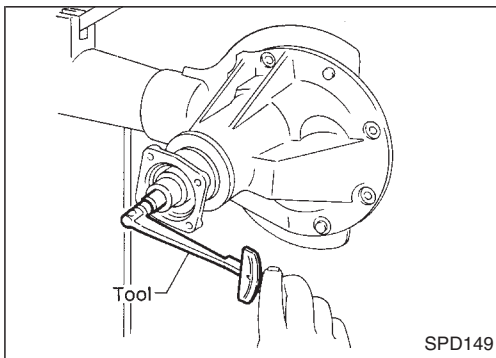
7. Insert companion flange into drive pinion by tapping the companion flange with a soft hammer.



8. Tighten pinion nut to specified torque.
The threaded portion of drive pinion and pinion nut should be free from oil or grease.

Tool number:

KV38104700



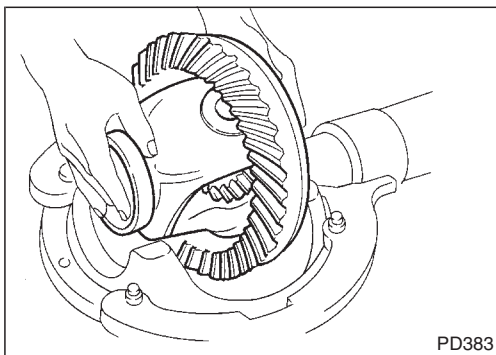
9. Turn drive pinion in both directions several times, and measure pinion bearing preload.

Tool number:

ST3127S000

Pinion bearing preload:

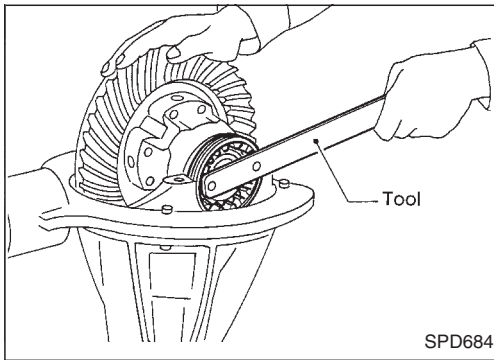
1.1 - 1.6 N·m (11.2 - 16.3 kg-cm, 9.7 - 14.1 in-lb)



10. Install differential case assembly with side bearing outer races into gear carrier.

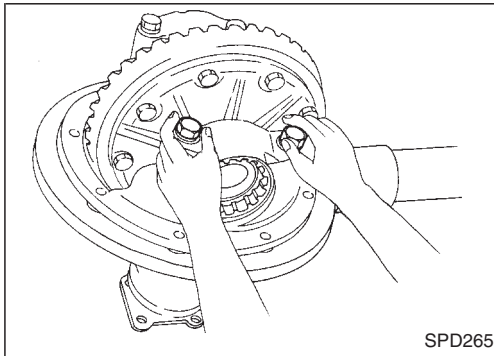
ASSEMBLY (C200)

Differential Carrier (Cont'd)



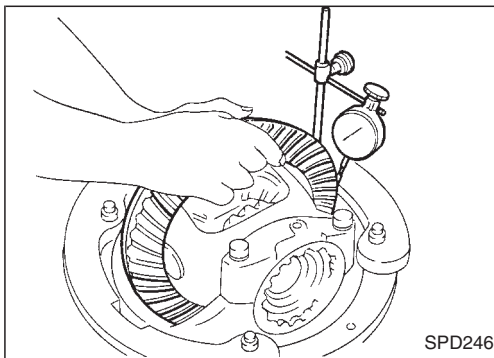
11. Position side bearing on gear carrier with threads properly engaged; screw in adjusters lightly at this stage of assembly.

Tool number:
ST32580000



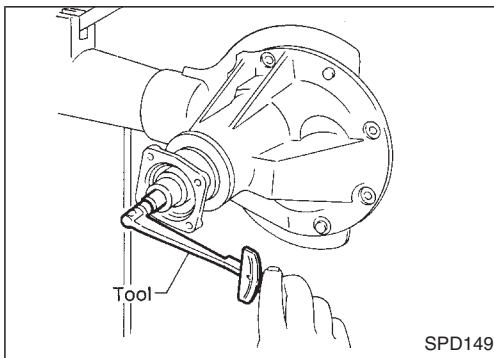
12. Align mark on bearing cap with that on gear carrier and install bearing cap on gear carrier.

- Do not tighten at this point to allow further tightening of side bearing adjusters.



13. Tighten both right and left side bearing adjusters alternately and measure ring gear backlash and total preload at the same time. Adjust right and left side bearing adjusters by tightening them alternately so that proper ring gear backlash and total preload can be obtained.

Ring gear-to-drive pinion backlash:
0.10 - 0.20 mm (0.0039 - 0.0079 in)



- When checking preload, turn drive pinion in both directions several times to set bearing rollers.

Tool number:
ST3127S000

The total pinion bearing preload value with the differential case assembly should be in accordance with the same value measured without the differential case assembly. (See point 9.)

The relationship between both is:

Pinion bearing preload

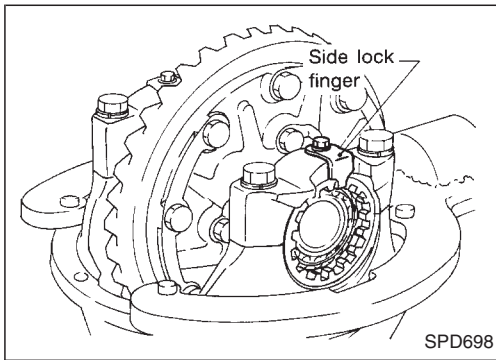
With differential case assembly		Without differential case assembly	
kg-cm	N-m	kg-cm	N-m
14	1.4	17 - 23	1.7 - 2.3
15	1.5	18 - 24	1.8 - 2.4
16	1.6	19 - 25	1.9 - 2.5
17	1.7	20 - 26	2.0 - 2.6

ASSEMBLY (C200)

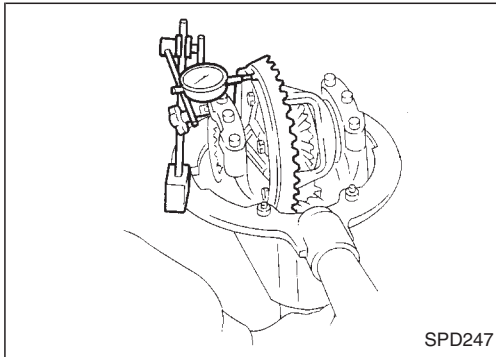
Differential Carrier (Cont'd)

14. Tighten side bearing cap bolts.

: 88 - 98 N·m (9.0 - 9.9 kg-m, 65 - 72 ft-lb)



15. Install side lock finger in place to prevent rotation during operation.



16. Check runout of ring gear with a dial indicator.

Runout limit:

0.08 mm (0.0031 in)

- If backlash varies excessively in different places, the variance may have resulted from foreign matter caught between the ring gear and the differential case.
- If the backlash varies greatly when the runout of the ring gear is within a specified range, the hypoid gear set or differential case should be replaced.

17. Check tooth contact. (Refer to PD-13023.)

SERVICE DATA AND SPECIFICATIONS (SDS)

Propeller Shaft

GENERAL SPECIFICATIONS

Unit: mm (in)

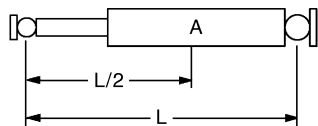
MODEL	KA24E	H/T	WAGON
Portion	Front	Rear	
Propeller shaft model	0F71H	2S80B	
Number of joints	2		
Coupling method with transmission	Flange type	Sleeve type	
Types of journal bearings	Solid type (dis-assembly type)	Solid type	
Shaft length (Spider to spider) mm (in)	569 (22.40)	750 (29.53)	950 (37.40)
Shaft outer diameter mm (in)	65 (2.56)	65 (2.56)	

INSPECTION AND ADJUSTMENT

Front propeller shaft

Unit: mm (in)

Propeller shaft model	0F71H
Journal axial play limit	0.02 (0.0008)
Propeller shaft runout limit	0.6 (0.024)
Measuring point A	L/2

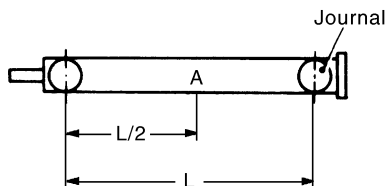


YPD011

Rear propeller shaft

Unit: mm (in)

Propeller shaft model	2S80B
Journal axial play limit	0.02 (0.0008)
Propeller shaft runout limit	0.6 (0.024)
Measuring point A	L/2



YPD012

Available snap rings

0F71H models

Thickness mm (in)	ID color	Part number
1.25 (0.0492)		37150-2X800
1.30 (0.0512)		37149-2X800
1.35 (0.0531)		37148-2X800
1.40 (0.0551)		37147-2X800
1.45 (0.0571)		37146-2X800

2S80B models

Thickness mm (in)	ID color	Part number
1.45 (0.0571)		37146-7F000
1.50 (0.0591)		37147-7F000
1.55 (0.0610)		37148-7F000
1.60 (0.0630)		37149-7F000
1.65 (0.0650)		37150-7F000
1.70 (0.0669)		37151-7F000
1.75 (0.0689)		37152-7F000

SERVICE DATA AND SPECIFICATIONS (SDS)

Final Drive

GENERAL SPECIFICATIONS

Front final drive	KA24E
Final drive model	C200 LSD
Gear ratio	4.625
Number of teeth (Ring gear/Drive pinion)	37/8
Oil capacity (approx.) ℓ (Imp pt)	1.3 (2-1/4)
Number of pinion gears	4

FRONT AXLE & FRONT SUSPENSION

SECTION FA

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<SUPPLEMENT-I>

NO CHANGES

<SUPPLEMENT-II>

NO CHANGES

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<SUPPLEMENT-V> (For Australia)

NO CHANGES

<SUPPLEMENT-VI> (For Europe and Australia)

NO CHANGES

<SUPPLEMENT-VII> (For Europe)

NO CHANGES

<SUPPLEMENT-VIII> (For Africa and Gulf Countries)

SERVICE DATA AND SPECIFICATIONS		General Specifications	8002
(SDS)	8002	Inspection and Adjustment	8002

<SUPPLEMENT-IX> (For Europe, Africa and Gulf Countries)

NO CHANGES

<SUPPLEMENT-X> (For Africa and Gulf Countries)

NO CHANGES

<SUPPLEMENT-XI> (For Europe)

NO CHANGES

<SUPPLEMENT-XII> (For Africa, Gulf Countries and Central & South America)

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FRONT AXLE & FRONT SUSPENSION

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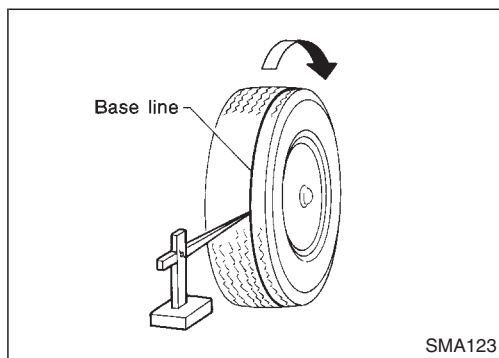
CHECK AND ADJUSTMENT

Front Wheel Alignment

TOE-IN

1. Mark a base line across the tread.

After lowering front of vehicle, move it up and down to eliminate friction, and set steering wheel in straight ahead position.



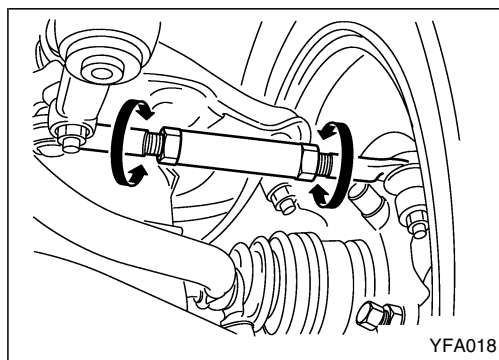
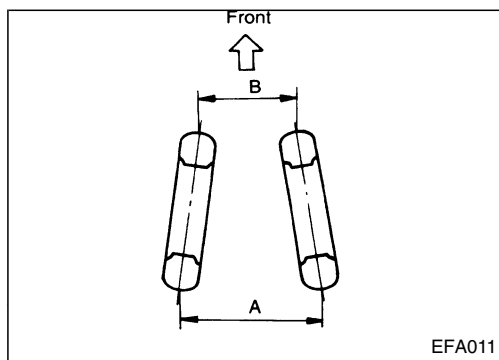
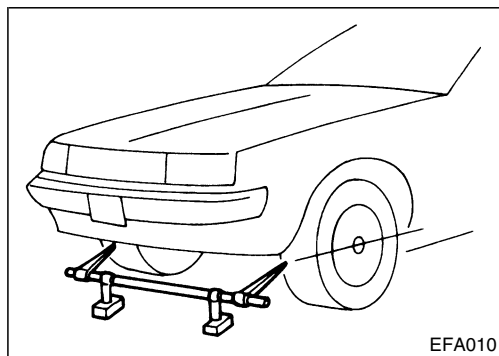
2. Measure toe-in.

Measure distance "A" and "B" at the same height as hub center.

Toe-in (Unladen):

Refer to SDS.

Toe-in = A - B

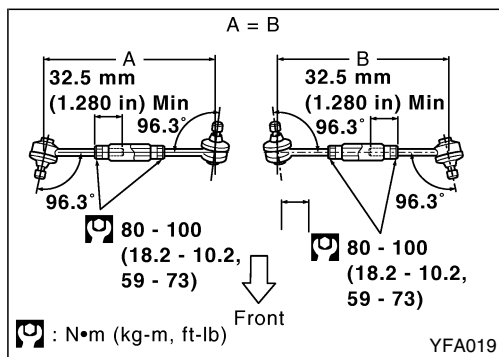


3. Adjust toe-in by varying the length of steering tie-rods.

(1) Loosen lock nuts.

(2) Adjust toe-in by turning the left and right tie-rod tubes an equal amount.

(3) Tighten lock nuts to the specified torque.



Make sure that the tie-rod bars are screwed into the tie-rod tube more than 32.5 mm (1.280 in).

Make sure that the tie-rods are the same length.

Standard length (A = B):

For Russia

287 mm (11.30 in)

Except for Russia

281 mm (11.06 in)

REAR AXLE & REAR SUSPENSION

SECTION **RA**

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<SUPPLEMENT-II>

NO CHANGES

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NO CHANGES

<SUPPLEMENT-VI> (For Europe and Australia)

NO CHANGES

<SUPPLEMENT-VII> (For Europe)

NO CHANGES

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<SUPPLEMENT-X> (For Africa and Gulf Countries)

NO CHANGES

<SUPPLEMENT-XI> (For Europe)

NO CHANGES

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NO CHANGES

<SUPPLEMENT-XIII> (For General)

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REAR AXLE & REAR SUSPENSION

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Diagram illustrating the rear suspension assembly, showing components and their corresponding torque specifications (N·m, kg-m, ft-lb).

Components and Torque Specifications:

- Upper spring seat
- Upper link
- Shock absorber
- Panhard rod
- Coil spring
- Stabilizer bar connecting rod
- Stabilizer bar
- Lower link W/O ABS
- Rear wheel sensor bracket

Torque Specifications:

- 108 - 147 (11.0 - 15.0, 80 - 108)
- 22 - 25 (2.2 - 2.5, 16 - 19)
- 108 - 147 (11.0 - 15.0, 80 - 108)
- 25 - 32 (2.6 - 3.3, 19 - 24)
- 108 - 147 (11.0 - 15.0, 80 - 108)
- 51 - 64 (5.2 - 6.5, 38 - 47)
- 108 - 147 (12 - 15, 87 - 108)

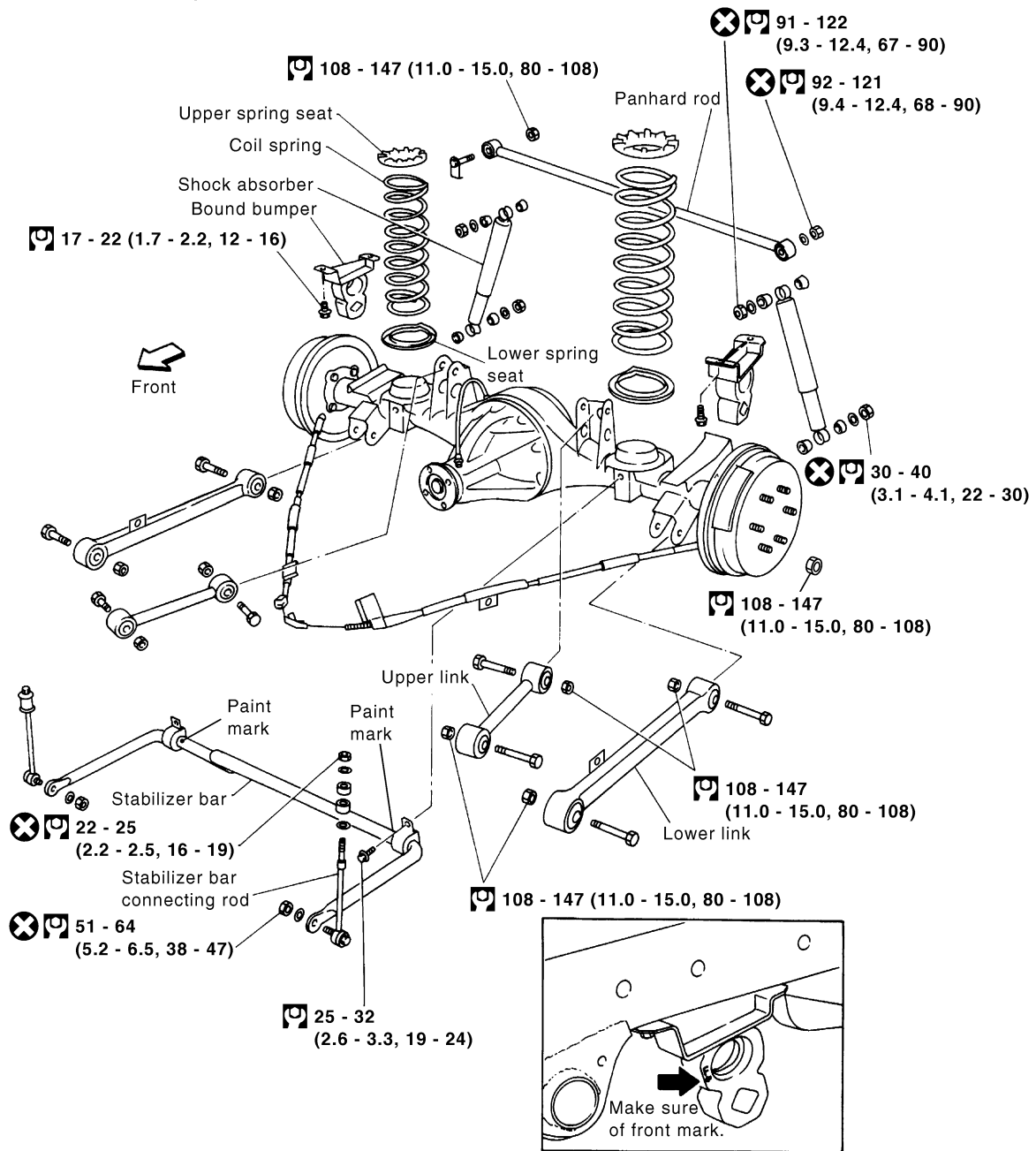
Notes:

- When installing each rubber part, final tightening must be carried out under unladen condition* with tires on ground.
- * Fuel, radiator coolant and engine oil full. Spare tire, jack, hand tools and mats in designated positions.

REAR SUSPENSION

When installing each rubber part, final tightening must be carried out under unladen condition* with tires on ground.

* Fuel, radiator coolant and engine oil full. Spare tire, jack, hand tools and mats in designated positions.



: N•m (kg-m, ft-lb)

BRAKE SYSTEM

SECTION **BR**

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<SUPPLEMENT-I>

NO CHANGES

<SUPPLEMENT-II>

NO CHANGES

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<SUPPLEMENT-X> (For Africa and Gulf Countries)

NO CHANGES

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BRAKE SYSTEM

SECTION **BR**

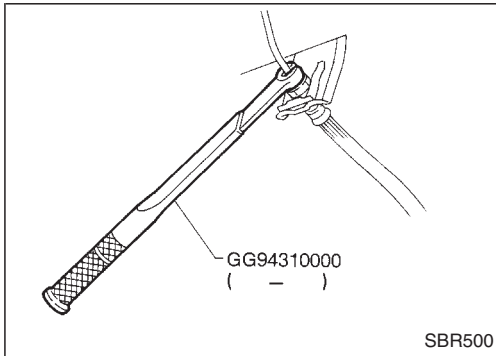
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BRAKE HYDRAULIC LINE

Inspection

Check brake lines (tubes and hoses) for cracks, deterioration or other damage. Replace any damaged parts.



Installation

CAUTION:

- Refill with new brake fluid "DOT 4".
- Never reuse drained brake fluid.

1. Tighten all flare nuts and connecting bolts.

Flare nut:

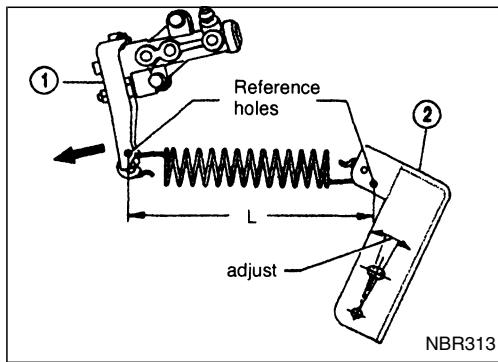
: 15 - 18 N·m (1.6 - 1.8 kg-m, 11 - 13 ft-lb)

Connecting bolt:

: 17 - 20 N·m (1.7 - 2.0 kg-m, 12 - 14 ft-lb)

2. Refill until new brake fluid comes out of each air bleeder valve.
3. Bleed air. Refer to "Bleeding Procedure".

LOAD SENSING VALVE



Inspection and Adjustment

To adjust the LSV correctly, proceed as follows:

- With unladen vehicle (12 liters of fuel, radiator coolant and engine oil are full). Spare tire, hand tools and mats in designated positions. Ensure all doors are closed and no one is inside of the car. Check the length of LSV spring "L".
- If the spring length is different from that specified, move the regulation lever (2) until the specified value is obtained. Move the LSV lever (1) until it contacts the stopper bolt and recheck the spring length.

Sensor spring length "L"

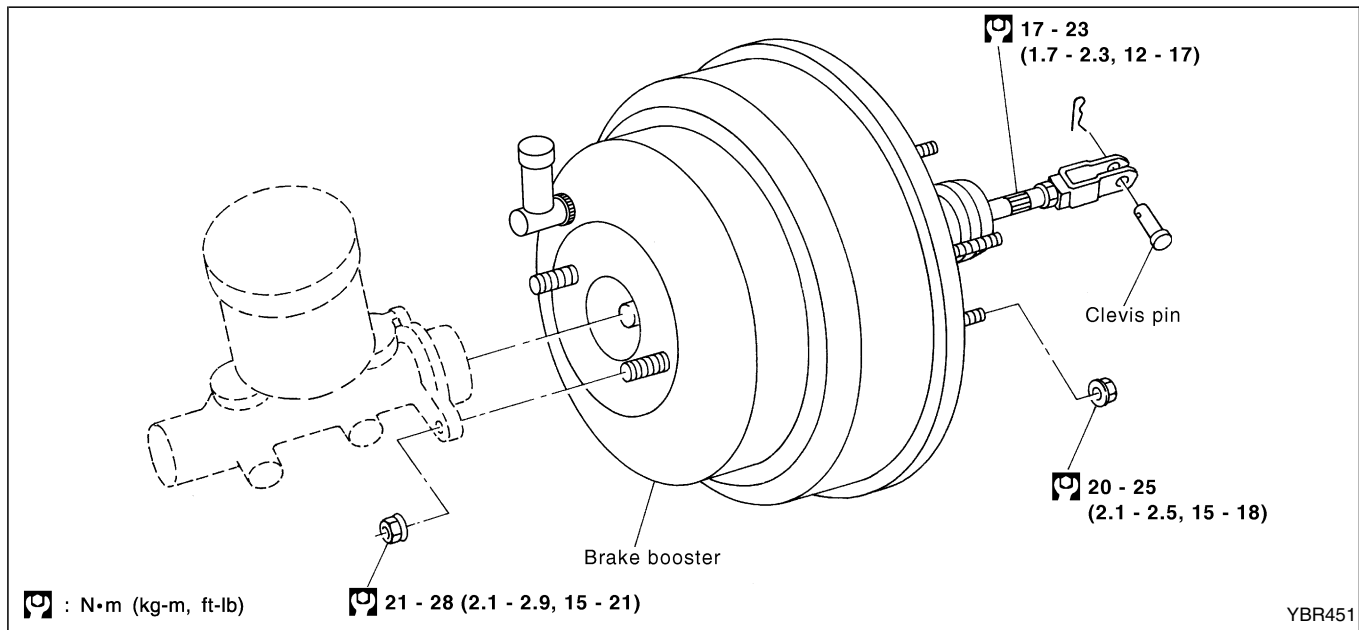
Hardtop: 211 mm (8.31 in)

Wagon: 209 mm (8.23 in)

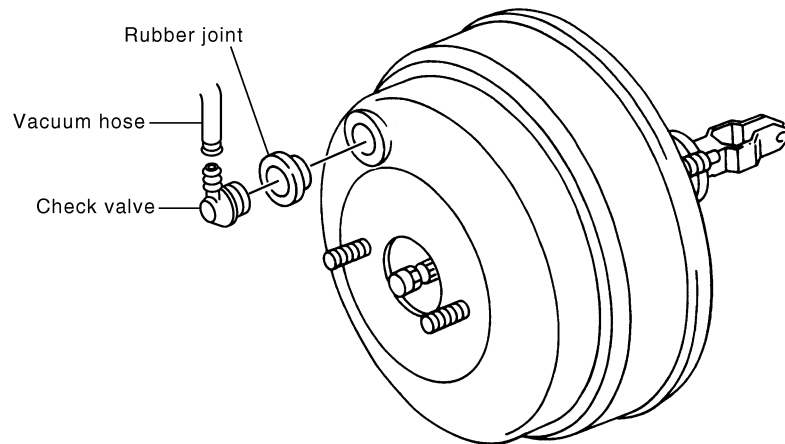
NOTE: Do not disturb stopper bolt.

BRAKE BOOSTER

Removal and Installation



VACUUM HOSE

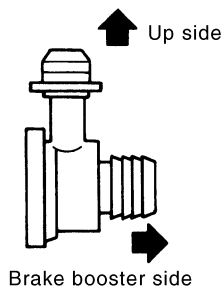


YBR447

Inspection

HOSES AND CONNECTORS

- Check condition of vacuum hoses and connectors.
- Check vacuum hoses and check valve for air tightness.

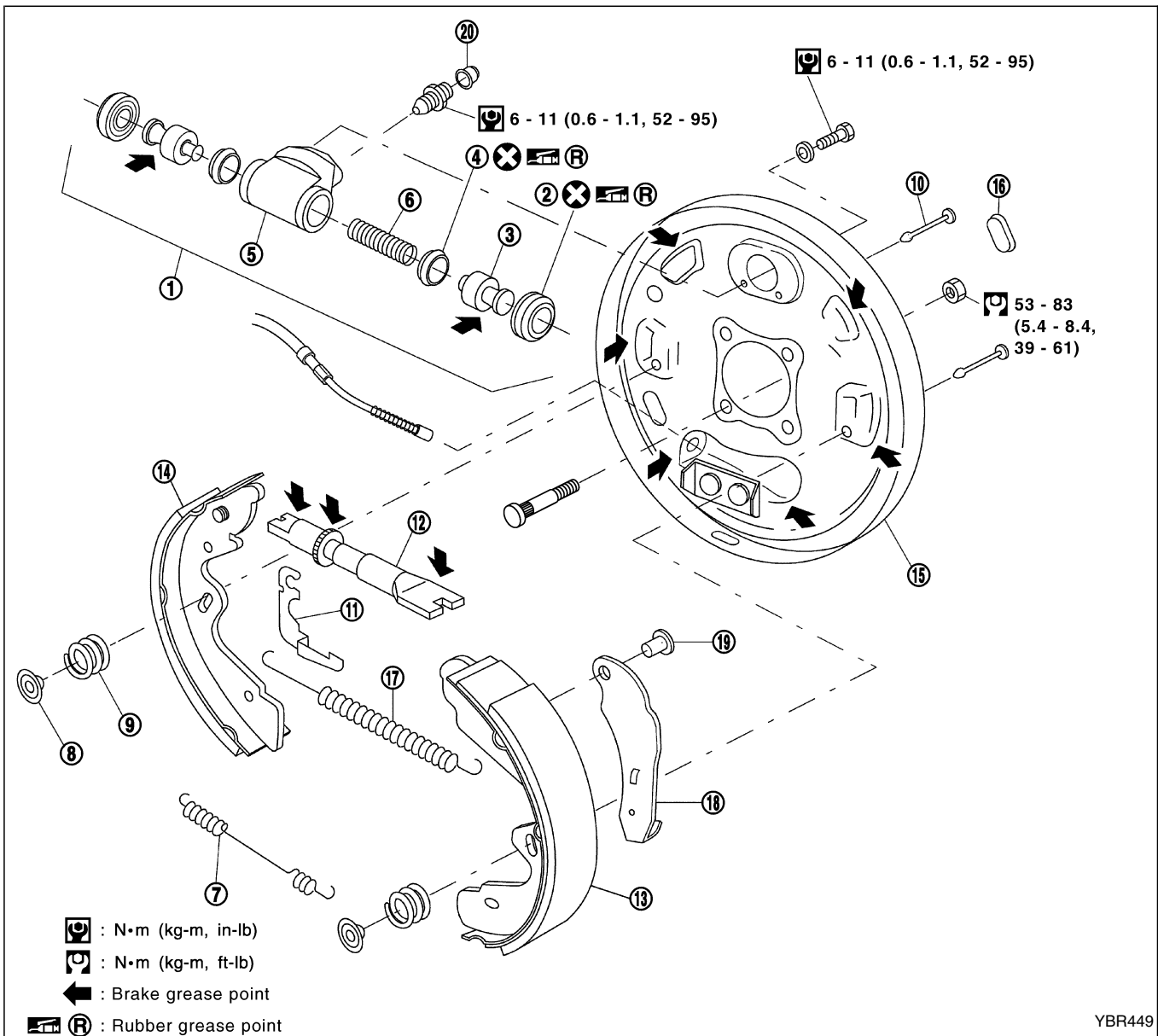


YBR448

CHECK VALVE

- Check vacuum with a manual vacuum pump.

Connect to booster side	Vacuum should exist.
Connect to engine side	Vacuum should not exist.



- | | | |
|---------------------------|-------------------------|----------------------|
| ① Wheel cylinder assembly | ⑧ Hold down retainer | ⑮ Back plate |
| ② Boot | ⑨ Shoe hold-down spring | ⑯ Plug |
| ③ Piston | ⑩ Shoe hold-down pin | ⑰ Shoe return spring |
| ④ Piston cup | ⑪ Pawl | ⑱ Toggle lever |
| ⑤ Cylinder body | ⑫ Adjuster assembly | ⑲ Pin |
| ⑥ Spring | ⑬ Trailing shoe | ⑳ Dust cap |
| ⑦ Retaining shoe spring | ⑭ Leading shoe | |

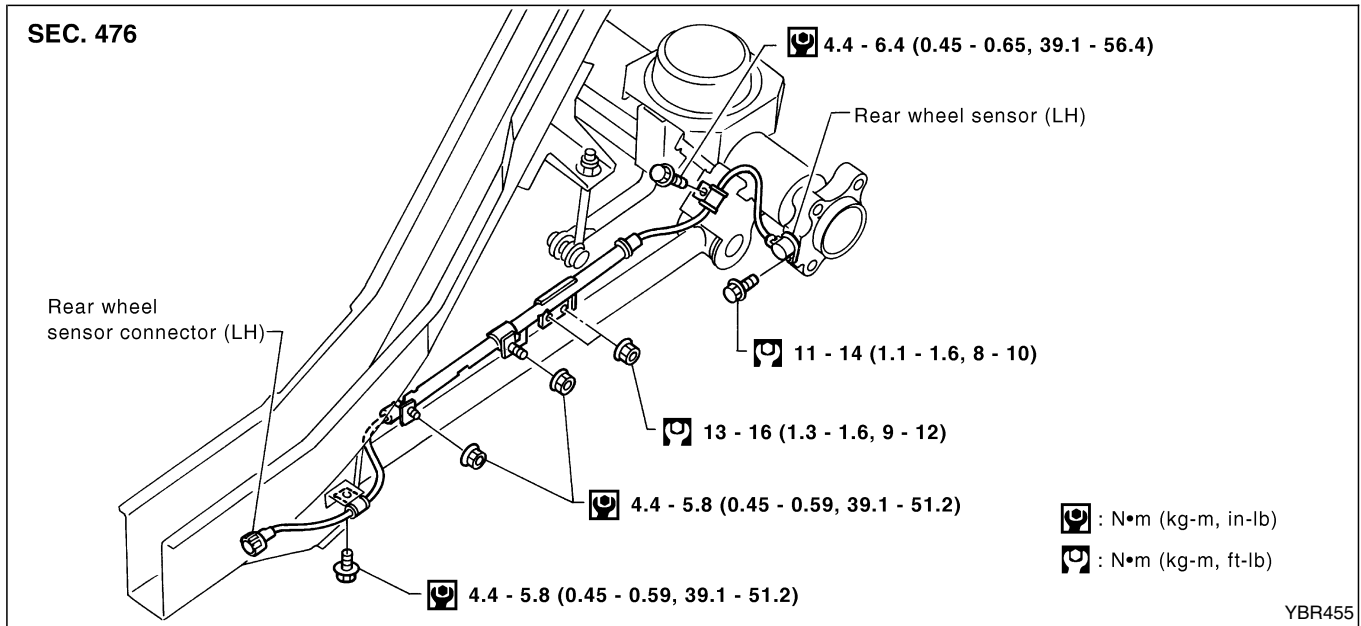
BR-13006

Removal and Installation

CAUTION:

Be careful not to damage sensor edge and sensor rotor teeth. When removing the front or rear wheel hub assembly, disconnect the ABS wheel sensor from the assembly and move it away.

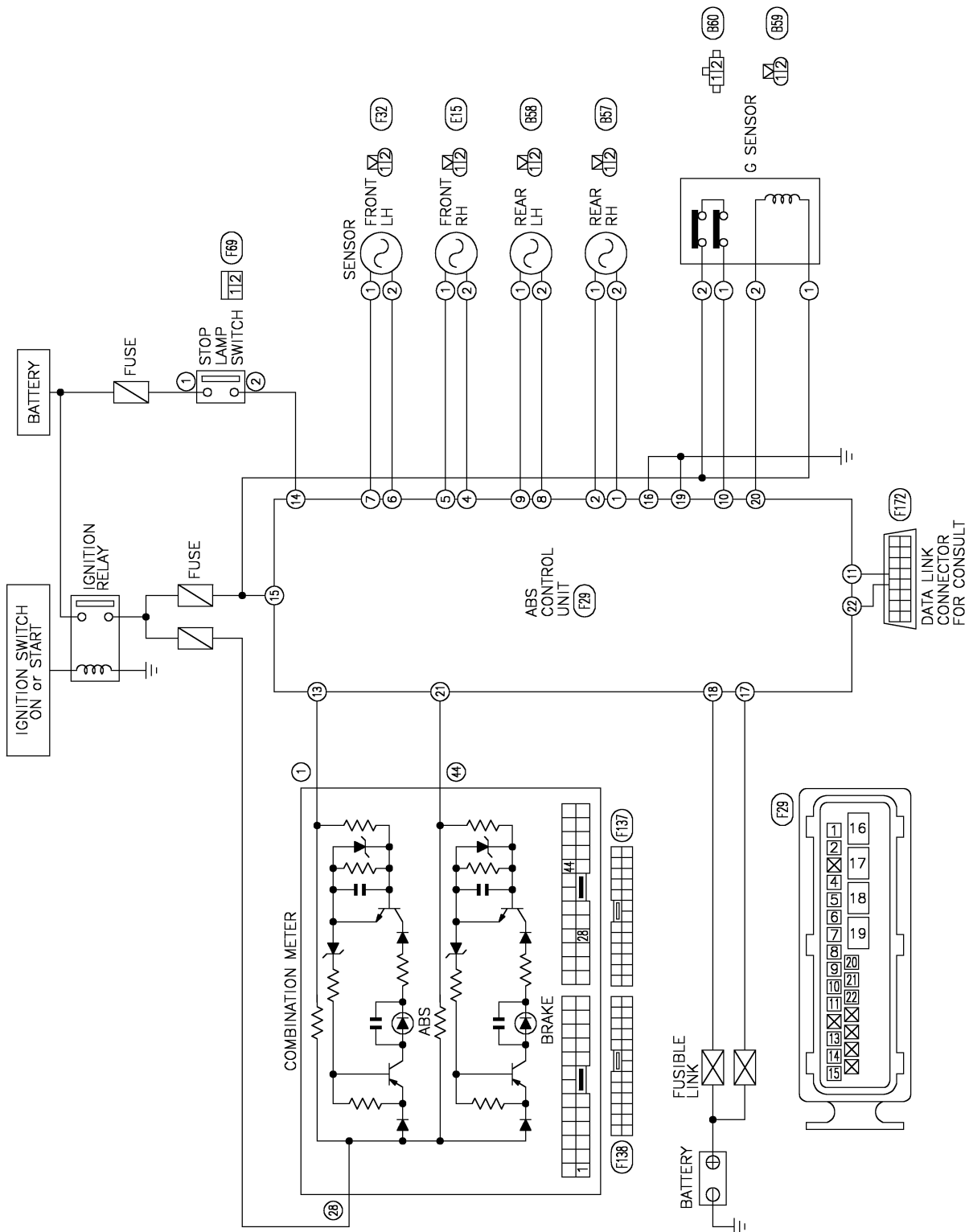
REAR WHEEL SENSOR



TROUBLE DIAGNOSES

Circuit Diagram for Quick Pinpoint Check

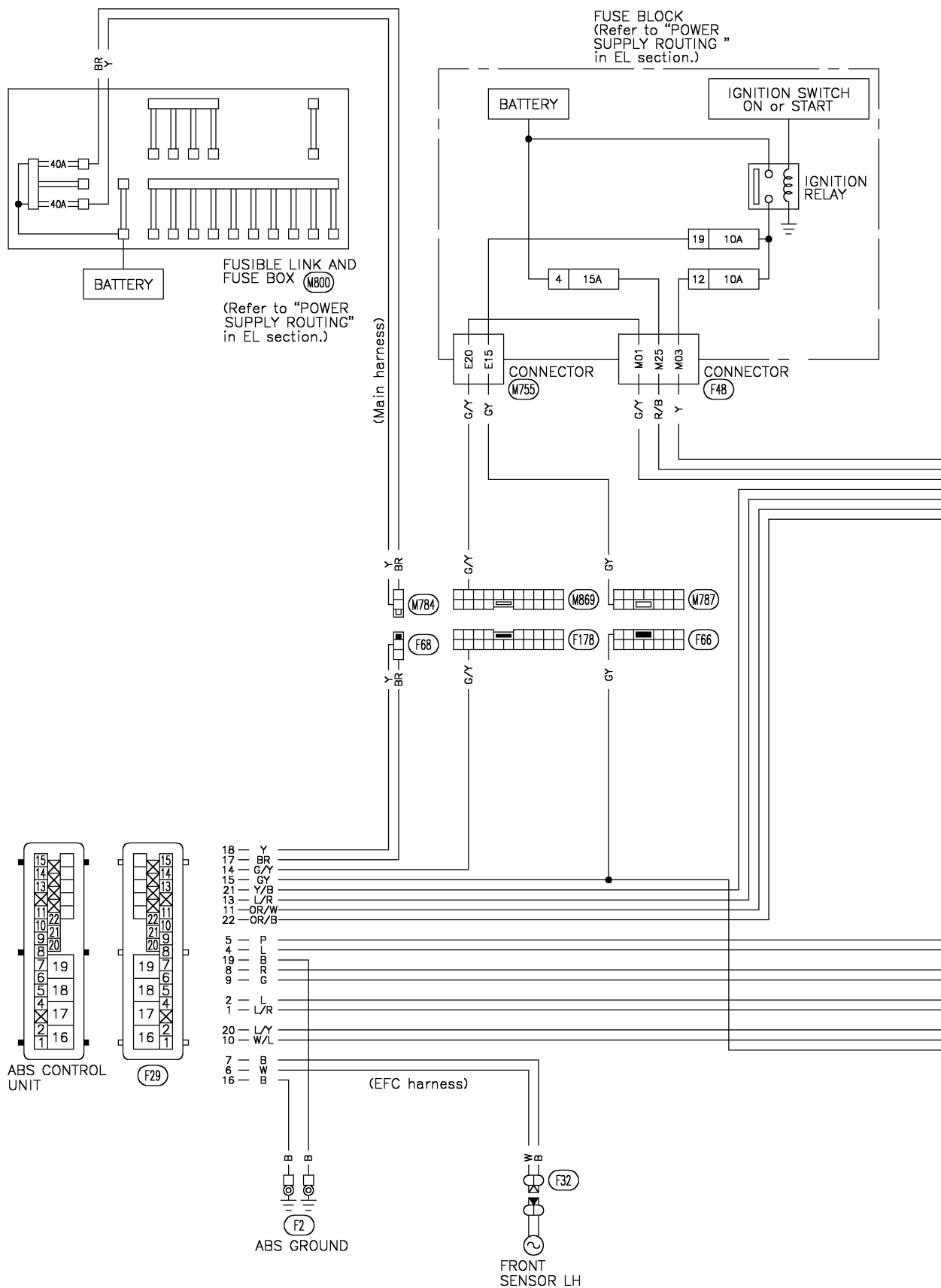
FOR RUSSIA



TROUBLE DIAGNOSES

Wiring Diagram — ABS —

FOR RUSSIA



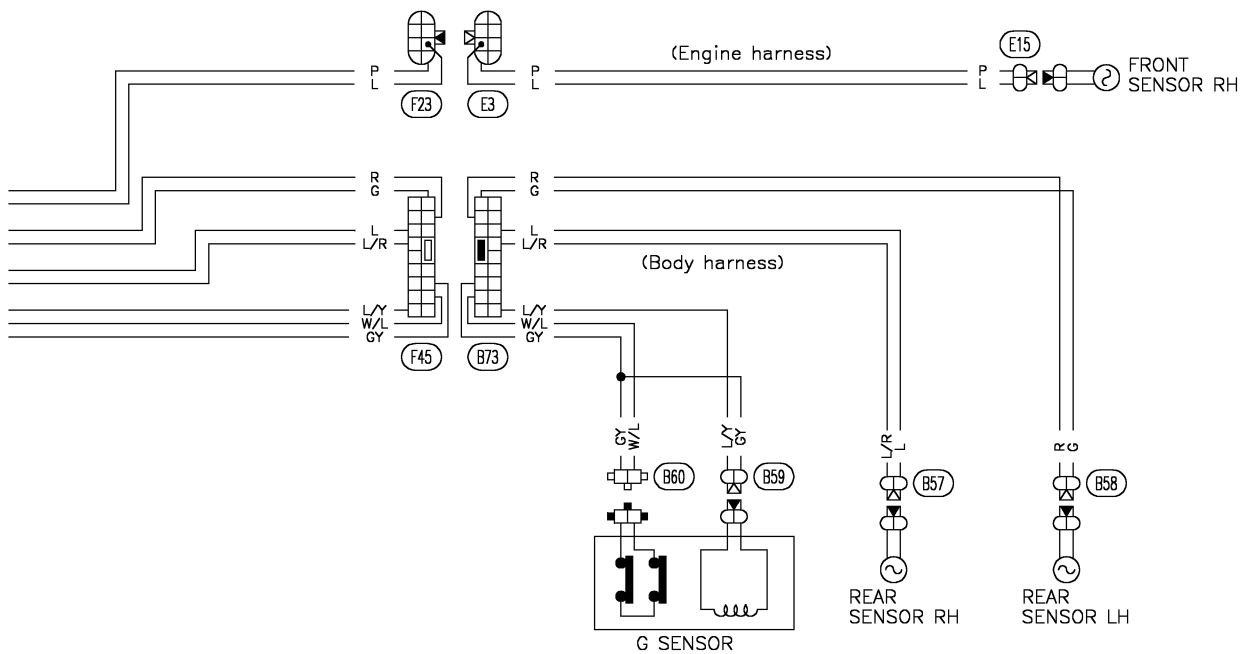
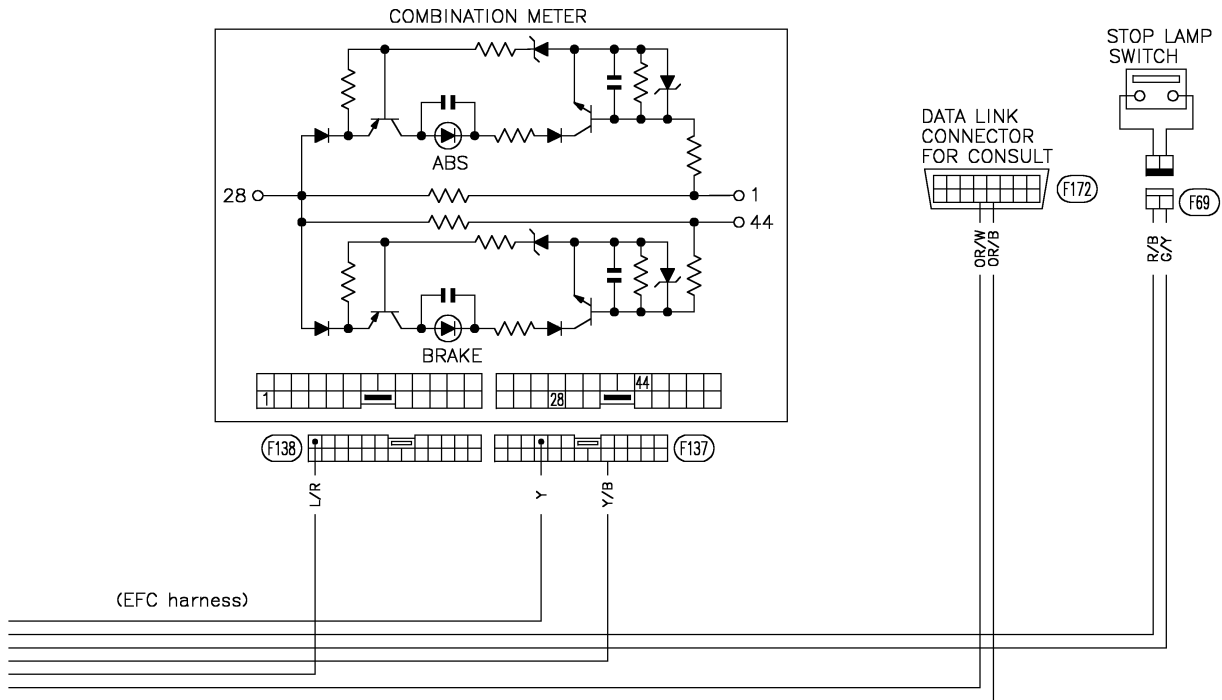
YBR445

BR-13009

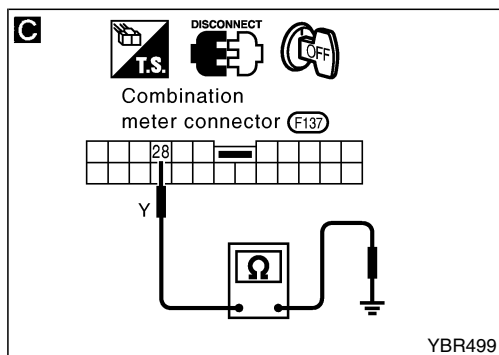
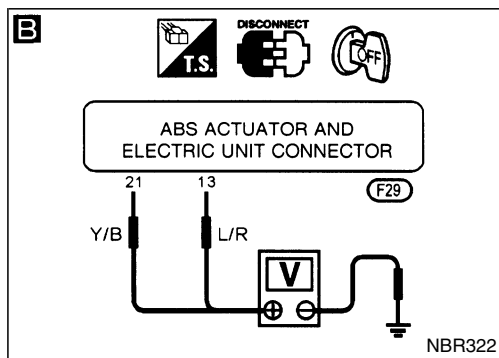
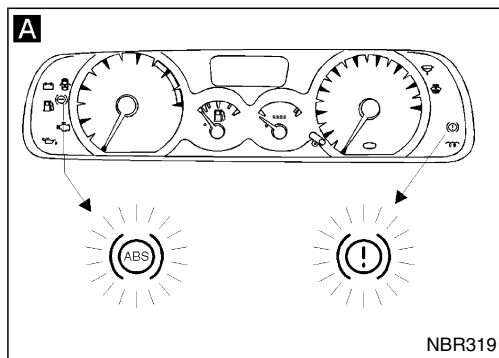
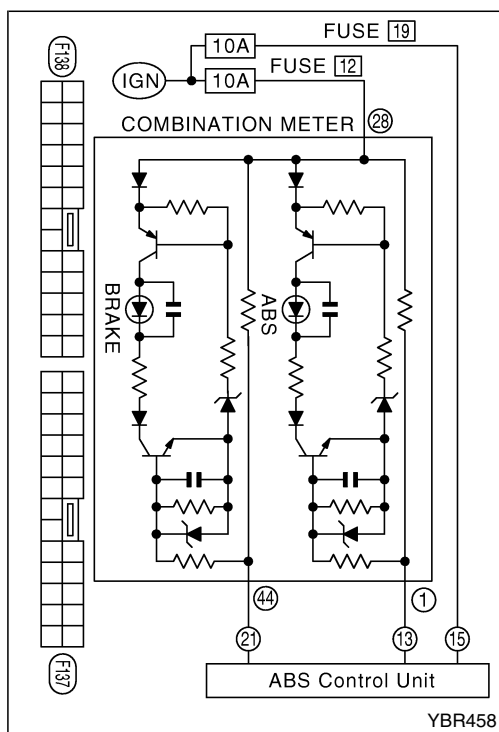
<http://vnx.su/>

TROUBLE DIAGNOSES

Wiring Diagram — ABS — (Cont'd)



YBR442



Diagnostic Procedure 1 (Not self-diagnostic item)

Warning lamp does not come on when ignition switch is turned ON.

CHECK FUSE.

Check 10A fuse 12. For fuse layout, refer to POWER SUPPLY ROUTING EL section.

NG → Replace fuse.

OK

A

CHECK ABS (and BRAKE) WARNING LAMP(S) ACTIVATE

Disconnect ABS actuator and electric unit connector.

Does the warning lamp(s) activate?

Yes → (A) (Go to next page.)

No

B

CHECK HARNESS FOR SHORT.

1. Disconnect ABS connector and electric unit connector.
2. Check voltage between ABS actuator and electric unit connector (F29) (body side) terminals 21, 13 and ground. **Battery voltage should not exist.**

NG → Repair harness or connector.

OK

C

Check voltage between combination connector (F137) terminal 28 and ground. **Battery voltage should exist.**

NG → Replace harness or connector.

OK

CHECK WARNING LAMP(S).

1. Turn ignition switch to "OFF" position.
2. Check ABS (and Brake) warning lamp(s).

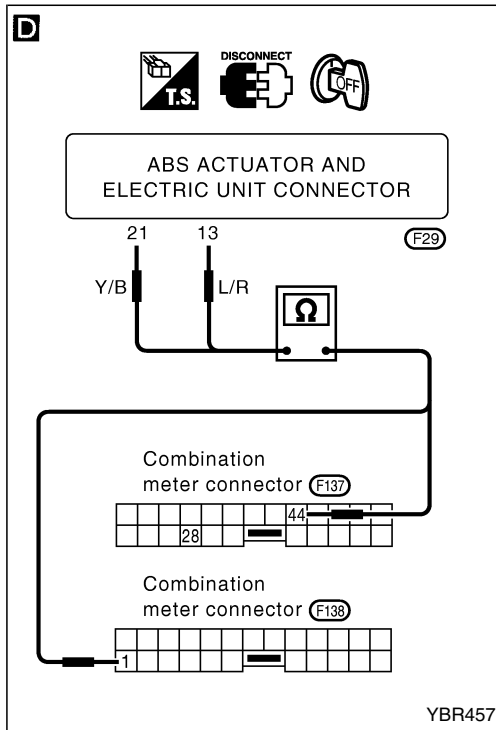
NG → Replace bulb(s).

OK

(A)

TROUBLE DIAGNOSES

Diagnostic Procedure 1 (Not self-diagnostic item) (Cont'd)



D

CHECK HARNESS FOR SHORT.

1. Disconnect combination meter connector (F138).
2. Check continuity between ABS actuator and electric unit connector (F29) and combination meter connector (F138).

	F29	F138	Continuity
Terminal	(19)	(1)	Yes

NG

Replace harness or connector(s).

OK

D

CHECK HARNESS FOR SHORT.

1. Disconnect combination meter connector (F137).
2. Check continuity between ABS actuator and electric unit connector (F29) and combination meter connector (F137).

	F29	F137	Continuity
Terminal	(21)	(44)	Yes

NG

Replace harness or connector(s).

OK

Check combination meter.

NG

CHECK HARNESS CONNECTOR.
Check ABS actuator and electric unit pin terminals for damage or connection of ABS actuator and electric unit harness connector. Reconnect ABS actuator and electric unit harness connector. Then retest.

OK

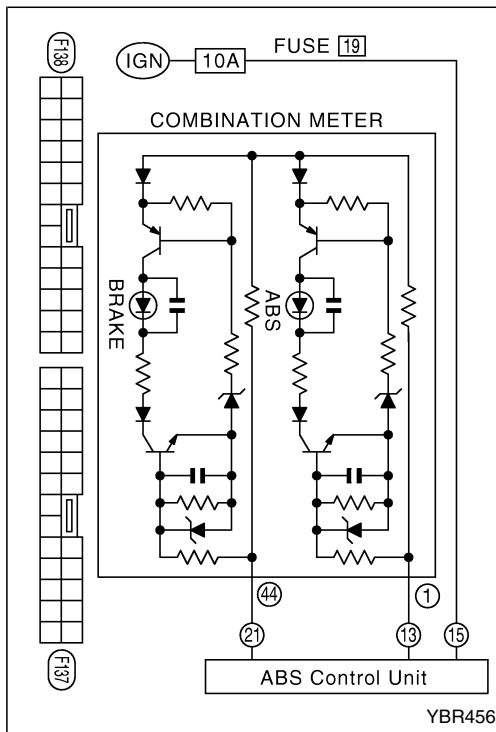
Inspection end

NG

REPLACE.
Replace ABS actuator and electric unit.

TROUBLE DIAGNOSES

Diagnostic Procedure 2 (Warning lamp stays on when ignition switch is turned ON)



CHECK FUSE.
Check 10A fuse (F19). For fuse layout, refer to POWER SUPPLY ROUTING in EL section.

NG → A (Go to next page.)

OK

A

CHECK WARNING LAMP.

1. Disconnect ABS actuator and electric unit connector.
2. Connect suitable wire between ABS actuator and electric unit harness connector (F29) terminals (13), (21) and ground.
Warning lamp should not activate.

NG → B (Go to next page.)

OK

CHECK HARNESS CONNECTOR.

Check ABS actuator and electric unit pin terminals for damage or the connection of ABS actuator and electric unit harness connector. Reconnect ABS actuator and electric unit harness connector. Then retest.

OK → Inspection end

NG

B

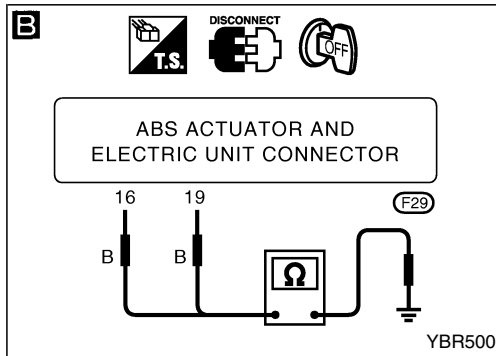
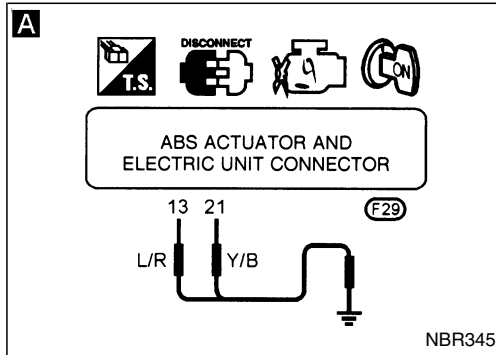
CHECK ABS MOTOR GROUND.

1. Turn ignition switch OFF.
2. Disconnect ABS actuator and electric unit connector.
3. Check continuity between ABS actuator and electric unit connector (F29) (body side) terminals (16), (19) and ground.
Continuity should exist.

NG → Check the following.
 • Harness connector (F29)
 • Harness for open or short between ABS actuator and electric unit and ground
 If NG, repair harness or connector.

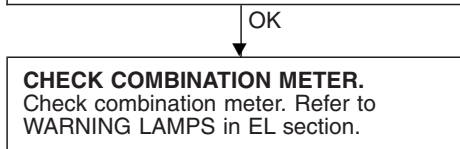
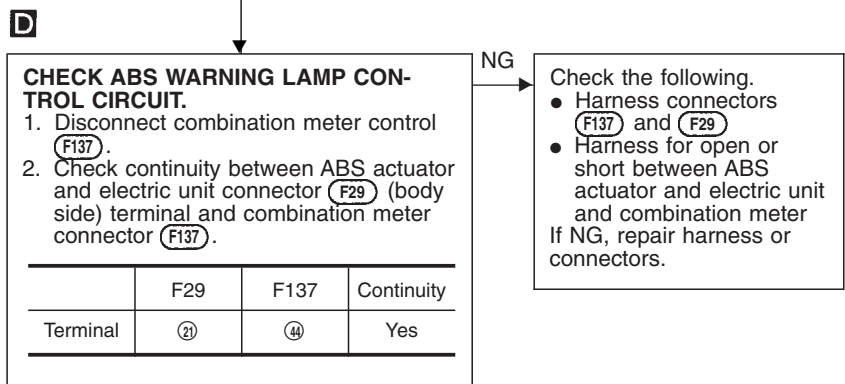
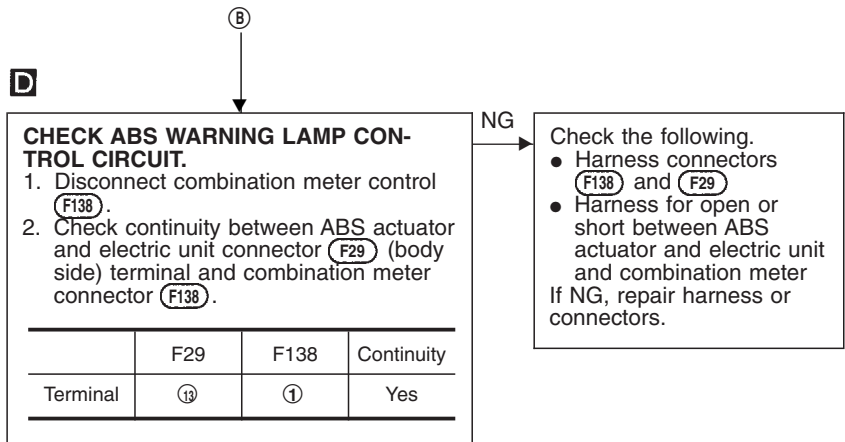
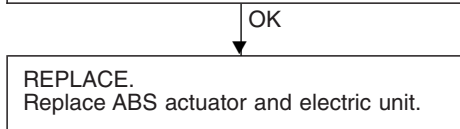
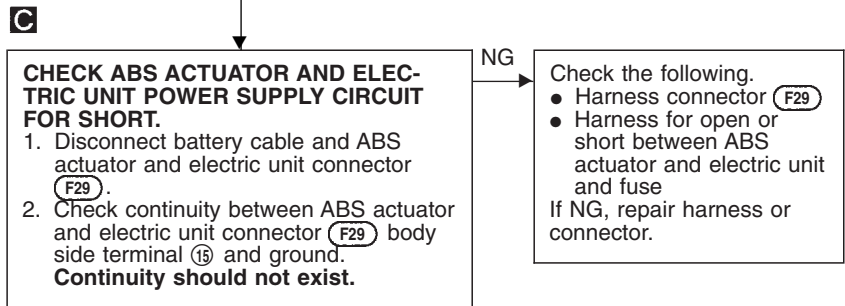
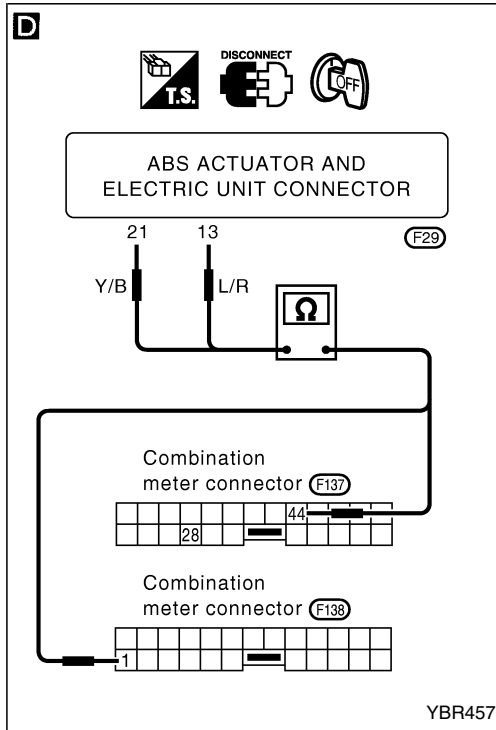
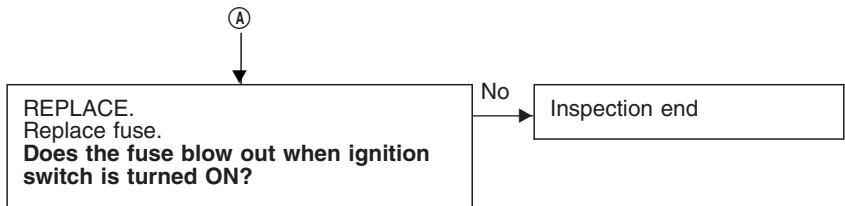
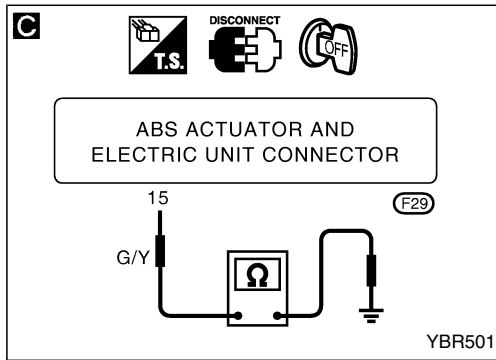
OK

REPLACE.
Replace ABS actuator and electric unit.



TROUBLE DIAGNOSES

Diagnostic Procedure 2 (Warning lamp stays on when ignition switch is turned ON) (Cont'd)



SERVICE DATA AND SPECIFICATIONS (SDS)

General Specifications

Applied model	Wagon (LWB)		Hardtop (SWB)		Wagon (LWB)		Hardtop (SWB)		
	Without ABS				With ABS				
Front brake									
Brake model		LD28VA							
Cylinder bore diameter	mm (in)	43 (1.69)							
Pad length x width x thickness	mm (in)	144.85 x 48.5 x 15.5 (5.70 x 1.90 x 0.61)							
Rotor outer diameter x thickness	mm (in)	276.7 x 26.1 (10.89 x 1.02)							
Drum brake									
Brake model		LT28							
Cylinder bore diameter	mm (in)	23.8 (0.94)		22.0 (0.87)				20.6 (0.81)	
Lining Length x width x thickness	mm (in)								
Leading		111 x 55 x 8.95 (4.37 x 2.17 x 0.35)							
Trailing		114 x 55 x 3.95 (4.49 x 2.17 x 0.16)							
Drum inner Diameter	mm (in)	280 (11.02)							
Master cylinder	mm (in)								
Cylinder bore diameter		25.4 (1.0)							
Control valve									
Valve model		Load Sensing Valve				—			
Split point [kPa (bar, kg/cm², psi)] x reducing ratio		Variable x 0.23		Variable x 0.15					
Brake booster									
Booster model		Lucas LSC 115 (8" + 9")							
Diaphragm diameter		mm (in)		Primary: 203.2 (8) Secondary: 228.6 (9)					
Specified brake fluid		DOT 4							

SERVICE DATA AND SPECIFICATIONS (SDS)

Inspection and Adjustment

DISC BRAKE

Unit: mm (in)

Brake mode	LD28VA
Pad wear limit	
Minimum thickness	2.0 (0.079)
Rotor repair limit	
Minimum thickness	24.0 (0.94)

DRUM BRAKE

Unit: mm (in)

Lining wear limit	
Minimum thickness	1.52 (0.06)
Drum repair limit	
Maximum inner diameter	280.5 (11.04)
Out-of-roundness	0.05 (0.0020) or less

BRAKE PEDAL

Unit: mm (in)

	RHD	LHD
Free pedal height (H)	196 - 206 (7.7 - 8.1)	210 - 220 (8.3 - 8.7)
Full stroke (D)	137.7 - 147.7 (5.42 - 5.81)	142.5 - 152.5 (5.61 - 6.0)
Clearance between pedal stopper and threaded end of stop lamp switch (C)	0.3 - 1.0 (0.012 - 0.039)	
Pedal free play at clevis (A)	1 - 3 (0.039 - 0.118)	

PARKING BRAKE

Item	Control type	Center lever
Number of notches [under force of 196 N (20 kg, 44 lb)]		9 - 10
Number of notches (when warning switch comes on)		1

STEERING SYSTEM

SECTION **ST**

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NO CHANGES

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NO CHANGES

<SUPPLEMENT-V> (For Australia)

NO CHANGES

<SUPPLEMENT-VI> (For Europe and Australia)

NO CHANGES

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<SUPPLEMENT-IX> (For Europe, Africa and Gulf Countries)

NO CHANGES

<SUPPLEMENT-X> (For Africa and Gulf Countries)

NO CHANGES

<SUPPLEMENT-XI> (For Europe)

NO CHANGES

<SUPPLEMENT-XII> (For Africa, Gulf Countries and Central & South America)

NO CHANGES

<SUPPLEMENT-XIII>

NO CHANGES

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When you read wiring diagrams:

- Read GI section, “HOW TO READ WIRING DIAGRAMS”.
- See EL section, “POWER SUPPLY ROUTING” for power distribution circuit.
- See EL section, for NATS information and wiring diagram.

★ For Seat belt, refer to MA section.

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Removal and Installation	13009	Removal and Installation — Side Air Bag	
Rear Door	13011	(Satellite) Sensor	13050
Power Window.....	13012	Removal — Side Air Bag Module.....	13051
Power Door Lock (Super Lock)	13014	Installation — Side Air Bag Module.....	13052
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Front Seat Belt.....	13042	Does Not Turn On	13086
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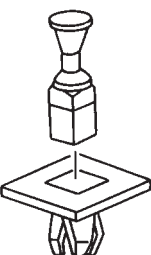
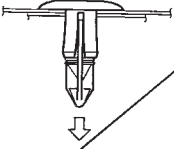
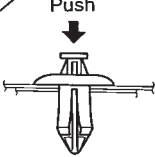
When you read wiring diagrams:

- Read GI section, “HOW TO READ WIRING DIAGRAMS”.
- See EL section, “POWER SUPPLY ROUTING” for power distribution circuit.
- See EL section, for NATS information and wiring diagram.

★ For Seat belt, refer to MA section.

Clip and Fastener

- Clips and fasteners in BF section correspond to the following numbers and symbols.
- Replace any clips and/or fasteners which are damaged during removal or installation.

No.	Symbol	Shape	Removal & Installation
C203		 SBF258G 	Push center pin to catching position. (Do not remove center pin by hitting it.)  SBF708E Installation: 

BODY END

- When removing and installing hood or trunk lid, place a cloth or other padding on hood or trunk lid corners to avoid scratching vehicle body.
- When removing clip or fastener, refer to CLIP & FASTENER.
- Apply sealing compound where necessary when installing parts.

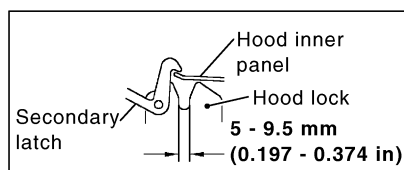
Front End

- Hood adjustment: Adjust at hinge portion.
- Hood lock adjustment: After adjusting, check hood lock control operation. Apply a coat of grease to hood locks engaging mechanism.
- Hood opener: Do not attempt to bend cable forcibly. Doing so increases effort required to unlock hood.

Hood lock adjustment

- Adjust hood so that hood primary lock meshes at a position where hood is 1 to 1.5 mm (0.039 to 0.059 in) lower than fender.
- After hood lock adjustment, adjust bumper rubber.
- When securing hood lock, ensure it does not tilt. Striker must be positioned at the center of hood primary lock.
- After adjustment, ensure that hood primary and secondary lock operate properly.

Hood lock secondary latch hooking length



Bumper rubber adjustment

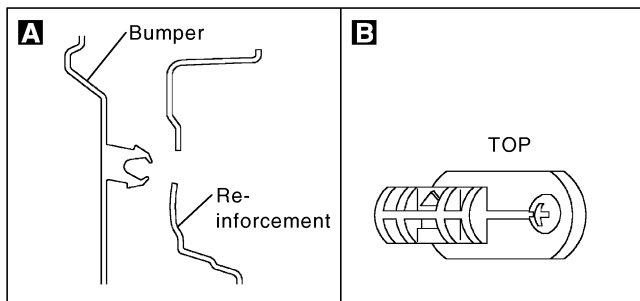
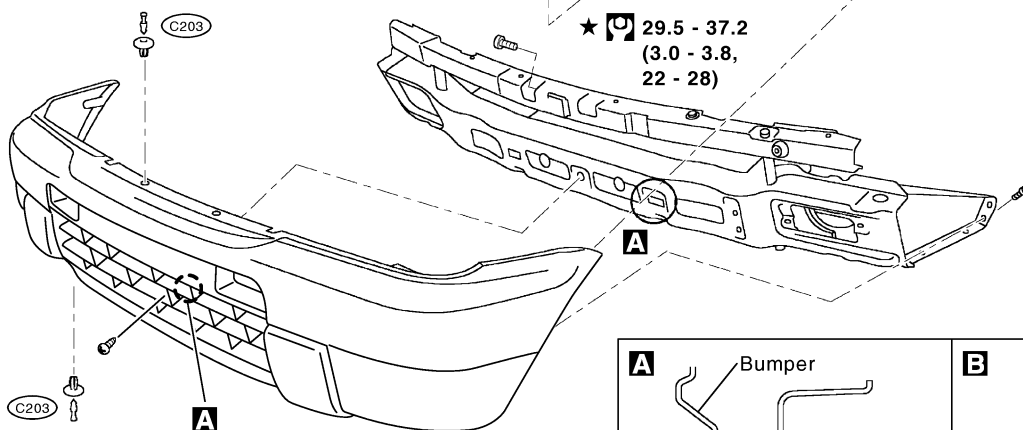
- Adjust so that hood is aligned with fender.
- Bumper rubber free height is approx. 13 mm

Hood adjustment

9.3 - 13
(0.95 - 1.3,
83 - 115)

21 - 26
(2.1 - 2.7, 15 - 20)

★ 29.5 - 37.2
(3.0 - 3.8,
22 - 28)



★ : Bumper assembly

: N•m (kg-m, in-lb)

: N•m (kg-m, ft-lb)

: Grease-up points

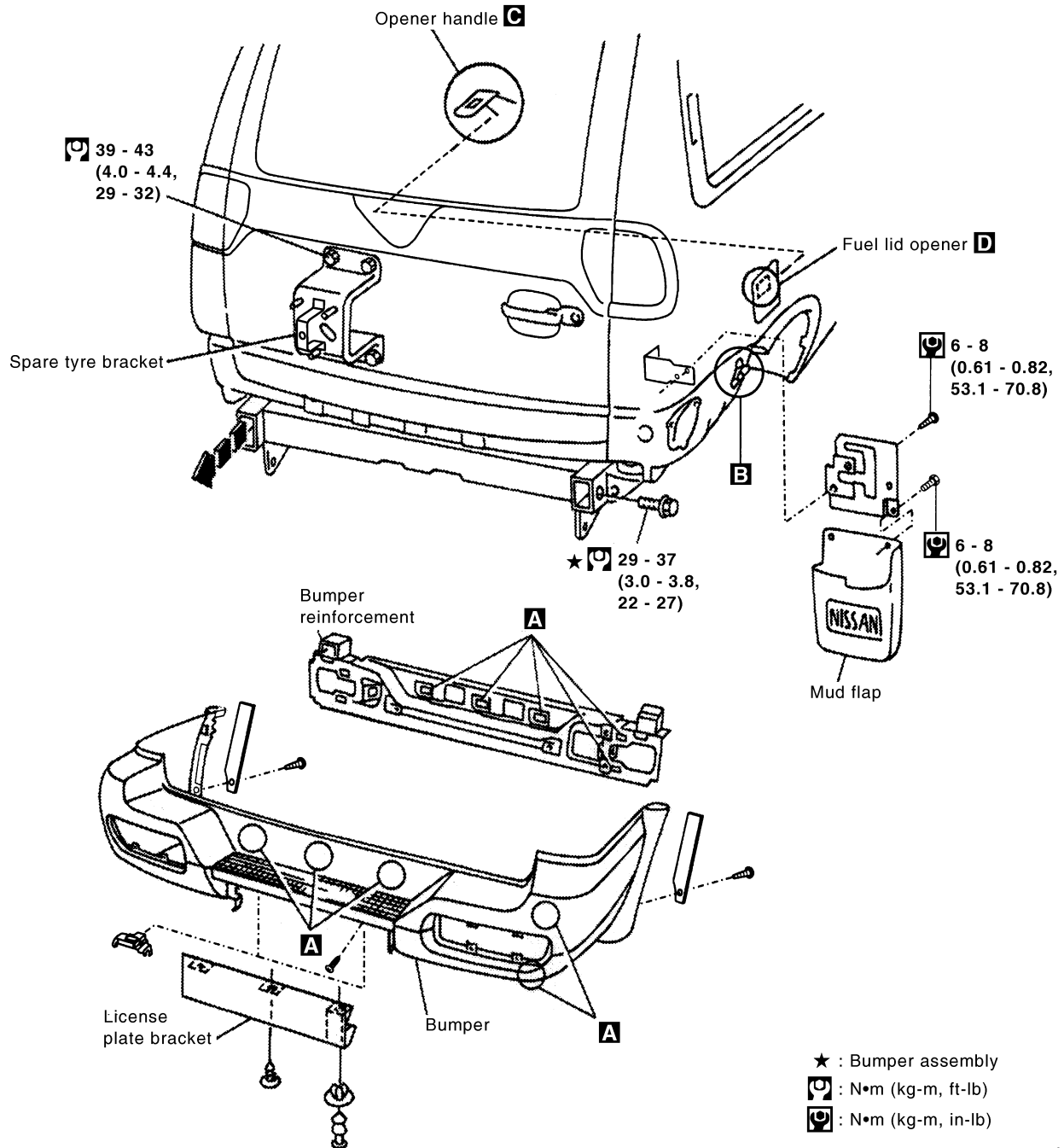
BODY END

Front End (Cont'd)

- Bumper finisher: It is made of plastic, so do not use excessive force and take care to keep oil away from it.
- When removing and installing hood or back door, place a cloth or other padding on hood or back door corners to avoid scratching vehicle body.
- When removing clip or fastener, refer to CLIP & FASTENER.
- Apply sealing compound where necessary when installing parts.

Body Rear End

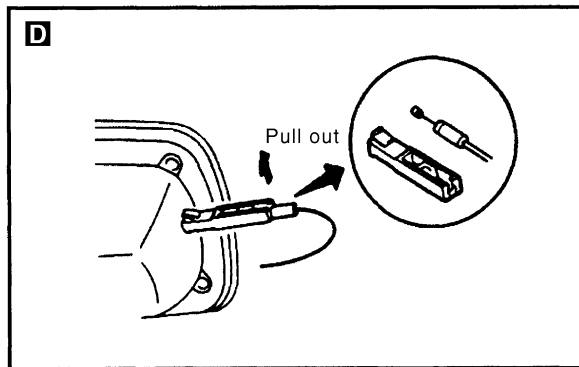
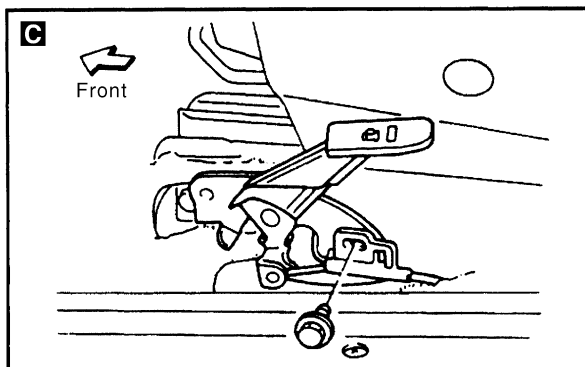
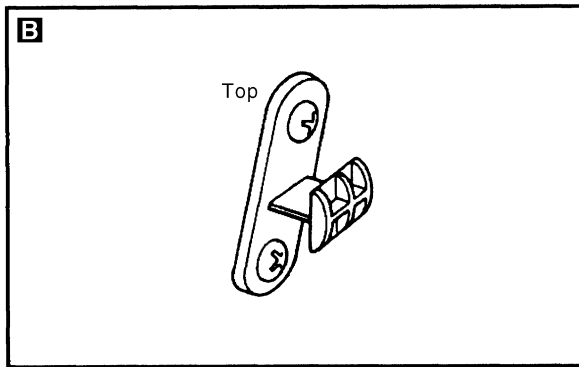
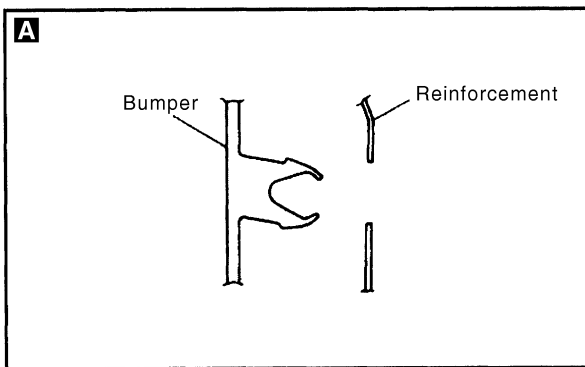
- Bumper finisher: It is made of plastic, so do not use excessive force and take care to keep oil away from it.



YBT117

BODY END

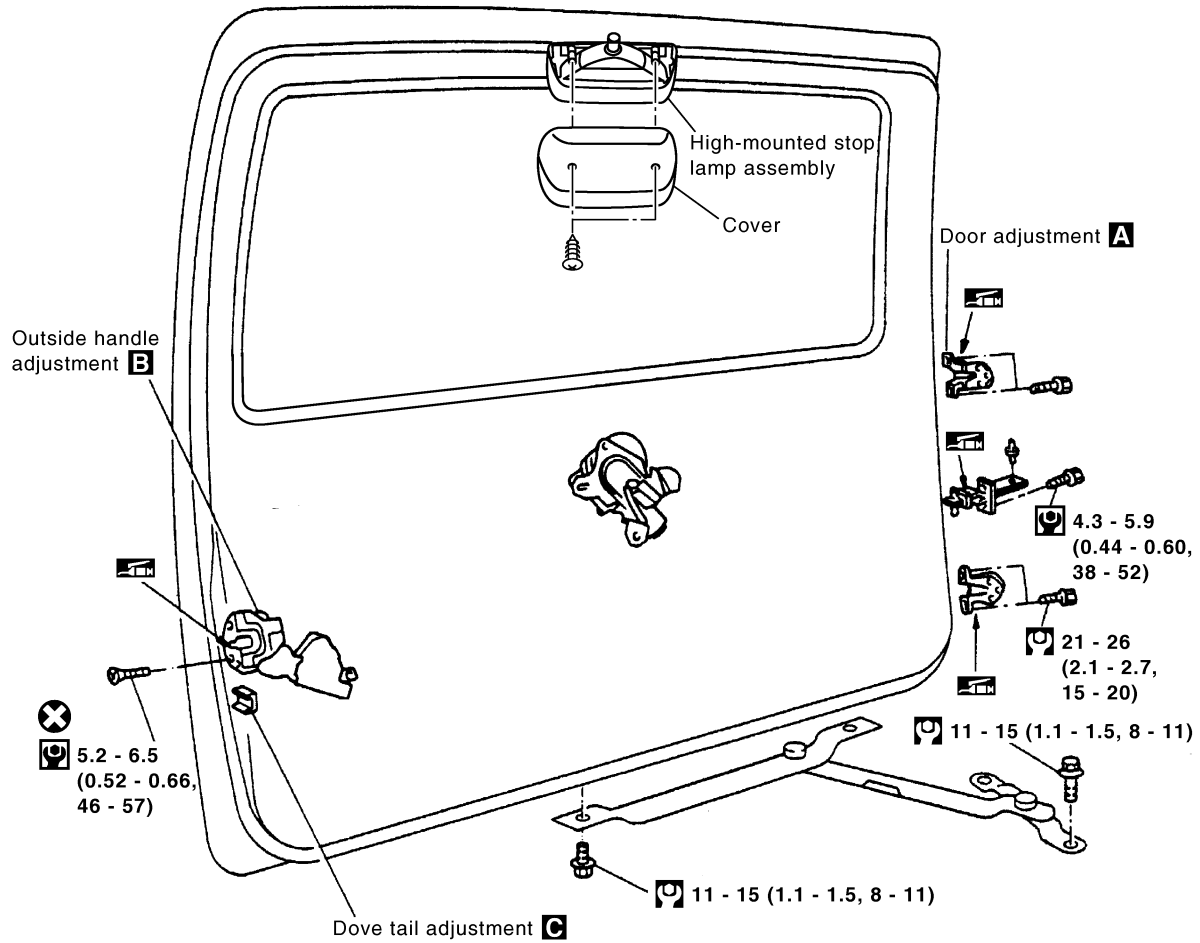
Body Rear End (Cont'd)



YBT118

Back Door

- After adjusting door or door lock, make sure door locks properly.

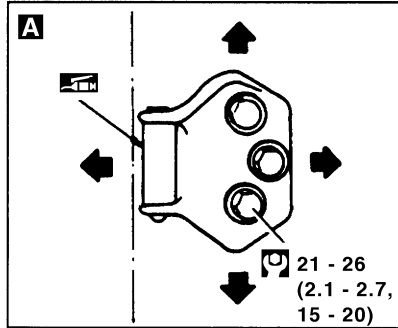


YBT122

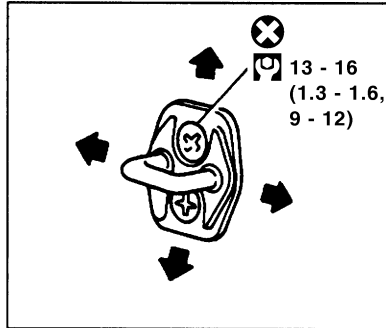
BODY END

Back Door (Cont'd)

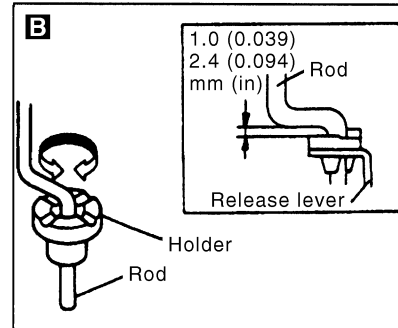
Door adjustment



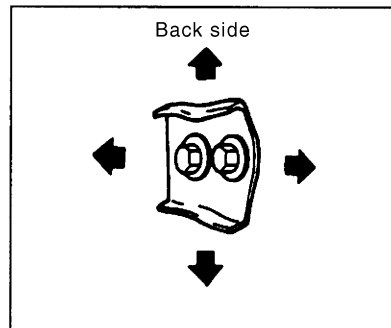
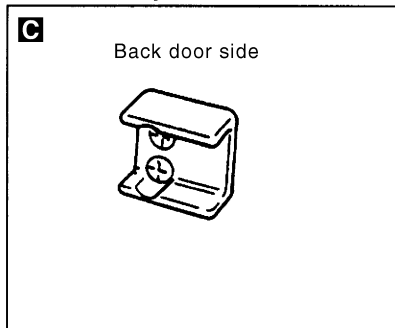
Striker adjustment



Outside handle adjustment



Dove tail adjustment



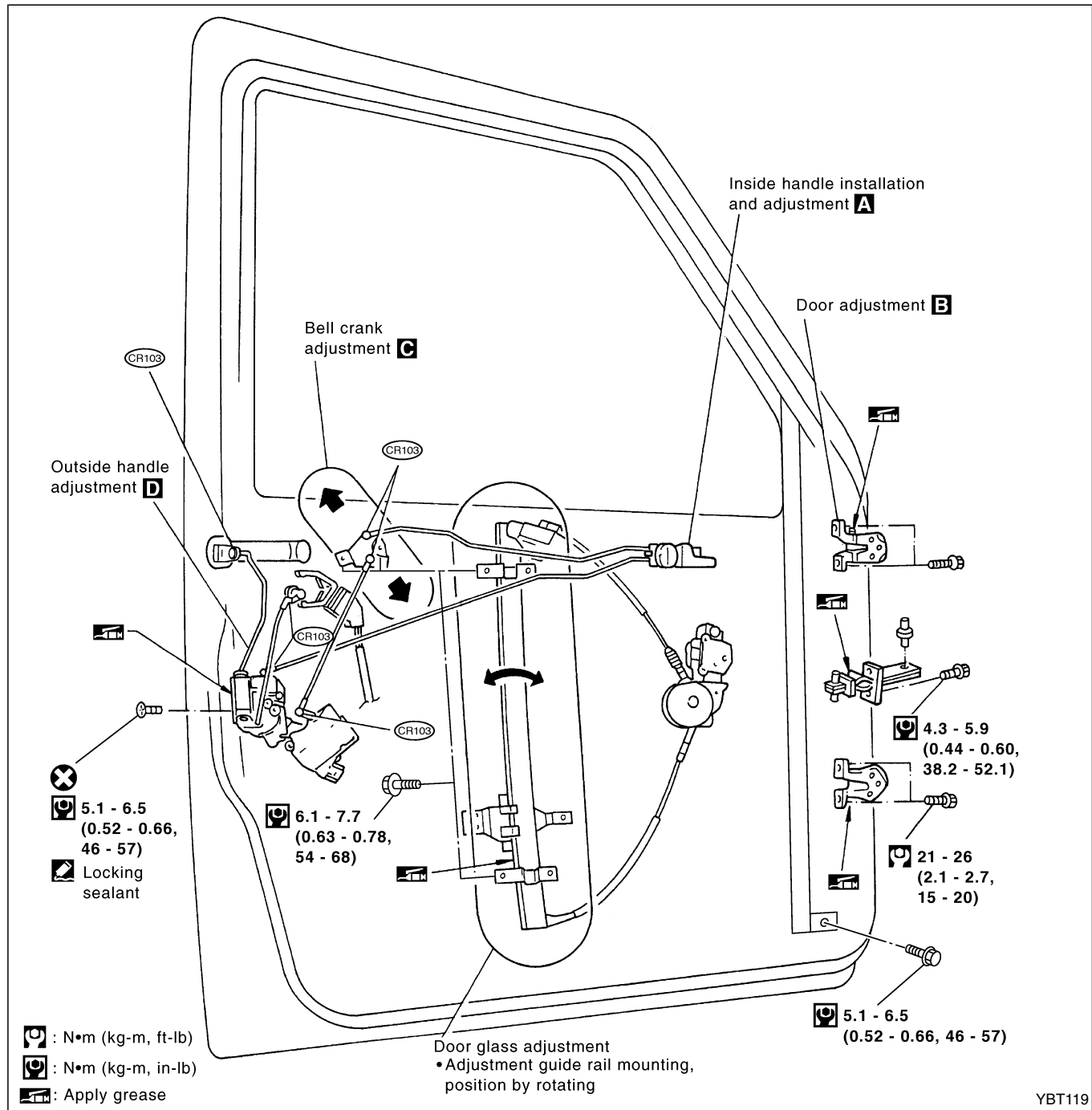
 : N•m (kg-m, ft-lb)

YBT123

Removal and Installation

FRONT DOOR

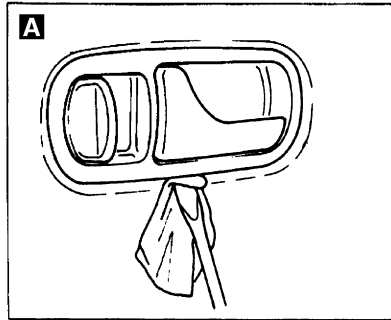
- For removal of front door finisher, refer to "DOOR TRIM".
- Remove sealing screen.
- After adjusting door or door lock, check door lock operation.



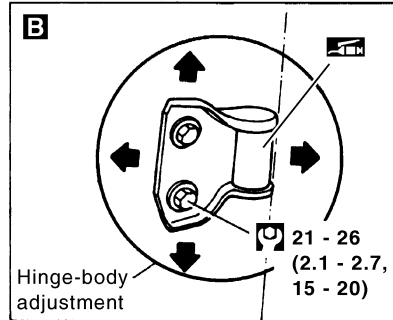
DOOR

Removal and Installation (Cont'd)

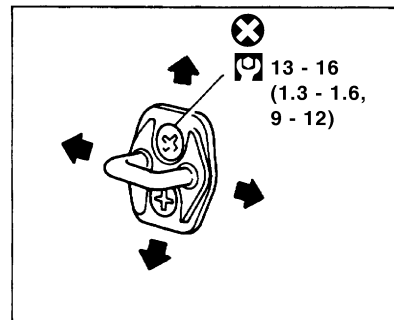
Inside handle installation



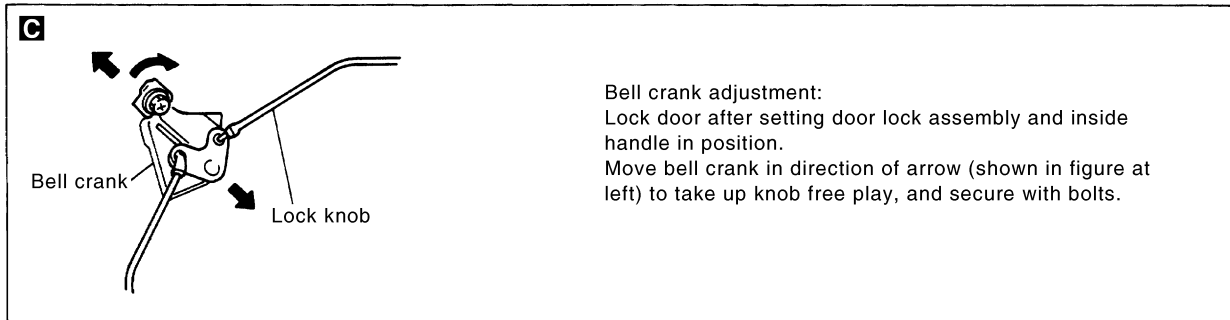
Door adjustment



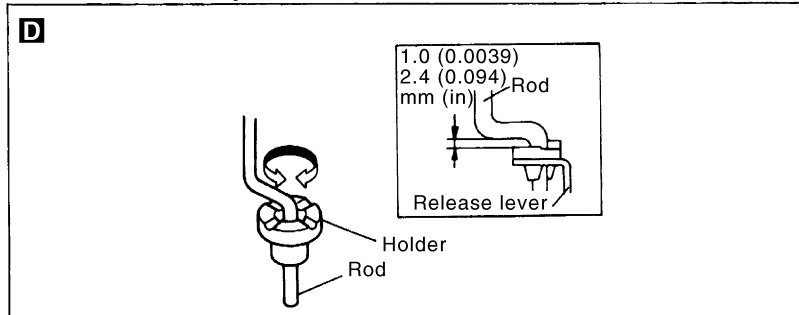
Striker adjustment



Bell crank adjustment



Outside handle adjustment



 : N•m (kg-m, ft-lb)

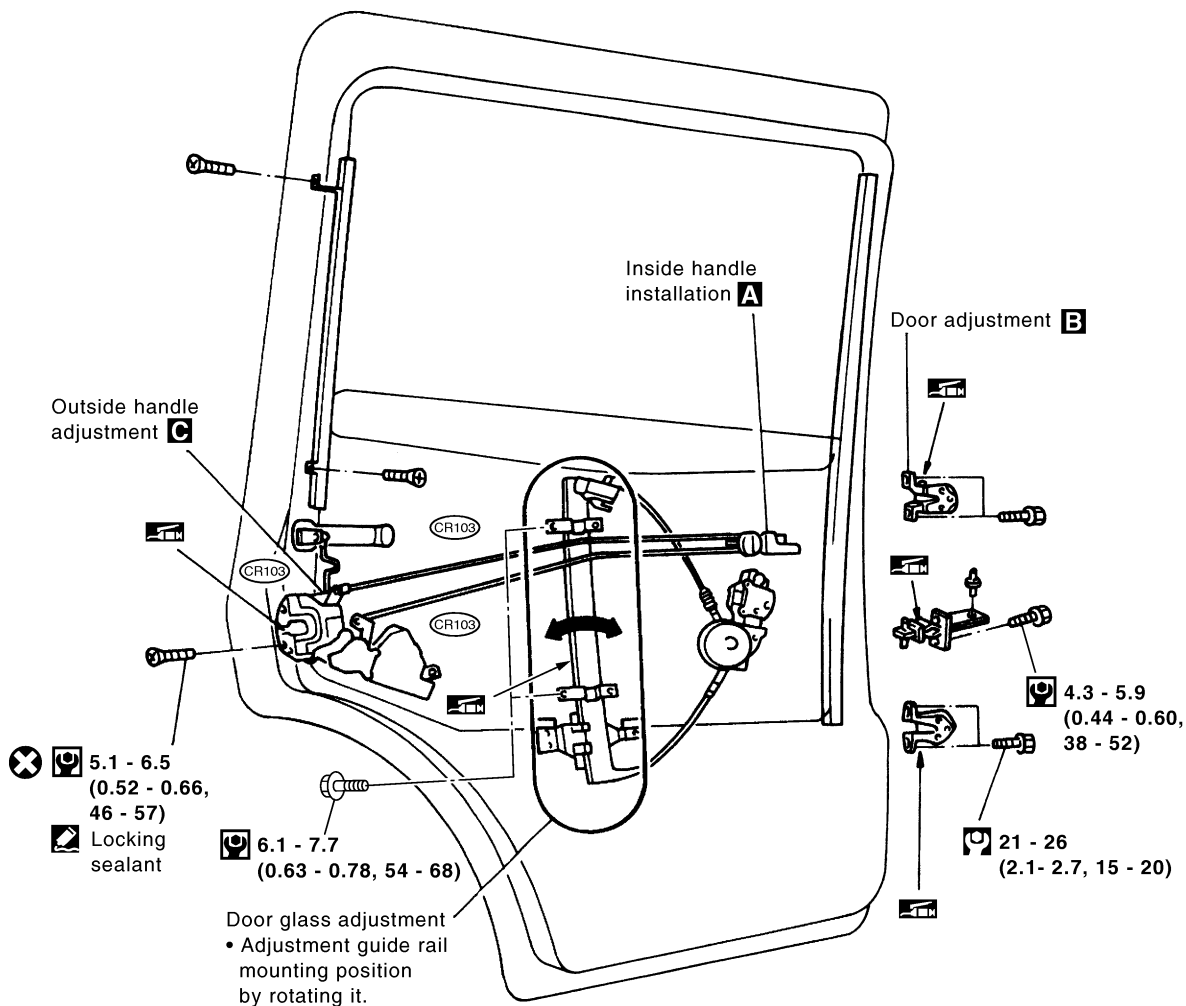
YBT120

DOOR

Rear Door

WAGON

- After adjusting door or door lock, make sure door locks properly.



⊗ : N•m (kg-m, in-lb)

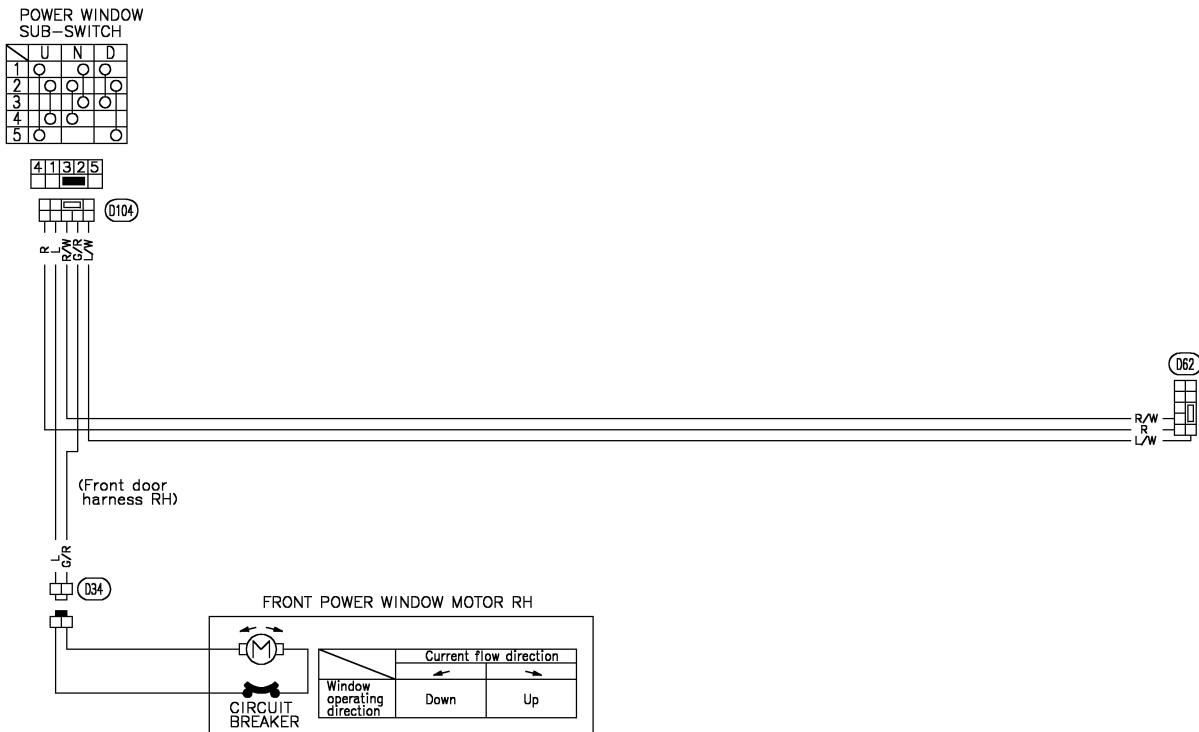
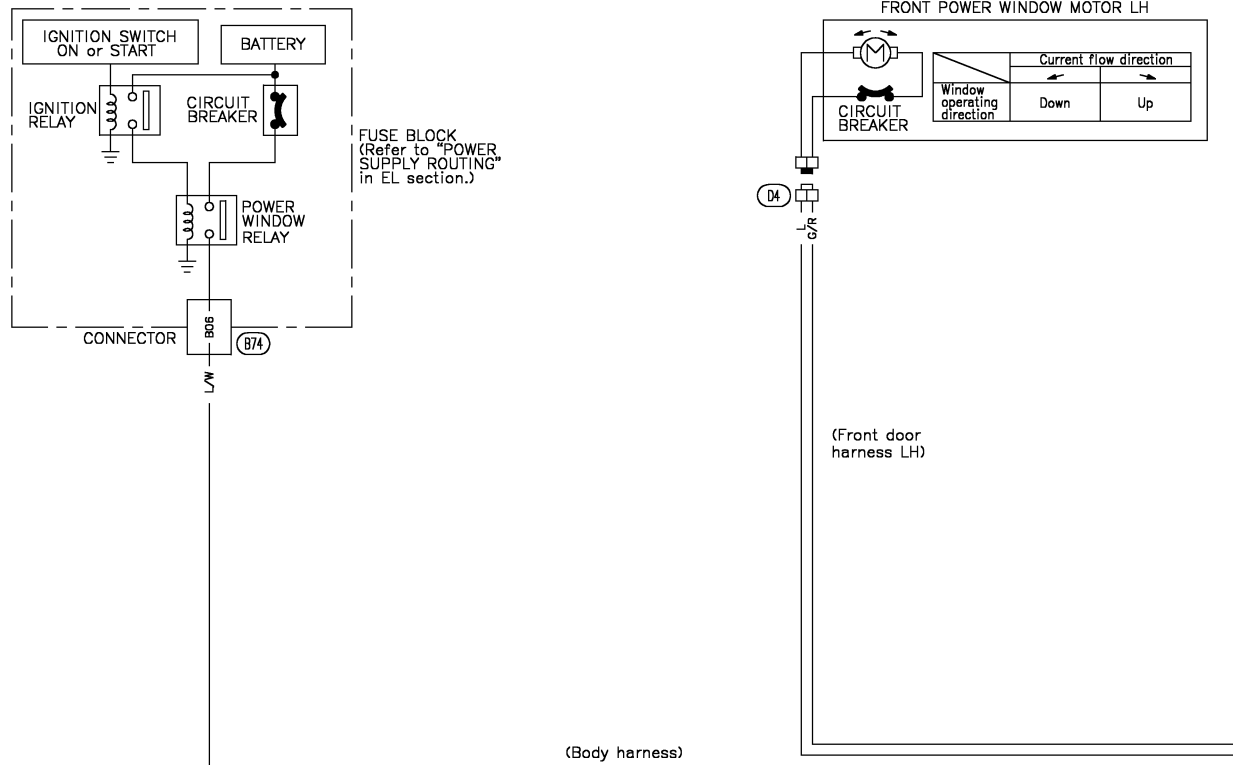
⊙ : N•m (kg-m, ft-lb)

YBT125

Power Window

WIRING DIAGRAM

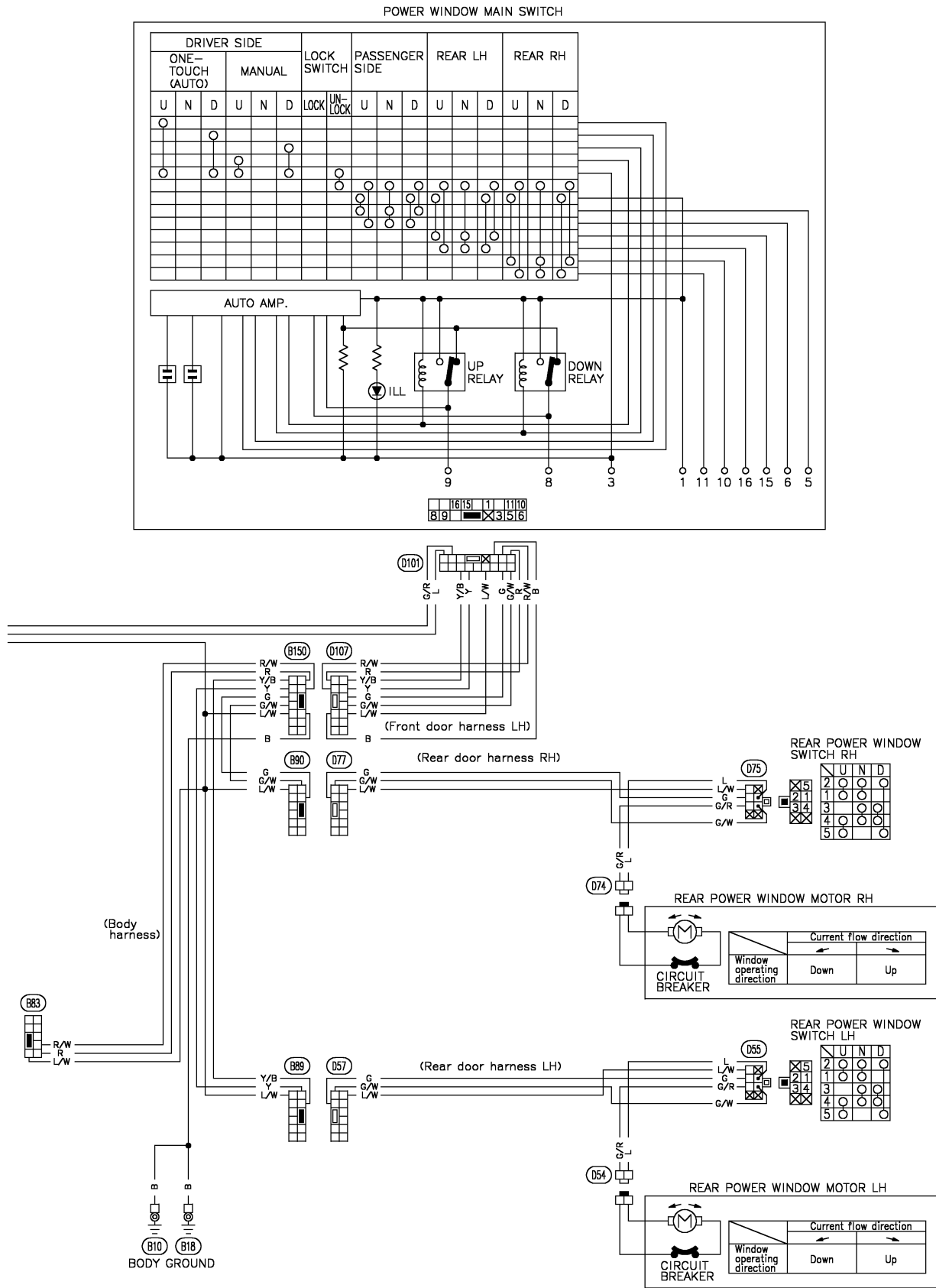
For Russia



YBF327

DOOR

Power Window (Cont'd)



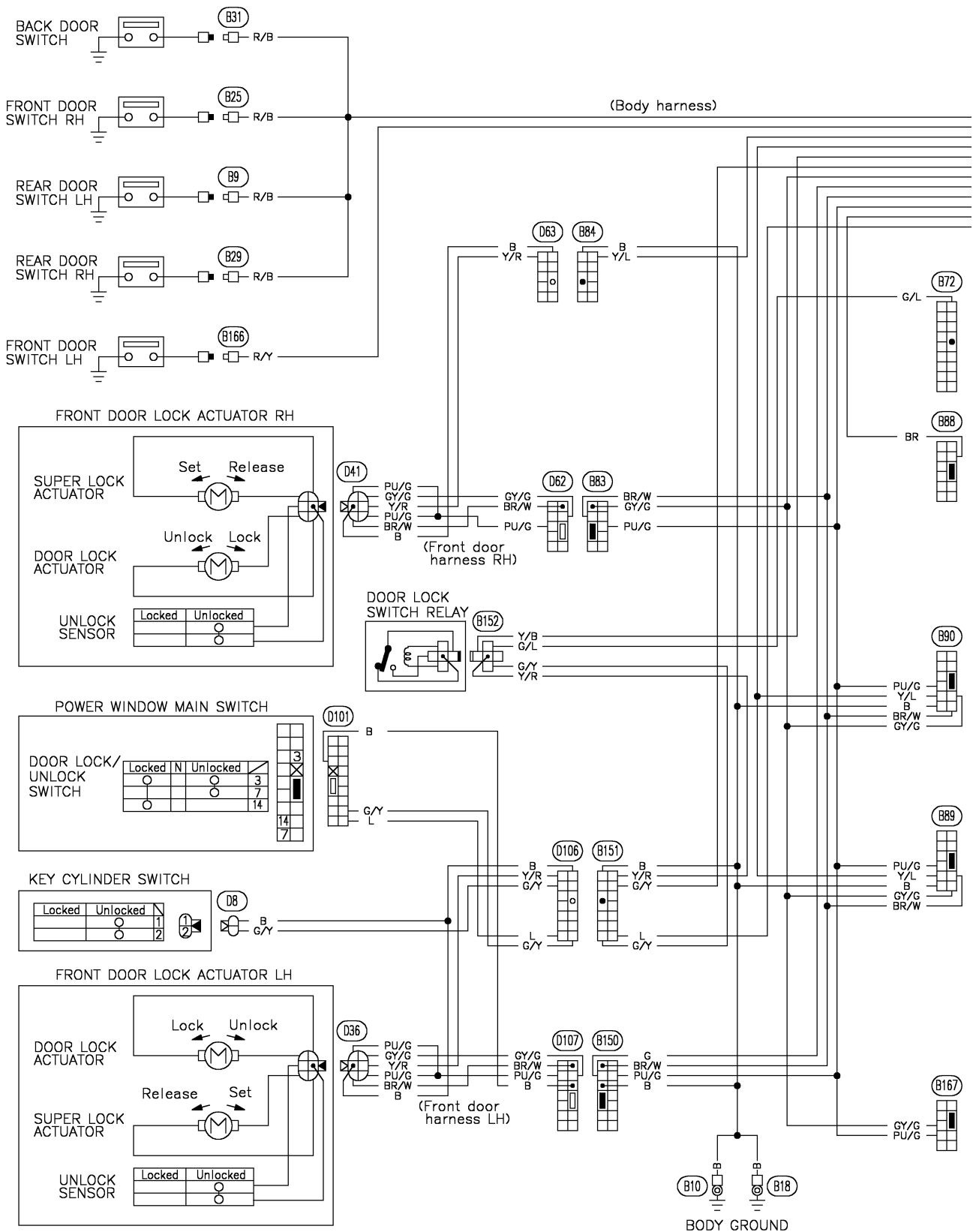
YBF312

BF-13013

<http://vnx.su/>

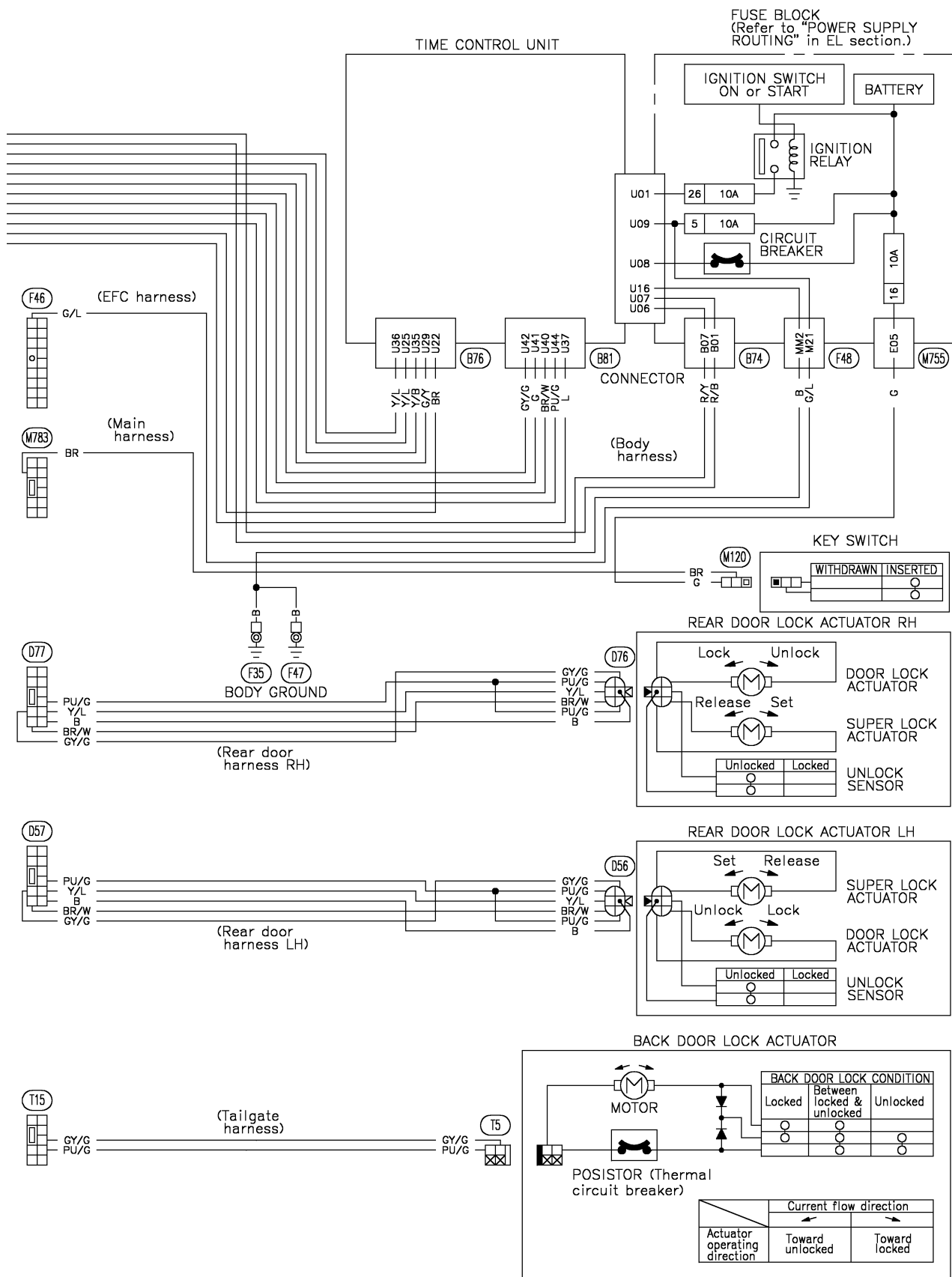
WIRING DIAGRAM

For Russia



DOOR

Power Door Lock (Super Lock) (Cont'd)

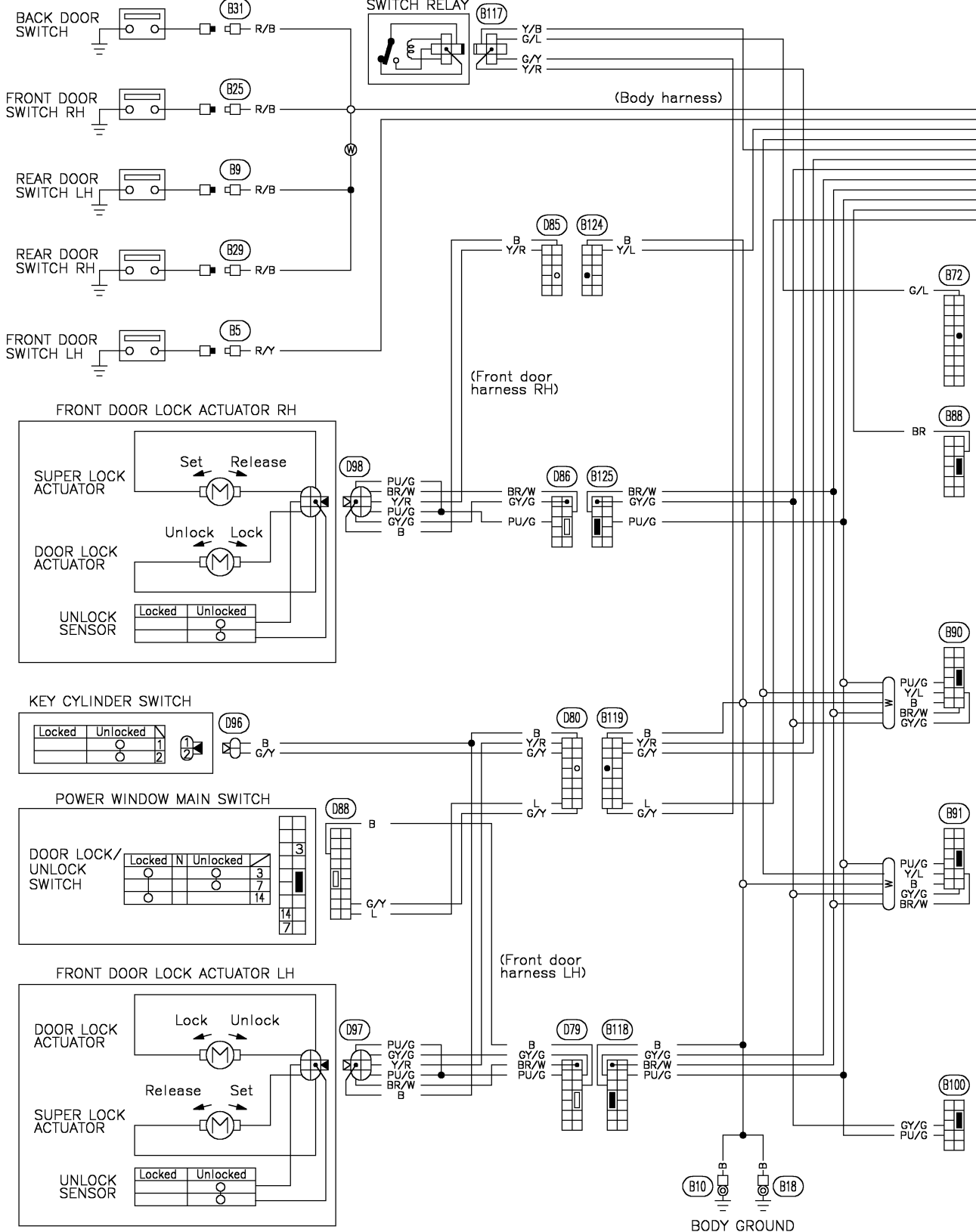


YBF313

WIRING DIAGRAM

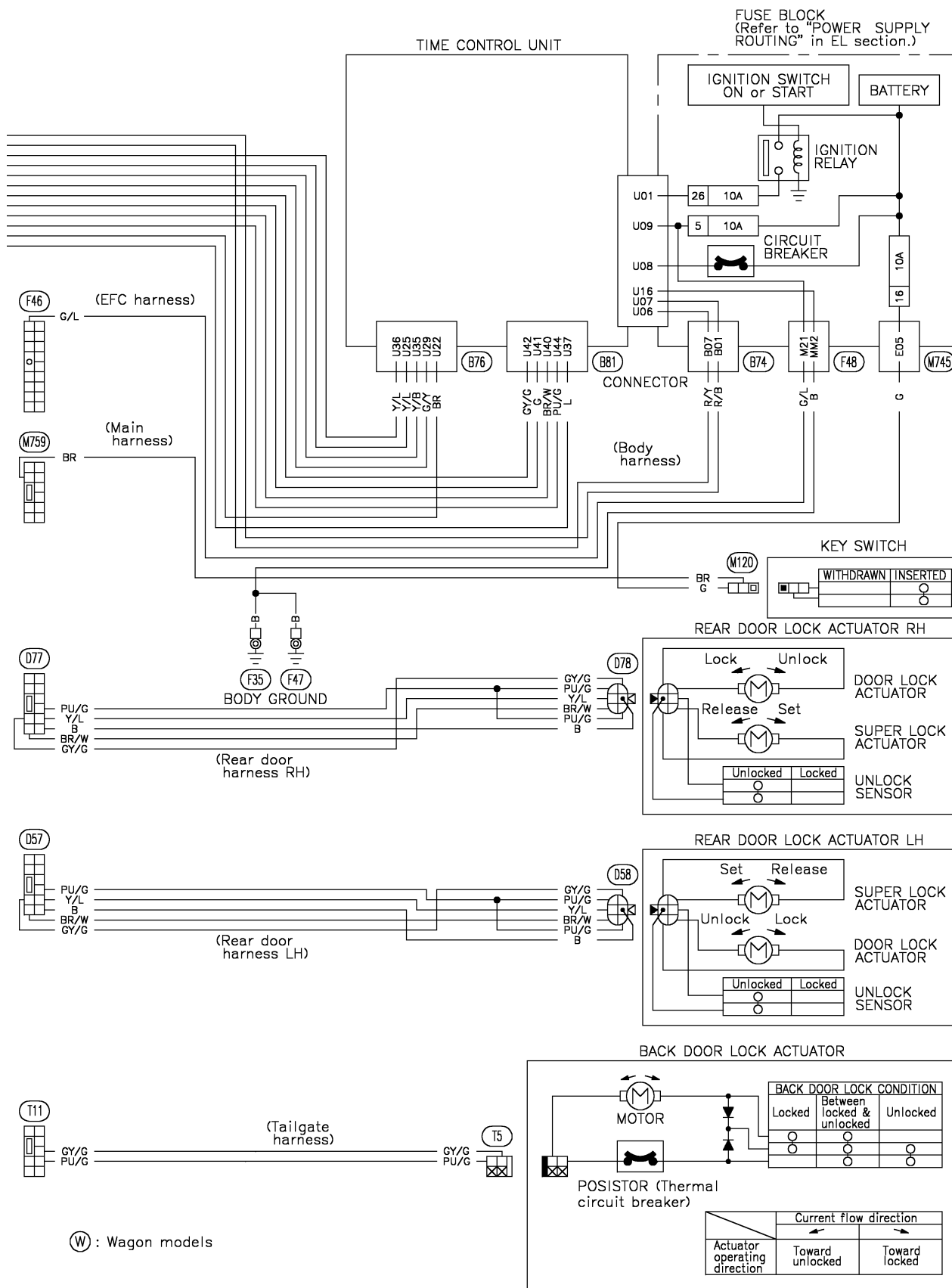
Except for Russia

DOOR LOCK



DOOR

Power Door Lock (Super Lock) (Cont'd)



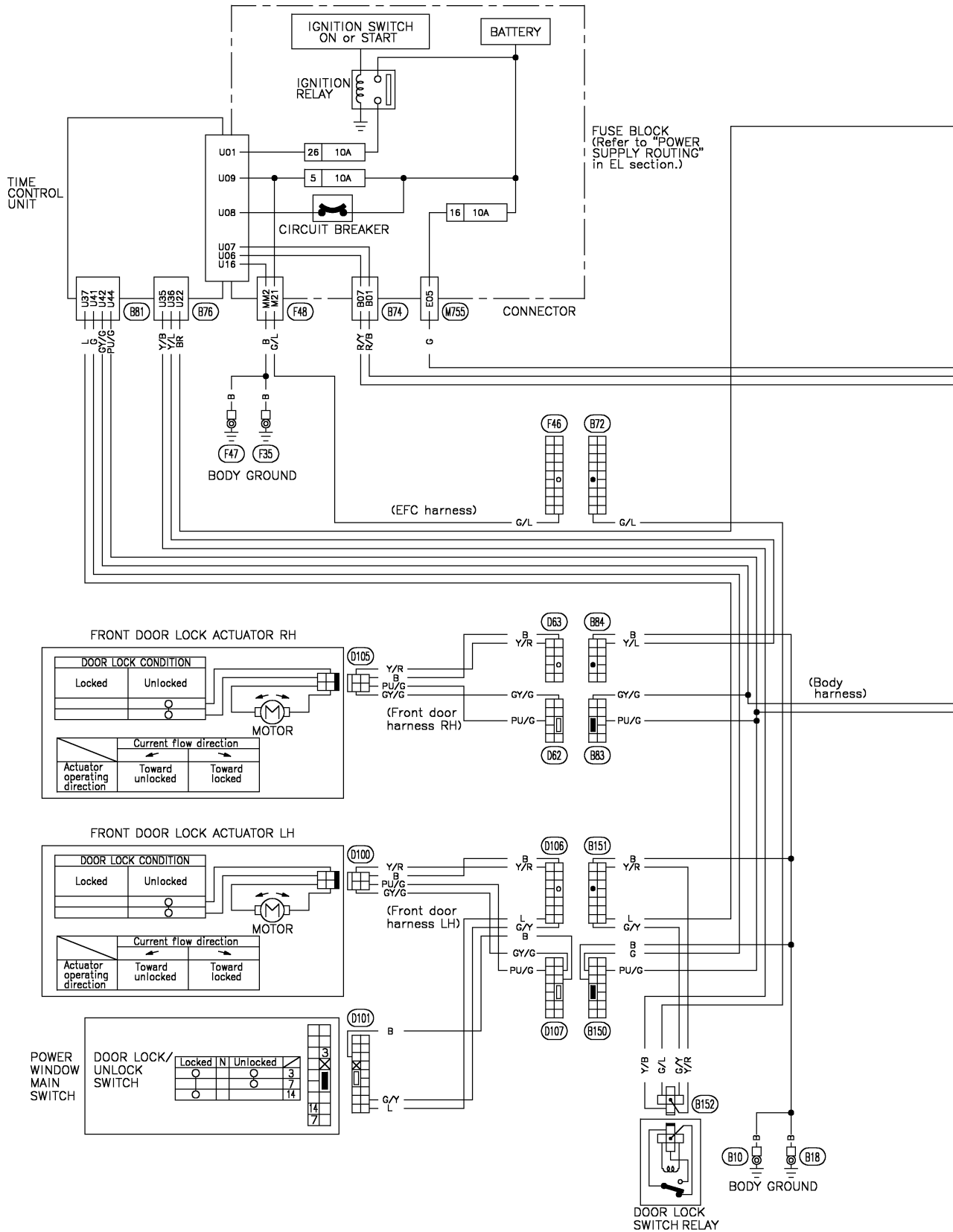
YBF314

DOOR

Power Door Lock

WIRING DIAGRAM

For Russia



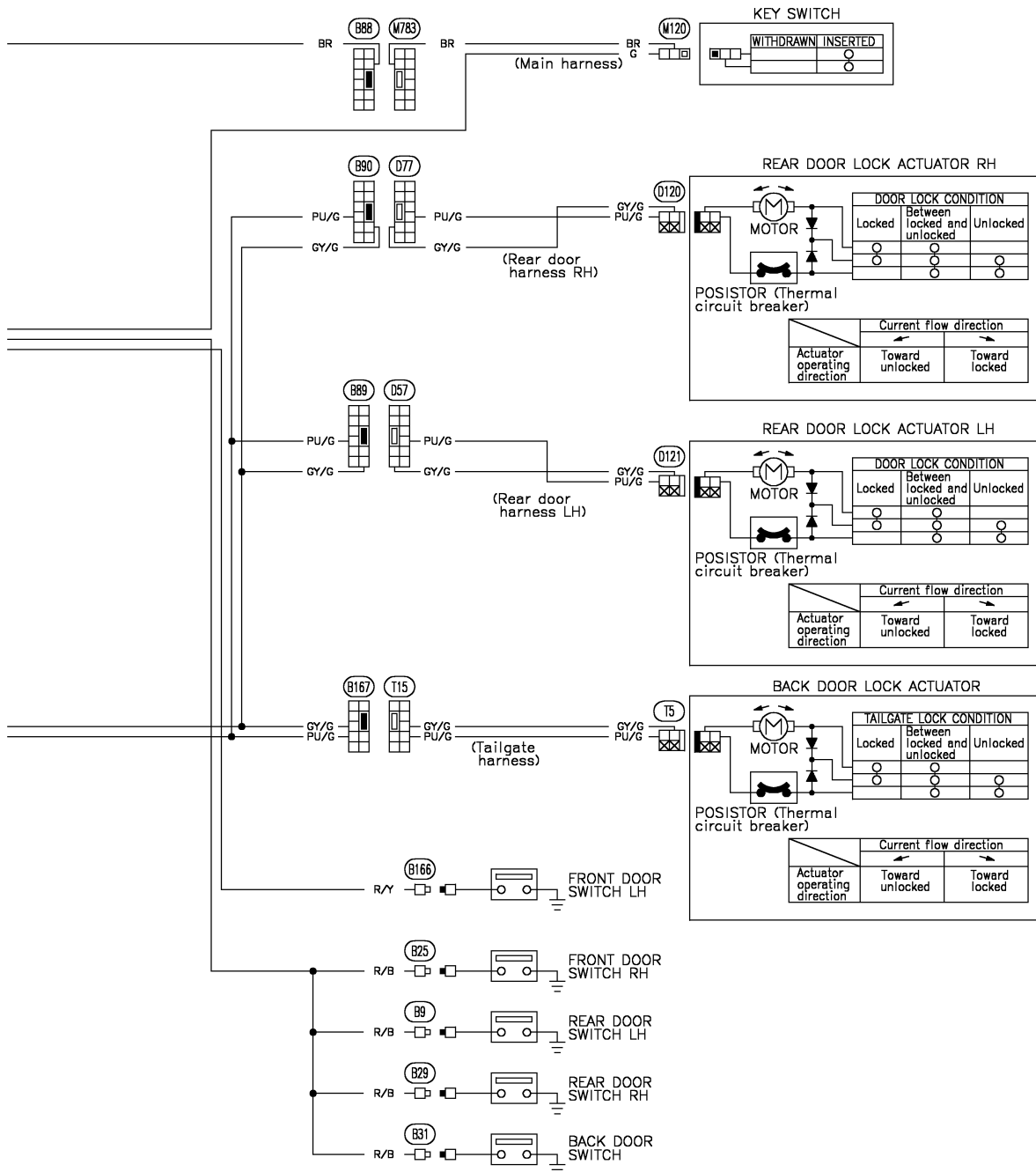
YBF315

BF-13018

<http://vnx.su/>

DOOR

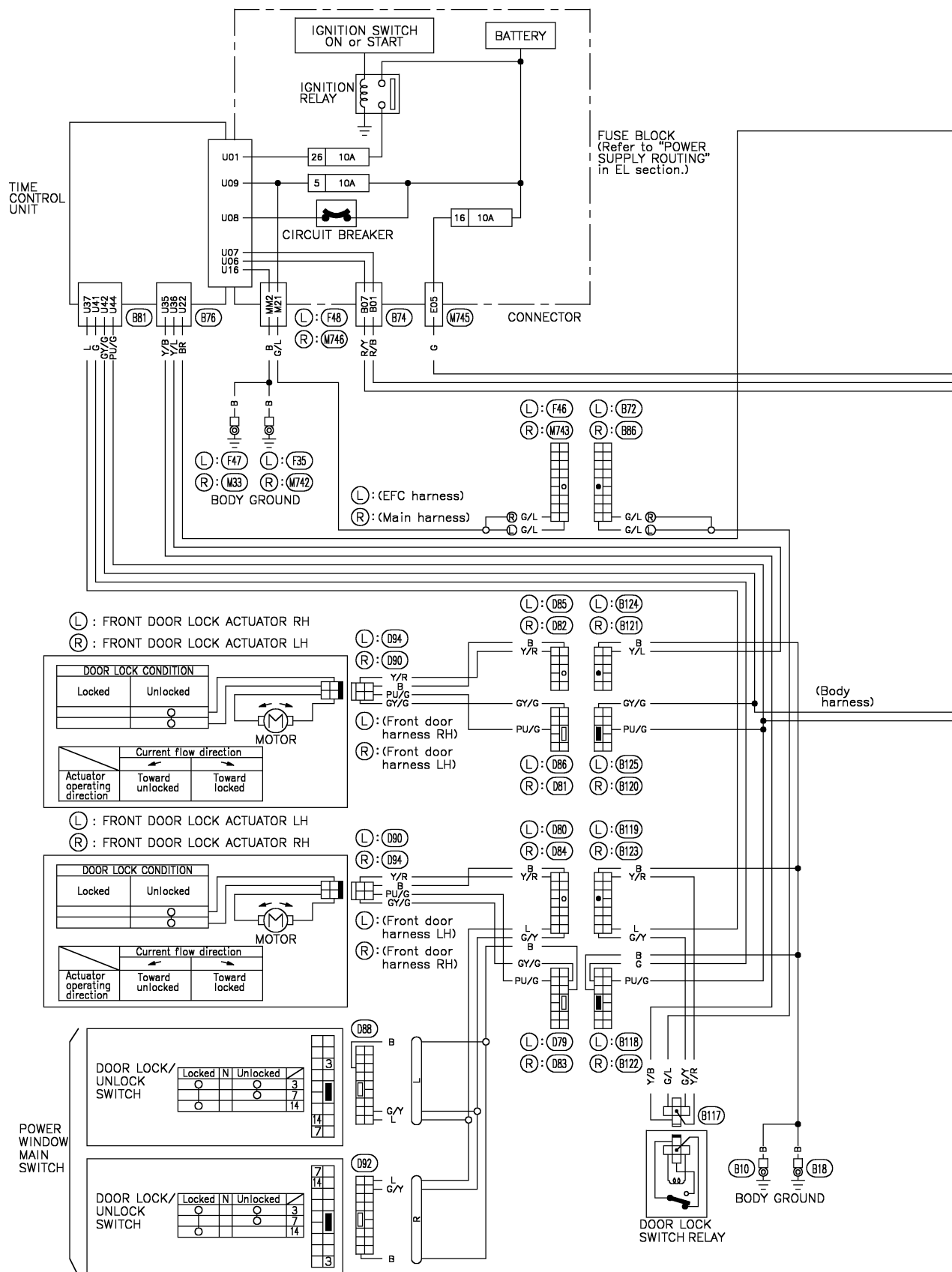
Power Door Lock (Cont'd)



DOOR Power Door Lock (Cont'd)

WIRING DIAGRAM

Except for Russia



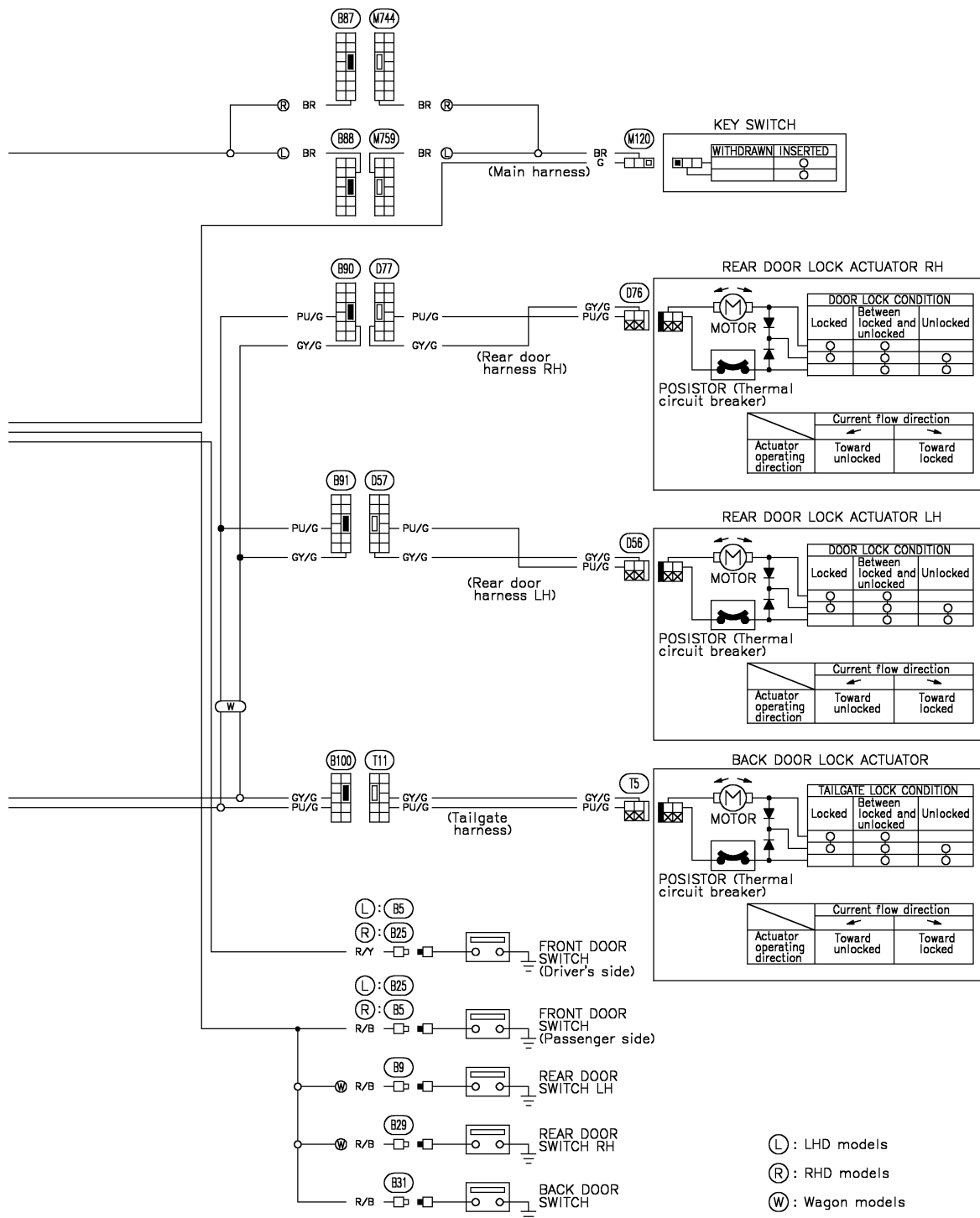
YBF317

BF-13020

<http://vnx.su/>

DOOR

Power Door Lock (Cont'd)



Schematic

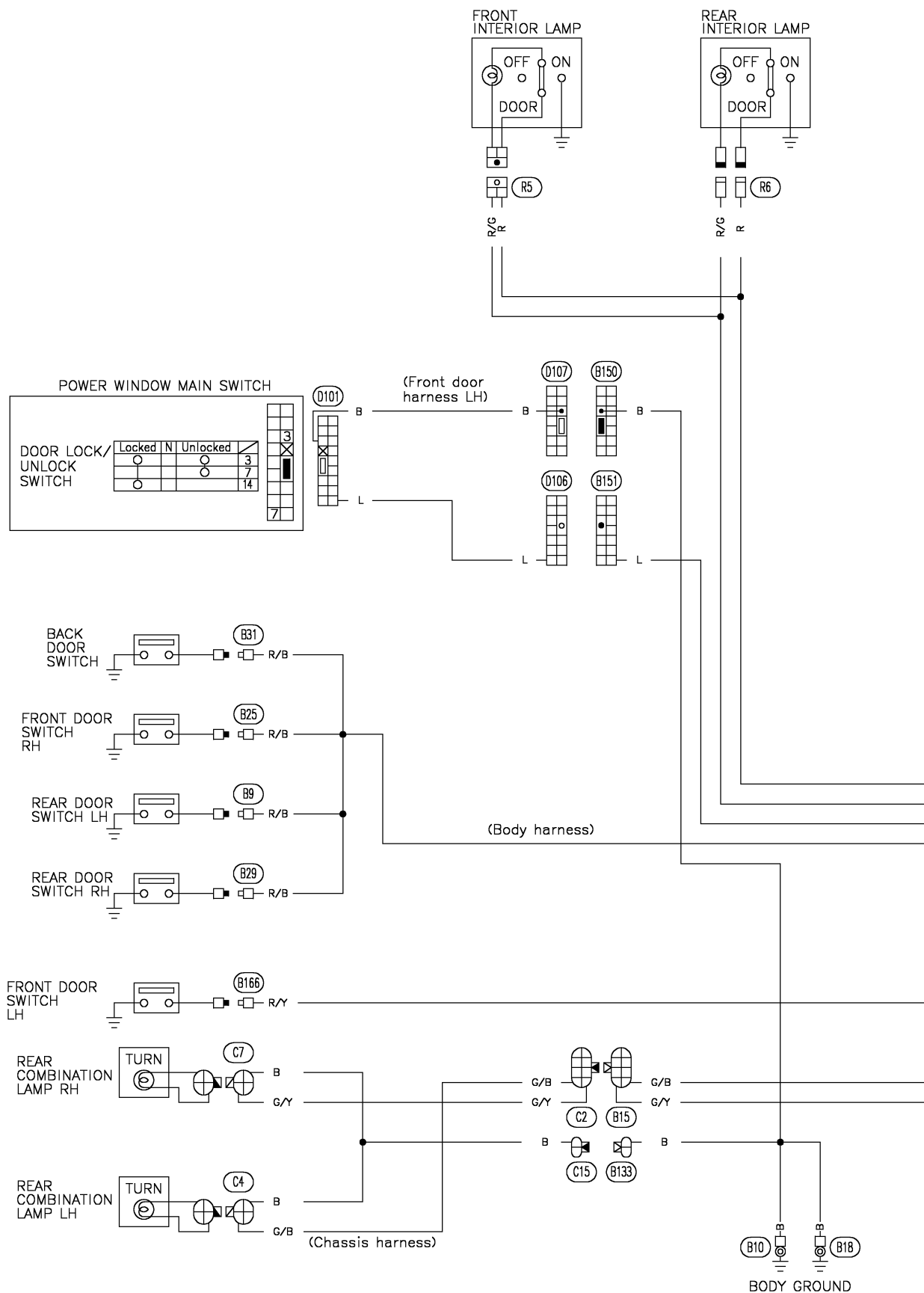
The diagram illustrates the electrical architecture of a vehicle's door lock system. Key components and their connections include:

- Power Source:** BATTERY, connected to the IGNITION SWITCH ON or START and a FUSE.
- Control and Safety:** KEY SWITCH (WITHDRAWN/INSERTED), CIRCUIT BREAKER, and FUSE.
- Actuators and Sensors:** FRONT DOOR LOCK ACTUATOR LH, FRONT DOOR LOCK ACTUATOR RH, REAR DOOR LOCK ACTUATOR LH, and REAR DOOR LOCK ACTUATOR RH. Each actuator is connected to a DOOR LOCK ACTUATOR (LOCK/UNLOCK) and a SUPER LOCK ACTUATOR (SET/RELEASE). UNLOCK SENSORS are also present for each door.
- Control Units:** TIME CONTROL UNIT (U01), FRONT DOOR SWITCH LH (U06), FRONT DOOR SWITCH RH (U07), REAR DOOR SWITCH LH (U11), REAR DOOR SWITCH RH (U12), COMBINATION METER (TURN) (U15), and POWER WINDOW MAIN SWITCH (U37).
- Wiring and Connections:** The diagram shows the flow of electrical current from the battery through various switches and relays to the actuators and sensors. It also includes a section for the DOOR LOCK SWITCH RELAY, which is connected to the battery and the actuators.

BF-13022

MULTI-REMOTE CONTROL SYSTEM

Schematic (Cont'd)



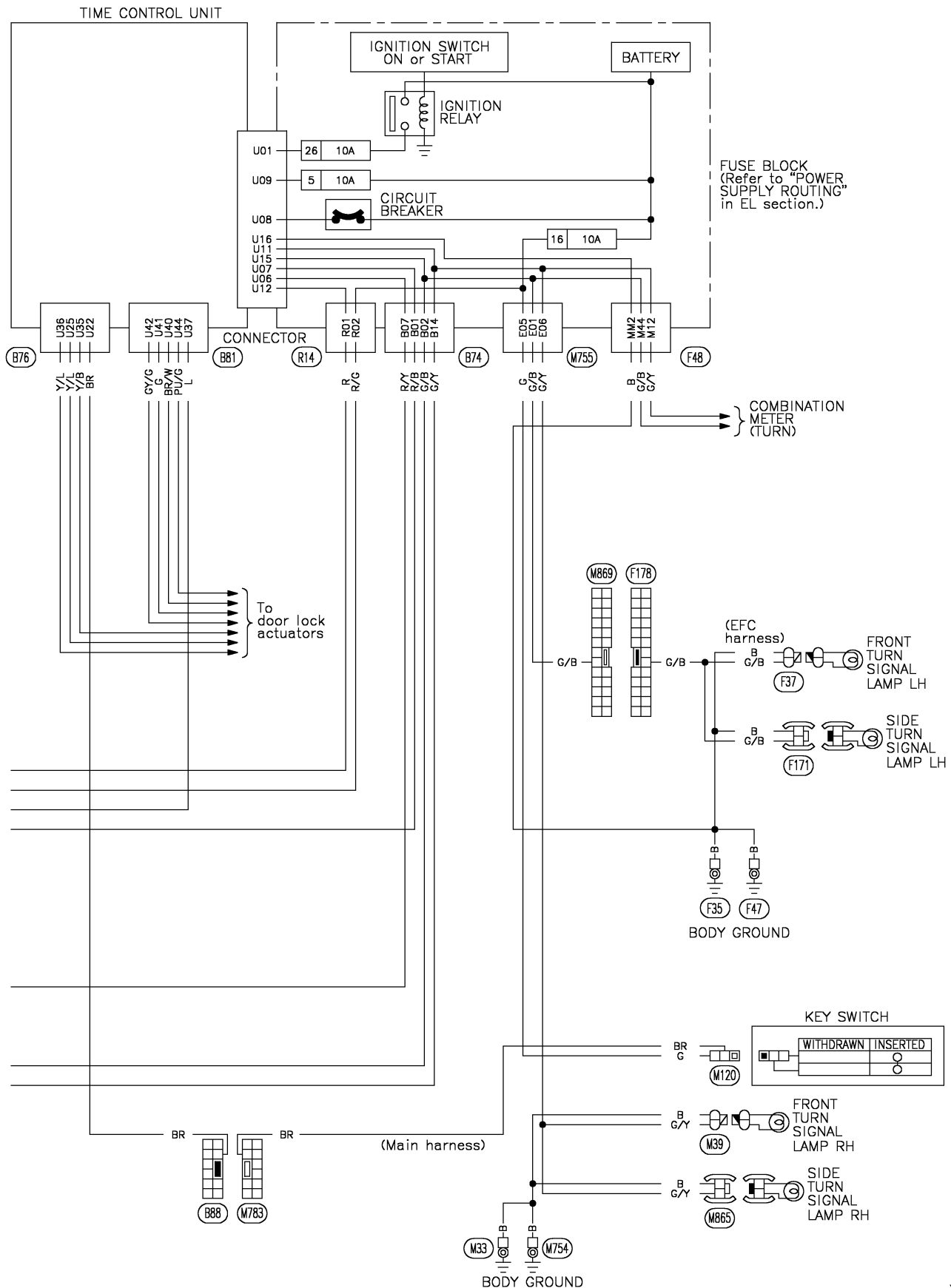
YBF330

BF-13023

<http://vnx.su/>

MULTI-REMOTE CONTROL SYSTEM

Schematic (Cont'd)



YBF320

BF-13024

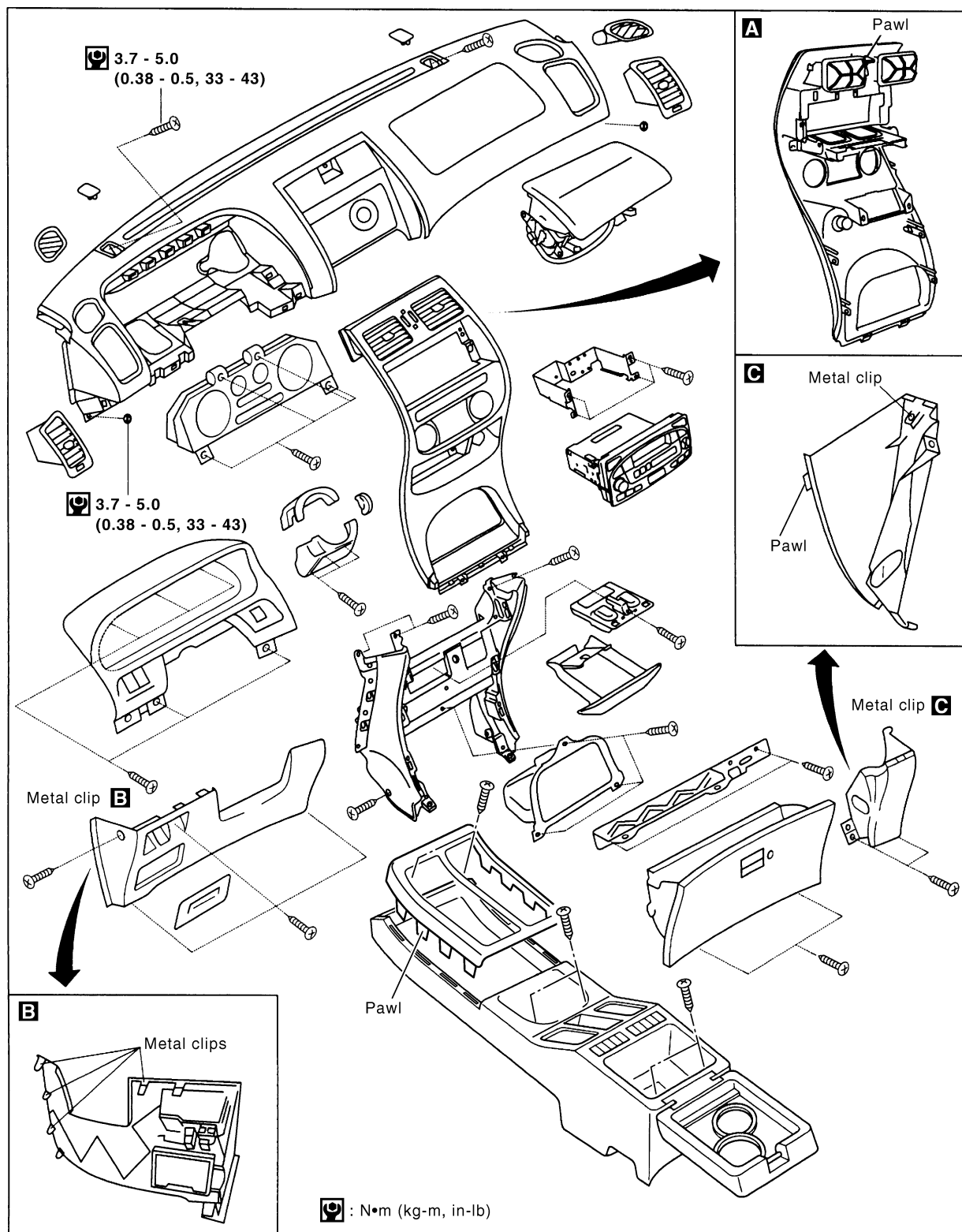
<http://vnx.su/>

INSTRUMENT PANEL

PRECAUTION:

Before disassembling instrument panel, remove connector from battery negative terminal.

- These parts are made of plastic, so do not use excessive force and be careful not to damage them.
- When removing instrument panel, remove front pillar garnish first.
- When removing clip or fastener, refer to CLIP & FASTENER.



YBT129

BF-13025

<http://vnx.su/>

Interior

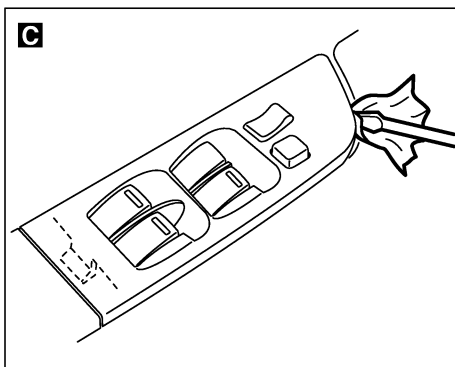
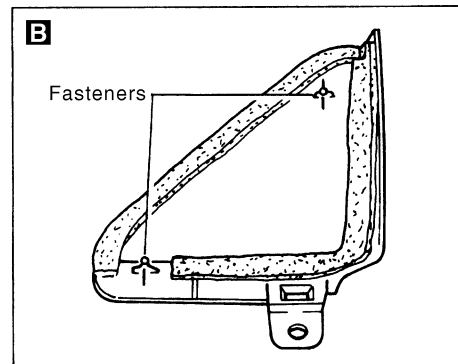
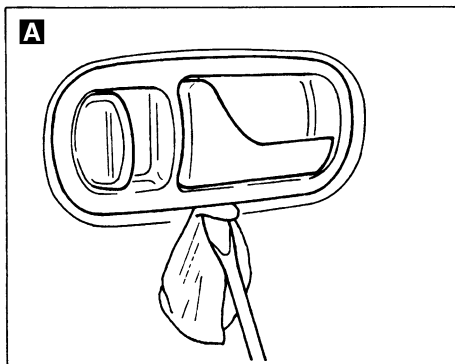
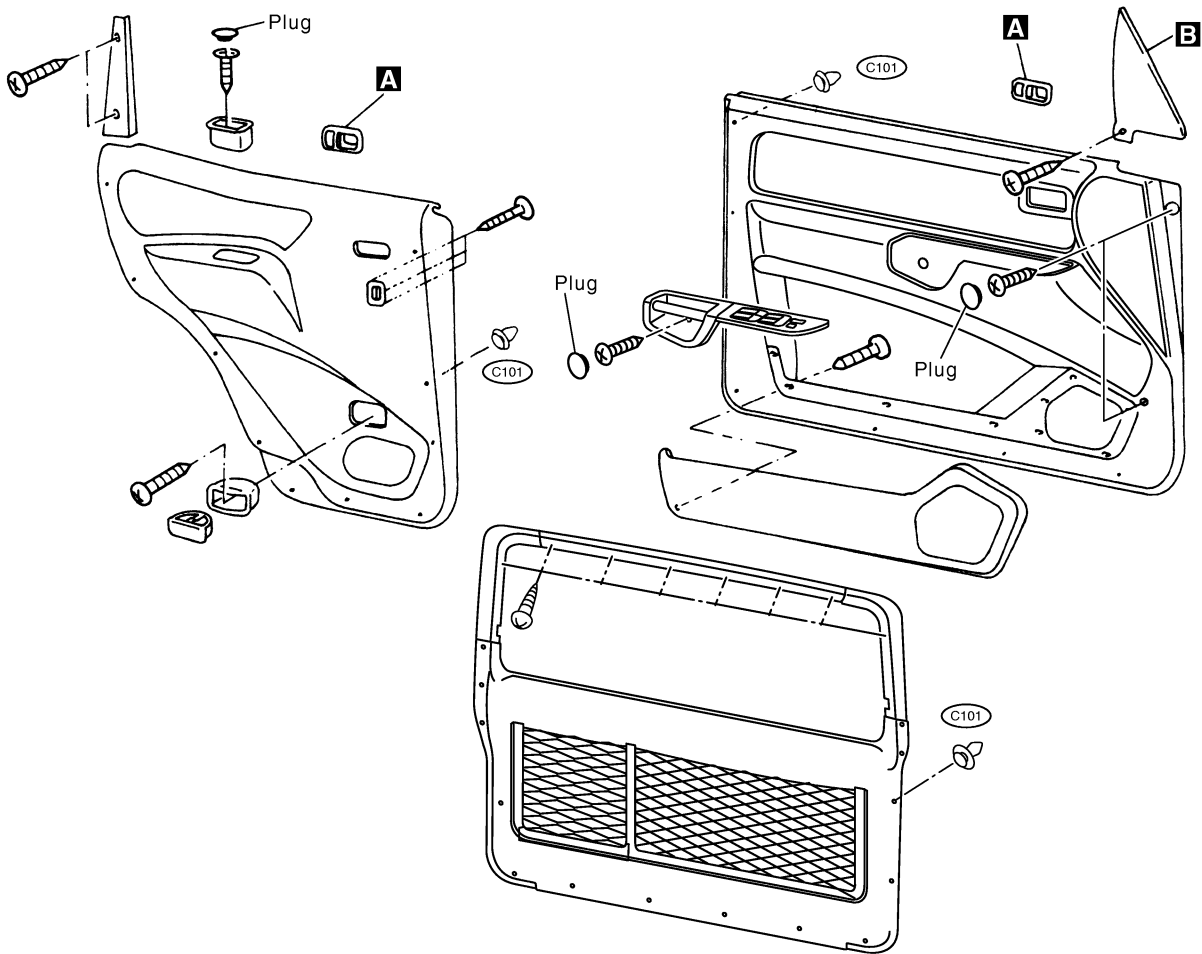
DOOR TRIM

PRECAUTION:

When removing the outside mirror's cover, situated at the inside of the door, pull the cover straight out so as to prevent the fasteners from breaking.

INTERIOR AND EXTERIOR

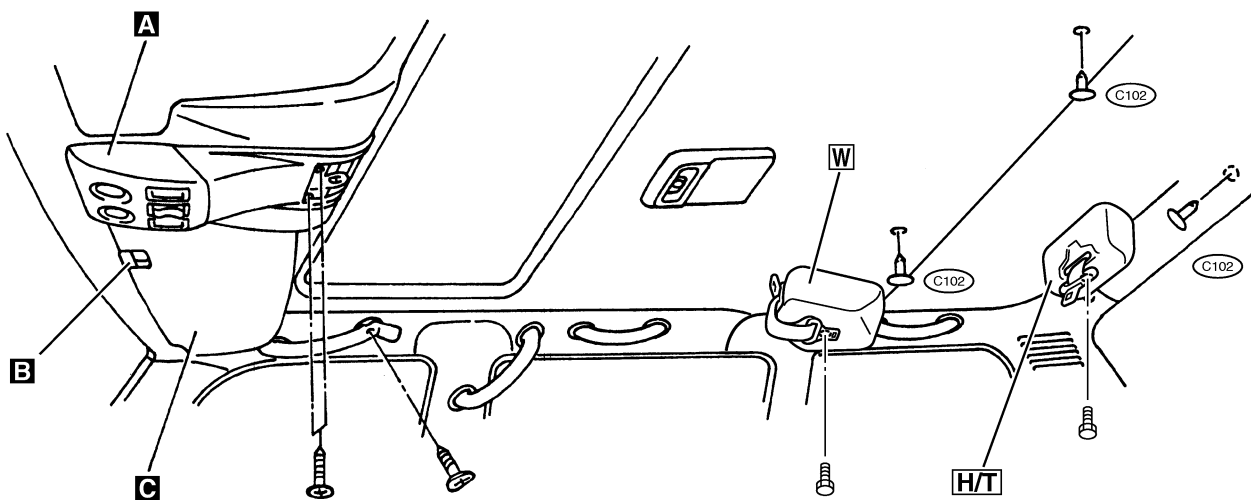
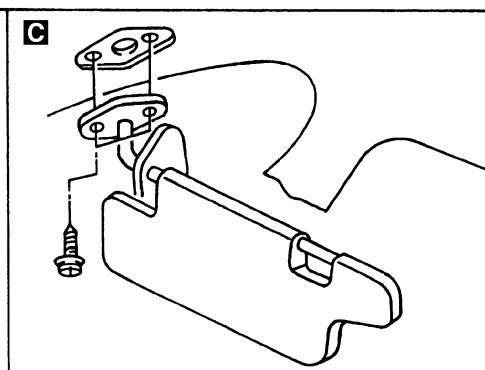
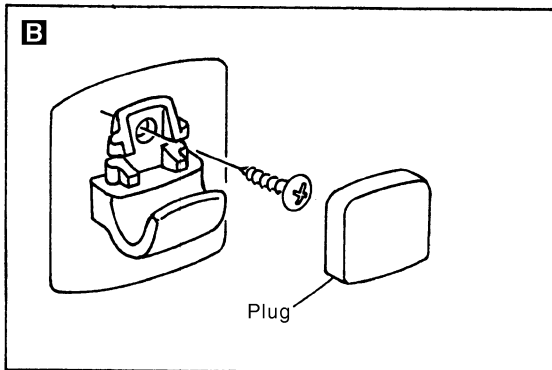
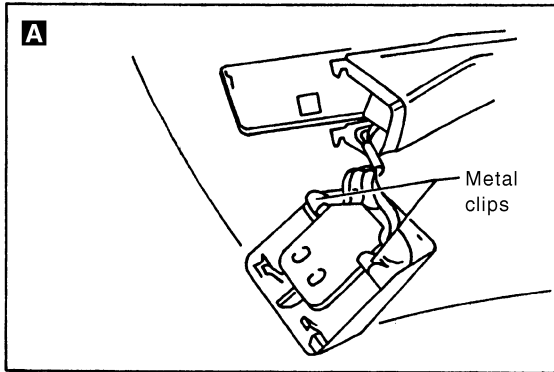
Interior (Cont'd)



INTERIOR AND EXTERIOR

Interior (Cont'd)

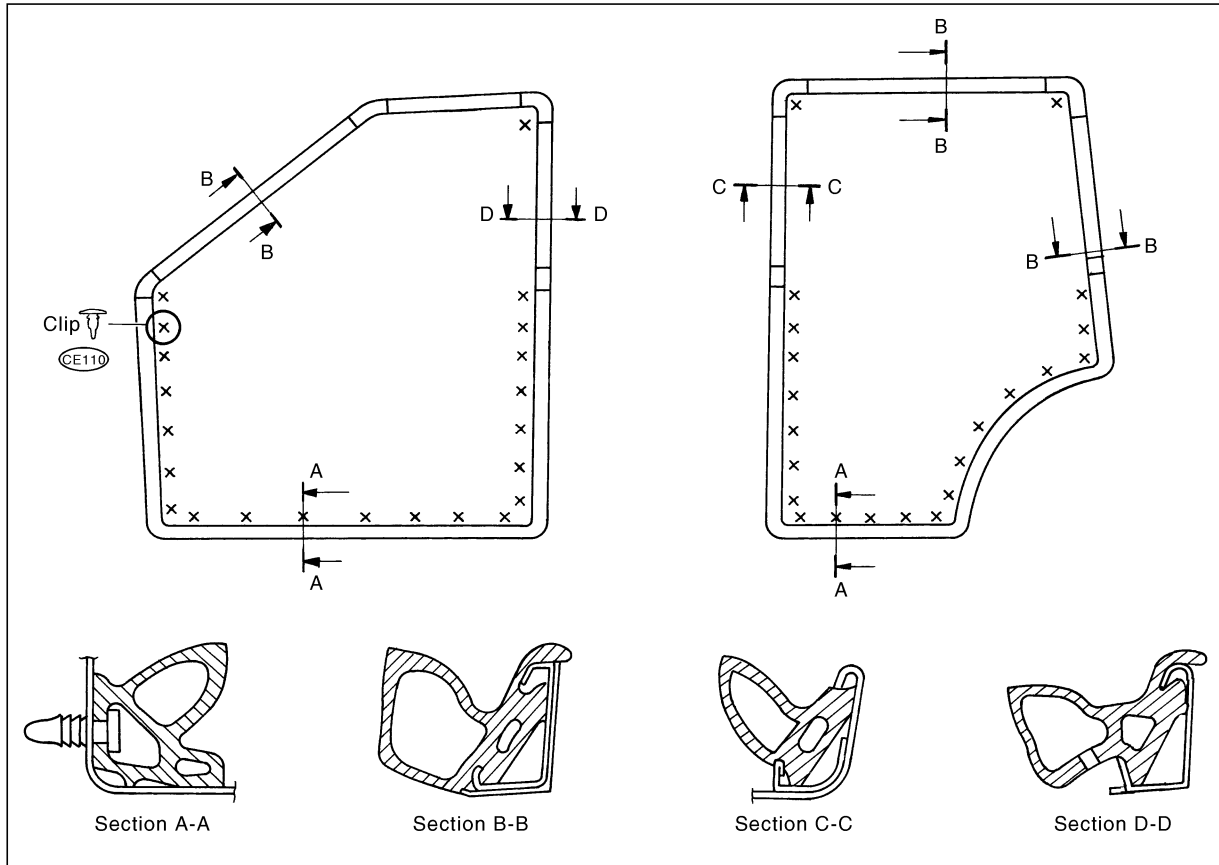
ROOF TRIM



Exterior

Door weatherstrip

⑥ Door weatherstrip



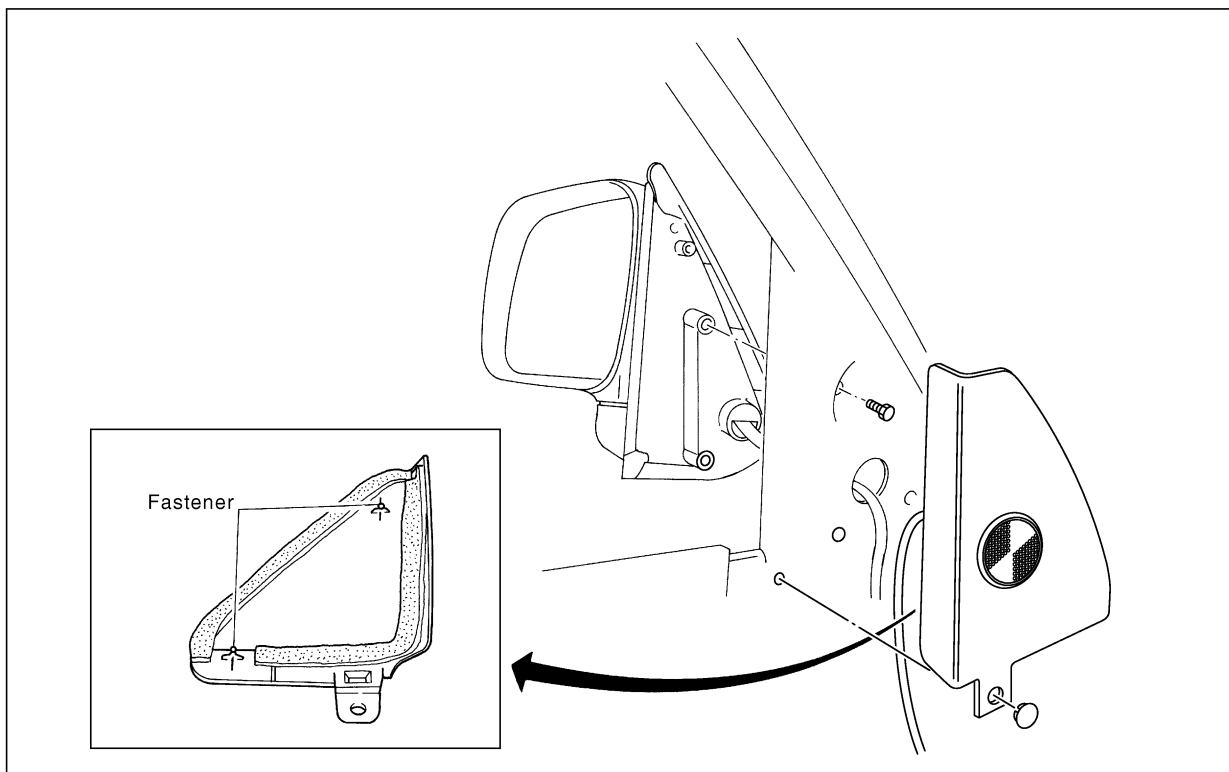
YBF332

INTERIOR AND EXTERIOR

Exterior (Cont'd)

Door mirror

⑦ Door mirror



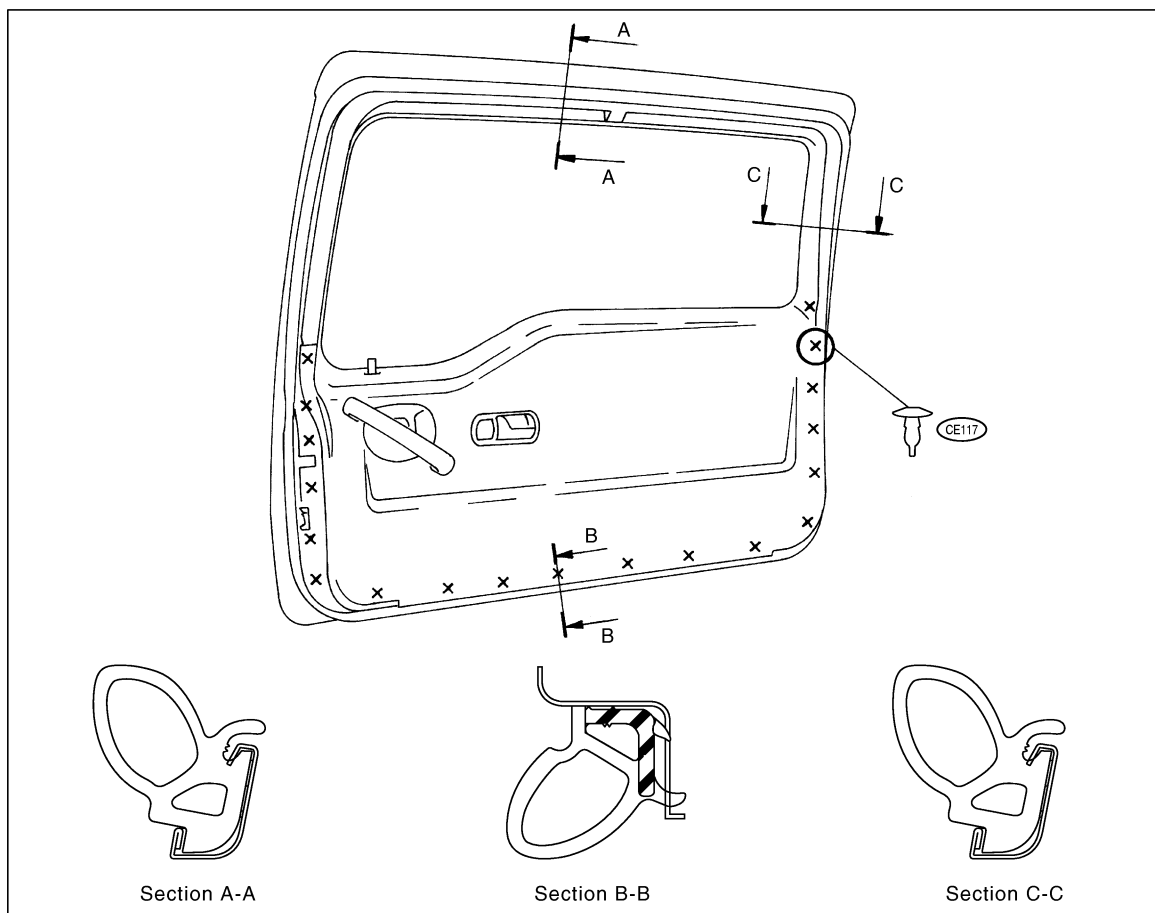
YBT136

INTERIOR AND EXTERIOR

Exterior (Cont'd)

Back door weatherstrip

⑬ Back door weatherstrip

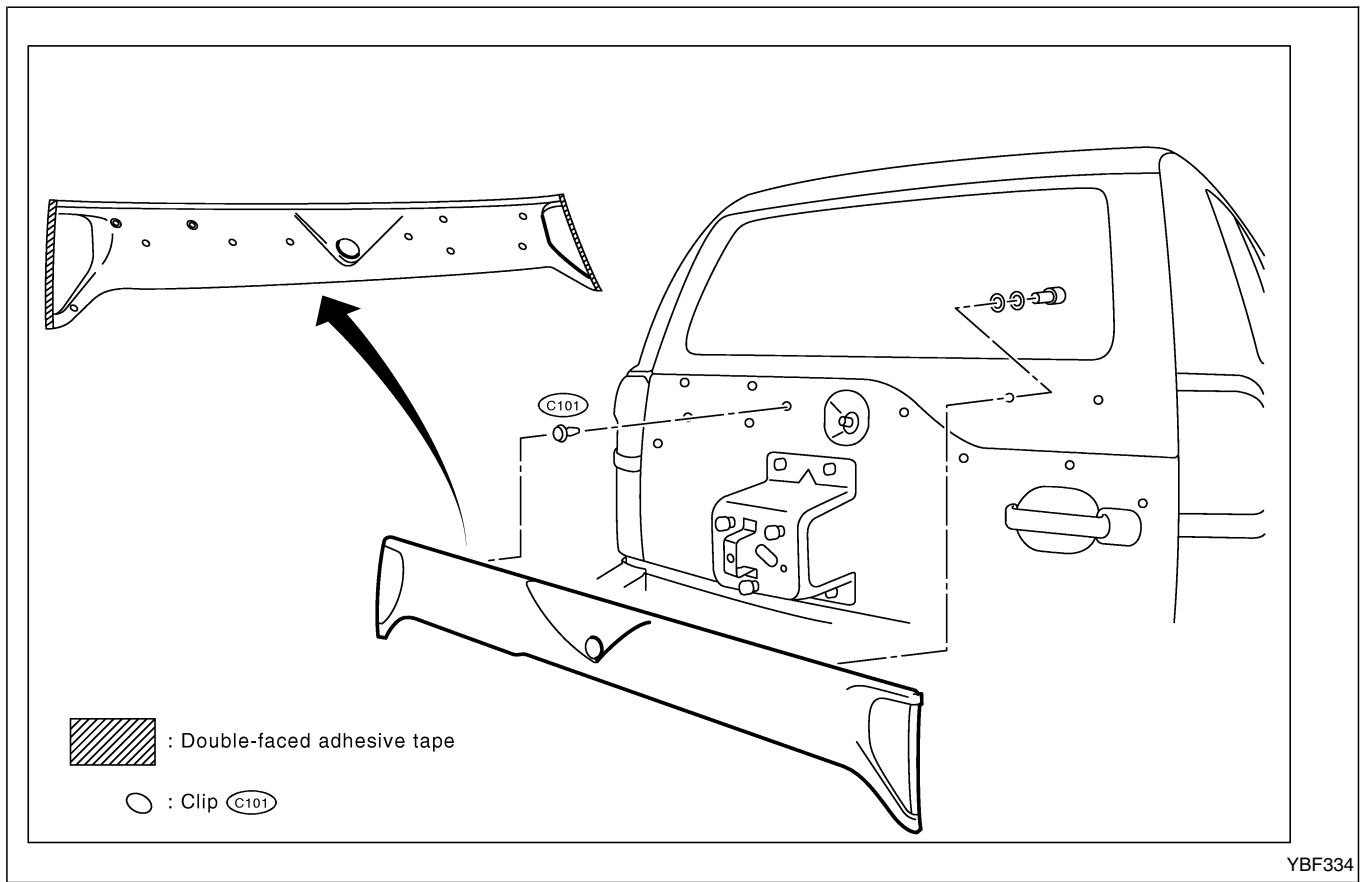


YBF333

INTERIOR AND EXTERIOR

Exterior (Cont'd)

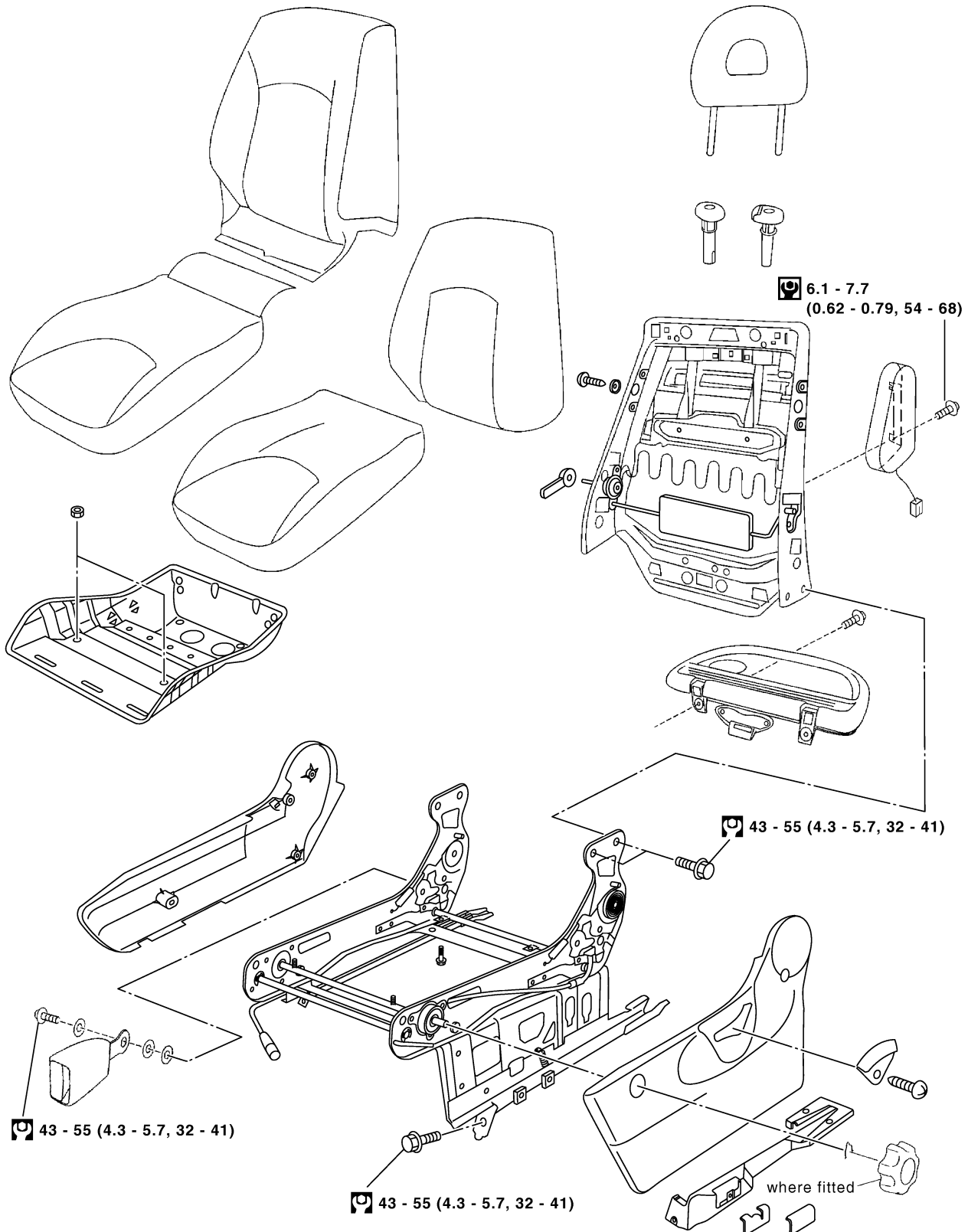
② Back door molding



- When removing or installing the seat trim, handle carefully to keep dirt out and avoid damage.

Front Seat

REMOVAL AND INSTALLATION



: N•m (kg-m, ft-lb)

: N•m (kg-m, in-lb)

BF-13033

<http://vnx.su/>

SEAT

Front Seat (Cont'd)

With side air bag

CAUTION:

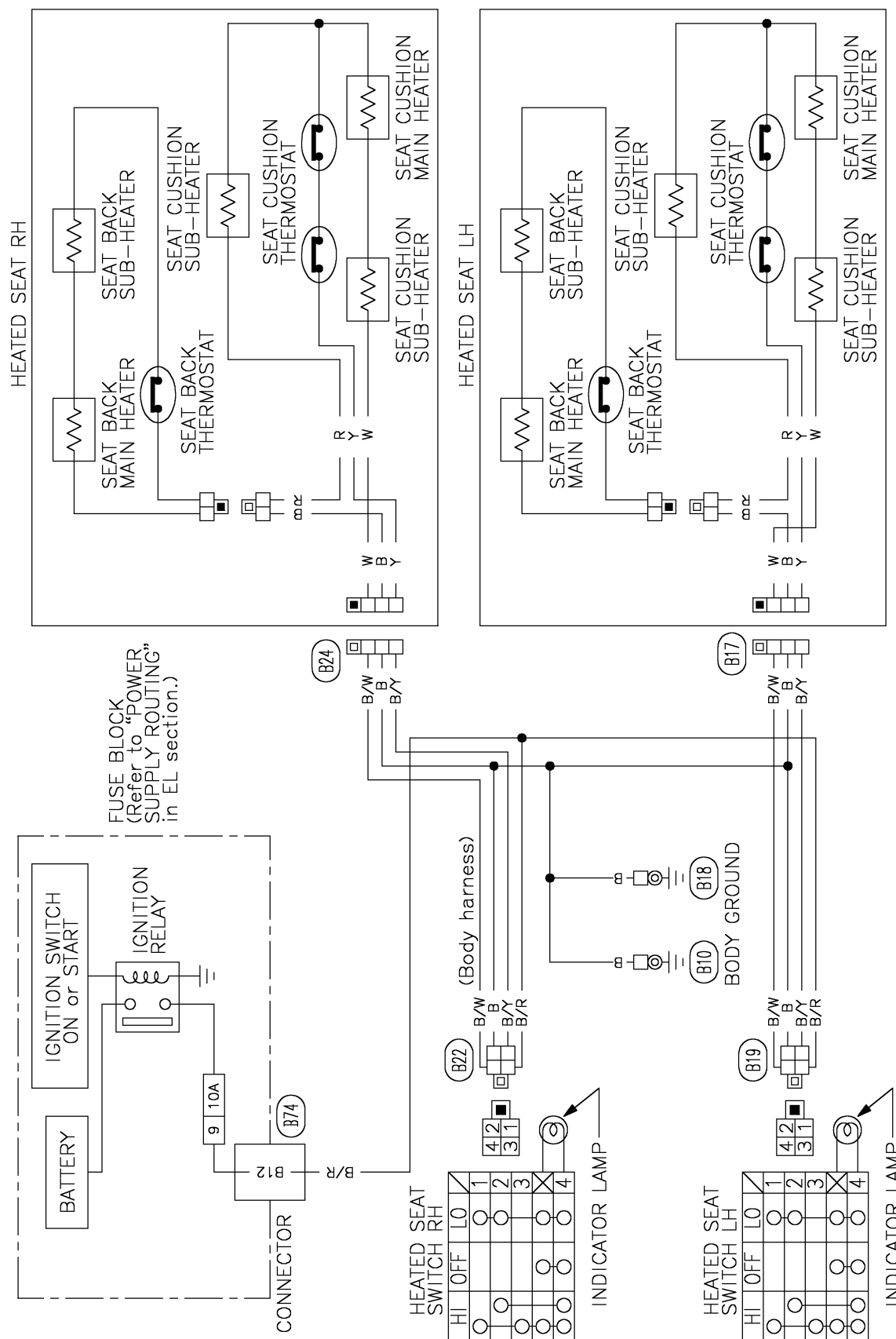
- Before removing the front seat, turn the ignition switch off, disconnect both battery cables and wait at least 3 minutes (models with side air bag).
- Do not drop, tilt, or bump the side air bag module installed in the seat. Always handle it with care.
- Disconnect the side air bag harness connector and heated seat harness connector from under the seat before removing the seat.
- Disconnect the side air bag harness connector before removing the seatback. Refer to BF-13051, "Front Side Air Bag Module" for details.

SEAT

Front Seat (Cont'd)

WIRING DIAGRAM

Except for Russia

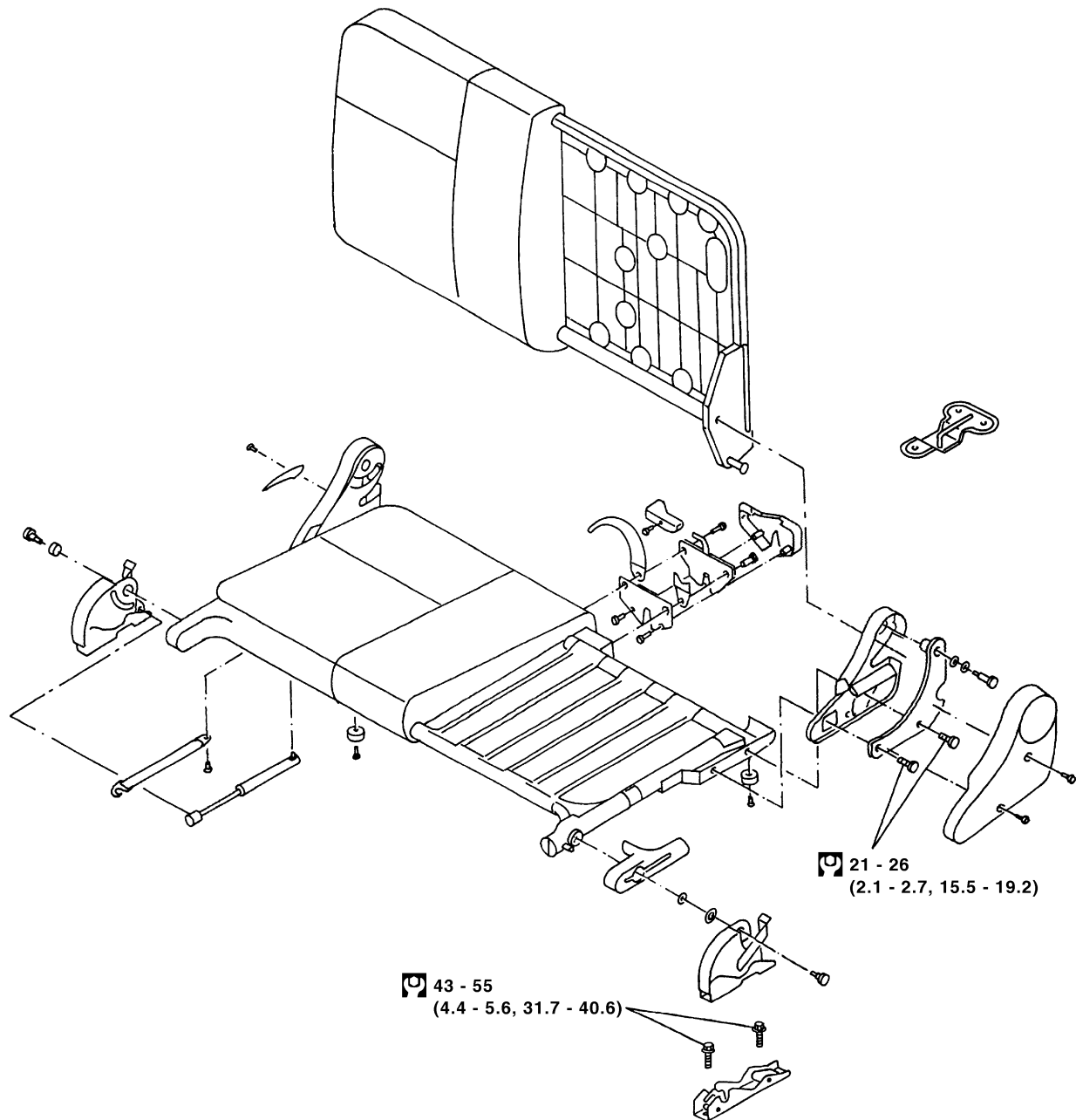


BF-13035

<http://vnx.su/>

YBF326

Third Seat



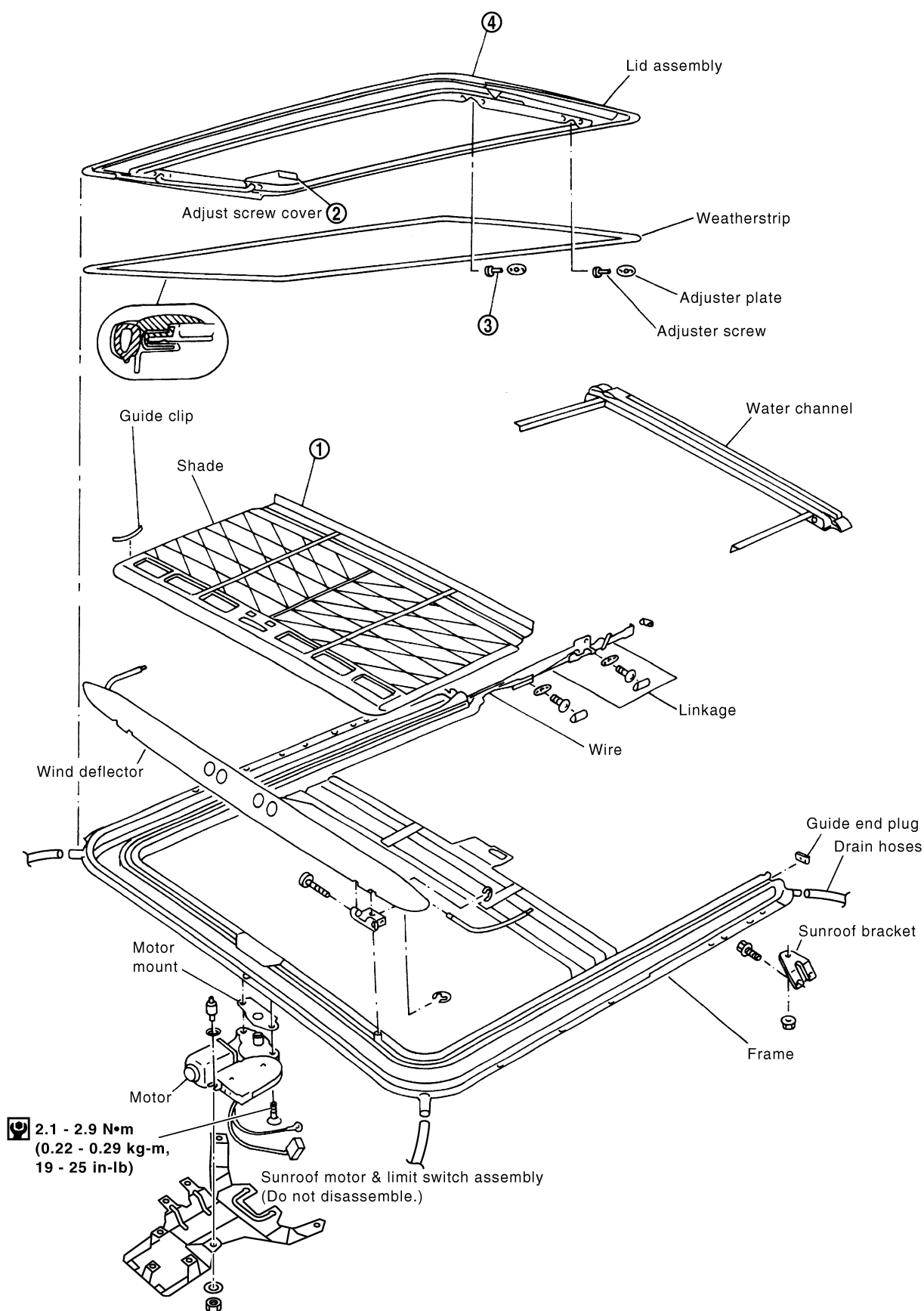
: N•m (kg-m, ft-lb)

YBT126

BF-13036

<http://vnx.su/>

SUN ROOF



YBT127

BF-13037

<http://vnx.su/>

MIRROR

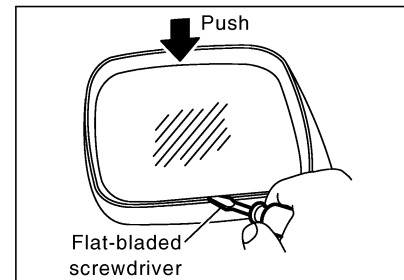
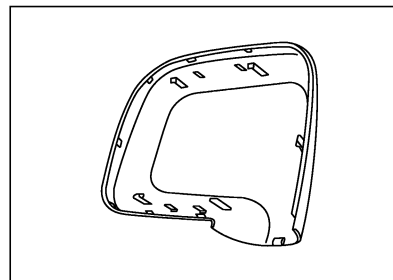
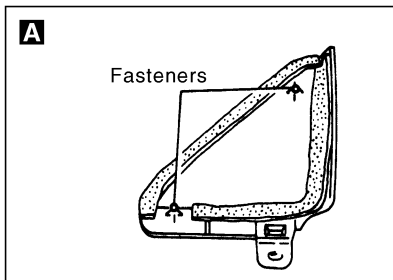
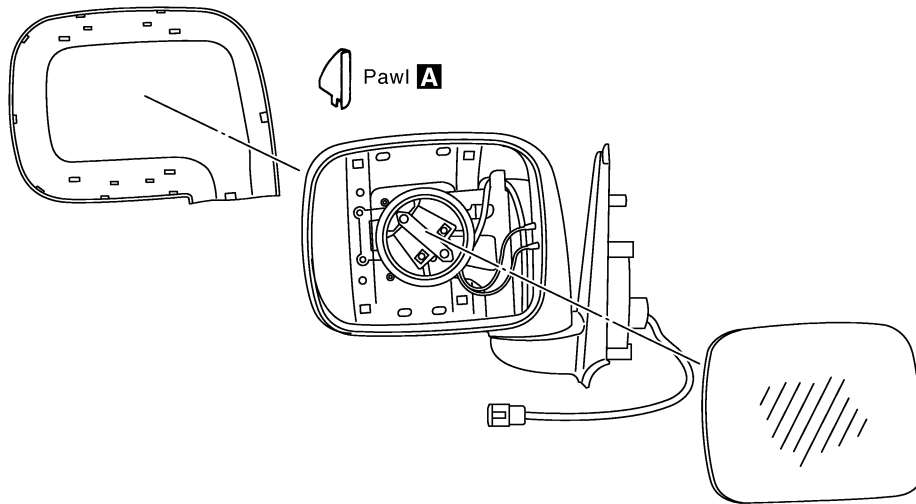
Door Mirror

CAUTION:

Be careful not to scratch door rearview mirror body.

REMOVAL — Door mirror

1. Remove door trim. Refer to "Removal — Door trim" in "Interior" for details.
2. Remove inner cover front corner of door.
3. Disconnect door mirror harness connector.
4. Remove harness clips.
5. Remove three bolts securing door mirror.



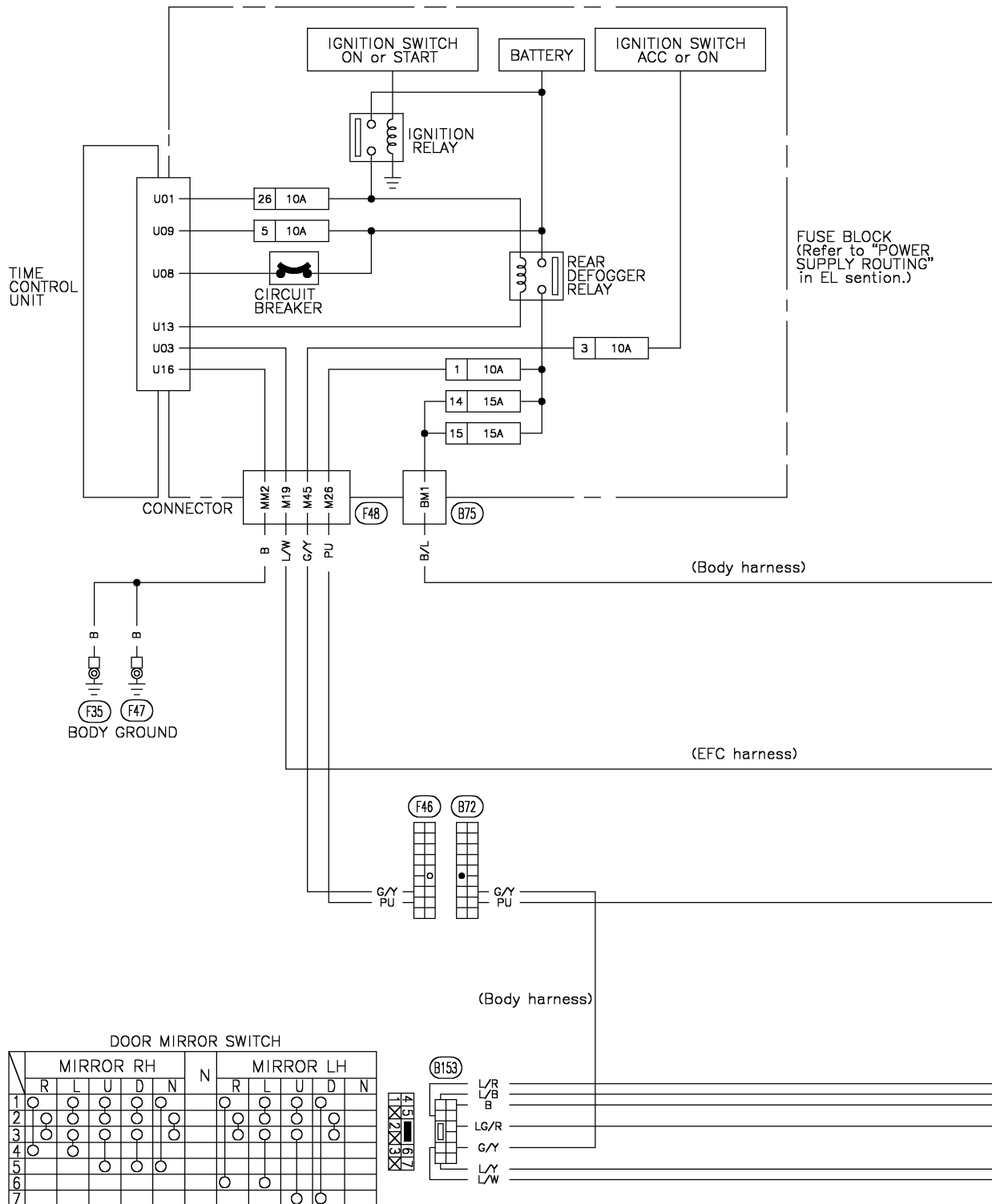
YBT135

MIRROR

Door Mirror (Cont'd)

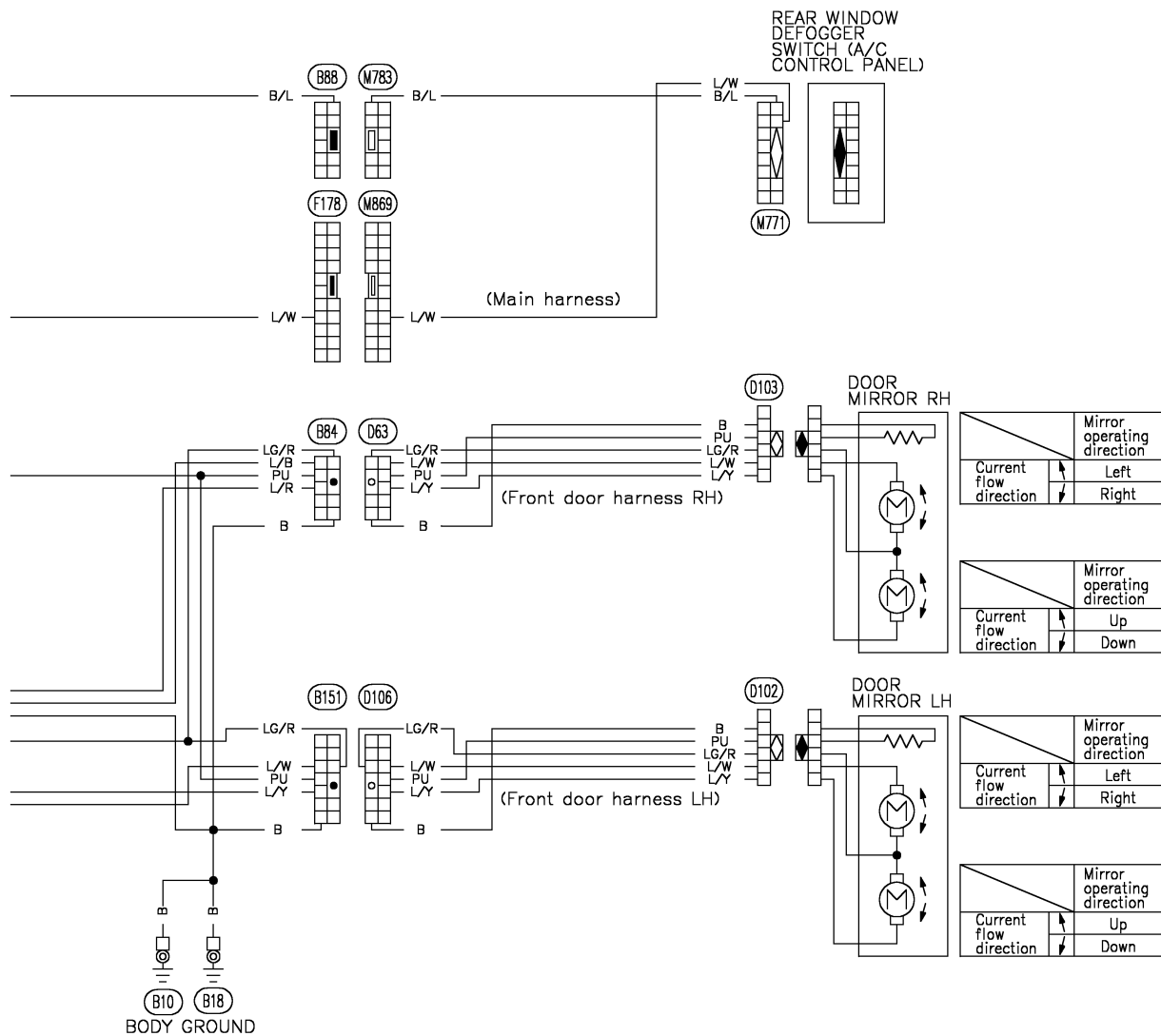
ELECTRICAL REMOTE CONTROL DOOR MIRROR WIRING DIAGRAM

For Russia



MIRROR

Door Mirror (Cont'd)



YBF321

Precautions

SUPPLEMENTAL RESTRAINT SYSTEM (SRS) “AIR BAG” AND “SEAT BELT PRE-TENSIONER”

The Supplemental Restraint System such as “AIR BAG” and “SEAT BELT PRE-TENSIONER” used along with a seat belt, helps to reduce the risk or severity of injury to the driver and front passenger for certain types of collision. The SRS composition which is available to NISSAN MODEL R20 is as follows (The composition varies according to the destination and optional equipment.):

- For a frontal collision
The Supplemental Restraint System consists of driver air bag module (located in the center of the steering wheel), front passenger air bag module (located on the instrument panel on passenger side), front seat belt pre-tensioners, a diagnosis sensor unit, warning lamp, wiring harness and spiral cable.
- For a side collision
The Supplemental Restraint System consists of front side air bag module (located in the outer side of front seat), side air bag (satellite) sensor, diagnosis sensor unit (one of components of air bags for a frontal collision), wiring harness, warning lamp (one of components of air bags for a frontal collision).

WARNING:

- To avoid rendering the SRS inoperative, which could increase the risk of personal injury or death in the event of a collision which would result in air bag inflation, all maintenance should be performed by an authorized NISSAN dealer.
- Improper maintenance, including incorrect removal and installation of the SRS, can lead to personal injury caused by unintentional activation of the system.
- Do not use electrical test equipment on any circuit related to the SRS unless instructed to in this Service Manual. SRS wiring harnesses are covered with yellow insulation (either just before the harness connectors or for the complete harness), for easy identification.

Precaution for Seat Belt Service

CAUTION:

- Before removing the seat belt pre-tensioner assembly, turn the ignition switch off, disconnect both battery cables and wait at least 3 minutes.
- Do not use electrical test equipment for seat belt pre-tensioner connector.
- After replacing or reinstalling seat belt pre-tensioner assembly, or reconnecting seat belt pre-tensioner connector, check the system function. Refer to “SRS Operation Check” for details. (RS-0)
- Do not disassemble buckle or seat belt assembly.
- Replace anchor bolts if they are deformed or worn out.
- Never oil tongue and buckle.
- If any component of seat belt assembly is questionable, do not repair. Replace the whole seat belt assembly.
- If webbing is cut, frayed, or damaged, replace seat belt assembly.
- When replacing seat belt assembly, use a genuine seat belt assembly.

After A Collision

WARNING:

Inspect all seat belt assemblies including retractors and attaching hardware after any collision.

NISSAN recommends that all seat belt assemblies in use during a collision be replaced unless the collision was minor and the belts show no damage and continue to operate properly. Failure to do so could result in serious personal injury in an accident. Seat belt assemblies not in use during a collision should also be replaced if either damage or improper operation is noted. Seat belt pre-tensioner should be replaced even if the seat belts are not in use during a frontal collision in which the air bags are deployed.

Replace any seat belt assembly if:

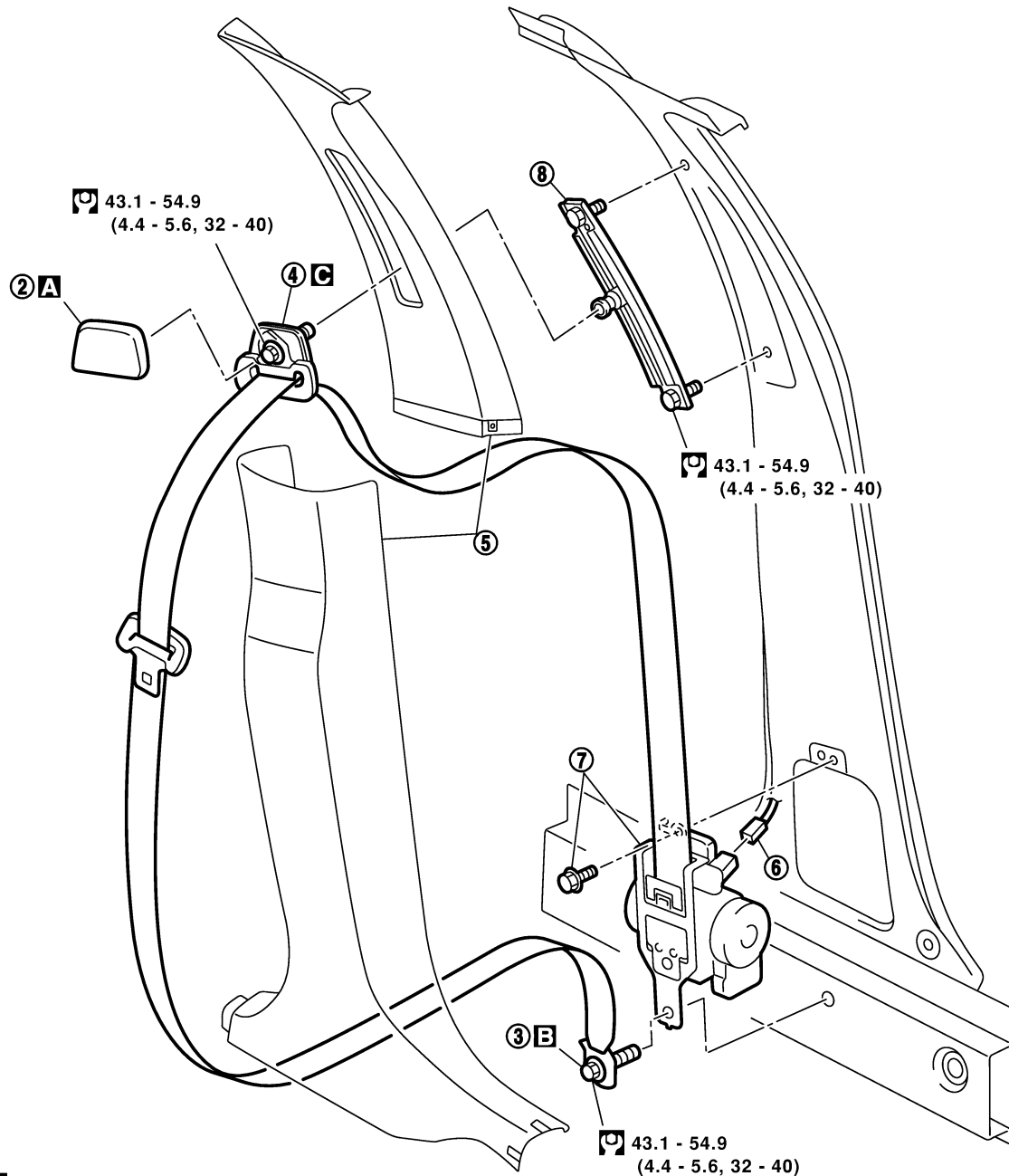
- The seat belt was in use at the time of a collision (except for minor collisions and the belts, retractors and buckles show no damage and continue to operate properly).
- The seat belt was damaged in an accident. (i.e. torn webbing, bent retractor or guide, etc.)
- The seat belt attaching point was damaged in an accident. Inspect the seat belt attaching area for damage or distortion and repair as necessary before installing a new seat belt assembly.
- Anchor bolts are deformed or worn out.

SEAT BELTS

Front Seat Belt

REMOVAL AND INSTALLATION

1. Slide the seat all the way forward. Tilt the seatback toward the front and remove the rear floor boxes.
2. Remove adjuster cover. **A**
3. Remove floor anchor bolt. **B**
4. Remove shoulder anchor bolt. **C**
5. Remove front and rear kicking plate, then remove center pillar upper and lower garnish. Refer to "SIDE AND FLOOR TRIM" for details.
6. Disconnect seat belt pre-tensioner connector.
7. Remove the screw securing seat belt pre-tensioner retractor, then remove seat belt and seat belt pre-tensioner retractor.
8. Remove bolts securing seat belt adjuster, then remove seat belt adjuster.



: N•m (kg-m, ft-lb)

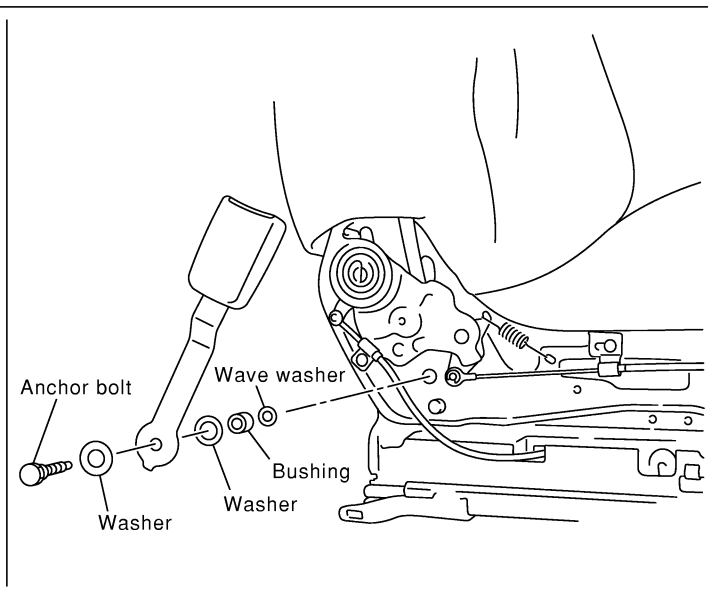
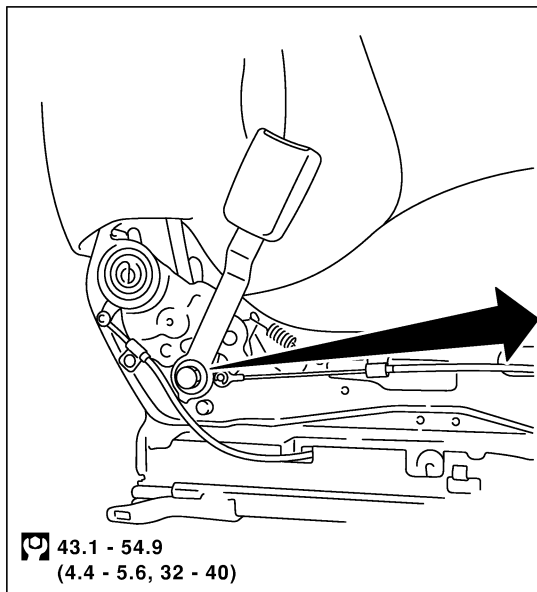
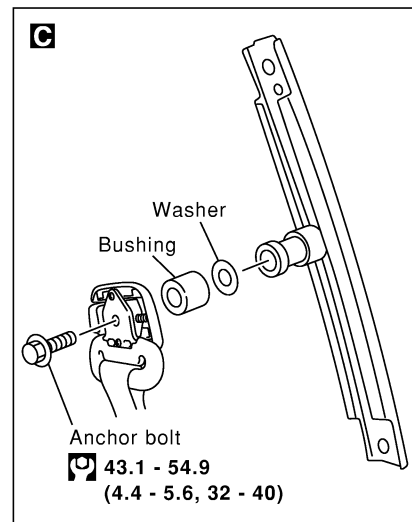
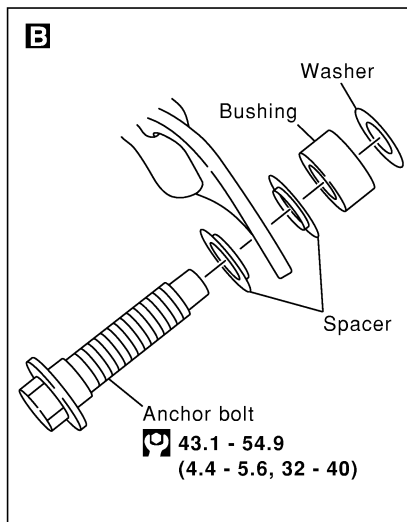
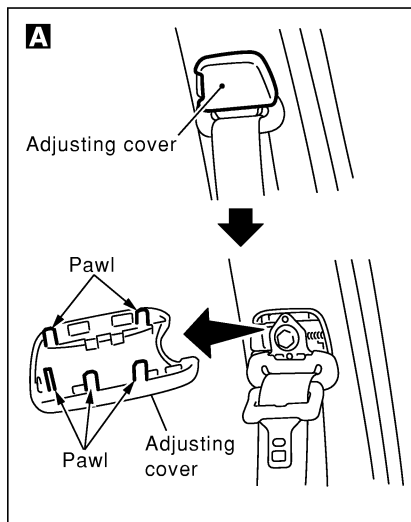
YRS093

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SEAT BELTS

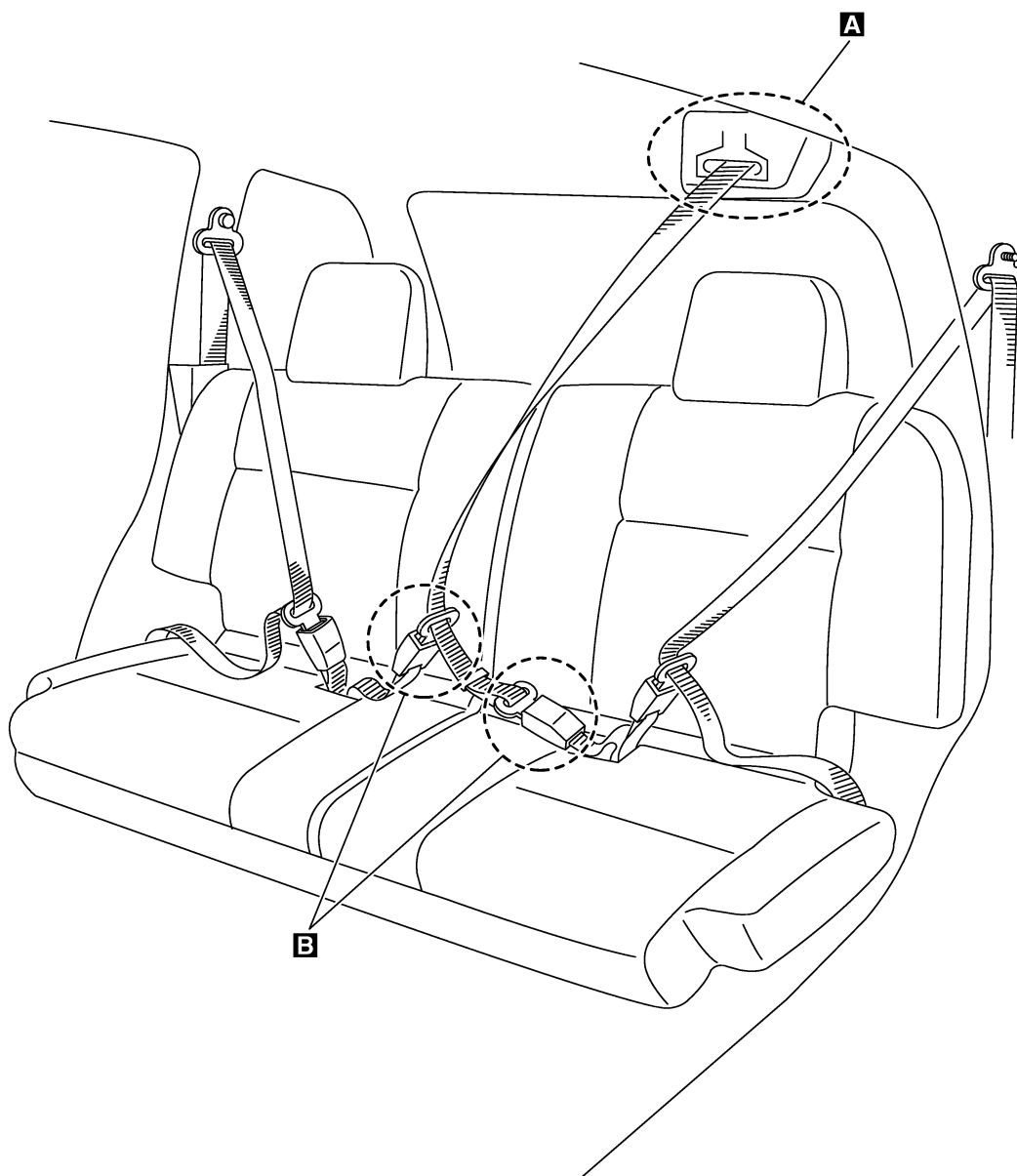
Front Seat Belt (Cont'd)



: N•m (kg-m, ft-lb)

SEAT BELTS

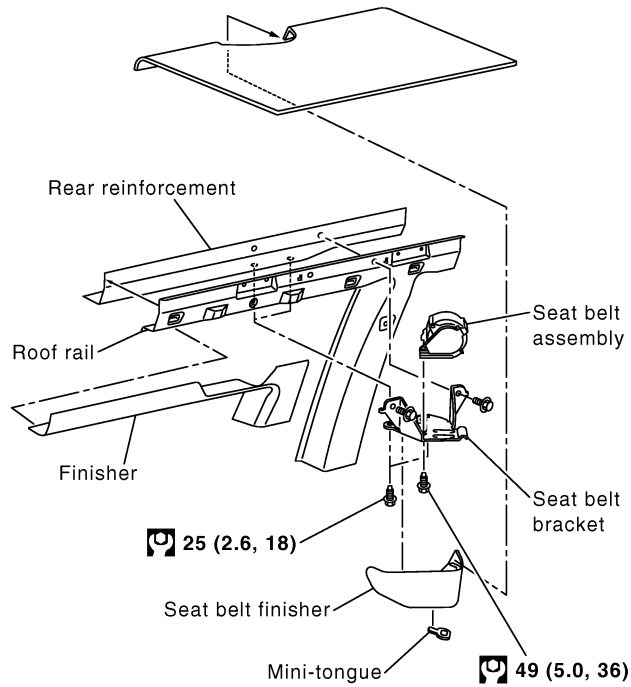
Rear 2nd Seat Belt



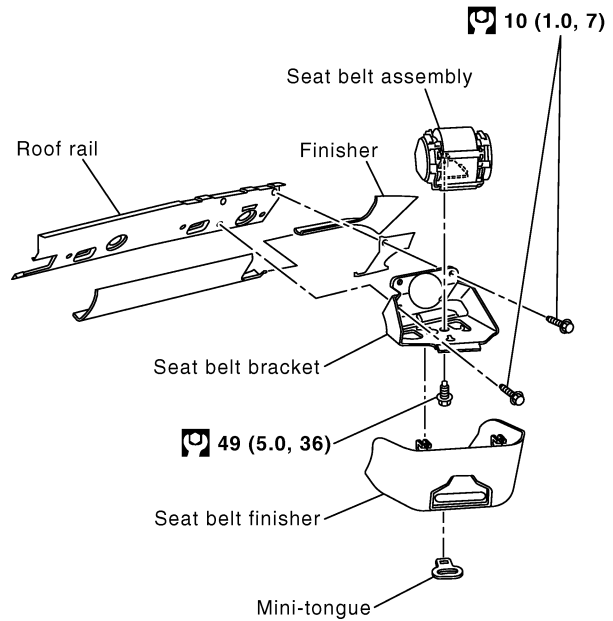
SEAT BELTS

Rear 2nd Seat Belt (Cont'd)

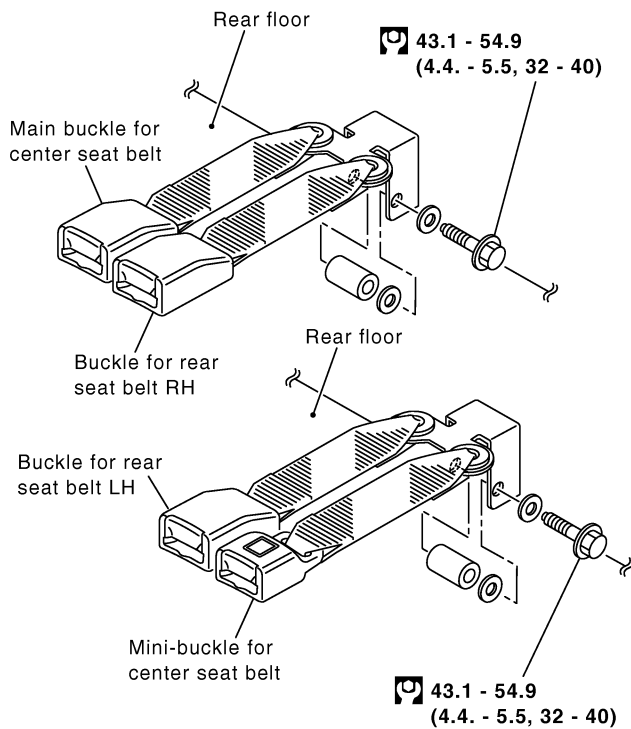
For Wagon 1



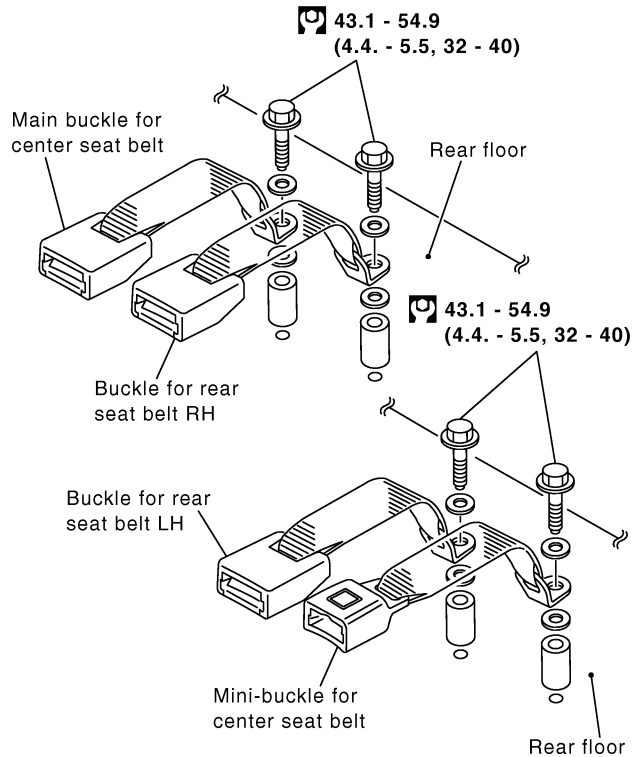
For Hardtop 1



For Wagon 2



For Hardtop 2



: N•m (kg-m, ft-lb)

YRS134

Precautions

SUPPLEMENTAL RESTRAINT SYSTEM (SRS) “AIR BAG” AND “SEAT BELT PRE-TENSIONER”

The Supplemental Restraint System such as “AIR BAG” and “SEAT BELT PRE-TENSIONER” used along with a seat belt, helps to reduce the risk or severity of injury to the driver and front passenger for certain types of collision. The SRS composition which is available to NISSAN MODEL R20 is as follows (The composition varies according to the destination and optional equipment.):

- For a frontal collision
The Supplemental Restraint System consists of driver air bag module (located in the center of the steering wheel), front passenger air bag module (located on the instrument panel on passenger side), front seat belt pre-tensioners, a diagnosis sensor unit, warning lamp, wiring harness and spiral cable.
- For a side collision
The Supplemental Restraint System consists of front side air bag module (located in the outer side of front seat), side air bag (satellite) sensor, diagnosis sensor unit (one of components of air bags for a frontal collision), wiring harness, warning lamp (one of components of air bags for a frontal collision).

WARNING:

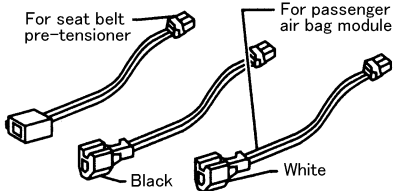
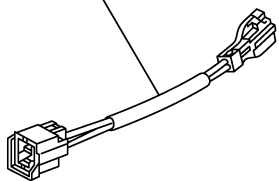
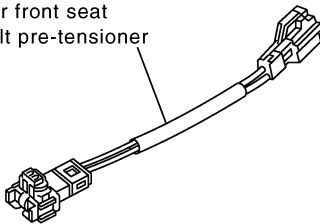
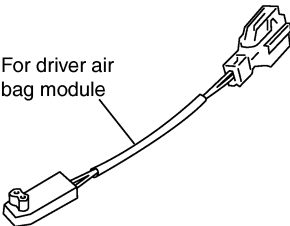
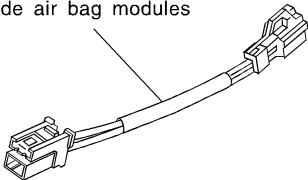
- **To avoid rendering the SRS inoperative, which could increase the risk of personal injury or death in the event of a collision which would result in air bag inflation, all maintenance should be performed by an authorized NISSAN dealer.**
- **Improper maintenance, including incorrect removal and installation of the SRS, can lead to personal injury caused by unintentional activation of the system.**
- **Do not use electrical test equipment on any circuit related to the SRS unless instructed to in this Service Manual. SRS wiring harnesses are covered with yellow insulation (either just before the harness connectors or for the complete harness), for easy identification.**

PRECAUTIONS FOR SRS “AIR BAG” AND “SEAT BELT PRE-TENSIONER” SERVICE

- Do not use electrical test equipment to check SRS circuits unless instructed to in this Service Manual.
- Before servicing the SRS, turn ignition switch “OFF”, disconnect both battery cables and wait at least 3 minutes.
For approximately 3 minutes after the cables are removed, it is still possible for the air bag and seat belt pre-tensioner to deploy. Therefore, do not work on any SRS connectors or wires until at least 3 minutes have passed.
- Diagnosis sensor unit must always be installed with their arrow marks “←” pointing towards the front of the vehicle for proper operation. Also check diagnosis sensor unit for cracks, deformities or rust before installation and replace as required.
- The spiral cable must be aligned with the neutral position since its rotations are limited. Do not attempt to turn steering wheel or column after removal of steering gear.
- Handle air bag module carefully. Always place driver and front passenger air bag modules with the pad side facing upward and place front side air bag module (built-in type) standing with stud bolt side setting bottom.
- Conduct self-diagnosis to check entire SRS for proper function after replacing any components.
- After air bag inflates, the front instrument panel assembly should be replaced if damaged.

SUPPLEMENTAL RESTRAINT SYSTEM (SRS)

Special Service Tools

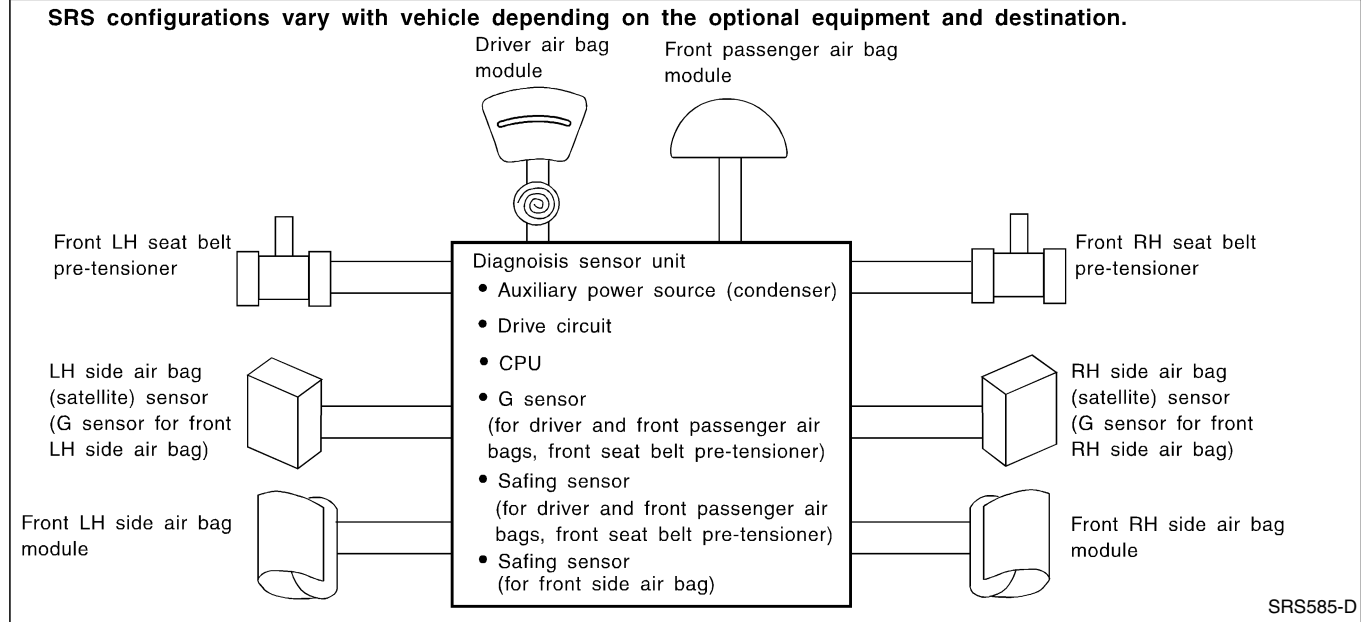
Tool number Tool name	Description
KV991065S0 Deployment tool adapters	 For seat belt pre-tensioner For passenger air bag module Black White NRS030
KV99108300 Deployment tool adapter for front passenger air bag	 For front passenger air bag module YRS101
KV99109700 Deployment tool adapter for seat belt pre-tensioner	 For front seat belt pre-tensioner YRS128
KV99109800 Deployment tool adapter for driver air bag module	 For driver air bag module YRS129
KV99109000 Deployment tool adapter for front side air bag	 For front side air bag modules NT797

SUPPLEMENTAL RESTRAINT SYSTEM (SRS)

Description

The air bag deploys if the diagnosis sensor unit activates while the ignition switch is in "ON" or "START" position.

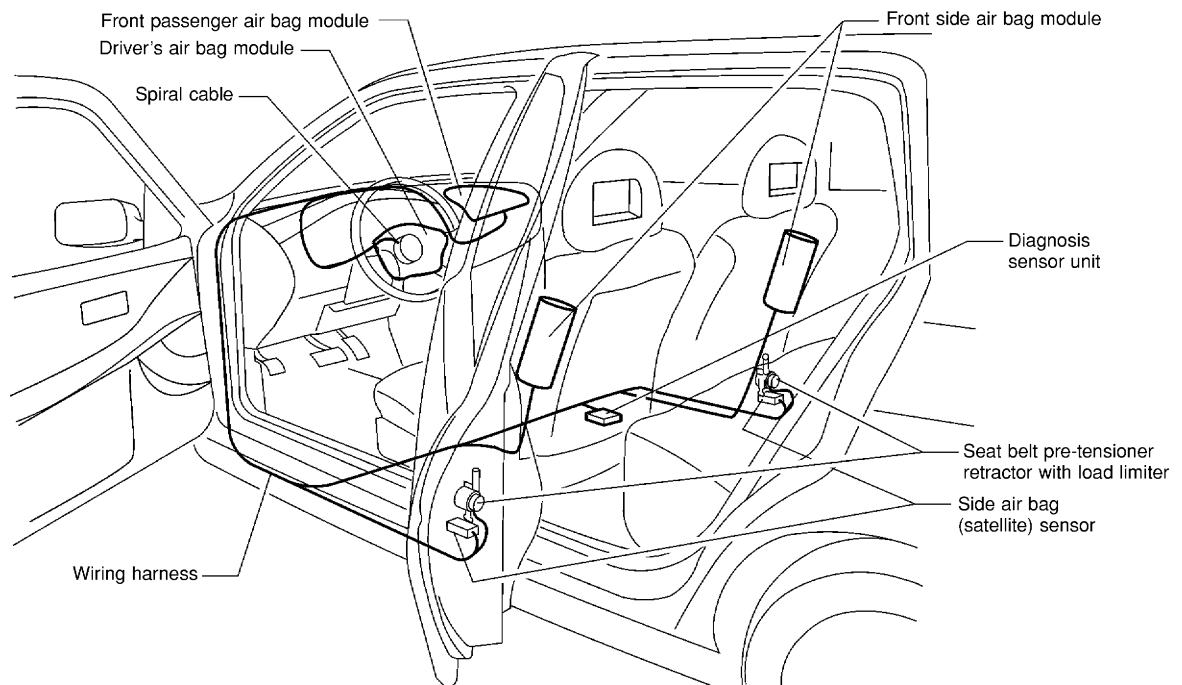
SRS configurations vary with vehicle depending on the optional equipment and destination.

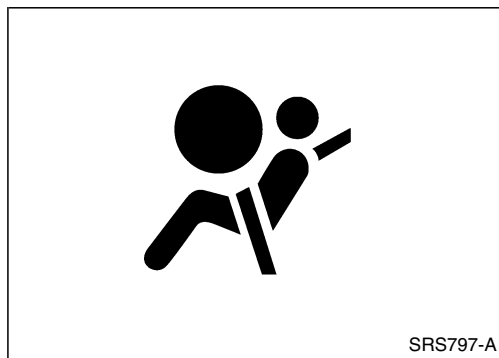
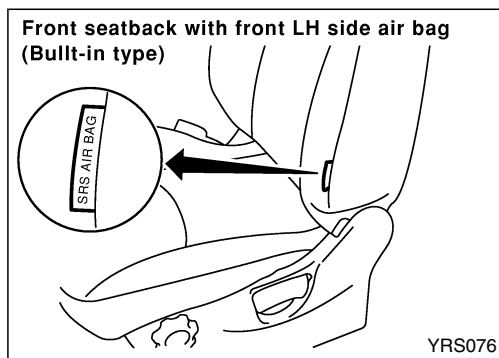


SRS Component Parts Location

SEC. 240•251•253•480•868•870

SRS configurations vary with vehicle depending on the destination and optional equipment.





Built-in Type Side Air Bag

Front side air bag is built-in type.

The front seatbacks with built-in type front side air bag have the labels shown in figure at left.

Maintenance Items

CAUTION:

Do not use electrical test equipment to check SRS circuit.

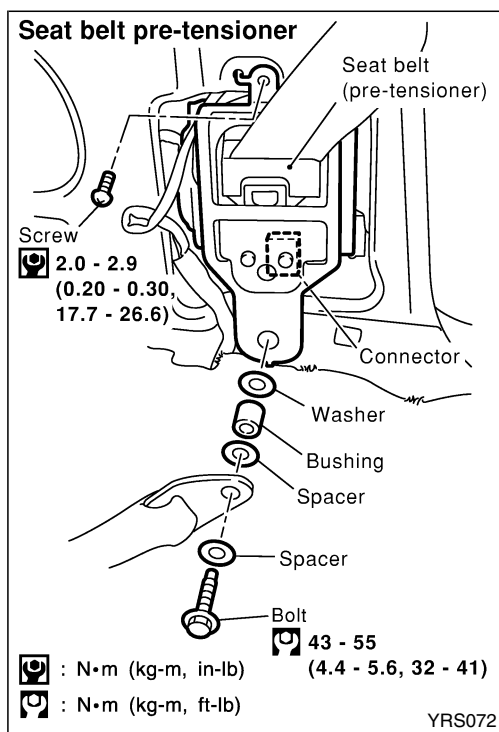
1. Check operation of "AIR BAG" warning lamp.

After turning ignition switch to "ON" position, "AIR BAG" warning lamp illuminates. The "AIR BAG" warning lamp will go off after about 7 seconds if no malfunction is detected. If any of the following "AIR BAG" warning lamp conditions occur, immediately check the air bag system. Refer to BF-13067 for details.

 - The "AIR BAG" warning lamp does not illuminate when the ignition switch is turned "ON".
 - The "AIR BAG" warning lamp does not go off about 7 seconds after the ignition switch is turned "ON".
 - The "AIR BAG" warning lamp blinks after about 7 seconds after the ignition switch is turned "ON".
2. Visually check SRS components.
 - 1) Diagnosis sensor unit
 - Check diagnosis sensor unit and bracket for dents, cracks and deformities.
 - Check connectors for damage, and terminals for deformities.
 - 2) Air bag module and steering wheel
 - Remove air bag module from steering wheel, instrument panel or seatback. Check harness cover and connectors for damage, terminals for deformities, and harness for binding.
 - Install driver air bag module to steering wheel to check fit or alignment with the wheel.
 - Check steering wheel for excessive free play.
 - Install front passenger air bag module to instrument panel to check fit or alignment with the instrument panel.
 - Install front side air bag module to seatback to check fit and alignment with the seat.
 - 3) Spiral cable
 - Check spiral cable for dents, cracks, or deformities.
 - Check connectors and protective tape for damage.
 - Check steering wheel for noise, binding or heavy operation.
 - 4) Main harness, body harness, side air bag module sub-harness
 - Check connectors for poor connections, damage, and terminals for deformities.
 - Check harnesses for binding, chafing or cut.
 - 5) Side air bag (satellite) sensor
 - Check side air bag (satellite) sensor (including bracket portion) for dents, cracks or deformities.
 - Check connectors for damage, and terminals for deformities.

CAUTION:

Replace previously used special bolts and ground bolt with new ones.



Front Seat Belt Pre-tensioner

REMOVAL AND INSTALLATION

CAUTION:

- Before servicing SRS, turn the ignition switch off, disconnect both battery cables and wait at least 3 minutes.
- Check front seat front belt pre-tensioner with load limiter for proper installation.
- After replacement of front seat belt pre-tensioner, check SRS function and perform self-diagnosis for SRS.
- Refer to "SRS Operation Check" for details.
- Do not attempt to disassemble front seat belt pre-tensioner with load limiter.
- Replace front seat belt pre-tensioner if it has been dropped or sustained an impact.
- Do not expose front seat belt pre-tensioner to temperatures exceeding 80°C (176°F).

For removal of front seat belt pre-tensioner, refer to "Front Seat Belt" for details.

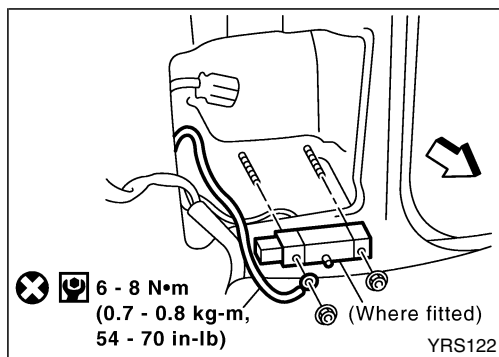
NOTE:

- To install, reverse the removal procedure sequence.

Removal and Installation — Side Air Bag (Satellite) Sensor

CAUTION:

- Before servicing SRS, turn the ignition switch off, disconnect both battery cables and wait at least 3 minutes.
- Do not use old bolts coated with bonding agent after removal; replace with new ones.
- Check side air bag (satellite) sensor for proper installation.
- Check side air bag (satellite) sensor to ensure they are free of deformities, dents, cracks or rust. If it shows any visible signs of damage, replace it with new one.
- After replacement of side air bag (satellite) sensor, check SRS function and perform self-diagnosis for SRS. Refer to BF-13067 for details.
- Do not attempt to disassemble side air bag (satellite) sensor.
- Replace side air bag (satellite) sensor if it has been dropped or sustained an impact.



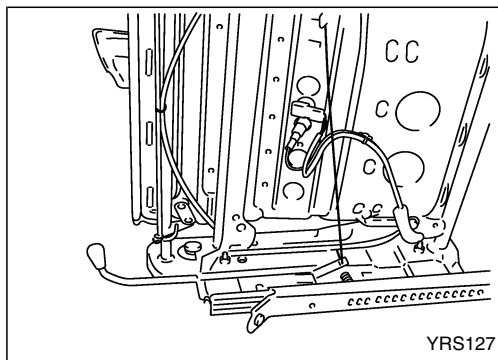
REMOVAL OF SIDE AIR BAG (SATELLITE) SENSOR

1. Remove front seat belt.
2. Disconnect side air bag (satellite) sensor connector.
3. Remove bolt and nuts from side air bag (satellite) sensor unit. Then remove the (satellite) sensor.

NOTE:

- To install, reverse the removal procedure sequence.
- Face the connector rearward and the label upward.

SUPPLEMENTAL RESTRAINT SYSTEM (SRS)

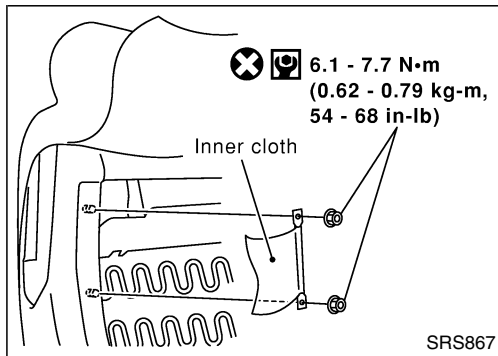


Removal — Side Air Bag Module

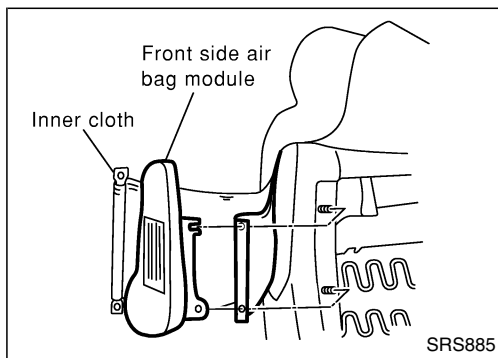
CAUTION:

- Before servicing SRS, turn the ignition switch “OFF”, disconnect both battery cables and wait at least 3 minutes.
- Always work from the rear of the front side air bag module.

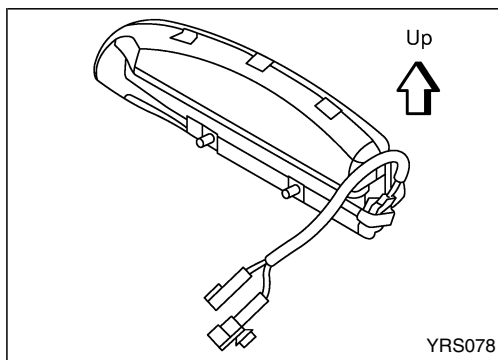
1. Disconnect side air bag module connector under the front seat.
2. Open the seatback zipper.



3. Pull up the seatback trim.
4. Remove the nuts coated with bonding agent, securing front side air bag and the inner cloth with seatback frame.

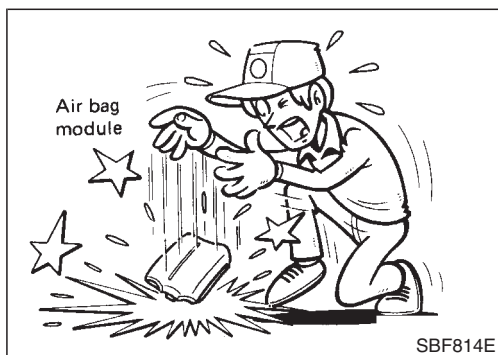


5. Remove the inner cloth.
6. Remove front side air bag connector. Front side air bag module can then be removed.

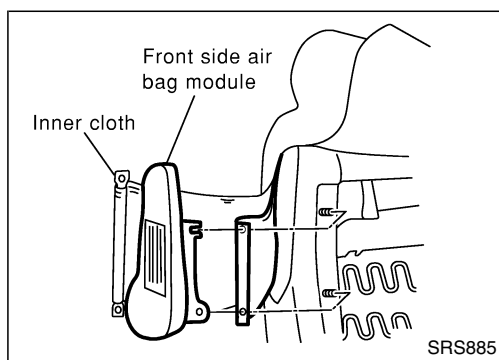


CAUTION:

- Always place the air bag module with the stud bolts side facing down.
- Do not attempt to disassemble air bag module.
- The torx nuts are coated with bonding agent. Do not use old nuts after removal; replace with new coated nuts.
- Do not insert any foreign objects (screwdriver, etc.) into air bag module connector.

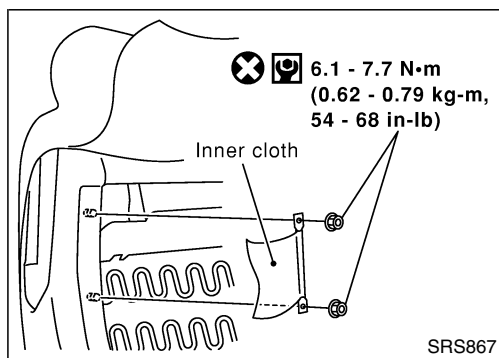


- Replace air bag module if it has been dropped or sustained an impact.
- Do not expose the air bag module to temperatures exceeding 90°C (194°F).
- Do not allow oil, grease or water to come in contact with the air bag module.
- After air bag inflates, all parts of front seatback (including front seatback frame) should be replaced.



Installation — Side Air Bag Module

1. Install the seatback trim. Refer to BT-13033, "Front Seat".
2. Install front side air bag module on seatback frame.
3. Install front side air bag connector.



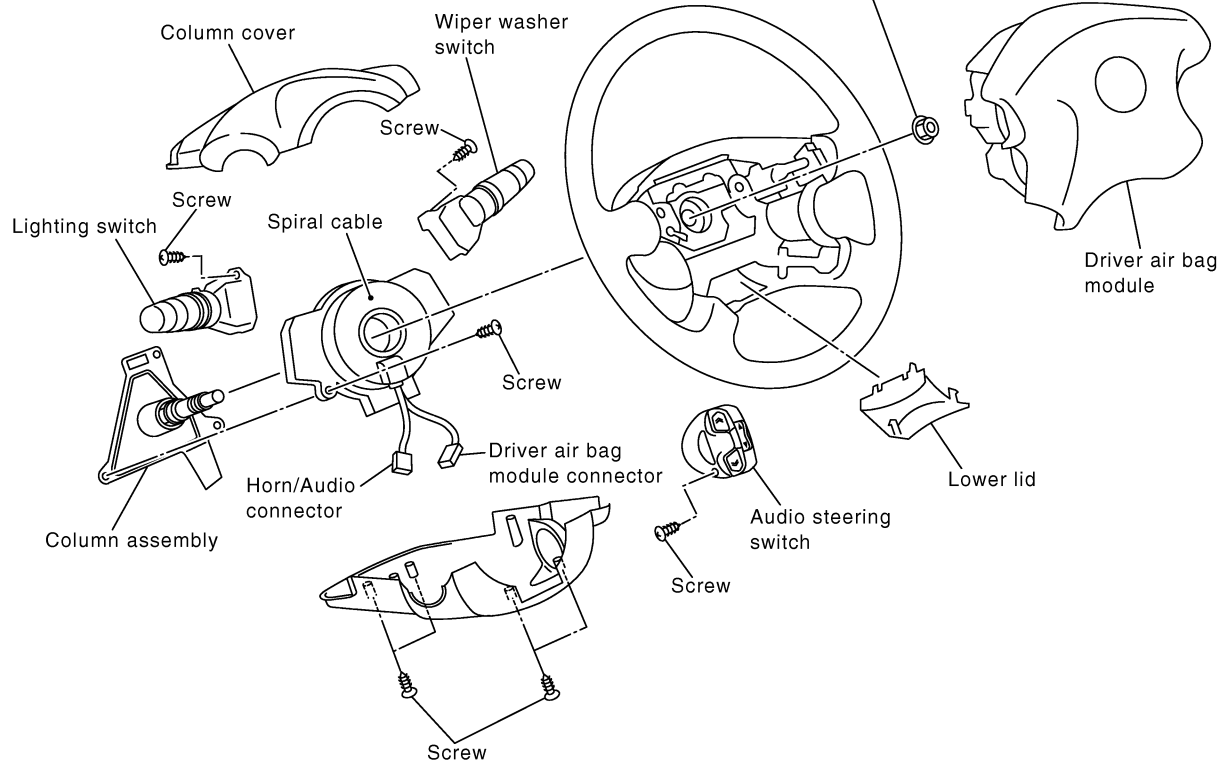
4. Secure the inner cloth which covers the side air bag module with new bolts.

5. Connect side air bag module connector.
6. Close the seatback zipper.
7. Connect both battery cables.
8. Perform self-diagnosis to ensure entire SRS operates properly. (Use CONSULT-II or air bag warning lamp.)

Removal — Air Bag Module and Spiral Cable

SEC. 253•484

 29.4 - 39.2 N•m
(3.0 - 4.0 kg-m, 22 - 29 ft-lb)



YRS107

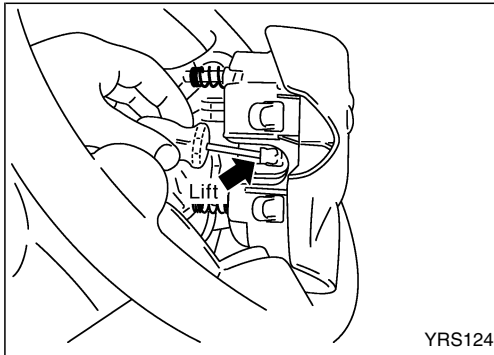
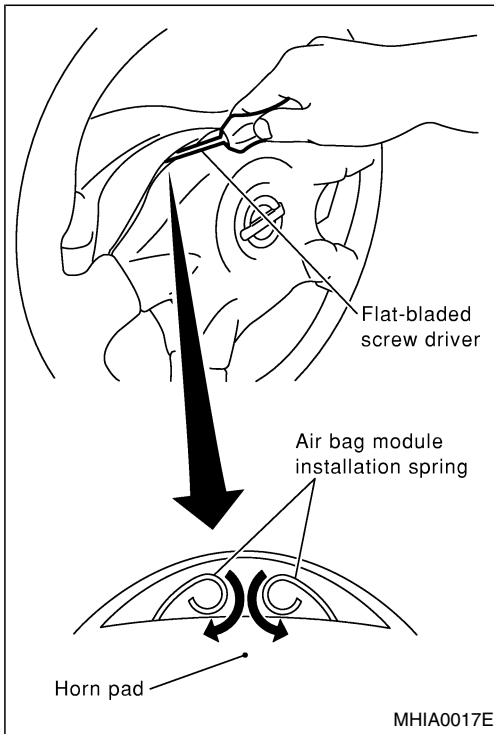
CAUTION:

- Before servicing SRS, turn the ignition switch off, disconnect battery ground cable and wait for at least 10 minutes.
 - Always work from the side of driver air bag module.
1. Push the top of horn pad downward.

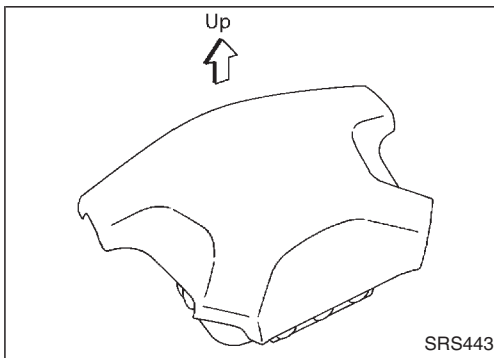
SUPPLEMENTAL RESTRAINT SYSTEM (SRS)

Removal — Air Bag Module and Spiral Cable (Cont'd)

2. Rotate the air bag module installation spring to inner direction with a flat-bladed screwdriver, remove air bag module.

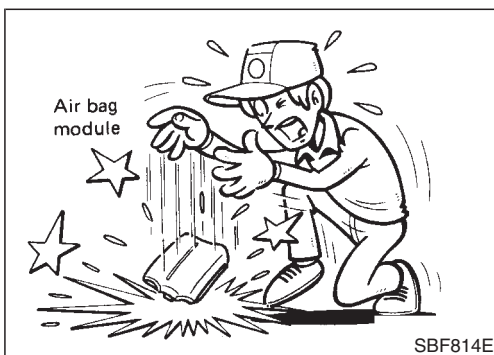


3. Lift the black locking clip with a flat-bladed screwdriver and disconnect air bag module harness connector. Disconnect horn connector.



CAUTION:

- Always place air bag module with pad side facing upward.
- Do not attempt to disassemble air bag module.
- The special bolts are coated with bonding agent. Discard old ones after removal; replace with new ones.

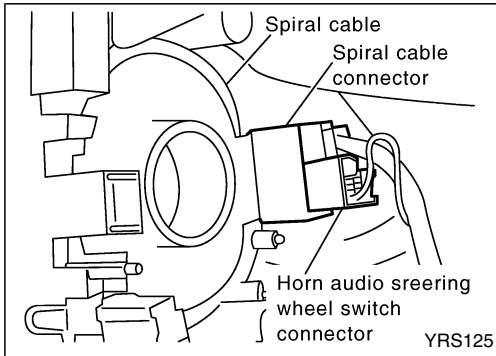


- Do not drop or impact air bag module. If any area is deformed or cracked, replace the module.
- Do not expose the air bag module to temperatures exceeding 100°C (212°F).
- Do not allow oil, grease or water to come in contact with the air bag module.

SUPPLEMENTAL RESTRAINT SYSTEM (SRS)

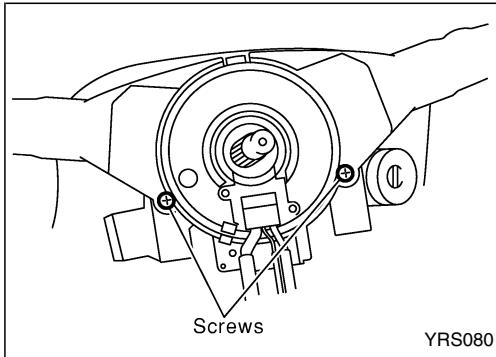
Removal — Air Bag Module and Spiral Cable (Cont'd)

4. Set steering wheel in the neutral position.
5. Disconnect horn connector and remove center nut.
6. Remove steering wheel.



CAUTION:

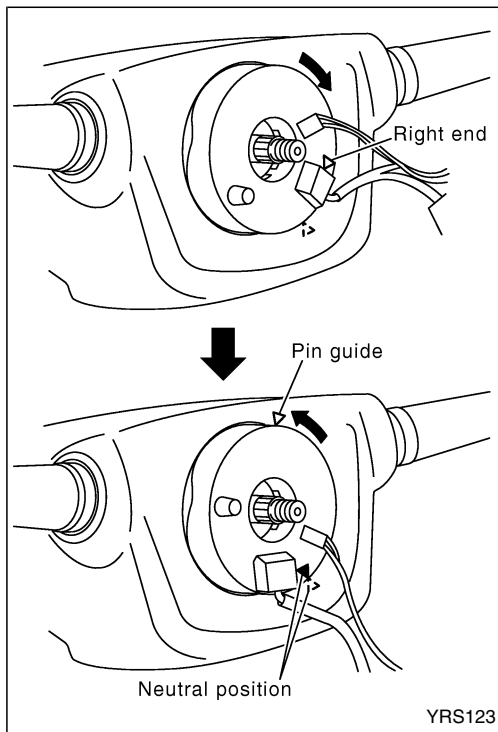
Do not tap or bump the steering wheel.



7. Remove steering column upper and lower covers.
8. Disconnect in order the air bag module connector and the (horn/audio steering switch) connector behind the spiral cable.
9. Remove spiral cable screws, and while pushing the upper plastic tab, remove the spiral cable.

CAUTION:

- Do not attempt to disassemble spiral cable.
- Do not apply lubricant to the spiral cable.

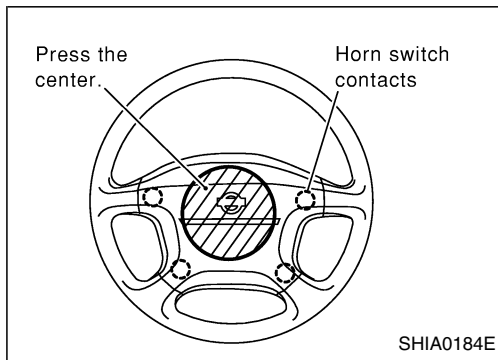


Installation — Air Bag Module and Spiral Cable

1. Set the front wheels in the straight-ahead position.
2. Make sure that the spiral cable is in the neutral position. The neutral position is detected by turning left (counterclockwise) about 2.5 revolutions from the right end position. Align the two marks (∇).

CAUTION:

- The spiral cable may snap due to steering operation if the cable is installed in an improper position.
 - Also, with the steering linkage disconnected, the cable may snap by turning the steering wheel beyond the limited number of turns. The spiral cable can be turned up to about 2.5 turns from the neutral position to both the right and left.
3. Connect spiral cable connector in the reverse order of disconnecting and tighten with screws.
 4. Install steering column covers. And make sure the harness do not get caught between inner steering cover and steering column.
 5. Install steering wheel, aligning with spiral cable pin guides, and pull spiral cable through.
 6. Connect horn connector (or horn/audio steering switch connector) and engage spiral cable with pawls in steering wheel. Move driver air bag module connector away from steering wheel lower lid opening.
 7. Tighten nut.
: 30 - 40 N·m (3.1 - 4.1 kg·m, 22 - 30 ft-lb)
 8. Install steering switch.
 9. For installing the air bag module, press the center of horn pad to make the contacts (RH, LH) ON.



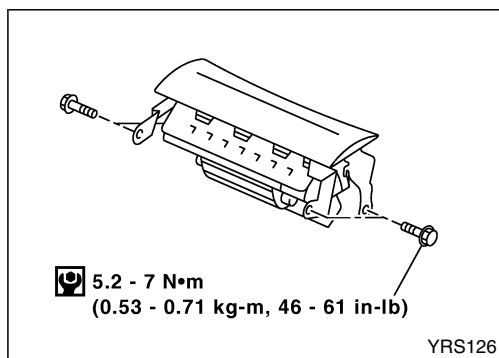
10. Connect air bag module connector and push the black locking clip to secure the connector to the air bag module.
11. Conduct self-diagnosis to ensure entire SRS functions correctly. (Use warning lamp check.)

SUPPLEMENTAL RESTRAINT SYSTEM (SRS)

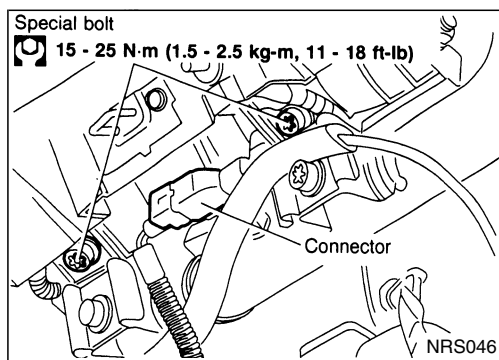
Removal — Front Passenger Air Bag Module

CAUTION:

- Before servicing SRS, turn the ignition switch off, disconnect both battery cables and wait for at least 3 minutes.
 - Always work from the side of or under air bag module.
1. Remove glove box.
 2. Disconnect inflator connector.

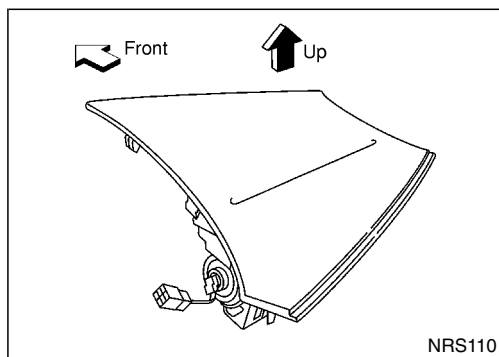


3. Remove bolts holding the passenger air bag module to the instrument panel.



4. Remove upper special bolts, as indicated.

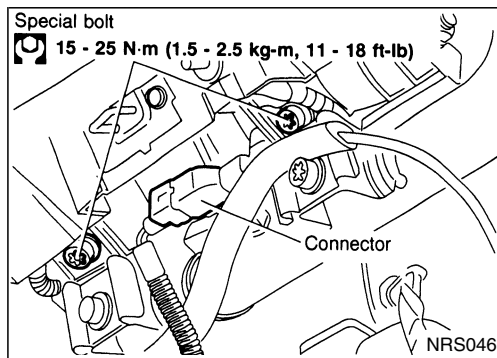
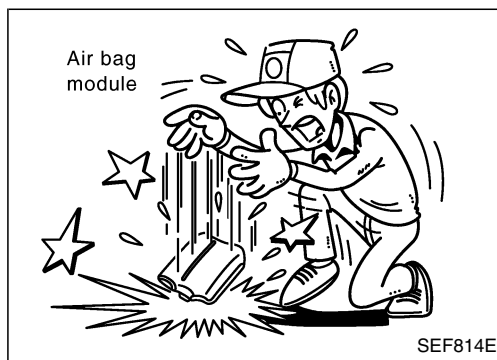
5. Remove the passenger air bag module.



CAUTION:

- Always place air bag module with pad side facing sideward.
- Do not attempt to disassemble air bag module.
- The special bolts are coated with bonding agent. Do not use old bolts after removal; replace with new coated bolts.

SUPPLEMENTAL RESTRAINT SYSTEM (SRS)



Removal — Front Passenger Air Bag Module (Cont'd)

- Replace air bag module if it has been dropped or sustained an impact.
- After air bag inflates, the front instrument panel should be replaced, if damaged.
- Do not expose the air bag module to temperatures exceeding 90°C (194°F).
- Do not allow oil, grease or water to come in contact with the air bag module.

Installation — Front Passenger Air Bag Module

- Always work from the side of or under air bag module.
- 1. Install front passenger air bag module.
- Ensure harness is not caught between rear of air bag module and steering member.

2. Connect air bag module connector.
3. Install glove box.
4. Connect both battery cables.
5. Conduct self-diagnosis to ensure entire SRS operates correctly. (Use CONSULT or warning lamp check). Refer to "Self-diagnosis" for details. (BF-6026)

Disposal of Air Bag Module and Seat Belt Pre-tensioner

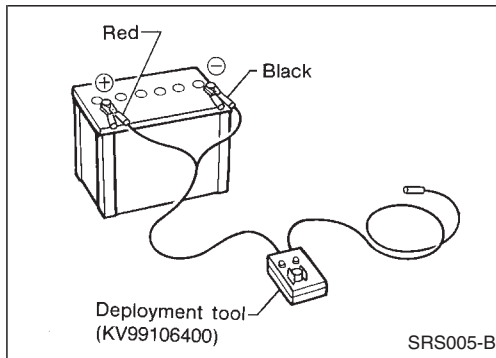
- Before disposing of air bag module and seat belt pre-tensioner, or vehicles equipped with such systems, deploy the systems. If such systems have already been deployed due to an accident, dispose of them as indicated in "DISPOSING OF AIR BAG MODULE AND SEAT BELT PRE-TENSIONER".
- When deploying the air bag module and seat belt pre-tensioner, always use the Special Service Tool; Deployment tool KV99106400.
- When deploying the air bag module and seat belt pre-tensioner, stand at least 5 m (16 ft) away from the deployment component.
- When deploying air bag module and seat belt pre-tensioner, a fairly loud noise is made, followed by smoke being released. The smoke is not poisonous, however, be careful not to inhale smoke since it irritates the throat and can cause choking.
- Always activate one air bag module at a time.
- Due to heat, leave air bag module unattended for more than 30 minutes after deployment. Also leave seat belt pre-tensioner unattended for more than 10 minutes after deployment.
- Be sure to wear gloves when handling a deployed air bag module and seat belt pre-tensioner.
- Never apply water to the deployed air bag module and seat belt pre-tensioner.

BF-13058

SUPPLEMENTAL RESTRAINT SYSTEM (SRS)

Disposal of Air Bag Module and Seat Belt Pre-tensioner (Cont'd)

- Wash your hands clean after finishing work.
- Place the vehicle outdoors with an open space of at least 6 m (20 ft) on all sides when deploying air bag module and seat belt pre-tensioner while mounted in vehicle.
- Use a voltmeter to make sure the vehicle battery is fully charged.
- Do not dispose of the air bag module and seat belt pre-tensioner un-deployed.



CHECKING DEPLOYMENT TOOL

Connecting to Battery

- Place the vehicle outdoors with an open space of at least 6 m (20 ft) on all sides.
- Use a voltmeter to make sure the vehicle battery is fully charged.

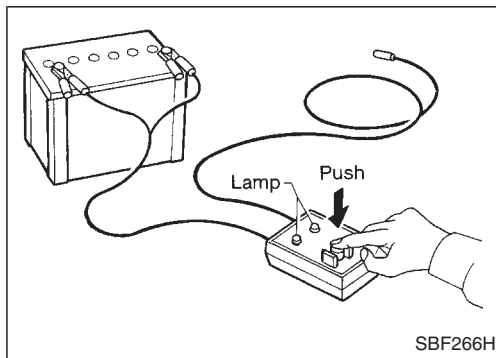
CAUTION:

The battery must show voltage of 9.6V or more.

Remove the battery from the vehicle and place it on dry wood blocks approximately 5 m (16 ft) away from the vehicle.

- Wait 3 minutes after the vehicle battery is disconnected before proceeding.
- Connect red clip of deployment tool to battery positive terminal and black clip to negative terminal.

Make sure the polarity is correct. The right side lamp in the tool, marked “deployment tool power”, should glow with a green light. If the right side lamp glows red, reverse the connections to the battery.



Deployment Tool Check

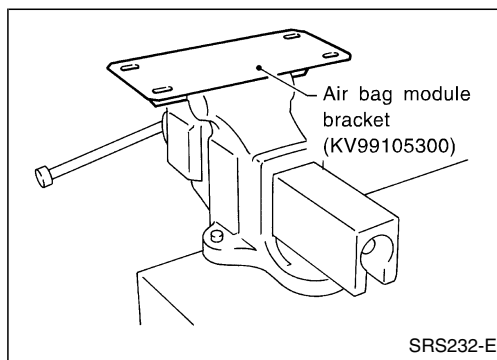
Press the deployment tool switch to the “ON” position. The left side lamp in the tool, marked “air bag connector voltage” should illuminate. If it does not illuminate, replace the tool.

Air Bag Deployment Tool Lamp Illumination Chart (Battery connected)

Switch operation	Left side lamp, green* “AIR BAG CONNECTOR VOLTAGE”	Right side lamp, green* “DEPLOYMENT TOOL POWER”
OFF	OFF	ON
ON	ON	ON

*: If this lamp glows red, the tool is connected to the battery incorrectly. Reverse the connections and make sure the lamp glows green.

SUPPLEMENTAL RESTRAINT SYSTEM (SRS)



Disposal of Air Bag Module and Seat Belt Pre-tensioner (Cont'd) DEPLOYMENT PROCEDURES FOR AIR BAG MODULE (OUTSIDE OF VEHICLE)

Unless the vehicle is being scrapped, deploying the air bag in the vehicle is not recommended. This may cause damage to the vehicle interior.

Anchor air bag module bracket (KV99105300) in a vise secured to a firm foundation during deployment.

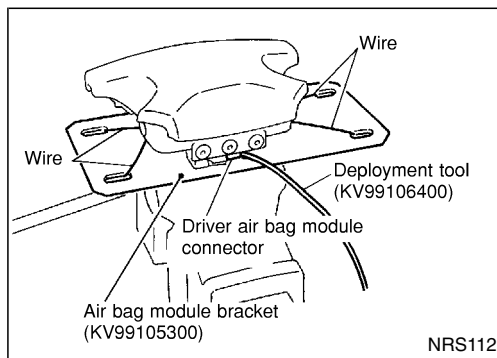
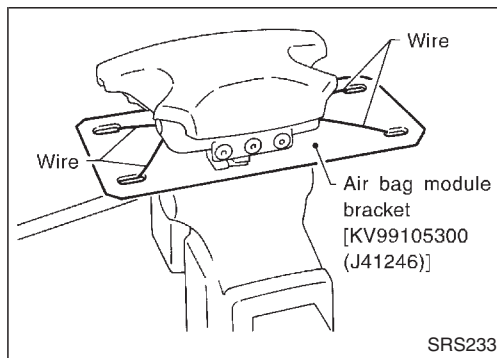
Deployment of Driver Air Bag Module (Outside of vehicle)

1. Using wire, secure driver air bag module to air bag module bracket (SST: KV99105300) at two places.

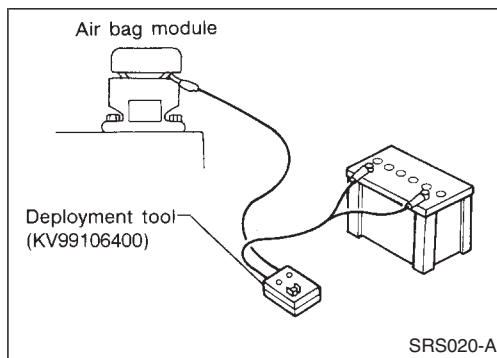
CAUTION:

Use wire of at least 1 mm (0.04 in) diameter.

2. Firmly secure air bag module bracket (SST: KV99105300) with driver air bag module attached, in a vise.



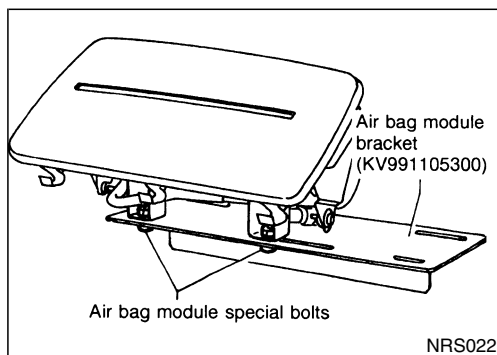
3. Connect deployment tool adapter (SST: KV99109800) to deployment (SST: KV99106400) connector and driver air bag module.



4. Connect red clip of deployment tool to battery positive terminal and black clip to negative terminal.
5. The lamp on the right side of the tool, marked "deployment tool power", should glow green, not red.
6. Press the button on the deployment tool. The left side lamp on the tool, marked "air bag connector voltage", will illuminate and the air bag module will deploy.

CAUTION:

When deploying the driver air bag module, stand at least 5 m (16 ft) away from the driver air bag module.

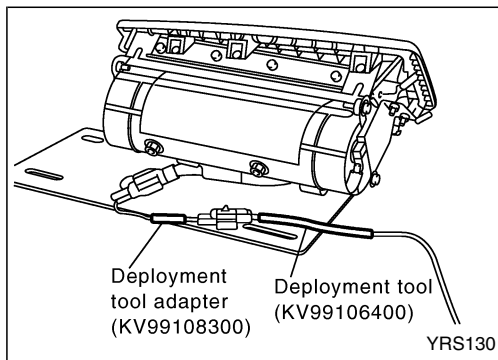


Deployment of Front Passenger Air Bag Module (Outside of vehicle)

1. Secure the passenger air bag module on the air bag module bracket (SST: KV99105300), using the modules special bolts.
2. Firmly anchor the air bag module bracket in a vise.

SUPPLEMENTAL RESTRAINT SYSTEM (SRS)

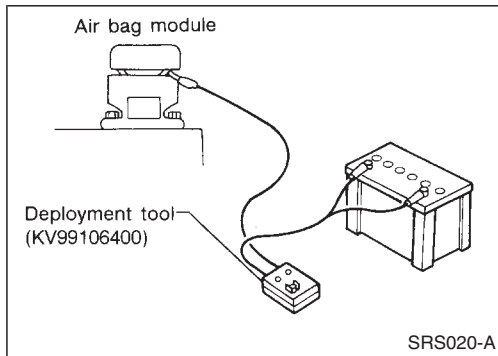
Disposal of Air Bag Module and Seat Belt Pre-tensioner (Cont'd)



3. Connect deployment tool adapter (SST: KV99108300) to deployment tool (SST: KV99106400) connector and front passenger air bag module connector.
4. Connect red clip of deployment tool to battery positive terminal and black clip to negative terminal.
5. The lamp on the right side of the tool, marked "deployment tool power", should glow green, not red.
6. Press the button on the deployment tool. The left side lamp on the tool, marked "air bag connector voltage", will illuminate and the front passenger air bag module will deploy.

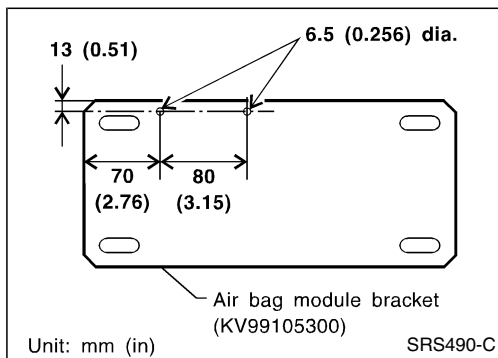
CAUTION:

- When deploying the front passenger air bag module, do not stand on the deploying side.
- Stand at least 5 m (16 ft) away from the front passenger air bag module.

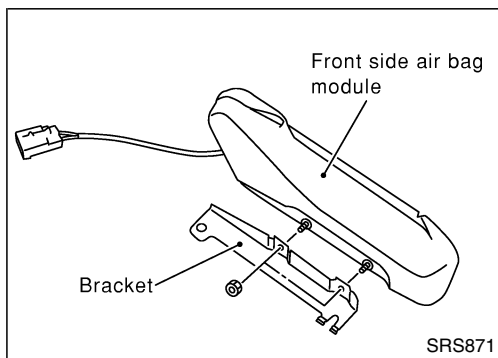


Deployment of Front Side Air Bag Module (Built-in type) (Outside of vehicle)

1. Make 6.5 mm (0.256 in) diameter holes in air bag module bracket (SST: KV99105300) at the position shown in figure at left.
2. Firmly secure air bag module bracket (SST: KV99105300) in a vise.



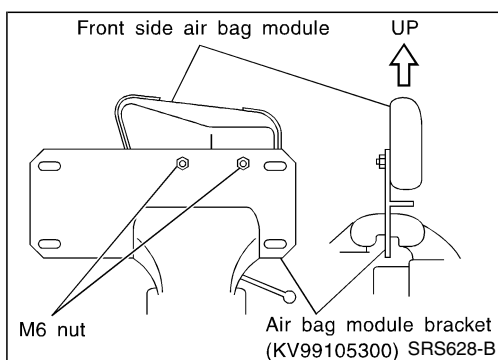
3. Remove nuts then remove the bracket from front side air bag module.



4. Insert the stud bolts of side air bag module into the two holes in air bag module bracket (held in vise) and fix them with two M6 nuts.

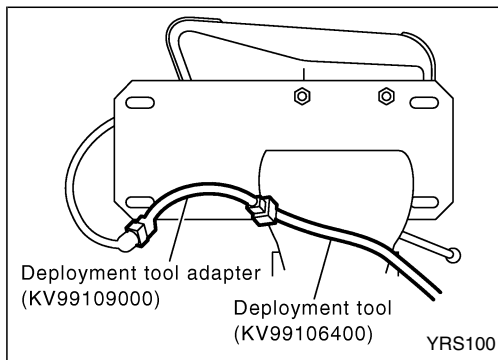
CAUTION:

Side air bag module should be secured to air bag module bracket (SST: KV99105300) in a vise with stud bolt side setting bottom.

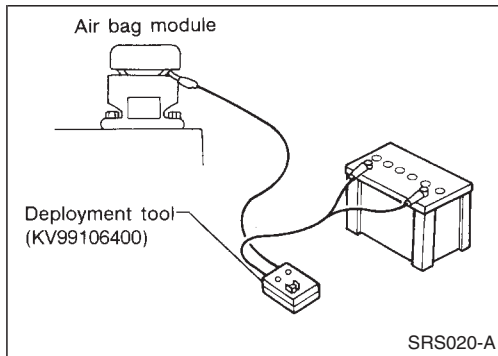


SUPPLEMENTAL RESTRAINT SYSTEM (SRS)

Disposal of Air Bag Module and Seat Belt Pre-tensioner (Cont'd)



5. Connect deployment tool adapter (SST: KV99109000) to deployment tool (SST: KV99106400) connector and connector on air bag module.



6. Connect red clip of deployment tool to battery positive terminal and black clip to negative terminal.
7. The lamp on the right side of the tool, marked "deployment tool power", should glow green, not red.
8. Press the button on the deployment tool. The left side lamp on the tool, marked "air bag connector voltage", will illuminate and the air bag module will deploy.

CAUTION:

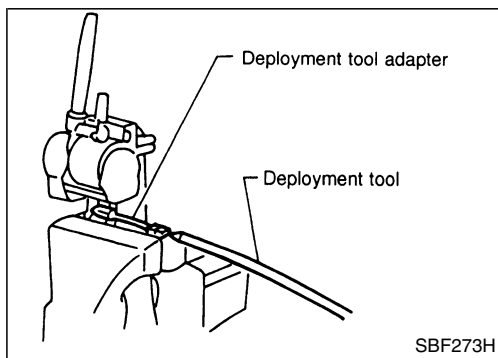
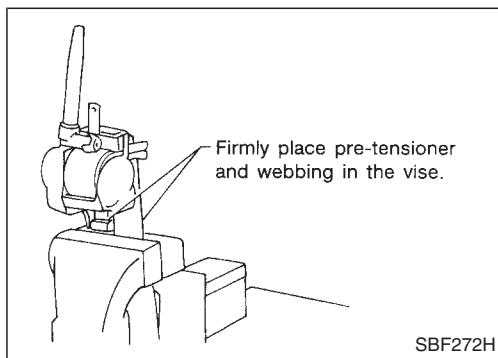
When deploying the air bag module, stand at least 5 m (16 ft) away from the air bag module.

DEPLOYMENT PROCEDURES FOR SEAT BELT PRE-TENSIONER AS A UNIT (OUTSIDE OF VEHICLE)

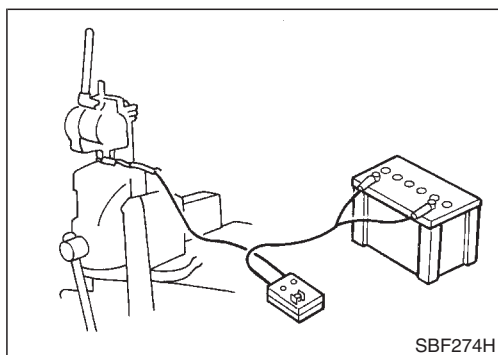
1. Firmly secure front seat belt pre-tensioner in a vise.

CAUTION:

Ensure bracket and webbing are placed in a vise.



2. Connect deployment tool adapter (SST: KV99109700) to deployment tool (SST: KV99106400) connector and front seat belt pre-tensioner connector.



3. Connect red clip of deployment tool to battery positive terminal and black clip to negative terminal.
4. The lamp on the right side of the tool, marked "deployment tool power", should glow green, not red.
5. Press the button on the deployment tool. The left side lamp on the tool, marked "seat belt pre-tensioner connector voltage", will illuminate and the front seat belt pre-tensioner will deploy.

CAUTION:

When deploying the front seat belt pre-tensioner, stand at least 5 m (16 ft) away from the front seat belt pre-tensioner.

SUPPLEMENTAL RESTRAINT SYSTEM (SRS)

Disposal of Air Bag Module and Seat Belt Pre-tensioner (Cont'd)

DEPLOYMENT OF AIR BAG MODULE AND SEAT BELT PRE-TENSIONER WHILE MOUNTED IN VEHICLE

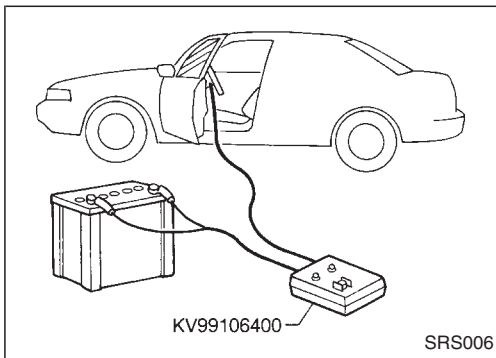
When disposing of a vehicle, deploy air bag module and seat belt pre-tensioner while they are mounted in vehicle.

CAUTION:

When deploying air bag module or seat belt pre-tensioner, ensure vehicle is empty.

1. Disconnect both the vehicle battery cables and wait 10 minutes.
2. Disconnect air bag module and seat belt pre-tensioner connector.
3. Connect deployment tool (SST: KV99106400) to air bag module or seat belt pre-tensioner.

For front passenger air bag module, attach deployment tool adapter (SST: KV99108300) to the tool connector. For front side air bag module (built-in type), attach deployment tool adapter (SST: KV99109000). For front seat belt pre-tensioner, attach deployment tool adapter (SST: KV99109700) to the tool connector.

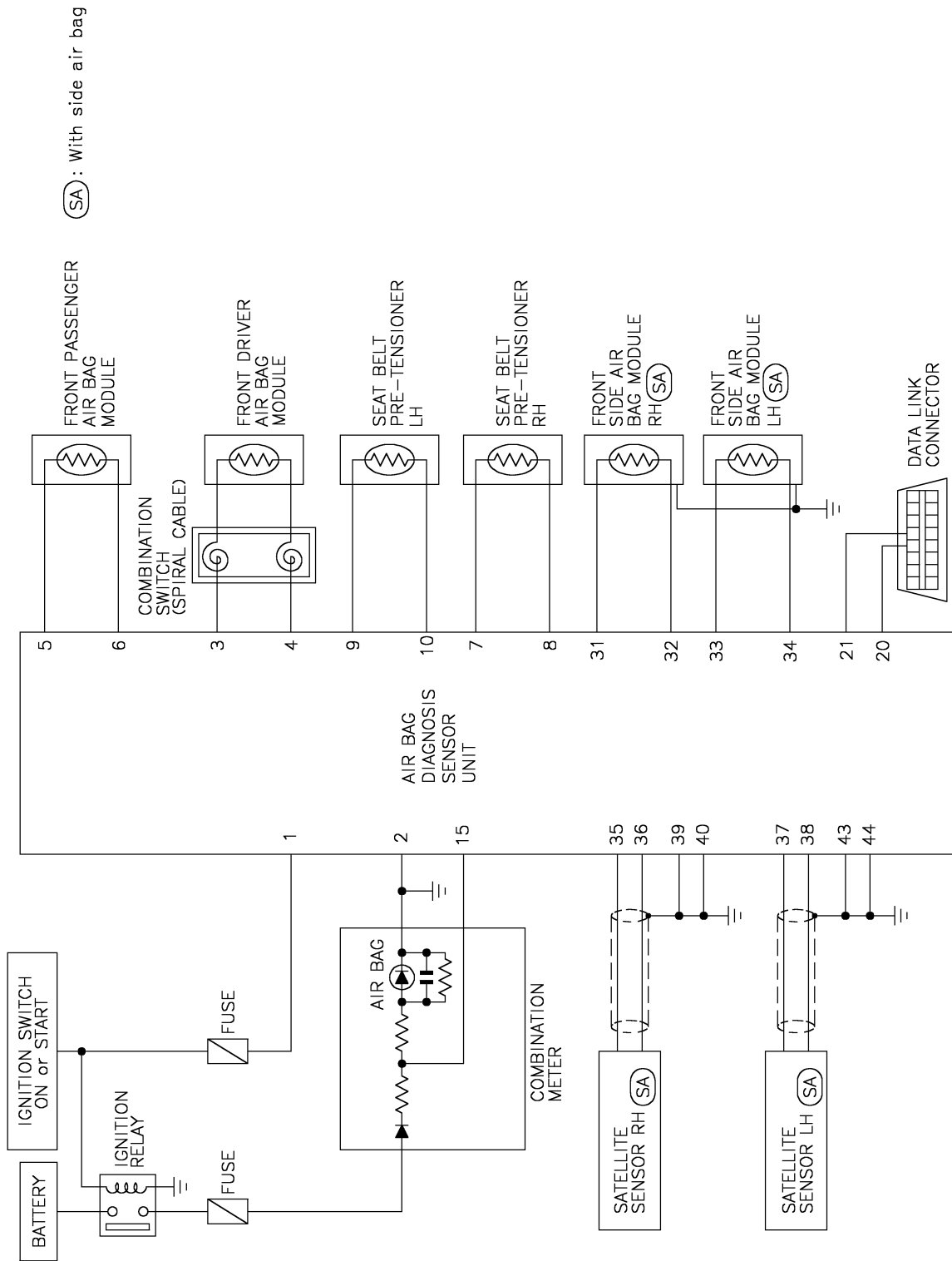


4. Connect red clip of deployment tool to battery positive terminal and black clip to negative terminal.
5. The lamp on the right side of the tool, marked "deployment tool power", should glow green, not red.
6. Press the button on the deployment tool. The left side lamp on the tool, marked "air bag connector voltage", will illuminate and the air bag module or seat belt pre-tensioner will deploy.
7. After deployment, remove them from vehicle and seal them up in plastic bags, then dispose of them.

CAUTION:

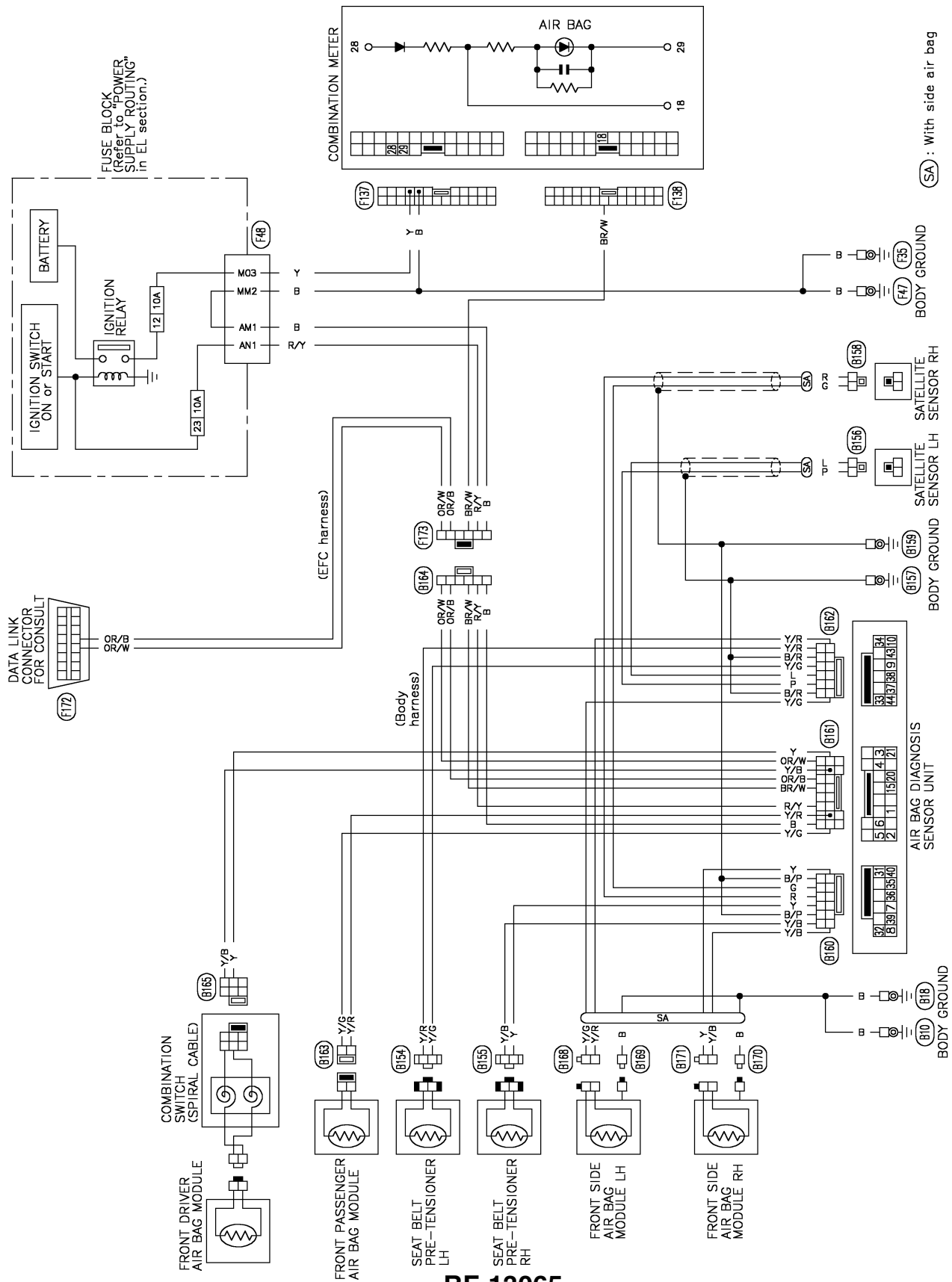
Activate only one air bag module or seat belt pre-tensioner at a time.

Schematic



Wiring Diagram — SRS —

DUAL AIR BAG SYSTEM For Russia



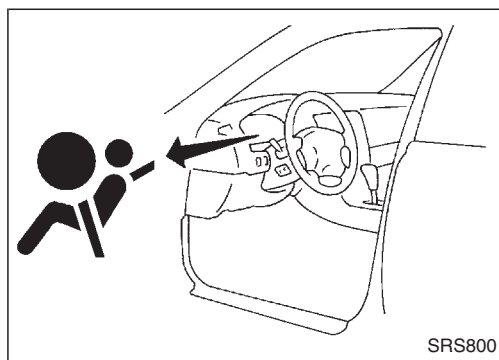
BF-13065

Wiring Diagram — SRS — (Cont'd)

Except for Russia



<http://vnz.su/>



SRS Operation Check

DIAGNOSTIC PROCEDURE 1

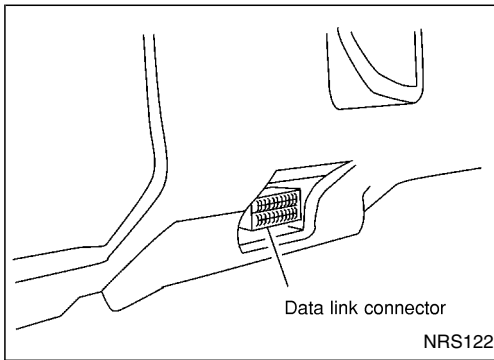
Checking Air Bag Operation by Using “AIR BAG” Warning Lamp — User Mode

1. After turning ignition switch from “OFF” to “ON”, “AIR BAG” warning lamp operates.
2. Compare “AIR BAG” warning lamp operation to the chart below.

“AIR BAG” warning lamp operation — User mode —	SRS condition	Reference item
MRS095A	No malfunction is detected. No further action is necessary.	—
MRS096A	The system is malfunctioning and needs to be repaired as indicated.	Go to DIAGNOSTIC PROCEDURE 2 or 6 (BF-13068 or BF-13076).
MRS097A	Air bag or/and seat belt pre-tensioner is deployed. Air bag fuse, diagnosis sensor unit or harness is malfunctioning and needs to be repaired.	Go to COLLISION DIAGNOSIS (BF-13087). Go to DIAGNOSTIC PROCEDURE 9 (BF-13084).
MRS098A	One of the following has occurred and needs to be repaired. • Meter fuse is blown. • “AIR BAG” warning lamp circuit has open or short. • Diagnosis sensor unit is malfunctioning.	Go to DIAGNOSTIC PROCEDURE 10 (BF-13086).

NOTE:

If “AIR BAG” warning lamp operates differently from the operations shown above, refer to “AIR BAG” warning lamp operation — Diagnosis mode —, DIAGNOSTIC PROCEDURE 6 (step 4), BF-13076.

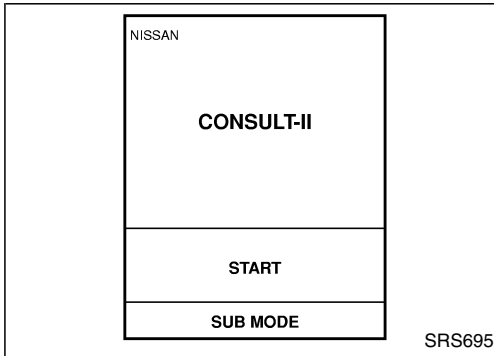


① Trouble Diagnoses with CONSULT-II

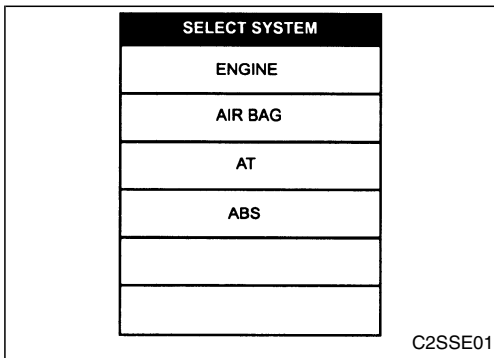
DIAGNOSTIC PROCEDURE 2

Inspecting SRS malfunctioning parts by using CONSULT-II — Diagnosis mode

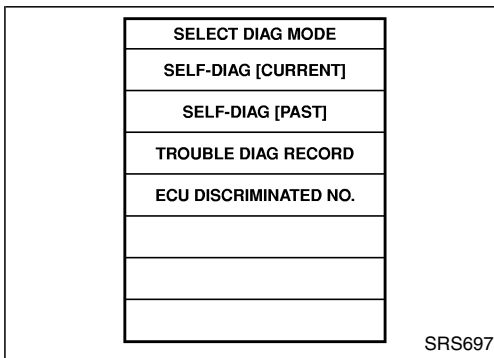
1. Turn ignition switch "OFF".
2. Connect CONSULT-II to data link connector.



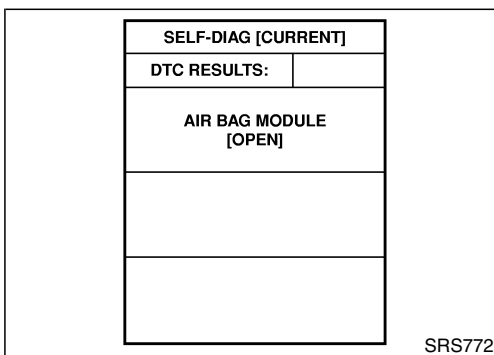
3. Turn ignition switch "ON".
4. Touch "START".



5. Touch "AIR BAG".



6. Touch "SELF-DIAG [CURRENT]".



7. Diagnostic codes are displayed on "SELF-DIAG [CURRENT]".

TROUBLE DIAGNOSIS — Supplemental Restraint System (SRS)

SELF-DIAG [CURRENT]	
DTC RESULTS:	
NO DTC IS DETECTED. FURTHER TESTING MAY BE REQUIRED.	

SRS701

ⓑ Trouble Diagnoses with CONSULT-II (Cont'd)

If no malfunction is detected on “SELF-DIAG [CURRENT]” but malfunction is indicated by the “AIR BAG” warning lamp, go to DIAGNOSTIC PROCEDURE 4, page BF-13072, to diagnose the following situations:

- Self-diagnostic result “SELF-DIAG [PAST]” (previously stored in the memory) might not be erased after repair.
- The SRS system malfunctions intermittently.

8. Touch “PRINT”.
9. Compare diagnostic codes to “CONSULT-II Diagnostic Code Chart”, page BF-13069.
10. Touch “BACK” key of CONSULT-II until “SELECT SYSTEM” appears in order to return to User mode from Diagnosis mode.
11. Turn ignition switch “OFF”, then turn off and disconnect CONSULT-II, and disconnect both battery cables.
12. Repair the system as outlined by the “Repair order” in “CONSULT-II Diagnostic Code Chart”, that corresponds to the self-diagnostic result. For replacement procedure of component parts, refer to BF-13050.
13. After repairing the system, go to DIAGNOSTIC PROCEDURE 3, page BF-13071 for final checking.

CONSULT-II Diagnostic Code Chart (“SELF-DIAG [CURRENT]”)

Diagnostic item	Explanation	Repair order “Recheck SRS at each replacement.”
NO DTC IS DETECTED.	When malfunction is indicated by the “AIR BAG” warning lamp is user mode.	• Self-diagnostic result “SELF-DIAG [PAST]” (previously stored in the memory) might not be erased after repair. • Intermittent malfunction has been detected in the past.
	• No malfunction is detected.	• Go to DIAGNOSTIC PROCEDURE 3 (BF-13071).
AIRBAG MODULE [OPEN]	• Driver air bag module circuit is open. (including the spiral cable)	1. Visually check the wiring harness connection. 2. Replace the harness if it has visible damage. 3. Replace the spiral cable. 4. Replace driver air bag module. (Before disposal, it must be deployed.) 5. Replace the diagnosis sensor unit. 6. Replace the related harness.
AIRBAG MODULE [VB-SHORT]	• Driver air bag module circuit is shorted to a power supply circuit. (including the spiral cable)	
AIRBAG MODULE [GND-SHORT]	• Driver air bag module circuit is shorted to ground. (including the spiral cable)	
AIRBAG MODULE [SHORT]	• Driver air bag module circuit is shorted between wires.	
ASSIST A/B MODULE [VB-SHORT]	• Front passenger air bag module circuit is shorted to a power supply circuit.	1. Visually check the wiring harness connection. 2. Replace the harness if it has visible damage. 3. Replace front passenger air bag module. (Before disposal, it must be deployed.) 4. Replace the diagnosis sensor unit. 5. Replace the related harness.
ASSIST A/B MODULE [OPEN]	• Front passenger air bag module circuit is open.	
ASSIST A/B MODULE [GND-SHORT]	• Front passenger air bag module circuit is shorted to ground.	
ASSIST A/B MODULE [SHORT]	• Front passenger air bag module circuit is shorted between wires.	

TROUBLE DIAGNOSIS — Supplemental Restraint System (SRS)

Ⓢ Trouble Diagnoses with CONSULT-II (Cont'd)

Diagnostic item	Explanation	Repair order “Recheck SRS at each replacement.”
SIDE MODULE LH [OPEN]	● Front LH side air bag module circuit is open.	1. Visually check the wiring harness connection. 2. Replace the harness if it has visible damage. 3. Replace front LH side air bag module. (Before disposal, it must be deployed.) 4. Replace the diagnosis sensor unit. 5. Replace the related harness.
SIDE MODULE LH [VB-SHORT]	● Front LH side air bag module circuit is shorted to a power supply circuit.	
SIDE MODULE LH [GND-SHORT]	● Front LH side air bag module circuit is shorted to ground.	
SIDE MODULE LH [SHORT]	● Front LH side air bag module circuit is shorted between wires.	
SIDE MODULE RH [OPEN]	● Front RH side air bag module circuit is open.	1. Visually check the wiring harness connection. 2. Replace the harness if it has visible damage. 3. Replace front RH side air bag module. (Before disposal, it must be deployed.) 4. Replace the diagnosis sensor unit. 5. Replace the related harness.
SIDE MODULE RH [VB-SHORT]	● Front RH side air bag module circuit is shorted to a power supply circuit.	
SIDE MODULE RH [GND-SHORT]	● Front RH side air bag module circuit is shorted to ground.	
SIDE MODULE RH [SHORT]	● Front RH side air bag module circuit is shorted between wires.	
SATELLITE SENS LH [UNIT FAIL] SATELLITE SENS LH [COMM FAIL]	● LH side air bag (satellite) sensor	1. Visually check the wiring harness connection. 2. Replace the harness if it has visible damage. 3. Replace the LH side air bag (satellite) sensor. 4. Replace the diagnosis sensor unit. 5. Replace the related harness.
SATELLITE SENS RH [UNIT FAIL] SATELLITE SENS RH [COMM FAIL]	● RH side air bag (satellite) sensor	1. Visually check the wiring harness connection. 2. Replace the harness if it has visible damage. 3. Replace the RH side air bag (satellite) sensor. 4. Replace the diagnosis sensor unit. 5. Replace the related harness.
PRE-TEN FRONT LH [OPEN/VB-SHORT]	● The circuit for front LH seat belt pre-tensioner is open or shorted to a power supply circuit.	1. Visually check the wiring harness connections. 2. Replace the harness if it has visible damage. 3. Replace front LH seat belt. (Before disposal, it must be deactivated.) 4. Replace the diagnosis sensor unit. 5. Replace the related harness.
PRE-TEN FRONT LH [GND-SHORT]	● The circuit for front LH seat belt pre-tensioner is shorted to ground.	
PRE-TEN FRONT RH [OPEN/VB-SHORT]	● The circuit for front RH seat belt pre-tensioner is open or shorted to a power supply circuit.	1. Visually check the wiring harness connections. 2. Replace the harness if it has visible damage. 3. Replace front RH seat belt. (Before disposal, it must be deactivated.) 4. Replace the diagnosis sensor unit. 5. Replace the related harness.
PRE-TEN FRONT RH [GND-SHORT]	● The circuit for front RH seat belt pre-tensioner is shorted to ground.	
CONTROL UNIT	● Low battery voltage (Less than 9V)	● Go to DIAGNOSTIC PROCEDURE 3 (BF-13071) after charging battery.
	● Diagnosis sensor unit is malfunctioning.	1. Visually check the wiring harness connection. 2. Replace the harness if it has visible damage. 3. Replace diagnosis sensor unit. 4. Replace the related harness.

* Follow the procedures in numerical order when repairing malfunctioning parts. Confirm whether malfunction is eliminated using the air bag warning lamp or CONSULT-II each time repair is finished. If malfunction is still observed, proceed to the next step. When malfunction is eliminated, further repair work is not required.

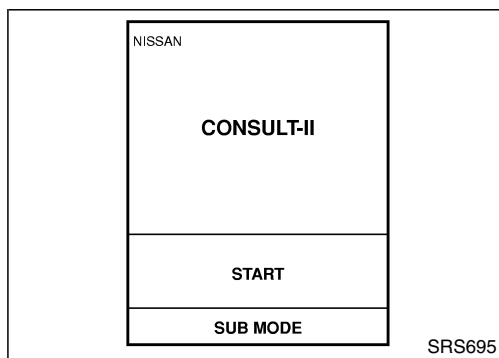
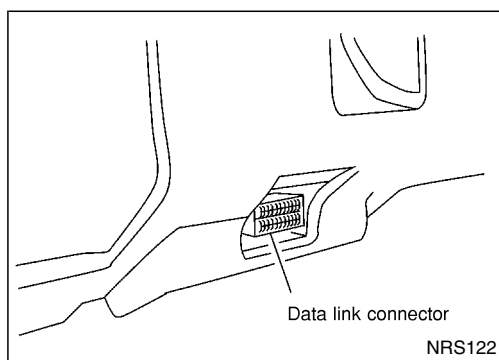
TROUBLE DIAGNOSIS — Supplemental Restraint System (SRS)

Ⓜ Trouble Diagnoses with CONSULT-II (Cont'd)

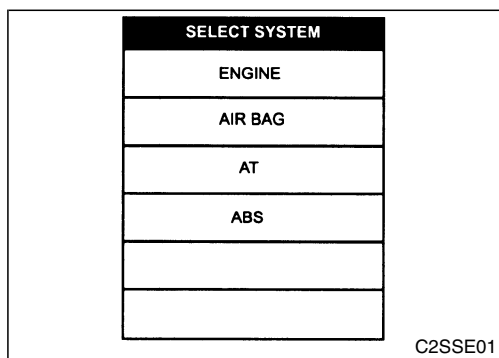
DIAGNOSTIC PROCEDURE 3

Final checking after repairing SRS by using CONSULT-II — Diagnosis mode

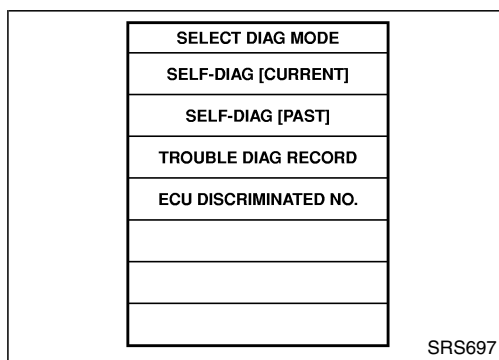
1. After repairing SRS, connect both battery cables.
2. Connect CONSULT-II to data link connector.
3. Turn ignition switch from "OFF" to "ON".



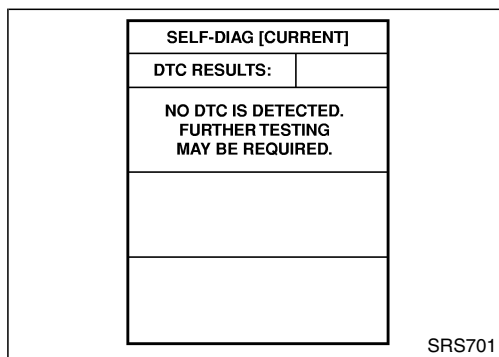
4. Touch "START".



5. Touch "AIR BAG".



6. Touch "SELF-DIAG [CURRENT]".



7. If no malfunction is detected on "SELF-DIAG [CURRENT]", repair of SRS is completed. Go to step 8.
If any malfunction is displayed on "SELF-DIAG [CURRENT]", the malfunctioning part is not repaired completely or another malfunctioning part is detected. Go to DIAGNOSTIC PROCEDURE 2, page BF-13068, and repair malfunctioning part completely.

TROUBLE DIAGNOSIS — Supplemental Restraint System (SRS)

Ⓜ Trouble Diagnoses with CONSULT-II (Cont'd)

8. Touch "ERASE".

NOTE:

Touch "ERASE" to clear the memory of the malfunction ("SELF-DIAG [PAST]").

If the memory of the malfunction in "SELF-DIAG [PAST]" is not erased, the User mode shows the system malfunction by the operation of the warning lamp even if the malfunction is repaired completely.

SELF-DIAG [CURRENT]	
DTC RESULTS:	
AIR BAG MODULE [OPEN]	
ERASE	

SRS773

SELECT DIAG MODE
SELF-DIAG [CURRENT]
SELF-DIAG [PAST]
TROUBLE DIAG RECORD
ECU DISCRIMINATED NO.

SRS697

SELF-DIAG [PAST]	
DTC RESULTS:	
NO DTC IS DETECTED. FURTHER TESTING MAY BE REQUIRED.	

SRS702

9. Touch "BACK" key of CONSULT-II to "SELECT SYSTEM" screen. Touch "SELF-DIAG [PAST]".

10. Check that no malfunction is detected on "SELF-DIAG [PAST]".

11. Touch "BACK" key of CONSULT-II until "SELECT SYSTEM" appears in order to return to User mode from Diagnosis mode.

12. Turn ignition switch "OFF", then turn off and disconnect CONSULT-II.

13. Go to "SRS Operation Check", page BF-13067 to check SRS operation by using "AIR BAG" warning lamp with User mode.

DIAGNOSTIC PROCEDURE 4 (CONTINUED FROM DIAGNOSTIC PROCEDURE 2)

Inspecting SRS malfunctioning record

1	CONSIDER POSSIBILITY OF NOT ERASING SELF-DIAGNOSTIC RESULT AFTER REPAIRING	
Is it the first time for maintenance of SRS?		
Yes or No		
Yes	▶	Go to DIAGNOSTIC PROCEDURE 5 (BF-13073).
No	▶	Self-diagnostic result “SELF-DIAG [PAST]” (previously stored in the memory) might not be erased after repair. Go to DIAGNOSTIC PROCEDURE 3, step 8 (BF-13071).

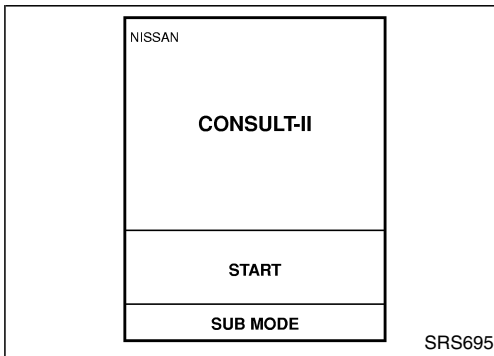
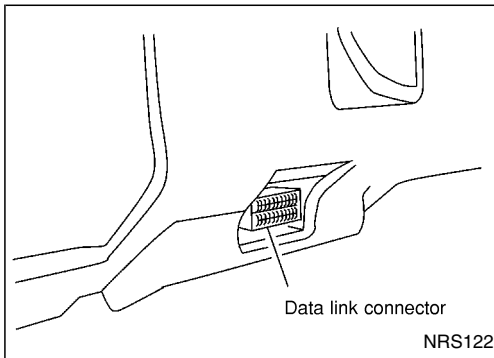
TROUBLE DIAGNOSIS — Supplemental Restraint System (SRS)

Ⓜ Trouble Diagnoses with CONSULT-II (Cont'd)

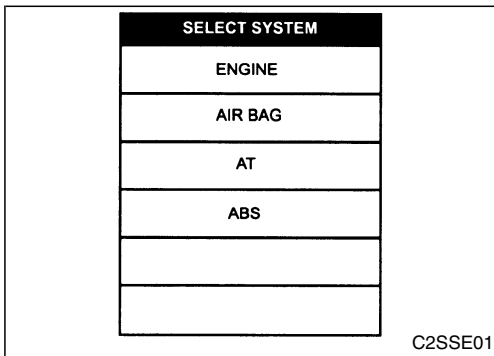
DIAGNOSTIC PROCEDURE 5

Inspecting SRS intermittent malfunction by using CONSULT-II — Diagnosis mode

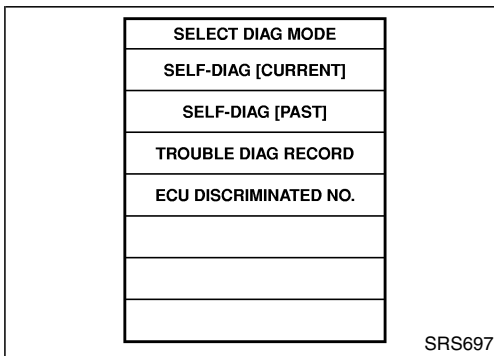
1. Turn ignition switch “OFF”.
2. Connect CONSULT-II to data link connector.



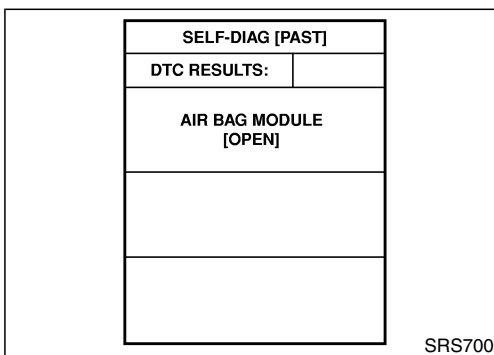
3. Turn ignition switch “ON”.
4. Touch “START”.



5. Touch “AIR BAG”.



6. Touch “SELF-DIAG [PAST]”.



7. If diagnostic codes are displayed on “SELF-DIAG [PAST]”, go to step 10.

TROUBLE DIAGNOSIS — Supplemental Restraint System (SRS)



Trouble Diagnoses with CONSULT-II (Cont'd)

If no malfunction is detected on “SELF-DIAG [PAST]”, touch “BACK” and go back to “SELECT DIAG MODE”.

SELF-DIAG [PAST]	
DTC RESULTS:	
NO DTC IS DETECTED. FURTHER TESTING MAY BE REQUIRED.	

SRS702

SELECT DIAG MODE
SELF-DIAG [CURRENT]
SELF-DIAG [PAST]
TROUBLE DIAG RECORD
ECU DISCRIMINATED NO.

SRS697

TROUBLE DIAG RECORD	
DTC RESULTS:	
AIR BAG MODULE [OPEN]	

SRS704

8. Touch “TROUBLE DIAG RECORD”.

NOTE:

With “TROUBLE DIAG RECORD”, diagnosis results previously erased by a reset operation can be displayed.

9. Diagnostic code is displayed on “TROUBLE DIAG RECORD”.

10. Touch “PRINT”.

11. Compare diagnostic codes to “Intermittent Malfunction Diagnostic Code Chart”, page BF-13075.

12. Touch “BACK” key of CONSULT-II until “SELECT SYSTEM” appears.

13. Turn ignition switch “OFF”, then turn off and disconnect CONSULT-II, and disconnect both battery cables.

14. Repair the system as outlined by the “Repair order” in “Intermittent Malfunction Diagnostic Code Chart”, that corresponds to the self-diagnostic result. For replacement procedure of component parts, refer to BF-13050.

15. Go to DIAGNOSTIC PROCEDURE 3, page BF-13071, for final-checking.

TROUBLE DIAGNOSIS — Supplemental Restraint System (SRS)

Trouble Diagnoses with CONSULT-II (Cont'd) **INTERMITTENT MALFUNCTION DIAGNOSTIC CODE** **CHART (“SELF-DIAG [PAST] OR TROUBLE DIAG** **RECORD”)**

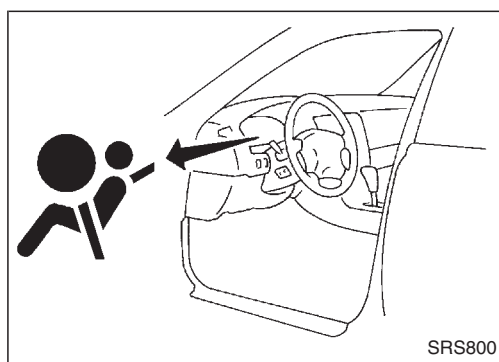
Diagnostic item	Explanation	Repair order
NO DTC IS DETECTED	No malfunction is detected.	Go to DIAGNOSTIC PROCEDURE 3 (BF-13071).
AIRBAG MODULE [OPEN]	Driver air bag module circuit is open. (including the spiral cable)	1. Visually check the wiring harness connection. 2. Replace the harness if it has visible damage. 3. If the harness check is OK, replace the spiral cable, diagnosis sensor unit and driver air bag module. (Before disposing of the driver air bag module, it must be deployed.)
AIRBAG MODULE [VB-SHORT]	Driver air bag module circuit is shorted to a power supply circuit. (including the spiral cable)	
AIRBAG MODULE [GND-SHORT]	Driver air bag module circuit is shorted to ground. (including the spiral cable)	
AIRBAG MODULE [SHORT]	Driver air bag module circuit is shorted between wires.	
ASSIST A/B MODULE [VB-SHORT]	Front passenger air bag module circuit is shorted to a power supply circuit.	1. Visually check the wiring harness connection. 2. Replace the harness if it has visible damage. 3. If the harness check is OK, replace the diagnosis sensor unit and passenger air bag module. (Before disposing of the passenger air bag module, it must be deployed.)
ASSIST A/B MODULE [OPEN]	Front passenger air bag module circuit is open.	
ASSIST A/B MODULE [GND-SHORT]	Front passenger air bag module circuit is shorted to ground.	
ASSIST A/B MODULE [SHORT]	Front passenger air bag module circuit is shorted between wires.	
SIDE MODULE LH [OPEN]	Front LH side air bag module circuit is open.	1. Visually check the wiring harness connection. 2. Replace the harness if it has visible damage. 3. If the harness check is OK, replace the diagnosis sensor unit and front LH side air bag module. (Before disposing of the front LH side air bag module, it must be deployed.)
SIDE MODULE LH [VB-SHORT]	Front LH side air bag module circuit is shorted to a power supply circuits.	
SIDE MODULE LH [GND-SHORT]	Front LH side air bag module circuit is shorted to ground.	
SIDE MODULE LH [SHORT]	Front LH side air bag module circuit is shorted between wires.	
SIDE MODULE RH [OPEN]	Front RH side air bag module circuit is open.	1. Visually check the wiring harness connection. 2. Replace the harness if it has visible damage. 3. If the harness check is OK, replace the diagnosis sensor unit and front RH side air bag module. (Before disposing of the front RH side air bag module, it must be deployed.)
SIDE MODULE RH [VB-SHORT]	Front RH side air bag module circuit is shorted to a power supply circuit.	
SIDE MODULE RH [GND-SHORT]	Front RH side air bag module circuit is shorted to ground.	
SIDE MODULE RH [SHORT]	Front RH side air bag module circuit is shorted between wires.	
SATELLITE SENS LH [UNIT FAIL] SATELLITE SENS LH [COMM FAIL]	LH side air bag (satellite) sensor	1. Visually check the wiring harness connection. 2. Replace the harness if it has visible damage. 3. If the harness check is OK, replace the diagnosis sensor unit and LH side air bag (satellite) sensor.

TROUBLE DIAGNOSIS — Supplemental Restraint System (SRS)

Ⓜ Trouble Diagnoses with CONSULT-II (Cont'd)

Diagnostic item	Explanation	Repair order
SATELLITE SENS RH [UNIT FAIL] SATELLITE SENS RH [COMM FAIL]	● RH side air bag (satellite) sensor	1. Visually check the wiring harness connection. 2. Replace the harness if it has visible damage. 3. If the harness check is OK, replace the diagnosis sensor unit and RH side air bag (satellite) sensor.
PRE-TEN FRONT LH [OPEN/VB-SHORT]	● The circuit for front LH seat belt pre-tensioner is open or shorted to a power supply circuit.	1. Visually check the wiring harness connections. 2. Replace the harness if it has visible damage. 3. If the harness check is OK, replace the diagnosis sensor unit and front LH seat belt. (Before disposing of the front LH seat belt pre-tensioner, it must be deployed.)
PRE-TEN FRONT LH [GND-SHORT]	● The circuit for front LH seat belt pre-tensioner is shorted to ground.	
PRE-TEN FRONT RH [OPEN/VB-SHORT]	● The circuit for front RH seat belt pre-tensioner is open or shorted to a power supply circuit.	1. Visually check the wiring harness connections. 2. Replace the harness if it has visible damage. 3. If the harness check is OK, replace the diagnosis sensor unit and front RH seat belt. (Before disposing of the front RH seat belt pre-tensioner, it must be deployed.)
PRE-TEN FRONT RH [GND-SHORT]	● The circuit for front RH seat belt pre-tensioner is shorted to ground.	
CONTROL UNIT	● Diagnosis sensor unit is malfunctioning.	1. Visually check the wiring harness connection. 2. Replace the harness if it has visible damage. 3. If the harness check is OK, replace the diagnosis sensor unit.

* Follow the procedures in numerical order when repairing malfunctioning parts, then make the final system check.



ⓧ Trouble Diagnoses without CONSULT-II

DIAGNOSTIC PROCEDURE 6

Inspecting SRS malfunctioning parts by using “AIR BAG” warning lamp — Diagnosis mode

NOTE:

SRS will not enter Diagnosis mode if no malfunction is detected in User mode.

1. Turn ignition switch “ON”.
2. After “AIR BAG” warning lamp lights for 7 seconds, turn ignition switch “OFF” within 1 second.
3. Wait more than 3 seconds.
4. Repeat steps 1 to 3 three times.
5. Turn ignition switch “ON”.
SRS is now in Diagnosis mode.
6. “AIR BAG” warning lamp operates in Diagnosis mode as follows:

NOTE:

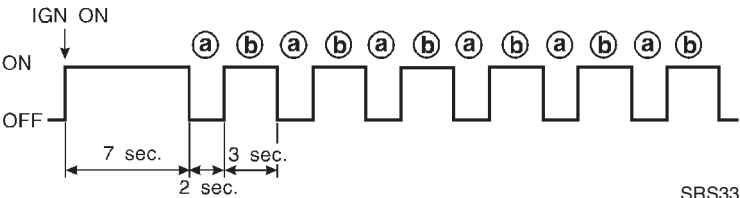
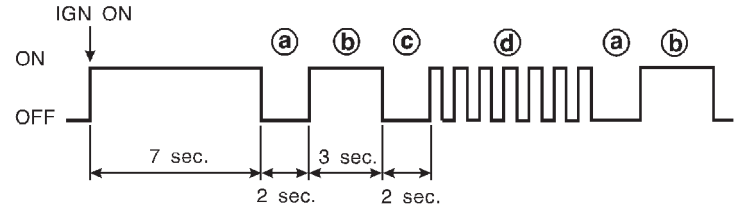
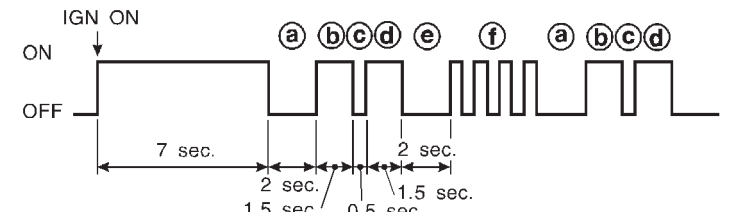
If SRS does not enter Diagnosis mode even though malfunction is detected in User mode, check the battery voltage.

If the battery voltage is less than 9V, charge the battery. Then go to DIAGNOSTIC PROCEDURE 7, page BF-13081.

If the battery voltage is OK, replace the diagnosis sensor unit.

TROUBLE DIAGNOSIS — Supplemental Restraint System (SRS)

⊗ Trouble Diagnoses without CONSULT-II (Cont'd)

No.	"AIR BAG" warning lamp flash pattern — Diagnosis mode —	SRS condition
1	 IGN ON ON OFF 7 sec. 2 sec. 3 sec. SRS333	Ⓐ through Ⓑ are repeated. • Diagnosis results (previously stored in the memory) might not be erased after repair. • Intermittent malfunction has been detected in the past. Go to DIAGNOSTIC PROCEDURE 8 (BF-13083).
2	 IGN ON ON OFF 7 sec. 2 sec. 2 sec. SRS341	Ⓐ through Ⓓ are repeated. Ⓑ — Driver and front passenger air bag and front seat belt pretensioner marker (For identifying driver air bag, front passenger air bag and/or front seat belt pretensioners malfunctioning) Ⓓ — Indicates malfunctioning part. The number of flash varies with malfunctioning part (0.5 sec. ON and 0.5 sec. OFF is counted as one flash.) The system is malfunctioning and needs to be repaired.
3	 IGN ON ON OFF 7 sec. 2 sec. 1.5 sec. 0.5 sec. 2 sec. SRS342-A	Ⓐ through Ⓙ are repeated. Ⓑ, Ⓒ, Ⓓ — Front side air bag marker (For identifying front side air bag malfunctioning) Ⓙ — Indicates malfunctioning part. The number of flash varies with malfunctioning part (0.5 sec. ON and 0.5 sec. OFF is counted as one flash.)

- Malfunctioning part is indicated by the number of flashes (part Ⓓ or Ⓙ). Compare the number of flashes to "Air Bag Warning Lamp Flash Code Chart", page BF-13078, and locate malfunctioning part.
- Turn ignition switch "OFF", and disconnect both battery cables.
- Repair the system as outlined by the "Repair order" in "Warning Lamp Flash Code Chart" that corresponds to the flash code. For replacement procedure of component parts, refer to BF-13050.
- After repairing the system, go to DIAGNOSTIC PROCEDURE 7, page BF-13081.

TROUBLE DIAGNOSIS — Supplemental Restraint System (SRS)

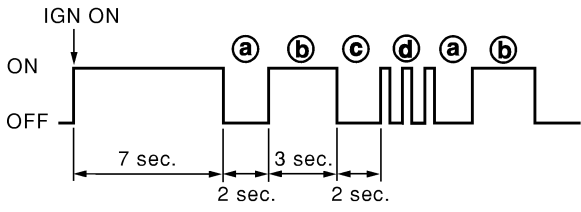
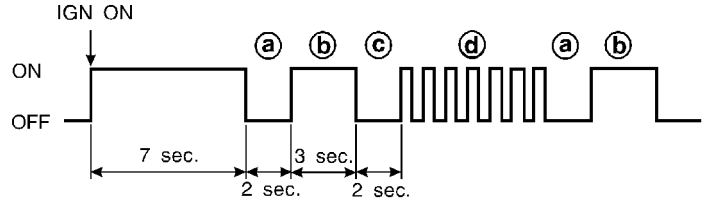
⊗ Trouble Diagnoses without CONSULT-II (Cont'd)

Air Bag Warning Lamp Flash Code Chart (Diagnosis mode)

• Diagnosis results (previously stored in the memory) might not be erased after repair. • Intermittent malfunction has been detected in the past.	<table border="1"> <thead> <tr> <th colspan="2">Flash pattern</th></tr> </thead> <tbody> <tr> <td> IGN ON ON OFF 7 sec. 2 sec. 3 sec. (a) (b) (a) (b) (a) (b) (a) (b) (a) (b) (a) (b) SRS333 </td><td> (a) through (b) are repeated. </td></tr> <tr> <td colspan="2"> Repair order </td></tr> <tr> <td colspan="2"> • Go to DIAGNOSTIC PROCEDURE 8 (BF-13083). </td></tr> </tbody> </table>	Flash pattern		IGN ON ON OFF 7 sec. 2 sec. 3 sec. (a) (b) (a) (b) (a) (b) (a) (b) (a) (b) (a) (b) SRS333	(a) through (b) are repeated.	Repair order		• Go to DIAGNOSTIC PROCEDURE 8 (BF-13083).	
Flash pattern									
IGN ON ON OFF 7 sec. 2 sec. 3 sec. (a) (b) (a) (b) (a) (b) (a) (b) (a) (b) (a) (b) SRS333	(a) through (b) are repeated.								
Repair order									
• Go to DIAGNOSTIC PROCEDURE 8 (BF-13083).									
The front RH seat belt pre-tensioner circuit is malfunctioning. (Ⓓ: 1 flash)	<table border="1"> <thead> <tr> <th colspan="2">Flash pattern</th></tr> </thead> <tbody> <tr> <td> IGN ON ON OFF 7 sec. 2 sec. 3 sec. 2 sec. (a) (b) (c) (d) (a) (b) SRS801 </td><td> (a) through (d) are repeated. Ⓓ — One flash indicates malfunctioning front RH seat belt pre-tensioner circuit. </td></tr> <tr> <td colspan="2"> Repair order ("Recheck SRS at each replacement.") </td></tr> <tr> <td colspan="2"> 1. Visually check the wiring harness connections. 2. Replace the harness if it has visible damage. 3. Replace front RH seat belt pre-tensioner. (Before disposal, it must be deactivated.) 4. Replace the diagnosis sensor unit. 5. Replace the related harness. </td></tr> </tbody> </table>	Flash pattern		IGN ON ON OFF 7 sec. 2 sec. 3 sec. 2 sec. (a) (b) (c) (d) (a) (b) SRS801	(a) through (d) are repeated. Ⓓ — One flash indicates malfunctioning front RH seat belt pre-tensioner circuit.	Repair order ("Recheck SRS at each replacement.")		1. Visually check the wiring harness connections. 2. Replace the harness if it has visible damage. 3. Replace front RH seat belt pre-tensioner. (Before disposal, it must be deactivated.) 4. Replace the diagnosis sensor unit. 5. Replace the related harness.	
Flash pattern									
IGN ON ON OFF 7 sec. 2 sec. 3 sec. 2 sec. (a) (b) (c) (d) (a) (b) SRS801	(a) through (d) are repeated. Ⓓ — One flash indicates malfunctioning front RH seat belt pre-tensioner circuit.								
Repair order ("Recheck SRS at each replacement.")									
1. Visually check the wiring harness connections. 2. Replace the harness if it has visible damage. 3. Replace front RH seat belt pre-tensioner. (Before disposal, it must be deactivated.) 4. Replace the diagnosis sensor unit. 5. Replace the related harness.									
The driver air bag module circuit is malfunctioning. (Ⓓ: 2 flashes)	<table border="1"> <thead> <tr> <th colspan="2">Flash pattern</th></tr> </thead> <tbody> <tr> <td> IGN ON ON OFF 7 sec. 2 sec. 3 sec. 2 sec. (a) (b) (c) (d) (a) (b) SRS334 </td><td> (a) through (d) are repeated. Ⓓ — Two flashes indicate malfunctioning driver air bag module circuit. </td></tr> <tr> <td colspan="2"> Repair order ("Recheck SRS at each replacement.") </td></tr> <tr> <td colspan="2"> 1. Visually check the wiring harness connection. 2. Replace the harness if it has visible damage. 3. Replace the spiral cable. 4. Replace driver air bag module. (Before disposal, it must be deployed.) 5. Replace the diagnosis sensor unit. 6. Replace the related harness. </td></tr> </tbody> </table>	Flash pattern		IGN ON ON OFF 7 sec. 2 sec. 3 sec. 2 sec. (a) (b) (c) (d) (a) (b) SRS334	(a) through (d) are repeated. Ⓓ — Two flashes indicate malfunctioning driver air bag module circuit.	Repair order ("Recheck SRS at each replacement.")		1. Visually check the wiring harness connection. 2. Replace the harness if it has visible damage. 3. Replace the spiral cable. 4. Replace driver air bag module. (Before disposal, it must be deployed.) 5. Replace the diagnosis sensor unit. 6. Replace the related harness.	
Flash pattern									
IGN ON ON OFF 7 sec. 2 sec. 3 sec. 2 sec. (a) (b) (c) (d) (a) (b) SRS334	(a) through (d) are repeated. Ⓓ — Two flashes indicate malfunctioning driver air bag module circuit.								
Repair order ("Recheck SRS at each replacement.")									
1. Visually check the wiring harness connection. 2. Replace the harness if it has visible damage. 3. Replace the spiral cable. 4. Replace driver air bag module. (Before disposal, it must be deployed.) 5. Replace the diagnosis sensor unit. 6. Replace the related harness.									

TROUBLE DIAGNOSIS — Supplemental Restraint System (SRS)

⊗ Trouble Diagnoses without CONSULT-II (Cont'd)

The front LH seat belt pre-tensioner circuit is malfunctioning. (ⓓ: 3 flashes)	Flash pattern  ⓐ through ⓓ are repeated. ⓓ — Three flashes indicate malfunctioning front LH seat belt pre-tensioner circuit. SRS802
	Repair order ("Recheck SRS at each replacement.") 1. Visually check the wiring harness connections. 2. Replace the harness if it has visible damage. 3. Replace front LH seat belt pre-tensioner. (Before disposal, it must be deactivated.) 4. Replace the diagnosis sensor unit. 5. Replace the related harness.
	Flash pattern  ⓐ through ⓓ are repeated. ⓓ — Seven flashes indicate malfunctioning diagnosis sensor unit. SRS335 Repair order ("Recheck SRS at each replacement.") 1. Visually check the wiring harness connections. 2. Replace the harness if it has visible damage. 3. Replace the diagnosis sensor unit. 4. Replace the related harness.

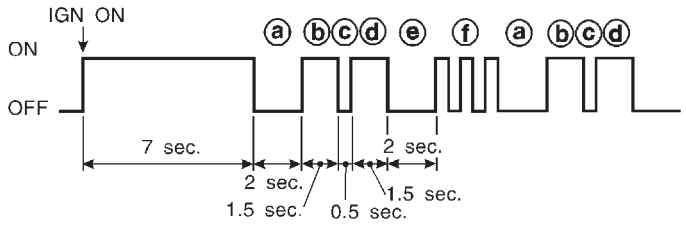
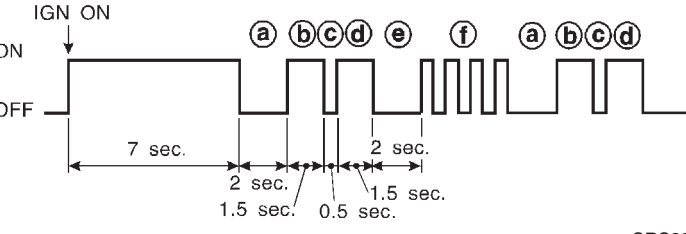
TROUBLE DIAGNOSIS — Supplemental Restraint System (SRS)

⊗ Trouble Diagnoses without CONSULT-II (Cont'd)

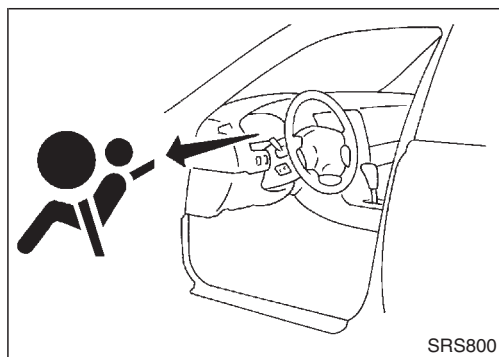
The front passenger air bag module circuit is malfunctioning. (Ⓓ: 8 flashes)	Flash pattern	
		Ⓐ through Ⓓ are repeated. Ⓓ — Eight flashes indicate malfunctioning front passenger air bag module circuit.
	SRS336	
Repair order ("Recheck SRS at each replacement.")		
1. Visually check the wiring harness connection. 2. Replace the harness if it has visible damage. 3. Replace front passenger air bag module. (Before disposal, it must be deployed.) 4. Replace the diagnosis sensor unit. 5. Replace the related harness.		
The front RH side air bag module circuit is malfunctioning. (Ⓘ: 1 flash)	Flash pattern	
		Ⓐ through Ⓙ are repeated. Ⓙ — One flash indicates malfunctioning front RH side air bag module circuit.
	SRS338	
Repair order ("Recheck SRS at each replacement.")		
1. Visually check the wiring harness connection. 2. Replace the harness if it has visible damage. 3. Replace front RH side air bag module. (Before disposal, it must be deployed.) 4. Replace the diagnosis sensor unit. 5. Replace the related harness.		
The front LH side air bag module circuit is malfunctioning. (⓷: 2 flashes)	Flash pattern	
		Ⓐ through ⓷ are repeated. ⓷ — Two flashes indicate malfunctioning front LH side air bag module circuit.
	SRS337	
Repair order ("Recheck SRS at each replacement.")		
1. Visually check the wiring harness connection. 2. Replace the harness if it has visible damage. 3. Replace front LH side air bag module. (Before disposal, it must be deployed.) 4. Replace the diagnosis sensor unit. 5. Replace the related harness.		

TROUBLE DIAGNOSIS — Supplemental Restraint System (SRS)

⊗ Trouble Diagnoses without CONSULT-II (Cont'd)

The RH side air bag (satellite) sensor is malfunctioning. (f) : 3 flashes)	Flash pattern  a through f are repeated. f — Three flashes indicate malfunctioning RH side air bag (satellite) sensor circuit. SRS340
	Repair order ("Recheck SRS at each replacement.") 1. Visually check the wiring harness connection. 2. Replace the harness if it has visible damage. 3. Replace the RH side air bag (satellite) sensor. 4. Replace the diagnosis sensor unit. 5. Replace the related harness.
The LH side air bag (satellite) sensor is malfunctioning. (f) : 4 flashes)	Flash pattern  a through f are repeated. f — Four flashes indicate malfunctioning LH side air bag (satellite) sensor circuit. SRS339-A
	Repair order ("Recheck SRS at each replacement.") 1. Visually check the wiring harness connection. 2. Replace the harness if it has visible damage. 3. Replace the LH side air bag (satellite) sensor. 4. Replace the diagnosis sensor unit. 5. Replace the related harness.

* Follow the procedures in numerical order when repairing malfunctioning parts. Confirm whether malfunction is eliminated using the air bag warning lamp or CONSULT-II each time repair is finished. If malfunction is still observed, proceed to the next step. When malfunction is eliminated, further repair work is not required.



DIAGNOSTIC PROCEDURE 7

Final checking after repairing SRS by using "AIR BAG" warning lamp — Diagnosis mode and User mode

1. After repairing SRS connect both battery cables.
2. Open driver's door.
3. Turn ignition switch from "OFF" to "ON".
4. "AIR BAG" warning lamp operates in Diagnosis mode as follows:

TROUBLE DIAGNOSIS — Supplemental Restraint System (SRS)

⊗ Trouble Diagnoses without CONSULT-II (Cont'd)

No.	"AIR BAG" warning lamp flash pattern — Diagnosis mode —	SRS condition
1	SRS333	Ⓐ through Ⓑ are repeated. No malfunction is detected or repair is completed. No further action is necessary.
2	SRS341	Ⓐ through Ⓓ are repeated. Ⓑ — Driver and front passenger air bag and front seat belt pretensioner marker (For identifying driver air bag, front passenger air bag and/or front seat belt pretensioners malfunctioning) Ⓓ — Indicates malfunctioning part. The number of flashes varies with malfunctioning part (0.5 sec. ON and 0.5 sec. OFF is counted as one flash.) The system is malfunctioning and needs to be repaired.
3	SRS342-A	Ⓐ through Ⓙ are repeated. Ⓑ, Ⓒ, Ⓓ — Front side air bag marker (For identifying front side air bag malfunctioning) Ⓙ — Indicates malfunctioning part. The number of flashes varies with malfunctioning part (0.5 sec. ON and 0.5 sec. OFF is counted as one flash.)

NOTE:

When diagnosis sensor unit is replaced with new one, "AIR BAG" warning lamp will operate in User mode. Checking "AIR BAG" warning lamp operation in Diagnosis mode is not required. Go to step 6.

5. If "AIR BAG" warning lamp operates as shown in No. 1 in chart above, turn ignition switch "OFF" to reset from Diagnosis mode to User mode and to erase the memory of the malfunction. Then go to step 6.

If "AIR BAG" warning lamp operates as shown in No. 2 or No. 3 in chart above, the malfunctioning part is not repaired completely, or another malfunctioning part is detected. Go to DIAGNOSTIC PROCEDURE 6, page BF-13076, and repair malfunctioning part completely.

6. Turn ignition switch "ON". "AIR BAG" warning lamp operates in User mode. Compare "AIR BAG" warning lamp operation to the chart on the next page.

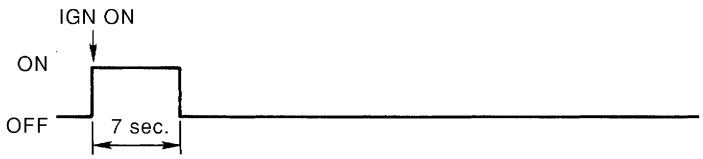
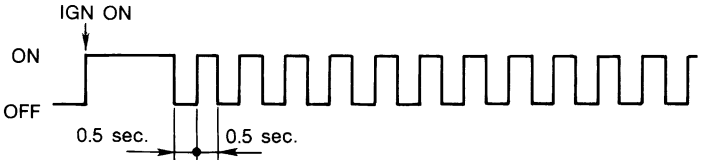
NOTE:

When a malfunction is detected, switch from Diagnosis mode to user mode by turning the ignition switch as follows:

- 1) Turn ignition switch "ON".
 - 2) After "AIR BAG" warning lamp lights for 7 seconds, turn ignition switch "OFF" within 1 second.
 - 3) Wait more than 3 seconds.
 - 4) Repeat steps 1 to 3 three times.
 - 5) Turn ignition switch "ON".
- SRS is now in User mode.

TROUBLE DIAGNOSIS — Supplemental Restraint System (SRS)

⊗ Trouble Diagnoses without CONSULT-II (Cont'd)

"AIR BAG" warning lamp operation — User mode —	SRS condition	Reference item
 MRS095A	No malfunction is detected. No further action is necessary.	—
 MRS096A	The system is malfunctioning and needs to be repaired as indicated.	Go to DIAGNOSTIC PROCEDURE 6 (BF-13076).
 MRS097A	Air bag is deployed. Seat belt pre-tensioner is deployed. Air bag fuse, diagnosis sensor unit or harness is malfunctioning and needs to be repaired.	Go to COLLISION DIAGNOSIS (BF-13087). Go to DIAGNOSTIC PROCEDURE 9 (BF-13084).
 MRS098A	One of the following has occurred and needs to be repaired. • Meter fuse is blown. • "AIR BAG" warning lamp circuit has open or short. • Diagnosis sensor unit is malfunctioning.	Go to DIAGNOSTIC PROCEDURE 10 (BF-13086).

DIAGNOSTIC PROCEDURE 8 (CONTINUED FROM DIAGNOSTIC PROCEDURE 6)

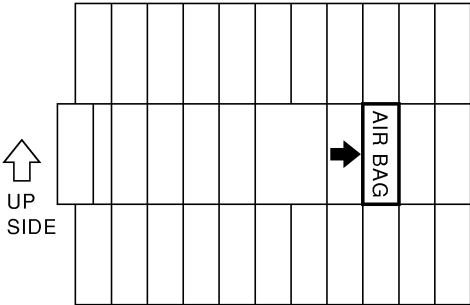
Inspecting SRS malfunctioning record

1	CONSIDER POSSIBILITY OF NOT ERASING SELF-DIAGNOSTIC RESULT AFTER REPAIRING
Is it the first time for maintenance of SRS?	
Yes or No	
Yes	▶ Go to DIAGNOSTIC PROCEDURE 5 (BF-13073). (Further inspection cannot be performed without CONSULT-II.)
No	▶ Diagnosis results (previously stored in the memory) might not be erased after repair. Go to DIAGNOSTIC PROCEDURE 7, step 5 (BF-13081).

Trouble Diagnoses: “AIR BAG” Warning Lamp Does Not Turn Off

DIAGNOSTIC PROCEDURE 9

1	SEE THE DEPLOYMENT OF AIR BAG MODULE
Is air bag module deployed?	
Yes or No	
Yes	▶ Refer to COLLISION DIAGNOSIS (BF-13087).
No	▶ GO TO 2.

2	CHECK AIR BAG FUSE
Is SRS “Air Bag” fuse OK?	
	
SRS835	
OK or NG	
OK	▶ GO TO 4.
NG	▶ GO TO 3.

3	CHECK AIR BAG FUSE AGAIN
Replace “AIR BAG” fuse and turn ignition switch ON.	
Is “AIR BAG” fuse blown again?	
Yes	▶ Repair main harness.
No	▶ INSPECTION END

TROUBLE DIAGNOSIS — Supplemental Restraint System (SRS)

Trouble Diagnoses: “AIR BAG” Warning Lamp Does Not Turn Off (Cont’d)

4	CHECK DIAGNOSIS SENSOR UNIT								
 Connect CONSULT-II and touch “START”. Is “AIR BAG” displayed on CONSULT-II? <table><tr><th>SELECT SYSTEM</th></tr><tr><td>ENGINE</td></tr><tr><td>AIR BAG</td></tr><tr><td>AT</td></tr><tr><td>ABS</td></tr><tr><td> </td></tr><tr><td> </td></tr></table> C2SSE01			SELECT SYSTEM	ENGINE	AIR BAG	AT	ABS		
SELECT SYSTEM									
ENGINE									
AIR BAG									
AT									
ABS									
Yes or No									
Yes	▶	GO TO 5.							
No	▶	Visually check the wiring harness connection of diagnosis sensor unit. If the harness connection check result is OK, replace diagnosis sensor unit.							

5	CHECK HARNESS CONNECTION
Is harness connection between warning lamp and diagnosis sensor unit OK?	
OK or NG	
OK	▶ Replace diagnosis sensor unit.
NG	▶ Connect “AIR BAG” warning lamp and diagnosis sensor unit connector properly. If “AIR BAG” warning lamp still does not go off, replace harness.

Collision Diagnosis

FOR FRONTAL COLLISION

To repair the SRS, perform the following steps.

When SRS (except the side air bag modules) is activated in a collision:

- 1) Replace the diagnosis sensor unit.
- 2) Remove the air bag modules (except the side air bag modules) and front seat belt pre-tensioner assemblies.
- 3) Check the SRS components using the table shown below:
 - Replace any SRS components showing visible signs of damage (dents, cracks and deformation).
- 4) Install new air bag modules (except the side air bag module) and front seat belt pre-tensioner assemblies.
- 5) Conduct self-diagnosis using CONSULT-II or "AIR BAG" warning lamp. Refer to "SRS Operation Check" for details. Ensure entire SRS operation properly.

When SRS is not activated in a collision:

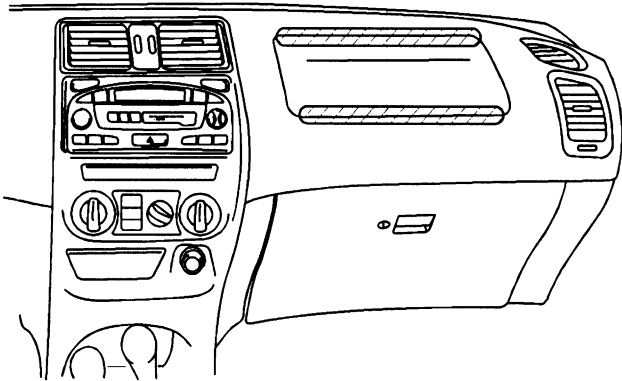
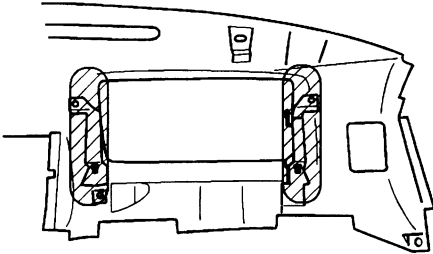
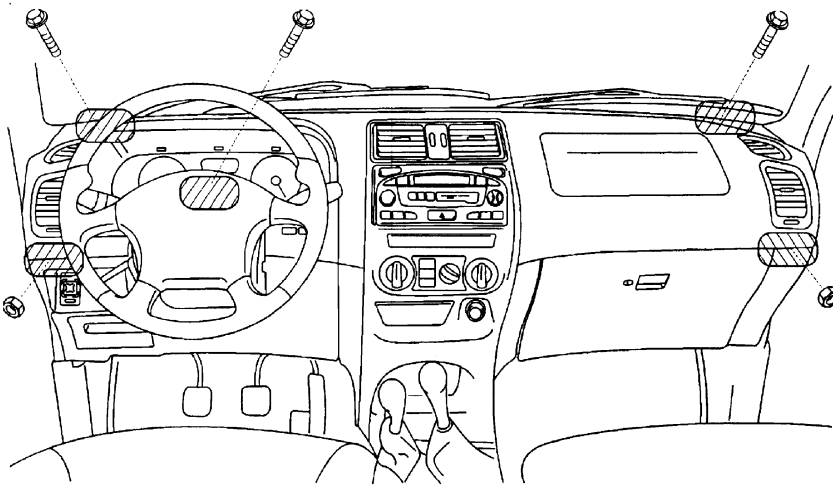
- 1) Check the SRS components using the table shown below:
 - Replace any SRS components showing visible signs of damage (dents, cracks and deformation).
- 2) Conduct self-diagnosis using CONSULT-II or "AIR BAG" warning lamp. Refer to "SRS Operation Check" for details. Ensure entire SRS operation properly.

SRS Inspection (For frontal collision)

Part	SRS is activated	SRS is NOT activated
Air bag module (driver and front passenger side)	REPLACE Install with new special bolts coated with bonding agent.	1. Remove air bag module. Check harness cover and connectors for damage, terminals for deformities, and harness for binding. 2. a. Install driver air bag module into the steering wheel to check fit and alignment with the wheel. b. Install front passenger air bag module into the instrument panel to check fit with the instrument panel. 3. No damage found, reinstall with new bolts coated with bonding agent. 4. If damaged—REPLACE. Install air bag modules with new special bolts coated with bonding agent. Air bag must be deployed before disposal.
Front seat belt pre-tensioner assembly	REPLACE Install seat belt pre-tensioner with new bolts.	1. Remove front seat belt pre-tensioners. Check harness cover and connectors for damage, terminals for deformities, and harness for binding. 2. Check belts for damage and anchors for loose mounting. 3. Check retractor for smooth operation. 4. If no damage is found, reinstall front seat belt pre-tensioner assembly. 5. If damaged—REPLACE. Install the front seat belt pre-tensioners with new bolts coated with bonding agent. Front seat belt pre-tensioners must be deployed before disposal.
Diagnosis sensor unit	REPLACE Install with new bolts coated with bonding agent.	1. Check case for dents, cracks or deformities. 2. Check connectors for damage, and terminals for deformities. 3. If no damage is found, reinstall with new special bolts and ground bolt coated with bonding agent. 4. If damaged—REPLACE. Install diagnosis sensor unit with new special bolts and ground bolt coated with bonding agent.
Steering wheel		1. Visually check steering wheel for deformities. 2. Check harness (built into steering wheel) and connectors for damage, and terminals for deformities. 3. Install driver air bag module to check fit or alignment with steering wheel. 4. Check steering wheel for excessive free play. 5. If no damage is found, reinstall with bolts. 6. If damaged—REPLACE.
Spiral cable		1. Visually check spiral cable and combination switch for damage. 2. Check connectors and protective tape for damage. 3. Check steering wheel for noise, binding or heavy operation. 4. If no damage is found, reinstall with bolts. 5. If damaged—REPLACE.

TROUBLE DIAGNOSIS — Supplemental Restraint System (SRS)

Collision Diagnosis (Cont'd)

Part	SRS is activated	SRS is NOT activated
Harness and Connectors	1. Check connectors for poor connection, damage, and terminals for deformities. 2. Check harness for binding, chafing, cuts, or deformities. 3. If no damage is found, reinstall the harness and connectors. 4. Damaged—REPLACE damaged section of harness. Do not attempt to repair, splice or modify any SRS harness.	
Instrument panel	1. When passenger air bag inflates, check the following points for bending, deformities or cracks. ● Opening portion for front passenger air bag  Check points  NBF372 ● Front passenger air bag module brackets Back face of instrument panel   Check points NBF373 ● The portions securing the instrument panel   Check points NBF374 2. If no damage is found, reinstall the instrument panel. 3. If damaged—REPLACE the instrument panel with bolts.	

Collision Diagnosis (Cont'd)

FOR SIDE COLLISION

To repair the SRS for a side collision, perform the following steps.

When the side air bag is activated in the side collision:

- 1) Replace the following component:
 - All parts of front seatback (including front seatback frame) with side air bag module (on the side on which side air bag is activated)
 - Diagnosis sensor unit
 - Side air bag (satellite) sensor (on the side on which side air bag is activated)
- 2) Check the SRS components and the related parts using the table shown below.
 - Replace any SRS components and the related parts showing visible signs of damage (dents, cracks, deformation).
- 3) Conduct self-diagnosis using CONSULT-II or "AIR BAG" warning lamp. Refer to "SRS Operation Check" for details (BF-13067). Ensure entire SRS operation properly.

When SRS is not activated in the side collision:

- 1) Check the SRS components and the related parts using the table shown below.
 - Replace any SRS components and the related parts showing visible signs of damage (dents, cracks, deformation).
- 2) Conduct self-diagnosis using CONSULT-II or "AIR BAG" warning lamp. Refer to BF-13067 for details. Ensure entire SRS operation properly.

SRS Inspection (For side collision)

Part	Side air bag is activated	SRS is NOT activated
Front (LH or RH) side air bag modules	REPLACE all parts of front seatback with deployed front side air bag module.	1. Check for visible signs of damage (dents, tears, deformation) of the seatback on the collision side. 2. If damaged—REPLACE the damaged seat parts with new bolts and remove the front side air bag module. 3. Check for visible signs of damage (tears etc.) of the side air bag module. 4. Check harness and connectors for damage, and terminals for deformities. 5. If no damaged is found, reinstall the front side air bag module with new nuts. 6. If damaged—REPLACE the front side air bag module with new nuts. Air bag must be deployed before disposing of it.
(LH or RH) side air bag (satellite) sensor	REPLACE the side air bag (satellite) sensor on the collision side with new nuts coated with bonding agent. (Repair the center pillar inner, etc. before installing new one if damaged.)	1. Remove the satellite sensor on the collision side. Check harness connectors for damage, terminals for deformities, and harness for binding. 2. Check for visible signs of damage (dents, cracks, deformation) of the satellite sensor. 3. Install the side air bag (satellite) sensor to check fit. 4. If no damage is found, reinstall the side air bag (satellite) sensor with new nuts. 5. If damaged—REPLACE the side air bag sensor with new nuts coated with bonding agent.
Diagnosis sensor unit	REPLACE the diagnosis sensor unit with the new bolts.	1. Check case and bracket for dents, cracks or deformities. 2. Check connectors for damage, and terminals for deformities. 3. If no damage is found, reinstall the diagnosis sensor unit with new special bolts and ground bolt. 4. If damaged—REPLACE. Install the diagnosis sensor unit with new special bolts and ground bolt.

TROUBLE DIAGNOSIS — Supplemental Restraint System (SRS)

Collision Diagnosis (Cont'd)

Part	Side air bag is activated	SRS is NOT activated
Front seat belt pre-tensioner assembly	1. Check if the seat belt can be extended smoothly. If the seat belt cannot be extended smoothly. — Check for deformities of the center pillar inner. — If the center pillar inner has no damage, REPLACE the front seat belt pre-tensioner assembly. 2. Remove the front seat belt pre-tensioner assembly on the collision side. Check harness cover and connectors for damage, terminals for deformities, and harness for binding. 3. Check for visible signs of damage (dents, cracks, deformation) of the front seat belt pre-tensioner assembly. 4. If no damage is found, reinstall the front seat belt pre-tensioner assembly. 5. If damaged—REPLACE the front seat belt pre-tensioner assembly with new bolts coated with bonding agent. The front seat belt pre-tensioner assembly must be deployed before disposal.	
Seat with built-in side air bag	REPLACE all parts of front seatback (including front seat-back frame)	1. Visually check the seat on the collision side. 2. Remove the seat on the collision side and check the following for damage and deformities. ● Harness, connectors and terminals ● Frame and recliner (for front and rear seat), and also adjuster and slides (for front seat) 3. If no damage is found, reinstall the seat. 4. If damaged—REPLACE the damaged seat parts with new bolts.
Center pillar inner	1. Check the center pillar inner on the collision side for damage (dents, cracks, deformation). 2. If damaged—REPAIR the center pillar inner.	
Trim	1. Check for visible signs of damage (dents, cracks, deformation) of the interior trim on the collision side. 2. If damaged—REPLACE the damaged trim parts.	

HEATER & AIR CONDITIONER

SECTION HA

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When you read wiring diagrams:

- Read GI section, "HOW TO READ WIRING DIAGRAMS".
- See EL section, "POWER SUPPLY ROUTING" for power distribution circuit.

When you perform trouble diagnoses, read GI section, "HOW TO FOLLOW FLOW CHART IN TROUBLE DIAGNOSES".

HEATER & AIR CONDITIONER

SECTION **HA**

MODIFICATION NOTICE:

- Wiring Diagram has been changed.

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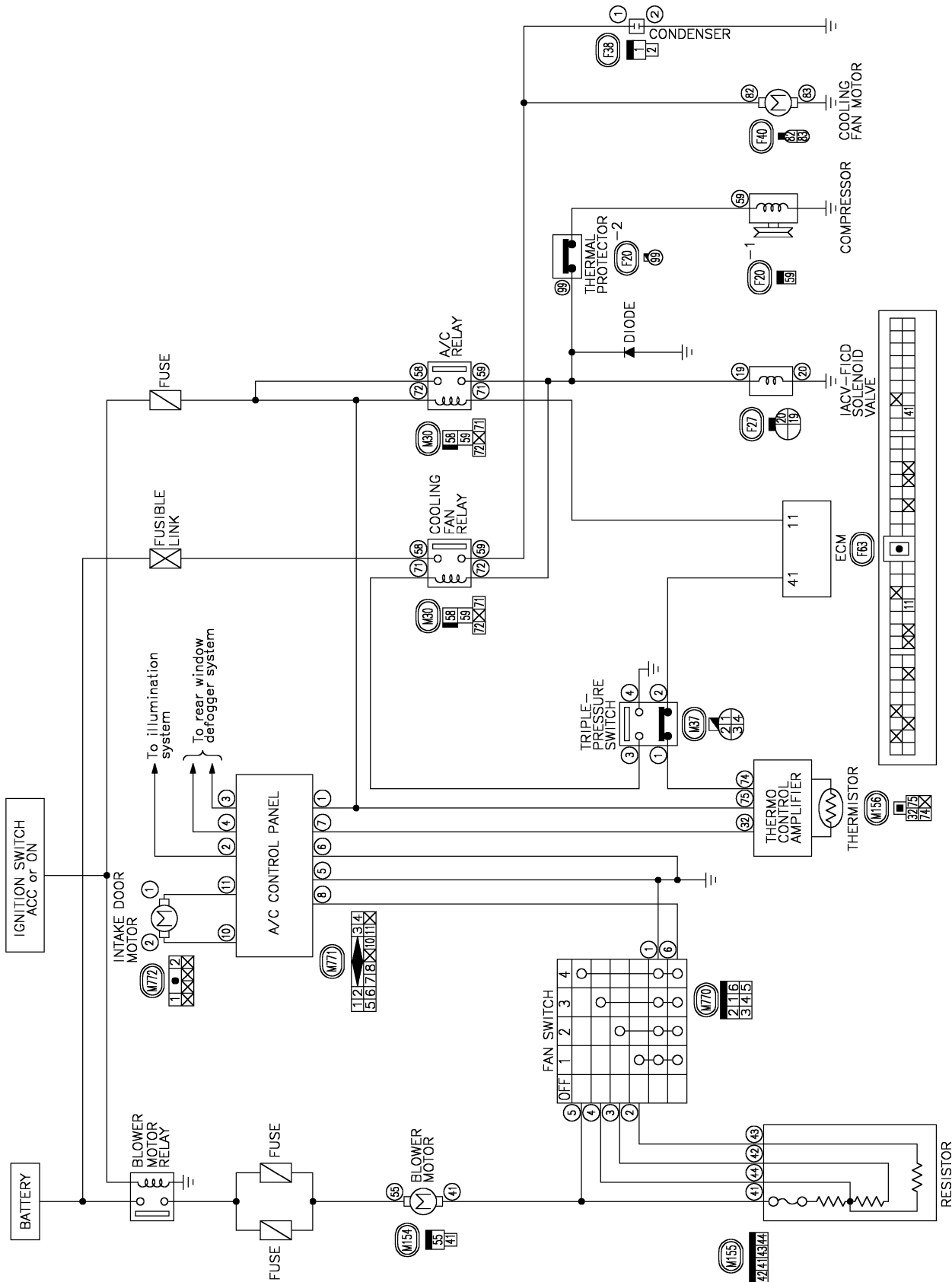
When you read wiring diagrams:

- Read GI section, "HOW TO READ WIRING DIAGRAMS".
- See EL section, "POWER SUPPLY ROUTING" for power distribution circuit.

When you perform trouble diagnoses, read GI section, "HOW TO FOLLOW FLOW CHART IN TROUBLE DIAGNOSES".

Circuit Diagram for Pinpoint Check

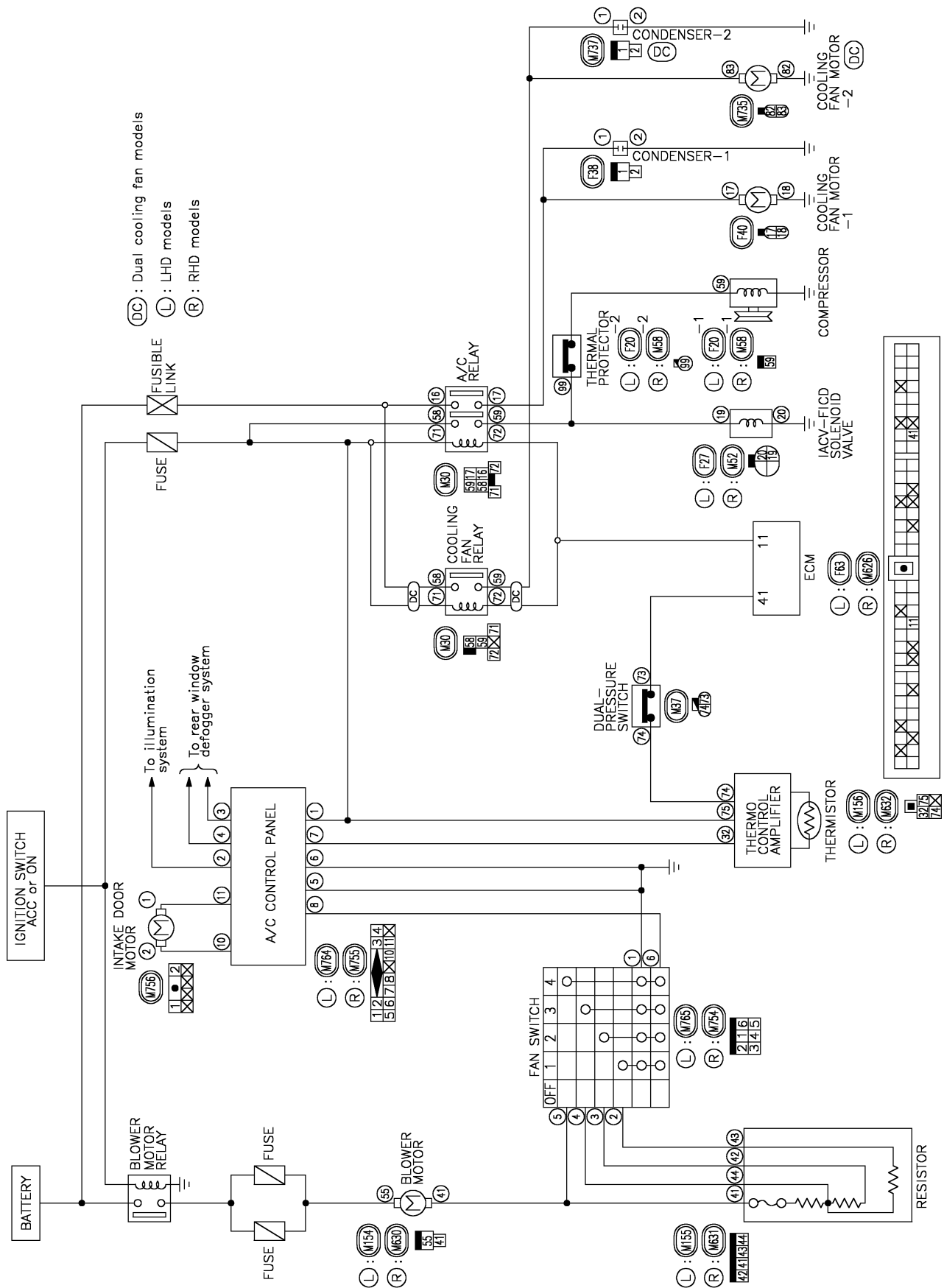
KA24E ENGINE MODELS FOR RUSSIA



TROUBLE DIAGNOSES

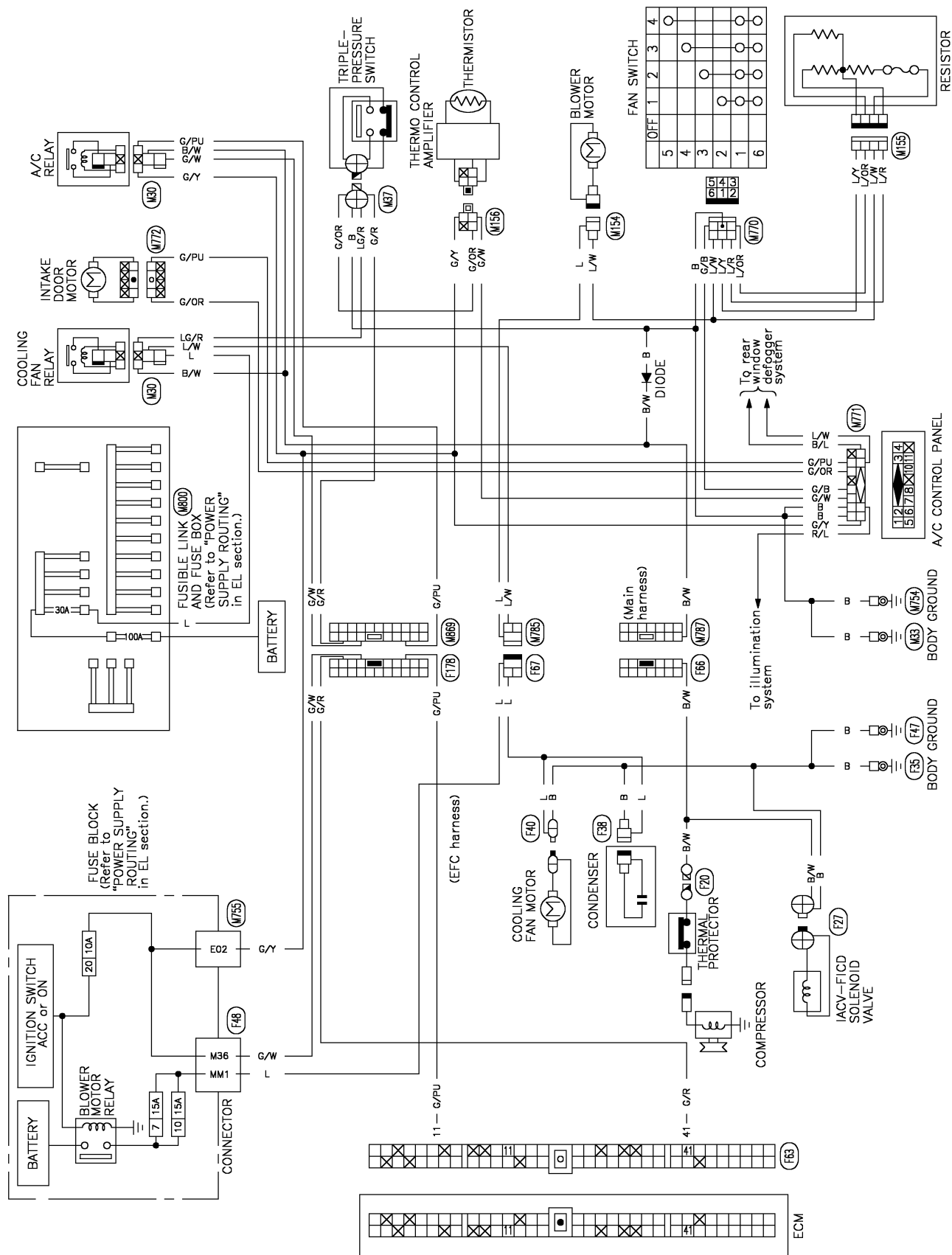
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KA24E ENGINE MODELS EXCEPT FOR RUSSIA



Wiring Diagram

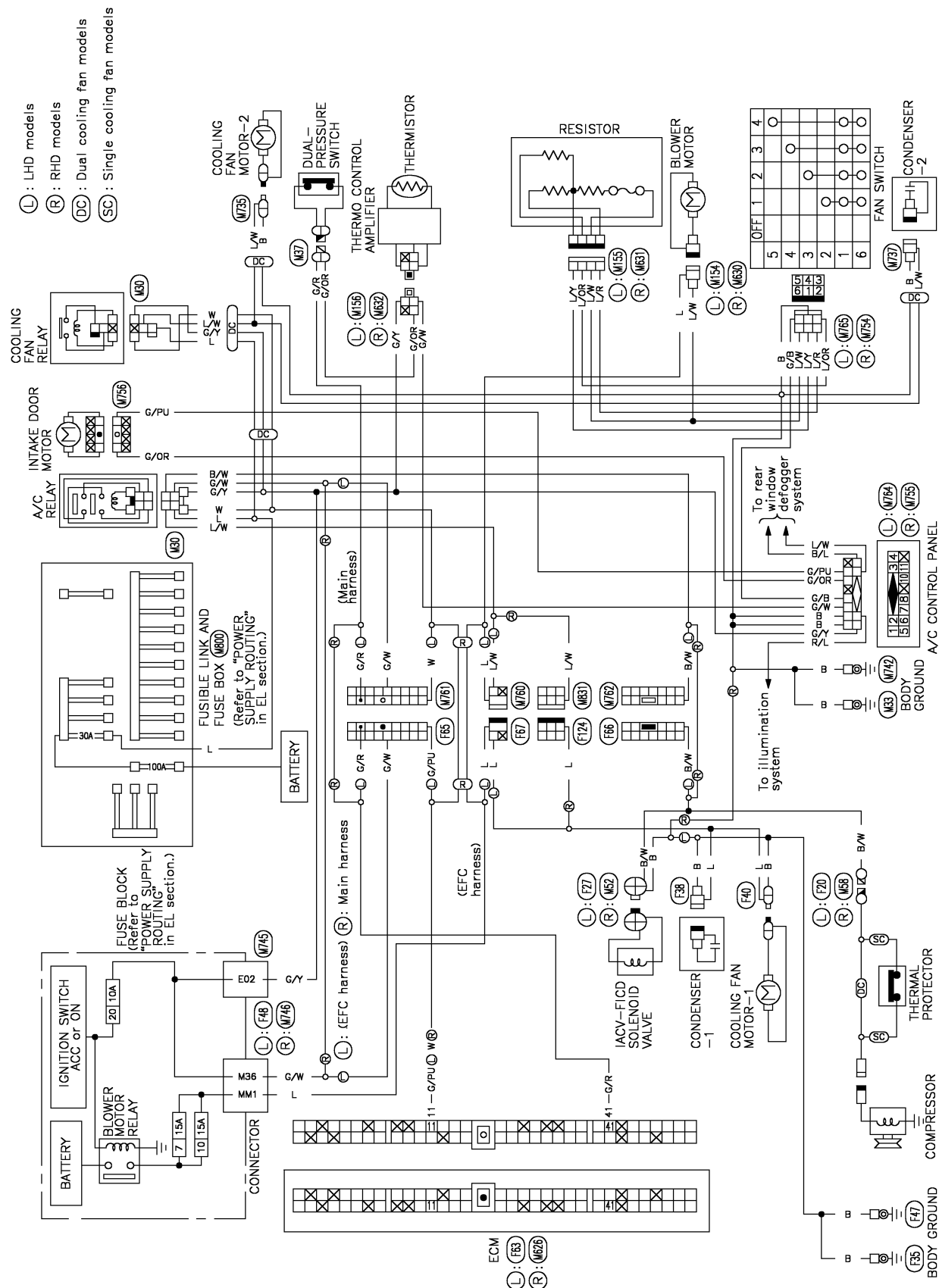
KA24E ENGINE MODELS FOR RUSSIA



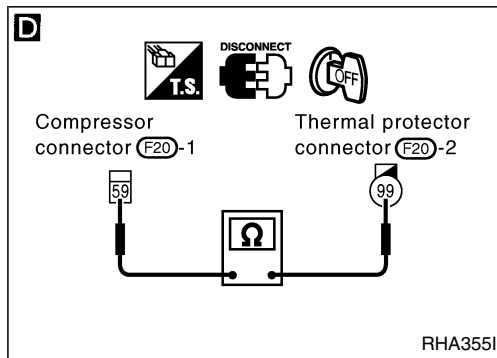
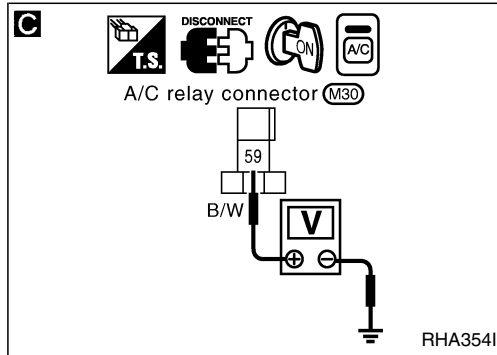
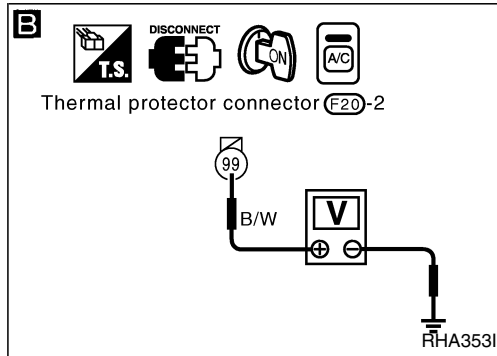
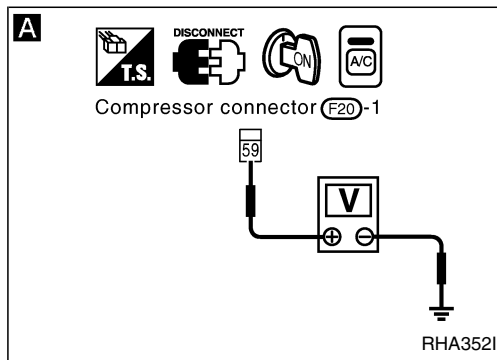
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Wiring Diagram (Cont'd)

KA24E ENGINE MODELS EXCEPT FOR RUSSIA



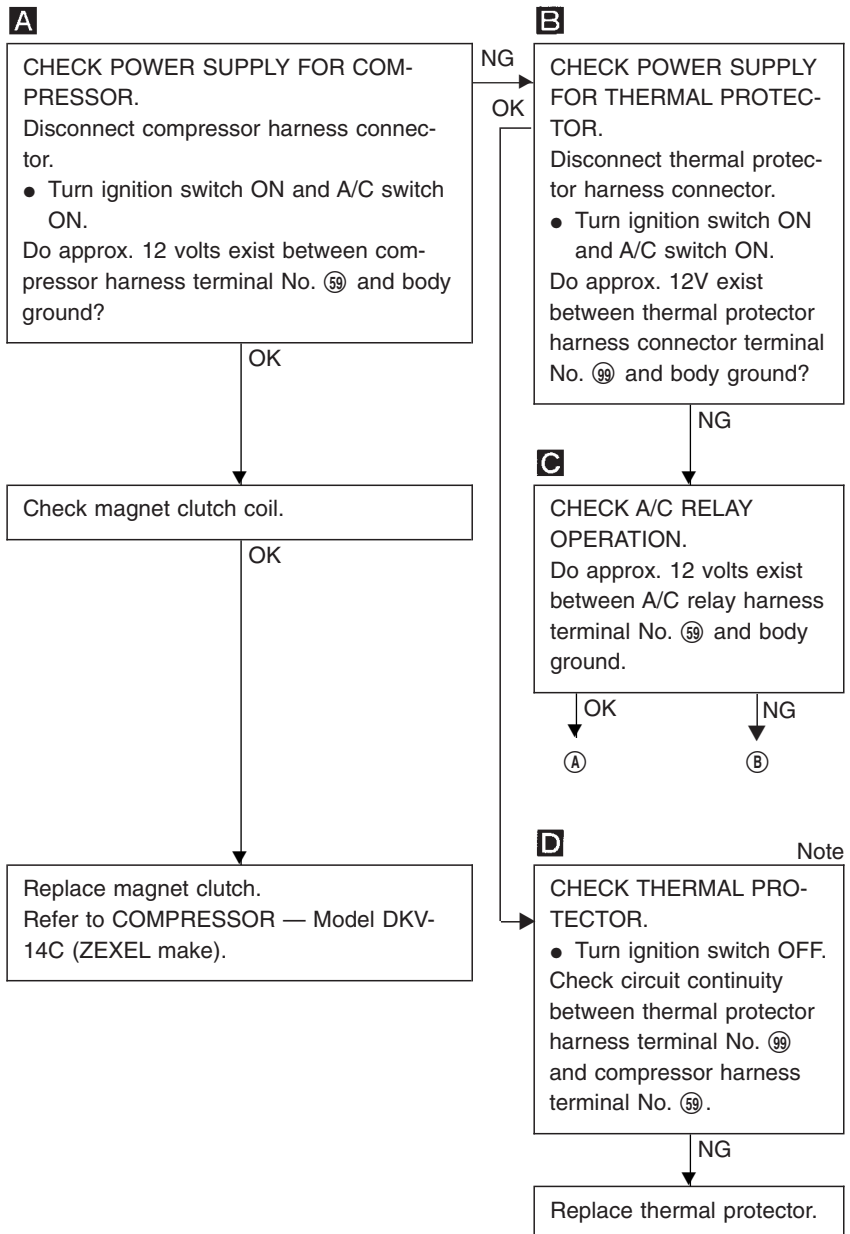
TROUBLE DIAGNOSES



Diagnostic Procedure 2 (KA24E Engine Models for Russia)

SYMPTOM: Magnet clutch does not engage when A/C switch and fan switch are ON.

- Perform **PRELIMINARY CHECK 1** before referring to the following flow chart. (Refer to **PRELIMINARY CHECK 1**, HA-35.)

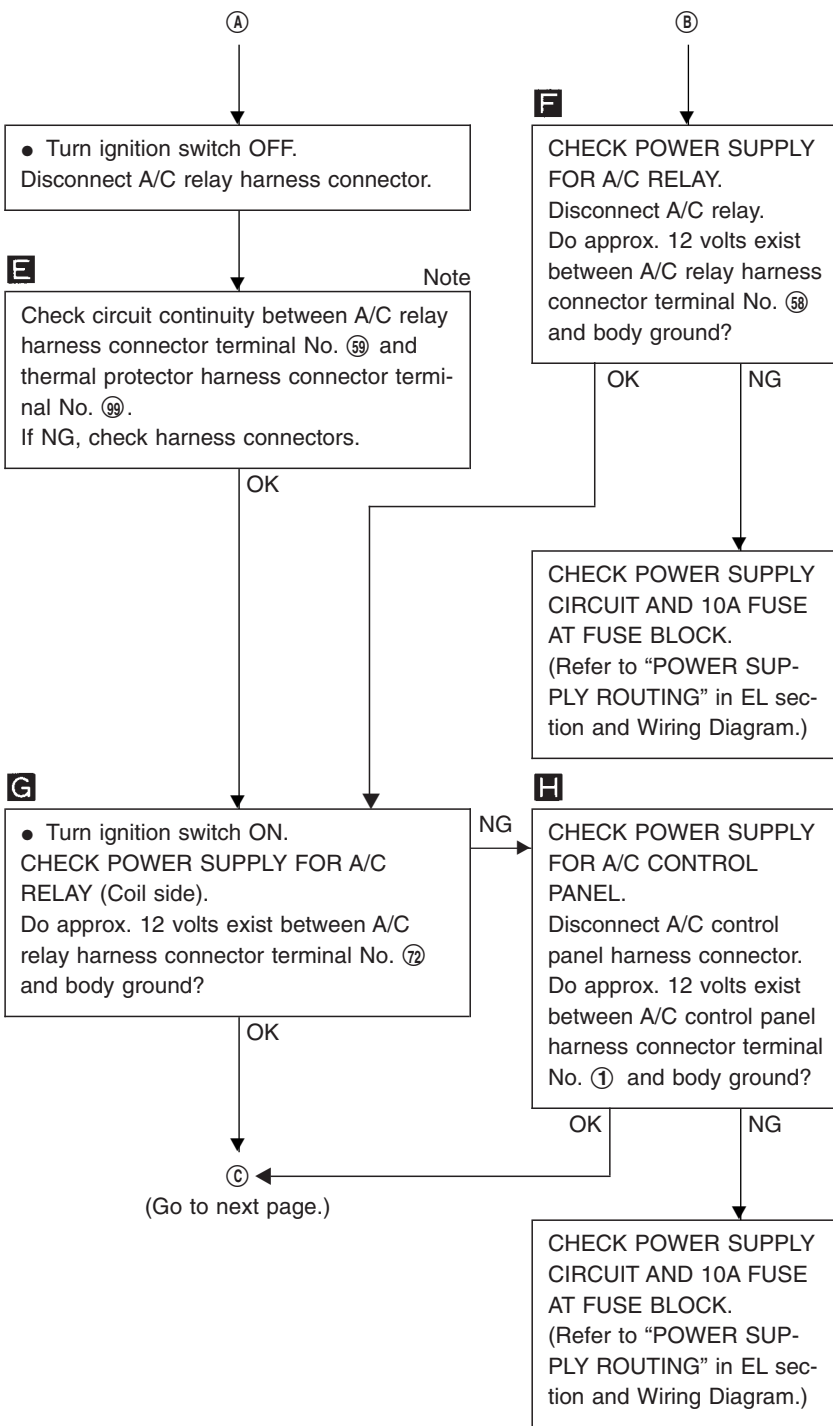
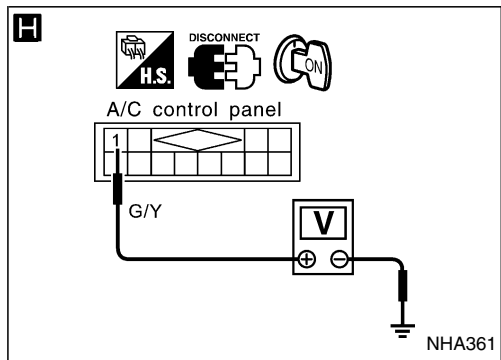
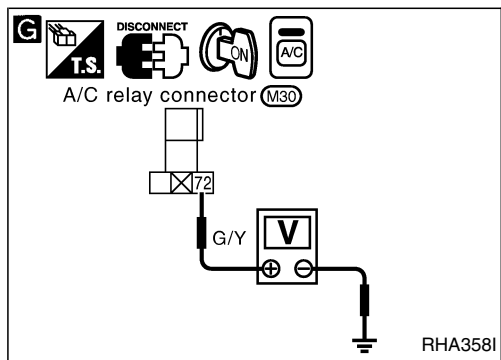
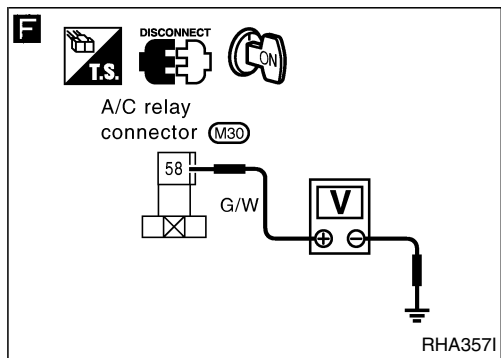
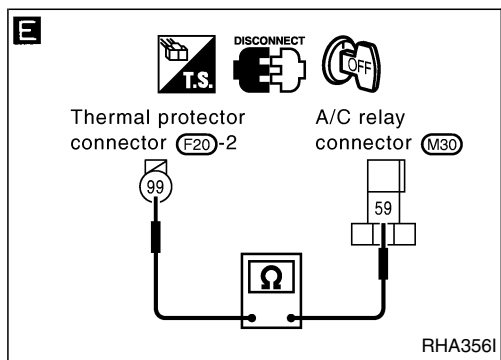


Note:

If the result is NG after checking circuit continuity, repair harness or connector.

TROUBLE DIAGNOSES

Diagnostic Procedure 2 (KA24E Engine Models for Russia) (Cont'd)

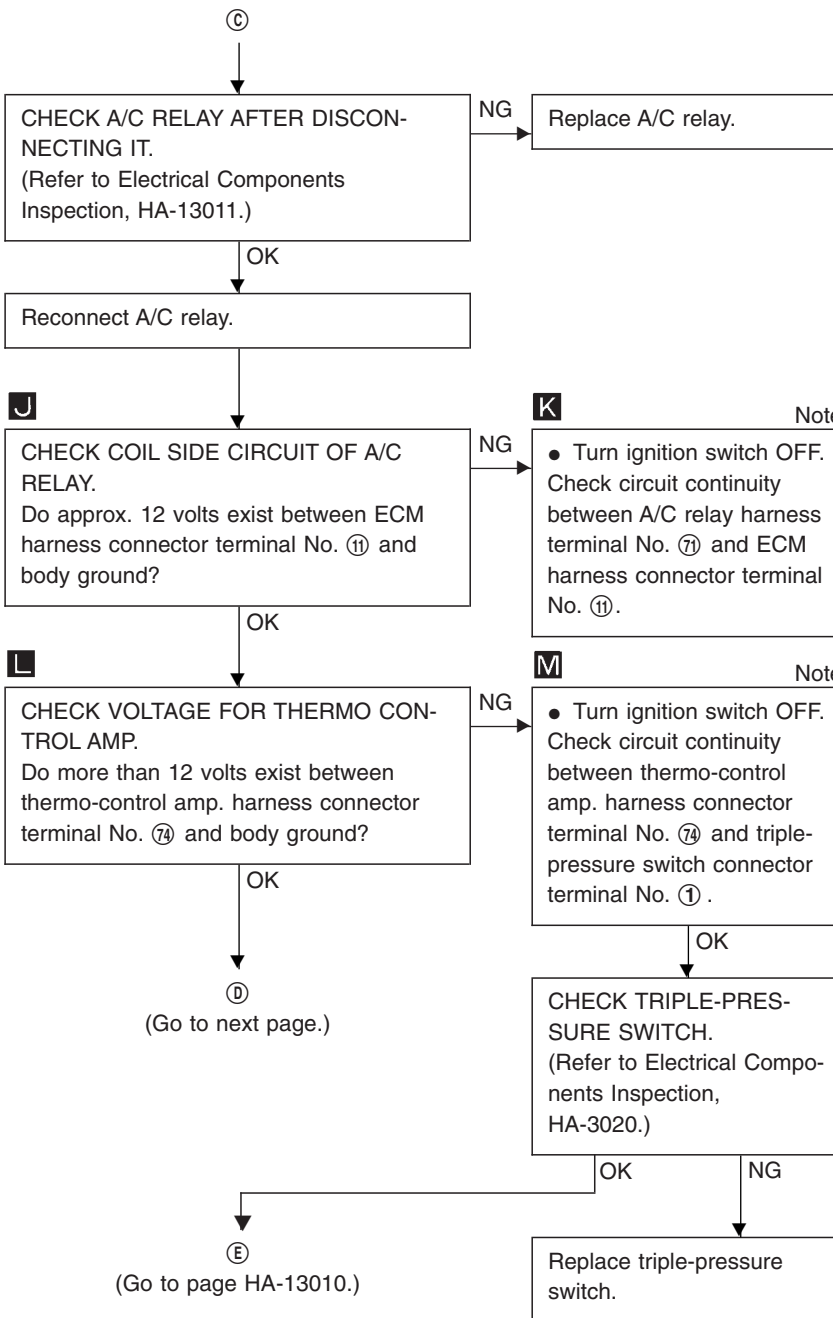
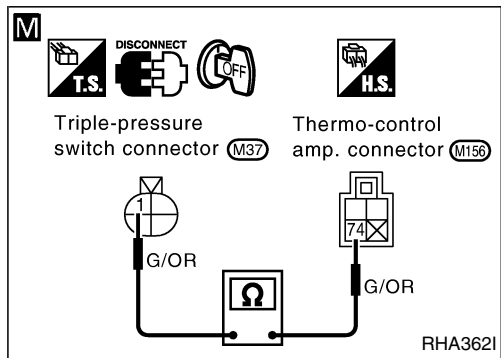
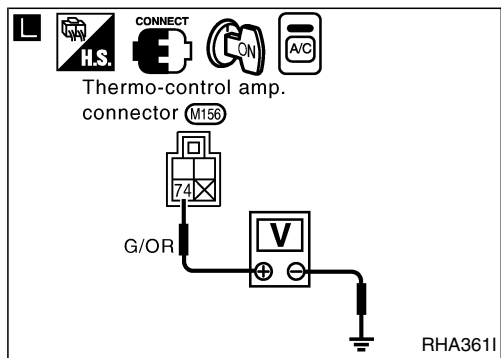
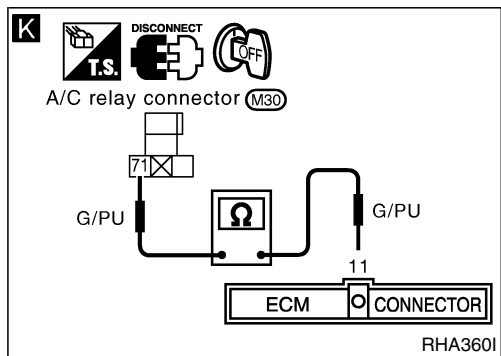
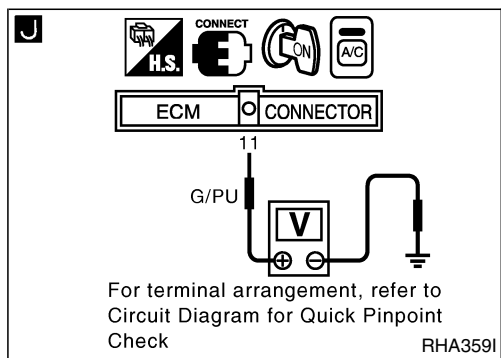


Note:

If the result is NG after checking circuit continuity, repair harness or connector.

TROUBLE DIAGNOSES

Diagnostic Procedure 2 (KA24E Engine Models for Russia) (Cont'd)

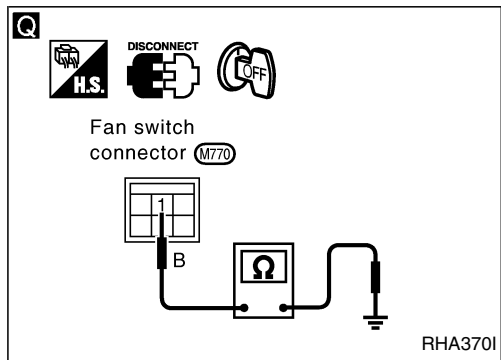
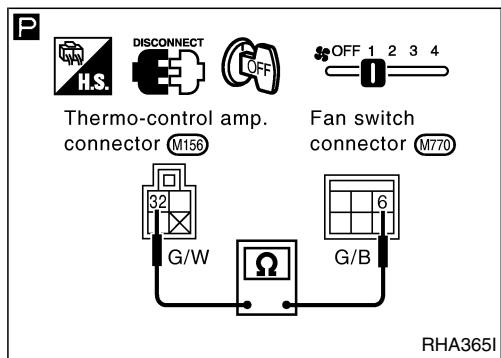
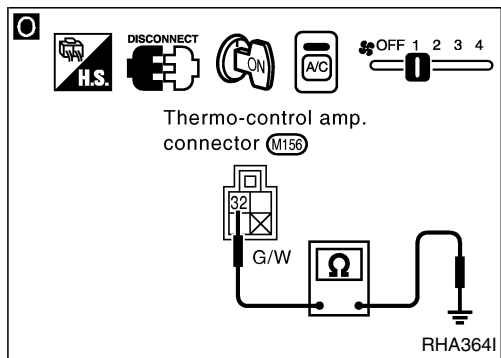
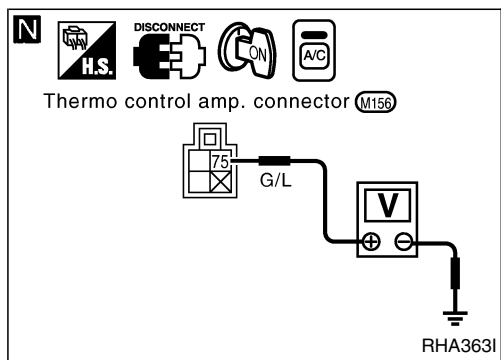


Note:

If the result is NG after checking circuit continuity, repair harness or connector.

TROUBLE DIAGNOSES

Diagnostic Procedure 2 (KA24E Engine Models for Russia) (Cont'd)



①

Note

CHECK POWER SUPPLY FOR THERMO-CONTROL AMP.
Disconnect thermo-control amp. connector.
Turn ignition switch ON.
Ensure A/C switch is in ON position.
Ensure fan switch is in ON position (1 to 4).
Do approx. 12 volts exist between thermo-control amp. harness connector terminal No. ⑦⑤ and body ground?

OK

● Turn ignition switch OFF. CHECK BODY GROUND CIRCUIT FOR THERMO-CONTROL AMP.
Does continuity exist between thermo control amp. harness connector terminal No. ③② and body ground?

OK

Replace thermo-control amp.

NG

Disconnect fan switch harness connector.
Ensure A/C switch is in ON position.

Note

CHECK BODY GROUND CIRCUIT FOR FAN SWITCH.
Does continuity exist between fan switch harness connector terminal No. ① and body ground?

OK

CHECK FAN SWITCH.
(Refer to Electrical Components Inspection, HA-13011.)

NG

Replace fan switch.

NG

Disconnect fan switch harness connector.
Ensure A/C switch is in ON position.

Note

Check circuit continuity between thermo-control amp. harness connector terminal No. ③② and fan switch harness connector terminal No. ⑥.

OK

Check A/C switch (Refer to Electrical Components Inspection, HA-9026.)

OK

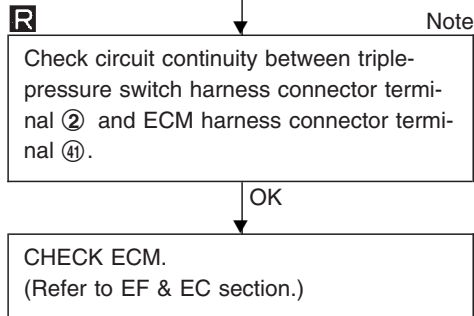
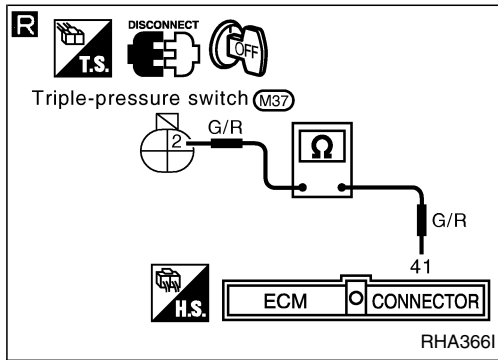
Repair harness or connectors.

Note:

If the result is NG after checking circuit continuity, repair harness or connector.

TROUBLE DIAGNOSES

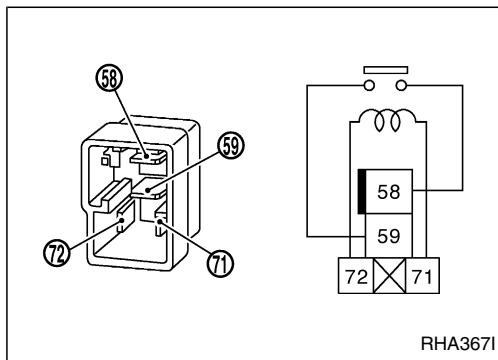
Diagnostic Procedure 2 (KA24E Engine Models for Russia) (Cont'd)



Note:

If the result is NG after checking circuit continuity, repair harness or connector.

TROUBLE DIAGNOSES



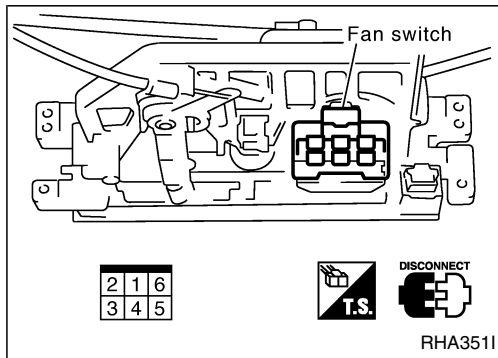
Electrical Components Inspection

A/C RELAY

Check circuit continuity between terminals by supplying 12 volts to coil side terminals of A/C relay.

Apply 12 volts to terminals ① and ②, and check continuity between terminals ③ and ⑤.

Conditions	Continuity
12V direct current supply between terminals ① and ②.	YES
No current supply	NO



FAN SWITCH

Check continuity between terminals at each switch position.

Terminal	Fan switch position				
	OFF	1	2	3	4
5					○
4				○	
3			○		
2		○			
1		○	○	○	○
6		○	○	○	○

ELECTRICAL SYSTEM

SECTION **EL**

When you read wiring diagrams:

- Read GI section, "HOW TO READ WIRING DIAGRAMS".

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WIRING DIAGRAM REFERENCE CHART

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POWER WINDOW AND POWER DOOR LOCK, HEATED SEAT, SUN ROOF, DOOR MIRROR AND SUPPLEMENTAL RESTRAINT SYSTEM (AIR BAG)	BF SECTION
HEATER AND AIR CONDITIONER	HA SECTION

ELECTRICAL SYSTEM

SECTION **EL**

When you read wiring diagrams:

- Read GI section, "HOW TO READ WIRING DIAGRAMS".

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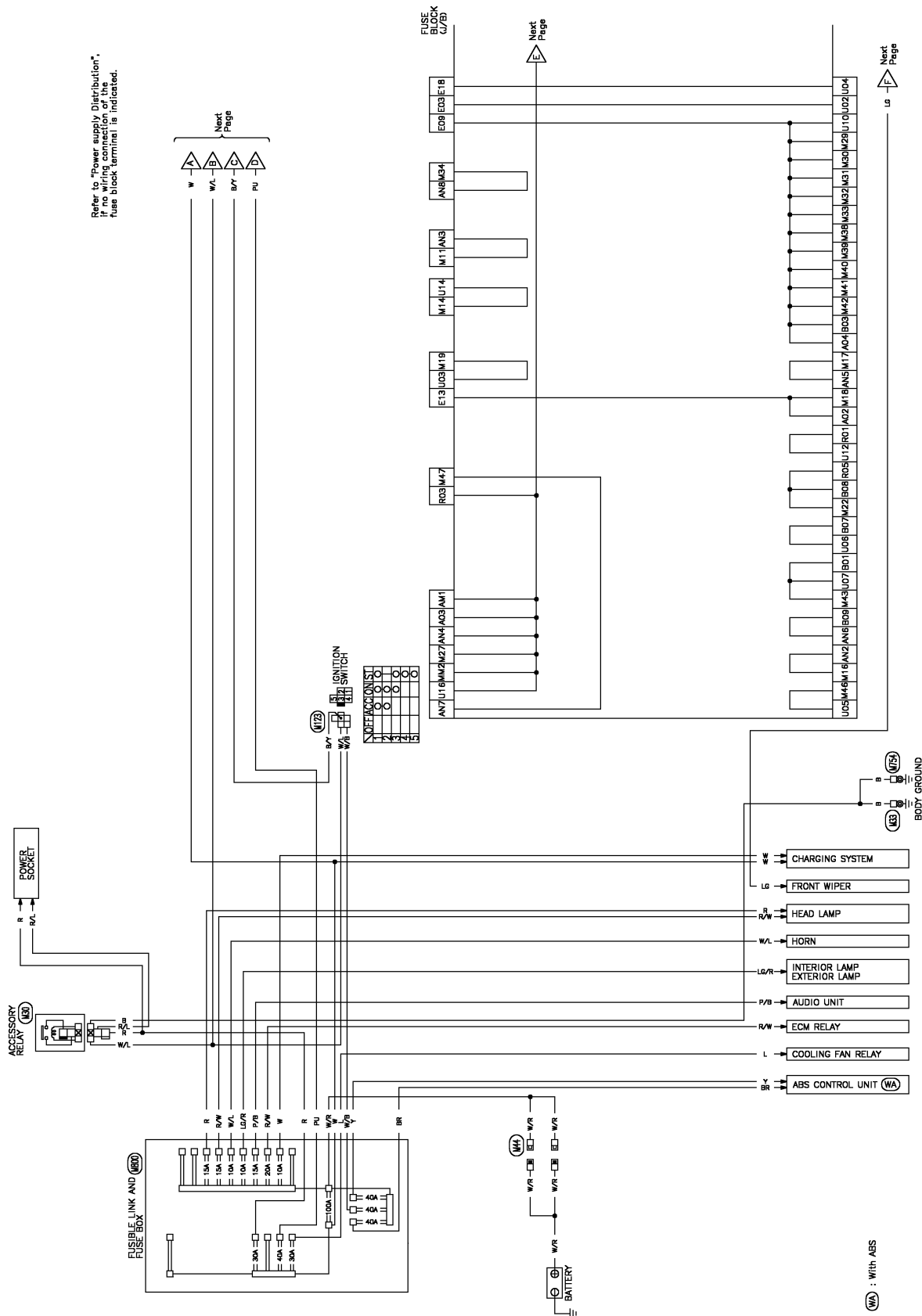
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WIRING DIAGRAM REFERENCE CHART

ENGINE CONTROL SYSTEM, IGNITION SYSTEM.....	EF & EC SECTION
POWER WINDOW AND POWER DOOR LOCK, HEATED SEAT, SUN ROOF, DOOR MIRROR AND SUPPLEMENTAL RESTRAINT SYSTEM (AIR BAG)	BF SECTION
HEATER AND AIR CONDITIONER	HA SECTION

Wiring Diagram/For Russia



Wiring Diagram/For Russia (Cont'd)



EL-13005



Wiring Diagram/Except for Russia (Cont'd)



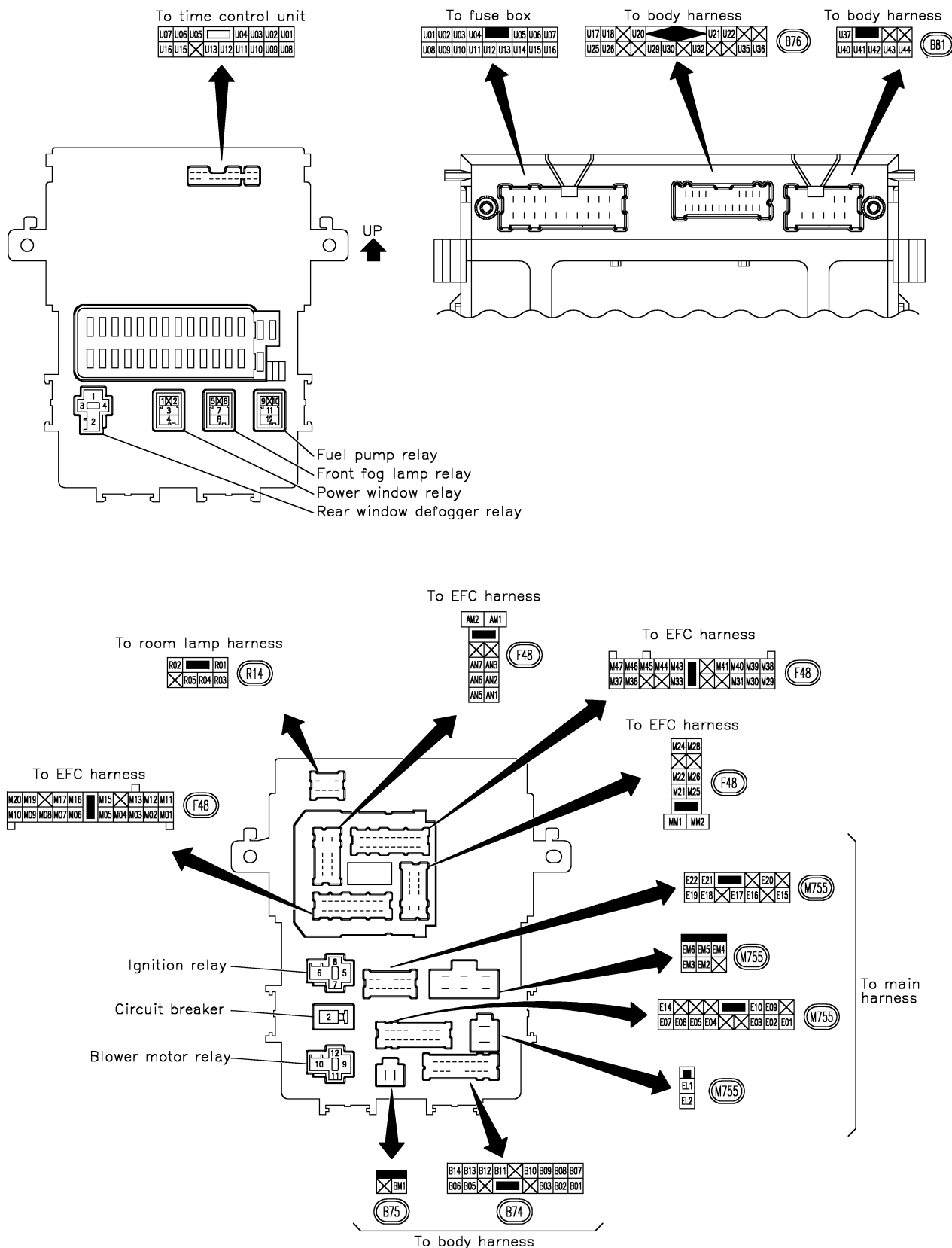
Power Supply Distribution/For Russia

CONNECTOR No.	TERMINAL No.	WIRE COLOR	CONNECT PART
(F48)	M01	G/Y	Stop lamp switch
	M02	OR	Combination meter
	M03	Y	Vehicle speed sensor, Combination meter
	M04	Y	Back-up lamp switch
	M05	R/W	Fuel injector
	M06	Y	Data link connector
	M07	B/W	SCV control solenoid valve
			NATS IMMU
			EGR valve and EVAP canister purge control solenoid valve, IACV-AAC valve
			Heated oxygen sensor
	M08	R/B	Headlamp cleaner motor
	M09	W/R	ECM
	M10	OR/B	Front fog lamp, Combination meter
	M12	G/Y	Combination meter
	M15	R/G	Combination meter
	M19	L/W	A/C control panel
	M29	R/L	Audio unit and hazard switch
	M30	R/L	Combination meter
	M36	G/W	A/C relay
(M755)	M38	R/L	Headlamp aiming switch, Headlamp aiming motor
	M39	R/L	Audio unit and hazard switch
	M43	R/B	Combination meter
	M44	G/B	Combination meter
	M45	G/Y	Audio unit, Door mirror switch, CD autochanger
	M46	G/R	Hazard switch
	AN1	R/Y	Air bag diagnosis sensor unit
	AM1	B	Air bag diagnosis sensor unit
	M21	G/L	Door lock switch relay
	M24	G/R	Cigarette lighter
	M25	R/B	Stop lamp switch
	M26	PU	Door mirror
	MM1	L	Blower motor
	MM2	B	Body ground
	EM2	LG	Wiper motor
	EM3	W/L	Accessory relay
	EM4	PU	Fusible link and fuse box
	EM5	W/L	Ignition switch, Accessory relay
	EM6	B/Y	Ignition switch
	E01	G/B	Turn signal lamp
	E02	G/Y	A/C relay, Thermistor, A/C control panel
	E03	G/B	Lighting switch
	E05	G	Theft warning horn relay, Key switch
	E06	G/Y	Turn signal lamp
	E09	R/L	Clearance lamp, Lighting switch, A/C control panel
			Cigarette lighter, Ashtray illumination
	E14	OR/B	Front fog lamp
CONNECTOR No.	TERMINAL No.	WIRE COLOR	CONNECT PART
(M755)	E15	G/Y	ABS control unit, G sensor
	E16	G/Y	Rear wiper switch
	E17	LG	Wiper switch
	E18	G/Y	Turn signal lamp
	E19	OR/L	Fog lamp switch
	E20	G/Y	ABS control unit
	E21	R	Rear fog lamp relay
	E22	B/W	Daytime light control unit
	EL1	W	Charging system, Fusible link and fuse box
	EL2	W	Charging system, Fusible link and fuse box
	BM1	B/L	A/C control panel, Rear window defogger
	B01	R/B	Door switch, Back door switch
(B75)	B02	G/B	Rear combination lamp (turn)
	B05	OR	Rear combination lamp (rear fog lamp)
	B06	L/W	Power window switch
	B07	R/Y	Front door switch LH
	B10	G/Y	Rear wiper motor
	B11	G/Y	Rear combination lamp (stop), High-mounted stop lamp
	B12	B/R	Heated seat switch
	B13	B/R	Fuel pump
	B14	G/Y	Rear combination lamp (turn)
	R01	R	Interior lamp, Rear interior lamp
	R02	R/G	Map lamp, Interior lamp, Rear interior lamp
			Sunroof switch and map lamp
	R03	B	Map lamp, Sunroof switch and map lamp
	R04	W/G	Sunroof switch and map lamp
(B76)	U17	PU	Ultrasonic sensors
	U18	G/B	NATS IMMU, Combination meter
	U20	B/Y	Ultrasonic sensors
	U21	P	Ultrasonic sensors
	U22	BR	Key switch
	U25	Y/L	Door lock actuator
	U26	LG/R	NATS IMMU
	U29	G/Y	Key cylinder switch
	U30	L	Ultrasonic cancel switch
	U32	Y/B	Hood switch
	U35	Y/B	Door lock switch relay
	U36	Y/L	Front door lock actuator
	U37	L	Power window main switch
	U40	BR/W	Door lock actuator
(B81)	U41	G	Door lock actuator
	U42	G/Y/G	Door lock actuator
	U43	G/W	Theft warning horn relay
	U44	PU/G	Door lock actuator

Power Supply Distribution/Except for Russia

CONNECTOR No.	TERMINAL No.	WIRE COLOR	CONNECT PART
L : (F48) R : (M746)	M01	G/Y	Stop lamp switch
	M02	OR	Combination meter
	M03	Y	Vehicle speed sensor, Combination meter
	M04	Y	Back-up lamp switch
	M05	R/W	Fuel injector
	M06	Y	Data link connector
	M07	B/W	SCV control solenoid valve
			NATS IMMU, Heated oxygen sensor, EGR valve and EVAP canister purge control solenoid valve, IACV-AAC valve
	M09	W/R	ECM
	M10	OR/B	Front fog lamp, Combination meter
B75	M12	G/Y	Combination meter
	M15	R/G	Combination meter
	M19	L/W	A/C control panel
	M29	R/L	Audio unit
	M30	R/L	Combination meter
	M31	R/L	Cigarette lighter, Ashtray illumination
	M33	R/L	Glove box lamp
	M36	G/W	A/C relay
	M39	R/L	Hazard switch
	M41	R/L	A/C control panel
L : (R14) R : (B82)	M43	R/B	Combination meter
	M44	G/B	Combination meter
	M45	G/Y	Audio unit, Door mirror switch, CD autochanger
	M46	G/R	Hazard switch
	AN1	R/Y	Air bag diagnosis sensor unit
	AM1	B	Air bag diagnosis sensor unit
	M21	G/L	Door lock switch relay
	M24	G/R	Cigarette lighter
	M25	R/B	Stop lamp switch
	MM1	L	Blower motor
M745	MM2	B	Body ground
	EM2	LG	Wiper motor
	EM3	W/L	Ignition switch, Accessory relay
	EM4	PU	Fusible link and fuse box
	EM5	W/L	Ignition switch, Accessory relay
	EM6	B/Y	Ignition switch
	E01	G/B	Turn signal lamp
	E02	G/Y	A/C relay, Thermistor, A/C control panel, Cooling fan relay
	E03	G/B	Lighting switch
	E05	G	Key switch
B81	E06	G/Y	Turn signal lamp
	E09	R/L	Clearance lamp, Lighting switch, A/C control panel
			Cigarette lighter, Ashtray illumination
	E14	OR/B	Front fog lamp
			Stop lamp switch
			Combination meter
			Vehicle speed sensor, Combination meter
			Back-up lamp switch
			Fuel injector
			Data link connector
B74			SCV control solenoid valve
			NATS IMMU, Heated oxygen sensor, EGR valve and EVAP canister purge control solenoid valve, IACV-AAC valve
			ECM
			Front fog lamp, Combination meter
			Combination meter
			Combination meter
			A/C control panel
			Audio unit
			Combination meter
			Cigarette lighter, Ashtray illumination
L : (R14) R : (B82)			Glove box lamp
			A/C relay
			Hazard switch
			A/C control panel
			Combination meter
			Combination meter
			Audio unit, Door mirror switch, CD autochanger
			Hazard switch
			Air bag diagnosis sensor unit
			Air bag diagnosis sensor unit
B76			Door lock switch relay
			Cigarette lighter
			Stop lamp switch
			Blower motor
			Body ground
			Wiper motor
			Ignition switch, Accessory relay
			Fusible link and fuse box
			Ignition switch, Accessory relay
			Ignition switch
B81			Turn signal lamp
			A/C relay, Thermistor, A/C control panel, Cooling fan relay
			Lighting switch
			Key switch
			Turn signal lamp
			Clearance lamp, Lighting switch, A/C control panel
			Cigarette lighter, Ashtray illumination
			Front fog lamp
			Stop lamp switch
			Combination meter
		Vehicle speed sensor, Combination meter	
		Back-up lamp switch	
		Fuel injector	
		Data link connector	
		SCV control solenoid valve	
		NATS IMMU, Heated oxygen sensor, EGR valve and EVAP canister purge control solenoid valve, IACV-AAC valve	
		ECM	
		Front fog lamp, Combination meter	
		Combination meter	
		Combination meter	
		A/C control panel	
		Audio unit	
		Combination meter	
		Cigarette lighter, Ashtray illumination	
		Glove box lamp	
		A/C relay	
		Hazard switch	
		A/C control panel	
		Combination meter	
		Combination meter	
		Audio unit, Door mirror switch, CD autochanger	
		Hazard switch	
		Air bag diagnosis sensor unit	
		Air bag diagnosis sensor unit	
		Door lock switch relay	
		Cigarette lighter	
		Stop lamp switch	
		Blower motor	
		Body ground	
		Wiper motor	
		Ignition switch, Accessory relay	
		Fusible link and fuse box	
		Ignition switch, Accessory relay	
		Ignition switch	
		Turn signal lamp	
		A/C relay, Thermistor, A/C control panel, Cooling fan relay	
		Lighting switch	
		Key switch	
		Turn signal lamp	
		Clearance lamp, Lighting switch, A/C control panel	
		Cigarette lighter, Ashtray illumination	
		Front fog lamp	
		Stop lamp switch	
		Combination meter	
		Vehicle speed sensor, Combination meter	
		Back-up lamp switch	
		Fuel injector	
		Data link connector	
		SCV control solenoid valve	
		NATS IMMU, Heated oxygen sensor, EGR valve and EVAP canister purge control solenoid valve, IACV-AAC valve	
		ECM	
		Front fog lamp, Combination meter	
		Combination meter	
		Combination meter	
		A/C control panel	
		Audio unit	
		Combination meter	
		Cigarette lighter, Ashtray illumination	
		Glove box lamp	
		A/C relay	
		Hazard switch	
		A/C control panel	
		Combination meter	
		Combination meter	
		Audio unit, Door mirror switch, CD autochanger	
		Hazard switch	
		Air bag diagnosis sensor unit	
		Air bag diagnosis sensor unit	
		Door lock switch relay	
		Cigarette lighter	
		Stop lamp switch	
		Blower motor	
		Body ground	
		Wiper motor	
		Ignition switch, Accessory relay	
		Fusible link and fuse box	
		Ignition switch, Accessory relay	
		Ignition switch	
		Turn signal lamp	
		A/C relay, Thermistor, A/C control panel, Cooling fan relay	
		Lighting switch	
		Key switch	
		Turn signal lamp	
		Clearance lamp, Lighting switch, A/C control panel	
		Cigarette lighter, Ashtray illumination	
		Front fog lamp	
		Stop lamp switch	
		Combination meter	
		Vehicle speed sensor, Combination meter	
		Back-up lamp switch	
		Fuel injector	
		Data link connector	
		SCV control solenoid valve	
		NATS IMMU, Heated oxygen sensor, EGR valve and EVAP canister purge control solenoid valve, IACV-AAC valve	
		ECM	
		Front fog lamp, Combination meter	
		Combination meter	
		Combination meter	
		A/C control panel	
		Audio unit	
		Combination meter	
		Cigarette lighter, Ashtray illumination	
		Glove box lamp	
		A/C relay	
		Hazard switch	
		A/C control panel	
		Combination meter	
		Combination meter	
		Audio unit, Door mirror switch, CD autochanger	
		Hazard switch	
		Air bag diagnosis sensor unit	
		Air bag diagnosis sensor unit	
		Door lock switch relay	
		Cigarette lighter	
		Stop lamp switch	
		Blower motor	
		Body ground	
		Wiper motor	
		Ignition switch, Accessory relay	
		Fusible link and fuse box	
		Ignition switch, Accessory relay	
		Ignition switch	
		Turn signal lamp	
		A/C relay, Thermistor, A/C control panel, Cooling fan relay	
		Lighting switch	
		Key switch	
		Turn signal lamp	
		Clearance lamp, Lighting switch, A/C control panel	
		Cigarette lighter, Ashtray illumination	
		Front fog lamp	
		Stop lamp switch	
		Combination meter	
		Vehicle speed sensor, Combination meter	
		Back-up lamp switch	
		Fuel injector	
		Data link connector	
		SCV control solenoid valve	
		NATS IMMU, Heated oxygen sensor, EGR valve and EVAP canister purge control solenoid valve, IACV-AAC valve	
		ECM	
		Front fog lamp, Combination meter	
		Combination meter	
		Combination meter	
		A/C control panel	
		Audio unit	
		Combination meter	
		Cigarette lighter, Ashtray illumination	
		Glove box lamp	
		A/C relay	
		Hazard switch	
		A/C control panel	
		Combination meter	
		Combination meter	
		Audio unit, Door mirror switch, CD autochanger	
		Hazard switch	
		Air bag diagnosis sensor unit	
		Air bag diagnosis sensor unit	
		Door lock switch relay	
		Cigarette lighter	
		Stop lamp switch	
		Blower motor	
		Body ground	
		Wiper motor	
		Ignition switch, Accessory relay	
		Fusible link and fuse box	
		Ignition switch, Accessory relay	
		Ignition switch	
		Turn signal lamp	
		A/C relay, Thermistor, A/C control panel, Cooling fan relay	
		Lighting switch	
		Key switch	
		Turn signal lamp	
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		Front fog lamp	
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		Hazard switch	
		A/C control panel	
		Combination meter	

Terminal Arrangement/For Russia



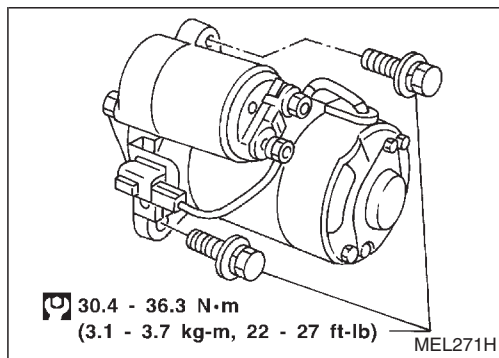
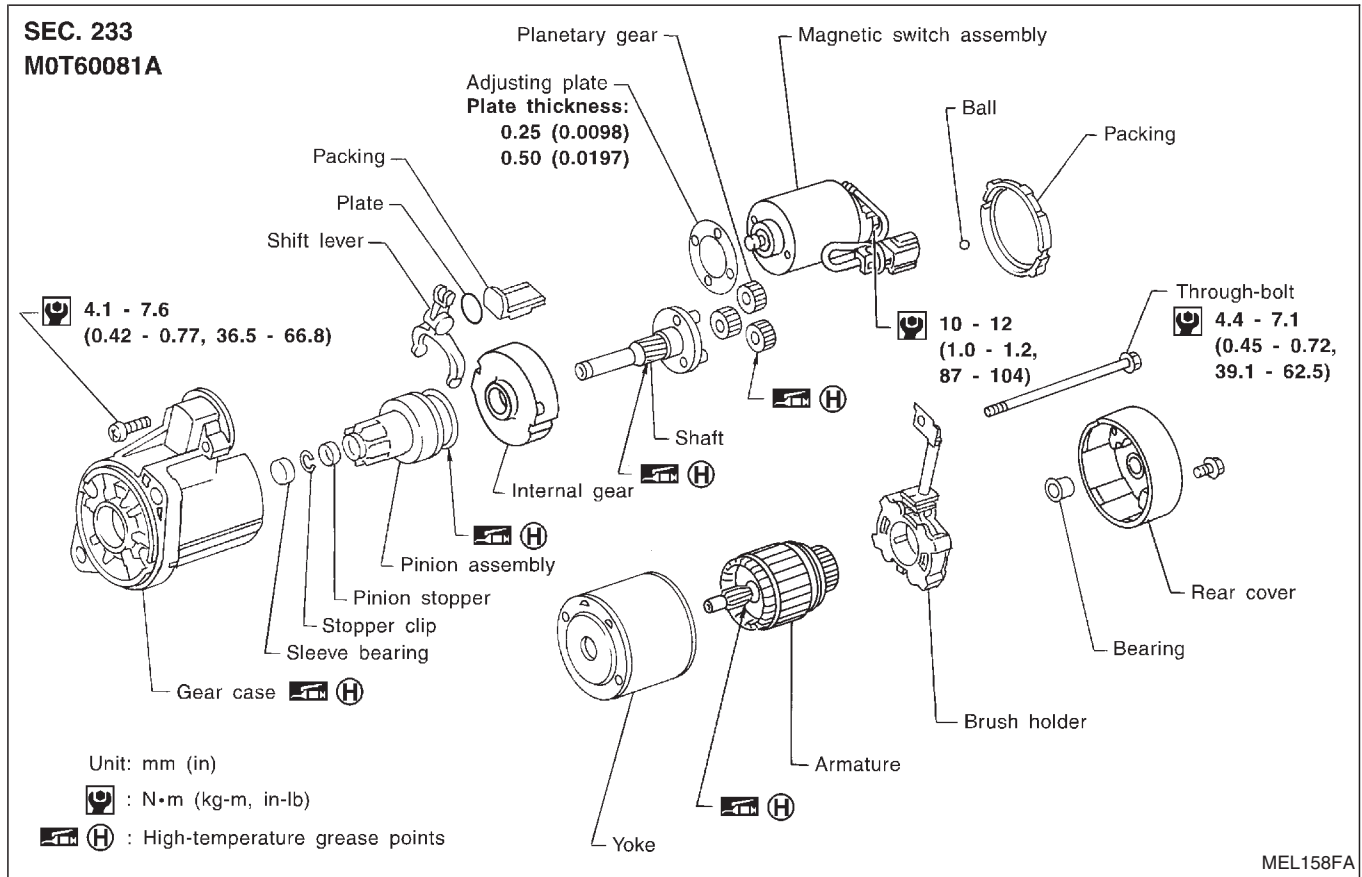
BATTERY

Service Data and Specifications (SDS)

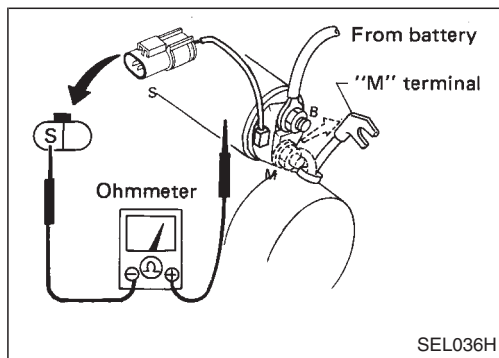
Applied model	KA24E engine
Type	L2-580 R (65 Ah)
Capacity	V-AH 12-55

STARTING SYSTEM

Construction



Removal and Installation



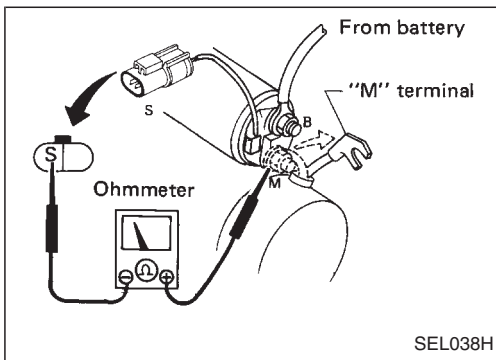
Magnetic Switch Check

- Before starting to check, disconnect battery ground cable.
- Disconnect "M" terminal of starter motor.
- 1. Continuity test (between "S" terminal and switch body).
- No continuity ... Replace.

STARTING SYSTEM

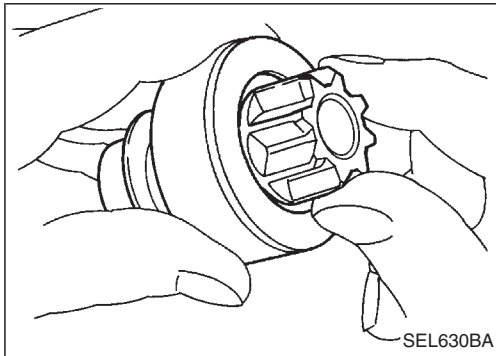
Magnetic Switch Check (Cont'd)

2. Continuity test (between "S" terminal and "M" terminal).
- No continuity ... Replace.



Pinion/Clutch Check

1. Inspect pinion teeth.
- Replace pinion if teeth are worn or damaged. (Also check condition of ring gear teeth.)
2. Inspect reduction gear teeth (If equipped).
- Replace reduction gear if teeth are worn or damaged. (Also check condition of armature shaft gear teeth.)
3. Check to see if pinion locks in one direction and rotates smoothly in the opposite direction.
- If it locks or rotates in both directions, or unusual resistance is evident. ... Replace.



Brush Check

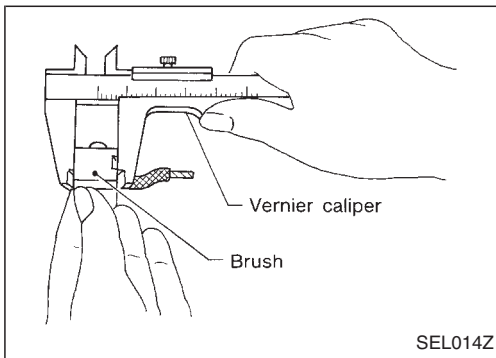
BRUSH

Check wear of brush.

Wear limit length:

Refer to SDS, EL-13015.

- Excessive wear ... Replace.



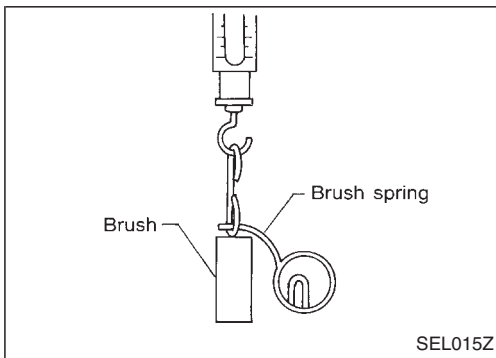
BRUSH SPRING PRESSURE

Check brush spring pressure with brush spring detached from brush.

Spring pressure (with new brush):

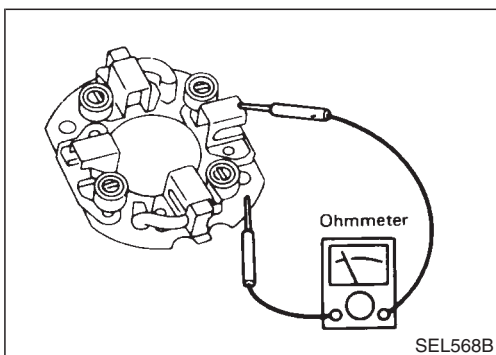
Refer to SDS, EL-13015.

- Not within the specified values ... Replace.

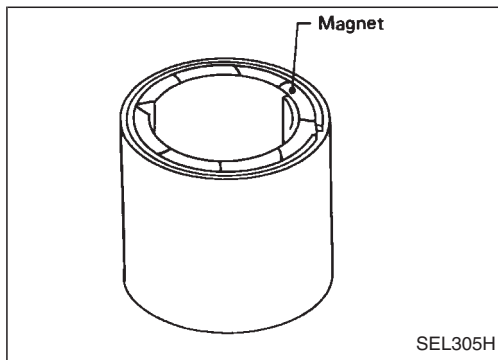


BRUSH HOLDER

1. Perform insulation test between brush holder (positive side) and its base (negative side).
- Continuity exists. ... Replace.
2. Check brush to see if it moves smoothly.
- If brush holder is bent, replace it; if sliding surface is dirty, clean.



STARTING SYSTEM

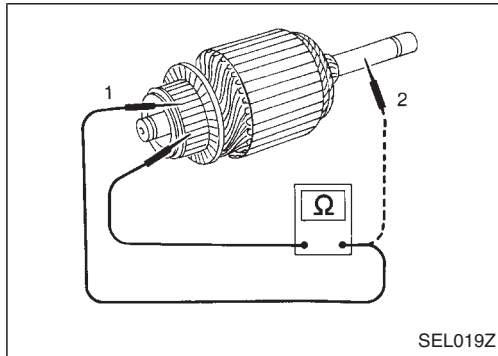


Yoke Check

Magnet is secured to yoke by bonding agent. Check magnet to see that it is secured to yoke and for any cracks. Replace malfunctioning parts as an assembly.

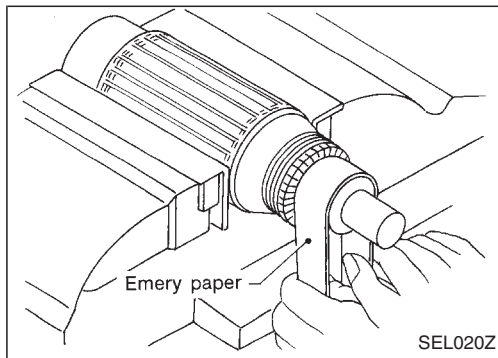
CAUTION:

Do not clamp yoke in a vice or strike it with a hammer.

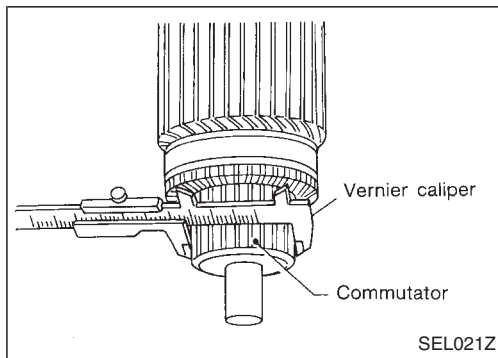


Armature Check

1. Continuity test (between two segments side by side).
 - No continuity ... Replace.
2. Insulation test (between each commutator bar and shaft).
 - Continuity exists. ... Replace.



3. Check commutator surface.
 - Rough ... Sand lightly with No. 500 - 600 emery paper.



4. Check diameter of commutator.

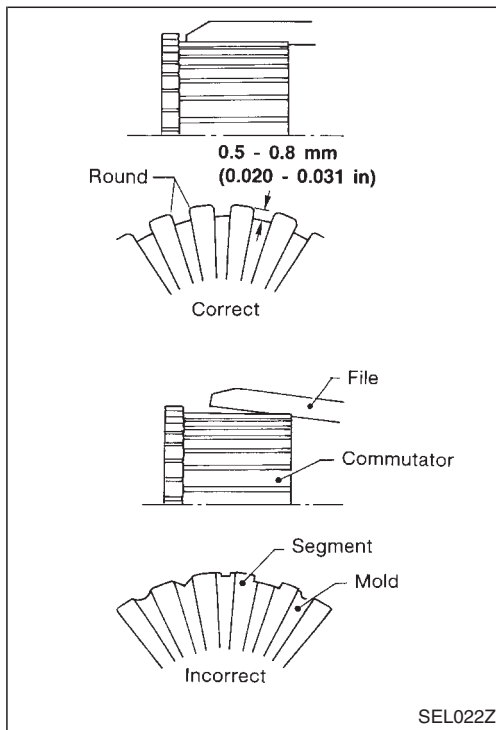
Commutator minimum diameter:
Refer to SDS, EL-13015.

 - Less than specified value ... Replace.

STARTING SYSTEM

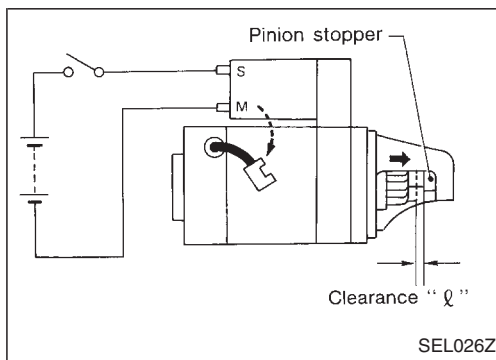
Armature Check (Cont'd)

5. Check depth of insulating mold from commutator surface.
- Less than 0.2 mm (0.008 in) ... Undercut to 0.5 to 0.8 mm (0.020 to 0.031 in)



Assembly

Apply high-temperature grease to lubricate the bearing, gears and frictional surface when assembling the starter. Carefully observe the following instructions.



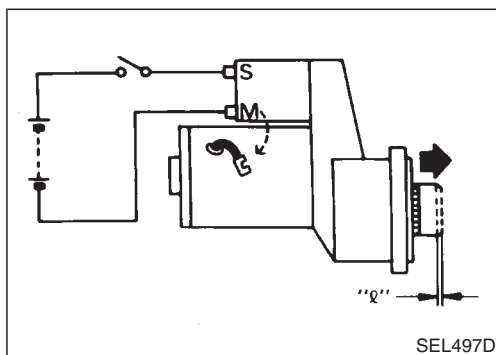
PINION PROTRUSION LENGTH ADJUSTMENT

Clearance "ℓ"

With pinion driven out by magnetic switch, push pinion back to remove slack and measure clearance "ℓ" between the front edge of the pinion and the pinion stopper.

Clearance "ℓ":

Refer to SDS, EL-13015.



Movement "ℓ"

Compare movement "ℓ" in height of pinion when it is pushed out with magnetic switch energized and when it is pulled out by hand until it touches stopper.

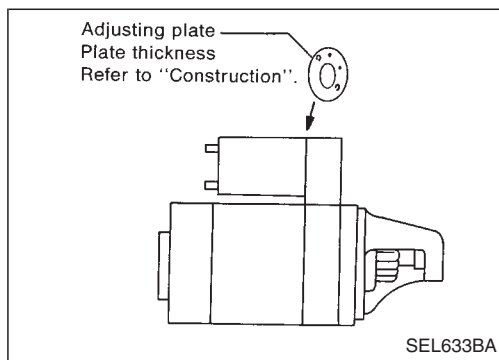
Movement "ℓ":

Refer to SDS, EL-13015.

STARTING SYSTEM

Assembly (Cont'd)

- Not in the specified value ... Adjust by adjusting plate.



Service Data and Specifications (SDS)

STARTER

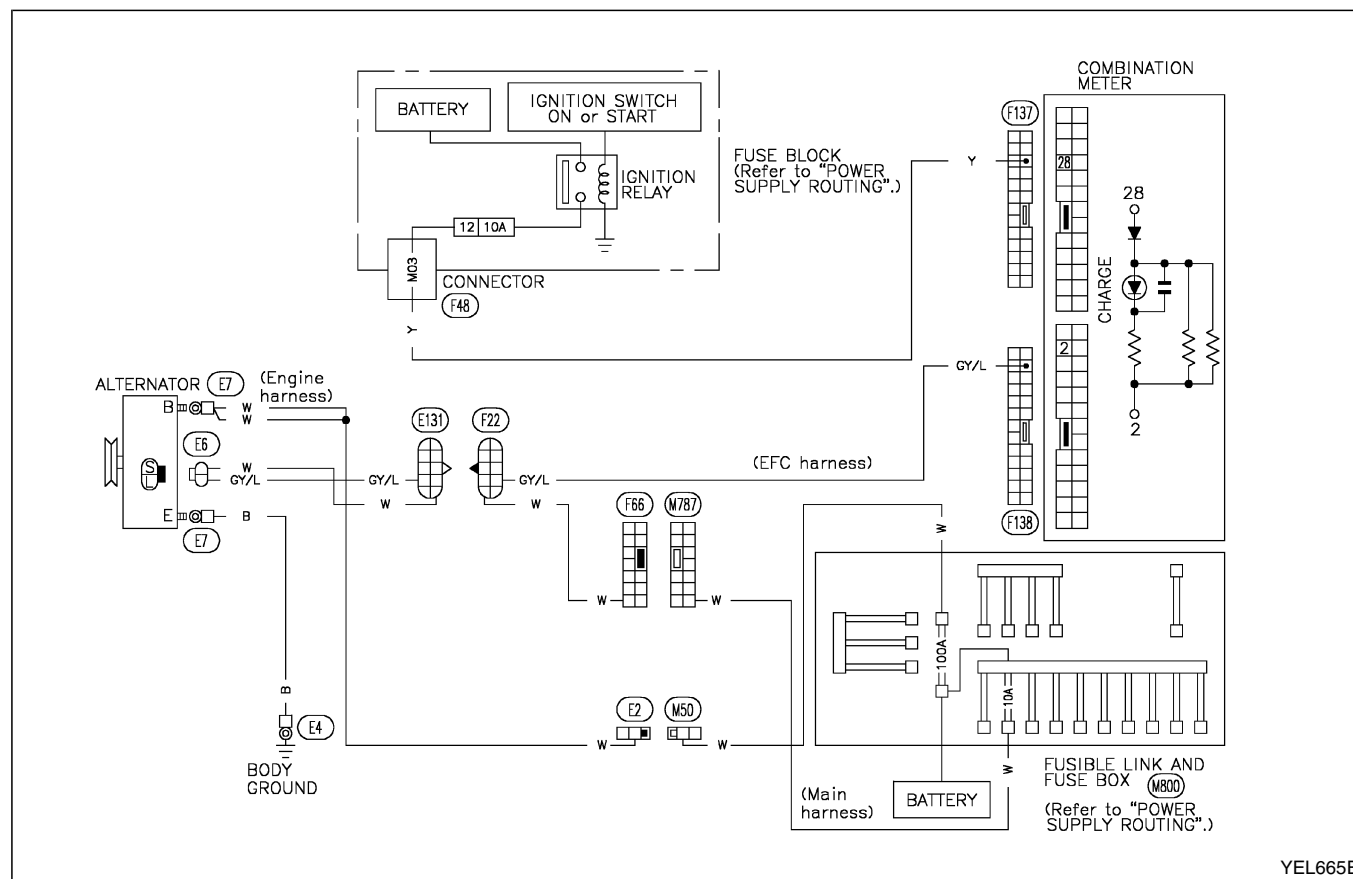
Type		M0T60081A
		MITSUBISHI
		Reduction
Applied model		4WD
		KA24
		Standard
System voltage	V	12
No-load		
Terminal voltage	V	11.0
Current	A	Less than 90
Revolution	rpm	More than 2,500
Minimum diameter of commutator	mm (in)	28.8 (1.134)
Minimum length of brush	mm (in)	7.0 (0.276)
Brush spring tension	N (kg, lb)	11.8 - 23.5 (1.2 - 2.4, 2.6 - 5.3)
Clearance between bearing metal and armature shaft	mm (in)	—
Clearance "ℓ" between pinion front edge and pinion stopper	mm (in)	—
Movement "ℓ" in height of pinion assembly	mm (in)	0.5 - 2.0 (0.020 - 0.079)

*: Not include the current of the magnet switch circuit

CHARGING SYSTEM

Wiring Diagram

FOR RUSSIA

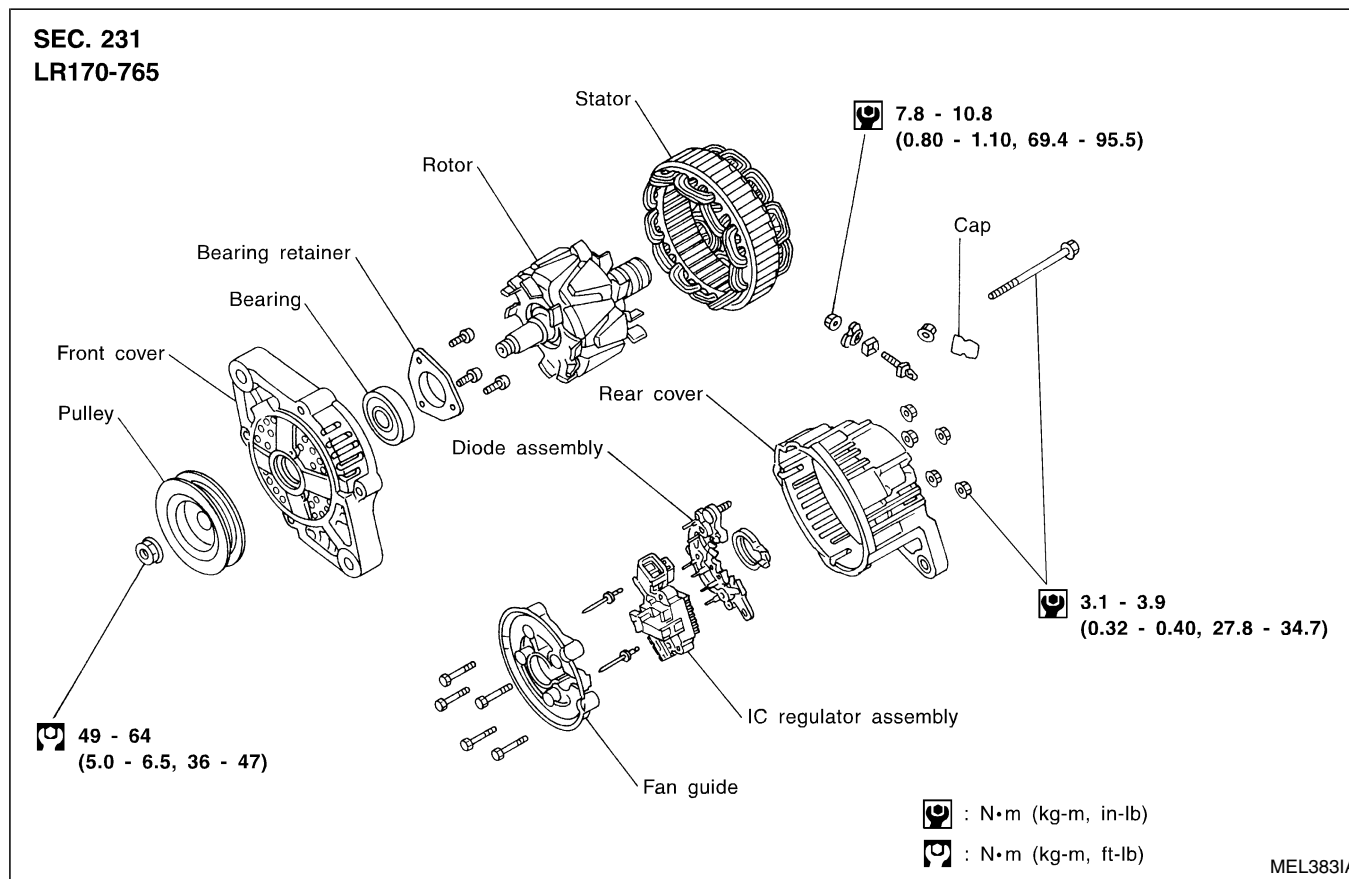


EL-13016

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CHARGING SYSTEM

Construction



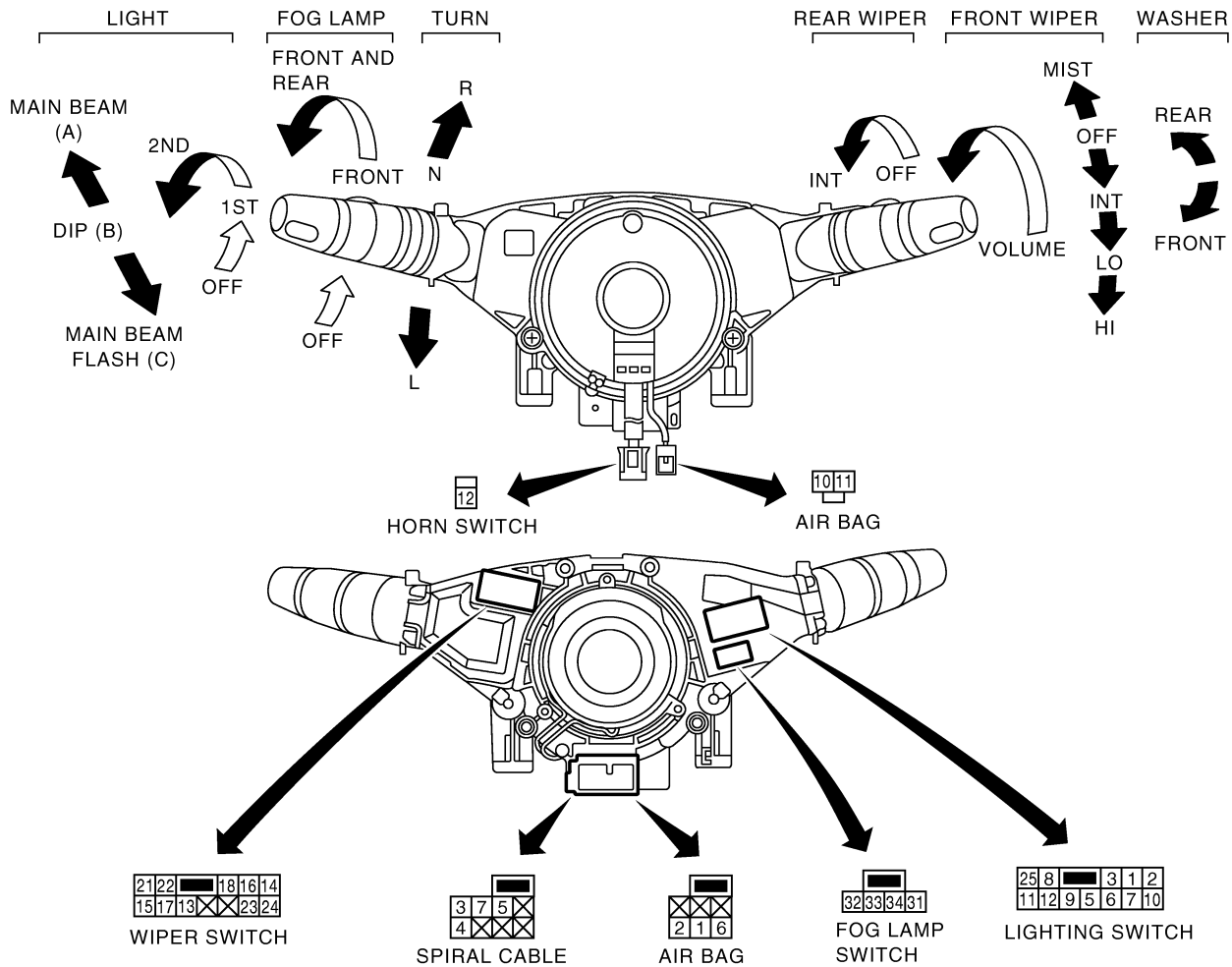
Service Data and Specifications (SDS)

ALTERNATOR

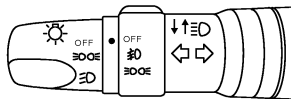
Type		LR170-765
		HITACHI
Applied model		KA24
Nominal rating	V-A	12-70
Ground polarity		Negative
Minimum revolution under noload (When 13.5V is applied)	rpm	Less than 1,000
Hot output current (When 13.5V is applied)	A/rpm	More than 17.5/1,300 More than 54/2,500 More than 75/5,000
Regulated output voltage	V	14.1 - 14.7
Minimum length of brush	mm (in)	6.0 (0.236)
Brush spring pressure	N (g, oz)	1.0 - 3.43 (102 - 350, 3.60 - 12.34)
Slip ring minimum outer diameter	mm (in)	26 (1.024)
Rotor (Field coil) resistance	Ω	2.58

COMBINATION SWITCH

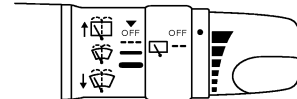
Check



LIGHTING FOG LAMP AND TURN SIGNAL SWITCH

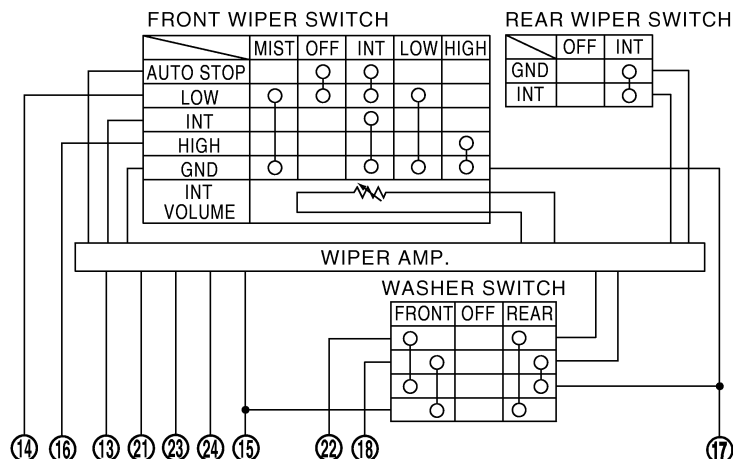


WIPER AND WASHER SWITCH



LIGHTING SWITCH

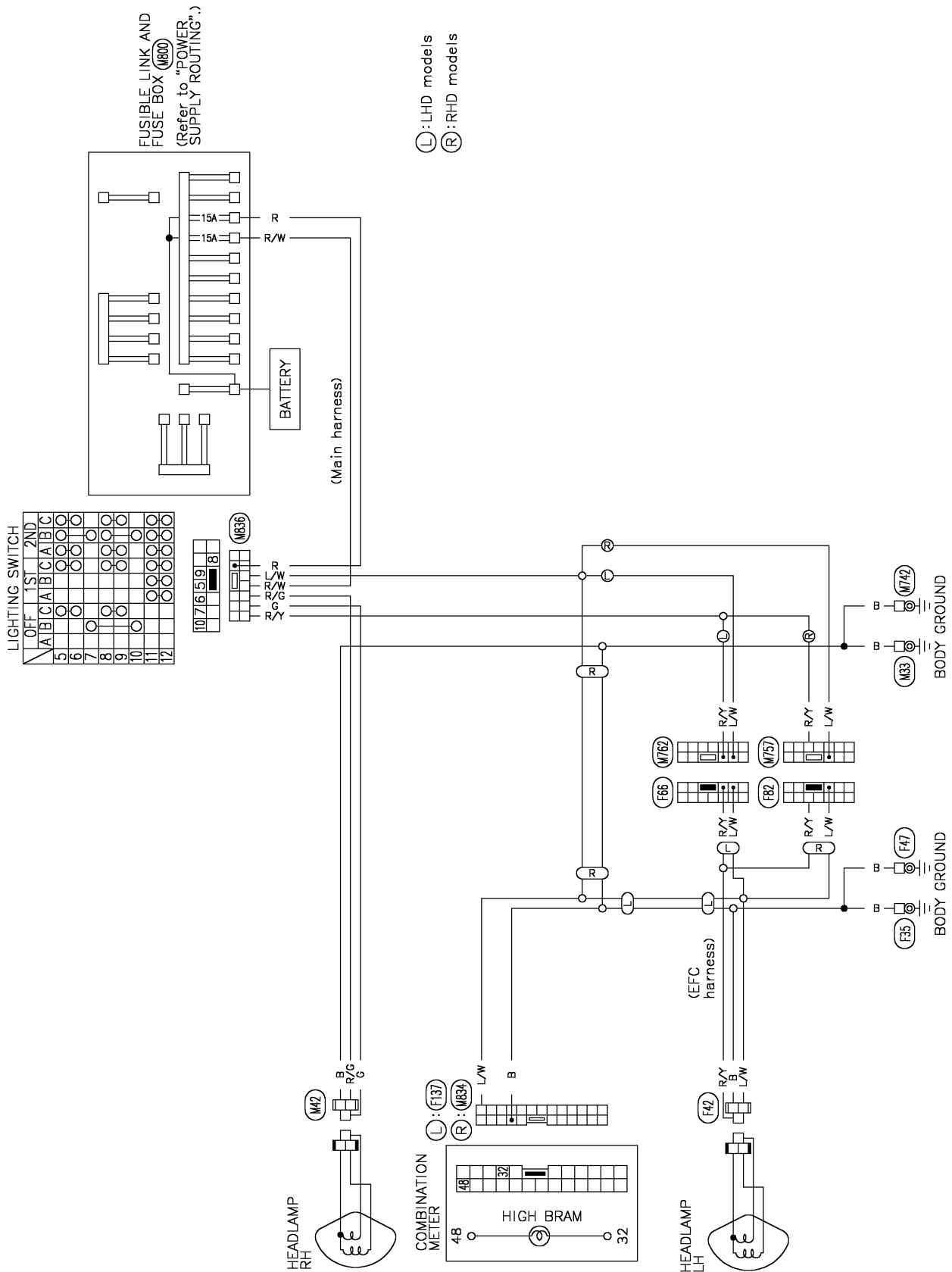
	OFF	1ST	2ND
A	○	○	○
B	○	○	○
C	○	○	○
A	○	○	○
B	○	○	○
C	○	○	○
A	○	○	○
B	○	○	○
C	○	○	○
A	○	○	○
B	○	○	○
C	○	○	○



HEADLAMP

Wiring Diagram

EXCEPT FOR RUSSIA



YEL668E

EL-13019

<http://vnx.su/>

FOR RUSSIA

FOR RUSSIA

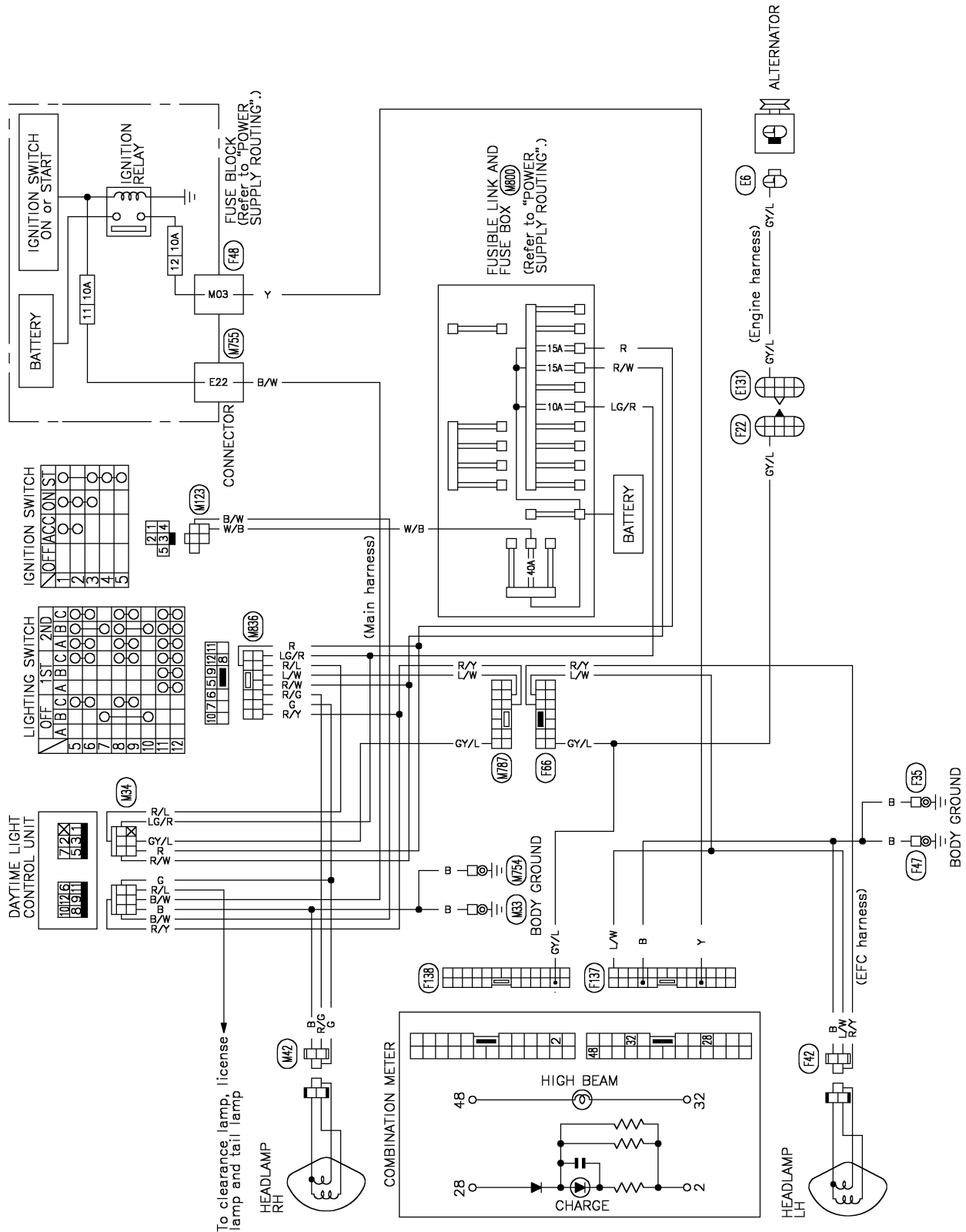


<http://vnz.su/>

HEADLAMP — Daytime Light System —

Wiring Diagram

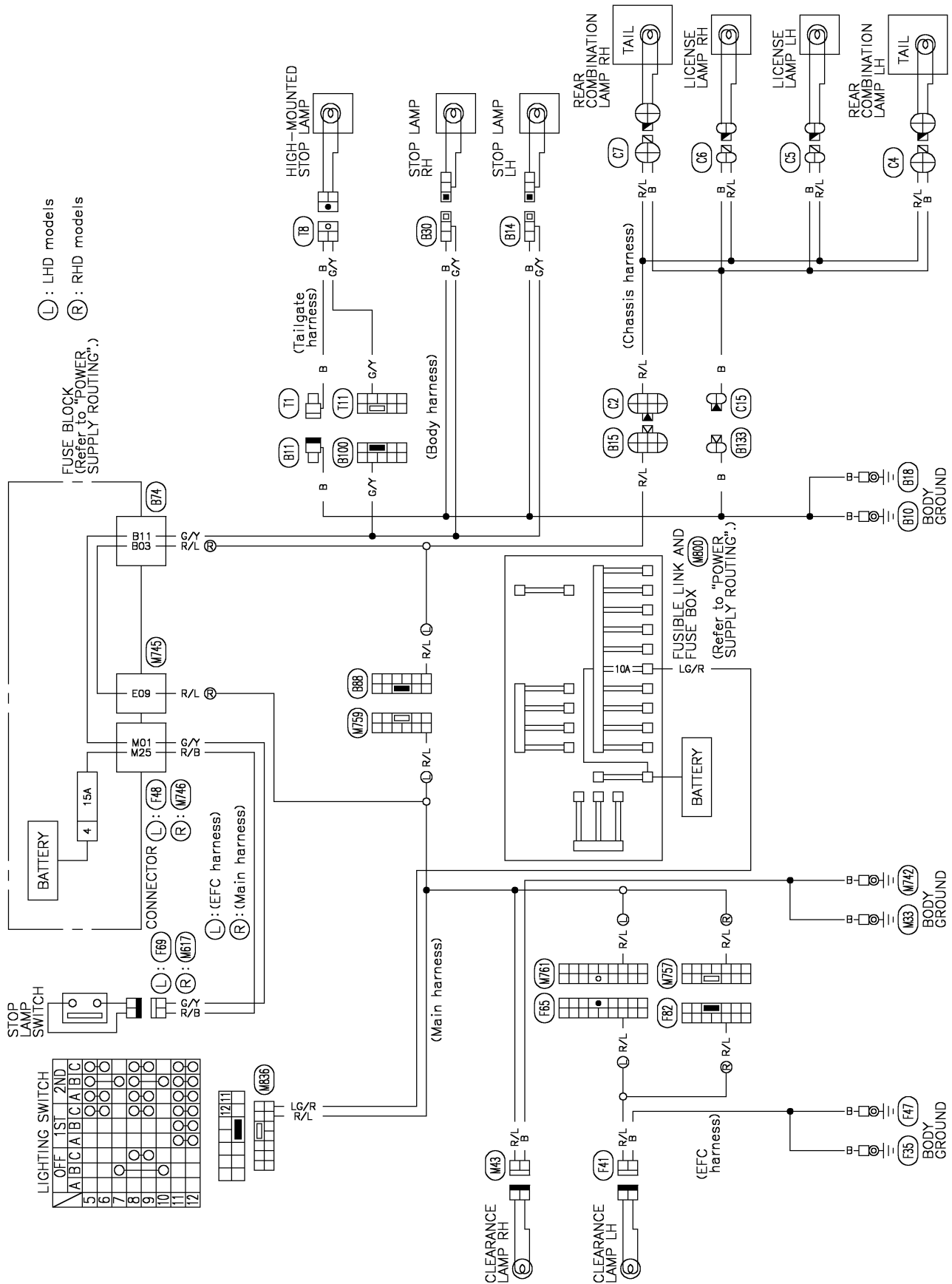
FOR RUSSIA



EXTERIOR LAMP

Clearance, License, Tail and Stop Lamps/ Wiring Diagram (Cont'd)

EXCEPT FOR RUSSIA



YEL671E

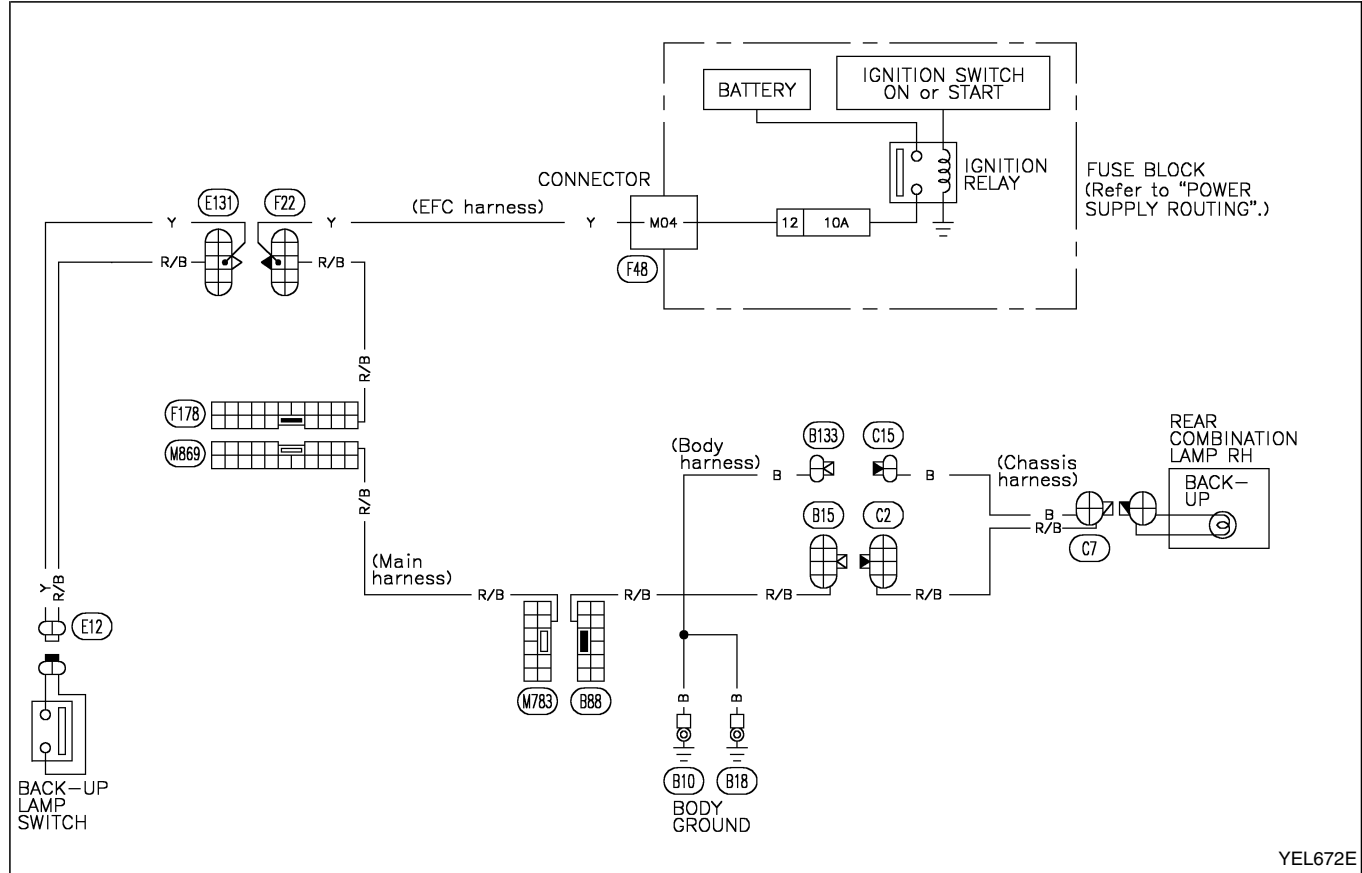
EL-13024

<http://vnx.su/>

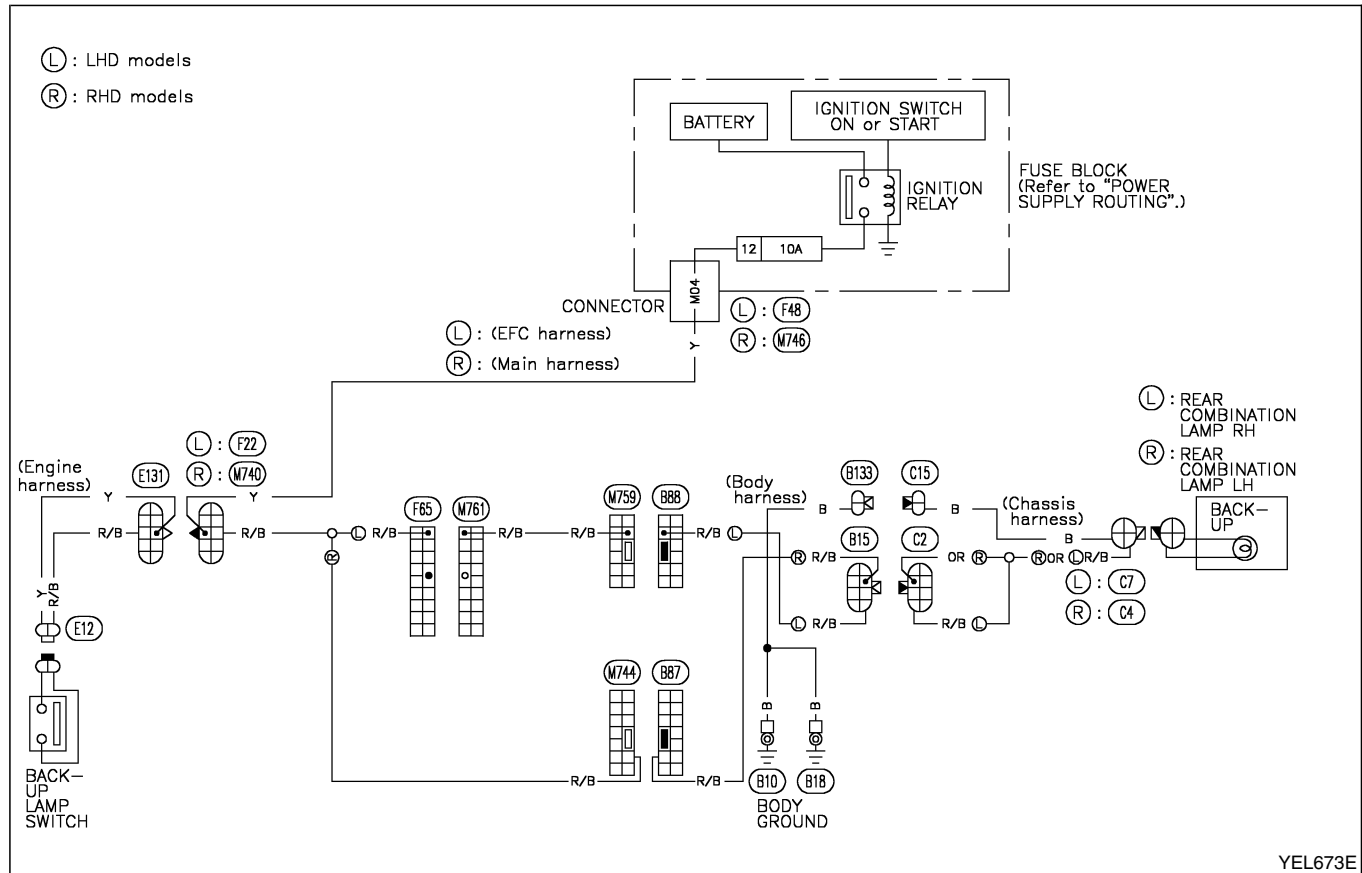
EXTERIOR LAMP

Back-up Lamp/Wiring Diagram

FOR RUSSIA



EXCEPT FOR RUSSIA

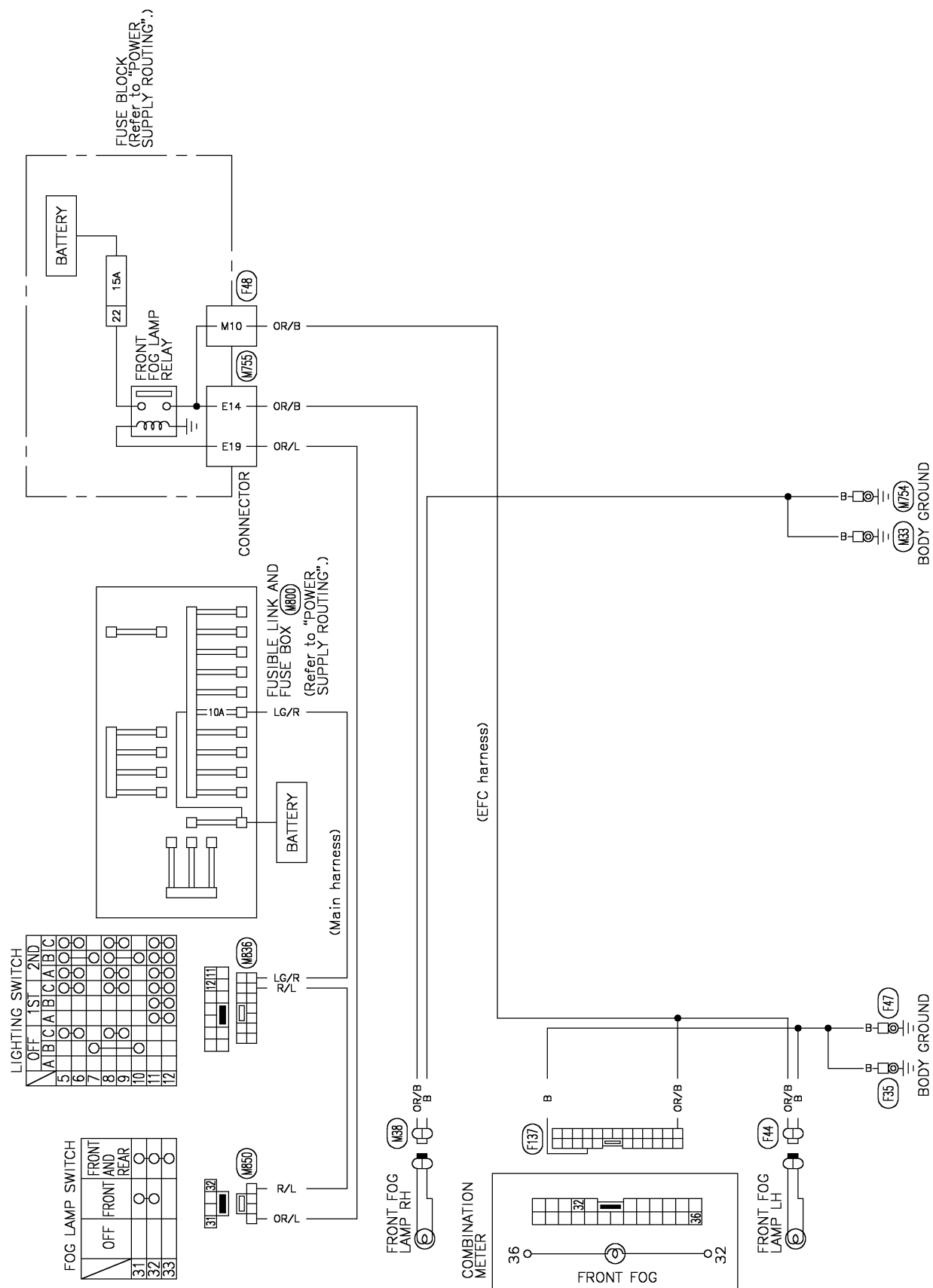


EL-13025

EXTERIOR LAMP

Front Fog Lamp/Wiring Diagram

FOR RUSSIA



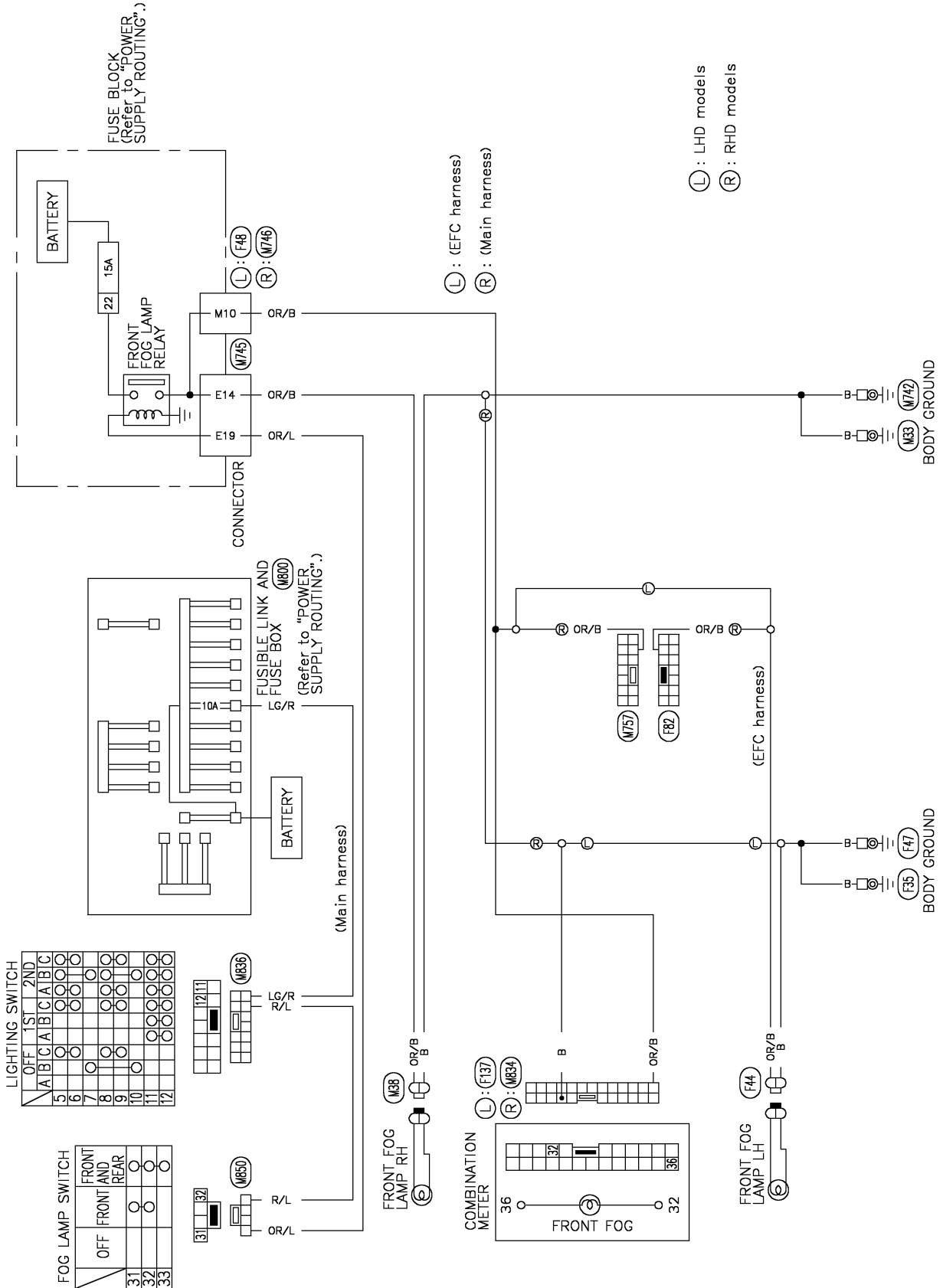
YEL674E

EL-13026

EXTERIOR LAMP

Front Fog Lamp/Wiring Diagram (Cont'd)

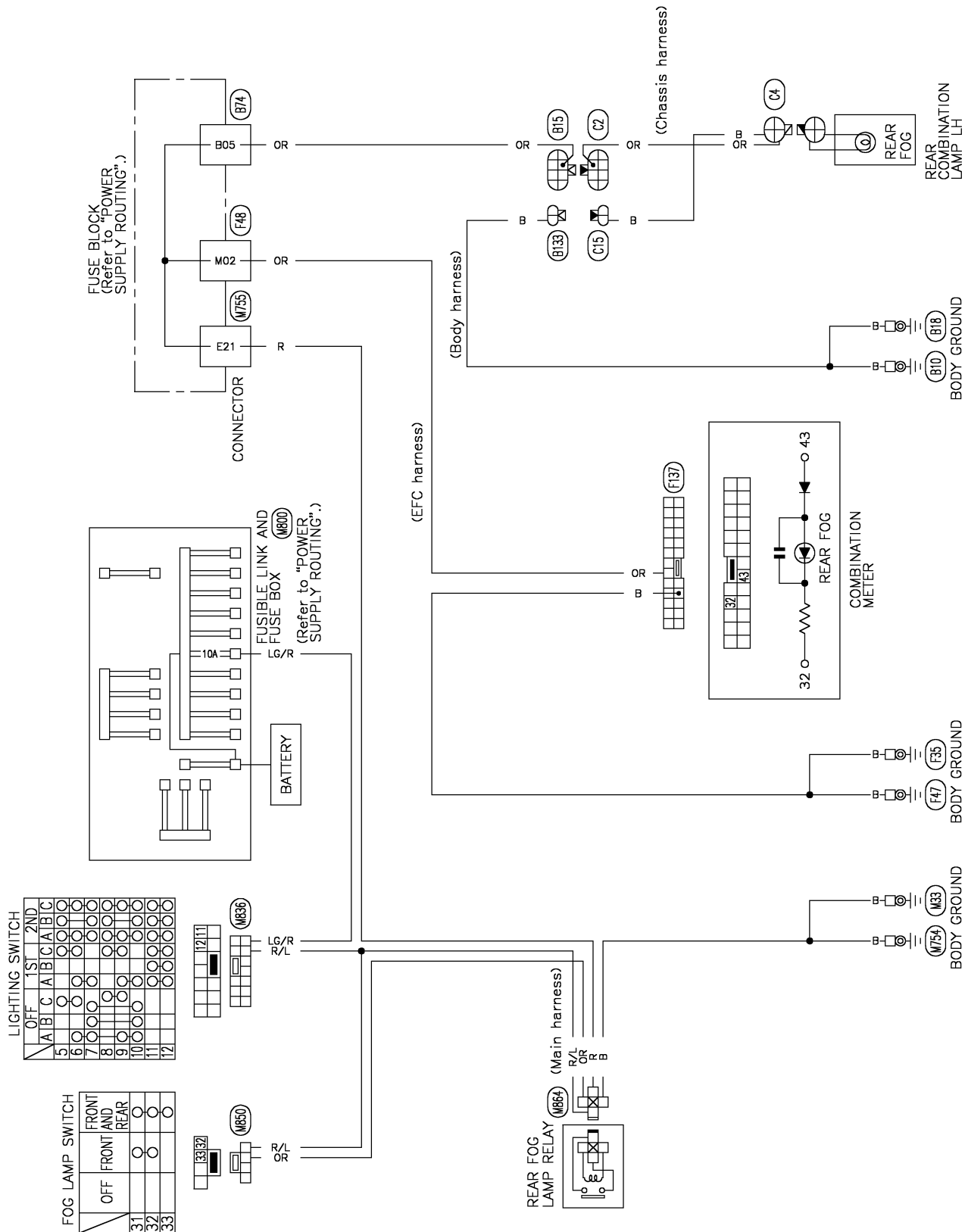
EXCEPT FOR RUSSIA



EXTERIOR LAMP

Rear Fog Lamp/Wiring Diagram

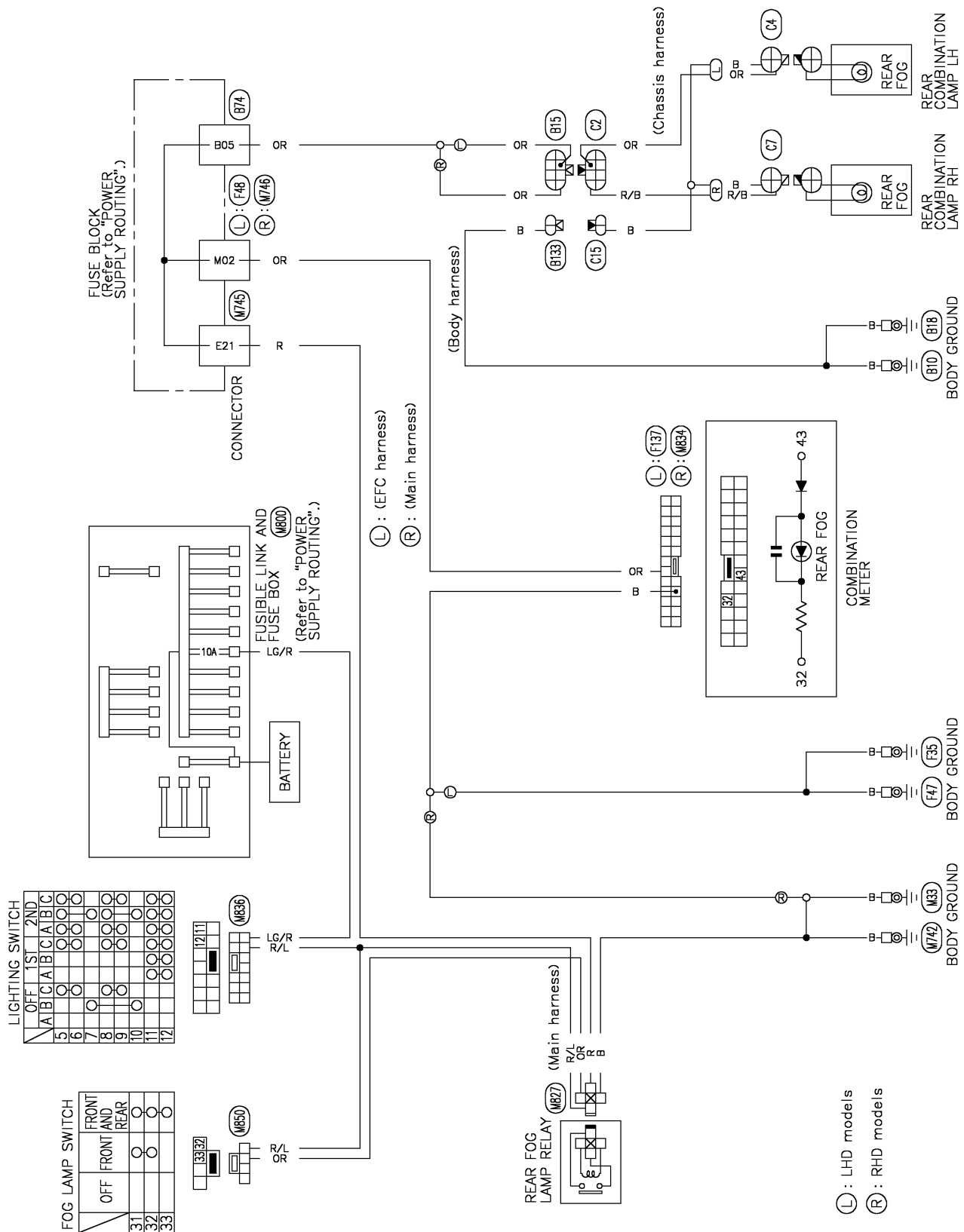
FOR RUSSIA



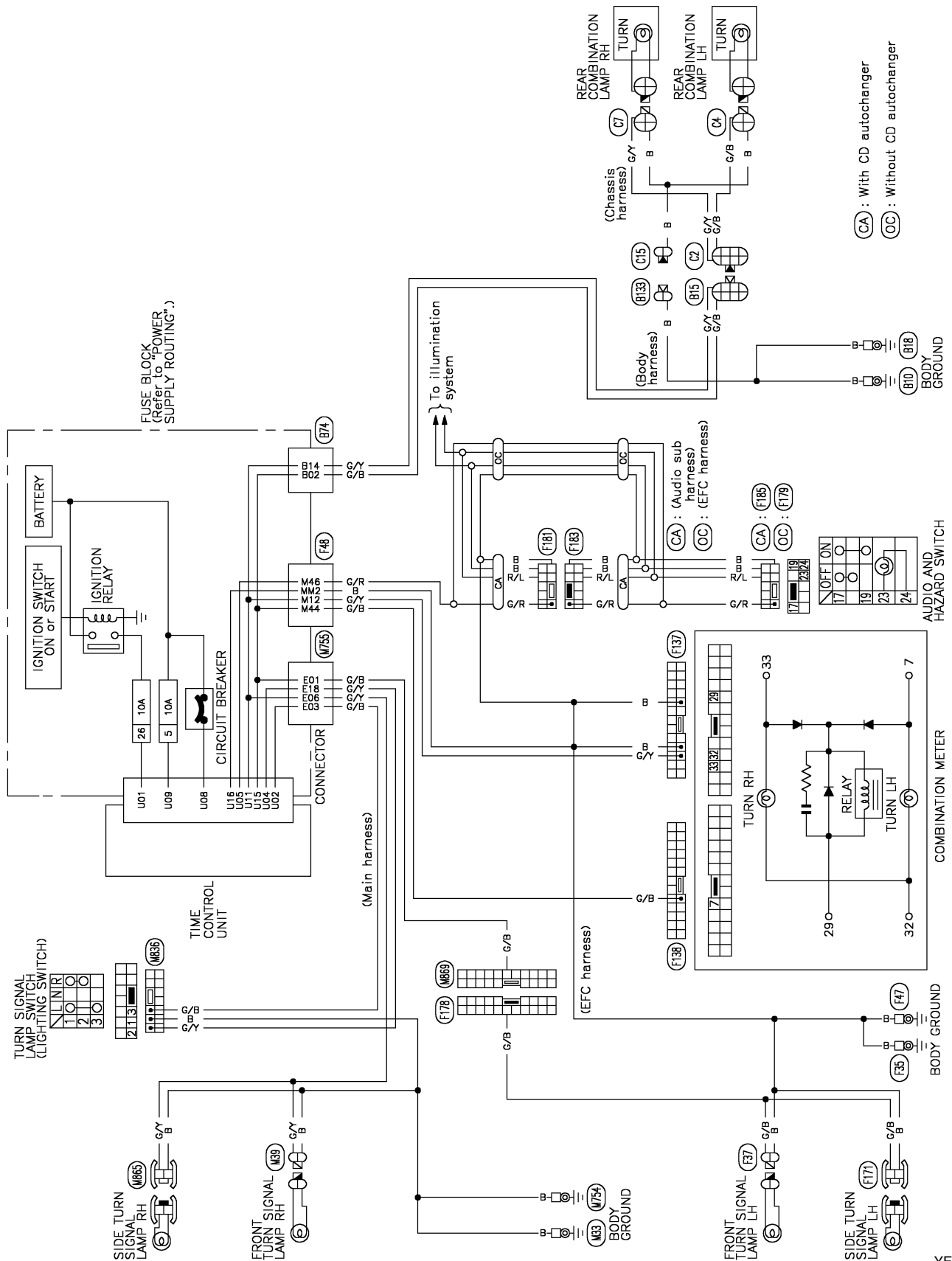
EXTERIOR LAMP

Rear Fog Lamp/Wiring Diagram (Cont'd)

EXCEPT FOR RUSSIA



Turn Signal and Hazard Warning Lamps/Wiring Diagram



YEL678E

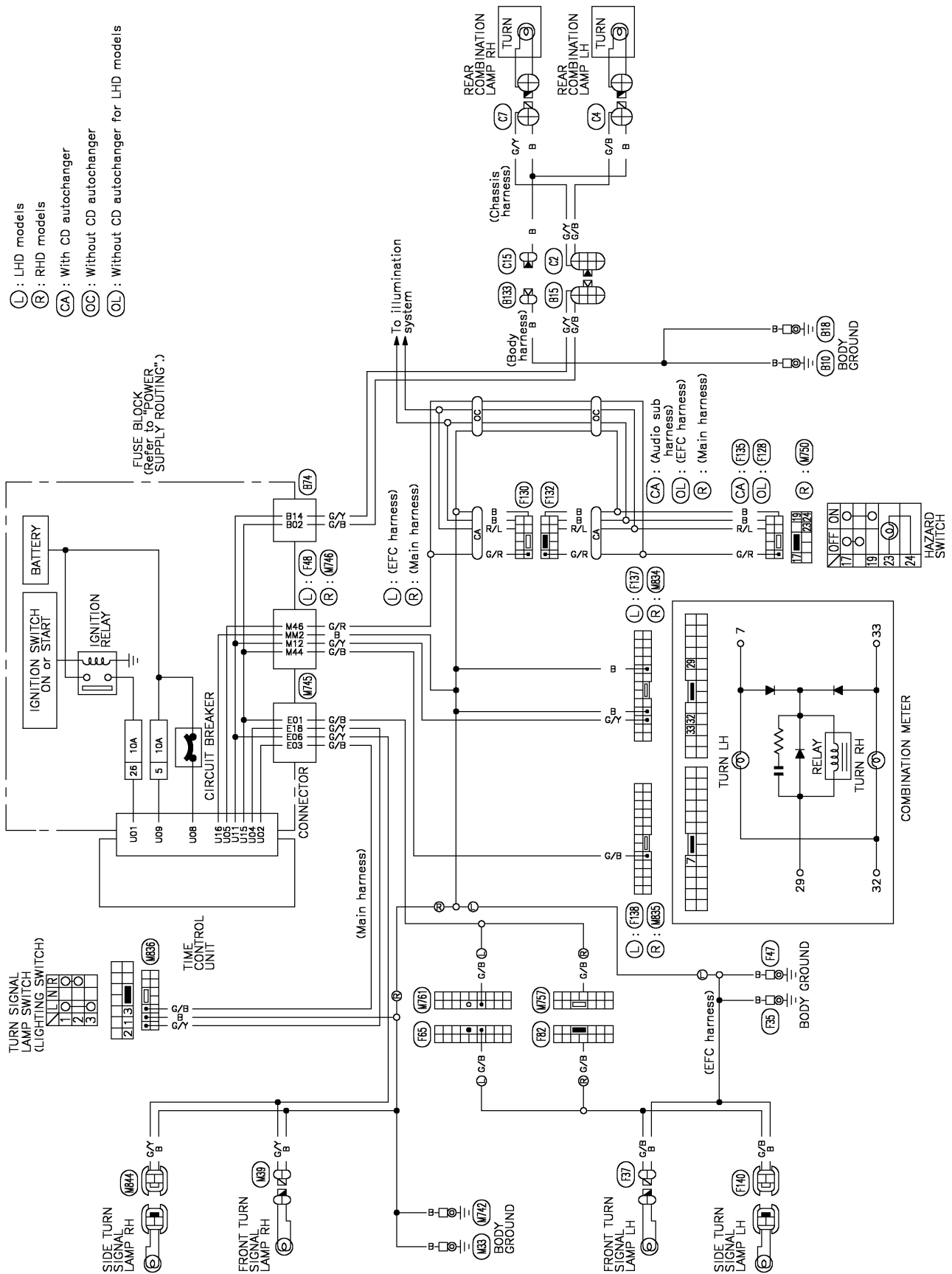
EL-13030

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EXTERIOR LAMP

Turn Signal and Hazard Warning Lamps/Wiring Diagram (Cont'd)

EXCEPT FOR RUSSIA



YEL679E

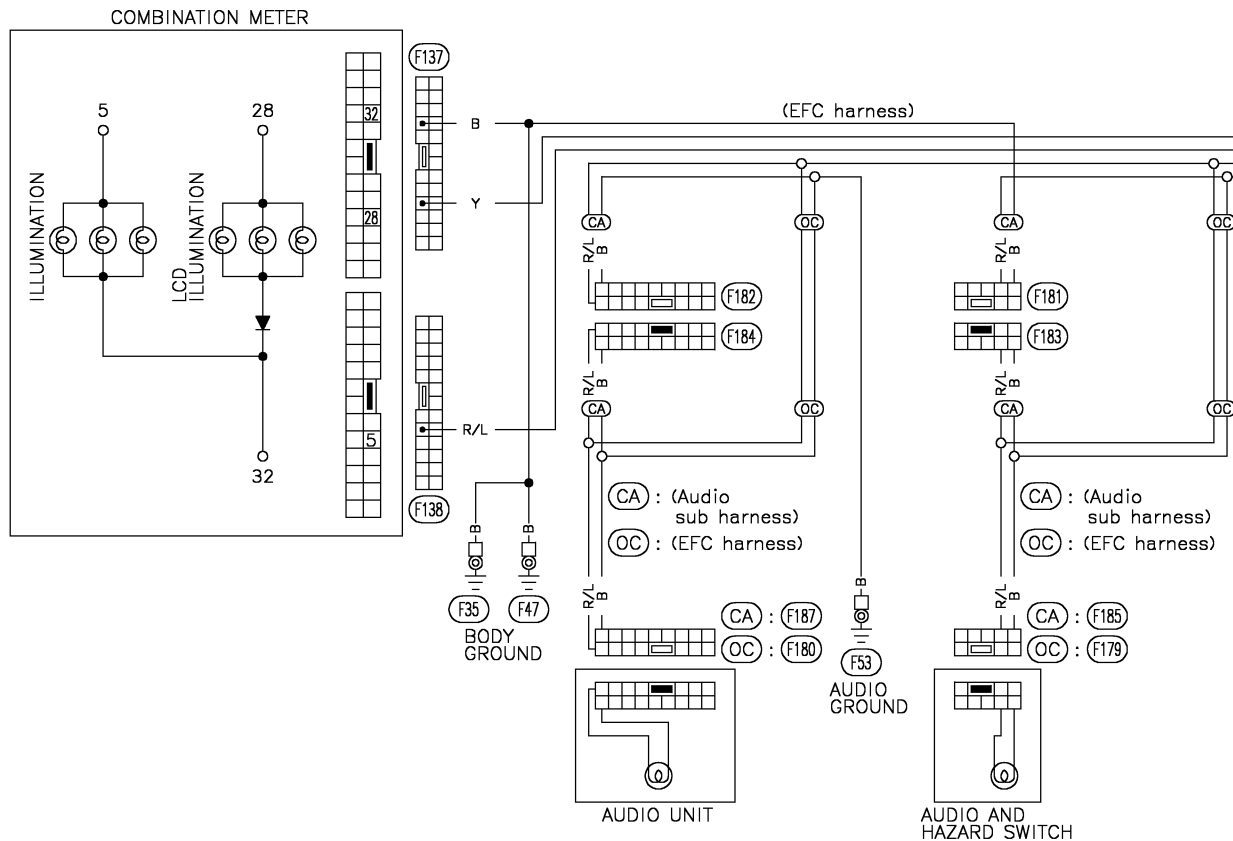
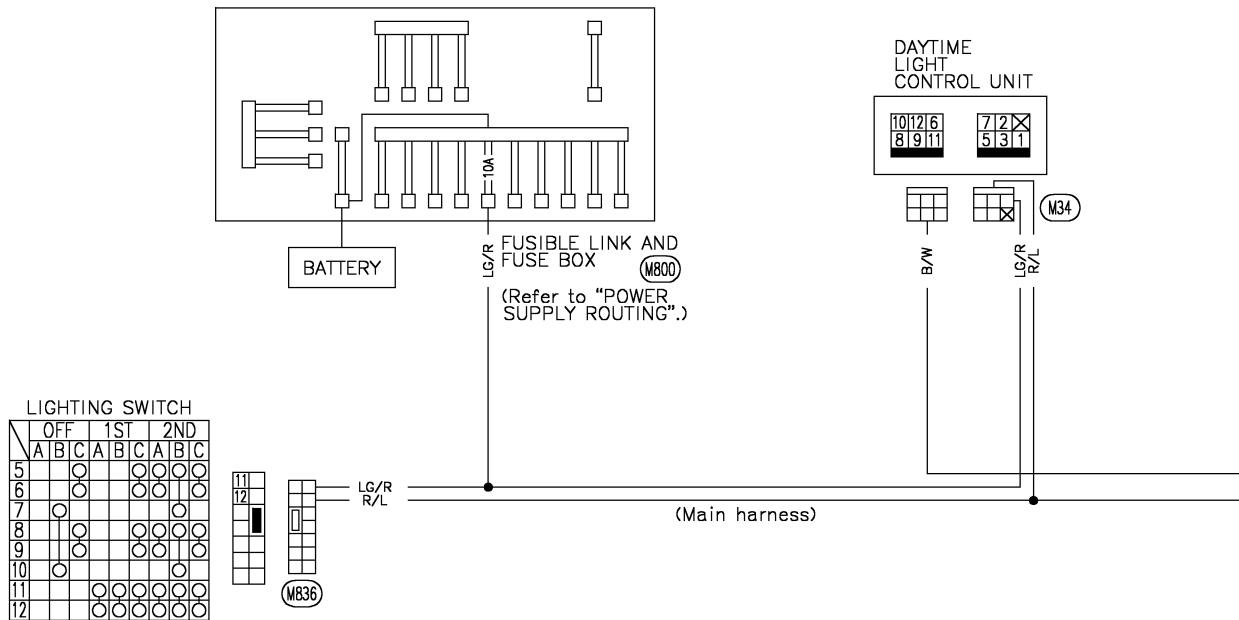
EL-13031

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INTERIOR LAMP

Illumination/Wiring Diagram

FOR RUSSIA



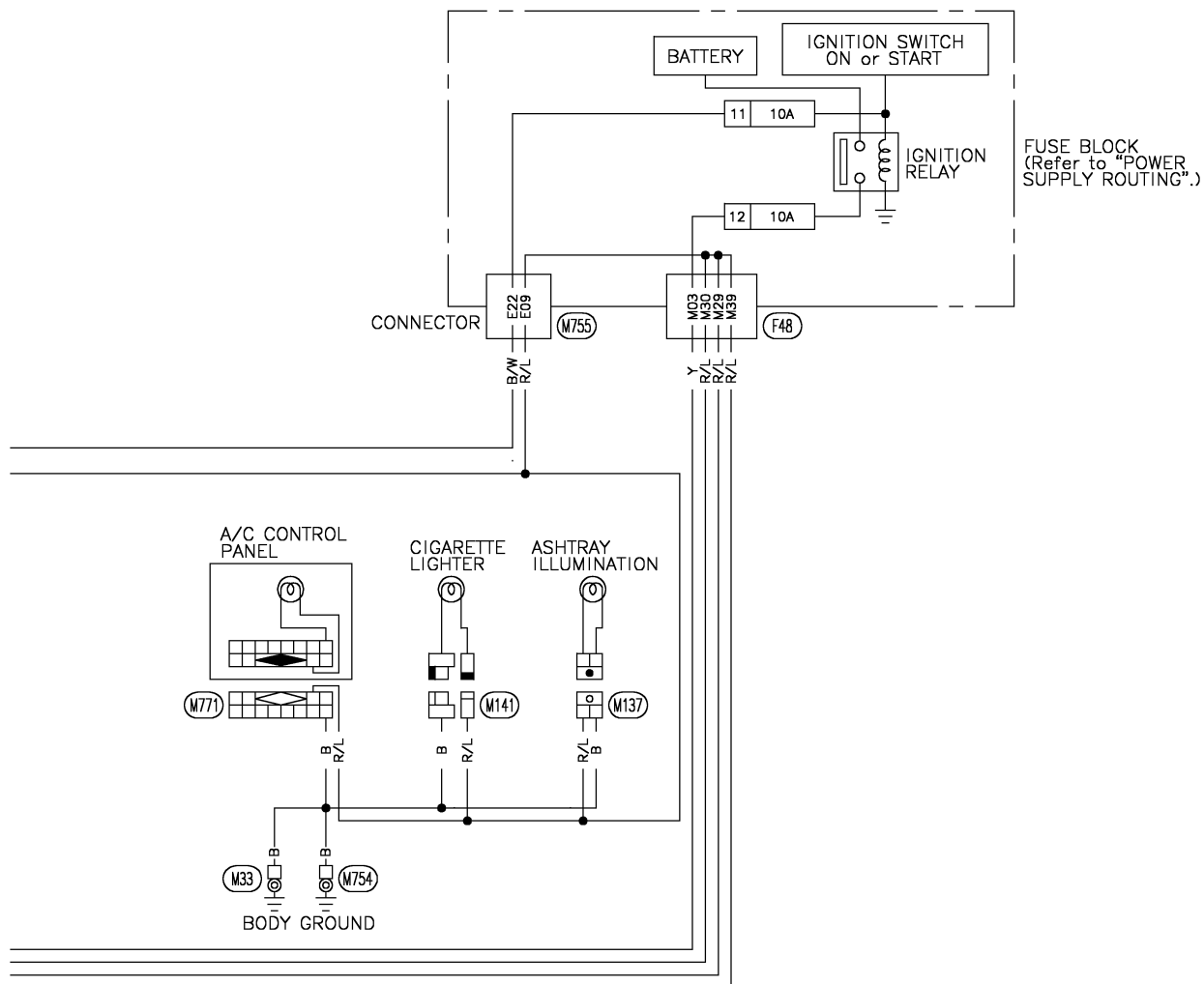
YEL854E

EL-13032

<http://vnx.su/>

INTERIOR LAMP

Illumination/Wiring Diagram (Cont'd)

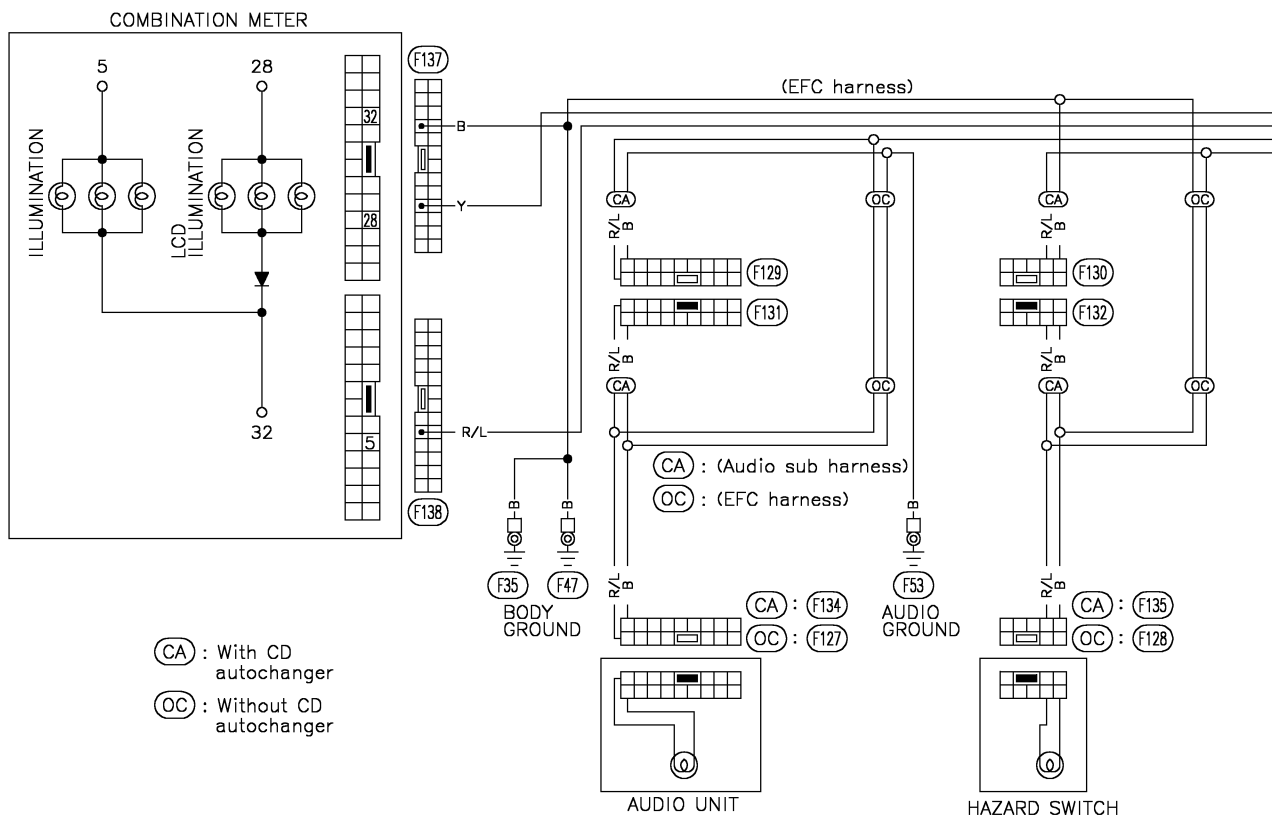
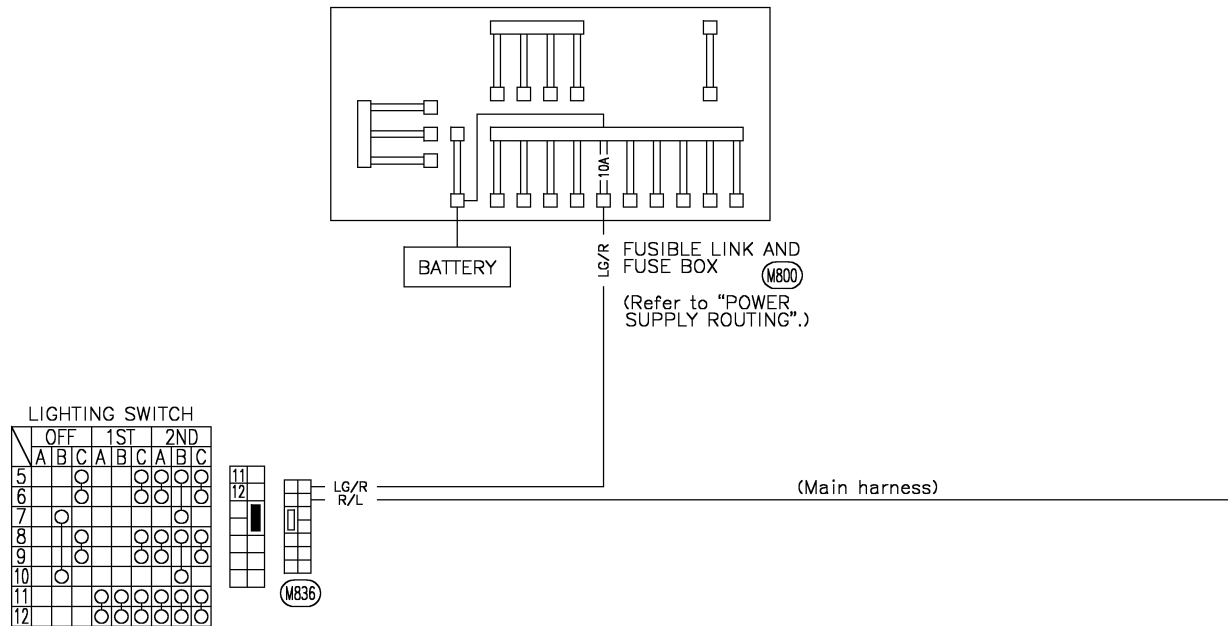


- (CA) : With CD autochanger
- (OC) : Without CD autochanger

INTERIOR LAMP

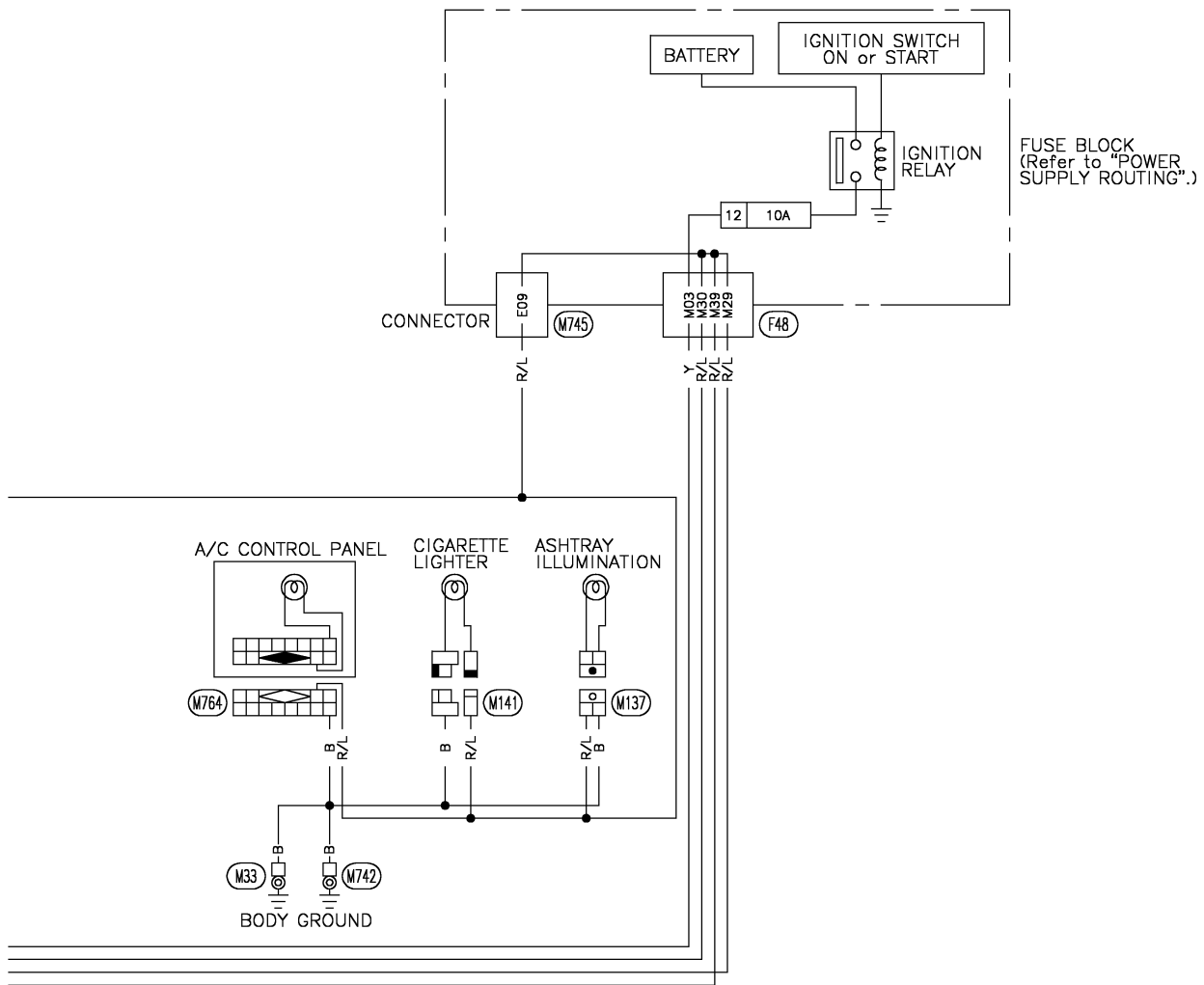
Illumination/Wiring Diagram (Cont'd)

EXCEPT FOR RUSSIA (LHD MODELS)



INTERIOR LAMP

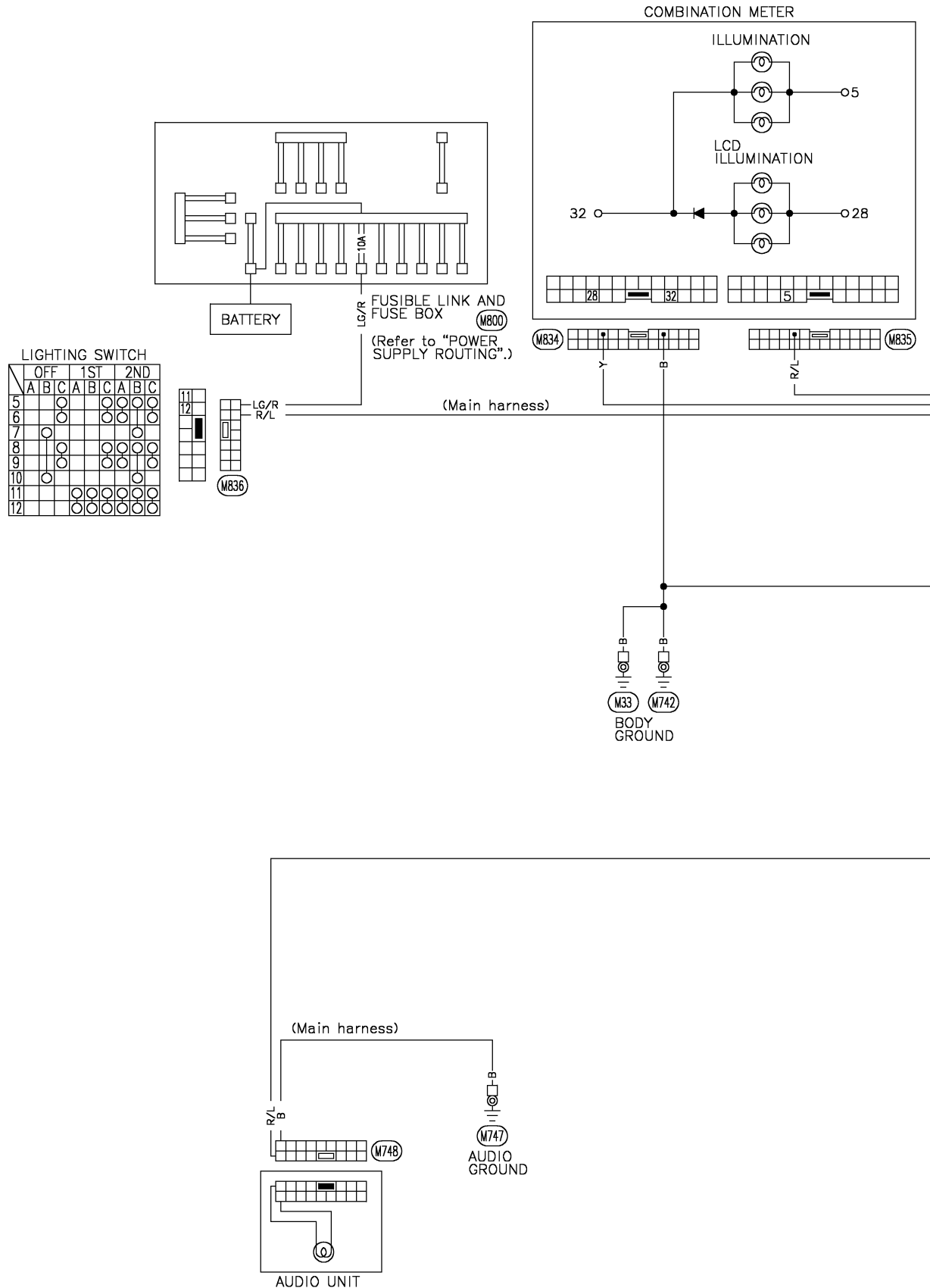
Illumination/Wiring Diagram (Cont'd)



INTERIOR LAMP

Illumination/Wiring Diagram (Cont'd)

EXCEPT FOR RUSSIA (RHD MODELS)



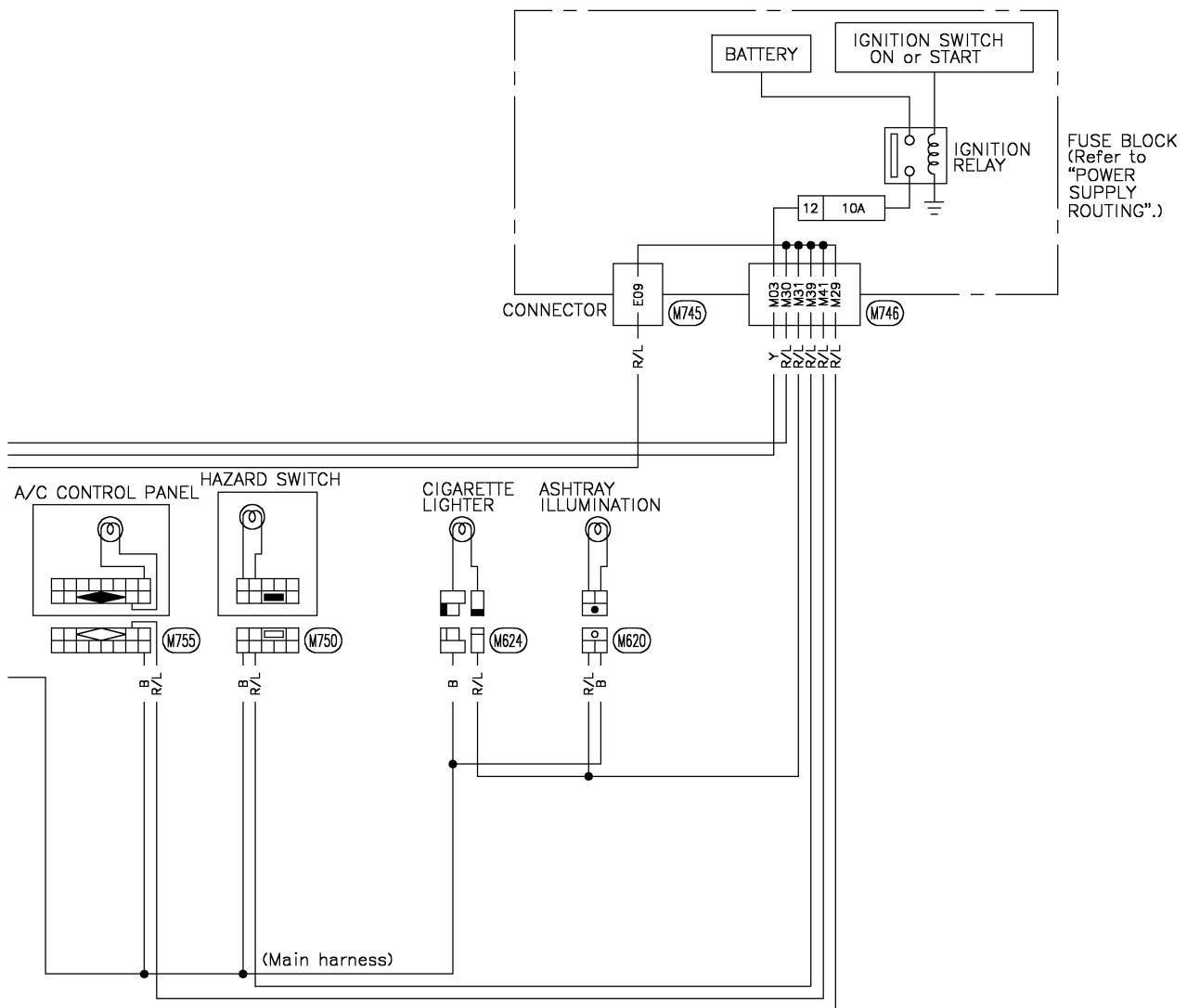
YEL683E

EL-13036

<http://vnx.su/>

INTERIOR LAMP

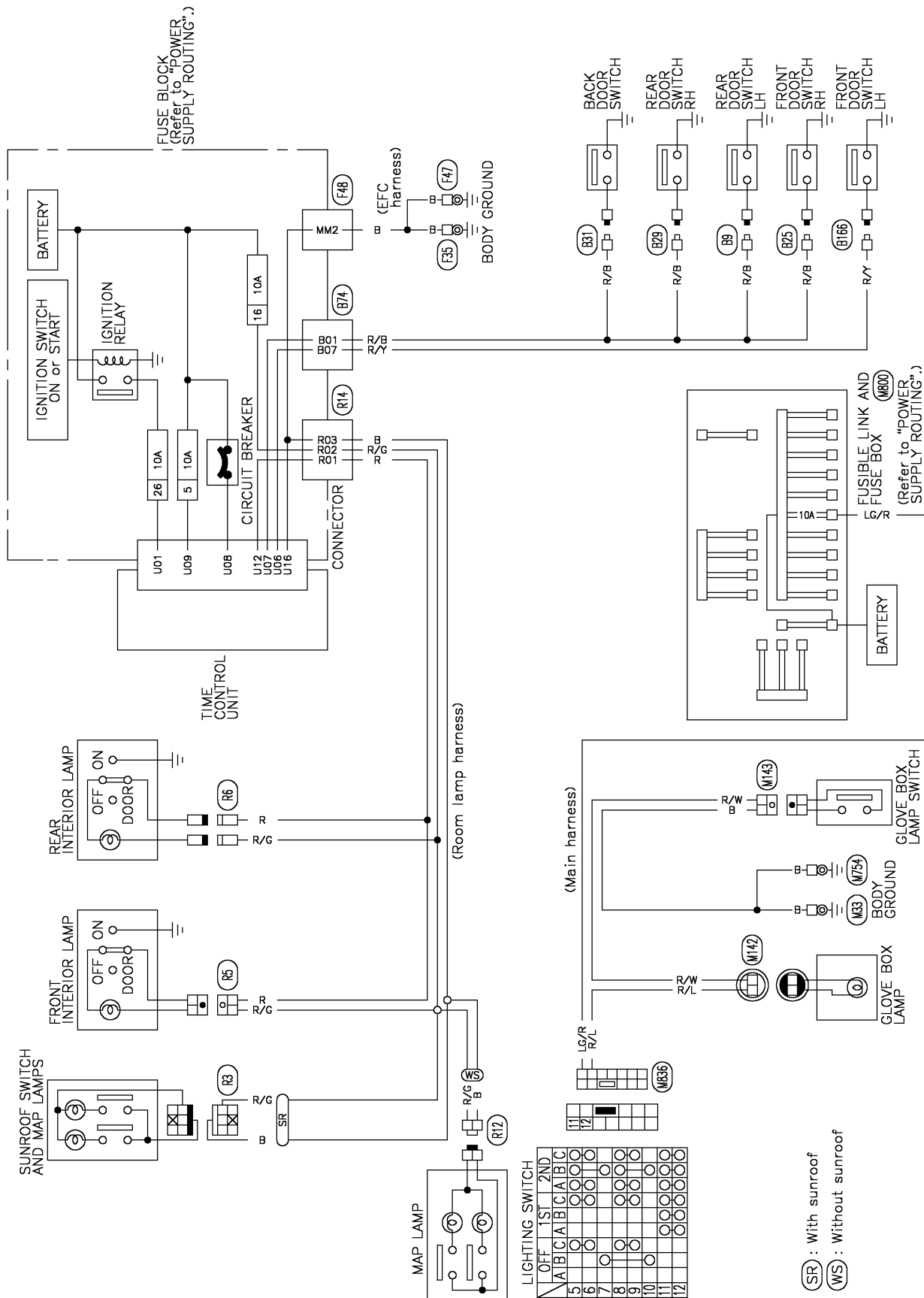
Illumination/Wiring Diagram (Cont'd)



INTERIOR LAMP

Interior, Spot and Luggage Room Lamps/ Wiring Diagram

FOR RUSSIA



EL-13038

<http://vnx.ru/>

YEL685E

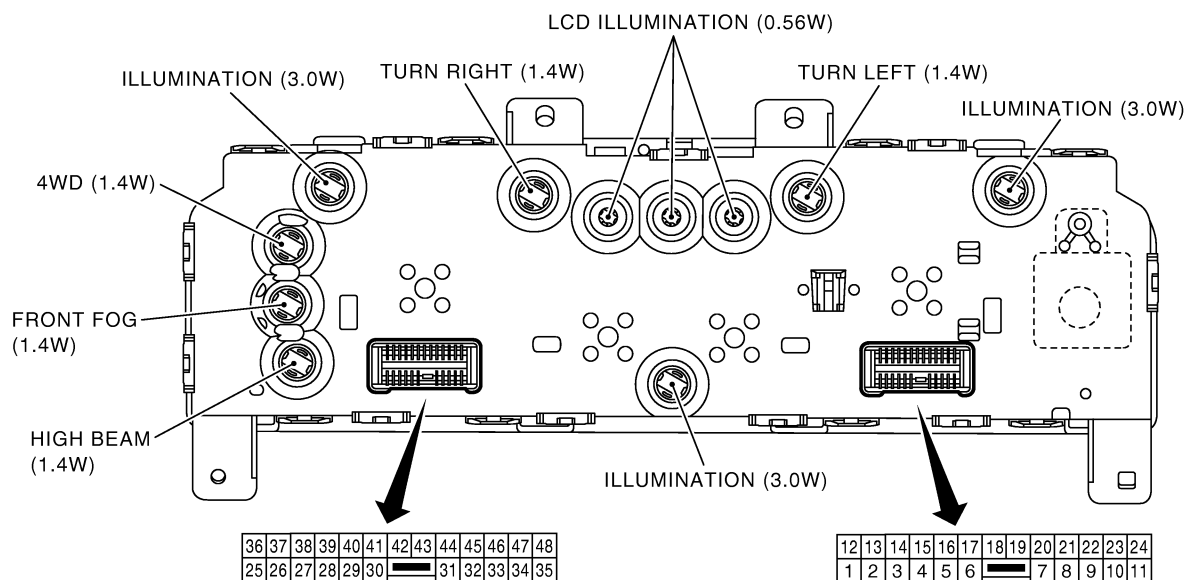
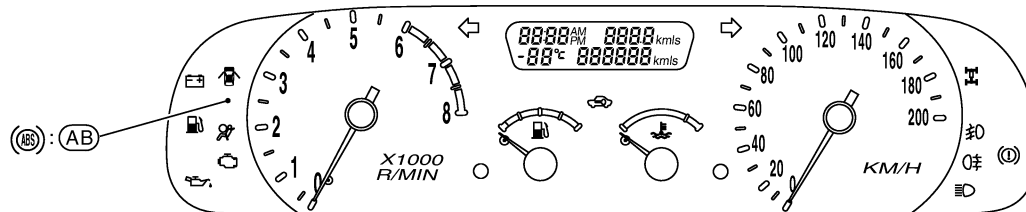
Interior, Spot and Luggage Room Lamps/ Wiring Diagram (Cont'd)

[illegible]

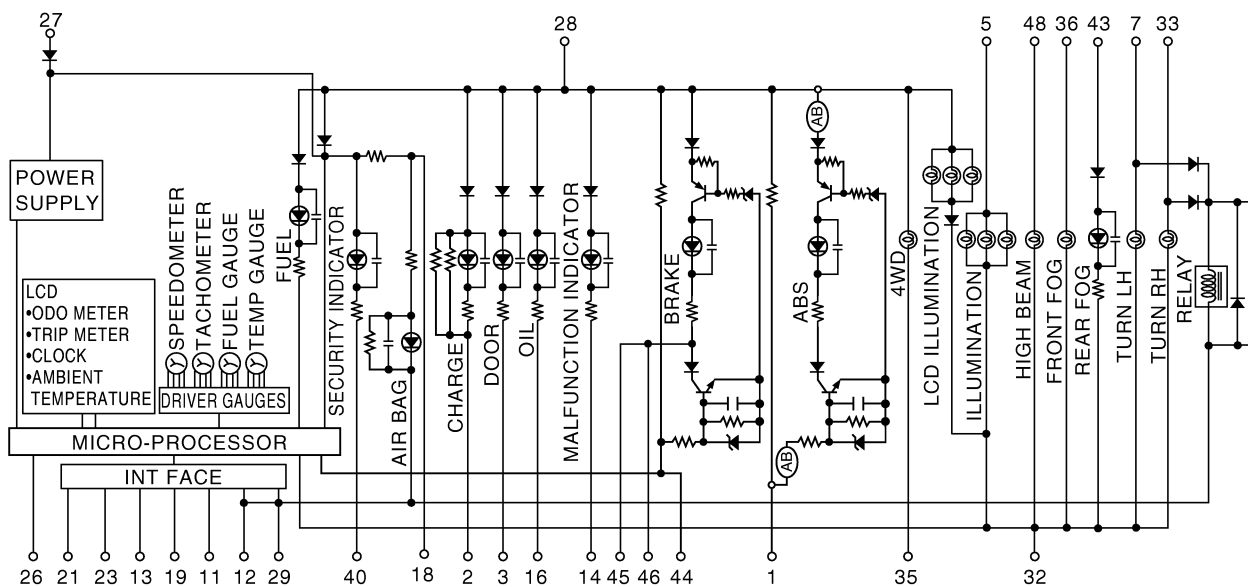
METER AND GAUGES

Combination Meter

FOR RUSSIA



(AB) : With ABS



YEL627E

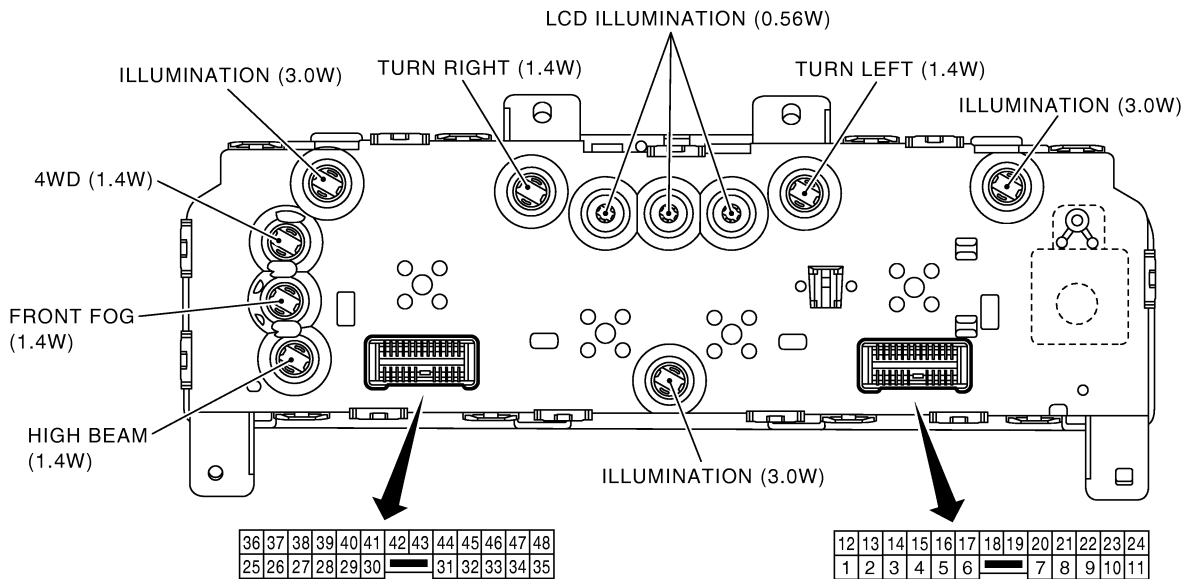
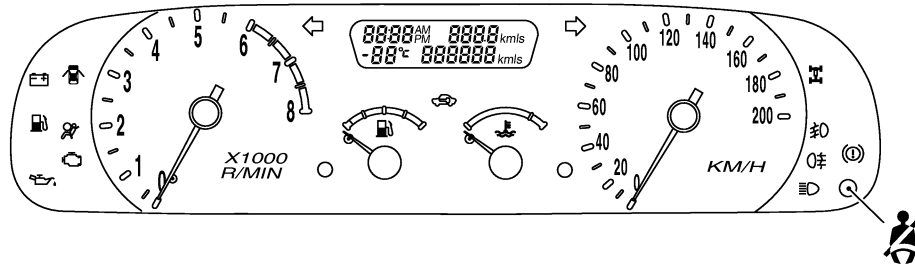
EL-13041

<http://vnx.su/>

METER AND GAUGES

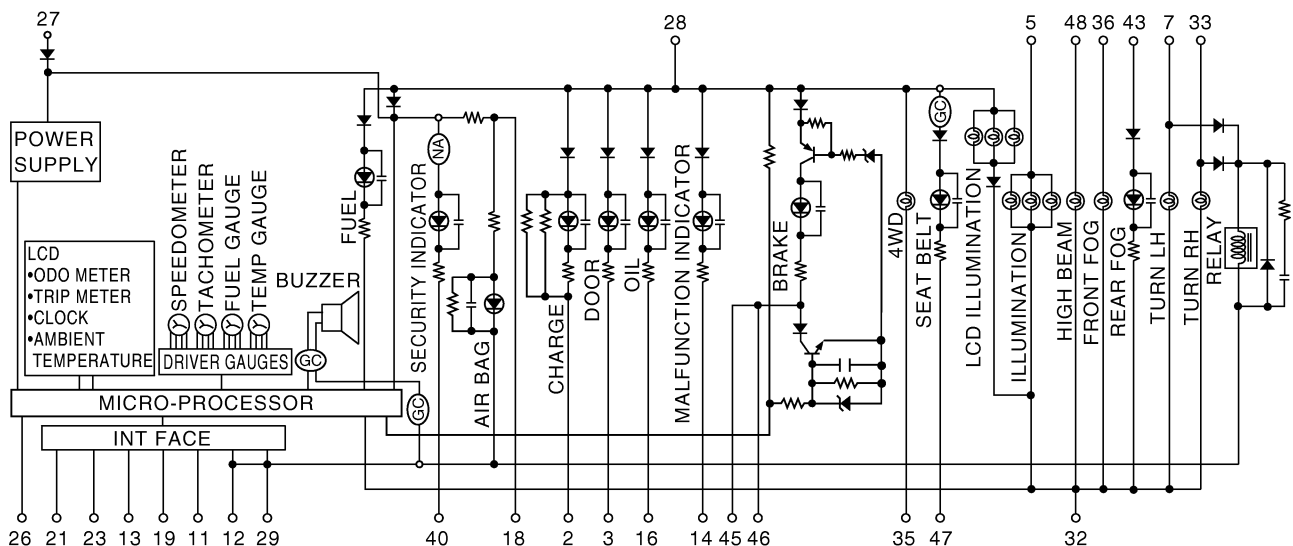
Combination Meter (Cont'd)

EXCEPT FOR RUSSIA



(GC) : For Gulf Countries

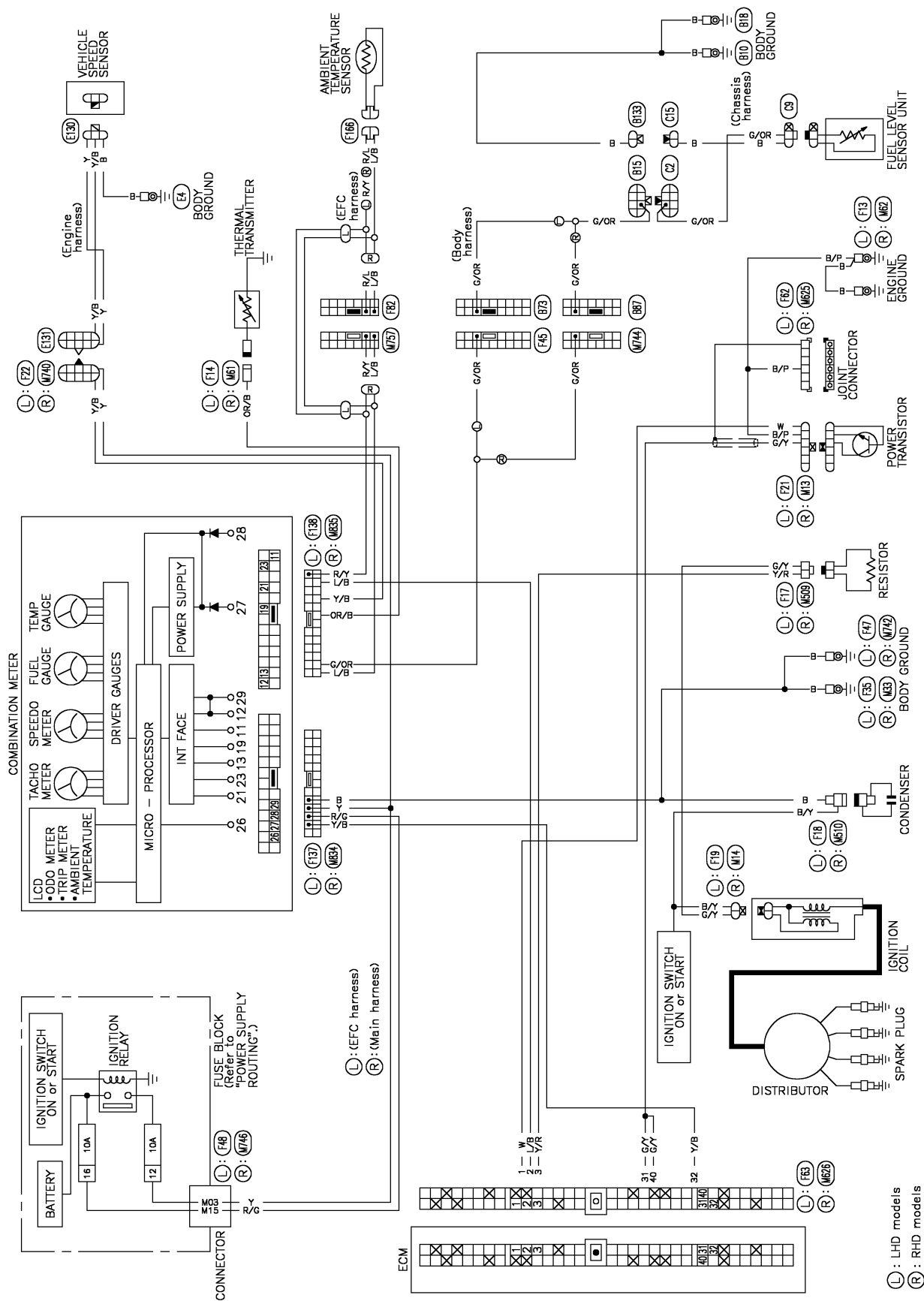
(NA) : With NATS



METER AND GAUGES

Tachometer, Temp. and Fuel Gauges/Wiring Diagram (Cont'd)

EXCEPT FOR RUSSIA



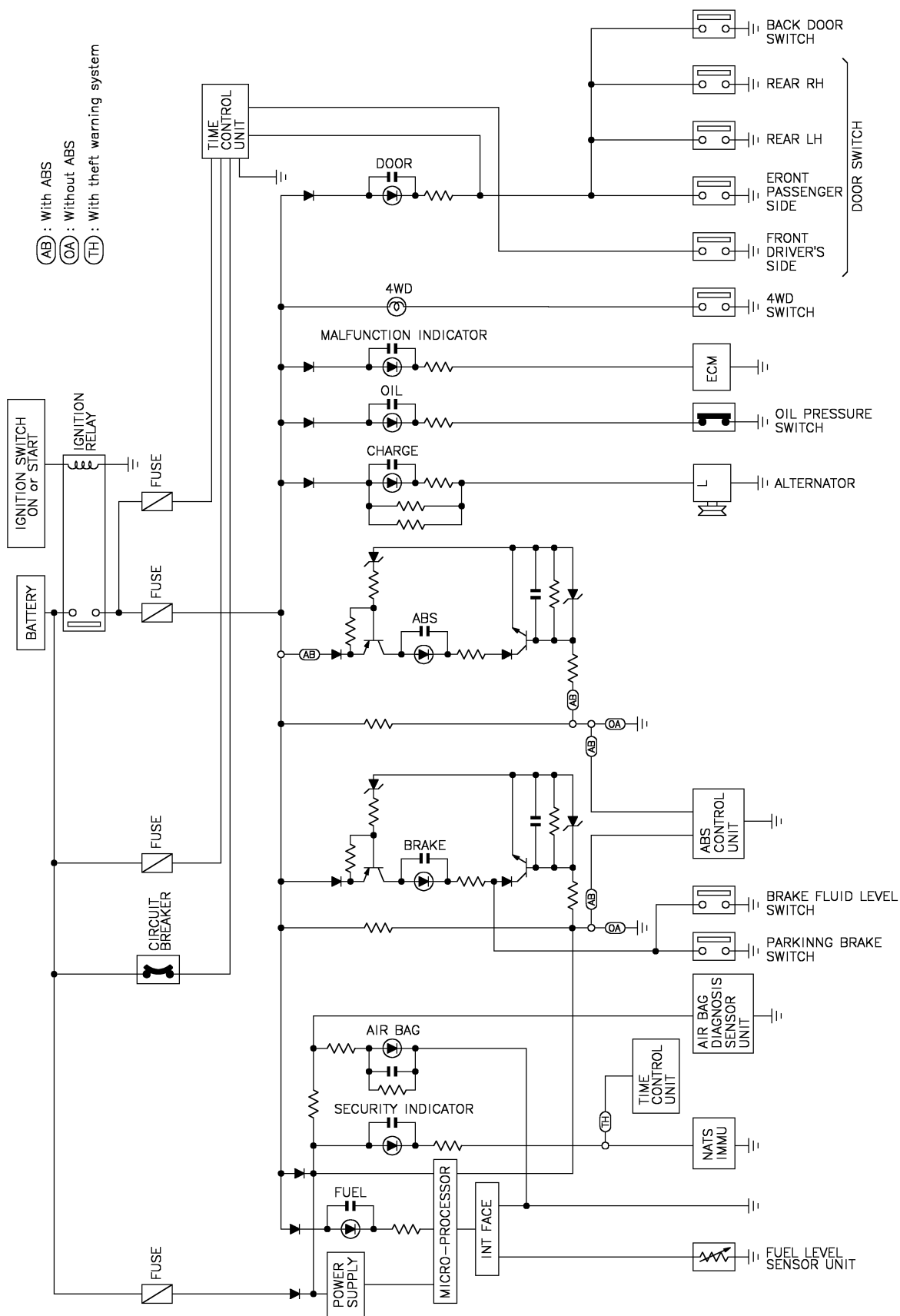
YEL689E

EL-13044

<http://vnx.su/>

Warning Lamps/Schematic

FOR RUSSIA



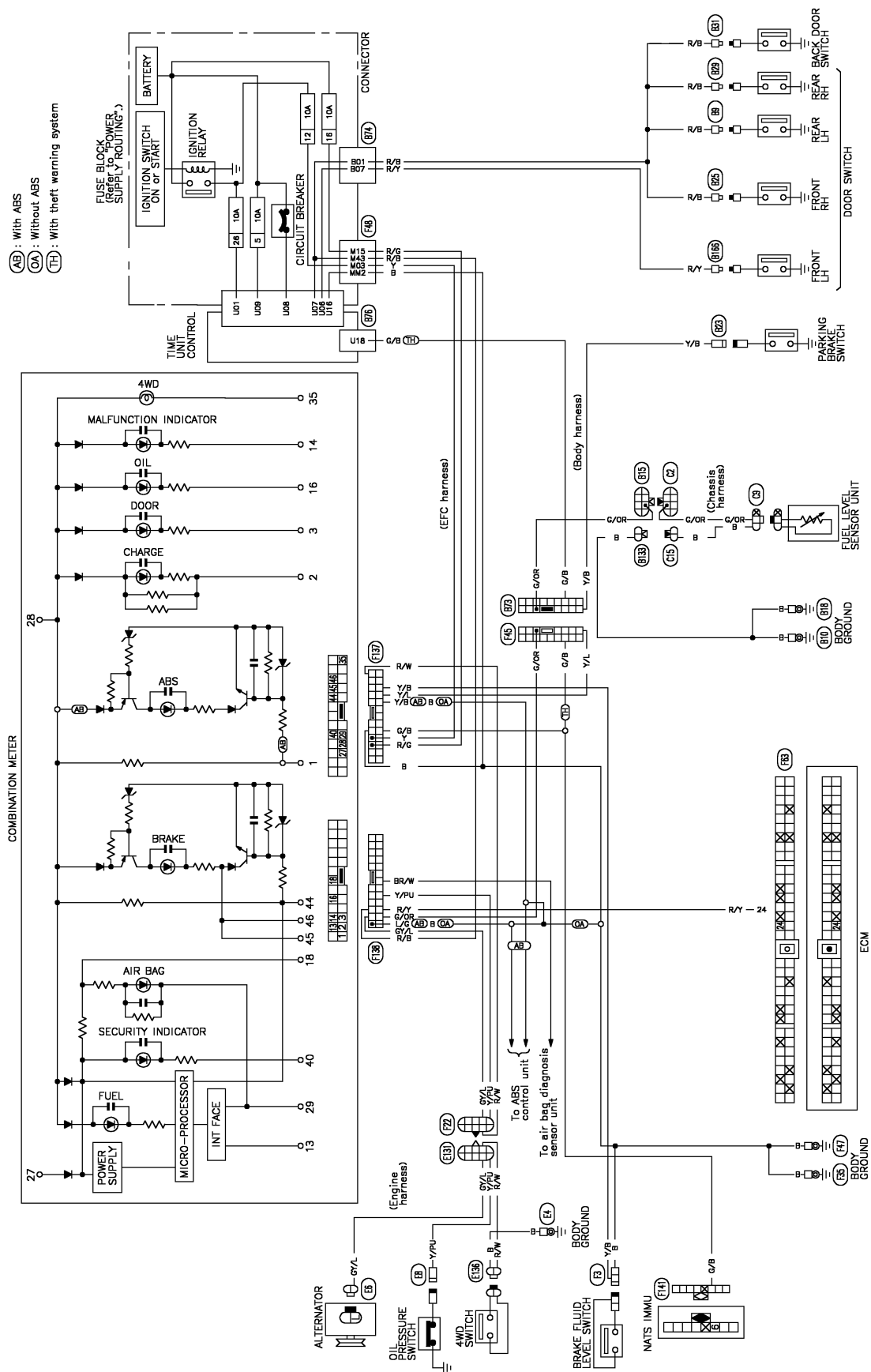
YEL690E

EL-13045

<http://vnx.su/>

Warning Lamps/Wiring Diagram

FOR RUSSIA



Warning Lamps/Wiring Diagram (Cont'd)

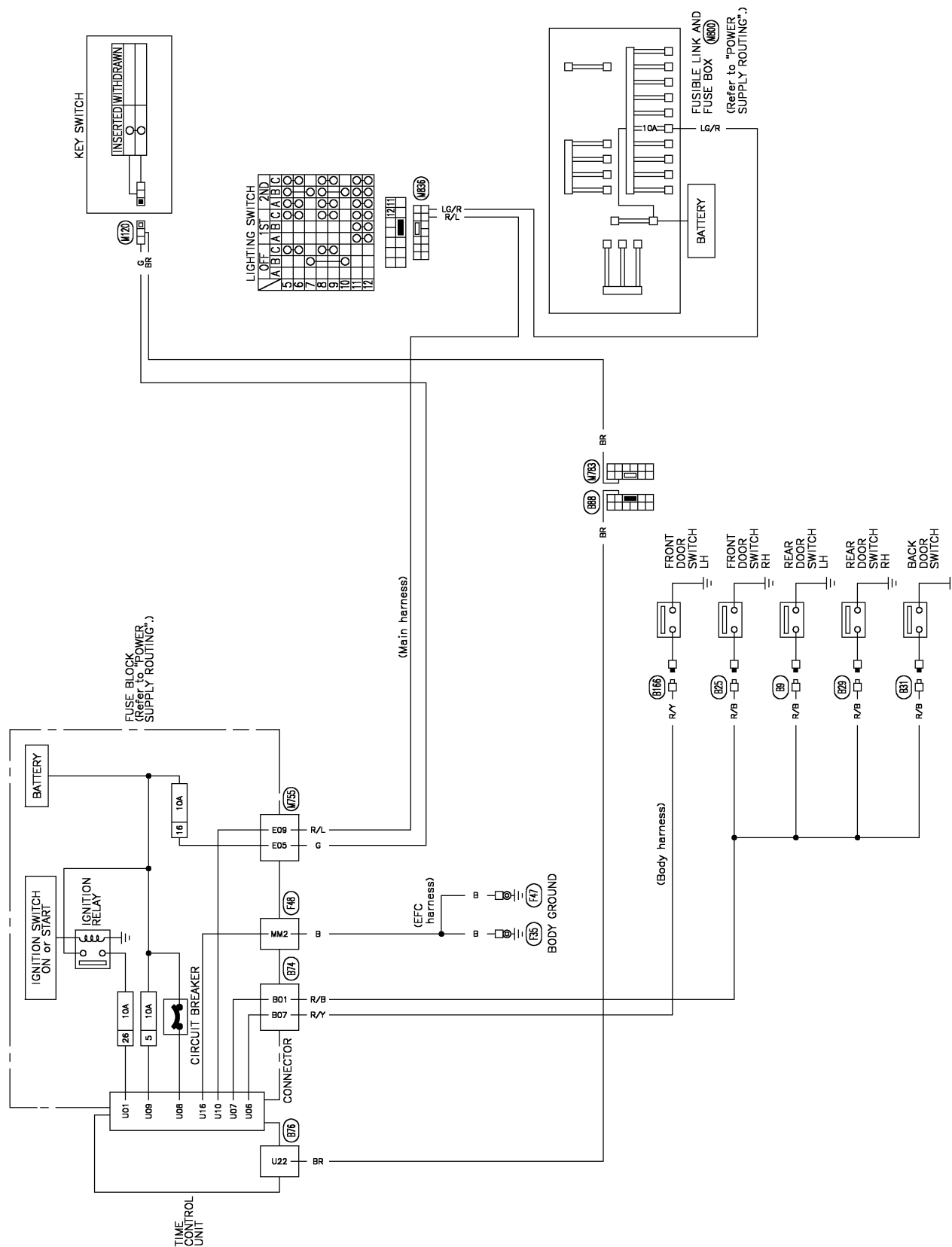
[illegible]

Warning Lamps/Wiring Diagram (Cont'd)

WARNING LAMPS AND CHIME

Warning Chime/Wiring Diagram

FOR RUSSIA



YEL694E

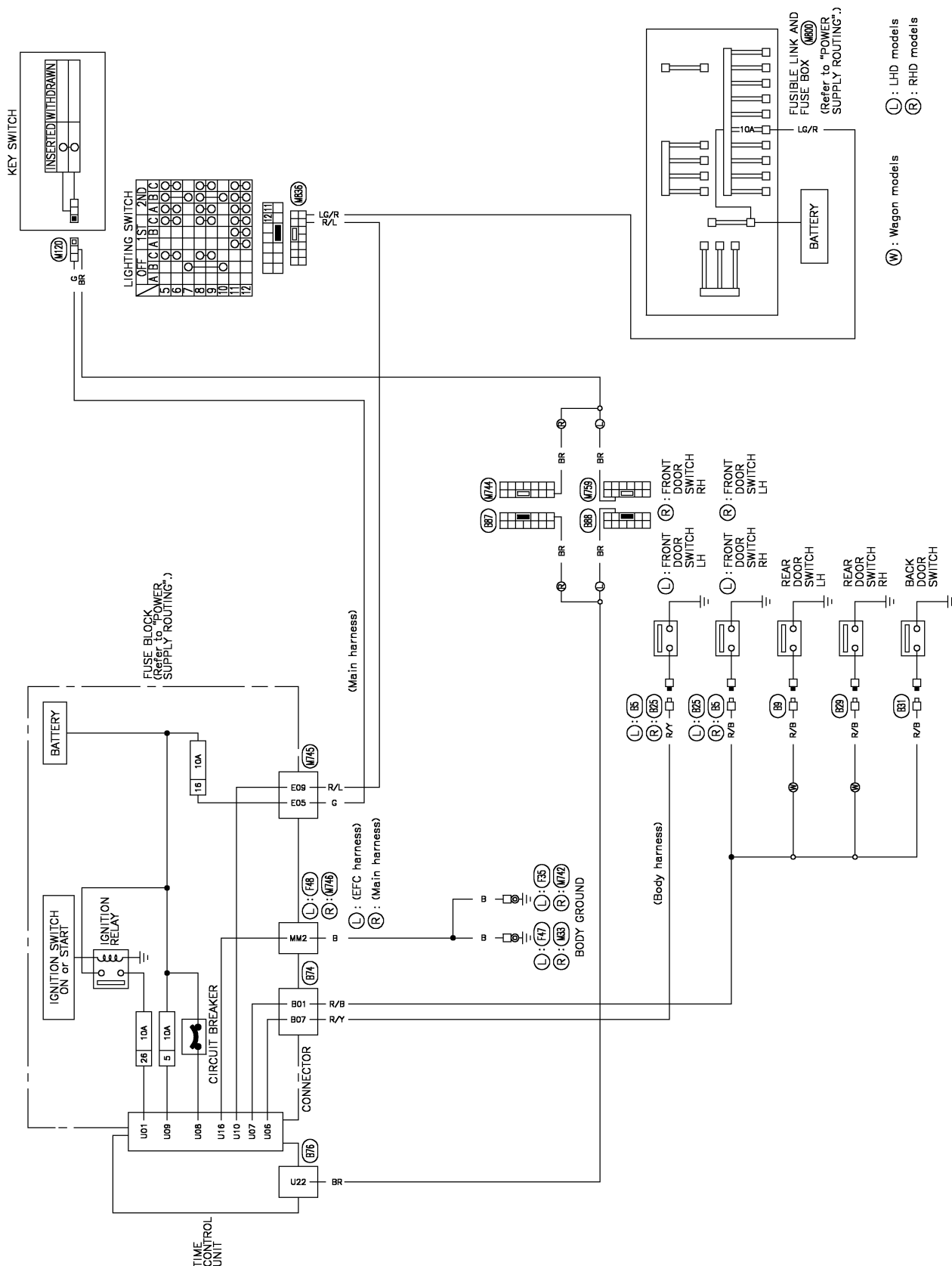
EL-13049

<http://vnx.su/>

WARNING LAMPS AND CHIME

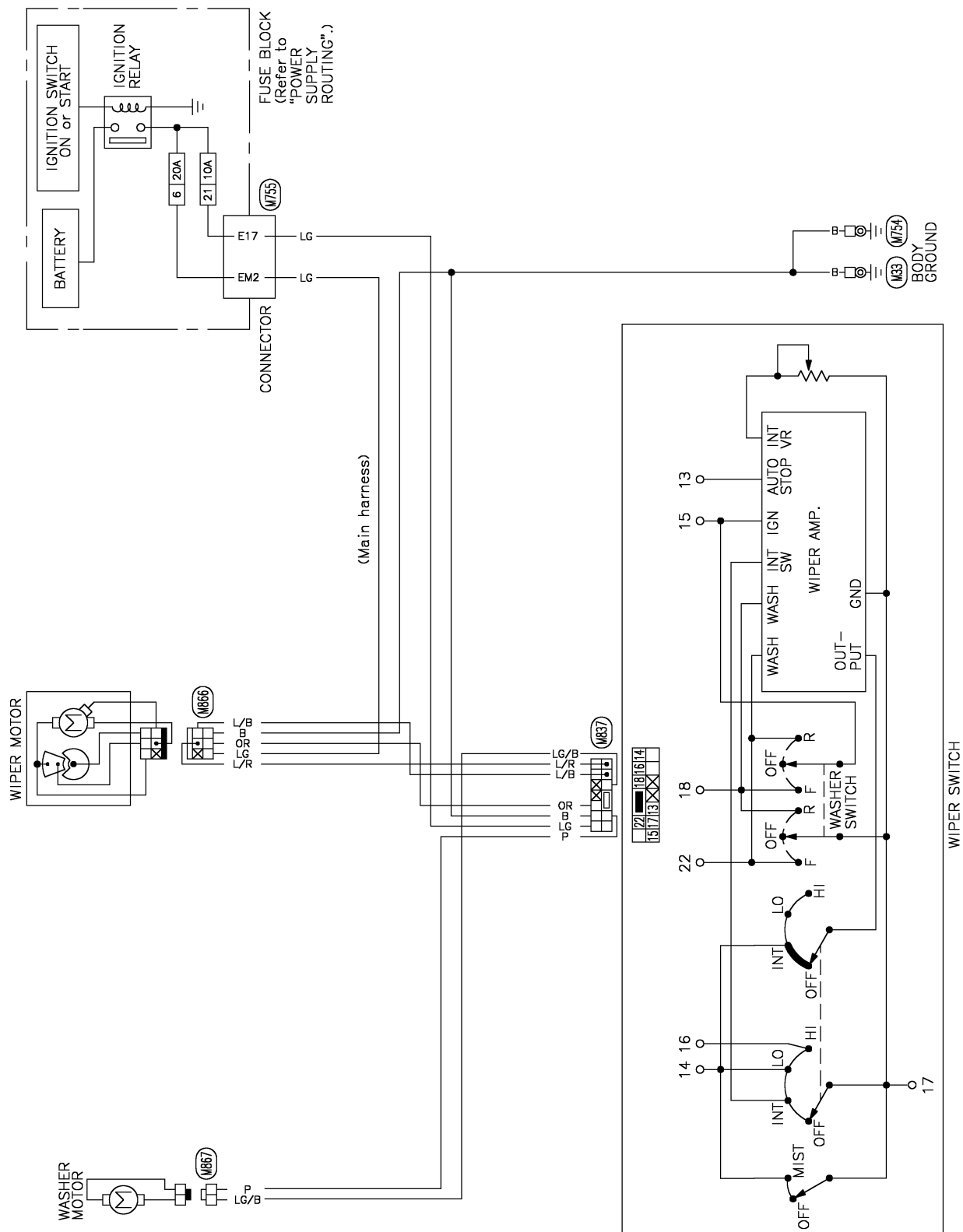
Warning Chime/Wiring Diagram (Cont'd)

EXCEPT FOR RUSSIA



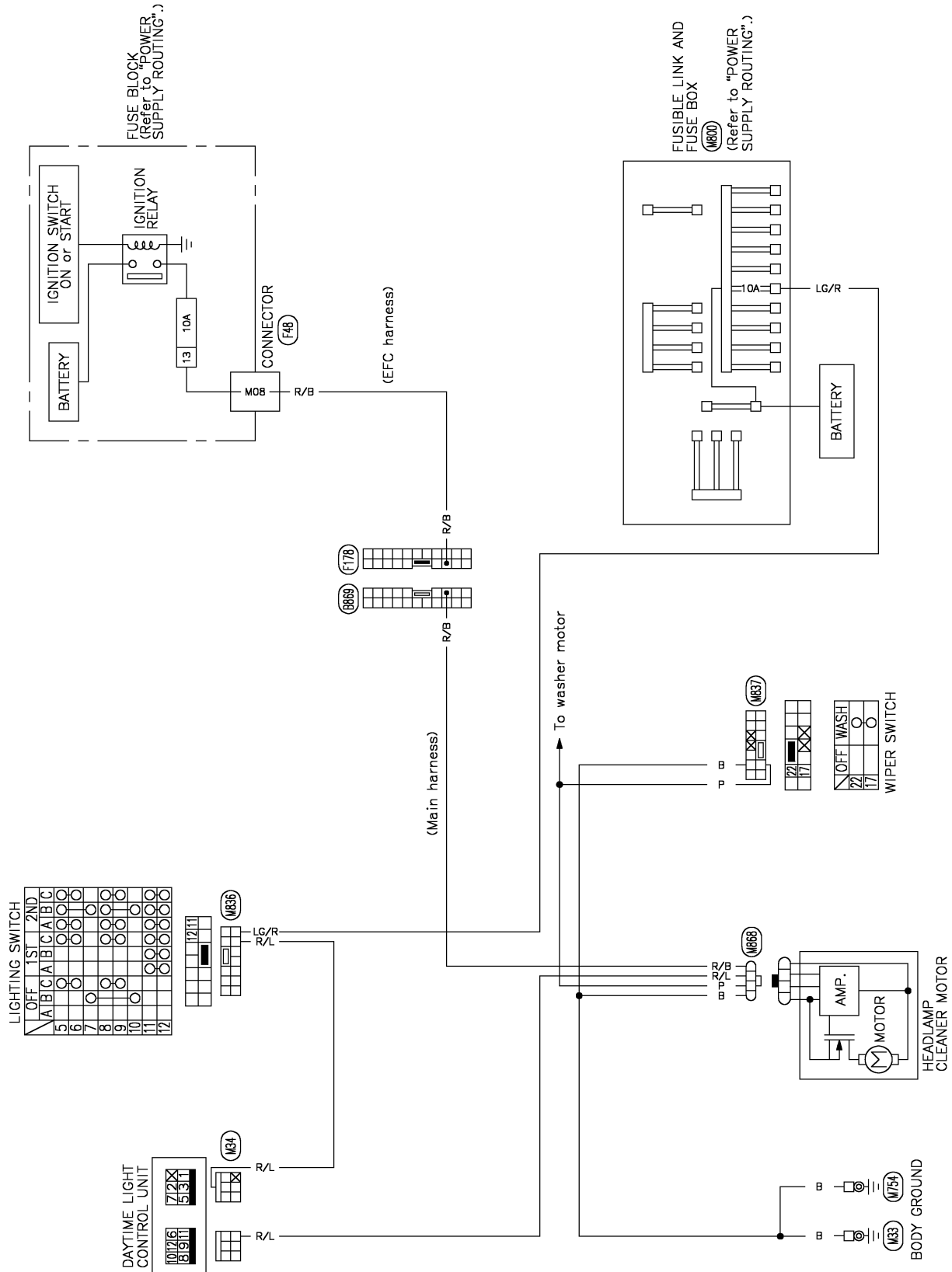
Front Wiper and Washer/Wiring Diagram

FOR RUSSIA



Headlamp Washer/Wiring Diagram

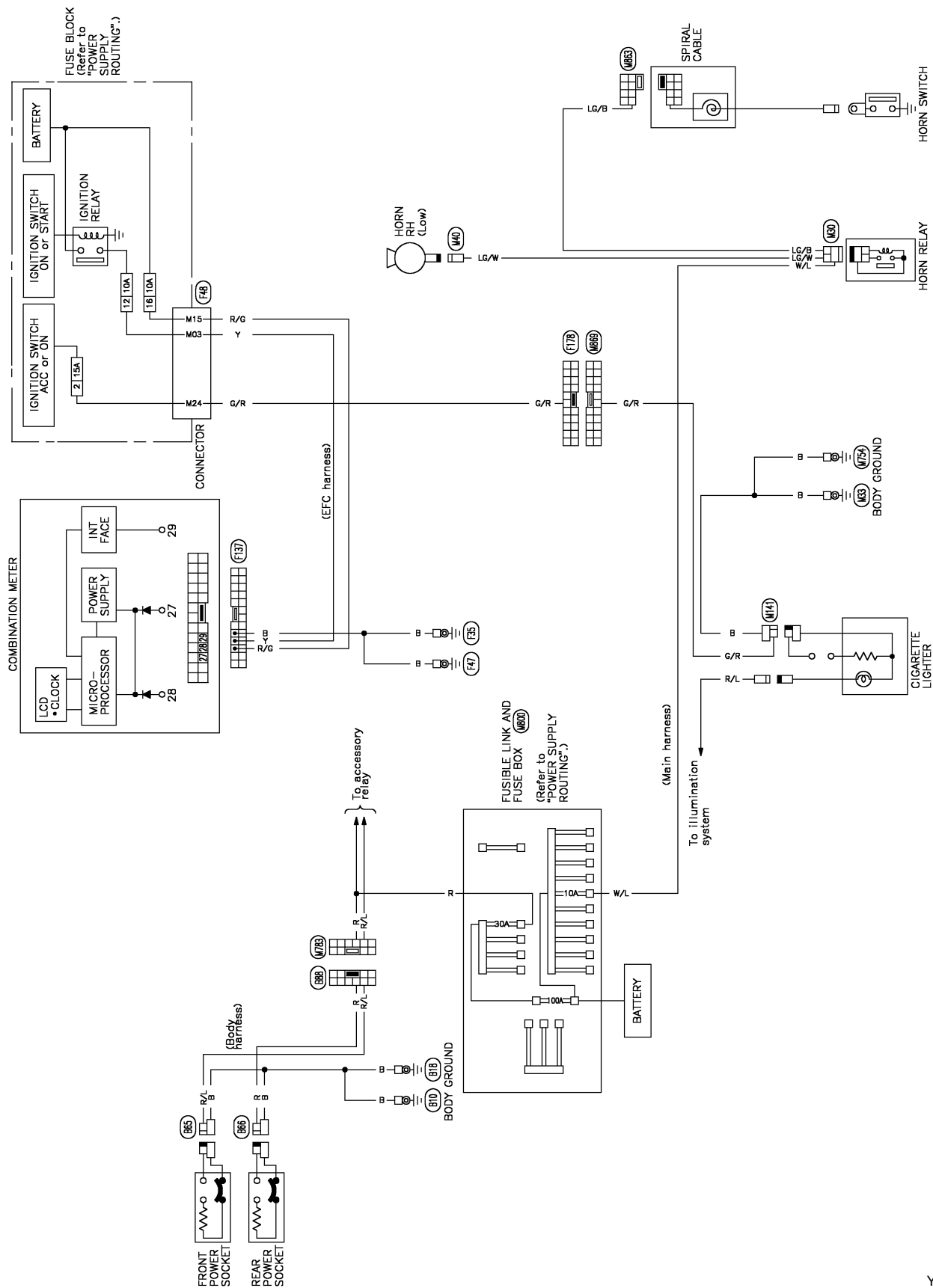
FOR RUSSIA



HORN, CIGARETTE LIGHTER AND CLOCK

Horn, Cigarette Lighter and Clock/Wiring Diagram

FOR RUSSIA



YEL700E

EL-13055

Horn, Cigarette Lighter and Clock/Wiring Diagram (Cont'd)

Wiring Diagram for Power Supply System

Legend:
 (L) : LHD models
 (R) : RHD models

Notes:
 FUSE BLOCK (Refer to "POWER SUPPLY ROUTING")
 FUSIBLE LINK AND FUSE BOX (Refer to "POWER SUPPLY ROUTING")

Components and Connections:

- BATTERY:** Connected to the main power supply line.
- IGNITION SWITCH:** Controls the ignition relay and provides power to the combination meter.
- IGNITION RELAY:** Controls the horn and provides power to the combination meter.
- COMBINATION METER:** Includes a micro-processor, power supply, and LCD clock. It is connected to the ignition switch and the main power supply line.
- FRONT POWER SOCKET:** Connected to the main power supply line.
- REAR POWER SOCKET:** Connected to the main power supply line.
- HORN:** Connected to the ignition relay and the main power supply line.
- SPIRAL CABLE:** Connected to the main power supply line.
- HORN SWITCH:** Controls the horn.
- HORN RELAY:** Controls the horn.
- CIGARETTE LIGHTER:** Connected to the main power supply line.
- TO ILLUMINATION SYSTEM:** Connected to the main power supply line.

Wiring Details:

- The main power supply line is connected to the battery and the ignition switch.
- The ignition switch is connected to the ignition relay and the combination meter.
- The ignition relay is connected to the horn and the combination meter.
- The combination meter is connected to the main power supply line.
- The front power socket is connected to the main power supply line.
- The rear power socket is connected to the main power supply line.
- The horn is connected to the ignition relay and the main power supply line.
- The spiral cable is connected to the main power supply line.
- The horn switch is connected to the horn relay.
- The horn relay is connected to the horn.
- The cigarette lighter is connected to the main power supply line.
- The illumination system is connected to the main power supply line.

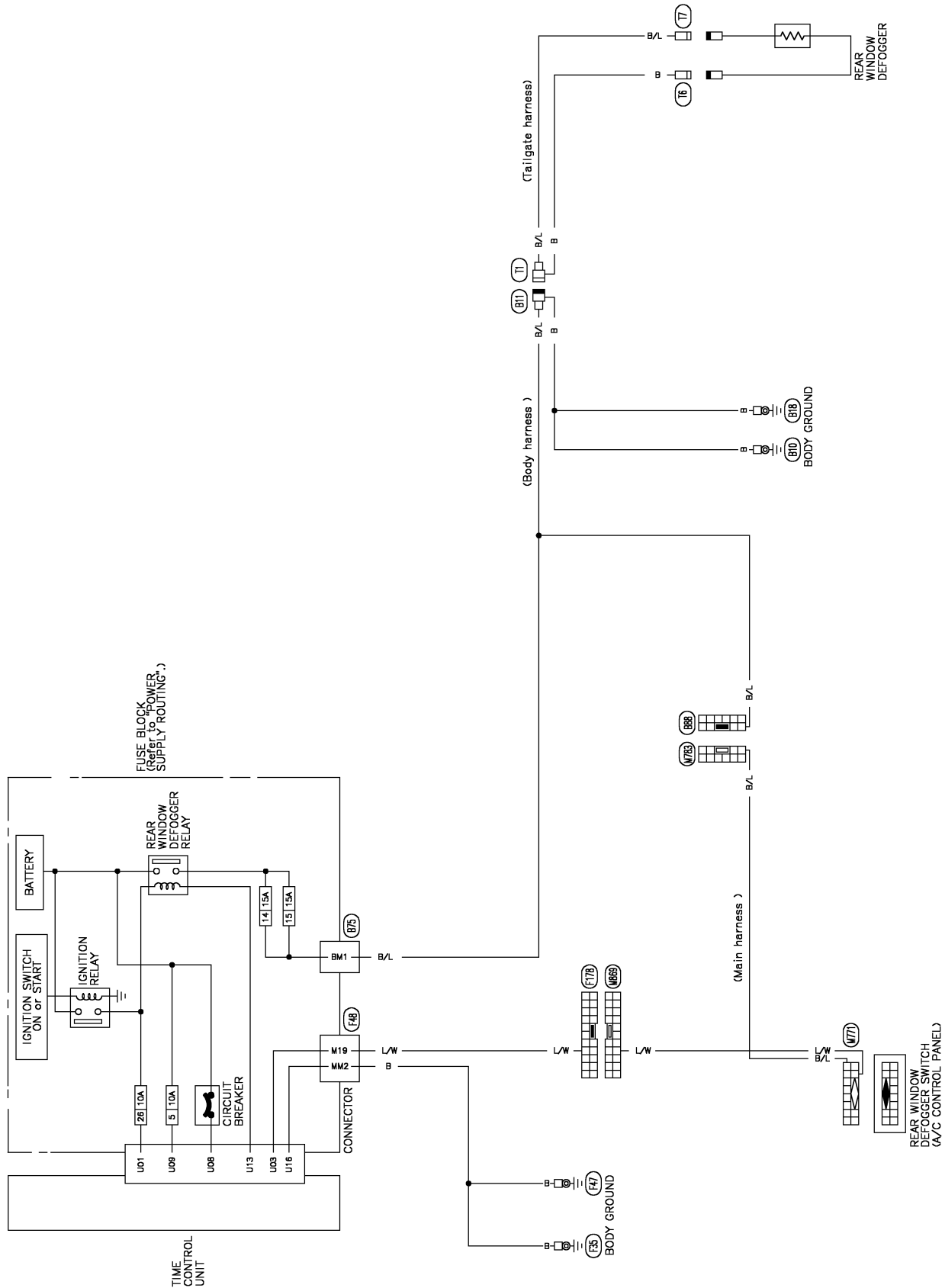
Ⓐ : LHD models
Ⓑ : RHD models

EL-13056

REAR WINDOW DEFOGGER

Wiring Diagram

FOR RUSSIA



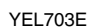
EL-13057

<http://vnx.su/>

YEL702E

Audio/Wiring Diagram

FOR RUSSIA (WITH CD AUTOCHANGER)

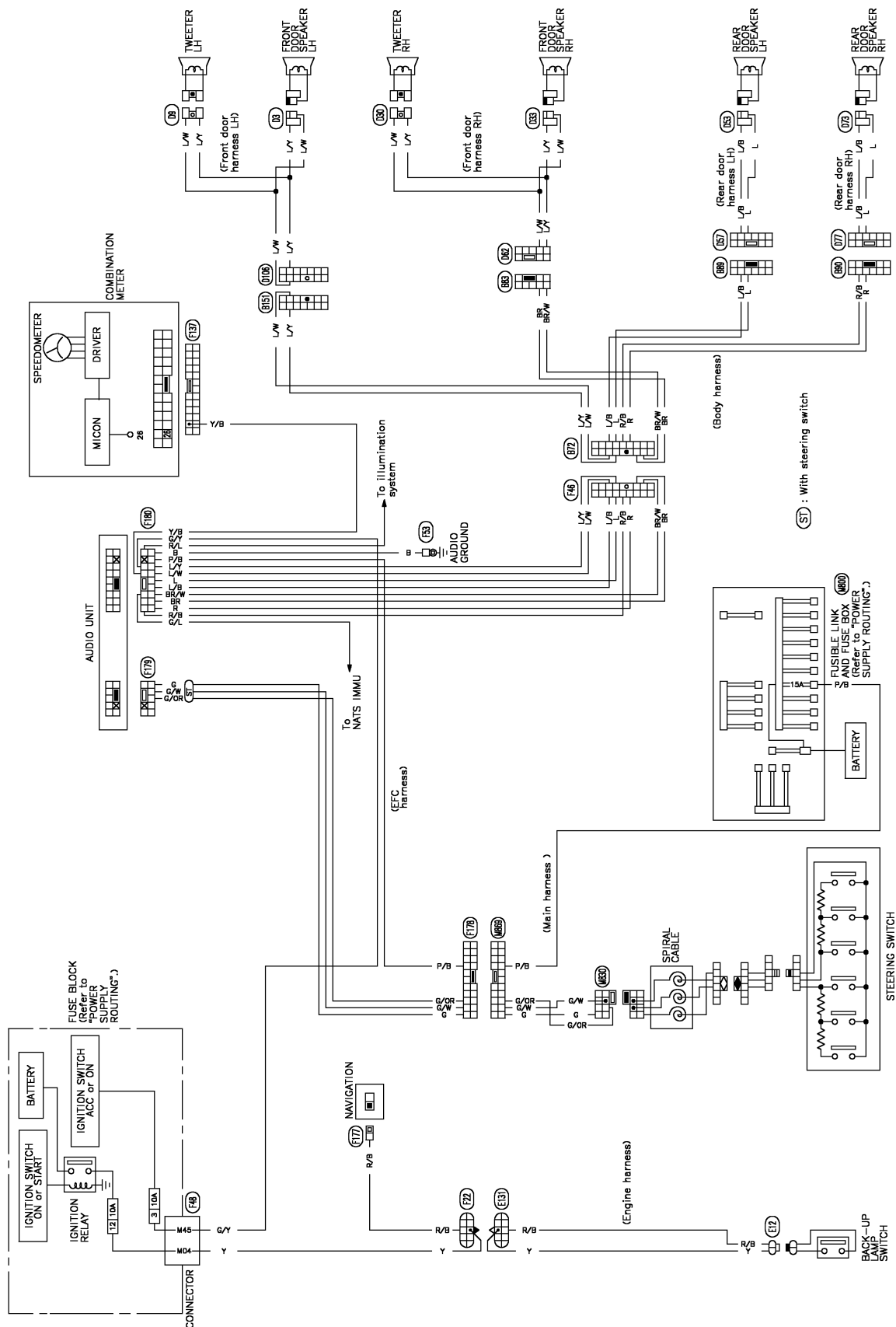


<http://vnz.su/>

AUDIO AND ANTENNA

Audio/Wiring Diagram (Cont'd)

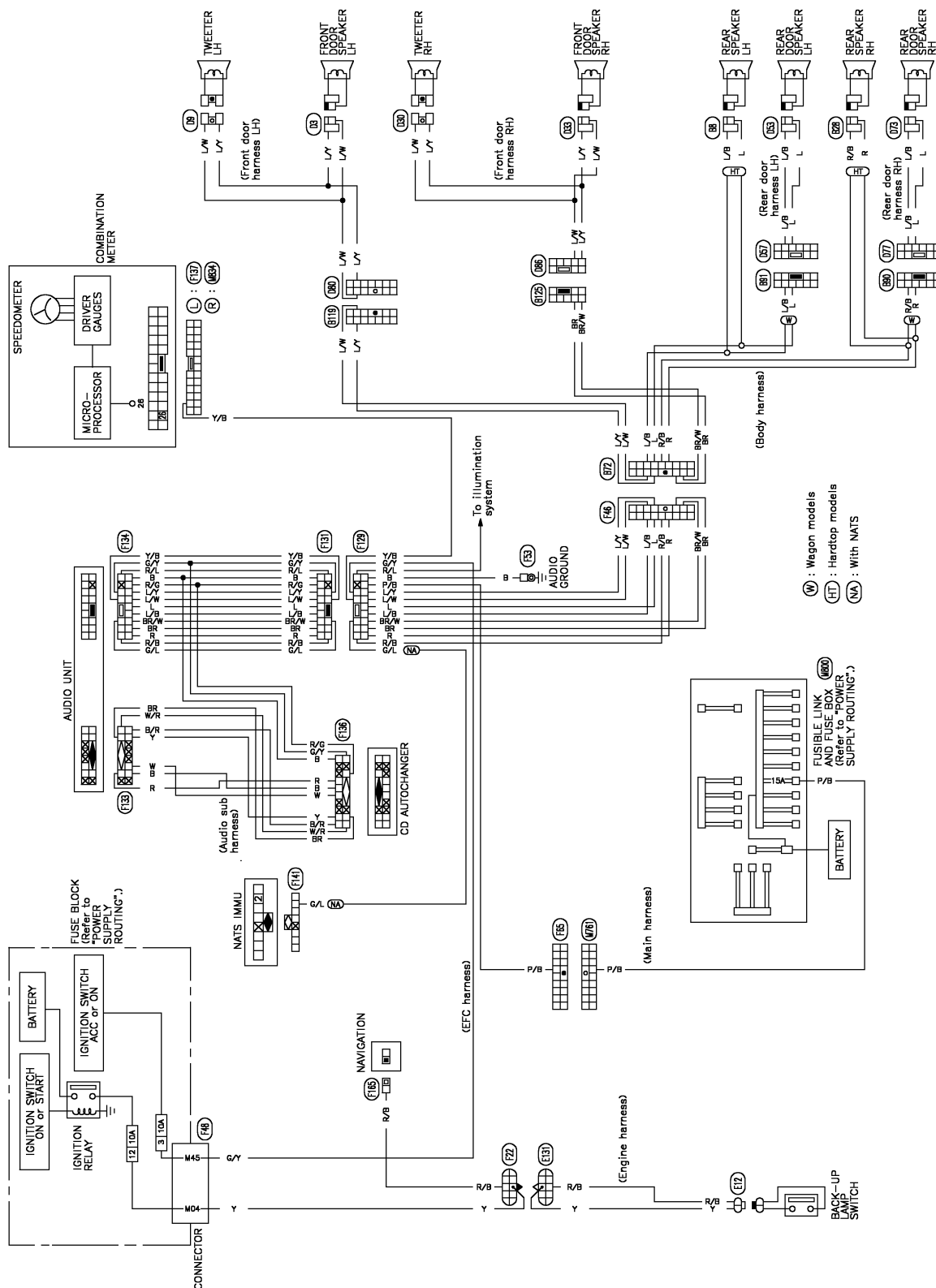
FOR RUSSIA (WITHOUT CD AUTOCHANGER)



AUDIO AND ANTENNA

Audio/Wiring Diagram (Cont'd)

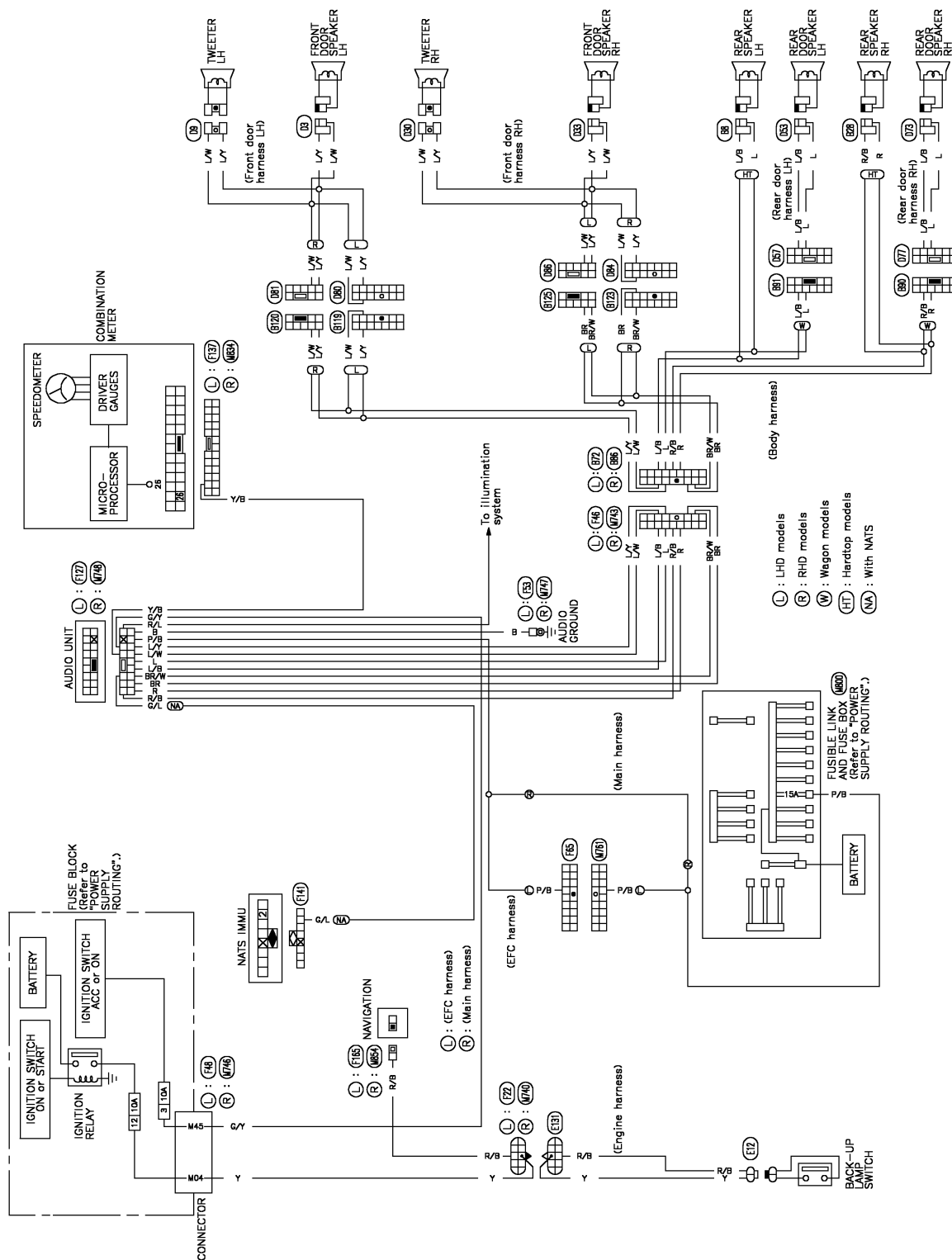
EXCEPT FOR RUSSIA (WITH CD AUTOCHANGER)



AUDIO AND ANTENNA

Audio/Wiring Diagram (Cont'd)

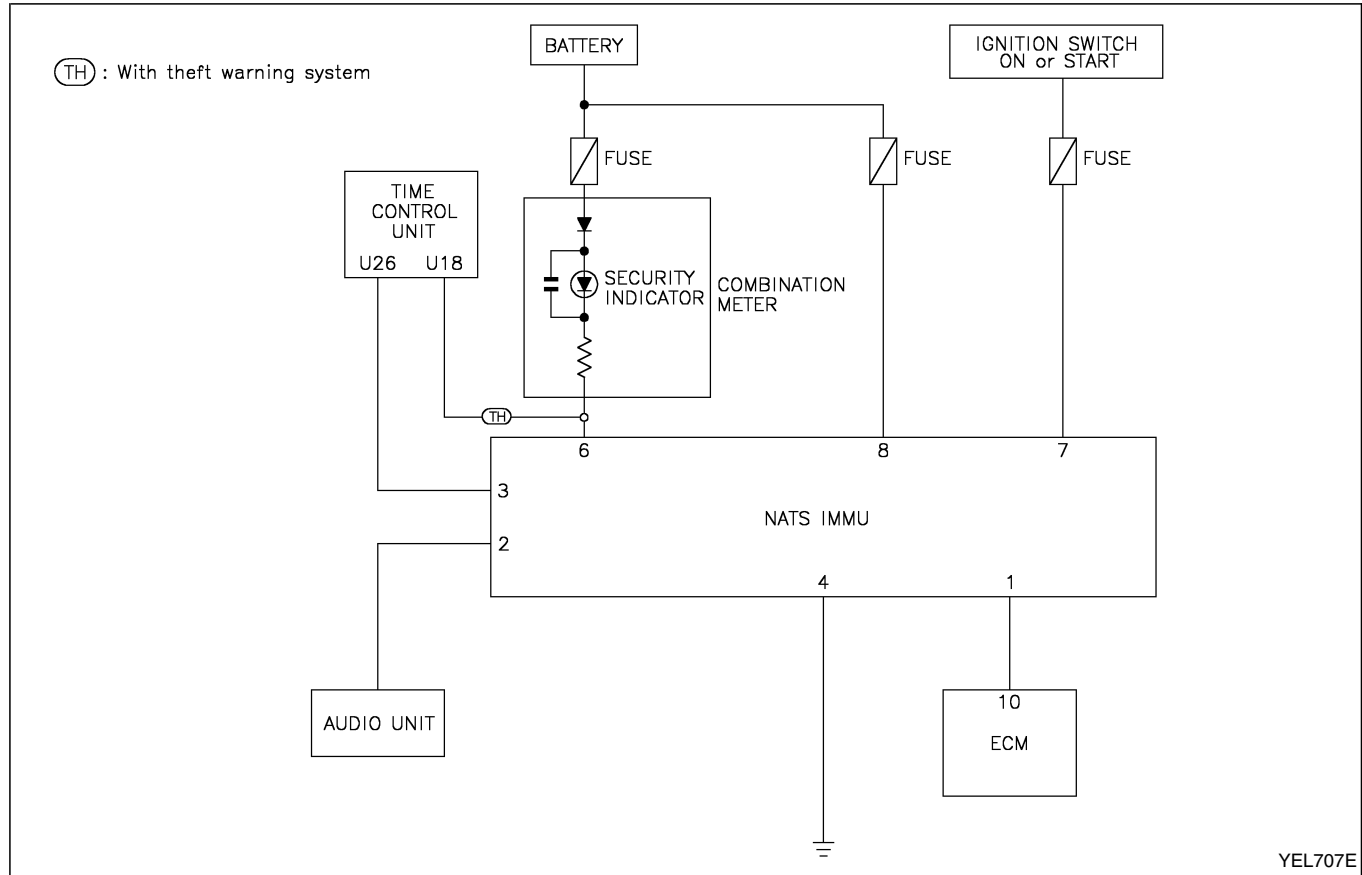
EXCEPT FOR RUSSIA (WITHOUT CD AUTOCHANGER)



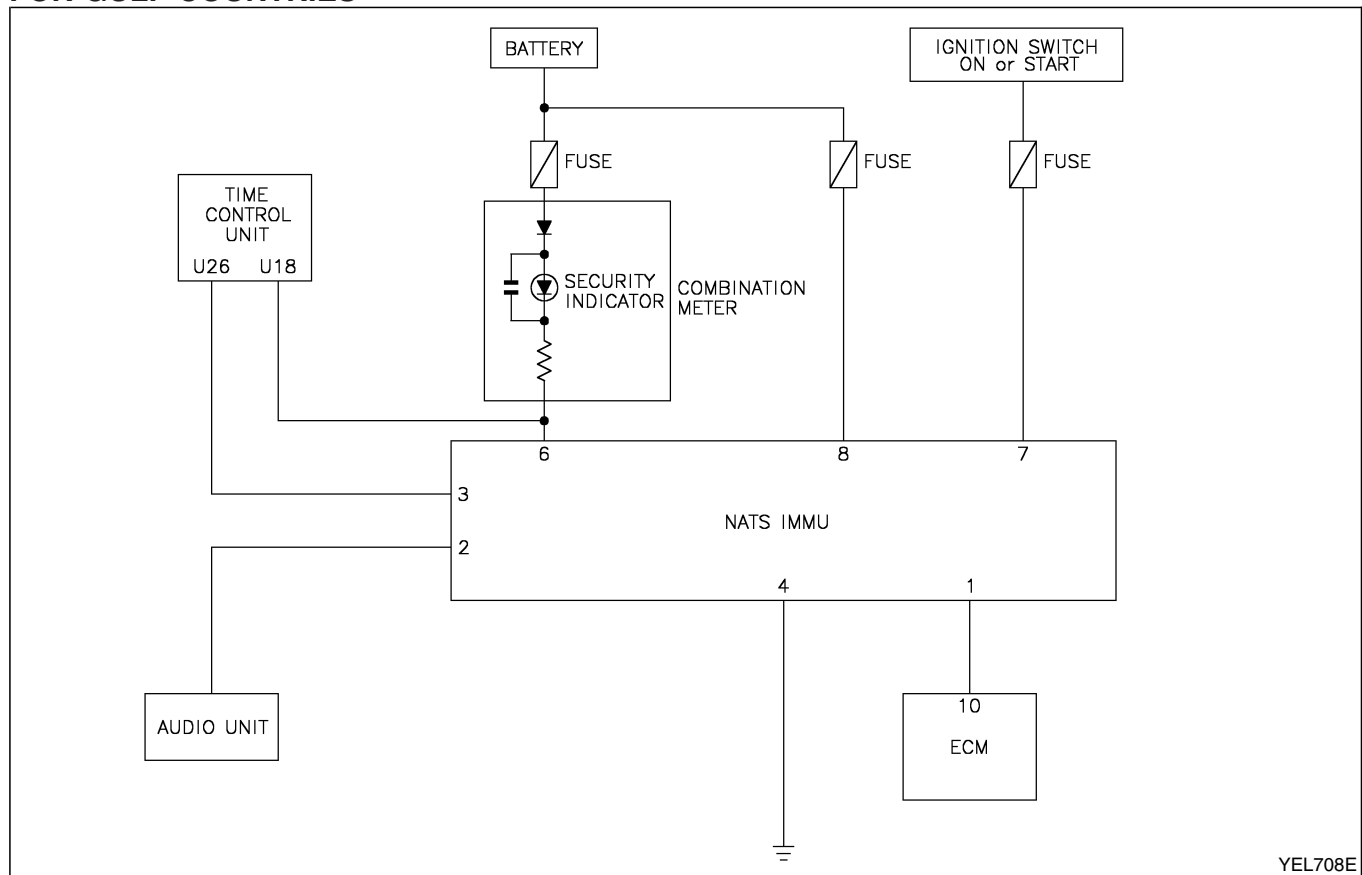
NATS (Nissan Anti-Theft System)

NATS/Circuit Diagram

FOR RUSSIA



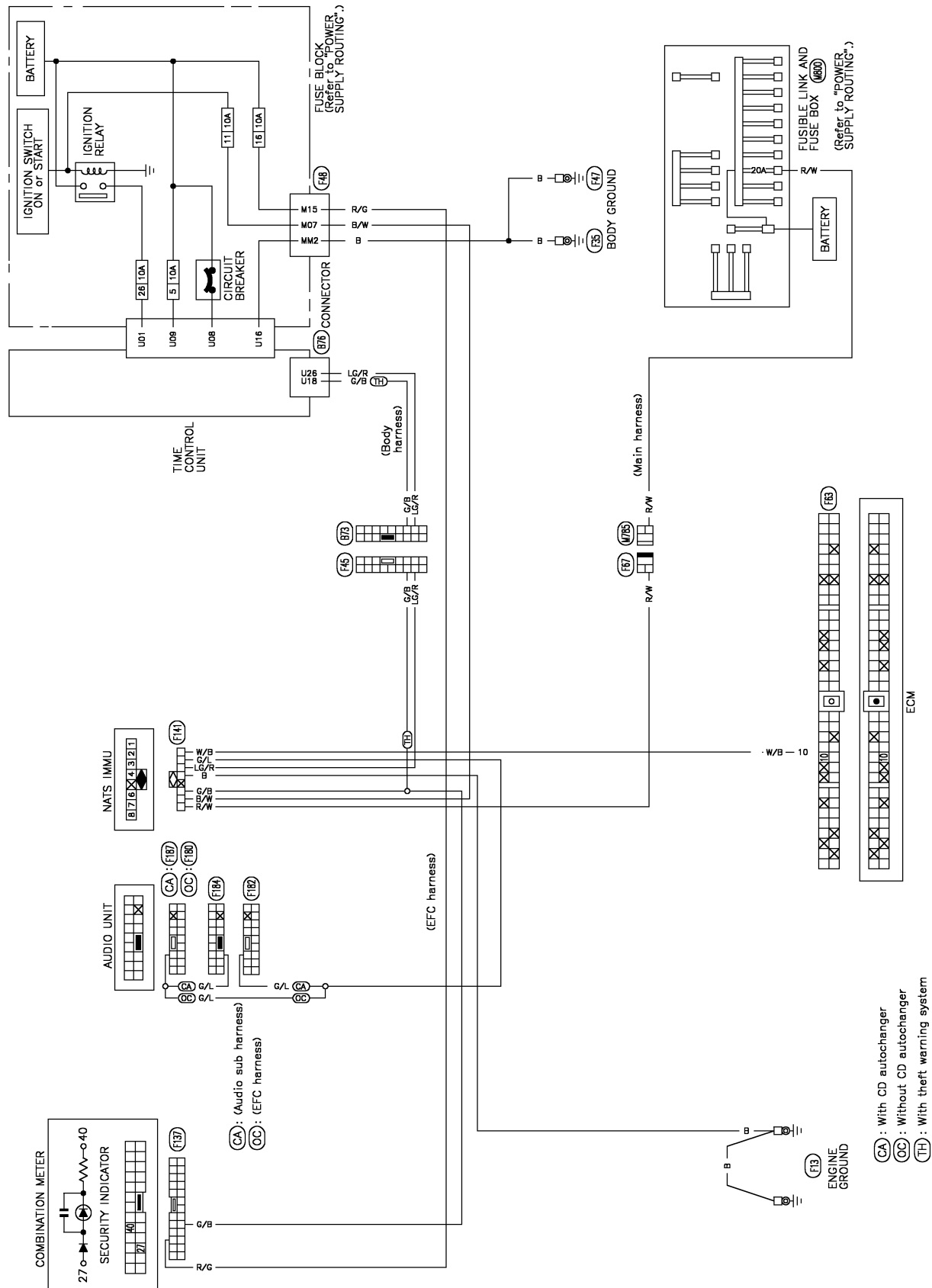
FOR GULF COUNTRIES



NATS (Nissan Anti-Theft System)

NATS/Wiring Diagram

FOR RUSSIA



YEL709E

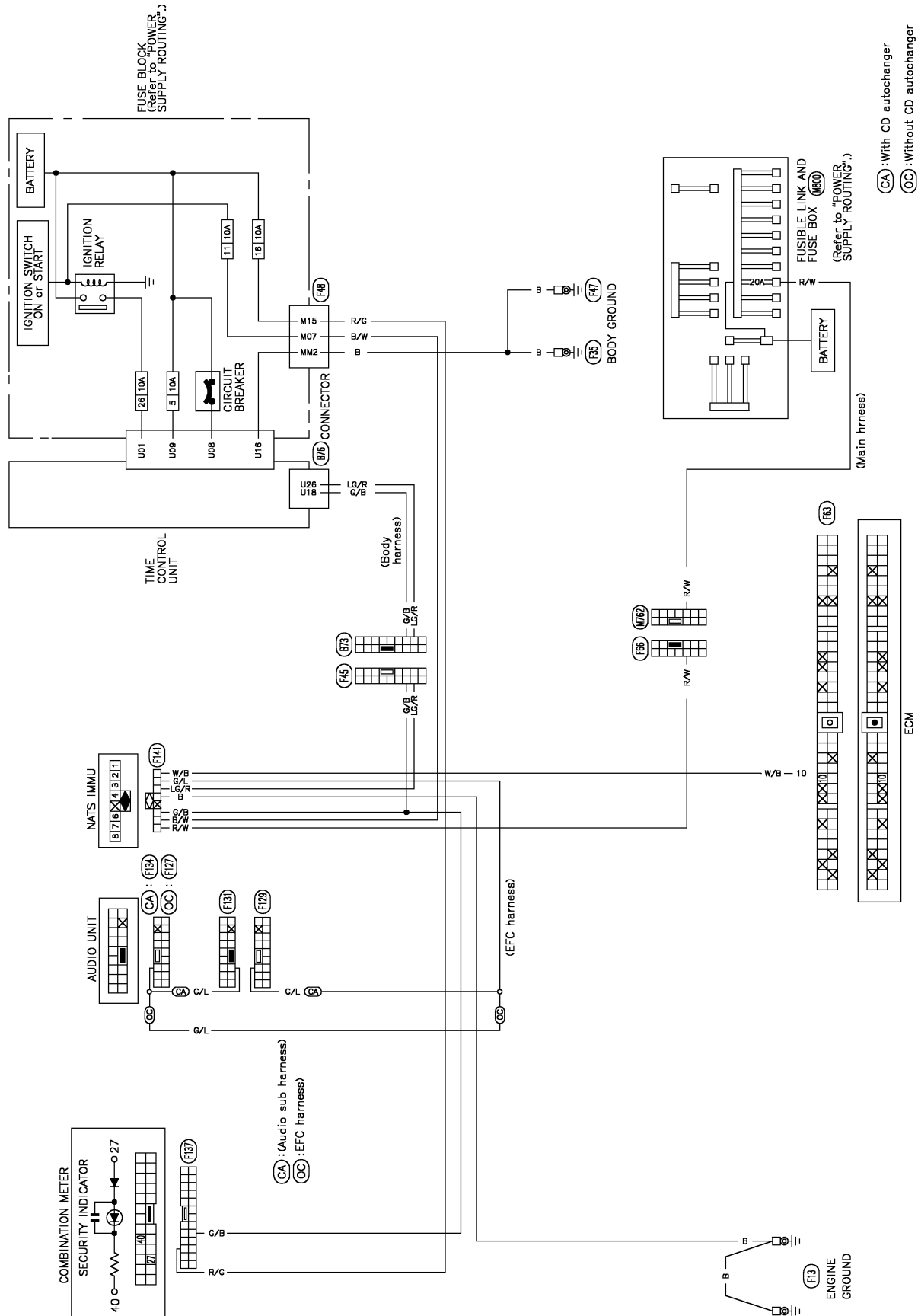
EL-13063

<http://vnx.su/>

NATS (Nissan Anti-Theft System)

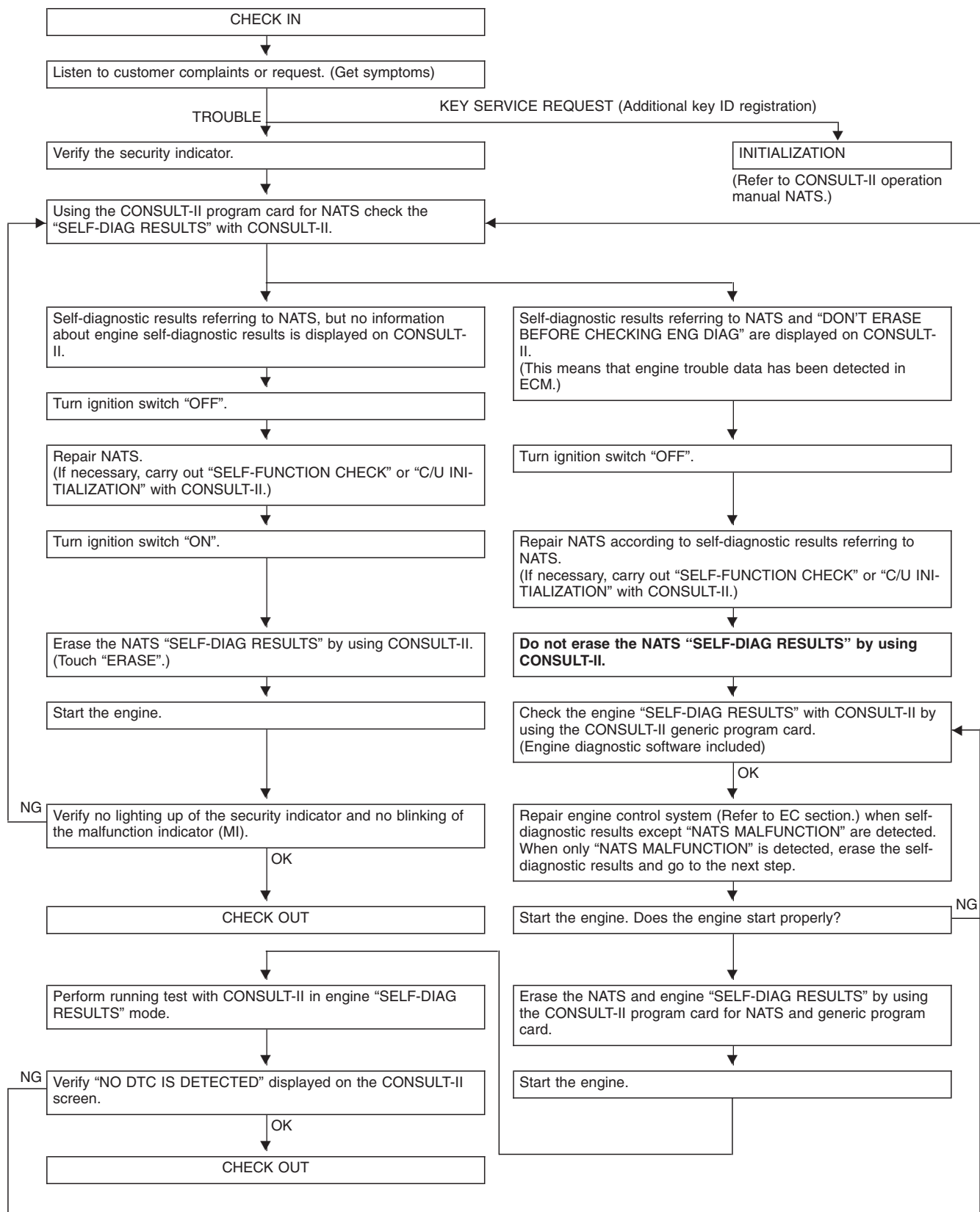
NATS/Wiring Diagram (Cont'd)

FOR GULF COUNTRIES



Trouble Diagnoses

WORK FLOW



NATS (Nissan Anti-Theft System)

Trouble Diagnoses (Cont'd)

SYMPTOM MATRIX CHART 1 (Self-diagnosis related item)

SYMPTOM	Displayed "SELF-DIAG RESULTS" on CONSULT-II screen	DIAGNOSTIC PROCEDURE (Reference page)	SYSTEM (Malfunctioning part or mode)	REFERENCE PART NO. OF ILLUSTRATION ON NEXT PAGE
- Security indicator lighting up* - Engine does not start	CHAIN OF ECM-IMMU	PROCEDURE 1 (EL-13068)	Open circuit in battery voltage line of IMMU circuit	C1
			Open circuit in ignition line of IMMU circuit	C2
			Open circuit in ground line of IMMU circuit	C3
			Open or short circuit in communication line between IMMU and ECM	C4
			ECM	B
			IMMU	A
	DIFFERENCE OF KEY	PROCEDURE 2 (EL-13070)	Unregistered key	D
			IMMU	A
	CHAIN OF IMMU-KEY	PROCEDURE 3 (EL-13071)	Malfunction of key ID chip	E
			IMMU	A
	ID DISCORD, IMM-ECM	PROCEDURE 4 (EL-13072)	System initialization has not yet been completed.	F
			ECM	B
			IMMU	A
	LOCK MODE	PROCEDURE 5 (EL-13073)	LOCK MODE	D
- Security indicator lighting up* - MI staying ON	DON'T ERASE BEFORE CHECKING ENG DIAG	WORK FLOW (EL-13065)	Engine trouble data and NATS trouble data have been detected in ECM.	—

NOTE:

- When NATS detects trouble, the security indicator lights up while ignition key is in the "ON" position.

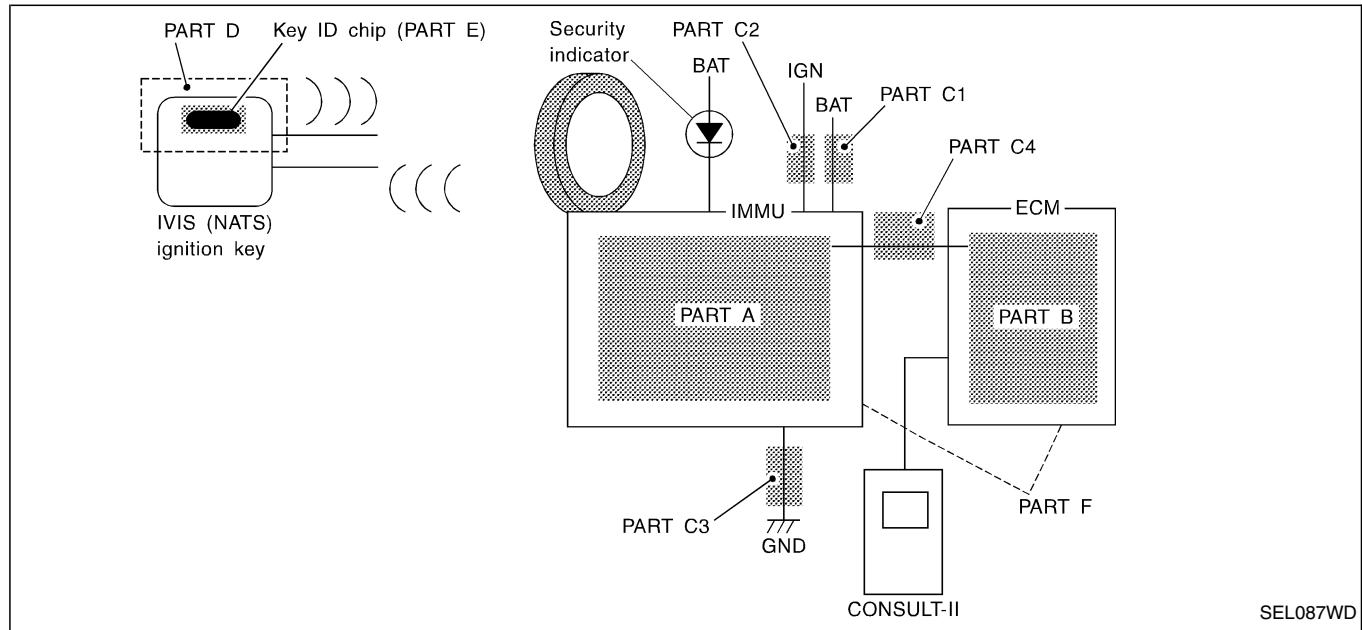
NATS (Nissan Anti-Theft System)

Trouble Diagnoses (Cont'd)

SYMPTOM MATRIX CHART 2 (Non self-diagnosis related item)

SYMPTOM	DIAGNOSTIC PROCEDURE (Reference page)	SYSTEM (Malfunctioning part or mode)	REFERENCE PART NO. OF ILLUSTRATION BELOW
Security ind. does not light up.	PROCEDURE 6 (EL-13074)	Security ind.	—
		Open circuit between Fuse and NATS IMMU	
		Continuation of initialization mode	
		NATS IMMU	

DIAGNOSTIC SYSTEM DIAGRAM



NATS (Nissan Anti-Theft System)

Trouble Diagnoses (Cont'd)

DIAGNOSTIC PROCEDURE 1

Self-diagnostic results:

“CHAIN OF ECM-IMMU” displayed on CONSULT-II screen

A

SELF DIAGNOSIS	
DTC RESULTS	TIME
CHAIN OF ECM-IMMU	0

YEL471B

A

Confirm SELF-DIAGNOSTIC RESULTS “CHAIN OF ECM-IMMU” displayed on CONSULT-II screen.

OK

B

CHECK POWER SUPPLY CIRCUIT FOR IMMU.

Check voltage between IMMU terminal ⑧ and ground.

Battery voltage should exist.

NG

Check the following:

- 20A fusible link
 - Harness for open or short between fuse and IMMU connector
- Ref. part No. C1

OK

C

CHECK IGN SW. ON SIGNAL.

Check voltage between IMMU terminal ⑦ and ground while ignition switch is “ON” position.

Battery voltage should exist.

NG

Check the following:

- 10A fuse [No. 11], located in the fuse block (J/B)]
 - Harness for open or short between fuse and IMMU connector
- Ref. part No. C2

OK

D

CHECK GROUND CIRCUIT FOR IMMU.

Check continuity between IMMU terminal ④ and ground.

Continuity should exist.

NG

Repair harness.
Ref. part No. C3

OK

E

CHECK COMMUNICATION OPEN CIRCUIT.

Check continuity between IMMU terminal ① and ECM terminal ⑩.

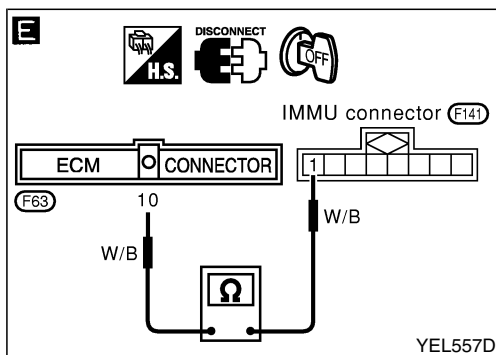
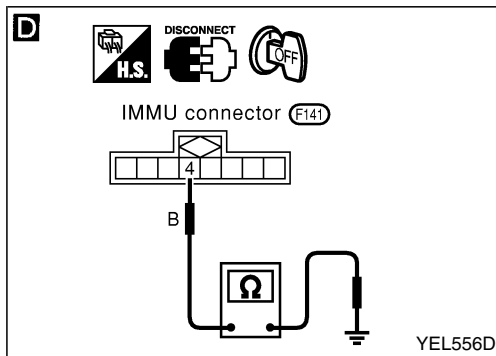
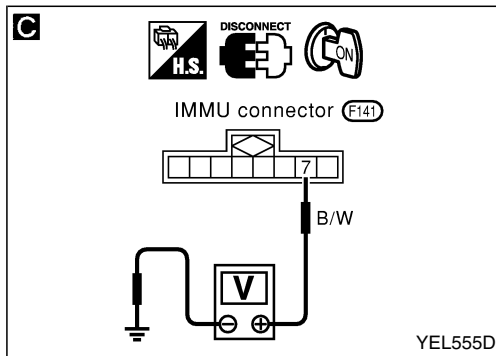
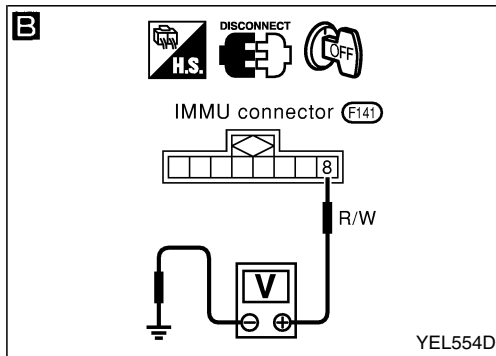
Continuity should exist.

NG

Repair harness.
Ref. part No. C4

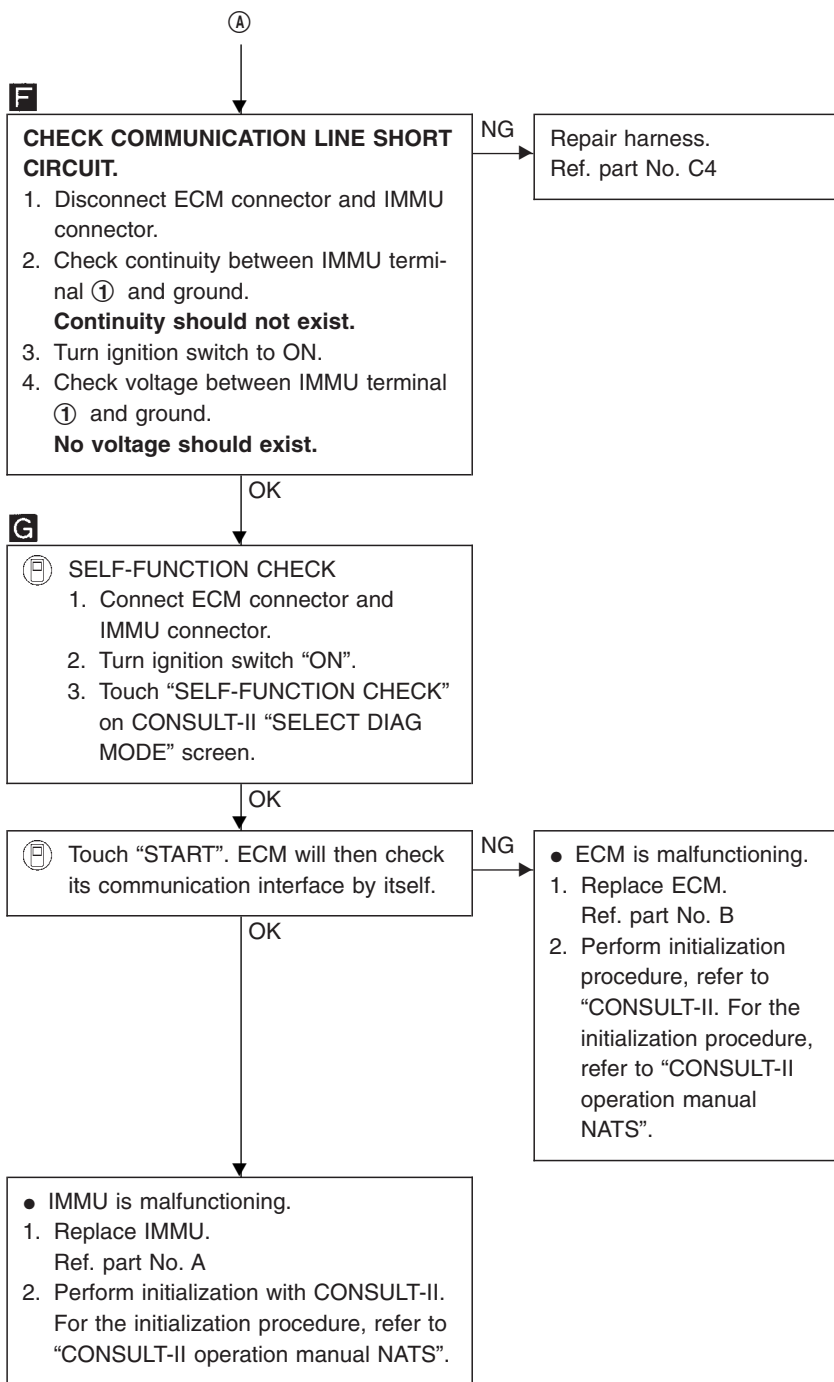
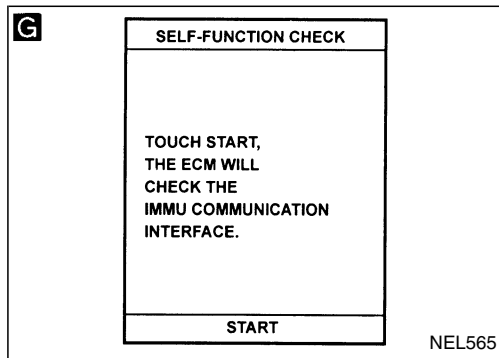
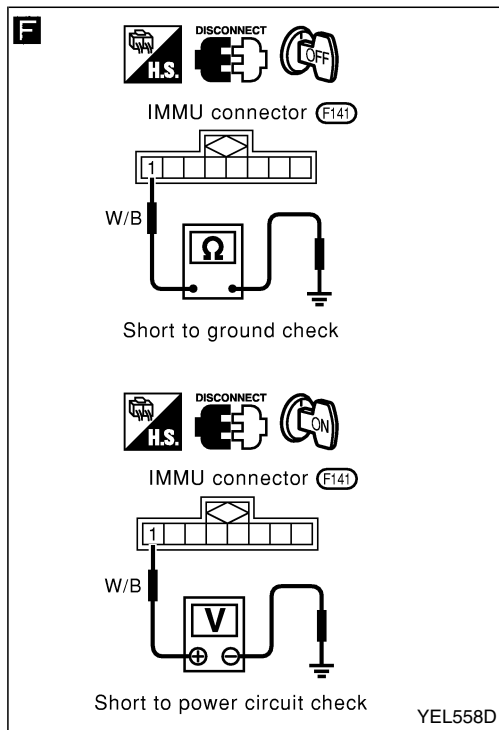
OK

①



NATS (Nissan Anti-Theft System)

Trouble Diagnoses (Cont'd)



NATS (Nissan Anti-Theft System)

Trouble Diagnoses (Cont'd)

DIAGNOSTIC PROCEDURE 2

Self-diagnostic results:

“DIFFERENCE OF KEY” displayed on CONSULT-II screen

A

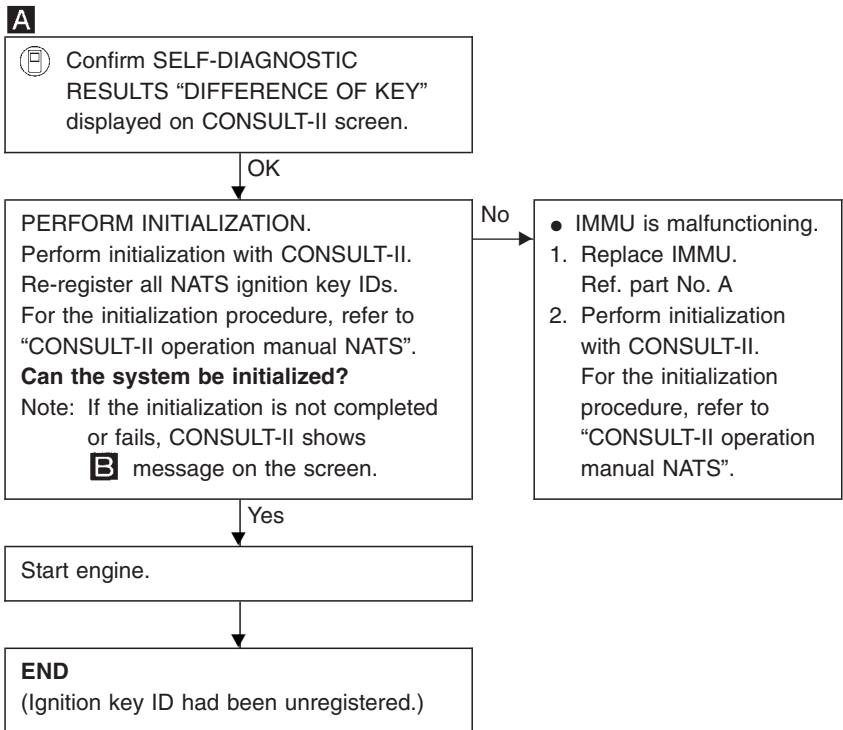
SELF DIAGNOSIS	
DTC RESULTS	TIME
DIFFERENCE OF KEY	0

YEL478B

B

IMMU INITIALIZATION
INITIALIZATION FAIL
THEN IGN KEY SW 'OFF' AND 'ON', AFTER CONFIRMING SELF-DIAG AND PASSWORD, PERFORM C/U INITIALIZATION AGAIN.

YEL479B



NATS (Nissan Anti-Theft System)

Trouble Diagnoses (Cont'd)

DIAGNOSTIC PROCEDURE 3

Self-diagnostic results:

“CHAIN OF IMMU-KEY” displayed on CONSULT-II screen

A	SELF DIAGNOSIS	
	DTC RESULTS	TIME
	CHAIN OF IMMU-KEY	0

YEL480B

A



Confirm SELF-DIAGNOSTIC RESULTS “CHAIN OF IMMU-KEY” displayed on CONSULT-II screen.

OK

CHECK NATS IGNITION KEY ID CHIP.
Can the engine start with another registered NATS ignition key?

Yes

● Ignition key ID chip is malfunctioning.

1. Replace the ignition key.
Ref. part No. E
2. Perform initialization with CONSULT-II.
For the initialization procedure, refer to “CONSULT-II operation manual NATS”.

No

CHECK NATS IMMU INSTALLATION.

NG

Reinstall NATS IMMU correctly.

OK

● IMMU is malfunctioning.

1. Replace IMMU.
Ref. part No. A
2. Perform initialization with CONSULT-II.
For the initialization procedure, refer to “CONSULT-II operation manual NATS”.

NATS (Nissan Anti-Theft System)

Trouble Diagnoses (Cont'd)

DIAGNOSTIC PROCEDURE 4

Self-diagnostic results:

"ID DISCORD, IMM-ECM" displayed on CONSULT-II screen

A

SELF DIAG RESULTS	
DTC RESULTS	TIME
ID DISCORD, IMM-ECM	0

C2SDD01

B

IMMU INITIALIZATION
INITIALIZATION FAIL
THEN IGN KEY SW 'OFF' AND 'ON', AFTER CONFIRMING SELF-DIAG AND PASSWORD, PERFORM C/U INITIALIZATION AGAIN.

YEL479B

A

Confirm SELF-DIAGNOSTIC RESULTS "ID DISCORD, IMM-ECM" displayed on CONSULT-II screen.

* "ID DISCORD, IMM-ECM":
Registered ID of IMMU is in
discord with that of ECM.

PERFORM INITIALIZATION.
Perform initialization with CONSULT-II.
Re-register all NATS ignition key IDs.
For the initialization procedure, refer to
"CONSULT-II operation manual NATS".
Can the system be initialized?
Note: If the initialization is not completed
or fails, CONSULT-II shows
B message on the screen.

No

- ECM is malfunctioning.
1. Replace ECM.
Ref. part No. B
 2. Perform initialization
with CONSULT-II.
For the initialization
procedure, refer to
"CONSULT-II operation
manual NATS".

Yes

Start engine. (END)
(System initialization was not completed.
Ref. part No. F)

NATS (Nissan Anti-Theft System)

Trouble Diagnoses (Cont'd)

DIAGNOSTIC PROCEDURE 5

Self-diagnostic results:

“LOCK MODE” displayed on CONSULT-II screen

A

SELF DIAGNOSIS	
DTC RESULTS	TIME
LOCK MODE	0

YEL484B

B

IMMU INITIALIZATION
INITIALIZATION FAIL
THEN IGN KEY SW 'OFF' AND 'ON', AFTER CONFIRMING SELF-DIAG AND PASSWORD, PERFORM C/U INITIALIZATION AGAIN.

YEL479B

A

Confirm SELF-DIAGNOSTIC RESULTS “LOCK MODE” is displayed on CONSULT-II screen.

1. Turn the ignition switch to OFF position.
2. Turn the ignition key switch to ON position with a registered key. (Do not start engine.) Wait for 5 seconds.
3. Return the key to the OFF position.
4. Repeat steps 2 and 3 twice (total of three cycles).
5. Start the engine.

Can the engine start?

Yes

System is OK.
(Now the system is escaped from “LOCK MODE”.)

No

CHECK NATS IMMU INSTALLATION.

NG

Reinstall NATS IMMU correctly.

OK

PERFORM INITIALIZATION.
Perform initialization with CONSULT-II.
For the initialization procedure, refer to “CONSULT-II operation manual NATS”.

Can the system be initialized?

Note: If the initialization is incompleted or failed, CONSULT-II shows **B** message on the screen.

Yes

System is OK.

No

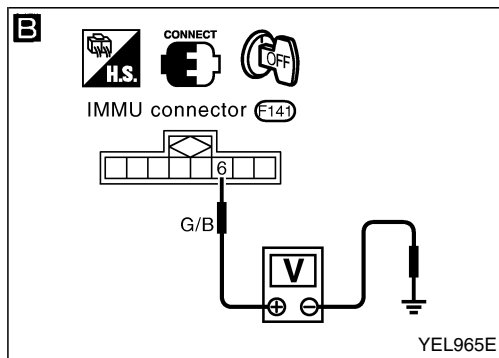
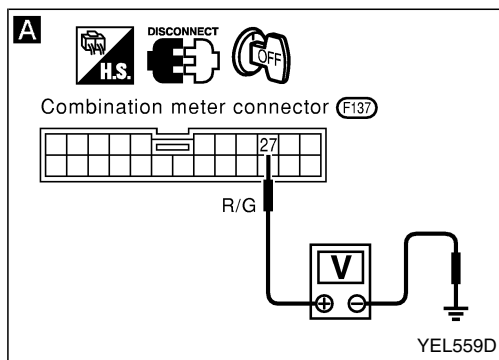
Go to DIAGNOSTIC PROCEDURE 4, EL-13072 to check “CHAIN OF IMMU-KEY”.

NATS (Nissan Anti-Theft System)

Trouble Diagnoses (Cont'd)

DIAGNOSTIC PROCEDURE 6

“SECURITY INDICATOR LAMP DOES NOT LIGHT UP”



Check 10A fuse [No. 16], located in the fuse block (J/B).

NG → Replace fuse.

OK

NATS INITIALIZATION
 1) Install the 10A fuse.
 2) Perform initialization with CONSULT-II.
 For the operation of initialization, refer to “CONSULT-II operation manual NATS”.

Turn ignition switch “OFF”.

Start engine and turn ignition switch “OFF”.

Check the security ind. lighting.

OK → INSPECTION END

NG

A

Check voltage between combination meter connector terminal 27 and ground.
Voltage: Battery voltage

NG → Check harness for open or short between fuse and security indicator lamp.

OK

CHECK SECURITY INDICATOR LAMP.

NG → Repair or replace combination meter.

OK

B

CHECK NATS IMM FUNCTION.
 1. Connect NATS IMM connector.
 2. Disconnect combination meter connector.
 3. Check continuity between NATS IMM terminal 6 and ground.
Continuity should exist intermittently.

NG → NATS IMM is malfunctioning. Replace IMM.

Perform initialization with CONSULT-II.
 For the operation of initialization, refer to “CONSULT-II operation manual NATS”.

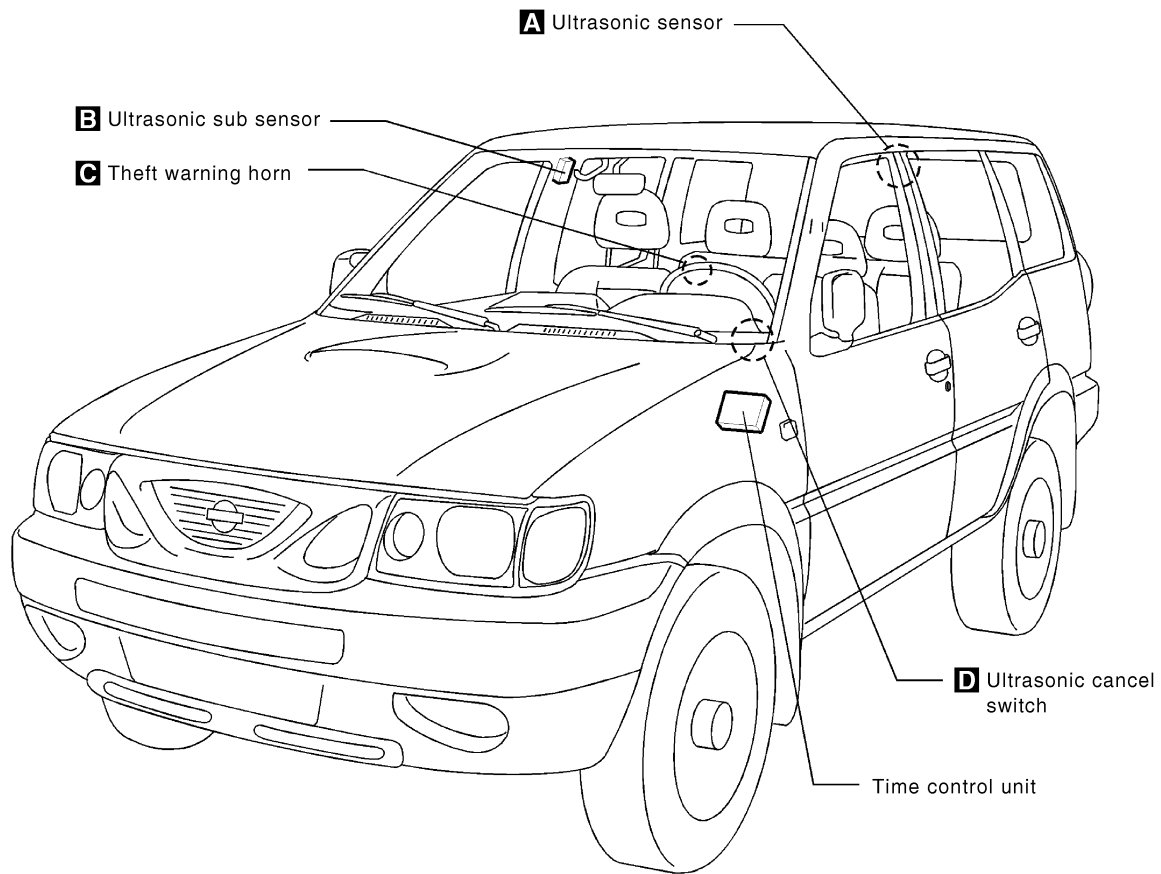
OK

Check harness for open or short between security indicator and NATS IMM.

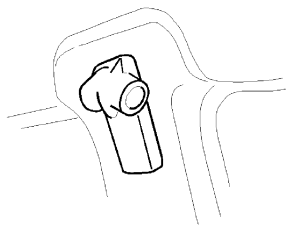
NOTE

THEFT WARNING SYSTEM

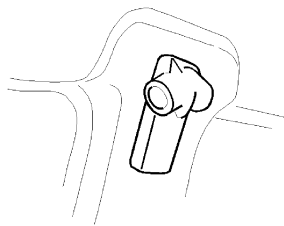
Components Parts and Harness Connector Location



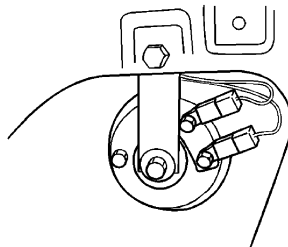
A



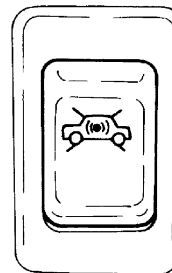
B



C



D

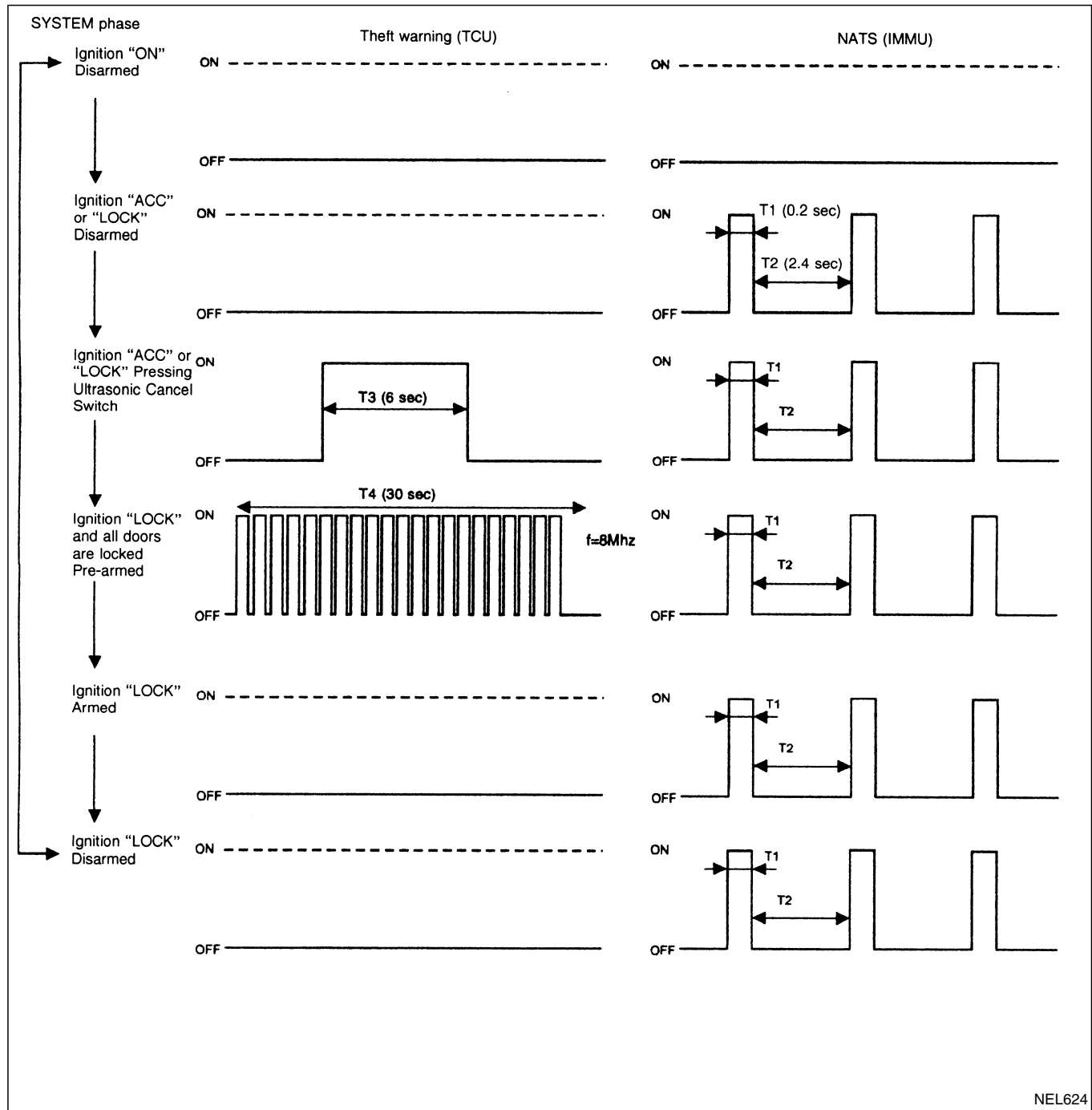


THEFT WARNING SYSTEM

System Description

OPERATION FLOW

The SECURITY indicator can be operated by both the IMMU (for NATS) and the TCU (for Theft Warning). The flow chart shows both operations.



THEFT WARNING SYSTEM

System Description (Cont'd)

SETTING THE THEFT WARNING SYSTEM

Initial condition

- (1) Close all doors.
- (2) Close hood.

Pre-armed phase and armed phase

The theft warning system turns into the “pre-armed” phase when hood and all doors are closed and locked by key or multi-remote controller. (The security indicator lamp blinks intermittently for 30 seconds.)

After about 30 seconds, the system automatically shifts into the “armed” phase (the system is set).

CANCELING THE SET THEFT WARNING SYSTEM

When the following (a) or (b) operation is performed, the armed phase is canceled.

- (a) Unlock the doors with the multi-remote controller.
- (b) Insert key in ignition key cylinder and turn it to ON. Then NATS IMMU will send a disarm signal to the time control unit.

ACTIVATING THE ALARM OPERATION OF THE THEFT WARNING SYSTEM

Make sure the system is in the armed phase. When the following operation (a) (b) (c) or (d) is performed, the system sounds the horns and flashes the hazard lamp for about 30 seconds.

- (a) Engine hood or any door is opened before unlocking door with the multi-remote controller.
- (b) A door is unlocked without using the multi-remote controller.
- (c) The ignition is switched ON without using a NATS registered key.
- (d) The ultra sonic sensing is triggered.

POWER SUPPLY AND GROUND CIRCUIT

Power is supplied at all times.

- Through 10A fuse [No. 16], located in the fuse block (J/B)]
- to combination meter terminal 27.

Power is supplied at all times

- through 10A fuse [No. 5], located in the fuse block (J/B)]
- to time control unit terminal U09.

With the ignition switch in the ON or START position, power is supplied

- through 10A fuse [No. 26], located in the fuse block (J/B)]
- to time control unit terminal U01.

Ground is supplied

- to time control unit terminal U16
- through body grounds F35 and F47.

INITIAL CONDITION TO ARM THE SYSTEM

The operation of the theft warning system is controlled by all the doors and hood.

To activate the theft warning system, the time control unit must receive signals indicating all the doors and hood are closed and the doors are locked.

When a door is open, time control unit terminal U06 or U07 receives a ground signal from each door switch.

When a door is unlocked, time control unit terminal U25, U35 or U36 receives a ground signal from each door unlock sensor.

When the hood is open, time control unit terminal U32 receives a ground signal

- from the hood switch
- through body grounds M33 and M754.

THEFT WARNING SYSTEM

System Description (Cont'd)

THEFT WARNING SYSTEM ARMING (With key or remote controller used to lock doors)

If the key is used to lock doors, time control unit terminal (U29) receives a ground signal

- from terminal (2) of the key cylinder switch
- through body grounds (B18) and (B10).

If this signal or lock signal from remote controller is received by the time control unit, the theft warning system will arm automatically.

When arming the theft warning system, time control unit terminal (U18) supplies ground intermittently to terminal (2) of the security indicator lamp. The security lamp will blink intermittently for approximately 30 seconds (and then blink every 2.6 seconds, due to NATS).

Now the theft warning system is in armed phase.

THEFT WARNING SYSTEM ALARM OPERATION

The theft warning system is triggered by

- opening a door
- opening back door
- opening the hood
- unlocking door without using the multi-remote controller
- switching the ignition ON without a NATS registered key
- triggering the ultra sonic sensors

Once the theft warning system is in armed phase, if the time control unit receives a signal at terminal (U25), (U35), (U36) (door unlock sensor), (U06), (U07) (door switch), (U32) (hood switch), or (U17) (ultra sonic sensor) the theft warning system will be triggered. The hazard lamps flash and the horn sounds intermittently.

Power is supplied at all times

- through 10A fuse [No. 16], located in the fuse block (J/B)]
- to theft warning relay.

If the theft warning system is triggered, ground is supplied

- from terminal (U43) of the time control unit
- to theft warning relay.

The hazard lamps flash and the horn sounds intermittently.

The alarm automatically turns off 30 seconds but will reactivate if the vehicle is tampered with again, or if the initial cause remains present.

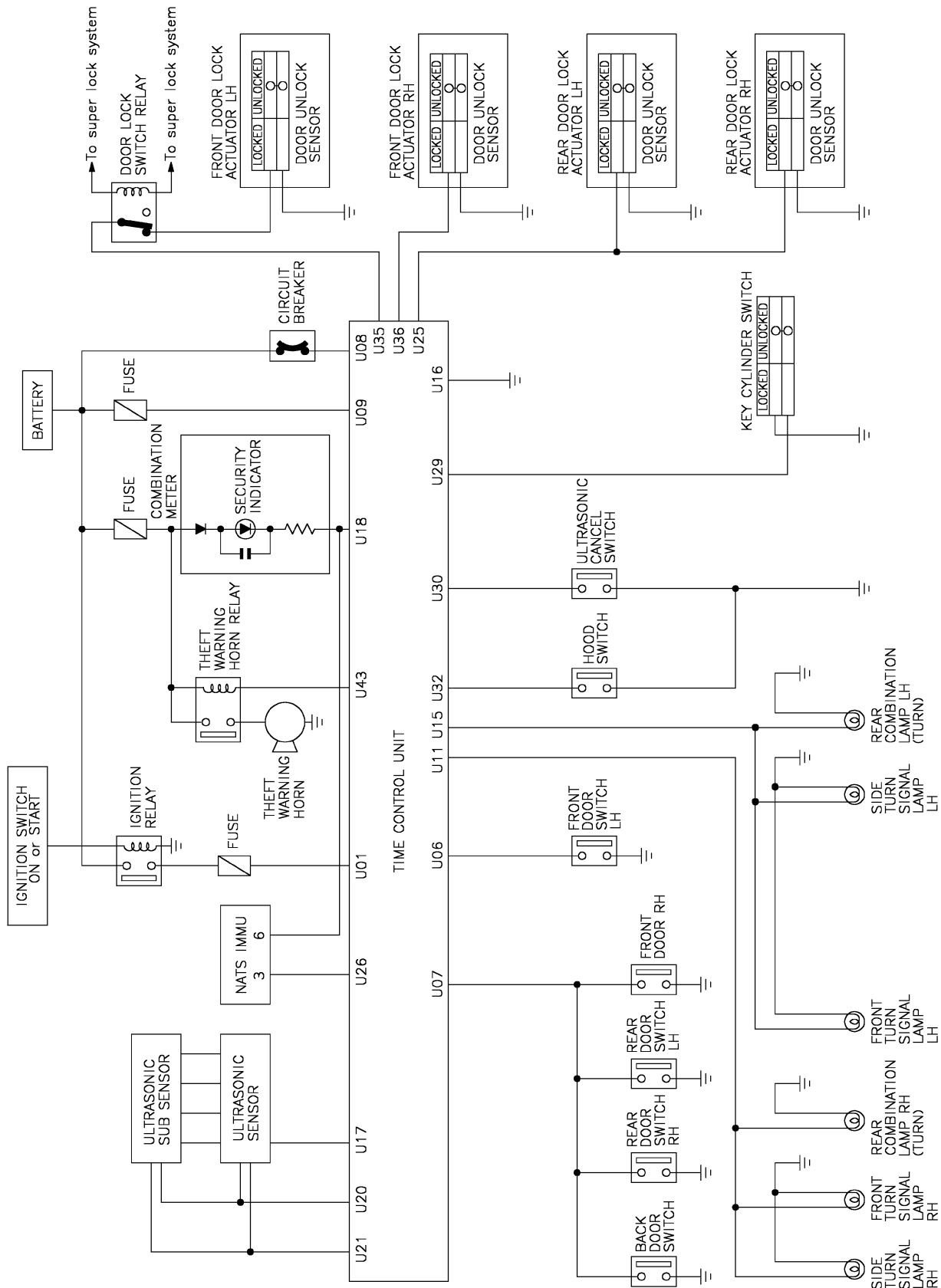
THEFT WARNING SYSTEM ALARM DISARMING

The theft warning system alarm operation can be deactivated by either unlocking the vehicle with the remote controller, or turning the ignition to the "ON" position with a registered NATS key.

THEFT WARNING SYSTEM

Theft Warning System/Schematic

FOR RUSSIA



YEL711E

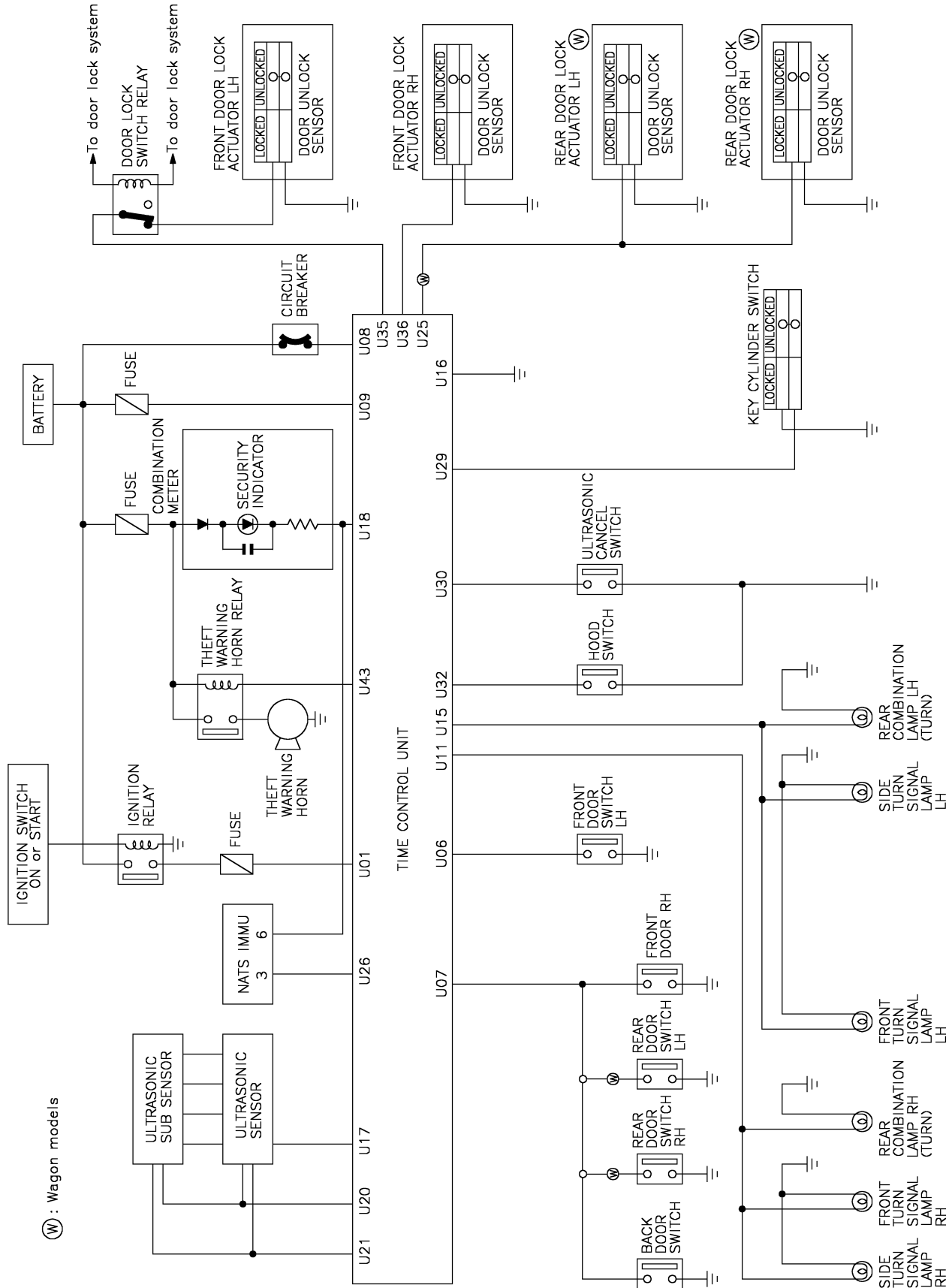
EL-13080

<http://vnx.su/>

THEFT WARNING SYSTEM

Theft Warning System/Schematic (Cont'd)

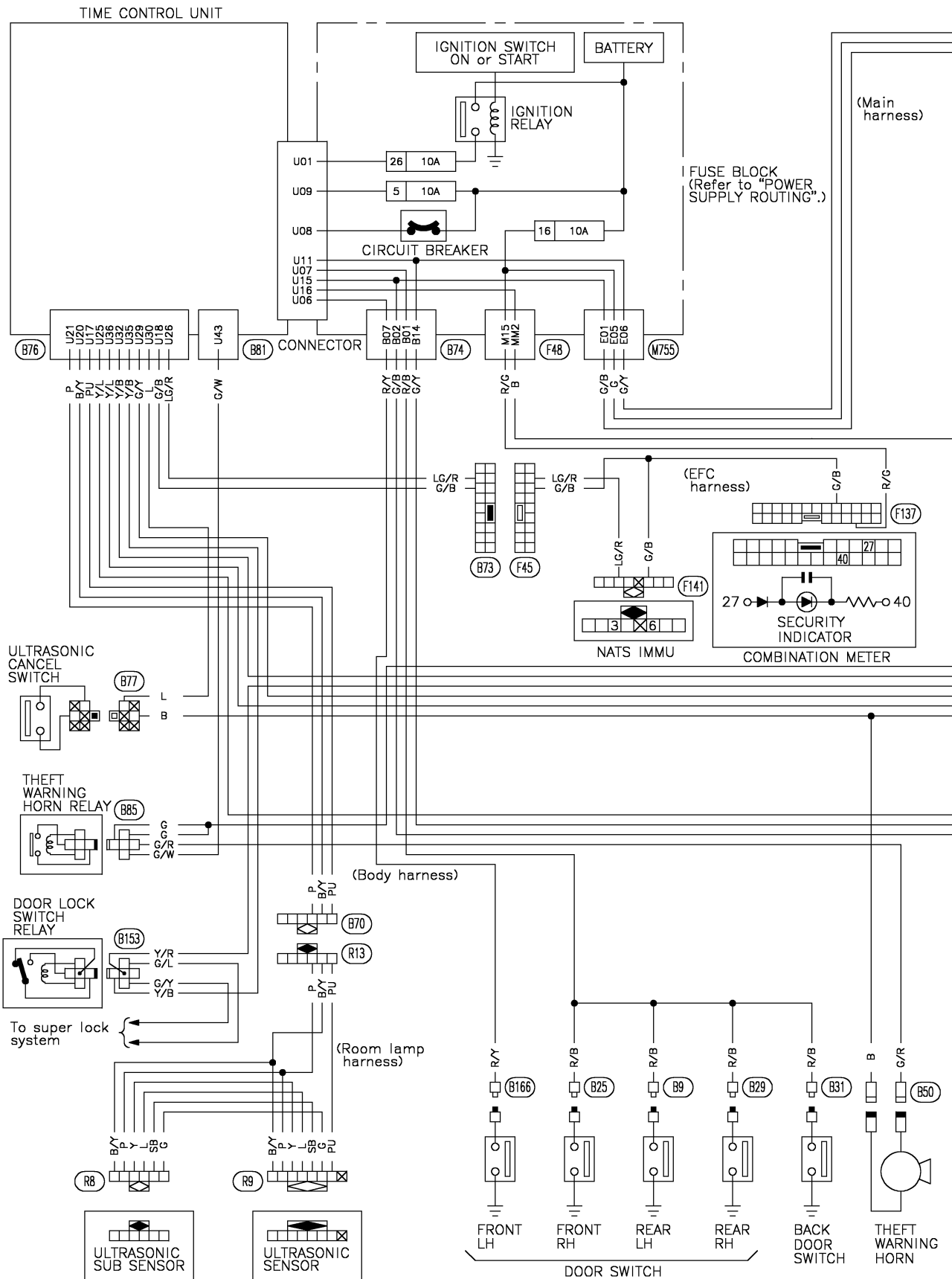
EXCEPT FOR RUSSIA



THEFT WARNING SYSTEM

Theft Warning System/Wiring Diagram

FOR RUSSIA

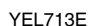


YEL855E

EL-13082

<http://vnx.su/>

Theft Warning System/Wiring Diagram (Cont'd)



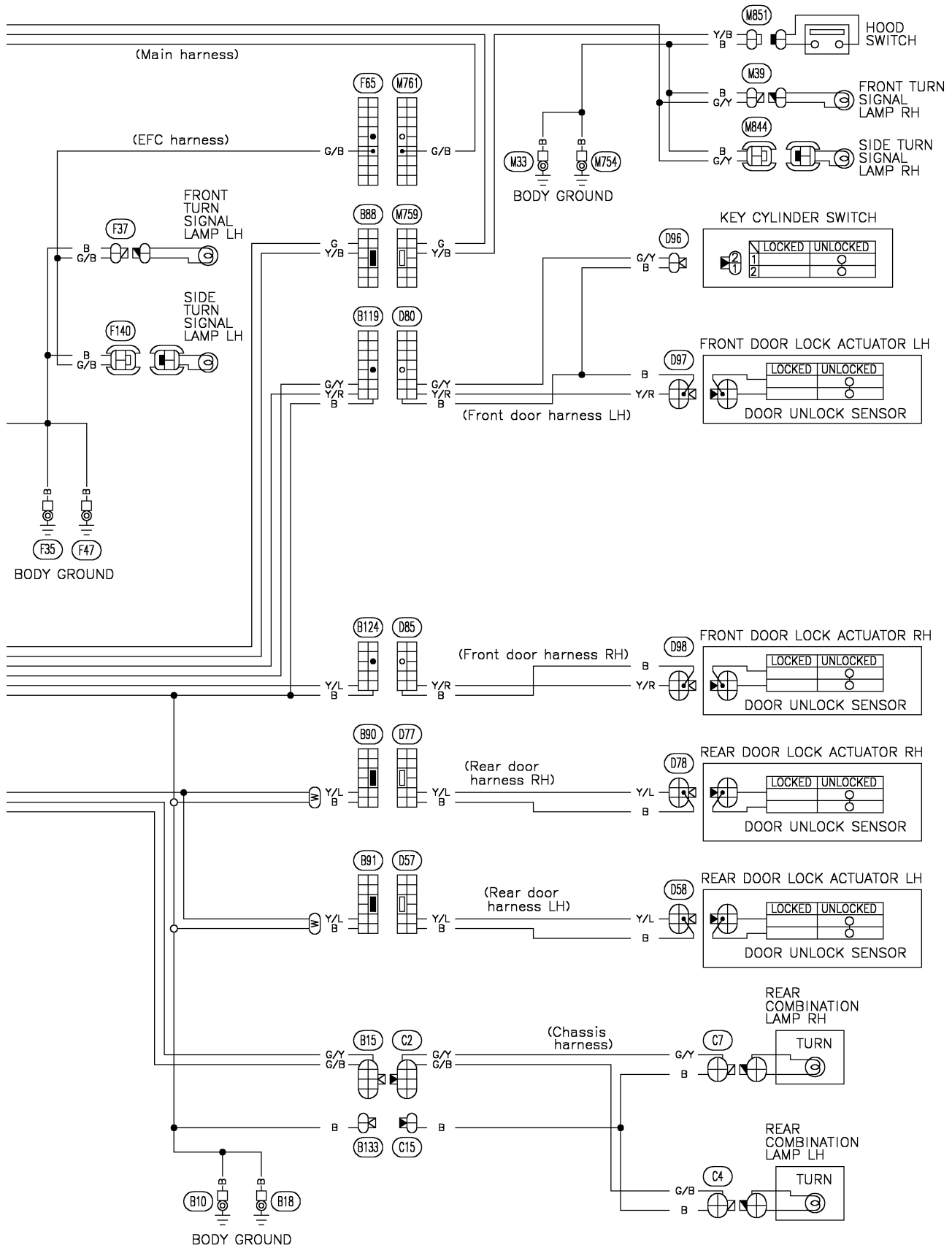
<http://vnx.su/>

Theft Warning System/Wiring Diagram (Cont'd)

[illegible]

THEFT WARNING SYSTEM

Theft Warning System/Wiring Diagram (Cont'd)

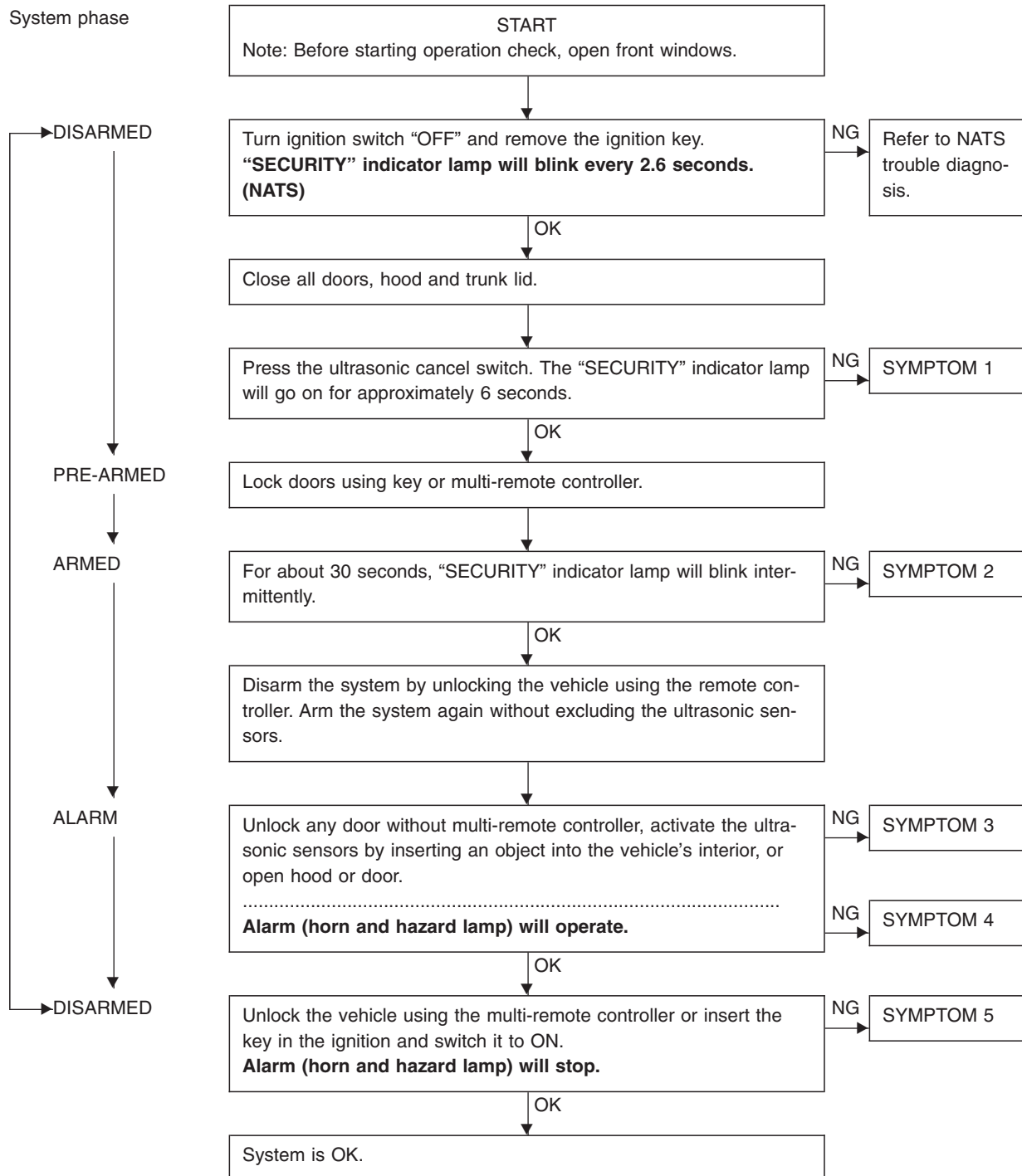


THEFT WARNING SYSTEM

Trouble Diagnoses

PRELIMINARY CHECK

The system operation is canceled by turning the ignition switch to "ON" at any step between START and ARMED in the following flow chart.



After performing preliminary check, go to symptom chart on next page.

THEFT WARNING SYSTEM

Trouble Diagnoses (Cont'd)

Before starting trouble diagnoses below, perform preliminary check on previous page.

Symptom numbers in the symptom chart correspond with those of Preliminary check.

SYMPTOM CHART

Procedure			—	Power supply and ground circuit check		Diagnostic procedure						—	—
REFERENCE PAGE			EL-13086	EL-13088	EL-13088	EL-13089	EL-13091	EL-13092	EL-13093	EL-13094	EL-13095	BF Section	EL-13062
SYMPTOM			Preliminary check	Power supply circuit check	Ground circuit check	Diagnostic Procedure 1 (Door, hood and back door switch check)	Diagnostic Procedure 2 (Security indicator lamp check)	Diagnostic Procedure 3 (Door unlock sensor check)	Diagnostic Procedure 4 (Door key cylinder switch check)	Diagnostic procedure 5 (Theft warning horn alarm check)	Diagnostic procedure 6 (Hazard lamp alarm check)	Check “MULTI-REMOTE CONTROL” system.	Check “NATS (Nissan Anti-Theft system)”.
1	Security indicator does not turn “ON” or blinking.		X	X	X		X						
2	Theft warning system cannot be set by...	All items	X	X	X	X		X					
		Door out side key	X	X	X				X				
		Multi-remote control	X	X	X							X	
3	*1 Theft warning system does not alarm when...	Any door is opened.	X	X	X	X							
		Any door is unlocked without using key or multi-remote controller.	X	X	X			X					
4	Theft warning alarm does not activate.	All function	X	X	X	X		X					
		Horn alarm	X	X	X					X			
		Hazard lamp	X	X	X						X		
5	Theft warning system cannot be canceled by...	Turning the ignition ON *2	X	X	X								X
		Multi-remote controller	X	X	X							X	

X: Applicable

*1: Make sure the system is in the armed phase.

*2: Make sure the key is NATS registered.

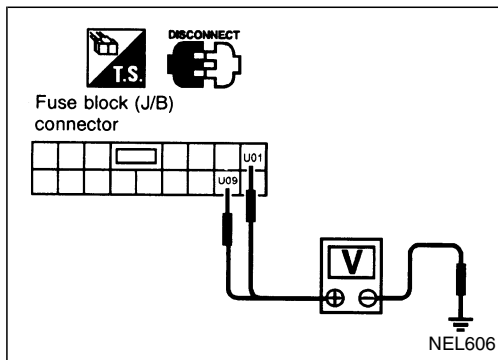
THEFT WARNING SYSTEM

Trouble Diagnoses (Cont'd)

POWER SUPPLY AND GROUND CIRCUIT CHECK

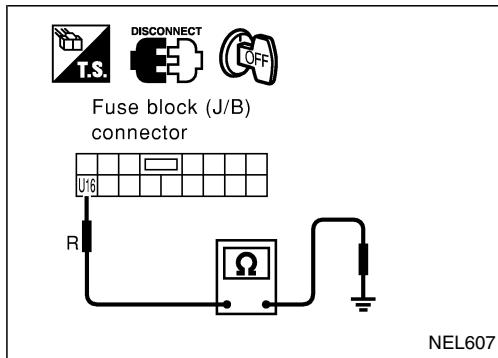
Main power supply circuit check

Terminals		Ignition switch position		
⊕	⊖	OFF	ACC	ON
U09	Ground	Battery voltage	Battery voltage	Battery voltage
U01	Ground	0V	0V	Battery voltage



Ground circuit check

Terminals	Continuity
U16 - Ground	Yes

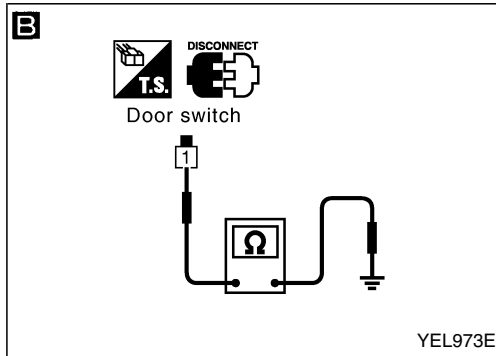
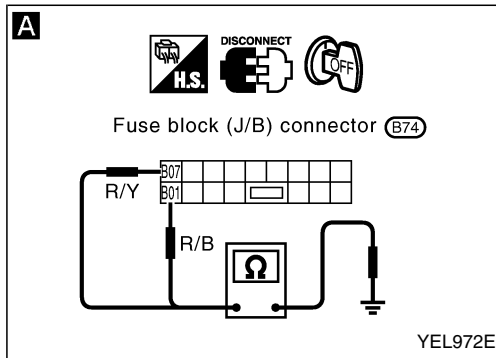


THEFT WARNING SYSTEM

Trouble Diagnoses (Cont'd)

DIAGNOSTIC PROCEDURE 1-(1)

(Door switch check)



A

CHECK DOOR SWITCH INPUT SIGNAL.
Remove time control unit from fuse block.
Note: Junction block (J/B) is very fragile. TCU should be removed carefully to avoid breaking the locking bars.
Check continuity between fuse block (J/B) and ground.

	Terminals	Condition	Continuity
Driver side door	(B07)	Opened	Yes
		Closed	No
Other door	(B01)	Opened	Yes
		Closed	No

OK

Door switch is OK.

NG

B

CHECK DOOR SWITCH.
1. Disconnect door switch connector.
2. Check continuity between door switch terminals.

Terminals	Condition	Continuity
① - ground	Closed	No
	Open	Yes

NG

Replace door switch.

OK

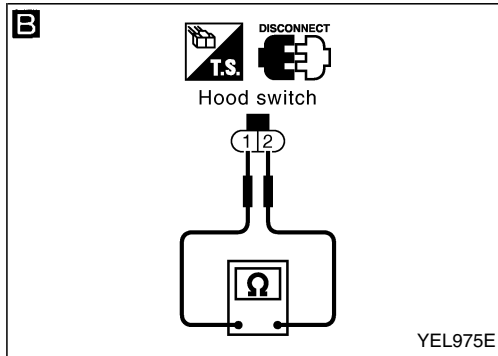
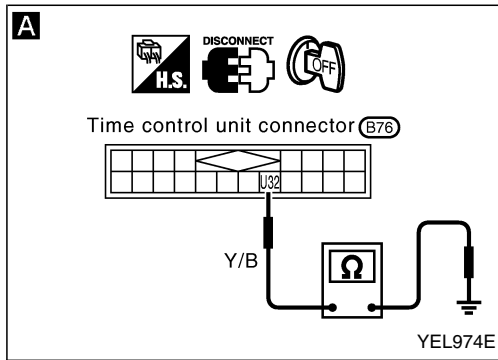
Check the following.

- Door switch ground condition
- Harness for open or short between control unit and door switch

THEFT WARNING SYSTEM

Trouble Diagnoses (Cont'd)

DIAGNOSTIC PROCEDURE 1-(2) (Hood switch check)



A

CHECK HOOD SWITCH INPUT SIGNAL.
Remove time control unit from fuse block.
Note: Junction block (J/B) is very fragile. TCU should be removed carefully to avoid breaking the locking bars.
Check continuity between control unit terminal (U32) and ground.

OK

Hood switch is OK.

Condition	Continuity
Hood is open.	Yes
Hood is closed.	No

Refer to wiring diagram.

NG

B

CHECK HOOD SWITCH.
1. Disconnect hood switch connector.
2. Check continuity between hood switch terminals.

NG

Replace hood switch.

Terminals	Condition	Continuity
① - ②	Pushed	No
	Released	Yes

OK

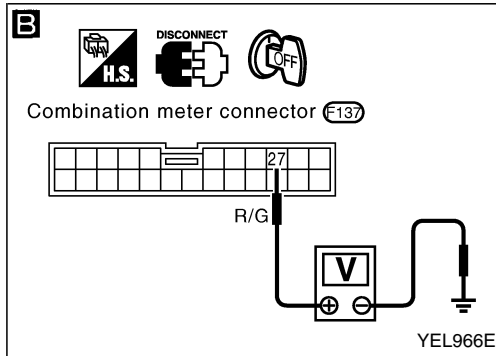
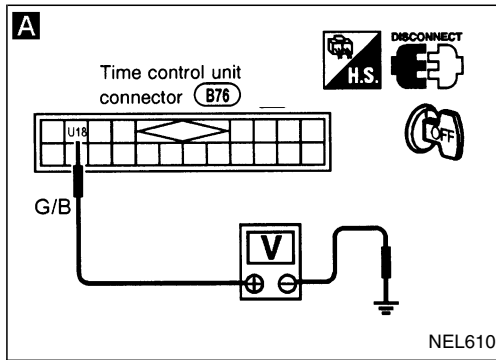
Check the following.

- Hood switch ground circuit
- Harness for open or short between control unit and hood switch

THEFT WARNING SYSTEM

Trouble Diagnoses (Cont'd)

DIAGNOSTIC PROCEDURE 2 (Security indicator check)



A

CHECK INDICATOR LAMP OUTPUT SIGNAL.

1. Remove time control unit from fuse block.
Note: Junction block (J/B) is very fragile. TCU should be removed carefully to avoid breaking the locking bars.
2. Check voltage between time control unit terminal (U18) and ground.
Battery voltage should exist.
Refer to wiring diagram.

OK

Security indicator lamp is OK.

NG

CHECK INDICATOR LAMP.

NG

Replace indicator lamp.

OK

B

CHECK POWER SUPPLY CIRCUIT FOR INDICATOR.

1. Disconnect combination meter connector.
2. Check voltage between combination meter terminal (27) and ground.
Battery voltage should exist.

NG

Check the following:

- 10A fuse [No. 16], located in the fuse block (J/B)]
- Harness for open or short between combination meter and fuse

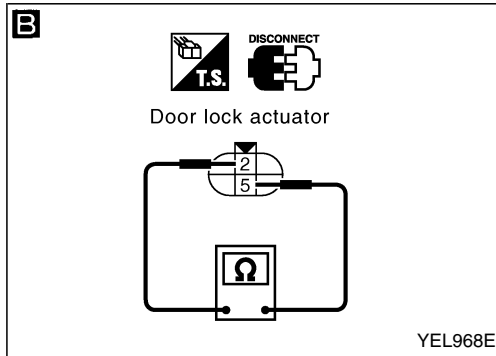
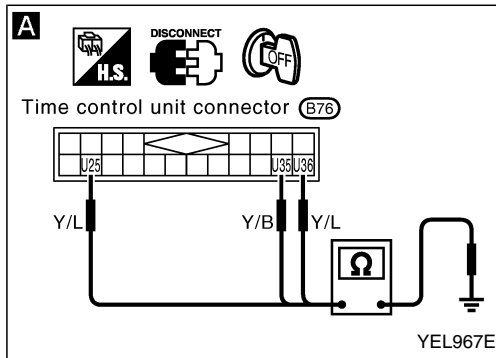
OK

Check harness for open or short between combination meter and control unit.

THEFT WARNING SYSTEM

Trouble Diagnoses (Cont'd)

DIAGNOSTIC PROCEDURE 3 (Door unlock sensor check)



A

CHECK DOOR UNLOCK SENSOR INPUT SIGNAL.

Remove time control unit from fuse block.

Note: Junction block (J/B) is very fragile. TCU should be removed carefully to avoid breaking the locking bars.

Check continuity between time control unit terminals (25), (35), (36) and ground.

OK

Door unlock sensor is OK.

	Terminals		Condition	Continuity
	⊕	⊖		
Driver side door	U35	Ground	Locked	No
			Unlocked	Yes
Passenger side door	U36	Ground	Locked	No
			Unlocked	Yes
Rear door	U25	Ground	Locked	No
			Unlocked	Yes

Refer to wiring diagram.

NG

B

CHECK DOOR UNLOCK SENSOR.

1. Disconnect door unlock sensor connector.
2. Check continuity between door unlock sensor terminals.

Terminals	Condition	Continuity
② - ⑤	Locked	No
	Unlocked	Yes

NG

Replace door unlock sensor.

OK

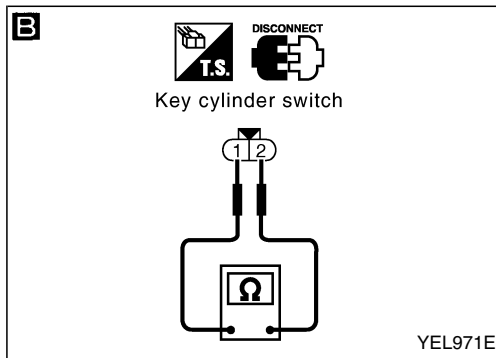
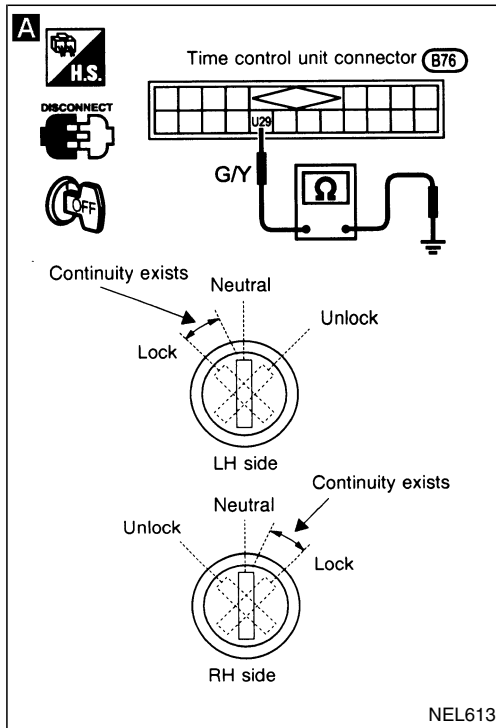
Check the following:

- Door unlock sensor ground circuit
- Harness for open or short between control unit and door unlock sensor
- Door lock switch relay

THEFT WARNING SYSTEM

Trouble Diagnoses (Cont'd)

DIAGNOSTIC PROCEDURE 4 (Door key cylinder switch check)



A

CHECK DOOR KEY CYLINDER SWITCH INPUT SIGNAL (LOCK SIGNAL).
Remove time control unit from fuse block.

Note: Junction block (J/B) is very fragile. TCU should be removed carefully to avoid breaking the locking bars.
Check continuity between time control unit connector terminal (U29) and ground.

Key cylinder switch operation	Continuity
Between neutral and lock	Yes
Unlock/neutral	No

OK

Door key cylinder switch is OK.

NG

B

CHECK DOOR KEY CYLINDER SWITCH.

1. Disconnect door key cylinder switch connector.
2. Check continuity between door key cylinder switch terminals.

Terminals	Key position	Continuity
① - ②	Neutral	No
	Between neutral and lock	Yes
	Unlock/neutral	No
	Full stroke (Lock)	No

NG

Replace key cylinder switch.

OK

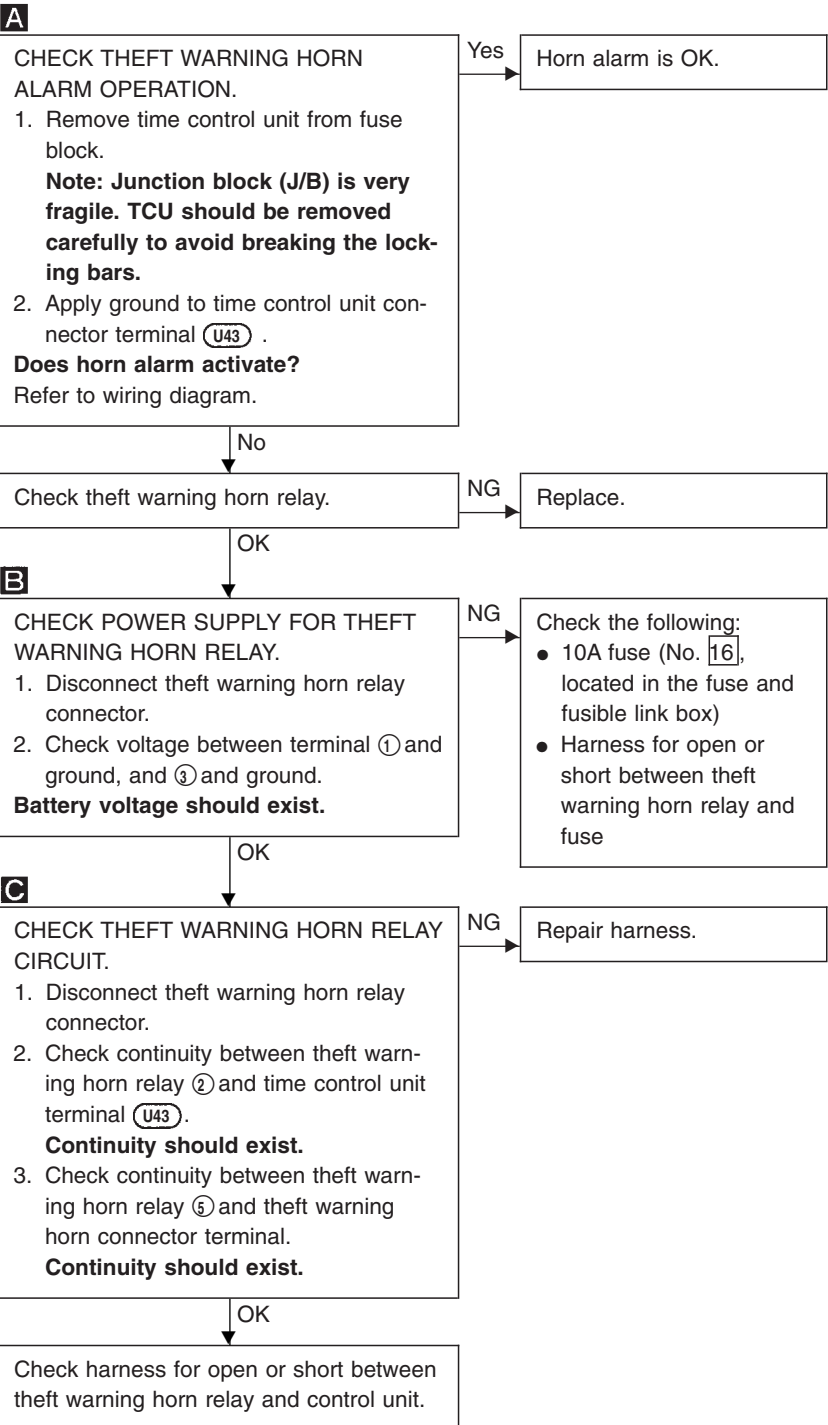
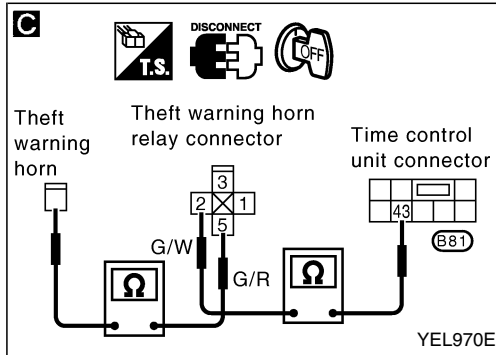
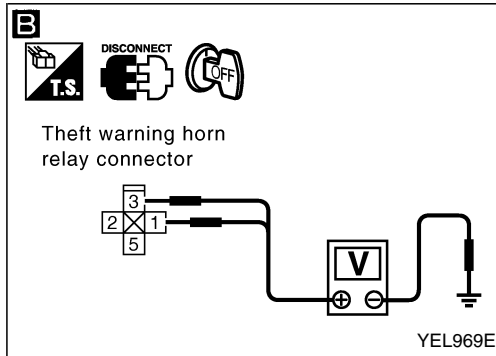
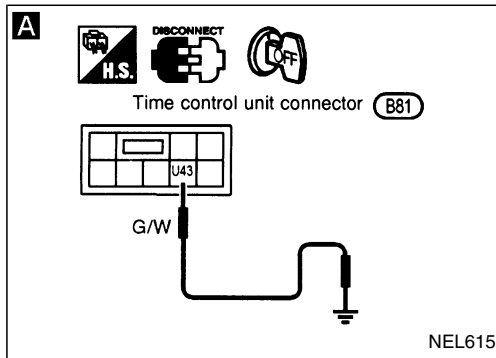
Check the following:

- Harness connectors between key cylinder switch and time control unit
- Door key cylinder switch ground circuit
- Harness for open or short-circuit between super lock control unit and door key cylinder.

THEFT WARNING SYSTEM

Trouble Diagnoses (Cont'd)

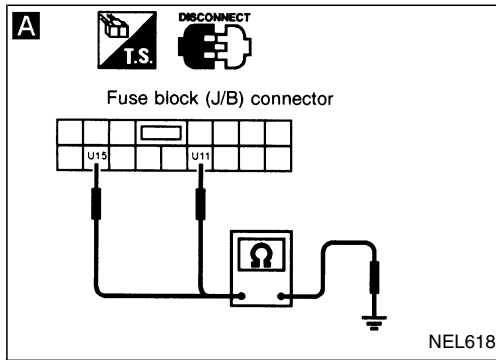
DIAGNOSTIC PROCEDURE 5 (Theft warning horn alarm check)



THEFT WARNING SYSTEM

Trouble Diagnoses (Cont'd)

DIAGNOSTIC PROCEDURE 6 (Hazard lamp alarm check)



Push hazard switch to ON.
Check hazard lamp operation.

OK

Replace time control unit.

NG

A

1. Remove time control unit from fuse block (J/B).
Note: Junction block (J/B) is very fragile. TCU should be removed carefully to avoid breaking the locking bars.

2. Check harness continuity between control unit terminals (U11) and (U15) and ground.
Continuity should exist.

NG

Check the following.

- Harness connectors
- Fuse block (J/B)
- Turn signal lamps
- Harness between time control unit and turn signal lamps, turn signal lamps and ground.

OK

Replace time control unit.

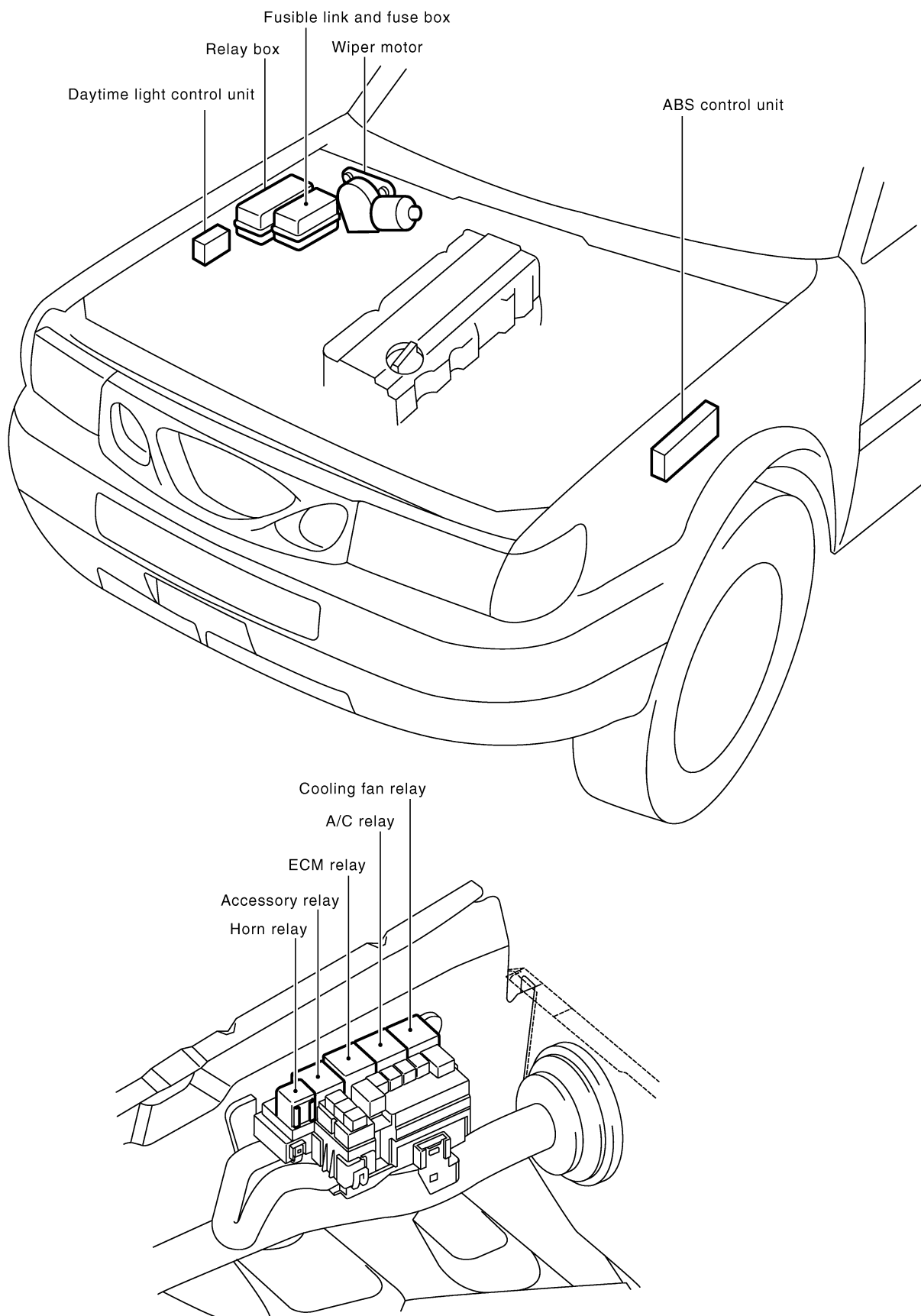
THEFT WARNING SYSTEM

NOTE

LOCATION OF ELECTRICAL UNITS

Engine Compartment

FOR RUSSIA



YEL629E

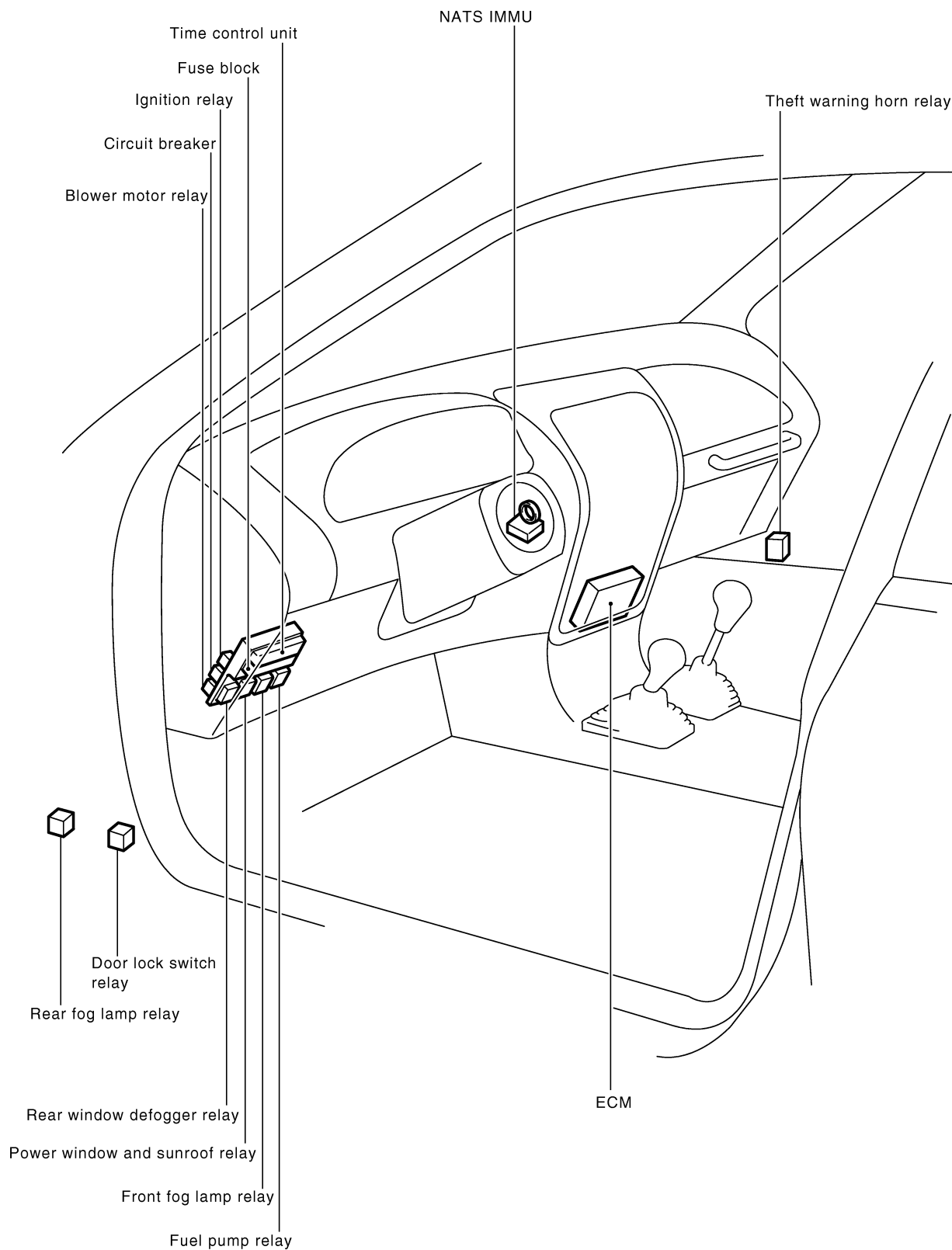
EL-13097

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LOCATION OF ELECTRICAL UNITS

Passenger Compartment

FOR RUSSIA



YEL630E

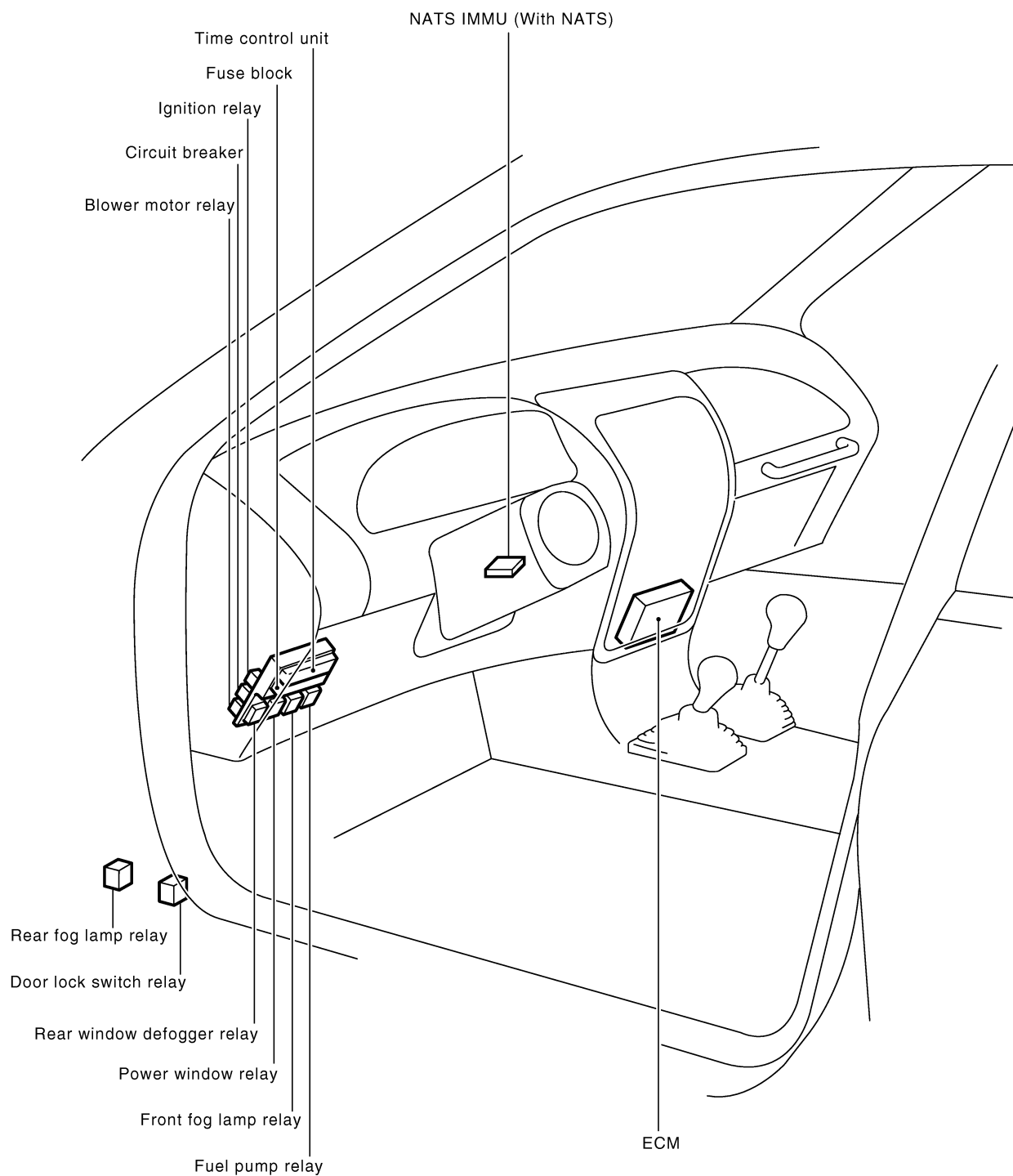
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LOCATION OF ELECTRICAL UNITS

Passenger Compartment (Cont'd)

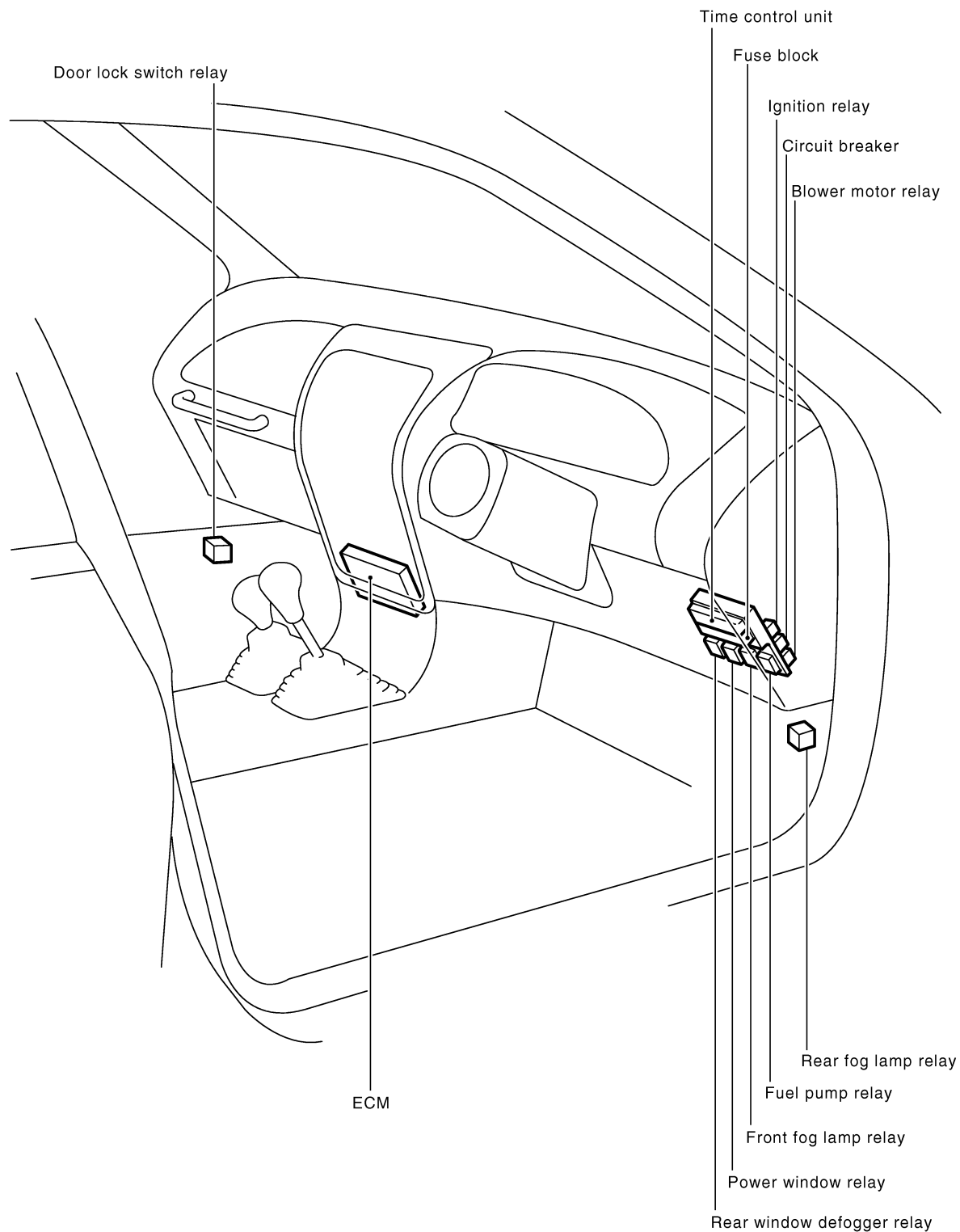
EXCEPT FOR RUSSIA (LHD MODELS)



LOCATION OF ELECTRICAL UNITS

Passenger Compartment (Cont'd)

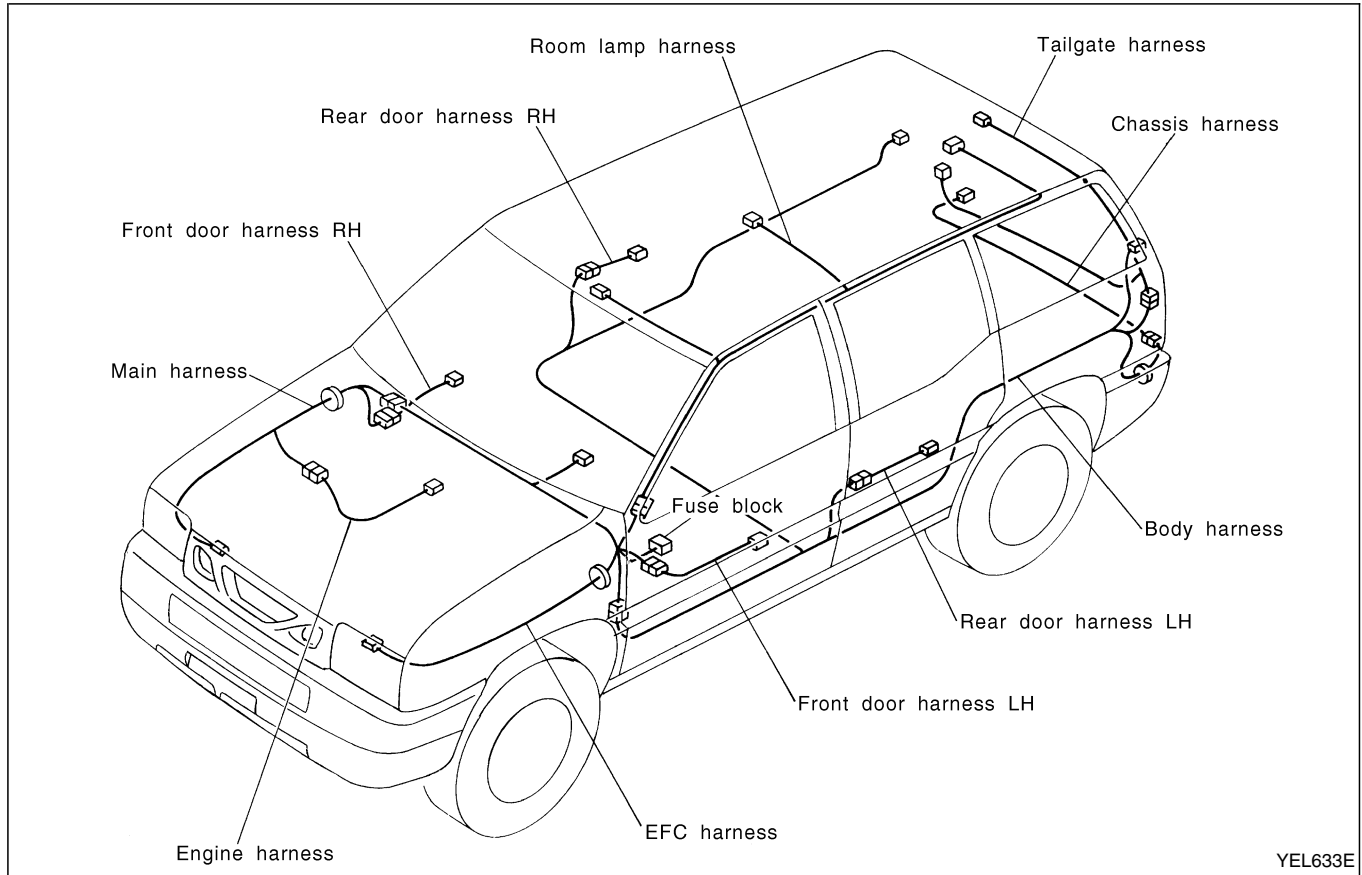
EXCEPT FOR RUSSIA (RHD MODELS)



HARNESS LAYOUT

Outline

FOR RUSSIA



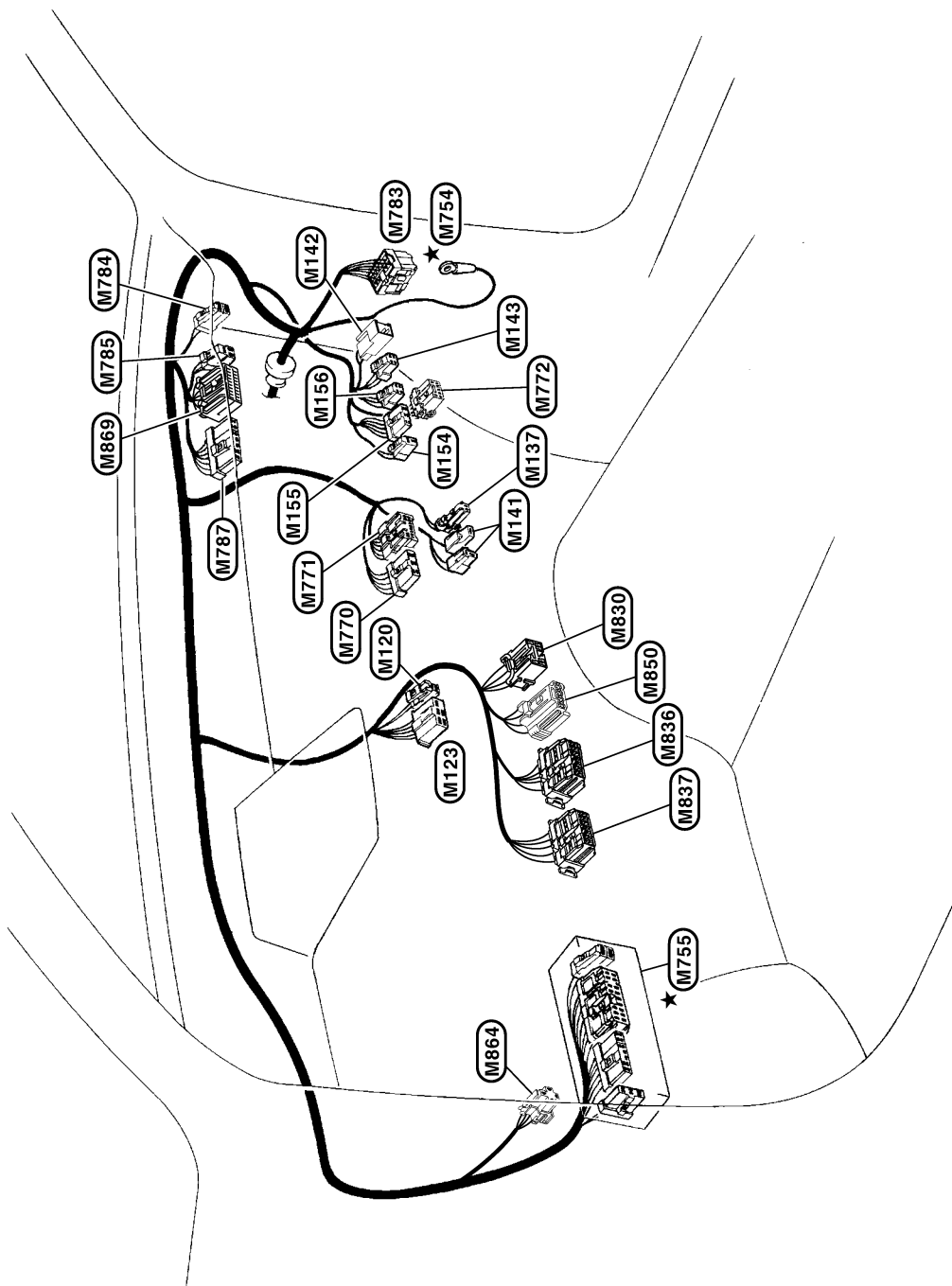
EL-13101

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HARNESS LAYOUT

Main Harness/For Russia

PASSENGER COMPARTMENT



HARNESS LAYOUT

Main Harness/For Russia (Cont'd)

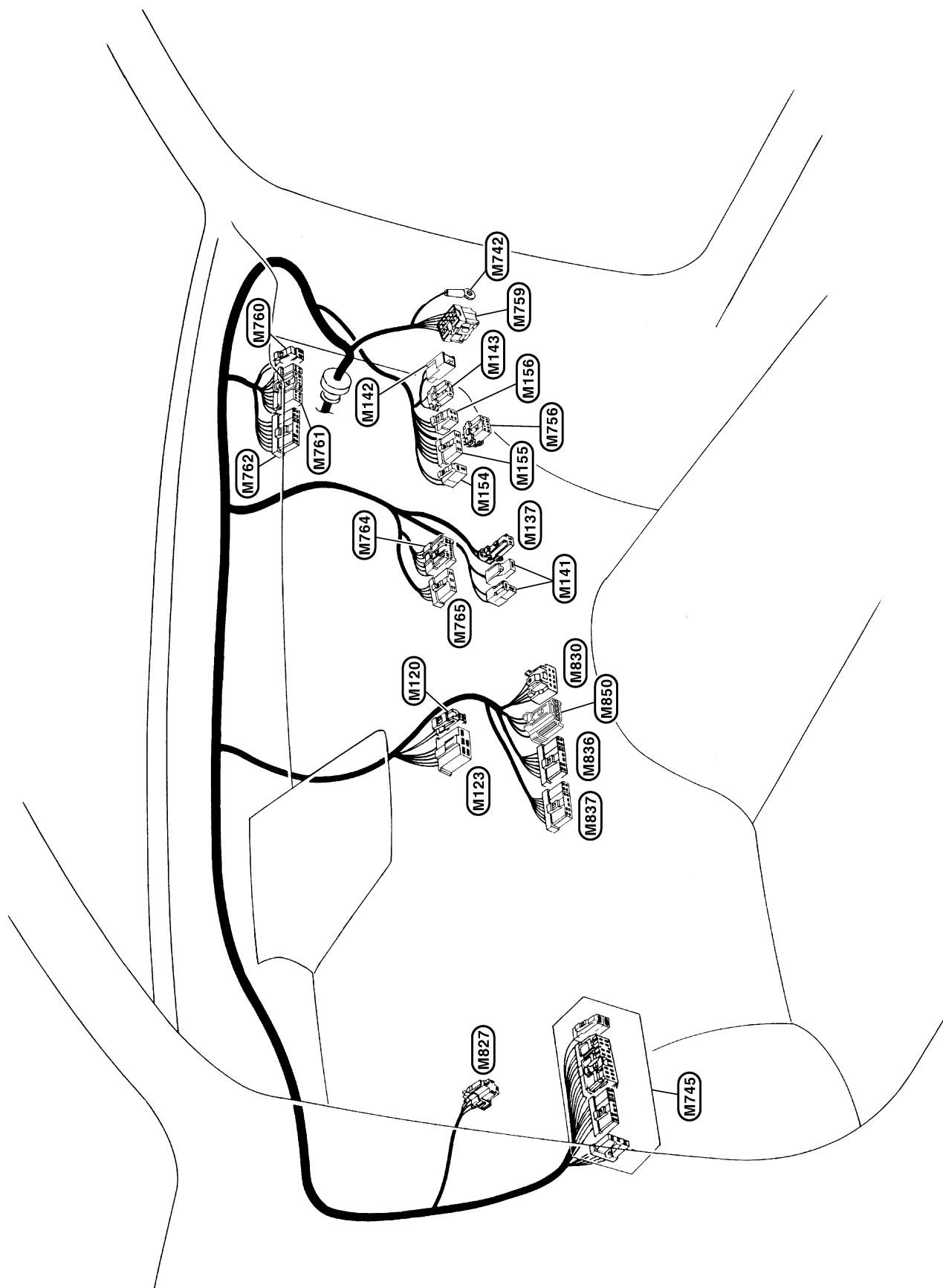
(M120)	: Key switch
(M123)	: Ignition switch
(M137)	: Ashtray illumination
(M141)	: Cigarette lighter
(M142)	: Glove box lamp
(M143)	: Glove box lamp switch
(M154)	: Blower motor
(M155)	: Resistor
(M156)	: Thermo control amplifier
★ (M754)	: Body ground
★ (M755)	: Fuse block
(M770)	: Fan switch (A/C control panel)
(M771)	: A/C control panel
(M772)	: Intake door motor
(M783)	: To (B88)
(M784)	: To (F68)
(M785)	: To (F67)
(M787)	: To (F66)
(M830)	: Spiral cable
(M836)	: Lighting switch
(M837)	: Wiper switch
(M850)	: Fog lamp switch
(M864)	: Rear fog lamp relay
(M869)	: To (F178)

★ : Be sure to connect and lock the connectors securely after repair work.
Failure to do so may cause the on-board diagnostic system to light up the MIL as an open circuit detection.

HARNESS LAYOUT

Main Harness/Except for Russia

PASSENGER COMPARTMENT — LHD MODELS



YEL635E

EL-13104

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HARNESS LAYOUT

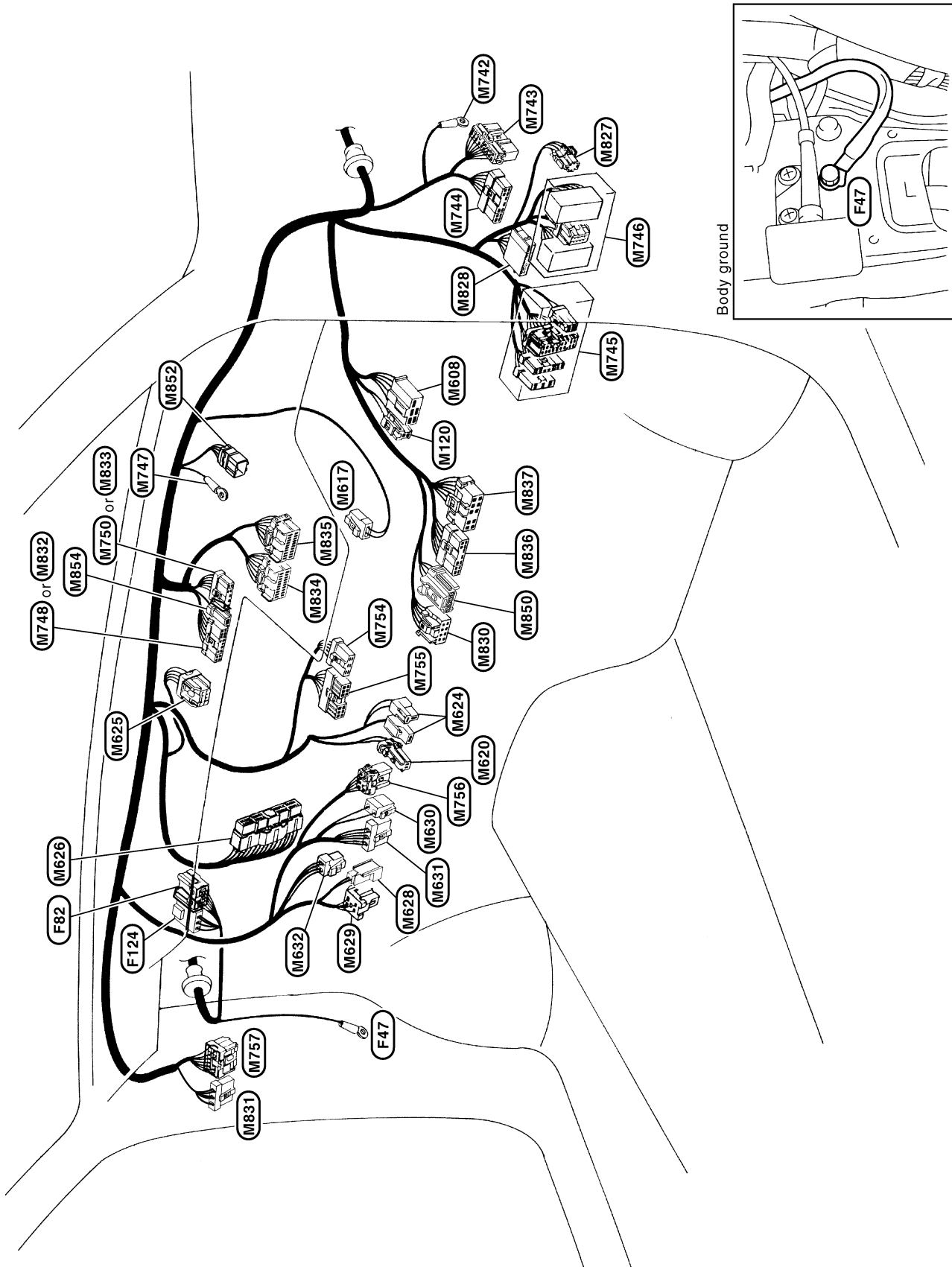
Main Harness/Except for Russia (Cont'd)

(M120)	: Key switch
(M123)	: Ignition switch
(M137)	: Ashtray illumination
(M141)	: Cigarette lighter
(M142)	: Glove box lamp
(M143)	: Glove box lamp switch
(M154)	: Blower motor
(M155)	: Resistor
(M156)	: Thermo control amplifier
(M742)	: Body ground
(M745)	: Fuse block
(M756)	: Intake door motor
(M759)	: To (B88)
(M760)	: To (F67)
(M761)	: To (F65)
(M762)	: To (F66)
(M764)	: A/C control panel
(M765)	: Fan switch (A/C control panel)
(M827)	: Rear fog lamp relay
(M830)	: Spiral cable
(M836)	: Lighting switch
(M837)	: Wiper switch
(M850)	: Fog lamp switch

HARNESS LAYOUT

Main Harness/Except for Russia (Cont'd)

PASSENGER COMPARTMENT — RHD MODELS



HARNESS LAYOUT

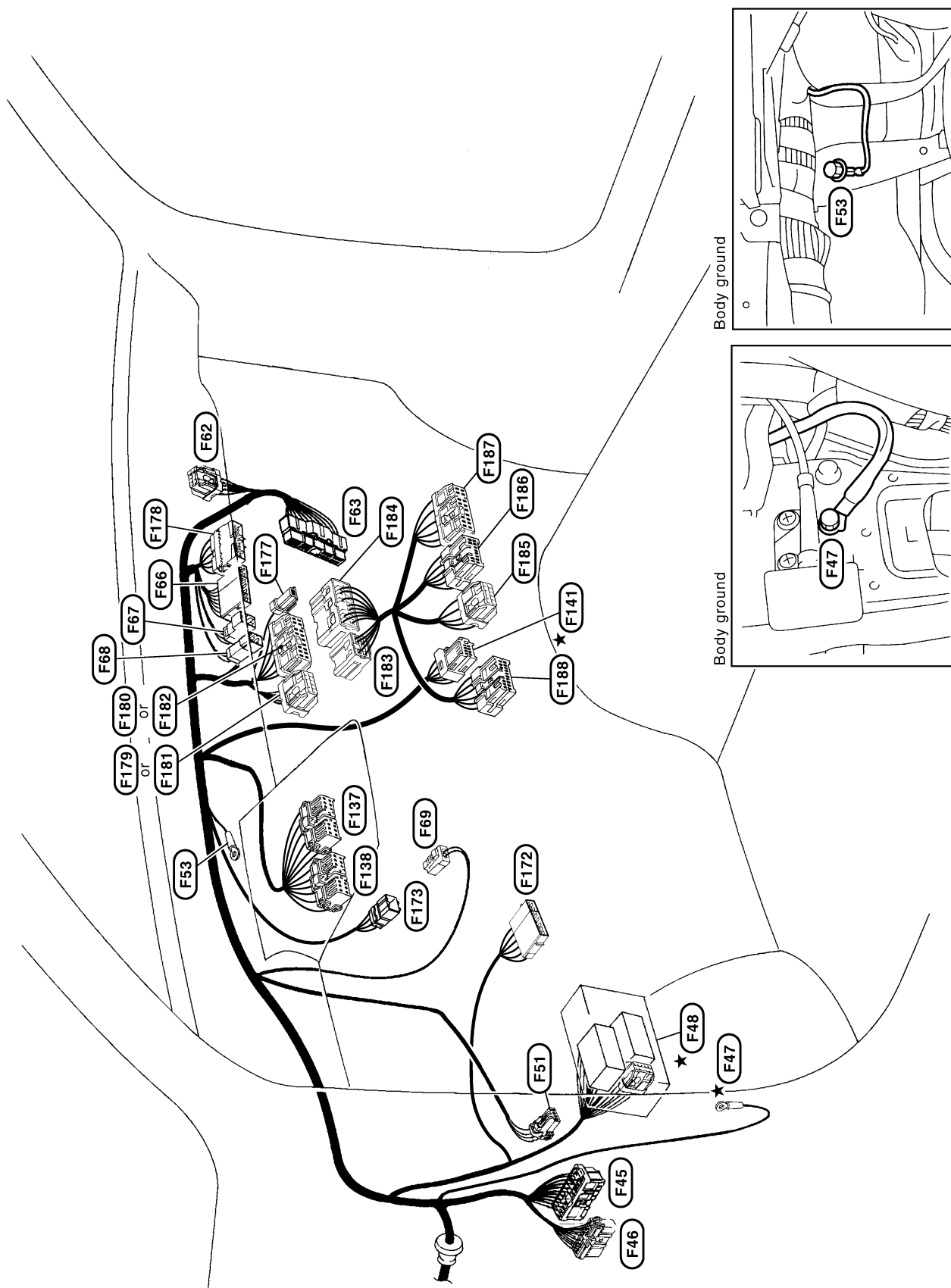
Main Harness/Except for Russia (Cont'd)

EFC harness

(F47) : Body ground
(F82) : To (M757)
(F124) : To (M831)

Main harness

(M120) : Key switch
(M608) : Ignition switch
(M617) : Stop lamp switch
(M620) : Ashtray illumination
(M624) : Cigarette lighter
(M625) : Joint connector
(M626) : ECM
(M628) : Glove box lamp
(M629) : Glove box lamp switch
(M630) : Blower motor
(M631) : Resistor
(M632) : Thermo control amplifier
(M742) : Body ground
(M743) : To (B86)
(M744) : To (B87)
(M745) : Fuse block
(M746) : Fuse block
(M747) : Audio ground
(M748) : Audio unit (Without CD autochanger)
(M750) : Hazard switch (Without CD autochanger)
(M754) : Fan switch (A/C control panel)
(M755) : A/C control panel
(M756) : Intake door motor
(M757) : To (F82)
(M827) : Rear fog lamp relay
(M828) : Data link connector
(M830) : Spiral cable
(M831) : To (F124)
(M832) : To (M838) (With CD autochanger)
(M833) : To (M839) (With CD autochanger)
(M834) : Combination meter
(M835) : Combination meter
(M836) : Lighting switch
(M837) : Wiper switch
(M850) : Fog lamp switch
(M852) : To (B140)
(M854) : Navigation



HARNESS LAYOUT

EFC Harness/For Russia (Cont'd)

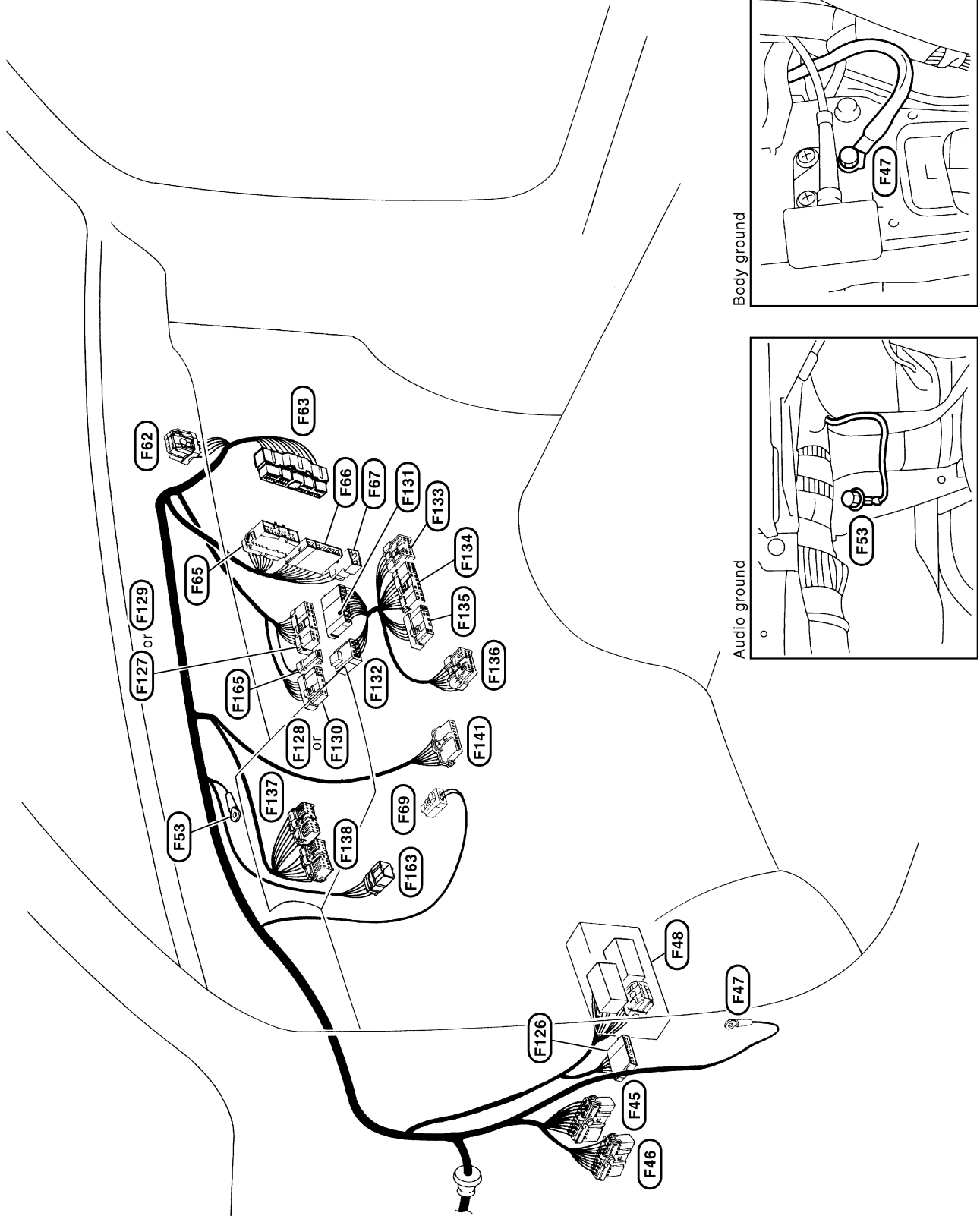
EFC harness	
F45	: To B73
F46	: To B72
★ F47	: Body ground
★ F48	: Fuse block
F51	: Headlamp aiming switch
F53	: Audio ground
F62	: Joint connector
F63	: ECM
F66	: To M787
F67	: To M785
F68	: To M784
F69	: Stop lamp switch
F137	: Combination meter
F138	: Combination meter
★ F141	: NATS IMMU
F172	: Data link connector
F173	: To B164
F177	: Navigation
F178	: To M869
F179	: Audio & Hazard switch (Without CD autochanger)
F180	: Audio unit (Without CD autochanger)
F181	: To F183 (With CD autochanger)
F182	: To F184 (With CD autochanger)
Audio sub harness	
F183	: To F181
F184	: To F182
F185	: Audio & Hazard switch
F186	: Audio unit
F187	: Audio unit
F188	: CD autochanger
(With CD autochanger)	

★ : Be sure to connect and lock the connectors securely after repair work.
Failure to do so may cause the on-board diagnostic system to light up the MIL as an open circuit detection.

HARNESS LAYOUT

EFC Harness/Except for Russia

PASSENGER COMPARTMENT — LHD MODELS



HARNESS LAYOUT

EFC Harness/Except for Russia (Cont'd)

EFC harness

F45	:	To	B73
F46	:	To	B72
F47	:	Body ground	
F48	:	Fuse block	
F53	:	Audio ground	
F62	:	Joint connector	
F63	:	ECM	
F65	:	To	M761
F66	:	To	M762
F67	:	To	M760
F69	:	Stop lamp switch	
F126	:	Data link connector	
F127	:	Audio unit (Without CD autochanger)	
F128	:	Hazard switch (Without CD autochanger)	
F129	:	To	F131 (With CD autochanger)
F130	:	To	F132 (With CD autochanger)
F137	:	Combination meter	
F138	:	Combination meter	
F141	:	NATS IMMU (With NATS)	
F163	:	To	B140
F165	:	Navigation	

Audio sub harness

F131	:	To	F129 (With CD autochanger)
F132	:	To	F130 (With CD autochanger)
F133	:	Audio unit (With CD autochanger)	
F134	:	Audio unit (With CD autochanger)	
F135	:	Hazard switch (With CD autochanger)	
F136	:	CD autochanger (With CD autochanger)	

ENGINE COMPARTMENT



<http://vnz.su/>

HARNESS LAYOUT

Main Harness and EFC Harness/For Russia (Cont'd)

Main harness

- ★ (M30) : Relay box (Refer to "LOCATION OF ELECTRICAL UNITS")
- ★ (M33) : Body ground
- (M34) : Daytime light control unit (For Russia)
- (M37) : Triple-pressure switch
- (M38) : Front fog lamp RH
- (M39) : Front turn signal lamp RH
- (M40) : Horn RH (Low)
- (M41) : Headlamp aiming motor RH
- (M42) : Headlamp RH
- (M43) : Clearance lamp RH
- ★ (M44) : Battery
- (M47) : Power steering oil pressure switch
- (M50) : To (E2)
- (M84) : Hood switch
- (M800) : Fusible link and fuse box
- (M865) : Side turn signal lamp RH
- (M866) : Wiper motor
- (M867) : Washer motor
- (M868) : Headlamp cleaner motor

EFC harness

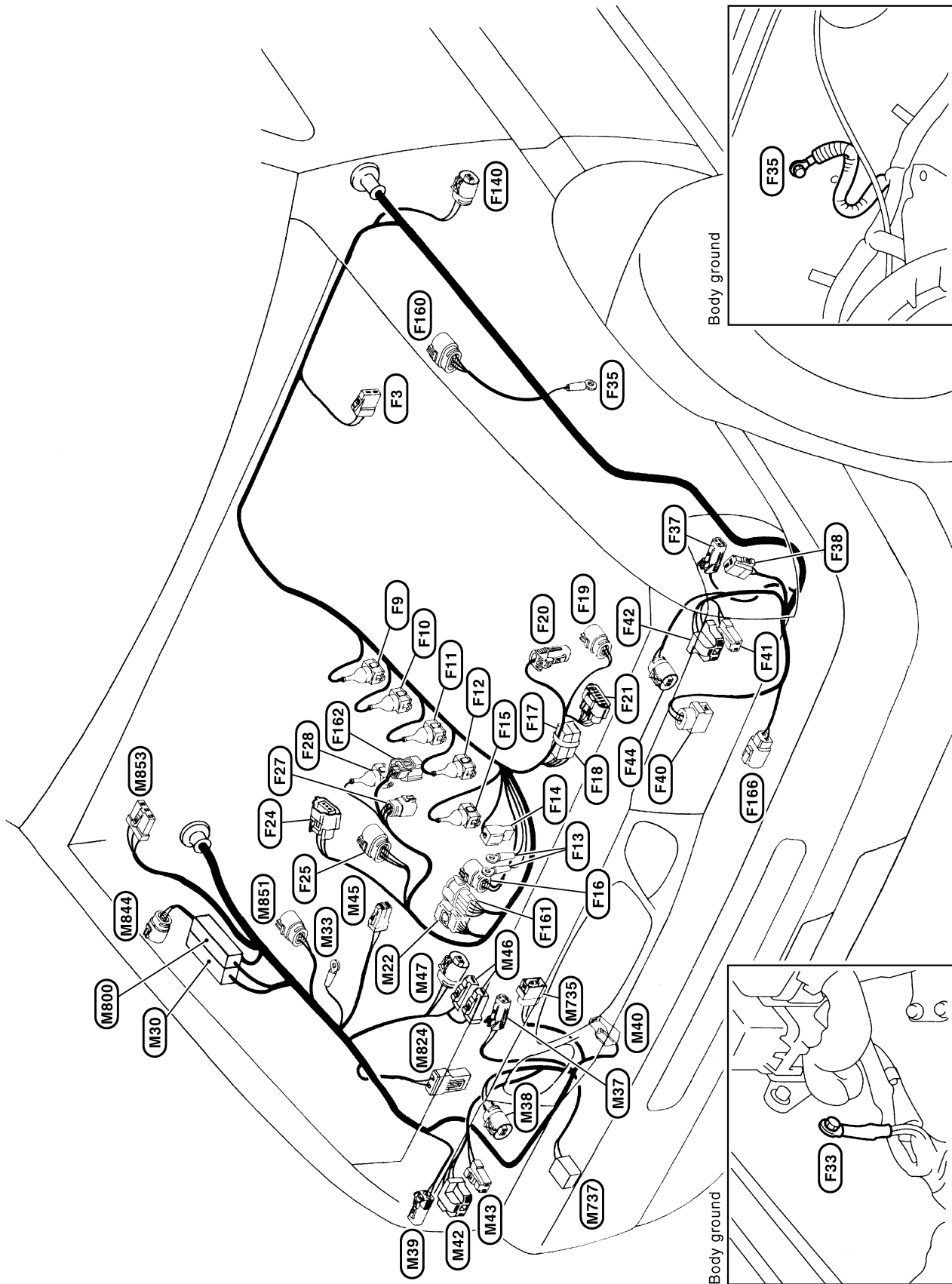
- (F2) : ABS ground (With ABS)
- (F3) : Brake fluid level switch
- (F9) : Fuel injector No. 4
- (F10) : Fuel injector No. 3
- (F11) : Fuel injector No. 2
- (F12) : Fuel injector No. 1
- (F13) : Engine ground
- (F14) : Thermal transmitter
- (F15) : Engine coolant temperature sensor
- (F16) : Intake air temperature sensor
- (F17) : Resistor
- (F18) : Condenser
- (F19) : Ignition coil
- (F20) : Compressor
- (F21) : Camshaft position sensor and power transistor
- (F22) : To (E131)
- (F23) : To (E3)
- (F24) : Mass air flow sensor
- (F25) : Throttle position sensor
- (F26) : EGR valve & EVAP canister purge control solenoid valve
- (F27) : IACV-FICD solenoid and IACV-AAC valve
- (F28) : SCV control solenoid valve
- (F29) : ABS control unit (with ABS)
- (F31) : Heated oxygen sensor
- (F32) : Front sensor LH
- (F35) : Body ground
- (F37) : Front turn signal lamp LH
- (F38) : Condenser
- (F40) : Cooling fan motor
- (F41) : Clearance lamp LH
- (F42) : Headlamp LH
- (F43) : Headlamp aiming motor LH
- (F44) : Front fog lamp LH
- (F170) : Ambient temperature sensor
- (F171) : Side turn signal lamp LH

★ : Be sure to connect and lock the connectors securely after repair work.
Failure to do so may cause the on-board diagnostic system to light up the MIL as an open circuit detection.

HARNESS LAYOUT

Main Harness and EFC Harness/Except for Russia

ENGINE COMPARTMENT — LHD MODELS



YEL643E

EL-13114

<http://vnx.su/>

HARNESS LAYOUT

Main Harness and EFC Harness/Except for Russia (Cont'd)

Main harness

- (M30) : Relay box (Refer to "LOCATION OF ELECTRICAL UNITS")
- (M33) : Body ground
- (M37) : Dual-pressure switch
- (M38) : Front fog lamp RH
- (M39) : Front turn signal lamp RH
- (M40) : Horn
- (M42) : Headlamp RH
- (M43) : Clearance lamp RH
- (M45) : To (E2)
- (M46) : Battery
- (M47) : Power steering oil pressure switch
- (M735) : Cooling fan motor-2 (Dual cooling fan models)
- (M737) : Condenser-2 (Dual cooling fan models)
- (M800) : Fusible link and fuse box
- (M824) : Washer motor
- (M844) : Side turn signal lamp RH
- (M851) : Hood switch (With theft warning system)
- (M853) : Wiper motor

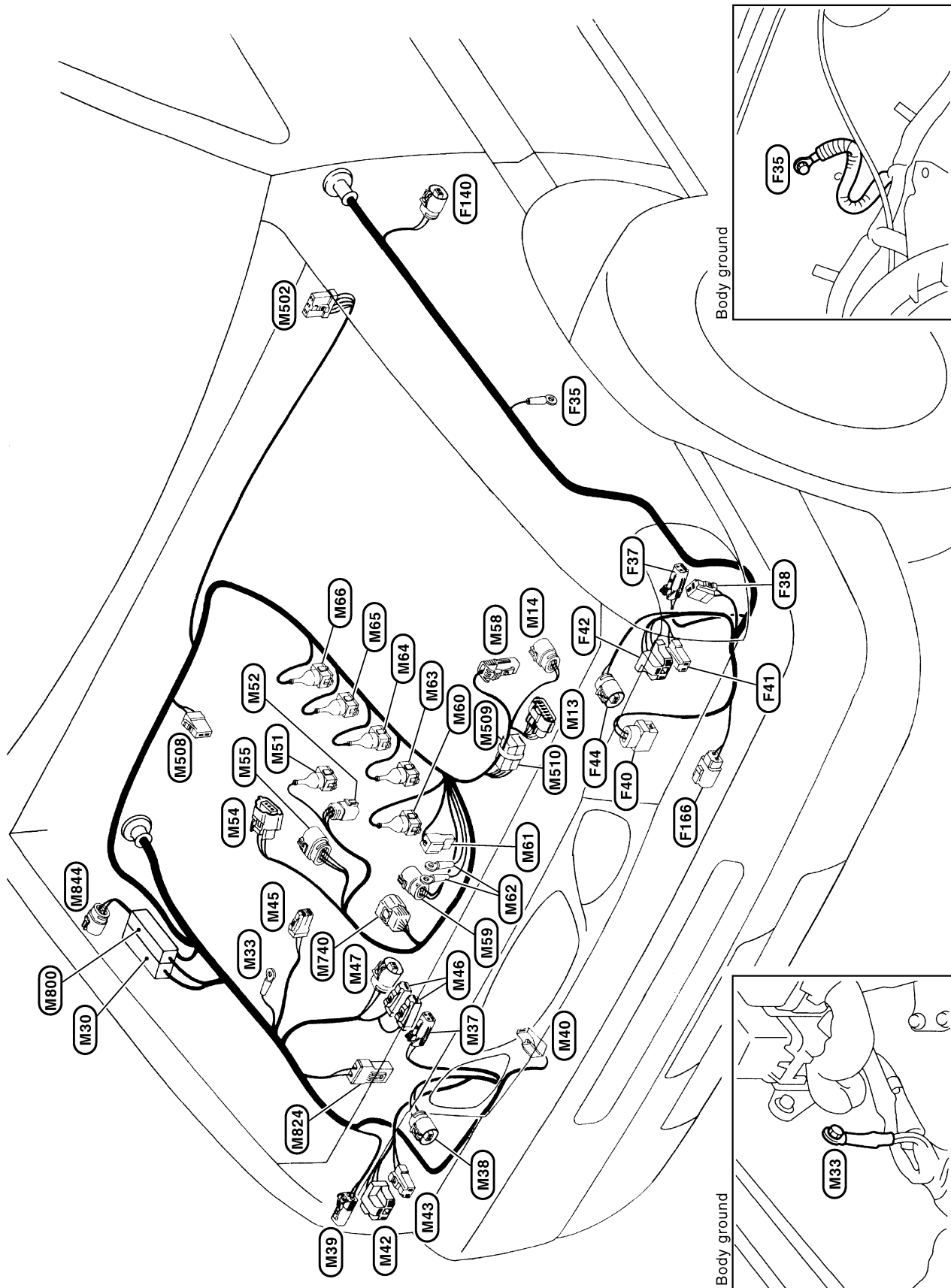
EFC harness

- (F3) : Brake fluid level switch
- (F9) : Fuel injector No. 4
- (F10) : Fuel injector No. 3
- (F11) : Fuel injector No. 2
- (F12) : Fuel injector No. 1
- (F13) : Engine ground
- (F14) : Thermal transmitter
- (F15) : Engine coolant temperature sensor
- (F16) : Intake air temperature sensor
- (F17) : Resistor
- (F18) : Condenser
- (F19) : Ignition coil
- (F20) : Compressor
- (F21) : Camshaft position sensor and power transistor
- (F22) : To (E131)
- (F24) : Mass air flow sensor
- (F25) : Throttle position sensor
- (F27) : IACV-FICD solenoid and IACV-AAC valve
- (F28) : SCV control solenoid valve
- (F35) : Body ground
- (F37) : Front turn signal lamp LH
- (F38) : Condenser-1
- (F40) : Cooling fan motor-1
- (F41) : Clearance lamp LH
- (F42) : Headlamp LH
- (F44) : Front fog lamp LH
- (F140) : Side turn signal lamp LH
- (F160) : Heated oxygen sensor (For Gulf Countries with wagon models)
- (F161) : To (E138) (For Gulf Countries)
- (F162) : EGR valve and EVAP canister purge control solenoid valve (For Gulf Countries)
- (F166) : Ambient temperature sensor

HARNESS LAYOUT

Main Harness and EFC Harness/Except for Russia (Cont'd)

ENGINE COMPARTMENT — RHD MODELS



YEL645E

EL-13116

<http://vnx.su/>

HARNESS LAYOUT

Main Harness and EFC Harness/Except for Russia (Cont'd)

Main harness

(M13)	: Camshaft position sensor and power transistor
(M14)	: Ignition coil
(M30)	: Relay box (Refer to "LOCATION OF ELECTRICAL UNITS")
(M33)	: Body ground
(M37)	: Dual-pressure switch
(M38)	: Front fog lamp RH
(M39)	: Front turn signal lamp RH
(M40)	: Horn
(M42)	: Headlamp RH
(M43)	: Clearance lamp RH
(M45)	: To (E2)
(M46)	: Battery
(M47)	: Power steering oil pressure switch
(M51)	: SCV control solenoid valve
(M52)	: IACV-FICD solenoid and IACV-AAC valve
(M54)	: Mass air flow sensor
(M55)	: Throttle position sensor
(M58)	: Compressor
(M59)	: Intake air temperature sensor
(M60)	: Engine coolant temperature sensor
(M61)	: Thermal transmitter
(M62)	: Engine ground
(M63)	: Fuel injector No. 1
(M64)	: Fuel injector No. 2
(M65)	: Fuel injector No. 3
(M66)	: Fuel injector No. 4
(M502)	: Wiper motor
(M508)	: Brake fluid level switch
(M509)	: Resistor
(M510)	: Condenser
(M740)	: To (E131)
(M800)	: Fusible link and fuse box
(M824)	: Washer motor
(M844)	: Side turn signal lamp RH

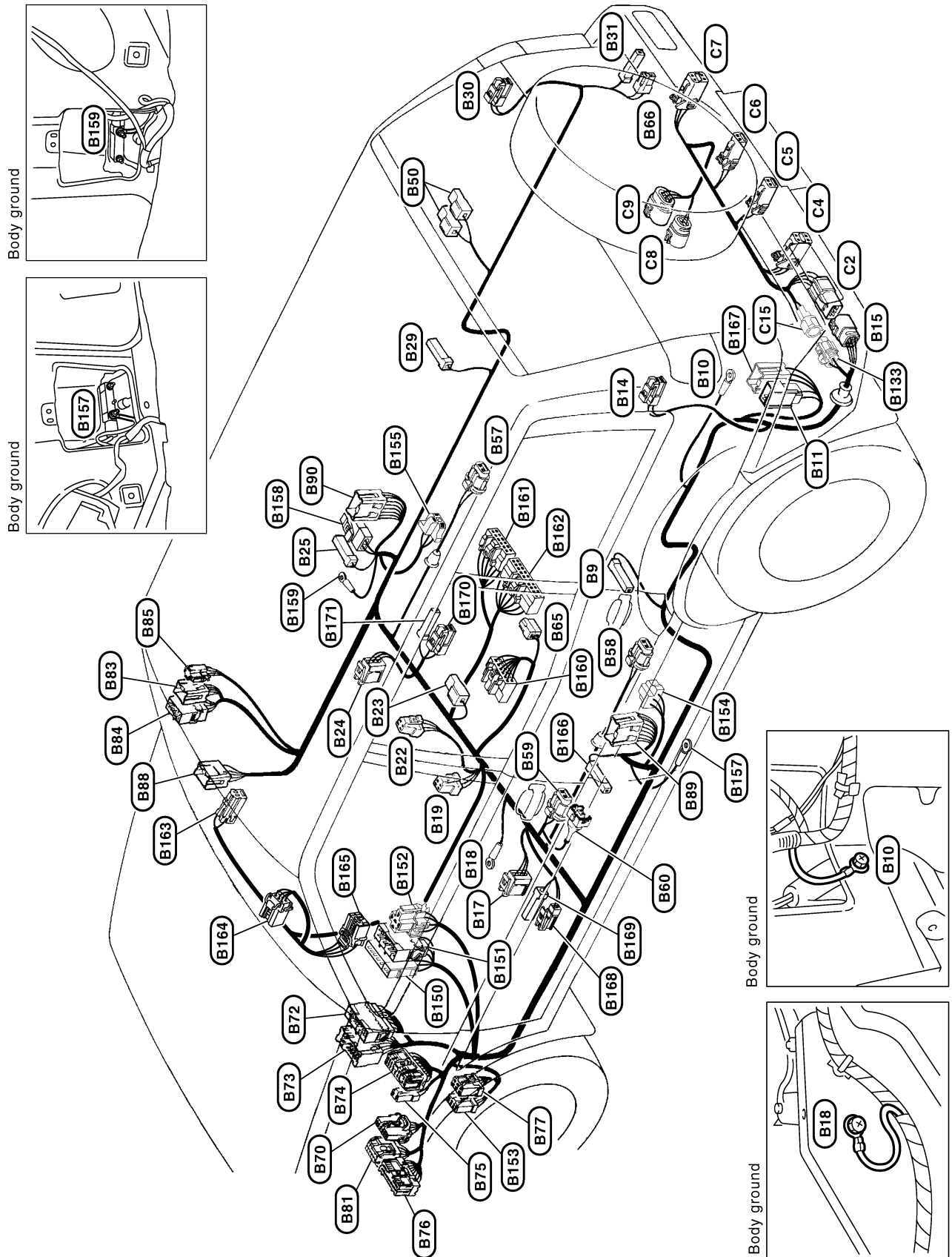
EFC harness

(F35)	: Body ground
(F37)	: Front turn signal lamp LH
(F38)	: Condenser-1
(F40)	: Cooling fan motor-1
(F41)	: Clearance lamp LH
(F42)	: Headlamp LH
(F44)	: Front fog lamp LH
(F140)	: Side turn signal lamp LH
(F166)	: Ambient temperature sensor

HARNESS LAYOUT

Body Harness and Chassis Harness/ For Russia

WAGON MODELS



EL-13118

<http://vnx.su/>

YEL853E

HARNESS LAYOUT

Body Harness and Chassis Harness/ For Russia (Cont'd)

Body harness

B9	: Rear door switch LH
B10	: Body ground
B11	: To T1
B14	: Stop lamp LH
B15	: To C2
B17	: Heated seat LH
B18	: Body ground
B19	: Heated seat switch LH
B22	: Heated seat switch RH
B23	: Parking brake switch
B24	: Heated seat RH
B25	: Front door switch RH
B29	: Rear door switch RH
B30	: Stop lamp RH
B31	: Back door switch
B50	: Theft warning horn
B57	: Rear sensor RH (With ABS)
B58	: Rear sensor LH (With ABS)
B59	: G sensor lock (With ABS)
B60	: G sensor (With ABS)
B65	: Front power socket
B66	: Rear power socket
B70	: To R13
B72	: To F46
B73	: To F45
B74	: Fuse block
B75	: Fuse block
B76	: Time control unit
B77	: Ultrasonic cancel switch
B81	: Time control unit
B83	: To D62
B84	: To D63
B85	: Theft warning horn relay
B88	: To M783
B89	: To D57
B90	: To D77

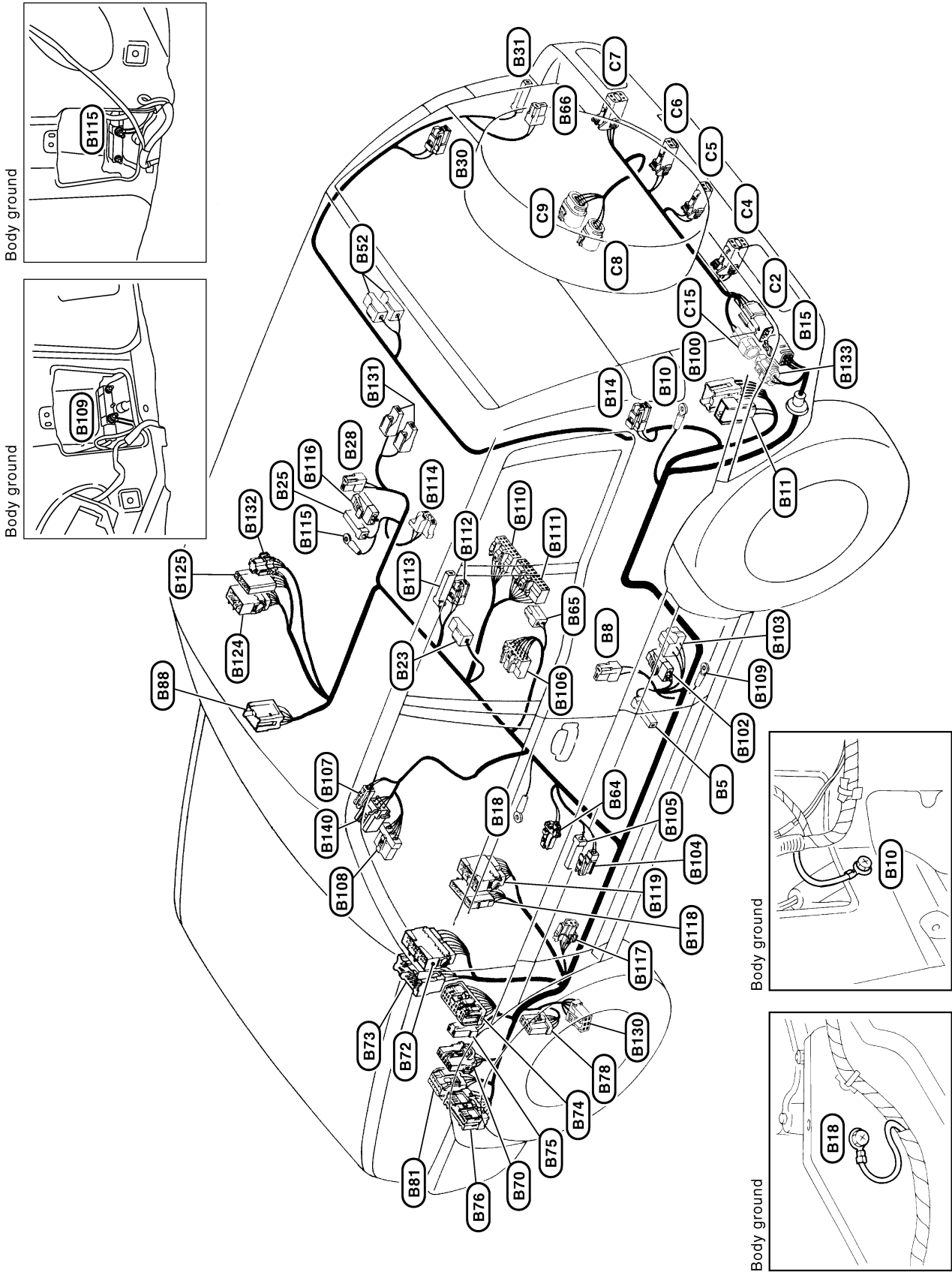
B133	: To C15
B150	: To D107
B151	: To D106
B152	: Door lock switch relay
B153	: Door mirror switch
B154	: Seat belt pre-tensioner LH
B155	: Seat belt pre-tensioner RH
B156	: Satellite sensor LH (With side air bag)
B157	: Body ground (with side air bag)
B158	: Satellite sensor RH (with side air bag)
B159	: Body ground (with side air bag)
B160	: Air bag diagnosis sensor unit
B161	: Air bag diagnosis sensor unit
B162	: Air bag diagnosis sensor unit
B163	: Front passenger air bag module
B164	: To F173
B165	: Combination switch (Spiral cable)
B166	: Front door switch LH
B167	: To T15
B168	: Front side air bag module LH (With side air bag)
B169	: Front side air bag module LH (With side air bag)
B170	: Front side air bag module RH (With side air bag)
B171	: Front side air bag module RH (With side air bag)

Chassis harness

C2	: To B15
C4	: Rear combination lamp LH
C5	: License lamp LH
C6	: License lamp RH
C7	: Rear combination lamp RH
C8	: Fuel pump
C9	: Fuel level sensor unit
C15	: To B133

Body Harness and Chassis Harness/Except for Russia

HARDTOP MODELS



YEL648E

EL-13120

HARNESS LAYOUT

Body Harness and Chassis Harness/Except for Russia (Cont'd)

Body harness

B5	: Front door switch LH	B114	: Seat belt pre-tensioner RH
B8	: Rear speaker LH	B115	: Body ground
B10	: Body ground	B116	: Satellite sensor RH
B11	: To T1	B117	: Door lock switch relay
B14	: Stop lamp LH	B118	: To D79
B15	: To C2	B119	: To D80
B18	: Body ground	B124	: To D85
B23	: Parking brake switch	B125	: To D86
B25	: Front door switch RH	B130	: Ultrasonic cancel switch (With theft warning system)
B28	: Rear speaker RH	B131	: Theft warning horn (With theft warning system)
B30	: Stop lamp RH	B132	: Theft warning horn relay (With theft warning system)
B31	: Back door switch	B133	: To C15
B52	: Luggage room lamp	B140	: To F163
B64	: Seat belt switch (With seat belt switch)		
B65	: Front power socket		
B66	: Rear power socket		
B70	: To R13		
B72	: To F46		
B73	: To F45		
B74	: Fuse block		
B75	: Fuse block		
B76	: Time control unit		
B78	: Door mirror switch		
B81	: Time control unit		
B88	: To M759		
B100	: To T11		
B102	: Satellite sensor LH (With side air bag)		
B103	: Seat belt pre-tensioner LH		
B104	: Front side air bag module LH		
B105	: Front side air bag module LH		
B106	: Air bag diagnosis sensor unit		
B107	: Front passenger air bag module		
B108	: Combination switch (Spiral cable)		
B109	: Body ground (With side air bag)		
B110	: Air bag diagnosis sensor unit		
B111	: Air bag diagnosis sensor unit		
B112	: Front side air bag module RH		
B113	: Front side air bag module RH		

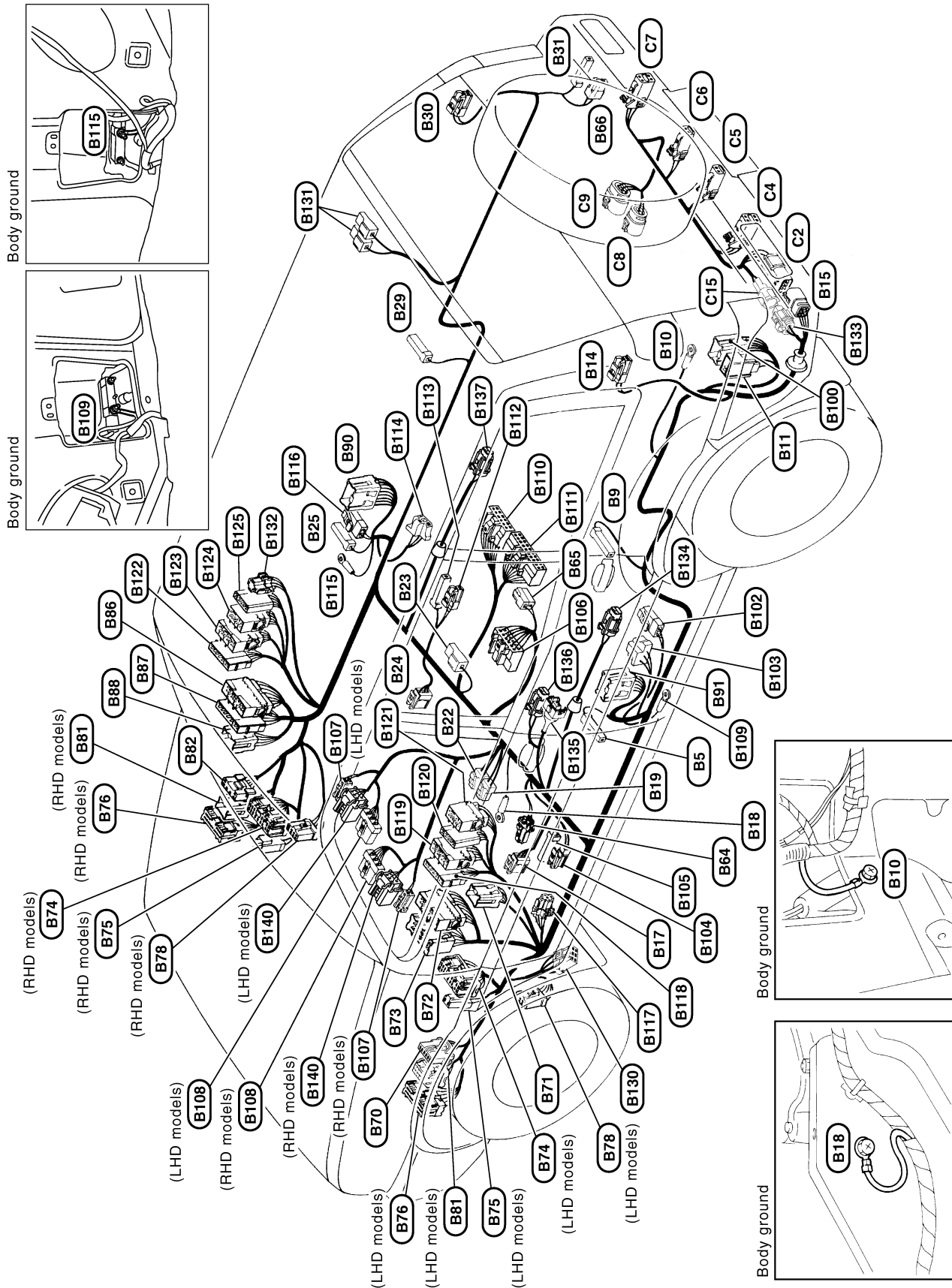
Chassis harness

C2	: To B15
C4	: Rear combination lamp LH
C5	: License lamp LH
C6	: License lamp RH
C7	: Rear combination lamp RH
C8	: Fuel pump
C9	: Fuel level sensor unit
C15	: To B133

HARNESS LAYOUT

Body Harness and Chassis Harness/Except for Russia (Cont'd)

WAGON MODELS



YEL650E

EL-13122

<http://vnx.su/>

HARNESS LAYOUT

Body Harness and Chassis Harness/Except for Russia (Cont'd)

Body harness

B5	: Front door switch LH
B9	: Rear door switch LH
B10	: Body ground
B11	: To T1
B14	: Stop lamp LH
B15	: To C2
B17	: Heated seat LH (With heated seat)
B18	: Body ground
B19	: Heated seat switch LH (With heated seat)
B22	: Heated seat switch RH (With heated seat)
B23	: Parking brake switch
B24	: Heated seat RH (With heated seat)
B25	: Front door switch RH
B29	: Rear door switch RH
B30	: Stop lamp RH
B31	: Back door switch
B64	: Seat belt switch (With seat belt switch)
B65	: Front power socket
B66	: Rear power socket
B70	: To R13
B71	: To R14 (RHD models)
B72	: To F46 (LHD models)
B73	: To F45 (LHD models)
B74	: Fuse block
B75	: Fuse block
B76	: Time control unit
B78	: Door mirror switch
B81	: Time control unit
B82	: Fuse block (RHD models)
B86	: To M743 (RHD models)
B87	: To M744 (RHD models)
B88	: To M759 (LHD models)
B90	: To D77
B91	: To D57
B100	: To T11
B102	: Satellite sensor LH (With side air bag)
B103	: Seat belt pre-tensioner LH
B104	: Front side air bag module LH
B105	: Front side air bag module LH } (With side air bag)

B106	: Air bag diagnosis sensor unit
B107	: Front passenger air bag module
B108	: Combination switch (Spiral cable)
B109	: Body ground (With side air bag)
B110	: Air bag diagnosis sensor unit
B111	: Air bag diagnosis sensor unit
B112	: Front side air bag module RH } (With side air bag)
B113	: Front side air bag module RH
B114	: Seat belt pre-tensioner RH
B115	: Body ground } (With side air bag)
B116	: Satellite sensor RH
B117	: Door lock switch relay
B118	: To D79 } (LHD models)
B119	: To D80 }
B120	: To D81 } (RHD models)
B121	: To D82 }
B122	: To D83 }
B123	: To D84 }
B124	: To D85 } (LHD models)
B125	: To D86 }
B130	: Ultrasonic cancel switch (With theft warning system)
B131	: Theft warning horn (With theft warning system)
B132	: Theft warning horn relay (With theft warning system)
B133	: To C15
B134	: Not used
B135	: Not used
B136	: Not used
B137	: Not used
B140	: To F163 (LHD models)
	To M852 (RHD models)

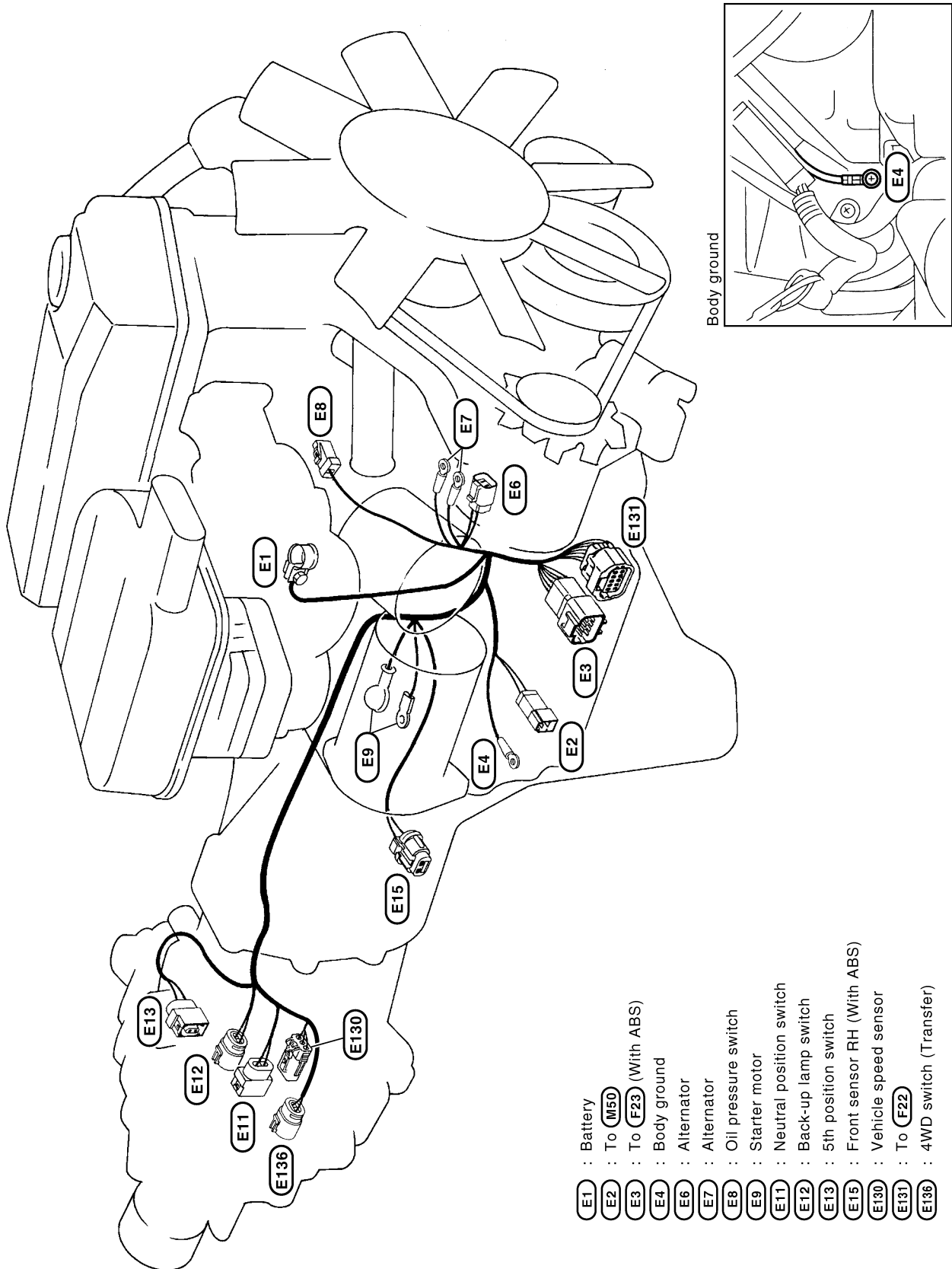
Chassis harness

C2	: To B15
C4	: Rear combination lamp LH
C5	: License lamp LH
C6	: License lamp RH
C7	: Rear combination lamp RH
C8	: Fuel pump
C9	: Fuel level sensor unit
C15	: To B133

HARNESS LAYOUT

Engine Harness/For Russia

KA24E ENGINE MODELS



EL-13124

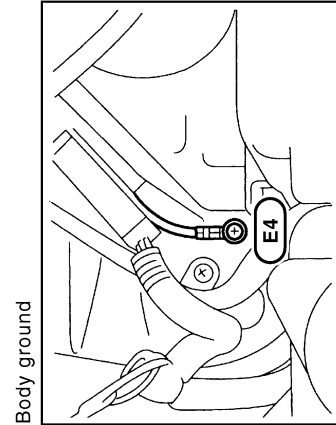
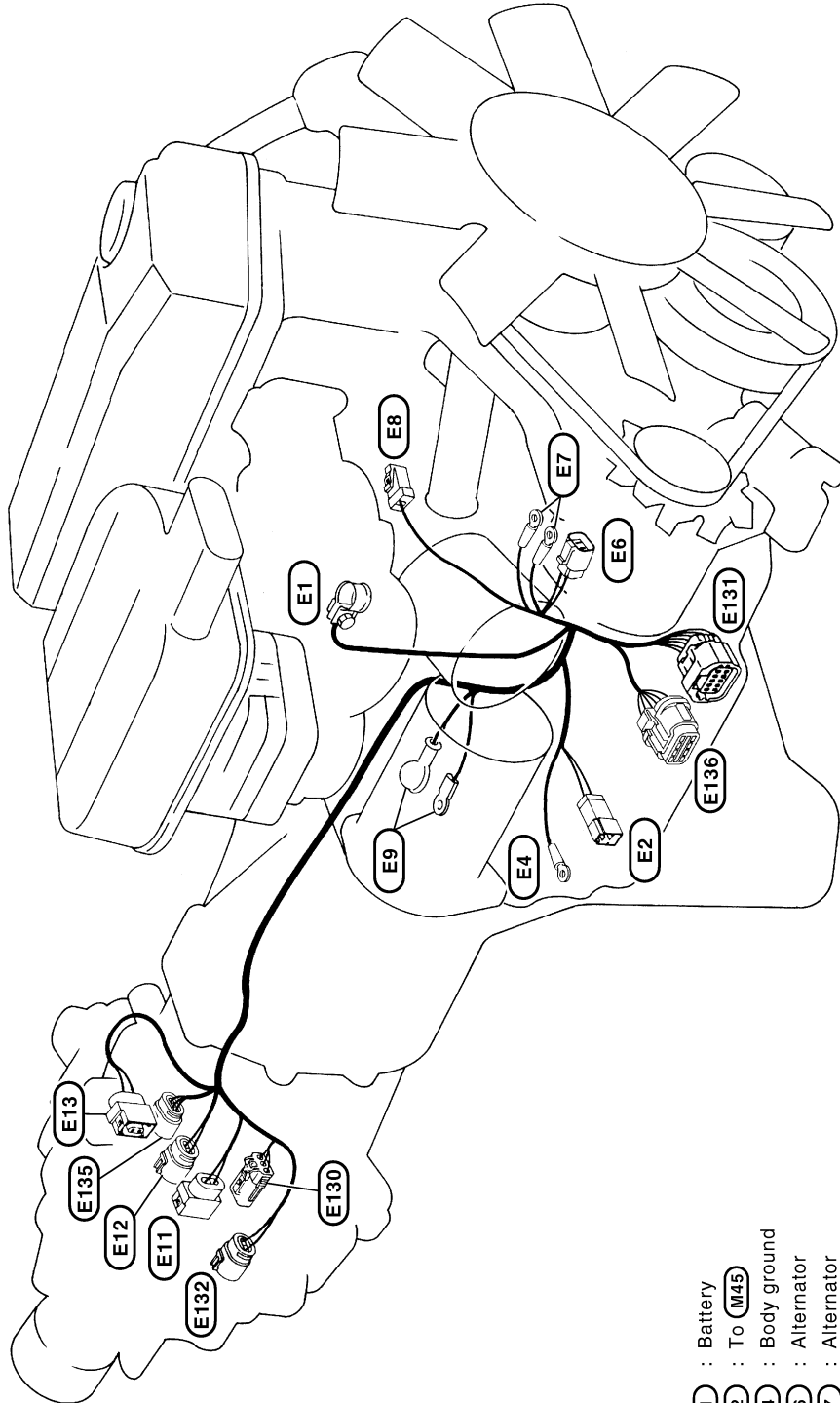
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YEL652E

HARNESS LAYOUT

Engine Harness/Except for Russia

KA24E ENGINE MODELS



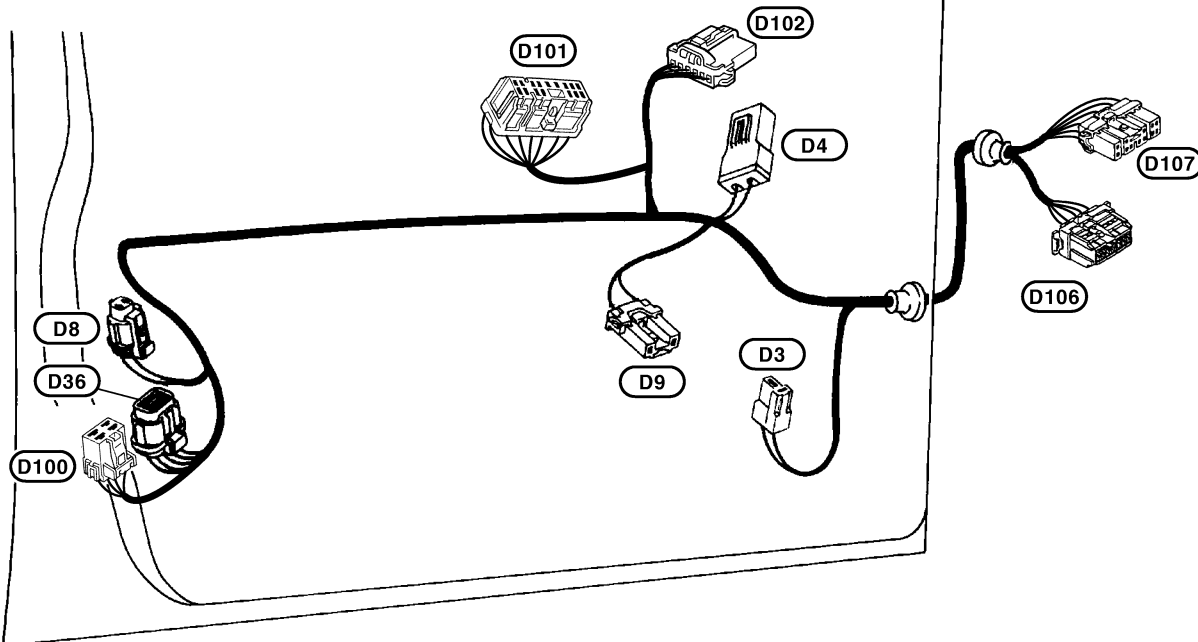
- E1 : Battery
- E2 : To **(M45)**
- E4 : Body ground
- E6 : Alternator
- E7 : Alternator
- E8 : Oil pressure switch
- E9 : Starter motor
- E11 : Neutral position switch
- E12 : Back-up lamp switch
- E13 : 5th position switch
- E130 : Vehicle speed sensor
- E131 : To **(M740)** (RHD models)
- E132 : To **(F22)** (LHD models)
- E133 : 4WD switch (Transfer)
- E135 : Heated oxygen sensor (For Gulf Countries with hardtop models)
- E136 : To **(F161)** (For Gulf Countries)

HARNESS LAYOUT

Door Harness (LH side)/For Russia

FRONT

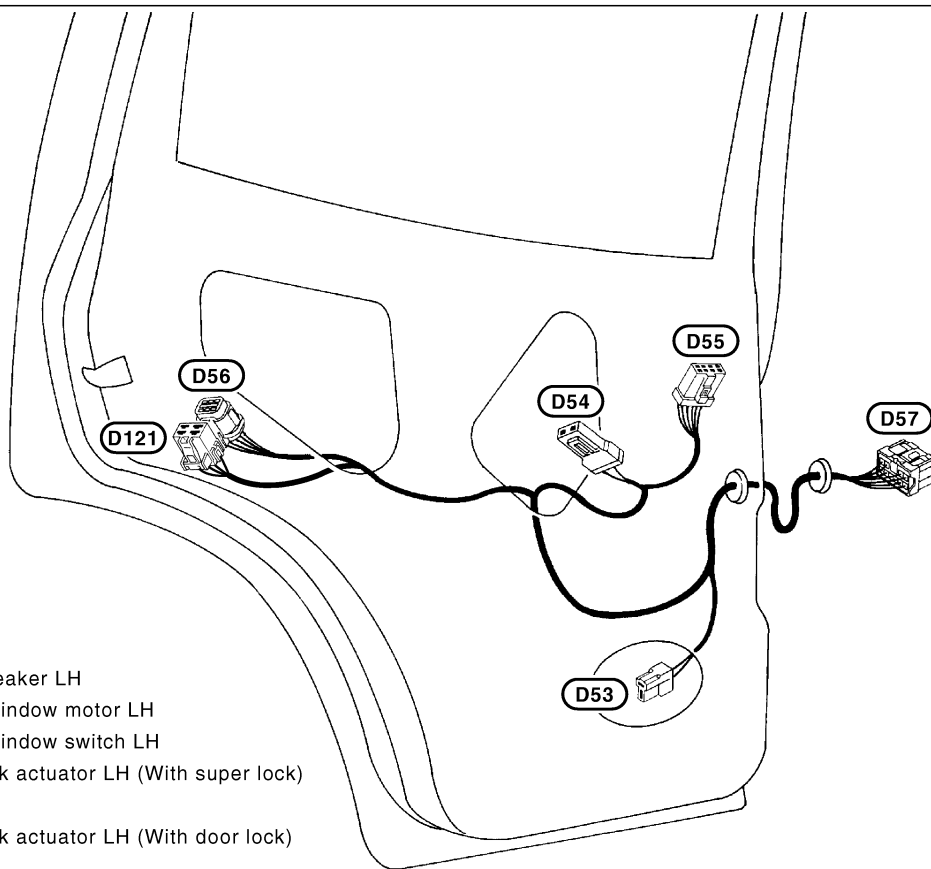
- | | |
|--|---|
| (D3) : Front door speaker LH | (D100) : Front door lock actuator LH (With door lock) |
| (D4) : Front power window motor LH | (D101) : Power window main switch |
| (D8) : Key cylinder switch (With theft warning system) | (D102) : Door mirror LH |
| (D9) : Tweeter LH | (D106) : To (B151) |
| (D36) : Front door lock actuator LH (With super lock) | (D107) : To (B150) |



YEL654E

REAR

- | |
|--|
| (D53) : Rear door speaker LH |
| (D54) : Rear power window motor LH |
| (D55) : Rear power window switch LH |
| (D56) : Rear door lock actuator LH (With super lock) |
| (D57) : To (B89) |
| (D121) : Rear door lock actuator LH (With door lock) |



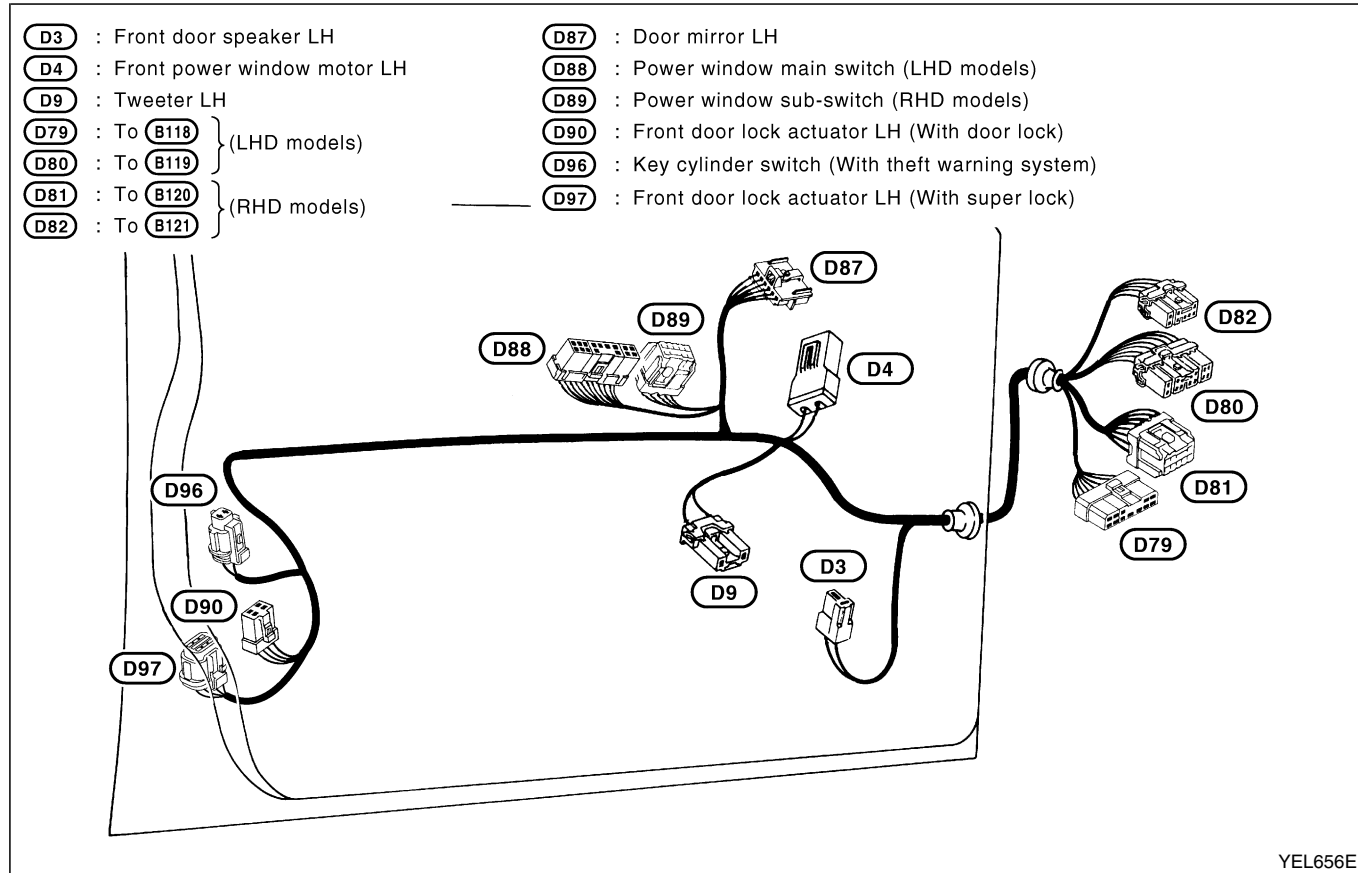
YEL655E

EL-13126

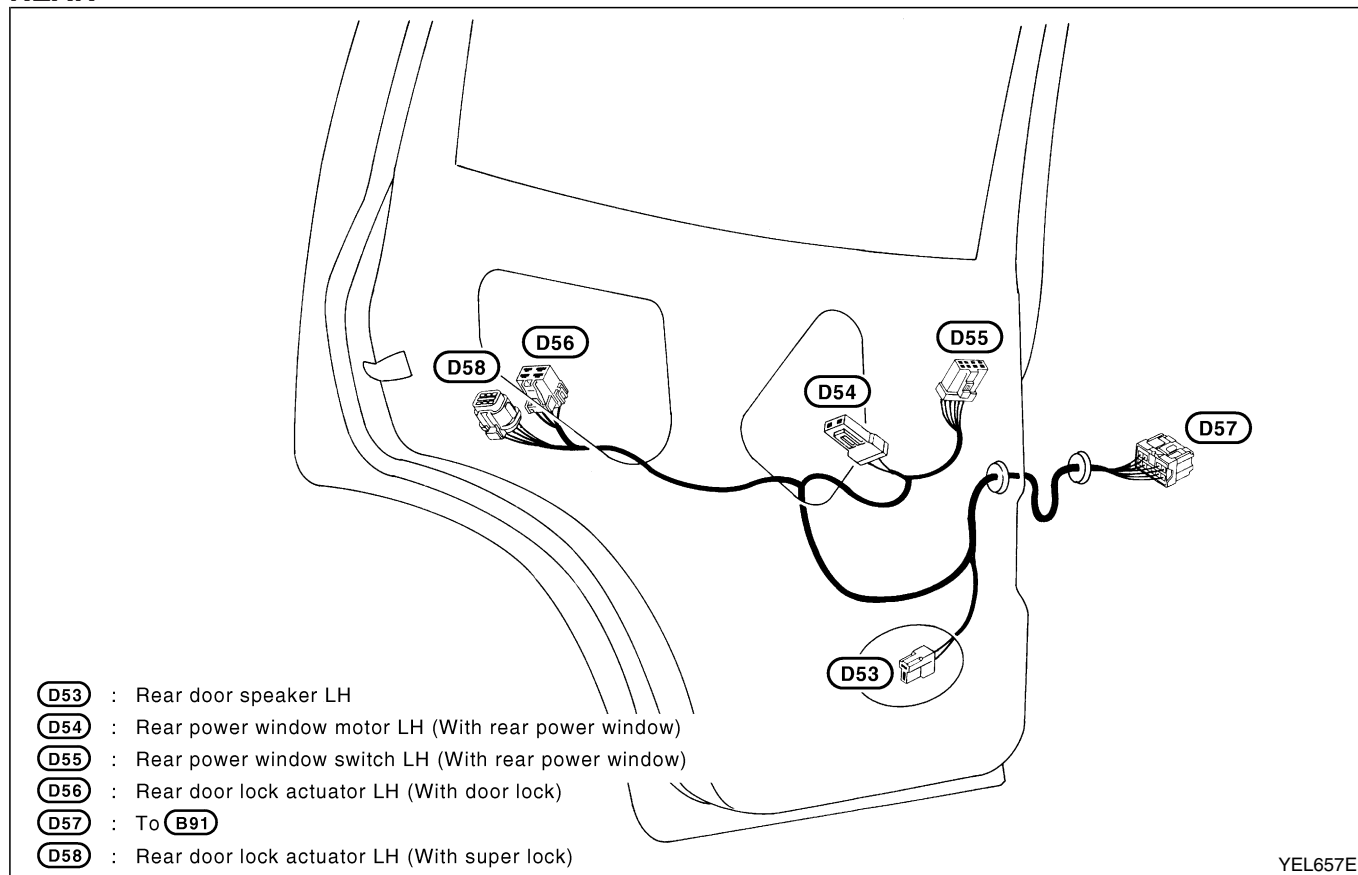
HARNESS LAYOUT

Door Harness (LH side)/Except for Russia

FRONT



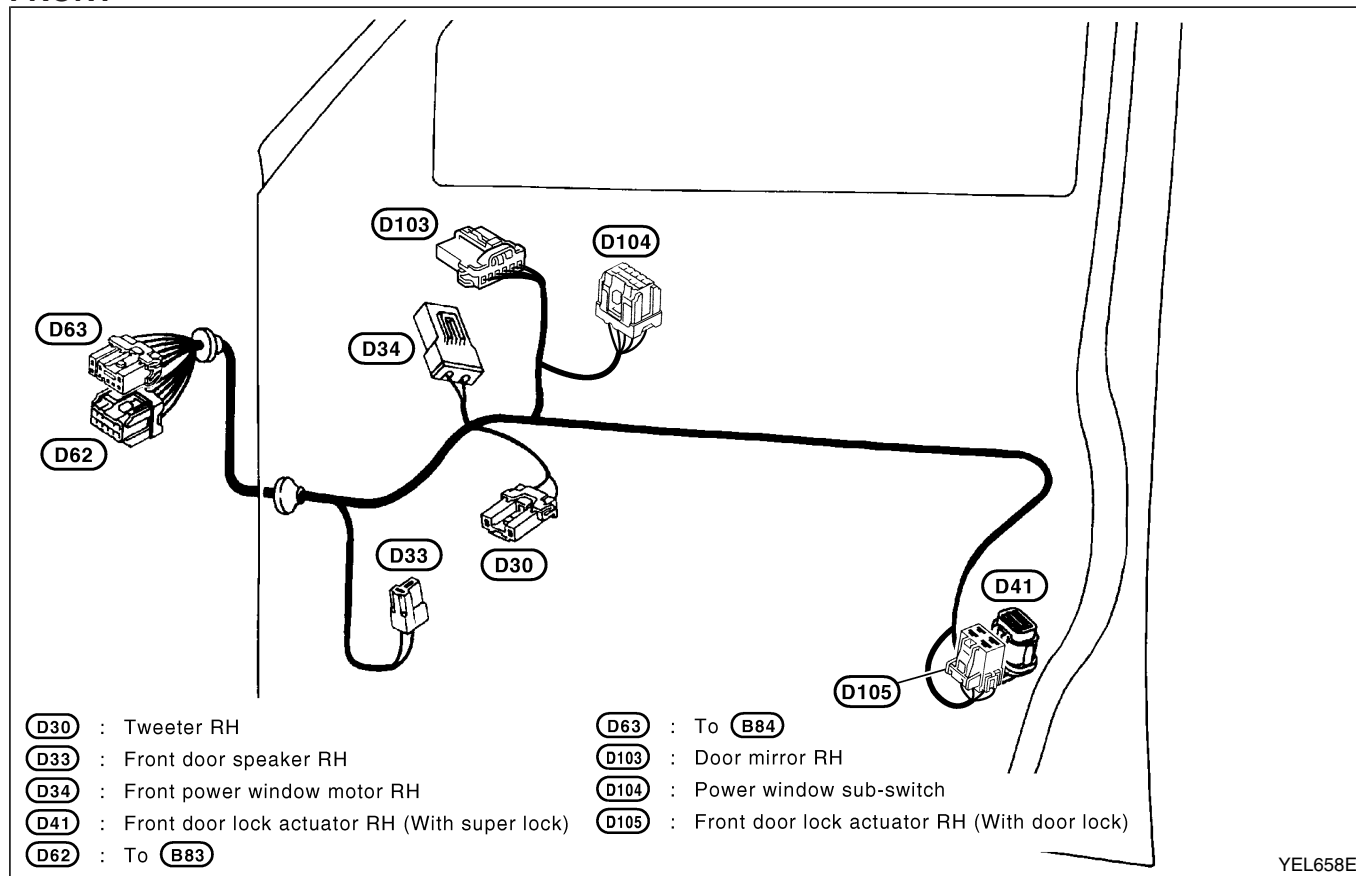
REAR



HARNESS LAYOUT

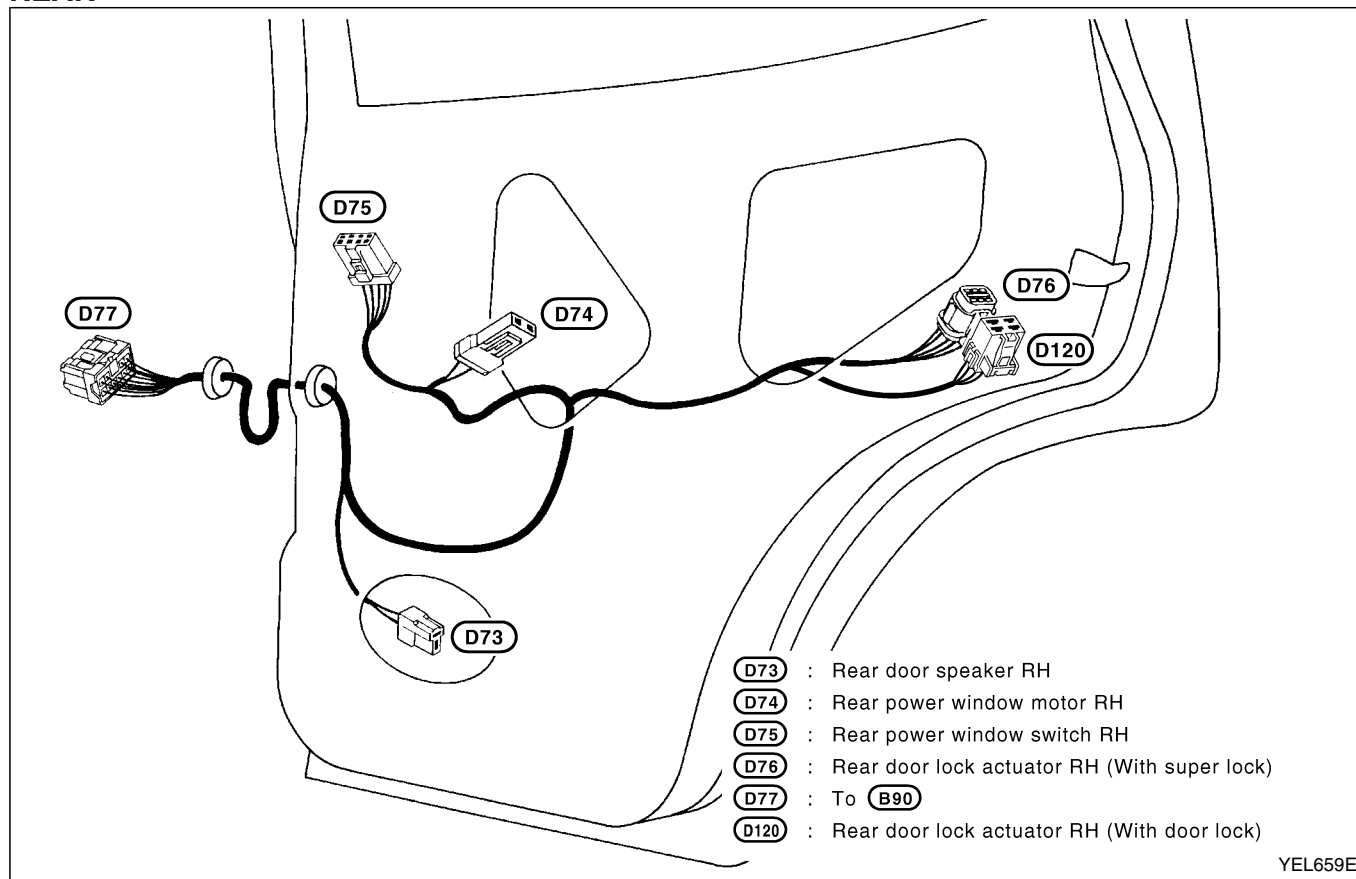
Door Harness (RH side)/For Russia

FRONT



YEL658E

REAR



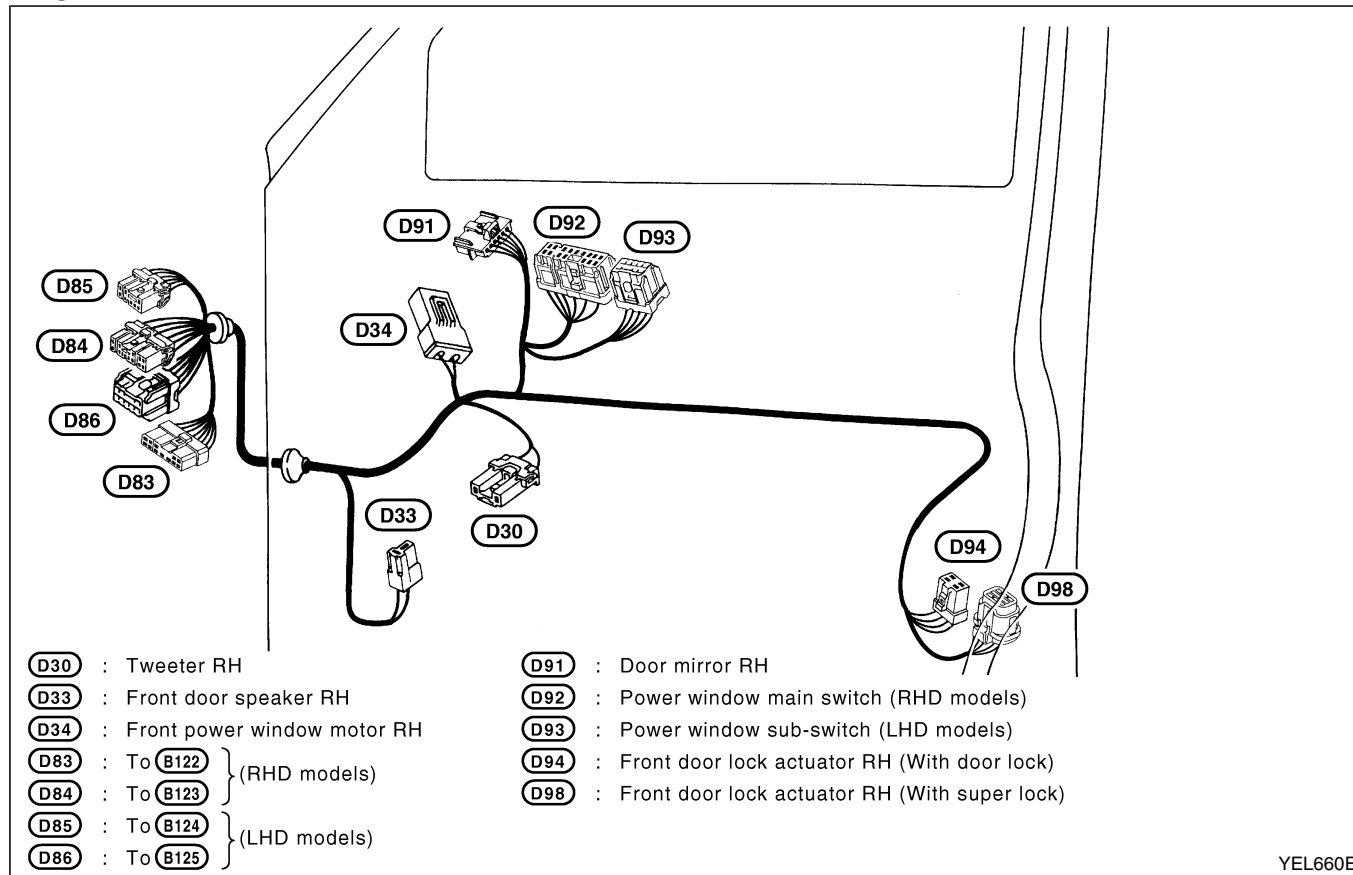
YEL659E

EL-13128

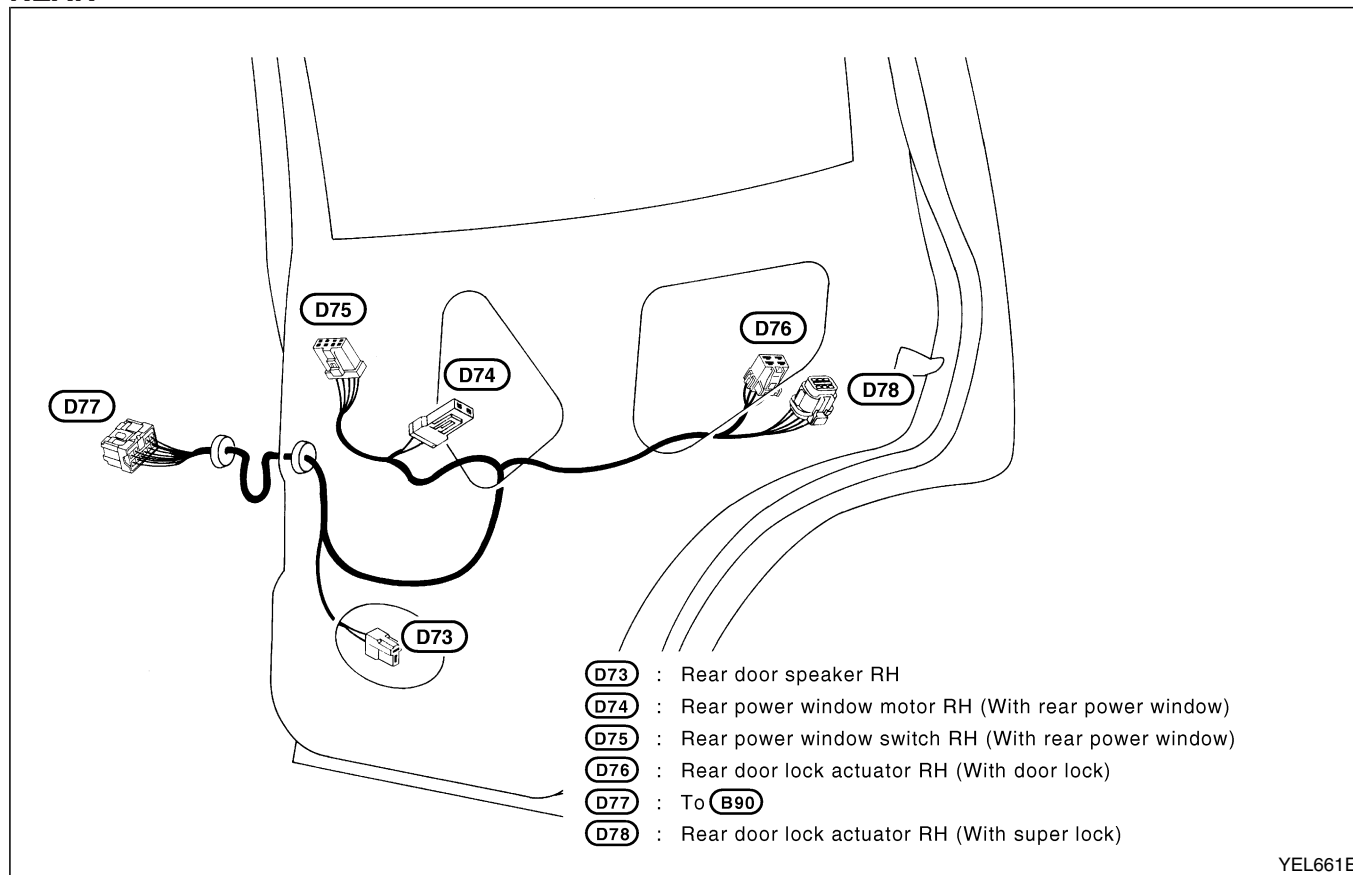
HARNESS LAYOUT

Door Harness (RH side)/Except for Russia

FRONT

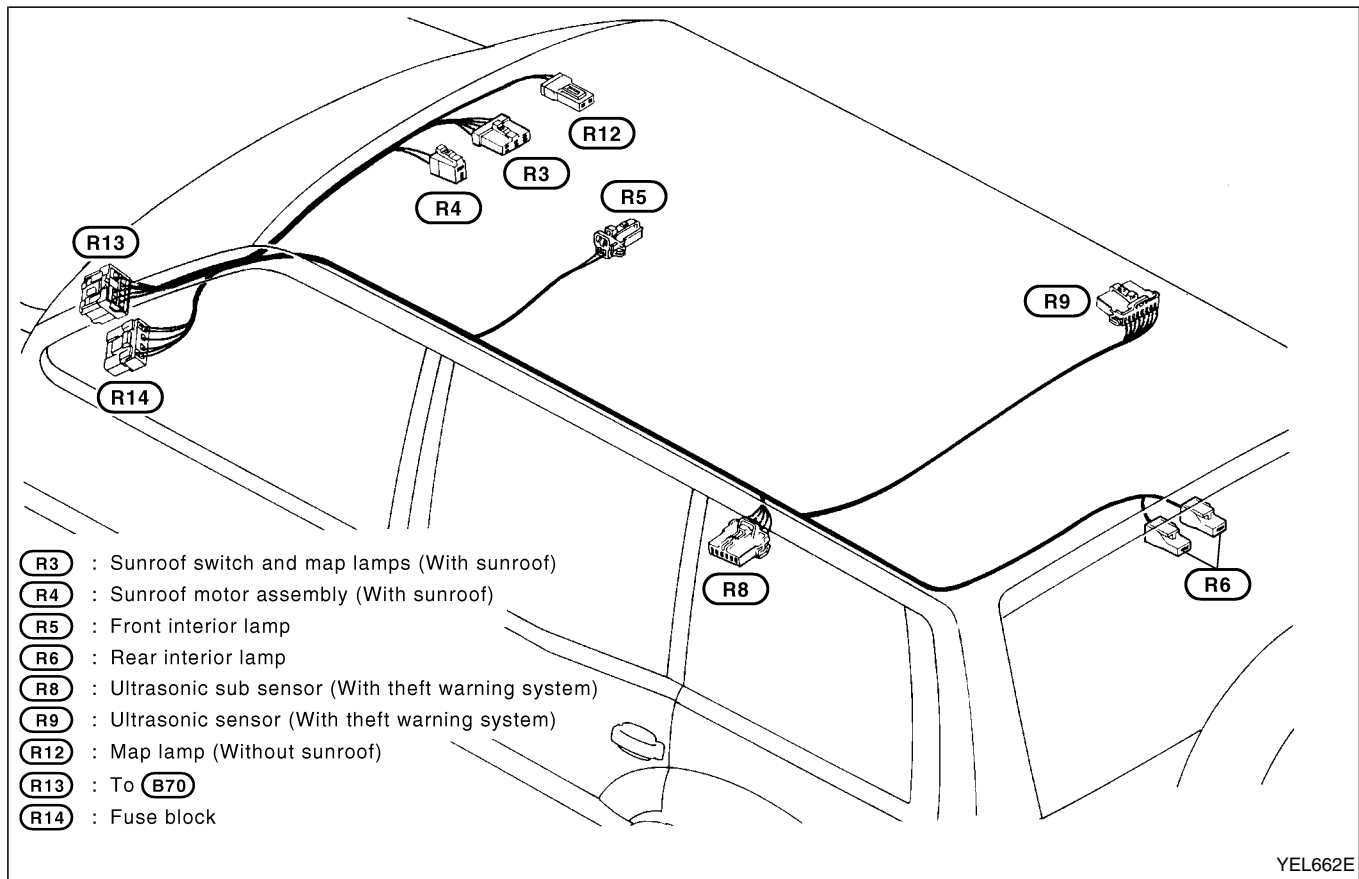


REAR



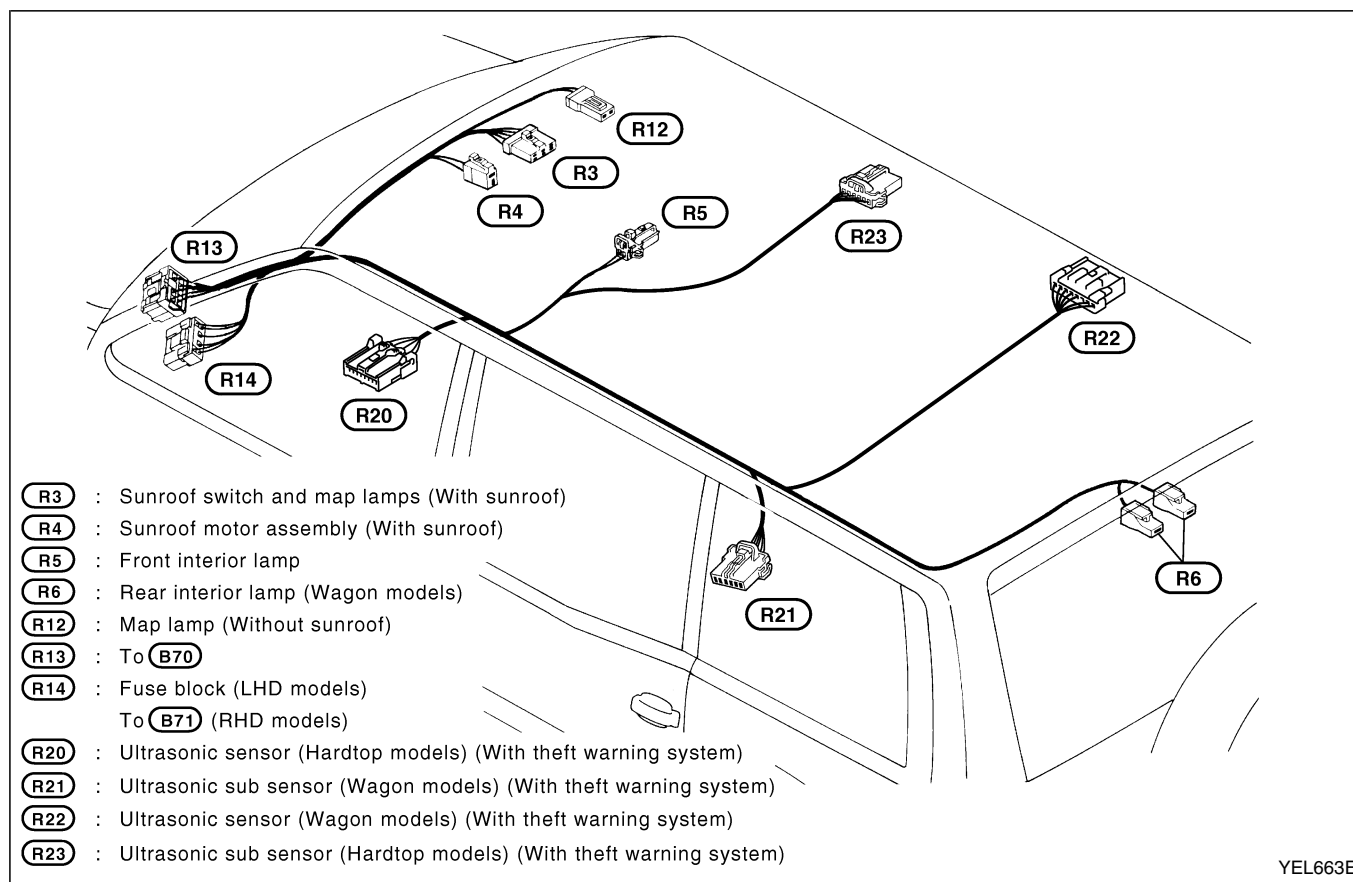
HARNESS LAYOUT

Room Lamp Harness/For Russia



HARNESS LAYOUT

Room Lamp Harness/Except for Russia



HARNESS LAYOUT

Tailgate Harness/For Russia

