



# SERVICE BULLETIN

QUALITY INFORMATION ANALYSIS

OVERSEAS SERVICE DEPT. MITSUBISHI MOTORS CORPORATION

SERVICE BULLETIN		No.: MSB-97E55-001	
		Date: 1998-04-15	<Model> <b>&lt;M/Y&gt;</b>
<b>Subject:</b> CHANGE IN AIR GAP FOR A/C COMPRESSOR			(EC,EXP) 3000GT 96-10 (Z10 96-10 (EX,EXP) L400 96-10 (PA0V) 96-10 (EC,EXP) COLT (CJ0A) (EX,EXP) LANCER (CK0A)
<b>Group:</b> HEATER, A/C & VENTILATION	Draftno: 97-AL-021		
<b>INFORMATION</b>	OVERSEAS SERVICE DEPT	<i>R. Usami</i> R. USAMI - MANAGER QUALITY INFORMATION ANALYSIS	

## 1. Description:

This Service Bulletin informs you of change in air gap of the clutch for the A/C compressor.

## 2. Applicable Manuals:

Manual	Pub. No.	Language	Page(s)
COLT/LANCER Workshop Manual	PWME9117-D	(English)	55-2-1, 45-1
	PWMS9118-D	(Spanish)	
	PWMF9119-D	(French)	
	PWMG9120-D	(German)	
	PWMD9121-D	(Dutch)	
	PWMW9122-D	(Swedish)	
3000GT Workshop Manual	PWUE9119-D	(English)	55-2, 50
'95 L400 Workshop Manual	PWWE9410	(English)	55-5, 68
	PWWS9411	(Spanish)	
	PWWF9412	(French)	
	PWWG9413	(German)	
	PWWD9414	(Dutch)	
	PWWW9415	(Swedish)	
'96 COLT/LANCER Workshop Manual	PWME9511	(English)	55-4, 31
	PWMS9512	(Spanish)	
	PWMF9513	(French)	
	PWMG9514	(German)	
	PWMD9515	(Dutch)	
	PWMW9516	(Swedish)	
'97 GALANT Workshop Manual	PWDE9611	(English)	55-4, 66
	PWDS9612	(Spanish)	
	PWDF9613	(French)	
	PWDG9614	(German)	
	PWDD9615	(Dutch)	
	PWDW9616	(Swedish)	

**3. Effective Date:**

Applicable vehicle	Effective Date
LANCER WAGON	From May 28, 1997
3000 GT	From February 5, 1997
L400	From June 4, 1997
COLT/LANCER	From April 18, 1997
GALANT	From March 5, 1997

**4. Details**

COLT/LANCER Workshop Manual, page 3, 4

3000GT Workshop Manual, page 5, 6

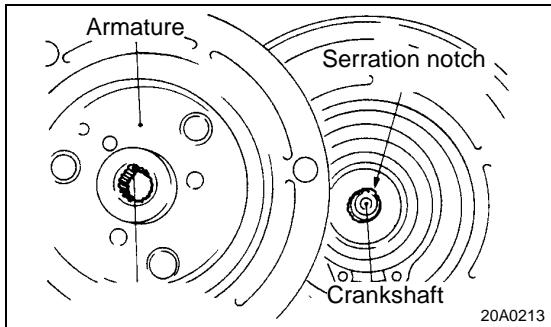
'95 L400 Workshop Manual, page 7, 8

'96 COLT/LANCER Workshop Manual, page 9, 10

'97 GALANT Workshop Manual, page 11, 12

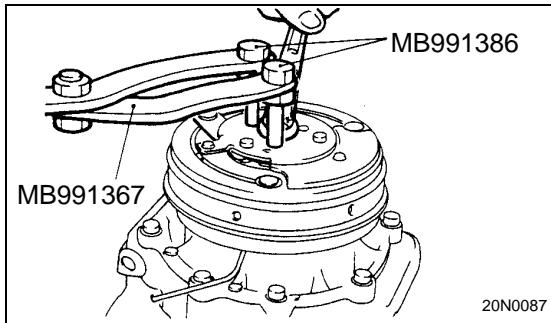
## SERVICE SPECIFICATIONS

Items	Specifications	
Standard value		
Idle speed 4G13, 4G15	r/min.	750 ± 100
4G92, 4G93		800 ± 100
4D68		750 ± 100
Idle up speed	r/min	850 ± 50
Resistor (for blower motor)	Ω	<L.H. drive vehicles> MH: 0.35 ML: 0.97 LO: 2.21
		<R.H. drive vehicles> MH: 0.33 ML: 1.28 LO: 2.81
		<b>&lt;New&gt;</b> <b>0.3 - 0.5 (0.01 - 0.02)</b>
		<b>&lt;Old&gt;</b> <del>0.4 - 0.65 (0.02 - 0.03)</del>
Air gap (Magnetic clutch)	mm (in.)	
Refrigerant temperature switch		
ON (continuity) temperature		Approx. 155°C (311°F) or less
OFF (no continuity) temperature		Approx. 155°C (311°F) or more [until the temperature drops to approx. 90°C (194°F) when OFF]
Resistor (for condenser fan motor)	Ω	0.29
Engine coolant temperature switch		
Petrol powered vehicles		Continuity: Approx. 115°C (239°F) or less No continuity: Approx. 115°C (239°F) or more {until the temperature drops to 108°C (226°F) when engine coolant temperature switch is OFF}
Diesel powered vehicles		Continuity: Approx. 113°C (235°F) or less No continuity: Approx. 113°C (235°F) or more {until the temperature drops to 108°C (226°F) when engine coolant temperature switch is OFF}



## 4. INSTALLATION OF ARMATURE PLATE

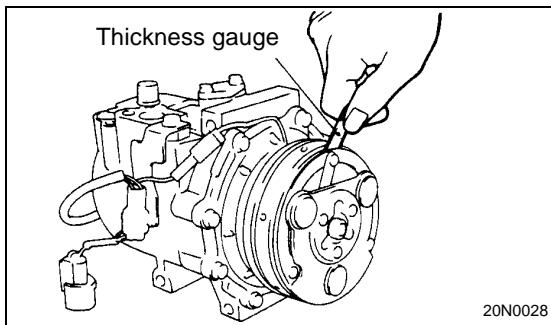
Align the mating mark of the crankshaft spline and the mating mark of the armature plate, and then fit them together.



## 3. INSTALLATION OF NUT

**<New>**

**0.3 - 0.5 mm (0.01 - 0.02 in.)**



### • AIR GAP ADJUSTMENT

Check whether or not the air gap of the clutch is within the standard value.

**Standard value:**

**0.4 - 0.65 mm (0.02 - 0.03 in.)**

**NOTE**

If there is a deviation of the air gap from the standard value, make the necessary adjustment by adjusting the number of shims.

**<Old>**

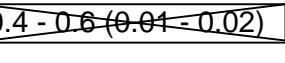
### SPECIFICATIONS GENERAL SPECIFICATIONS

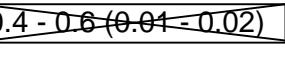
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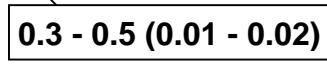
Items	Specifications				
Heater unit	Three -way-flow full-air-mix system				
Type	Push button type				
Heater control assembly					
Compressor					
Model	FX-105VS				
<Vehicles using R-12 refrigerant>	MSC105				
<Vehicles using R-134a refrigerant>					
Refrigerant unit lubricant	cm <sup>3</sup> (cu.in.)	FREOL S-83 or SUNISO 5GS 160 ± 20 (9.8 ± 1.2)			
<Vehicles using R-12 refrigerant>	SUN PAG 56 160 ± 20 (9.8 ± 1.2)				
<Vehicles using R-134a refrigerant>	1,150 (45.3)				
V belt size	mm (in.)				
Dual pressure switch					
<Vehicles using R-12 refrigerant>					
High pressure switch	kPa (kg/cm <sup>2</sup> , psi)	OFF: 2,700 (27, 384)	ON: 2,100 (21, 299)		
Low pressure switch	kPa (kg/cm <sup>2</sup> , psi)	OFF: 210 (2.1, 30)	ON: 235 (2.35, 33)		
<Vehicles using R-134a refrigerant>					
High pressure switch	kPa (kg/cm <sup>2</sup> , psi)	OFF: 3,200 (32, 455)	ON: 2,600 (26, 370)		
Low pressure switch	kPa (kg/cm <sup>2</sup> , psi)	OFF: 200 (2.0, 28)	ON: 225 (2.25, 32)		
Freezer prevention	°C (°F)	Air temperature thermostat			
Refrigerant and quantity	g (oz.)	OFF: -2 (28.4)	ON: 2 (35.6)		
<Vehicles using R-12 refrigerant>					
<Vehicles using R-134a refrigerant>	R-12 (CFC - 12) 770 - 870 (27.16 - 30.69) R-134a (HFC - 134a) 740 - 790 (26.10 - 27.87)				

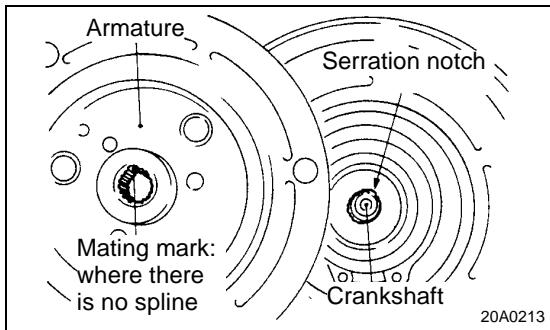
### SERVICE SPECIFICATIONS

E55CB

Item	Specifications	
Standard value		
Idle speed when air conditioner on rpm	900 ± 100	
Resister resistance value Ω	1.76 - 2.06 (Across terminals ② and ①) 1.10 - 1.26 (Across terminals ② and ③) 0.38 - 0.44 (Across terminals ② and ④)	
Thermostat		
ON temperature °C (°F)	Approx. 110 (230) or less	
OFF temperature °C (°F)	Approx. 155 (311) or less	
Revolution pick up sensor standard resistance Ω	405 ± 35 when ambient temperature is 20°C (68°F)	
Clutch clearance mm (in.)	0.4 - 0.6 (0.01 - 0.02) 	
Engine coolant temperature switch		
Switch-OFF temperature °C (°F)	112 - 118 (233 - 244)	
Air mix damper potentiometer motor assembly resistance		
MAX. HOT kΩ	0.2	
MAX. COOL kΩ	4.8	
Mode selection damper potentiometer assembly resistance		
DEF. Position kΩ	0.2	
FACE. Position kΩ	4.8	
Engine coolant temperature sensor		
Sensor-ON temperature °C(°F)	26.5 ± 4 (79.7 ± 7)	

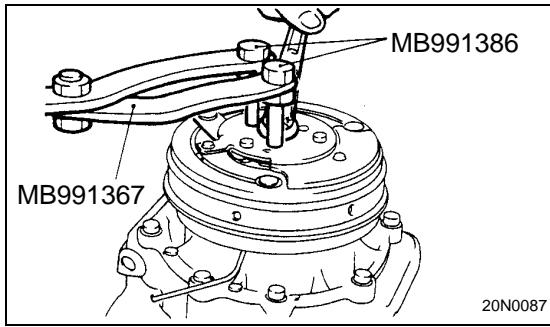
 **<Old>**  
**0.4 - 0.6 (0.01 - 0.02)**

 **<New>**  
**0.3 - 0.5 (0.01 - 0.02)**



#### 4. INSTALLATION OF ARMATURE PLATE

Align the mating mark of the crankshaft spline and the mating mark of the armature plate, and then fit them together.

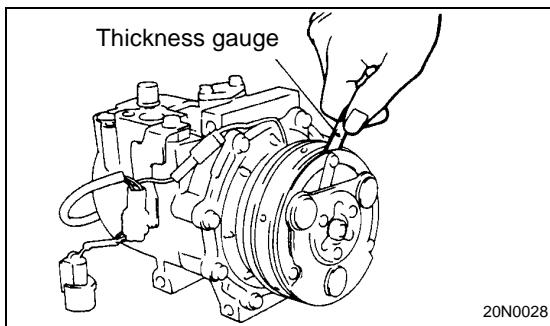


#### 3. INSTALLATION OF NUT

- (1) Use the special tool to tighten the nut.

**<New>**

**0.3 - 0.5 mm (0.01 - 0.02 in.)**



- (2) Check whether or not the air gap of the clutch is within the standard value.

**Standard value:**

**0.4 - 0.6 mm (0.01 - 0.02 in.)**

**NOTE**

If there is a deviation of the air gap from the standard value, make the necessary adjustment by adjusting the number of shims.

**<Old>**

## SERVICE SPECIFICATIONS

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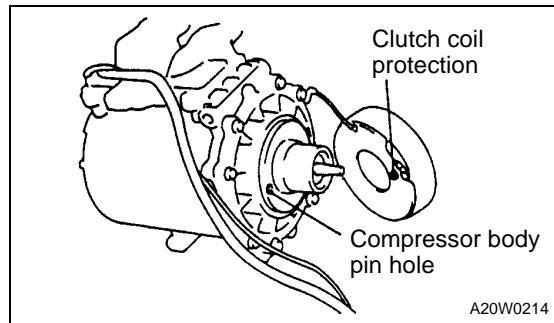
Items	Standard value		Remarks
Idle speed r/min.	4G63-M/T	700 ± 50	"N" Range
	4G63-A/T	750 ± 50	"P" Range
	4G64	800 ± 50	"N" or "P" Range
	4D56	750 ± 30	
Idle-up speed r/min.	4G63	850 - 950	
	4D56	900 - 1,000	
Idle-up solenoid valve Ω	Approx. 40		-
Resistor (for blower motor) Ω	HI - LO	1.96 ± 7%	Between terminals 2 - 3
	HI - ML	0.95 ± 7%	Between terminals 2 - 1
	HI - MH	0.33 ± 7%	Between terminals 2 - 4
Resistor (for air outlet changeover damper motor potentiometer) kΩ	Approx. 1 - 3		Between terminals 6 - 8 or Between terminals 7 - 8
Resistor (for pseudo signal) (Vehicles with overhead A/C) kΩ	4.7		-
Resistor (for rear blower motor - Built-in type) Ω	HI - LO	1.56 ± 7%	Between terminal 4 - 3
	HI - ML	0.86 ± 7%	Between terminal 4 - 6
	HI - MH	0.44 ± 7%	Between terminal 4 - 5
Resistor (for rear blower motor - Under seat type) Ω	Approx. 1.7		Between terminal 2 - 3
Air gap (Magnetic clutch) mm	0.3 - 0.6		-
Engine coolant temperature switch (for A/C cut-off) °C	ON (continuity)	108 or less	-
	OFF (no continuity)	112 - 118 or more	-
Engine coolant temperature switch (for condenser fan) <4D56> °C	ON (continuity)	100 - 104 or more	-
	OFF (no continuity)	97 or less	-
Engine coolant temperature switch (for condenser fan) <4G63, 4G64> °C	ON (continuity)	95 - 105 or more	-
	OFF (no continuity)	95 or less	-

## LUBRICANTS

<New> 0.3 - 0.6 <Single A/C>  
0.3 - 0.5 <Dual A/C>

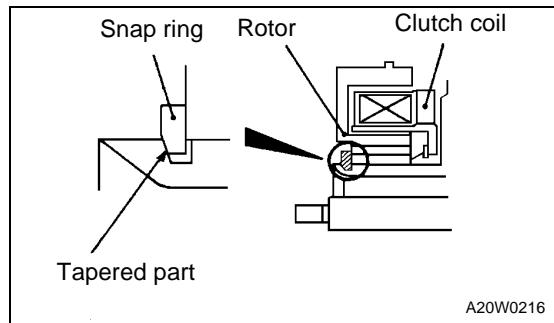
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Items	Quantity	Specified lubricants
Single A/C	Compressor refrigerant unit lubricant ml	180
	Each connection of refrigerant line	As required
	Refrigerant g	Approx. 650
Dual A/C	Compressor refrigerant unit lubricant ml	240
	Each connection of refrigerant line	As required
	Lip seal of the compressor	
	Refrigerant g	Approx. 950
		R134a (HFC - 134 a)
		SUN PAG 56
		R134a (HFC - 134a)



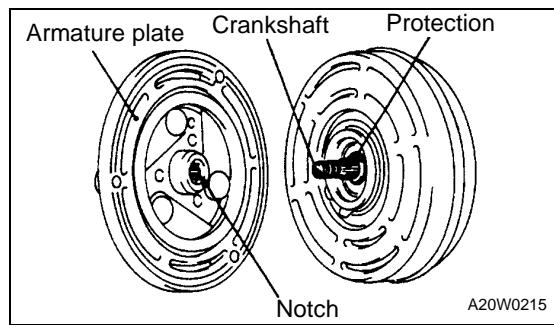
### ►C◀ CLUTCH COIL INSTALLATION

When installing the clutch coil to the A/C compressor body, install so that the pinhole of the A/C compressor body and the clutch coil projection are aligned.



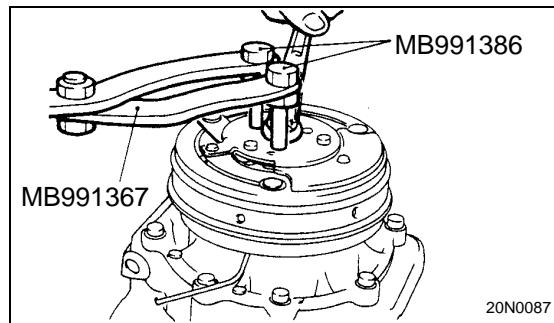
### ►D◀ SNAP RING INSTALLATION

Install the snap ring so that the tapered surface is at the outer side.

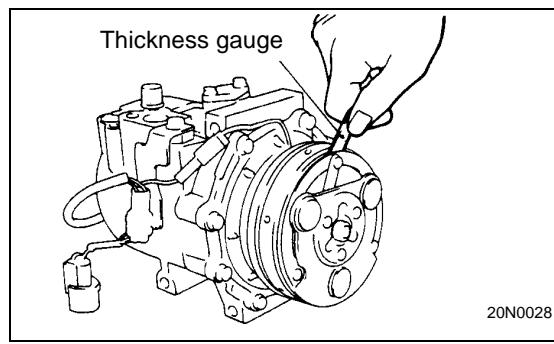


### ►E◀ ARMATURE PLATE INSTALLATION

Align the projection on the crankshaft serration with the armature notch, and then fit them together.



### ►F◀ NUT INSTALLATION



### ►G◀ ARMATURE PLATE INSTALLATION

Check whether or not the air gap of the clutch is within the standard value.

**Standard value: 0.3 - 0.6 mm <Single A/C>**

**0.4 - 0.6 mm <Dual A/C>**

#### NOTE

**<Old>**

If there is a deviation of the air gap from the standard value, make the necessary adjustment by adjusting the number of shims.

**<New> 0.3 - 0.5**

**Caution****Do not Heat R-134a above 40°C**

In most instances, moderate heat is required to bring the pressure of the refrigerant in its container above the pressure of the system when charging or adding refrigerant.

A bucket or large pan of hot water not over 40°C is all the heat required for this purpose. Do not heat the refrigerant container with a blowtorch or any other means that would raise temperature and pressure above this temperature. Do not weld or steam clean on or near the system components or refrigerant lines.

**Caution**

**Keep R-134a containers upright when charging the system.**

When metering R-134a into the refrigeration system keep the supply tank or cans in an upright position. If the refrigerant container is on its side or upside down, liquid refrigerant will enter the system and damage the compressor.

**Caution**

- 1. The leak detector for R-134a should be used to check for refrigerant gas leaks.**
- 2. Do not allow liquid refrigerant to touch bright metal.**

Refrigerant will tarnish bright metal and chrome surfaces, and in combination with moisture can severely corrode all metal surfaces.

**SERVICE SPECIFICATIONS**

55200030110

Items	Standard value	
Idle speed r/min	4G1, 4G9 (except MVV)	750 ± 100
	4G9 (MVV)	700 ± 100
Idle up speed r/min	850 ± 100	
Resistor (for blower motor) <L.H. drive vehicles> Ω	LO: 2.21, ML: 0.97, MH: 0.35	
Resistor (for blower motor) <R.H. drive vehicles> Ω	LO: 2.81, ML: 1.28, MH: 0.33	
Air gap (Magnetic clutch)	0.40 - 0.65 <Old>	

**LUBRICANTS**

&lt;New&gt;

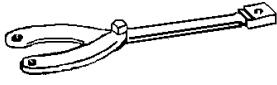
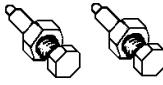
0.3 - 0.5

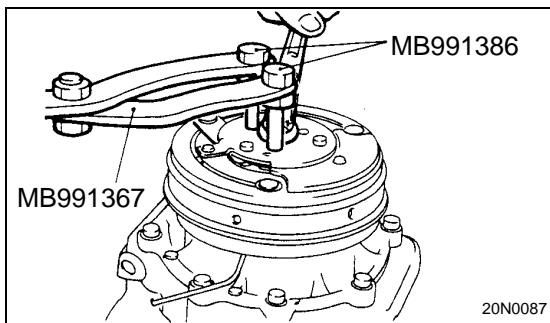
55200040113

Items	Specified lubricants	Quantity
Each connection of refrigerant line	SUN PAG 56	As required
Compressor refrigerant unit lubricant ml	SUN PAG 56	120

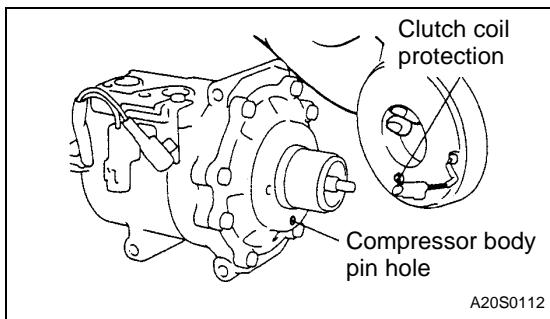
**SPECIAL TOOLS**

55200060096

Tool	Number	Name	Use
	MB991367	Special spanner	Removal and installation of armature mounting nut of compressor
	MB991386	Pin	Removal and installation of armature mounting nut of compressor

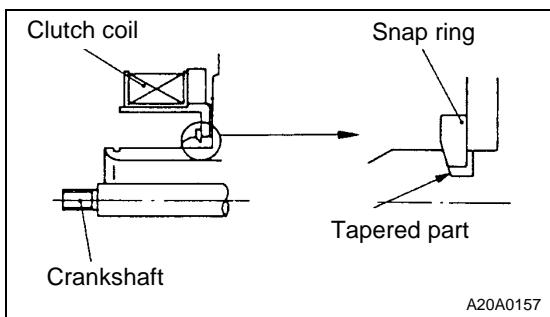


**DISASSEMBLY SERVICE POINT**  
►A►NUT REMOVAL



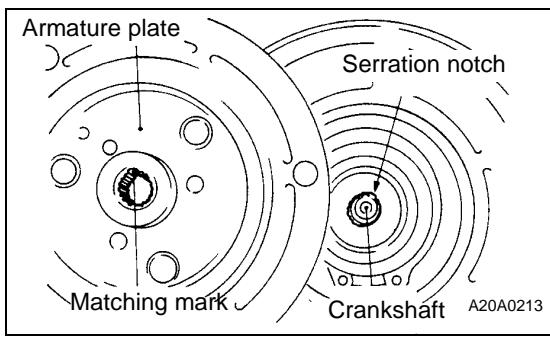
**REASSEMBLY SERVICE POINTS**  
►C◄ CLUTCH COIL INSTALLATION

When installing the clutch coil to the A/C compressor body, install so that the pinhole of the A/C compressor body and the clutch coil projection are aligned.



►B◄ SNAP RING INSTALLATION

Install the snap ring so that the tapered surface is at the outer side.

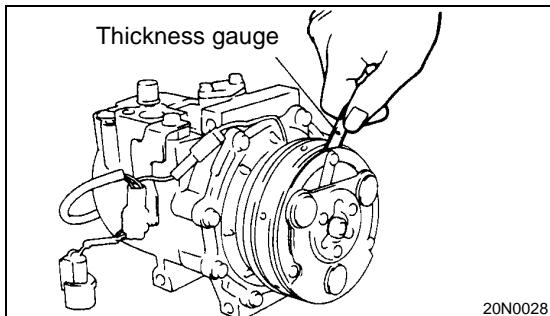


►C◄ ARMATURE PLATE INSTALLATION

Align the matching mark of the crankshaft spline and the matching mark of the armature plate, and then fit them together.

►D◄ NUT INSTALLATION

Use the special tool to hold the magnet clutch, and tighten the nut in the same manner as removal.



►E◄ AIR GAP ADJUSTMENT

Check whether or not the air gap of the clutch is within the standard value. **<Old>**

**Standard value: 0.40 - 0.65 mm**

NOTE

If there is a deviation of the air gap from the standard value, make the necessary adjustment by adjusting the number of shims.

**<New> 0.3 - 0.5**

**Caution****Do not Heat R-134a above 40°C**

In most instances, moderate heat is required to bring the pressure of the refrigerant in its container above the pressure of the system when charging or adding refrigerant.

A bucket or large pan of hot water not over 40°C is all the heat required for this purpose. Do not heat the refrigerant container with a blowtorch or any other means that would raise temperature and pressure above this temperature. Do not weld or steam clean on or near the system components or refrigerant lines.

**Caution**

**Keep R-134a containers upright when charging the system.**

When metering R-134a into the refrigeration system keep the supply tank or cans in an upright position. If the refrigerant container is on its side or upside down, liquid refrigerant will enter the system and damage the compressor.

**Caution**

- 1. The leak detector for R-134a should be used to check for refrigerant gas leaks.**
- 2. Do not allow liquid refrigerant to touch bright metal.**

Refrigerant will tarnish bright metal and chrome surfaces, and in combination with moisture can severely corrode all metal surfaces.

## SERVICE SPECIFICATIONS

55200030219

Items	Standard value	
Idle speed r/min	4G6	750 ± 50
	6A1	650 ± 50
	4D6	800 ± 30
Idle up speed r/min	When load by A/C is low	4G6
		750 ± 50
		6A1
		650 ± 50
		4D6
		850 ± 50
Resistor (for blower motor) Ω	When load by A/C is high	4G6
		850 ± 50
		6A1
		900 ± 50
	4D6	850 ± 50
Resistor (for blower motor) Ω	LO: 2.30, ML: 1.10, MH: 0.40	
Air gap (Magnetic clutch) mm	<del>0.40 - 0.65</del> <Old>	

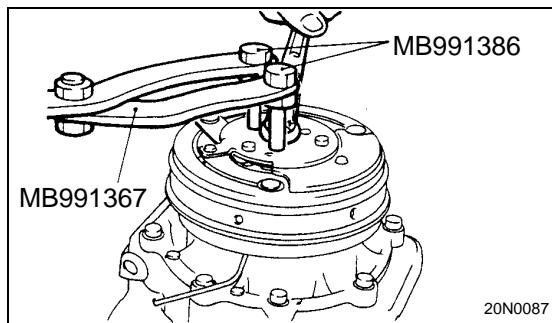
&lt;New&gt;

0.3 - 0.5

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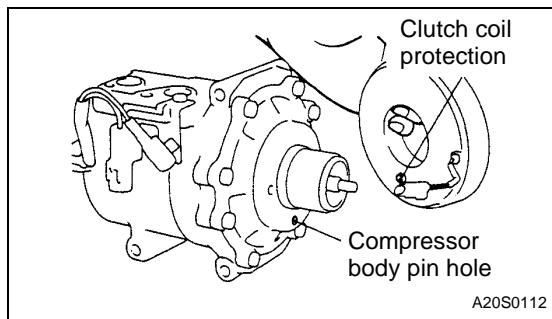
## LUBRICANTS

Items	Specified lubricants	Quantity
Each connection of refrigerant line	SUN PAG 56	As required
Compressor refrigerant unit lubricant ml	SUN PAG 56	120



## DISASSEMBLY SERVICE POINT

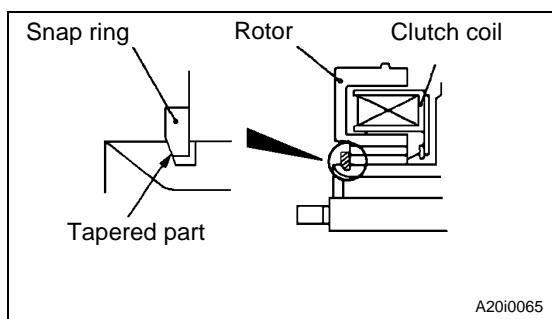
### ► A ► NUT REMOVAL



## REASSEMBLY SERVICE POINTS

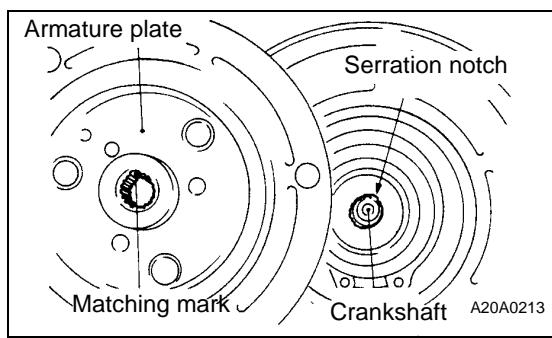
### ► A ◀ CLUTCH COIL INSTALLATION

When installing the clutch coil to the A/C compressor body, install so that the pinhole of the A/C compressor body and the clutch coil projection are aligned.



### ► B ◀ SNAP RING INSTALLATION

Install the snap ring so that the tapered surface is at the outer side.

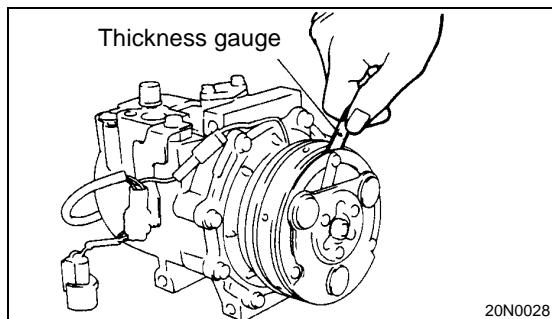


### ► C ◀ ARMATURE PLATE INSTALLATION

Align the matching mark of the crankshaft spline and the matching mark of the armature plate, and then fit them together.

### ► D ◀ NUT INSTALLATION

Use the special tool to hold the magnet clutch, and tighten the nut in the same manner as removal.



### ► E ◀ AIR GAP ADJUSTMENT

Check whether or not the air gap of the clutch is within the standard value.

**<Old>**  
**Standard value: 0.40 - 0.65 mm**

#### NOTE

If there is a deviation of the air gap from the standard value, make the necessary adjustment by adjusting the number of shims.

**<New> 0.3 - 0.5**