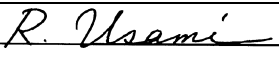




SERVICE BULLETIN

QUALITY INFORMATION ANALYSIS
OVERSEAS SERVICE DEPT. MITSUBISHI MOTORS CORPORATION

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

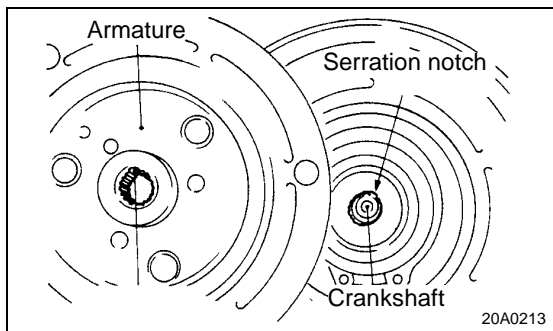
'95 L400 Workshop Manual, page 7, 8

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

'97 GALANT Workshop Manual, page 11, 12

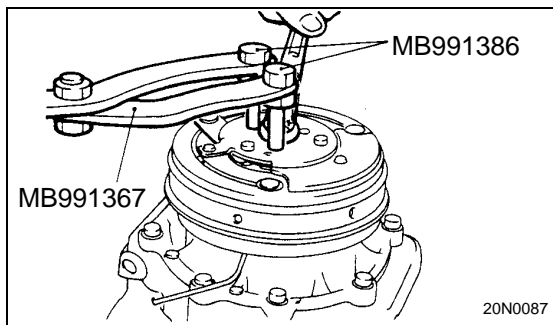
SERVICE SPECIFICATIONS

Items	Specifications
Standard value	
Idle speed r/min.	
4G13, 4G15	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> <R.H. drive vehicles>
	MH: 0.35 MH: 0.33
	ML: 0.97 ML: 1.28
	LO: 2.21 LO: 2.81
	<Old>
Air gap (Magnetic clutch) mm (in.)	0.4 - 0.65 (0.02 - 0.03)
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

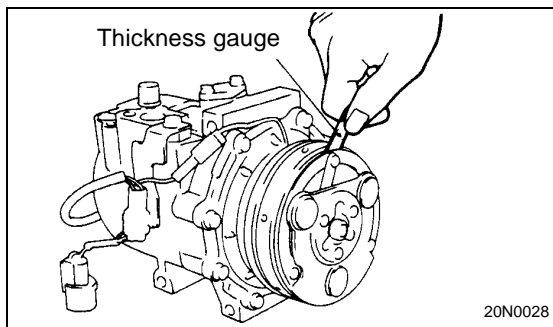
Align the mating mark of the crankshaft spline and the mating mark of the armature plate, and then fit them together.



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

<Old>

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

SPECIFICATIONS

E55CA

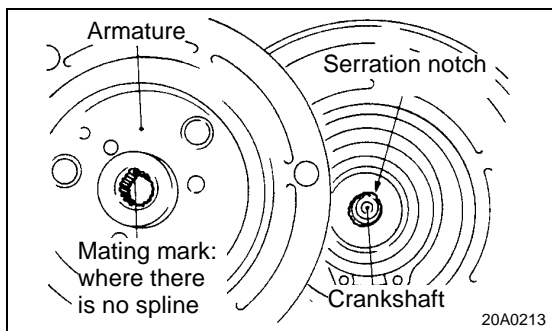
GENERAL SPECIFICATIONS

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

SERVICE SPECIFICATIONS

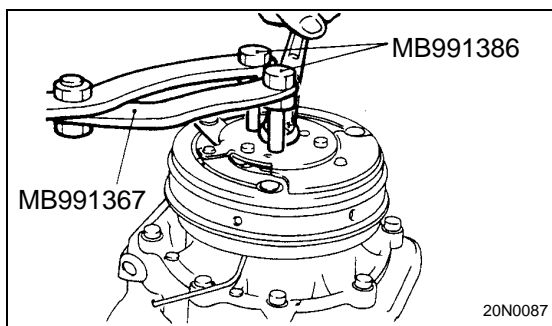
E55CB

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) <Old>
Engine coolant temperature switch	
Switch-OFF temperature °C (°F)	112 - 118 (233 - 244)
Air mix damper potentiometer motor assembly resistance	<New> 0.3 - 0.5 (0.01 - 0.02)
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)



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.

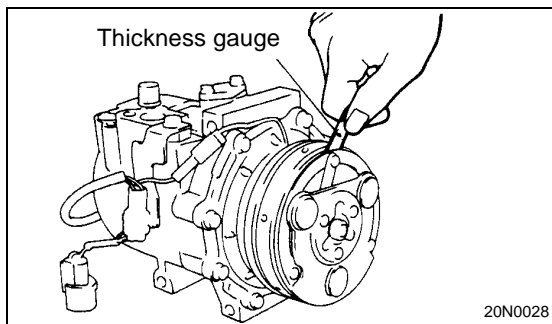


3. INSTALLATION OF NUT

(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

<Old>

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

SERVICE SPECIFICATIONS

120002258

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

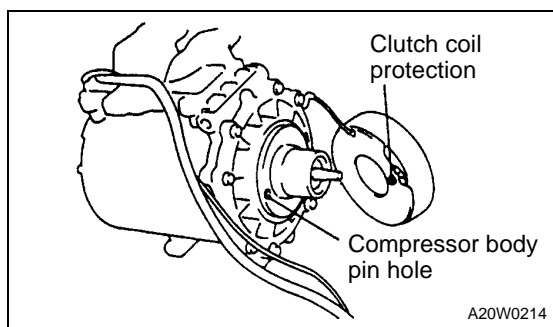
<New>

0.3 - 0.6 <Single A/C>

0.3 - 0.5 <Dual A/C>

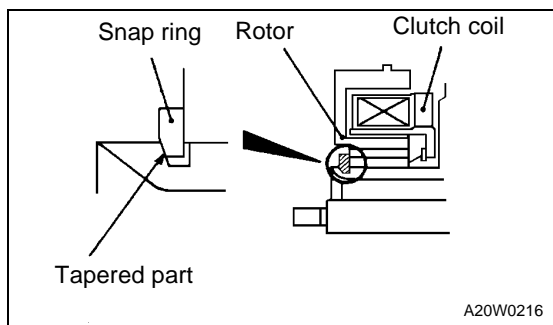
120002657

Items		Quantity	Specified lubricants
Single A/C	Compressor refrigerant unit lubricant mℓ	180	ZXL 100 PG
	Each connection of refrigerant line	As required	
	Refrigerant g	Approx. 650	R134a (HFC - 134 a)
Dual A/C	Compressor refrigerant unit lubricant mℓ	240	SUN PAG 56
	Each connection of refrigerant line	As required	
	Lip seal of the compressor		
	Refrigerant g	Approx. 950	R134a (HFC - 134a)



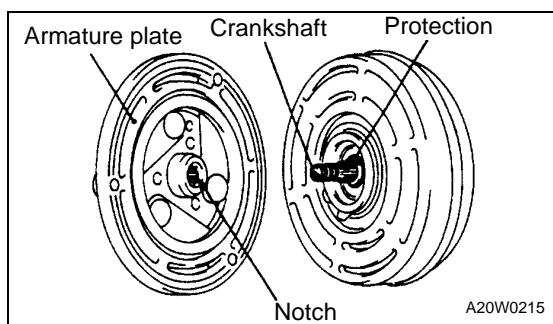
►C◄ CLUTCH COIL INSTALLATION

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.



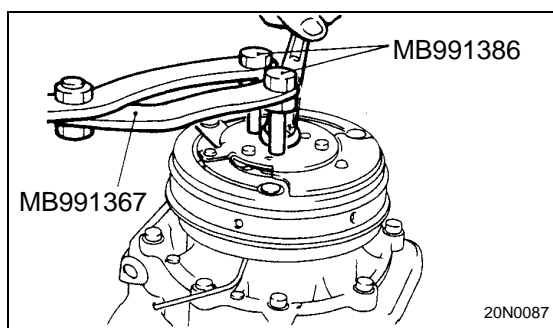
►D◄ SNAP RING INSTALLATION

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

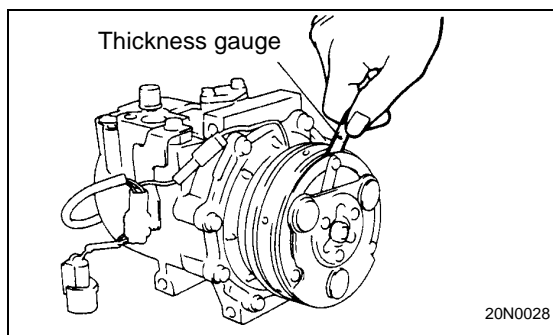


►E◄ ARMATURE PLATE INSTALLATION

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

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

<Old>

<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

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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>

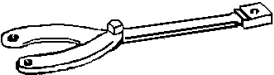

LUBRICANTS**<New>** **0.3 - 0.5**

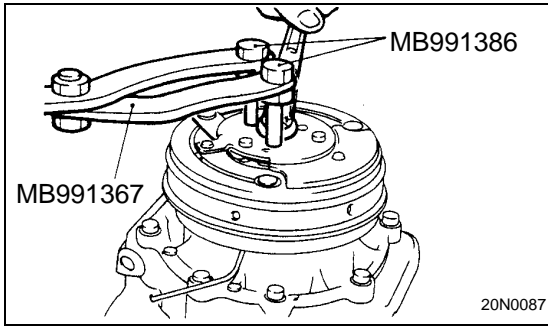
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Items	Specified lubricants	Quantity
Each connection of refrigerant line	SUN PAG 56	As required
Compressor refrigerant unit lubricant ml	SUN PAG 56	120

SPECIAL TOOLS

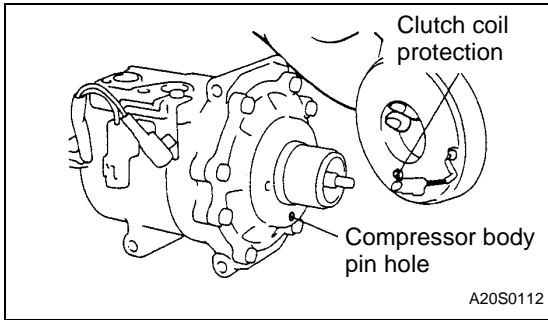
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Tool	Number	Name	Use
	MB991367	Special spanner	Removal and installation of armature mounting nut of compressor
	MB991386	Pin	Removal and installation of armature mounting nut of compressor



DISASSEMBLY SERVICE POINT

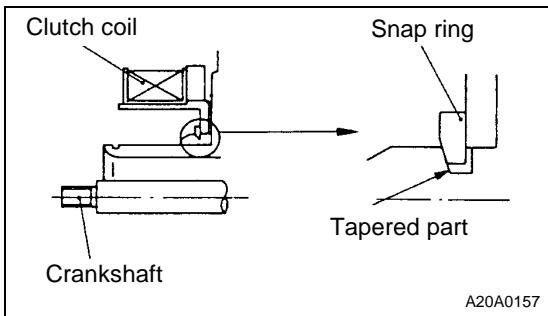
◀ A ▶ NUT REMOVAL



REASSEMBLY SERVICE POINTS

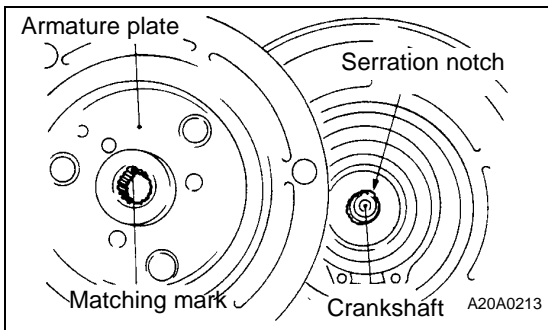
▶ C ◀ CLUTCH COIL INSTALLATION

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.

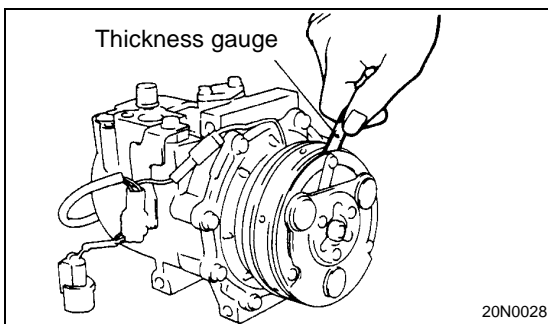


▶ C ◀ ARMATURE PLATE INSTALLATION

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.

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

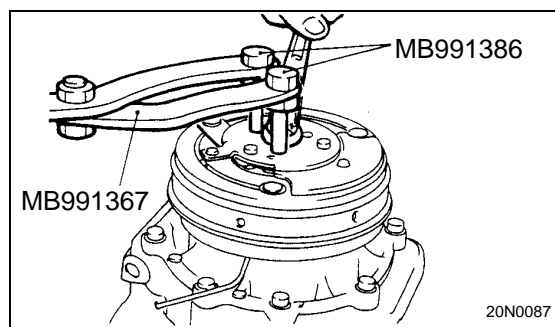
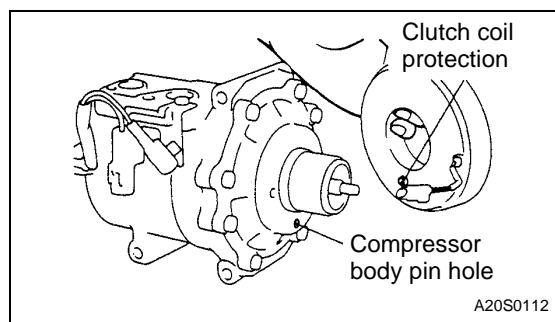
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Items		Standard value	
Idle speed r/min	4G6	750 ± 50	
	6A1	650 ± 50	
	4D6	800 ± 30	
Idle up speed r/min	When load by A/C is low	4G6	750 ± 50
		6A1	650 ± 50
		4D6	850 ± 50
	When load by A/C is high	4G6	850 ± 50
		6A1	900 ± 50
		4D6	850 ± 50
Resistor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

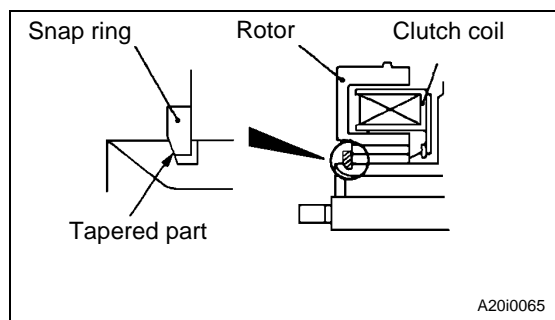
LUBRICANTS<New> **0.3 - 0.5**

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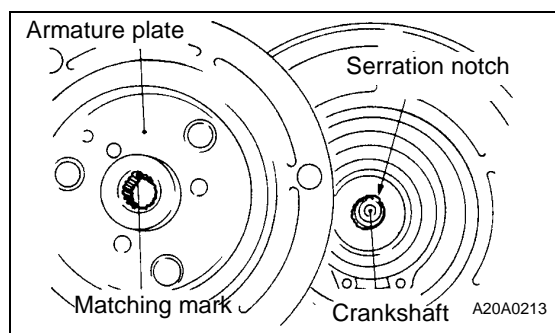
Items	Specified lubricants	Quantity
Each connection of refrigerant line	SUN PAG 56	As required
Compressor refrigerant unit lubricant ml	SUN PAG 56	120

**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**

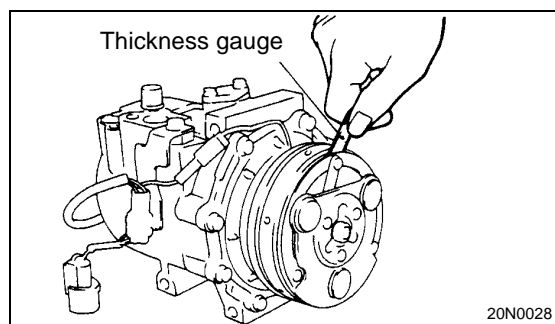
Install the snap ring so that the tapered surface is at the outer side.

**▶ 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**