

Service Bulletin

SA-002 Rev 3
Supersedes SA-002 Rev 2

DATE: February 14, 2007
TO: All Service and Parts Managers
SUBJECT: ECM[™]/X13[™] Motor and ECM[™] End Bell Control Module Kit Cross-Reference List

We are pleased to announce the release of an ECM[™]/X13[™] Motor and ECM[™] End Bell Control Module Kit cross-reference list for all variable speed Amana[®] and Goodman[®] brand furnaces, package units and air handlers. These lists show the existing service replacement ECM[™]/X13[™] Motors and ECM[™] End Bell Control Module Kits, and their corresponding replacement.

The following lists on Pages 4, 5, 6 and 7 show the original ECM[™]/X13[™] Motor for a product and the history of parts substitution(s) for a specific motor along with corresponding service replacement ECM[™] End Bell Control Module Kit. These new lists provide new ECM[™]/X13[™] motor and ECM[™] End Bell Control Module Kit part numbers for many units on the lists, but some ECM[™]/X13[™] Motor numbers will remain the same.

You will notice that in the Amana[®] list on Page 4, four of the entries in the list, package cooling and heat pump units (PCC60C, PHB60/PHD42, 48 & 60C), the ECM[™] Motor and End Bell Control Module Kits sub over to a Service R Kit which contains the designated ECM[™] Motor or End Bell Control Module Kit along with a Door Gasket Kit (Part # RF000179). These kits (Part #'s RF000192, 93, 94, 95, 96 & 97) containing the door gasket material were released to help in reducing infiltration of outdoor ambient air into the conditioned air compartments and improving overall Indoor Air Quality (IAQ) on the package cooling and heat pump units previously called out. The Door Gasket Kit (Part # RF000179) can also be ordered as a separate item for those wishing to add it to package cooling and heat pump units produced prior to the date codes of the units listed in Service Bulletin CAG-453.

With the release of the new ECM[™] End Bell Control Module Kits, we have added an identification label to the ECM[™] End Bell Control Module which provides the part # of the ECM[™] End Bell Control Module and the ECM[™] Motor that it is programmed for.

In order to simplify the ECM[™]/X13[™] Motor and ECM[™] End Bell Control Module part substitutions and prevent incorrect parts orders, we are making changes to our service parts listings located in ASAP (Amana Service Authorized Parts) CD ROM program, Parts Manuals and the Service Parts system. In the past, all ECM[™] Motor part numbers were automatically substituted over to ECM[™] End Bell Control Module Kits. This was set up this way in the past due to the fact that 99% of the time the failures were attributed to the ECM[™] End Bell Control Module and not the ECM[™] Motor. The changes that are currently taking place are the elimination of the automatic substitutions from the ECM[™] Motor to the ECM[™] End Bell Control Module Kit that were referenced in Service Bulletin CAG-430 that was released August 30, 2001.

In the previous Service Bulletin CAG-430, in the unlikely event that a complete ECM[™] Motor was needed, we required the dealer to contact their Distributor Technical Service Manager when ordering the complete ECM[™] Motor, but this will not be required with the changes currently taking place. Both the complete ECM[™] Motor assembly and ECM[™] End Bell Control Module Kit will be listed for a specific unit and it will be necessary for the service technician to determine which component has failed and not arbitrarily change the entire ECM[™] Motor assembly. The ECM[™]

End Bell Control Module will still allow us to be able to offer the homeowners a repair part for the ECM™ motor at a cost comparable to a standard motor when it has been determined that this component has failed and not the motor.

Extensive research by GE and Goodman showed that a failure of the motor portion was **extremely rare** and this was the reason for the previous automatic substitution to the ECM™ End Bell Control Module, but with improved ECM™ Motors, troubleshooting information and test equipment, we are confident that this change in providing both the complete ECM™ Motor and ECM™ End Bell Control Module part numbers will help simplify part(s) orders and eliminate incorrect part(s) orders that have occurred in the past.

WARRANTY PROCEDURES:

Goodman will continue to pay class “B” labor for ECM™ End Bell Control Modules replaced with ASURE or GoodCare labor coverage.

On the few claims where you are claiming warranty on a complete ECM™ motor assembly, you must indicate as such on the warranty claim form and include a copy of the invoice for the complete motor assembly.

MOTOR TESTING:

Troubleshooting information on ECM™ motors is available on the “InfoFinder” CD ROM. To open the ECM™ troubleshooting manual, type in “ECM™” in the literature # field (the third field) on the “Info-Finder opening screen. The ECM™ troubleshooting manual has extensive testing information on the ECM™ Motor and End Bell Control Modules. All of our service manuals are being revised to also provide detailed troubleshooting information on ECM™ Motors and the End Bell Control Modules.

Basically, you are verifying that the signal (24V) from the control is reaching the End Bell Control Module. If you are not reading a signal (24V) to the motor, the control or interface board is defective and not the End Bell Control Module.

If you suspect the motor portion of the ECM™ has failed:



HIGH VOLTAGE.

Disconnect ALL power before servicing or installing this unit. Multiple power sources may be present. Failure to do so may cause property damage, personal injury or death.

1. Disconnect power to the unit. Wait 5 minutes to allow internal capacitor to discharge.
2. Remove the End Bell Control Module (5-pin connector, 16-pin connector, and two screws on the end of the control module).
3. Between the End Bell Control Module and the motor, there is a 3-pin connector linking the motor to the control module. Disconnect the 3-pin connector.
4. Using an Ohmmeter, check the motor windings for continuity to ground. Continuity to ground (3-pin connector to shell) indicates a failed motor and the complete ECM™ motor assembly must be replaced.
5. Using an Ohmmeter, check the motor winding for continuity through the windings (pin to pin at the 3-pin connector). No continuity may indicate the motor is open on internal (thermal) overload. Allow the motor to cool and retest. If, after allowing the motor to cool, you still have no continuity, replace the complete ECM™ motor assembly.

IT IS NORMAL to feel a slight resistance as you rotate the shaft of the ECM™ motor. This is the effect of the stator magnets passing through the field windings. This is not an indication of failed bearings. The motor assembly does not need to be replaced.

Provided with each End Bell Control Module Kit are replacement instructions (**Part # 20299901 – ECM™ Module Replacement**), providing specific instructions for replacement of a defective End Bell Control Module and use of an Ohm Meter for testing for a defective ECM™ Motor.

**CAUTION**

Using the wrong End Bell Control Module voids all product warranties and may produce unexpected results.

NOTE: You **MUST** have the correct replacement module. The controls are factory programmed for specific operating modes. Even though they look alike, different End Bell Control Modules may have completely different functionality.

Also available from Goodman is the GE TECMATEXL™ service tool (**Part # GETECMATEXL**), which is a low cost, easy to use device that will analyze the GE ECM™ Motor independent of the HVAC system. It operates in the basic HVAC settings of fan-only, heating, cooling and de-humidification. This tool is specially designed to detect and isolate motor failures from other HVAC system failures. To order this service tool, contact Service Parts.

Please provide these ECM™ Motor and ECM™ End Bell Control Module Kit cross-reference lists to all your personnel who will be ordering these parts, so they can correctly identify their part numbers when needing to order any ECM™ components.

Amana® Brand ECM Cross Reference List

ECM™ Motor & End Bell Kit Cross Reference List												
Model	HP (Horsepower)	Original ECM Mtr/End Bell Assy Part #	Mtr/End Bell Assy Sub Part #	Mtr/End Bell Assy Sub Part #	Mtr/End Bell Assy Sub Part #	Mtr/End Bell Assy Sub Part #	Mtr/End Bell Assy Sub Part #	Current ECM Mtr/End Bell Assy Part #	Previous End Bell Kit Part #	Current End Bell Kit Part #	ECM™ Motor with Door Gasket Kit	
AMV90453BXA	1/2	20508513	20508514					0231K00009A	20509213	20509214		
AMV90704CXA	3/4	20509423	20509425					0231K00024A	20510123	20510125		
AMV90905DXA	1	20510314	20510317					0231K00036A	20511014	20511017		
AMV91155DXA	1	20510315	20510318					0231K00037A	20511015	20511018		
ACV90704CXA	3/4	20509424	20509426					0231K00025A	20510124	20510126		
ACV90905DXA	1/2	20510316	20510319					0231K00038A	20511016	20511019		
ADV80703BX	1/2	0131F0001P	0131F0001PS					0231K00046		20509216		
ADV80905CX	3/4	0131F0002P	0131F0002PS					0231K00050		20510131		
ADV81155CX	3/4	B13400914GB	B13400914GBS					0231K00049		20510130		
AMV80703/4BXA	3/4	B13400909GB	B13400912GB	B13400912GBS				0231K00047		20510128		
AMV80905CXA	3/4	B13400910GB	B13400913GB	B13400913GBS				0231K00048		20510129		
AMV81155CXA	3/4	B13400911GB	B13400914GB	B13400914GBS				0231K00049		20510130		
GUV070CX/DX40	1/2	10843305	20257702	20508502				0231K00001A	20299302	20509202		
GUV090CX/DX50	3/4	11074704	20257803	20509403				0231K00012A	20299311	20510103		
GUV115/140CX/DX50	3/4	11074705	20257804	20509404				0231K00013A	20299312	20510104		
GUV070FX40	1/2	20257709	20508509					0231K00006A		20509209		
GUV090FX50	3/4	20257815	20509415					0231K00019A		20510115		
GUV115/140FX50	3/4	20257816	20509416					0231K00020A		20510116		
GUA045AX30	1/2	10843307	20257704	20508504				0231K00002A	20299303	20509204		
GUA070AX40	3/4	11074707	20257806	20509406				0231K00014A	20299313	20510106		
GUA090AX50	1	10843404	20257904	20510304				0231K00027A	20299305	20511004		
GUA115AX50	1	10843405	20257905	20510305				0231K00028A	20299306	20511005		
GUA045BX/CX30	1/2	20257708	20508508					0231K00005A	20299322	20509208		
GUA070BX/CX40	3/4	20257810	20509410					0231K00017A	20299323	20510110		
GUA090BX/CX50	1	20257911	20510311					0231K00033A	20299324	20511011		
GUA115BX/CX50	1	20257912	20510312					0231K00034A	20299325	20511012		
GCA070BX/CX40	3/4	20257811	20509411					0231K00018A	20299327	20510111		
GCA090BX/CX50	1	20257913	20510313					0231K00035A	20299326	20511013		
BHA24-42TB	1/2	10843301	10843302	20257706	20508506			0231K00003A	20299316	20509206		
BHA48/60TB	1	10843401	20257908	20510308				0231K00030A	20299319	20511008		
BBC36A2A	1/2	10843304	20257701	20508501				0231K00000A	20299301	20509201		
BBC48A2A	3/4	11074703	20257802	20509402				0231K00011A	20299310	20510102		
BBC60A2A	3/4	11074702	20257801	20509401				0231K00010A	20299309	20510101		
BBC36A2C	1/2	20257712	20508512					0231K00008A		20509212		
BBC48A2C	3/4	20257821	20509421					0231K00022A		20510121		
BBC60A2C	3/4	20257822	20509422					0231K00023A		20510122		
MBE1200AA-1	1/2	BT1340044	BT1340044S					0231K00052		20509215		
MBE1600AA-1	3/4	BT1340045	BT1340045S					0231K00052		20510133		
MBE2000AA-1	3/4	BT1340046	BT1340046S					0231K00053		20510134		
PCC60C	3/4	20257808	20509408					0231K00015A	20299315	20510108	RF000192	
PHB60C/PHD48C	3/4	11074706	11074708	20257805	20509420			0231K00021A	20299314	20510120	RF000193	
PHD42C	1/2	10843308	20257705	20508510				0231K00007A	20299304	20509210	RF000194	
PHD60C	3/4	20257817	20257820	20509420				0231K00021A		20510120	RF000193	
PGC24/30/36B	1/2	10843303	20257707	20508507				0231K00004A	20299317	20509207		
PGC42/48B	3/4	11074701	20257809	20509409				0231K00016A	20299318	20510109		
PGC60B090	1	10843402	20257909	20510309				0231K00031A	20299320	20511009		
PGC60B135	1	10843403	20257910	20510310				0231K00032A	20299321	20511010		
PGD48/60C/E	1	10843406	20257906	20510307				0231K00029A	20299308	20511007		
APG1348***1A/AA	3/4	B13400915	B13400915S					0231K00051		20510132		
APG1360***1A/AA	1	B13400868	B13400868S					0231K00054		20511020		

Amana[®] Brand X13 Cross Reference List

X13™ Motor Cross Reference List						
Model	HP (Horsepower)	Original X13 Motor Part #	Motor Sub Part #	Motor Sub Part #	Motor Sub Part #	Current X13 Motor Part #
APG1348***1AB	3/4 (X13)	0131M00032				0231K00041
APG1360***1BA	1 (X13)	0131M00031				0231K00040
APG152407041AA	1/2 (X13)	0131M00059				0231K00059
APG153609041AA	1/2 (X13)	0131M00057				0231K00060
APG154811541AA	3/4 (X13)	0131M00058				0231K00062
APG156014041AA	1 (X13)	0131M00056				0231K00061
GPH/C1360H21A/AA	3/4 (X13)	0131M00030				0231K00039
GPH/C1360H21AB	3/4 (X13)	0131M00042				0231K00042
GPH/C1348M2*AA	3/4 (X13)	0131M00036				0231K00043
GPH/C1360M2*AA	1 (X13)	0131M00045				0231K00044

Goodman® Brand ECM Cross Reference List

ECM™ Motor & End Bell Kit Cross Reference List									
Model	HP (Horsepower)	Original ECM Mtr/End Bell Assy Part #	Mtr/End Bell Assy Sub Part #	Mtr/End Bell Assy Sub Part #	Mtr/End Bell Assy Sub Part #	Current ECM Mtr/End Bell Assy Part #	Previous End Bell Kit Part #	Current End Bell Kit Part #	
GMV950453BXA	1/2	20508514				0231K0009A		20509214	
GMV950704CXA	3/4	20509425				0231K00024A		20510125	
GMV950905DXA	1	20510317				0231K00036A		20511017	
GMV951155DXA	1	20510318				0231K00037A		20511018	
GMV90703BXA	1/2	20508514				0231K0009A		20509214	
GMV90704CXA	3/4	20509423	20509425			0231K00024A	20510123	20510125	
GMV909045CXA	3/4	20509410	20509427			0231K00026A		20510127	
GMV90905DXA	1	20510314	20510317			0231K00036A	20511014	20511017	
GMV91155DXA	1	20510315	20510318			0231K00037A	20511015	20511018	
GCY90704CXA	3/4	20509424	20509426			0231K00025A	20510124	20510126	
GCY90905DXA	1	20510316	20510319			0231K00038A	20511016	20511019	
GMV807034BXA	3/4	B13400909GB	B13400912GB	B13400912GBS		0231K00047		20510128	
GMV80905CXA	3/4	B13400910GB	B13400913GB	B13400913GBS		0231K00048		20510129	
GMV81155CXA	3/4	B13400911GB	B13400914GB	B13400914GBS		0231K00049		20510130	
GMPE075-3*	1/2	13400602BS	B13400902GA	B13400902GAS		B13400902GBS	13500902GAS	13500902GBS	
GMPE125-5*	1	13400603BS	B13400903GA	B13400903GBS		B13400903GBS	13500903GAS	13500903GBS	
GMPE100-4*	3/4	B13400904GA	B13400904GB			B13400904GBS	13500904GAS	13500904GBS	
GMNTE060-3	1/2	B13400905GB				B13400905GBS		13500905GBS	
GMNTE080-4	3/4	B13400906GB				B13400906GBS		13500906GBS	
GMNTE100-4	1	B13400907GB				B13400907GBS		13500907GBS	
GMNTE120-5	1	B13400908GB				B13400908GBS		13500908GBS	
AEP1024-00A-1	1/2	B13400702AB				B13400702ABS		13500702AAS	
AEP1030-00A-1/00C-1A	1/2	B13400702AB				B13400702ABS		13500702AAS	
AEP1036-00A-1/00C-1A	3/4	B13400704AB				B13400704ABS		13500704AAS	
AEP1048-00A-1	3/4	B13400704AB				B13400704ABS		13500704AAS	
AEP1060-00A-1/00C-1A	3/4	B13400704AB				B13400704ABS		13500704AAS	
AEPF18301AA/BA	1/2	B13400702AB				B13400702ABS		13500702AAS	
AEPF30361AA/BA	3/4	B13400704AB				B13400704ABS		13500704AAS	
AEPF42601AA/BA	3/4	B13400704AB				B13400704ABS		13500704AAS	
AV18-30-05	1/2	13400-602A				B13400702ABS		13500702AAS	
AV18-30-08	1/2	13400-602A				B13400702ABS		13500702AAS	
AV18-30-10	1/2	13400-602A				B13400702ABS		13500702AAS	
AV18-30-15	1/2	13400-602A				B13400702ABS		13500702AAS	
AV36-60-06	3/4	13400-603A				B13400704ABS		13500704AAS	
AV36-60-10	3/4	13400-603A				B13400704ABS		13500704AAS	
AV36-60-15	3/4	13400-603A				B13400704ABS		13500704AAS	
AV36-60-20	3/4	13400-603A				B13400704ABS		13500704AAS	
AER24/30* & AE24/30*	1/2	B13400602AS	B13400702AA	B13400702AB		B13400702ABS		13500702AAS	
AER36/48* & AE36/48*	3/4	B13400603AS	B13400604A2	B13400704AA		B13400704ABS		13500704AAS	
AER60*	3/4	B13400704AB				B13400704ABS		13500704AAS	
AE60*	3/4	B13400704AA	B13400704AB			B13400704ABS		13500704AAS	
MBE1200AA-1	1/2	BT1340044	BT1340044S			0231K00045		20509215	
MBE1600AA-1	3/4	BT1340045	BT1340045S			0231K00052		20510133	
MBE2000AA-1	3/4	BT1340046	BT1340046S			0231K00053		20510134	
PGJ024/030*	1/2	B13400602D				B13400802PAS		13500802PAS	
PGJ036/042/048*	1	B13400603D				B13400803PAS		13500803PAS	
GP1348***1A/AA	3/4	B13400915	B13400915S			0231K00051		20510132	
GP1360***1A/AA	1	B13400868	B13400868S			0231K00054		20511020	

Goodman[®] Brand X13 Cross Reference List

X13™ Motor Kit Cross Reference List						
Model	HP (Horsepower)	Original X13 Motor Part #	Motor Sub Part #	Motor Sub Part #	Motor Sub Part #	Current X13 Motor Assy Part #
GME80704BX	3/4 (X13)	0131F00013				0131F00013S
GME80905CX	1 (X13)	0131F00014				0131F00014S
GME81155CX	1 (X13)	0131F00015				0131F00015S
GPG1348***1AB	3/4 (X13)	0131M00032				0231K00041
GPG1360***1BA	1 (X13)	0131M00031				0231K00040
GPG13480903A/4A	3/4 (X13)	0131M00032				0231K00041
GPG13600903A/1403A	1 (X13)	0131M00031				0231K00040
GPG13600904A/1404A	1 (X13)	0131M00031				0231K00040
GPG152407041AA	1/2 (X13)	0131M00059				0231K00059
GPG153609041AA	1/2 (X13)	0131M00057				0231K00060
GPG154811541AA	3/4 (X13)	0131M00058				0231K00062
GPG156014041AA	1 (X13)	0131M00056				0231K00061
GPH/C1360H21A/AA	3/4 (X13)	0131M00030				0231K00039
GPH/C1360H21AB	3/4 (X13)	0131M00042				0231K00042
GPH/C1348M2*AA	3/4 (X13)	0131M00036				0231K00043
GPH/C1360M2*AA	1 (X13)	0231K00044				0231K00044

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