

DEALER SERVICE BULLETIN

Number: DSB 14-0025

Date: 4/1/14

Supersedes: DSB 11-0025A
Revised 9/17/12

Title: Bristol Two Stage Compressor or Unit
Replacement Program

PRODUCT CATEGORY:

Heat Pumps and Split System AC

MODELS AFFECTED:

Bryant: 698B, 598B, 286A, 187A
Carrier: 38YDB, 38TDB, 25HNA6, 24ANA7

Serial Number(s): All serial numbers within 10 years of unit production date as indicated by the unit serial number.

Commercial installations are not eligible for the program.

SITUATION:

This bulletin sets forth the modified replacement program for Bristol two stage compressors or complete outdoor units due to a compressor failure occurring on or after April 1st, 2014 IF such failure occurs within 10 years of the unit production date. The Bristol two stage reciprocating compressor has undergone continuous improvements to extend its long term reliability, but is more sensitive to certain operating conditions than a scroll compressor. Oversized equipment, improper airflow and charging issues are a few examples of applications and operating conditions that can cause additional stress on the system's components, including the compressor.

SOLUTION:

All claims will be submitted directly into the Service Bench Warranty System by the distributor. The Bristol Audit Form must be signed by the homeowner and is required to be held indefinitely at distribution for potential factory audit.

The customer has a choice of 2 options:

Option 1:

Compressor replacement **without** optional labor contract

- Carrier provides the replacement compressor and associated parts and pays a \$200 dealer allowance for labor cost.
- The replacement compressor and associated parts assume the remainder of the standard limited warranty from the original unit installation date.

Compressor replacement **with** optional labor contract

- Carrier pays a "tiered" optional contract labor and materials allowance for labor and miscellaneous parts (see Table #2 in Policy section below) in addition to providing the replacement compressor.
- The replacement compressor assumes the remainder of the standard limited warranty and the optional labor contract from the original unit installation date.

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The following Bristol TS Compressor Part Numbers are covered under this bulletin.

| Prior to 2006 | | |
|-------------------------|---------------|-----------------|
| RCD part number | Bristol model | Mfg part number |
| P032-2722K | T89B284CBCA | GB20PF007 |
| P032-1926K | T89B194CBCA | GB20PF008 |
| P032-3722K | T89B385CBCA | GB20TF004 |
| P032-5121K | T89A514BBCA | GB20JF006 |
| P032-5122K | T89A514BBCA | GB20JF008 |
| 2006 & After | | |
| RCD part number | Bristol model | Mfg part number |
| P032-1829K | T81J195CBCA | 757006-1000-00 |
| P032-2723K | T81J285CBCA | 757007-1000-00 |
| P032-3525K | T81J384CBCA | 757008-1000-00 |
| P032-5221K | T89A515BBCA | 757009-1000-00 |

Option 2:

Unit replacement **without** optional labor contract

- Customer pays a “tiered” unit replacement “buy-in” (see Table #1 below). Carrier has reduced the “buy-in” amount charged to the consumer by \$450 to assist the consumer with installation costs. The consumer is responsible for negotiating labor and any additional charges. All such costs must be paid directly to the dealer by the consumer.
- Customer receives a new equivalent unit with a scroll compressor
- The new unit assumes the remainder of the original unit’s limited warranty.
- Distributor is invoiced for customer pay in funds according to table #1.

Unit replacement **with** optional labor contract

- Customer pays a “tiered” unit replacement “buy-in” (see Table #1 below). Carrier pays a “tiered” optional contract labor and materials allowance for labor and miscellaneous parts (see Table #2 in Policy section below).
- New equivalent unit with a scroll compressor
- The new unit assumes the remainder of the original unit’s limited or optional warranty.
- Distributor is invoiced for customer pay in funds according to table #1.

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TABLE #1

| | Tiered buy-in for unit based on TIS (Time In Service) | | |
|--|---|---|--|
| | Less than 36 Months TIS | > 36 but less than 72 Months TIS | > 72 to 120 Months TIS |
| | Unit Replacement Buy-In (<i>With</i> Optional Labor Contract) | \$0.00, Labor rate per Table # 2 in Policy Section | \$545.00, Labor rate per Table # 2 in Policy Section |
| Unit Replacement Buy-In (<i>Without</i> Optional Labor Contract) | \$0.00, Carrier pays labor capped at \$450 | \$545.00, Includes \$450 reduction to help with installation costs. Customer pays labor costs to dealer | \$1545.00, Includes \$450 reduction to help with installation costs. Customer pays labor costs to dealer |

The following table identifies indoor coil models that have an approved outdoor unit match and are therefore covered under this bulletin.

Approved Match: Yes/No

| | Bristol | Approved Replacement |
|--------------------|---------|----------------------|
| 40FK (w/Puron TXV) | Yes | Yes * |
| FK4 (w/Puron TXV) | Yes | Yes * |
| FV4A, B | Yes | Yes * |
| FV4C | No | Yes |
| FE4A | Yes | Yes |

** Requires replacement of the indoor motor module for correct air flow when replacing the outdoor Bristol unit with the approved replacement model. Reference SMB 11-0024.*

The following table identifies approved outdoor models that have an approved outdoor unit match and are therefore covered under this bulletin.

Only the equivalent replacement to the failed unit as identified in the below chart is approved under this bulletin. No upgrades are allowed. A change in unit size (tonnage) is allowable if appropriate for the installation as long as the replacement unit is listed in the “Approved outdoor replacement” chart below.

Approved outdoor replacement units listed below:

| Carrier | | |
|-------------------|---------------------------------------|---|
| Bristol AC | Approved A/C Replacement Model | Approved A/C Replacement Model (Coastal) |
| 38TDB024 | 24APA724A or 24ANB724A | 24ANB724C |
| 38TDB036 | 24APA736A or 24ANB736A | 24ANB736C |
| 38TDB037 | 24APA736A or 24ANB736A | 24ANB736C |
| 38TDB048 | 24APA748A or 24ANB748A | 24ANB748C |
| 38TDB060 | 24APA760A or 24ANB760A | 24ANB760C |
| 24ANA724 | 24APA724A or 24ANB724A | 24ANB724C |
| 24ANA736 | 24APA736A or 24ANB736A | 24ANB736C |
| 24ANA748 | 24APA748A or 24ANB748A | 24ANB748C |

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| 24ANA760 | 24APA760A or 24ANB760A | 24ANB760C |
|----------------------|---------------------------------------|---|
| Bristol HP | Approved HP Replacement Model | Approved HP Replacement Model (Coastal) |
| 38YDB024 | 25HPA624A or 25HNB624A | 25HNB624C |
| 38YDB036 | 25HPA636A or 25HNB636A | 25HNB636C |
| 38YDB037 | 25HPA636A or 25HNB636A | 25HNB636C |
| 38YDB048 | 25HPA648A or 25HNB648A | 25HNB648C |
| 38YDB060 | 25HPA660A or 25HNB660A | 25HNB660C |
| 25HNA624 | 25HPA624A or 25HNB624A | 25HNB624C |
| 25HNA636 | 25HPA636A or 25HNB636A | 25HNB636C |
| 25HNA648 | 25HPA648A or 25HNB648A | 25HNB648C |
| 25HNA660 | 25HPA660A or 25HNB660A | 25HNB660C |
| <u>Bryant</u> | | |
| Bristol AC | Approved A/C Replacement Model | Approved A/C Replacement Model (Coastal) |
| 598BNX024 | 187BNA024 | 187BNC024 |
| 598BNX036 | 187BNA036 | 187BNC036 |
| 598BNX048 | 187BNA048 | 187BNC048 |
| 598BNX060 | 187BNA060 | 187BNC060 |
| 187ANA024 | 187BNA024 | 187BNC024 |
| 187ANA036 | 187BNA036 | 187BNC036 |
| 187ANA048 | 187BNA048 | 187BNC048 |
| 187ANA060 | 187BNA060 | 187BNC060 |
| Bristol HP | Approved HP Replacement Model | Approved HP Replacement Model (Coastal) |
| 698BNX024 | 286BNA024 | 286BNC024 |
| 698BNX036 | 286BNA036 | 286BNC036 |
| 698BNX048 | 286BNA048 | 286BNC048 |
| 698BNX060 | 286BNA060 | 286BNC060 |
| 286ANA024 | 286BNA024 | 286BNC024 |
| 286ANA036 | 286BNA036 | 286BNC036 |
| 286ANA048 | 286BNA048 | 286BNC048 |
| 286ANA060 | 286BNA060 | 286BNC060 |

* Replacement models listed are valid at time of original bulletin publishing. As models are replaced over time, the replacement model may be the listed model in this bulletin OR the equivalent newer model.

** Call Customer Service for pre-approval on any "Coastal" replacement models.

A customer signature is required on the Bristol Program Audit form to ensure that the customer was presented ALL options under the terms of this bulletin. Claims missing the customer signature can be reversed.

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Claiming:

All claims should be filed by distributor.

Field Action:

Diagnose the failed unit using the attached procedure and Bristol Program Audit Form. Determine if unit is eligible for program by utilizing appendix B to determine if it is within 10 years of its production date. If unit is eligible, determine customer choice for unit replacement or compressor replacement. Provide the completed Bristol Program Audit Form with the customer's signature to your distributor service manager to obtain pre-approval for replacement under this program.

For additional questions:

Carrier Expert Central:

800-946-2930

admin.sams@carrier.utc.com

Bryant Solution Center:

888-994-7237

admin.sams@carrier.utc.com

Customer brochures are available to help explain the program and choices to the customer. They can be ordered under the following part numbers:

Carrier: 01-811-20402-50

Bryant: 01-8110-1183-50

Parts:

The following parts are approved for replacement under the terms of this bulletin when indicated: Contactor, Capacitor, Filter Drier, Start kit, Start Relay and Compressor Plug (Accumulator - not covered).

Policy:

All Bristol Compressor Claims must be filed under the terms of the SMB. Claims filed through standard warranty channels, including optional labor contracts, will be denied.

This Policy will terminate June 30, 2014

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Bristol Program Audit Form**

This form needs to be completed and submitted to your Distributor Service Manager for pre-authorization to replace the compressor or unit under -. *All Fields Required*

| | |
|-------------------------------------|-------|
| System Information: | Date: |
| Outdoor Unit Model / Serial Number: | |
| Compressor Model/Serial Number: | |
| Date Installed: | |
| Date Failed: | |
| Customers Name: | |
| Dealers Name: | |
| Distributors Name: | |

| | |
|----------------------------|----------|
| Customer Complaint: | |
| Compressor Capacity Loss? | Yes / No |
| Does Unit Run? | Yes / No |

Below System Checks should be done in accordance to Appendix A of SMB 14-0025

| | |
|---|----------|
| Airflow: | |
| Was Airflow checked and is it within specification for the application? | Yes / No |
| Is Static Pressure within specification? | Yes / No |

| | |
|--|---------------|
| System Charge: | |
| Was system charge checked and was it within specification for the application? | Yes / No |
| Is application a long line set? | Yes/ No |
| If YES above, have appropriate checks been done to ensure application/installation is correct for a long line set? | Yes / No / NA |
| Are there Buried Refrigerant Lines in the application? | Yes / No |
| If Yes, has it been verified that no liquid slugging is occurring? | Yes / No / NA |

| | |
|--|----------|
| Failed Compressor: | |
| Is there power to the compressor? | Yes / No |
| Have the appropriate checks been done to determine that the issue is not electrical? | Yes / No |

Required: Customer was presented with all options under flyer 01-811-20402-50 or 01-8110-1183-50. For compressor replacement option, customer has received a \$200 dealer allowance for labor costs. For unit replacement option, customer is responsible for dealer labor costs.

Homeowner signature: _____

Distributor Name & Service Manager _____

Service Managers Signature _____

Is the failed unit covered with an optional labor contract? no yes → Contract #: _____

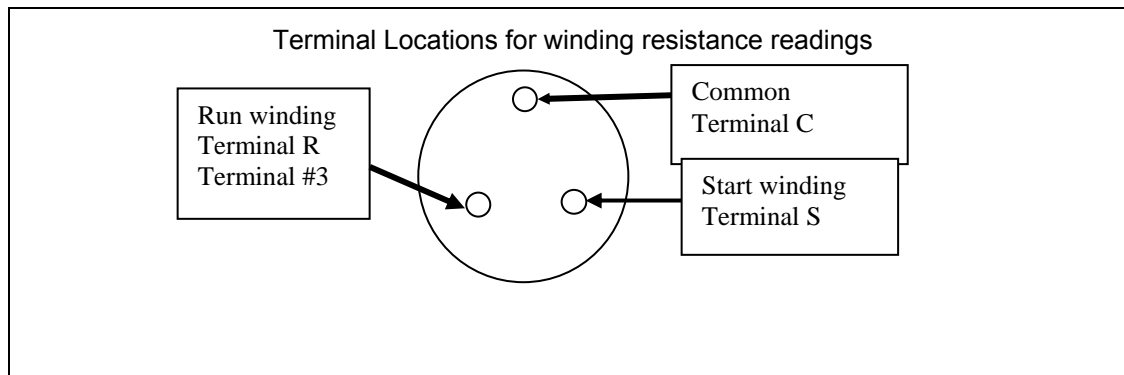
Bristol Compressor Program Diagnostic Reference

These procedures outline the steps associated with diagnosing the compressor and filling out the program claim form. Please use this section as a reference when filling out the required claim form for the program. After review of this completed Bristol Compressor Evaluation Form the Distributor Service Manager is authorized to sign and approve a replacement outdoor unit or compressor replacement under the terms of this SMB.

Proof of Compressor Electrical Failure

(Defined as Compressor windings electrically open, shorted or winding resistance measurements not correct. If electrically open, the internal overload may be open and steps must be taken to determine if a problem external to the compressor is the cause of the overload trip.)

Important Note: Prior to testing the compressor, disconnect and lockout/tagout all electrical power to system, including indoor and outdoor power sources.

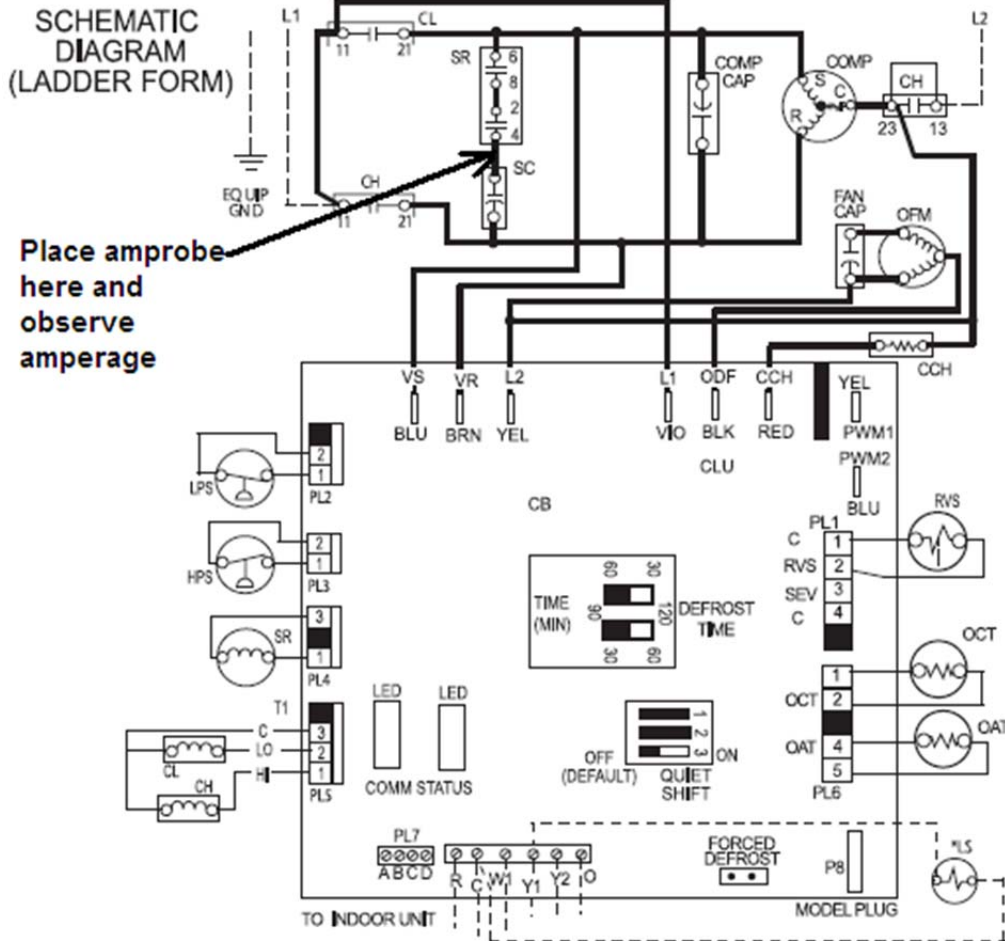


Checking Compressor Winding Resistance

Use the ∞ symbol for Open circuit

The sum of the start and run winding resistances should be equal to the value measured between "R" and "S". Resistance reading (R to C) + (S to C) = (R to S) **if not, compressor winding is damaged** If R to C and S to C are open circuit and R to S has resistance, the internal overload is open. The compressor needs time to cool to allow the internal overload to close. If the overload has opened, then other problems may be present in the refrigerant system that needs to be evaluated. Some possible causes of an open internal overload include insufficient refrigerant charge, restriction in the refrigerant circuit, and power supply problems. Replacing the unit may not solve these problems.

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Checking the start Components

Place a clamp amp meter between the start relay terminal 4 and the start capacitor. With the relay closed, you should observe amperage if the relay opens amperage should disappear.

Measuring the voltage across the open relay terminals (SR 6 to SR4) if the relay terminals are closed voltage should be zero (0). When the relays open a voltages should be measured at a minimum the voltage should be line voltage.

How the relay works

PI4 is a three (3) pin locking header with pin 2 removed. Header is labeled sr.

The connections are:

| | | |
|--------------------|----|-----------------------------------|
| pl4-1 | sr | connection for the start relay |
| pl4-2 | | not used |
| pl4-3 | sr | ground return for the start relay |
| Start relay output | sr | 85ma 22vdc |

On Bristol compressor models, when a command for compressor run occurs, the control will energize the start relay output, energizing the start relay (external to the board) that will add a start capacitor across the run capacitor of the compressor. When a predetermined voltage level at the appropriate terminal (vs. in high capacity and vr in low capacity) has been reached the relay removes the capacitor from the circuit.

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On all models, the presence of voltage at both vr and vs is an indication that a contactor has closed and the compressor is starting or running. When starting or running, a phase difference of the voltages on the inputs will indicate the compressor internal thermal cutout is closed. If the phase difference is ≤ 5 degrees for 10 seconds, the internal cutout has opened and the compressor is no longer running. If an open thermal cutout has been detected, the control will de-energize the low or hi compressor outputs, but continue to energize the odf/pwm output for 15 minutes. The status (yellow) led will flash the appropriate code.

If the control does not detect a model plug or detects an invalid model plug it will not allow the unit to operate. The status (yellow) led will flash the appropriate code.

Compressor start detection on Bristol models only:

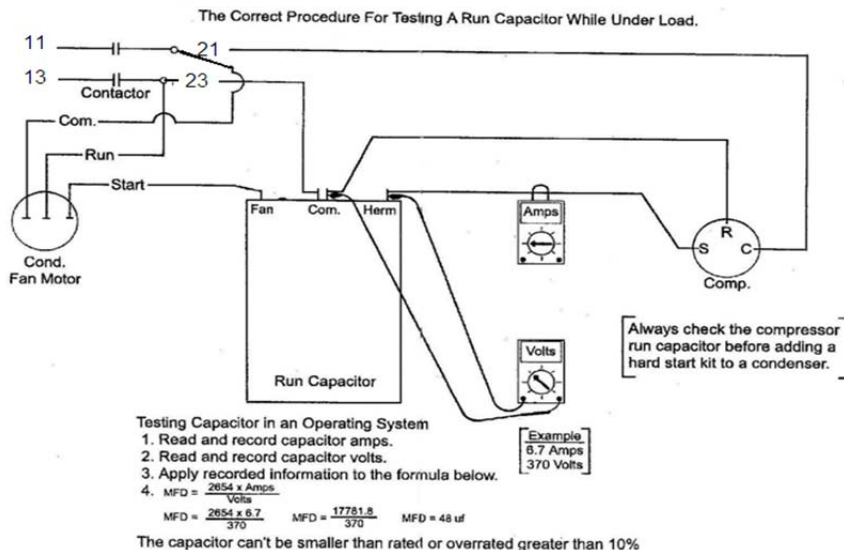
In low stage, if the specified start voltage at vr terminal is not achieved, the start relay is de-energized after 1 second and the control will flash the appropriate fault code. In high stage, if the specified start voltage at vs terminal is not achieved, the start relay is de-energized after 1 second and the control will flash the appropriate fault code. If the specified start voltage is not achieved for 3 consecutive low stage starts, low stage operation is locked out for 30 minutes. If the specified start voltage is not achieved for 3 consecutive high stage starts, high stage operation is locked out for 30 minutes. The control will flash the appropriate fault code.

Proof of Compressor Mechanical Failure

(Defined as Compressor electrically correct, but either will not operate or will operate but not pump refrigerant or will only pump at low stage capacity when the high stage control and high stage contactor are calling for high stage) **Noisy units DO NOT QUALIFY for Replacement unit coverage.**)

WARNING: this portion of the test procedure requires electrical power be supplied to the unit. Caution should be used to prevent personal injury due to electrical shock.

Testing the Capacitor



Capacitor MFD = $2654 \times \text{Amps} / \text{Volts}$

Appendix B: How to determine unit eligibility based on serial number

Example Unit Serial Number: 3104XXXXXX

(First 2 digits are calendar week, second 2 digits are calendar year)

To qualify for this bulletin, the fail date for the compressor must be within 10 years of the production calendar week.

Use the calendar below to determine if the compressor fail date falls on, or before, the production calendar week.

