

Service Overview

Bebco offers comprehensive preventive maintenance along with routine and emergency repair services for industrial duty HVAC Units regardless of their make and model, based upon years of experience in this highly specialized field.

Unlike local residential or commercial air conditioner service contractors, who can only provide basic refrigeration and electrical component services, our extensive knowledge of hazardous location requirements and advanced industrial air conditioner unit operation allows Bebco to provide a full range of preventive maintenance procedures, including cleaning, performance evaluations and repairs to ensure your industrial HVAC units perform flawlessly and maintain stable environments for your critical process controls, switchgear, variable frequency drives and other essential equipment located within your industrial facility buildings.

In addition, if a critical failure occurs, Bebco can also provide prompt emergency repair services to get your HVAC units back online as quickly as possible.

Our capabilities span from single circuit to multi-circuit refrigeration systems with basic or zoned temperature controls, lead-lag controls or advanced digital temperature control systems. We also service units equipped with integrated pressurization, gas phase filtration and other advanced industrial modifications.

As you'll discover by reviewing this technical bulletin, our services are especially geared to address the harsh and corrosive environments your HVAC units are subjected to on a daily basis, and we deploy rigorous step-by-step inspections to prevent most failures or prompt emergency repair services if needed to restore continuous and stable HVAC unit operation under your extremely demanding conditions.

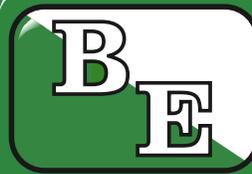
Service Capabilities

Bebco can provide complete refrigerant and electrical control system maintenance ranging from numerous preventive maintenance procedures to extensive emergency repair services, including coil, tubing, compressor, fan and blower replacement to total rewiring if necessary.

To meet your critical demands, Bebco maintains a broad stock of spare parts for many makes and models of industrial duty air conditioners and has a vast network of sources to obtain emergency replacement parts, most within only a few hours or overnight, depending on the rarity and origin of the unit.

In addition, due to our vast range of product knowledge, Bebco can provide extensive service across the full spectrum of industrial applications, for the following HVAC units:

- **Window & Through-Wall HVAC Units**
- **Wall Mounted HVAC & Chiller Units**
- **Pad Mounted HVAC & Chiller Units**
- **Pressurization & Ventilation Units**
- **Split & Roof Mounted HVAC Units**
- **Enclosure & Cabinet HVAC Units**
- **Gas Phase Filtration Units**

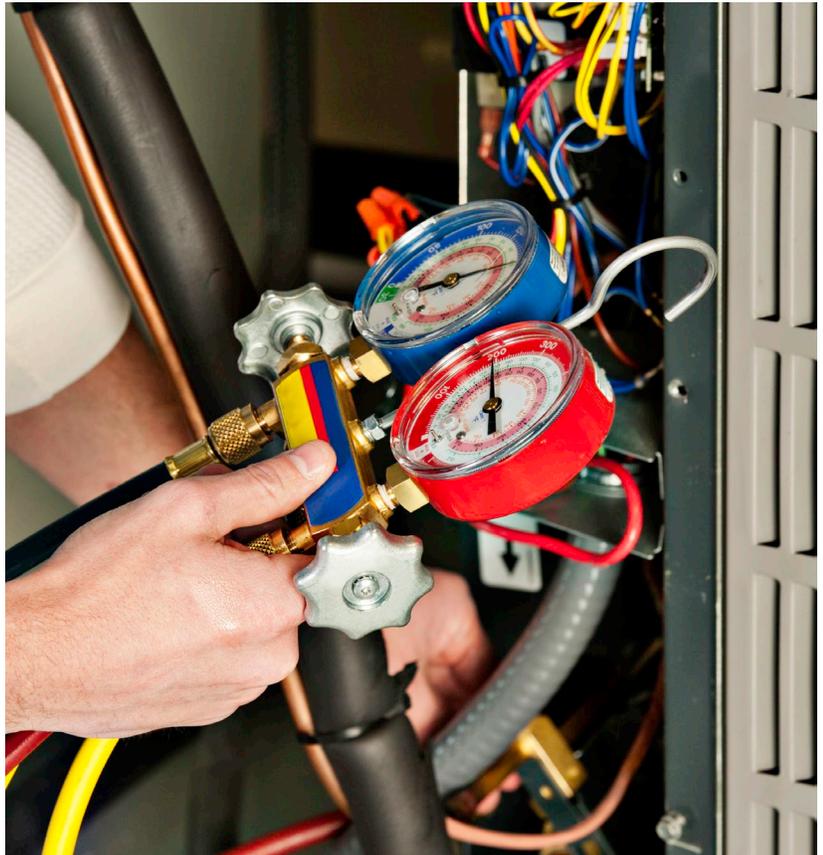


Maintenance & Repair Services

Field Service Programs for Industrial Facility HVAC Systems

Technical Bulletin BECC-PMRS-R2

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Comprehensive Preventive Maintenance and Repairs for all Industrial-Duty HVAC Units!



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Maintenance Program Implementation

Regularly scheduled preventive maintenance is the most cost effective procedure you can implement to ensure your HVAC units continue to operate in a safe, efficient and reliable manner over their extended lifespan.

In contrast, failure to perform preventive maintenance will effectively reduce the lifespan and reliability of your HVAC units and likely void many aspects of your unit's product warranty, regardless of its origin.

However, beyond the basic maintenance of changing air filters, HVAC units containing a combination of refrigerant systems, motors, fans, electronics, and other very unique components which should only be serviced by carefully trained and highly specialized HVAC maintenance technicians.

Bebco therefore offers three standard preventive maintenance programs or custom tailored programs to satisfy your specific needs. All programs include procedures to replace air filters, inspect and clean critical components, assess performance, verify critical functions and issue a detailed report that includes performance measurements and recommendations for both routine and critical component repairs and replacement.

By selecting a suitable program, users can then share the responsibility for providing some aspects of preventive maintenance or allow Bebco to provide all aspects of a viable preventive maintenance program.

Preventive Maintenance Programs

Annual Program

Our Annual Program provides one comprehensive maintenance procedure per year, followed by all recommended repairs and service you authorize.

At a minimum, this program requires the client's maintenance staff to perform basic maintenance procedures during the 2nd, 3rd and 4th quarter of an annual service contract.

The Annual Program is recommended for non-essential HVAC Units that will not lead to any disruption of critical process or power control systems upon failure, such as guard stations, security centers, man-quarters or other non-critical or non-essential buildings or spaces.

Biannual Program

Our Biannual Program provides one comprehensive maintenance procedure and one detailed maintenance procedure per year, both followed by all recommended repairs and service you authorize.

At a minimum, this program requires the client's maintenance staff to perform basic maintenance procedures during the 2nd, and 4th quarter of the annual service contract.

The Biannual Program is recommended as a vital necessity for all HVAC units providing climate control in buildings or spaces such as command centers, shelter-in-place or safe-haven structures, and non-essential or secondary safety, fire control, pumping and metering stations.

Quarterly Program

Our Quarterly Program provides one comprehensive maintenance procedure, one detailed maintenance procedure and two basic maintenance procedures per year, each followed by all recommended repairs and service you authorize.

This program eliminates the client's requirement to perform any maintenance. This program also includes a performance guarantee that provides any required emergency repair service free of charge, unless the cause of unit failure is due to external forces, such as any form of physical damage, electrical fault or inclement weather.

The Quarterly Program is recommended for all HVAC units that provide climate control for rooms, buildings or spaces containing critical distributive or analyzer process controls, switchgear or variable frequency drives and essential safety, fire control, pumping and metering stations.

Preventive Maintenance Procedures

The following preventive maintenance procedures will be performed as prescribed by the selected Preventive Maintenance Program:

Comprehensive Preventive Maintenance Procedures

Bebco recommends the following procedures be performed at least once a year for all HVAC Units, regardless of their location or purpose.

- Replacement of disposable intake and return air filters
- Cleaning of washable intake and return air filters
- Inspection of refrigerant coils, fans and motors
- Inspection of thermostats, fuses and heating elements
- Inspection of contactors, relays and wiring
- Inspection of compressor and motor capacitors
- Inspection of refrigerant tubing, dryers and valves
- Inspection of associated supply or return ducting
- Inspection of gas, airflow and humidity sensors
- Assessment of overall functionality and efficiency
- Verification of proper damper and louver operation
- Verification of proper refrigerant charge
- Verification of unit operating parameters and set-points
- Measurement of compressor and motor amperages
- Measurement of fan and blower wheel rotation speeds
- Cleaning and lubrication of motor and fan shaft bearings
- Cleaning and lubrication of dampers and louvers
- Cleaning of condenser and evaporator coils
- Cleaning of drain pans and addition of antimicrobial solution
- Optical refrigerant leak inspection and recharging
- Torquing of compressor, motor, fan and blower mounts
- Full psychometric evaluation and documentation
- Provision of disposable air filters for quarterly replacement *
- Production of a detailed annual inspection report

Detailed Preventive Maintenance Procedures

Bebco strongly recommends the following procedures be performed between comprehensive procedures for any HVAC Units that provide vital services.

- Replacement of disposable intake and return air filters
- Cleaning of washable intake and return air filters
- Inspection of refrigerant coils, fans and motors
- Inspection of refrigerant and electrical systems
- Inspection of contactors, relays and wiring
- Inspection of compressor and motor capacitors
- Inspection of refrigerant tubing, dryers and valves
- Assessment of overall functionality and efficiency
- Verification of proper damper and louver operation
- Verification of proper refrigerant charge
- Verification of unit operating parameters and set-points
- Measurement of all compressor and motor amperages
- Cleaning and lubrication of motor and fan shaft bearings
- Optical refrigerant leak inspection and recharging
- Provision of disposable air filters for quarterly replacement *
- Production of a detailed quarterly inspection report

Basic Preventive Maintenance Procedures

Bebco recommends the following procedures be performed on a quarterly basis to supplement the benefits of comprehensive and detailed procedures.

- Replacement of disposable intake and return air filters
- Cleaning of washable intake and return air filters
- Inspection of refrigerant coils, fans and motors
- Inspection of refrigerant and electrical systems
- Assessment of overall functionality and efficiency
- Verification of proper damper and louver operation
- Verification of unit operating parameters and set-points
- Production of a detailed basic inspection report

** Provision of disposable air filters for Client use is not applicable when a Quarterly Maintenance Program is selected.*

Bebco's Preventive Maintenance Benefits

The benefits of using Bebco to supplement or provide a total and effective preventive maintenance program are immeasurable in many respects, especially for industrial or hazardous location HVAC units which by their nature are exponentially more expensive to purchase and repair, as compared to their residential or commercial counterparts.

Additionally, our preventive maintenance programs also yield a significant number of advantages, by tracking trends of component degradation, reducing overall wear, increasing overall energy efficiency, maintaining efficient performance and preventing unnecessary contamination of a work space.

All preventive maintenance procedures begin with replacement of disposable intake and return air filters and careful cleaning of washable filters. Beyond ensuring a clean workspace environment, clean filters greatly enhance unit performance, reduce the number of operating cycles tremendously, and also prevent contamination of fan blades and blower wheels, which can otherwise lead to premature corrosion and failure of these critical components.

Our Comprehensive and Detailed Procedures also include the critical task of measuring current consumption of all compressors and motors to detect early signs of critical or premature failure. Our Annual Procedure also includes the more often than not overlooked tasks of measuring the rotation speed of all fans and blower wheels and checking the torque of all compressor, motor fan and blower wheel mounts.



Our Comprehensive & Detailed Procedures include the recorded measurement of all critical performance aspects, which are then used to detect potential degradation trends which lead to highly critical component failures!

Our Comprehensive and Detailed Procedures also provide detailed examinations of all moving and static parts. Foremost, our technicians perform detailed examinations of all coils, refrigerant tubing, motors, blower wheels and fans, compressors, all electrical components, all wiring and the overall housing to detect any signs of excessive wear, vibration, corrosion and other forms of structural or mechanical deterioration.

Our procedures also include examination of all dampers and louvers, associated ducts, all sensors and routine maintenance such as the cleaning of drain pans and the application of antimicrobial solutions in the drain pans to prevent the development of health-hazard mold or bacteria.

Finally, as one of the most crucial aspects of our preventive maintenance procedures, Bebco also performs extremely detailed examinations of contactor and relay contacts to detect early signs of burned or pitted surfaces, detailed examinations of all capacitors to detect early signs of swelling or leaking, and UV light optical inspections of all refrigerant system joints to detect early signs of corrosion and refrigerant leaks.

Routine Service Capabilities

Routine services are performed upon your authorization and in many cases, our Technicians will have all materials and parts to conduct the following procedures during their service call, or during their next regularly scheduled maintenance call. In either case, since these services are predicated upon preventing rather than addressing unit failures, the cost of routine service is typically far less than emergency repair services, and can include maintenance, repairs and component replacement, as follows:

- Compressor replacement
- Contactor and relay replacement
- Thermal expansion valve replacement
- Housing corrosion and coating repairs
- Electrical system replacement or rewiring
- Coil and refrigerant line replacement or repair
- Fan blade, blower wheel or motor replacement
- Refrigerant line insulation repairs or replacement
- Coil and refrigerant line coating application and restoration
- Washable filter replacement (upon significant deterioration)
- Thermostat and gas, airflow or humidity sensor replacement

Emergency Repair Services

Despite best efforts to exercise an effective preventive maintenance program, emergency services can be extremely vital, especially when an HVAC unit's failure halts production or disrupts critical refining processes.

Bebco therefore offers prompt emergency repair services for HVAC Units, along with pressurization ventilation and gas phase filtration systems, regardless of their origin.

Dependant on the issue and distance from our service center, technicians and all necessary parts can usually be dispatched within 12-48 hours of notification, and in extremely critical instances, our in-house stock of HVAC Units can also be utilized to provide emergency replacement units when repairs are not an option due to catastrophic events such as severe mechanical damage, fire, flood, lightning, sabotage or vandalism.



Emergency repair services quickly resolve any issue, and are provided at no cost* under our Quarterly Preventive Maintenance Program!

Emergency Service Capabilities

Emergency services most frequently focus on the following aspects of HVAC unit component repair or replacement, regardless of cause or origin:

- Entire unit replacement
- Compressor replacement
- Contactor and relay replacement
- Thermal expansion valve replacement
- Electrical system replacement or rewiring
- Coil and refrigerant line replacement or repair
- Fan blade, blower wheel or motor replacement
- Thermostat and gas, airflow or humidity sensor replacement
- Unit startup, acceptance testing and recommissioning

* Free emergency repair services limited to inherent unit failures - ask for sample contract to review terms and conditions.

Preventive Maintenance Program Pricing

Many studies have proven preventive maintenance programs are less expensive over time, as compared to emergency repairs. However, Bebcos believes traditional preventive maintenance programs with fixed pricing are extremely cost prohibitive for many Clients.

Therefore, Bebcos offers unique cost limiting options that are designed to assure your investment in our programs are equitable and worthwhile.

The cost of our Preventive Maintenance Programs consists of four basic elements, and you'll never be subjected to hidden fees or unanticipated costs, as follows and explained in more detail below:

Travel Charges

\$0.58 per Mile + Hourly Rate for Technicians

To provide the lowest possible cost for transportation, Bebcos charges a rate of \$0.58 per mile, plus the Hourly Rate for each Technician.

An estimated cost can be easily calculated using any route planning tool, to derive the miles from our service center to the address of your facility, along with the estimated driving time.

Mileage and hour rates will also apply to secure any parts or supplies that could not be anticipated. However, if our technicians must stay more than one day to complete approved services, mileage and hourly rates per technician to travel between a local hotel and the job site are waived, if the driving time is less than fifteen minutes. You therefore never pay an unreasonable flat trip rate, nor do you pay mileage or hourly rates for anything other than necessary service-related driving time.

Estimated Per-Diem Charges

\$56.00 - \$62.00 per Day per Technician + Lodging at Cost

Per-Diem charges apply when the distance to your facility exceeds 150 miles or when the combination of preventive maintenance procedures, regular service or emergency service exceeds 10 hours, including travel time. In these circumstances, Bebcos will provide a proposal including the per-diem cost per technician, plus estimated lodging expenses, at our cost.

The range of estimated cost covers meals and incidental expenses, as established by the U.S. General Services Administration and based upon your job site's zip code, which can be easily verified at the following Government Services Administration (GSA) website link:

<https://www.gsa.gov/travel/plan-book/per-diem-rates>.

Please note while the charges expressed above are only an estimate, Technician lodging, transportation expenses for rental cars and airfare are billed at actual cost. To verify these expenses, we will be pleased to provide bill and invoice statements to verify these costs, upon request.

Service Charges

\$90.00 - \$120.00 per Hour per Technician

Since many factors affect the cost of providing preventive maintenance procedures and routine or emergency repair services, we offer this hourly rate to accommodate discounts for multiple units, expeditious performance of service, or in contrast, any delays or impediments to unit access.

As an exception, Bebcos appreciates and respects your facility's concerns to maintain a safe environment. We therefore extend a credit of up to 2 hours per technician for safety orientations and preemptive site-specific training. This credit is provided so your investment to train us is matched by our commitment to become fully capable of providing services safely!

Materials & Parts Charge

Our Cost + 10%

Bebcos provides estimated man-hours and a fully detailed bill of material with a 10% markup for recommended repair service along with our Inspection Report, after each procedure is completed. You'll then be requested to authorize those repairs prior to the performance of that additional service.

Material and parts charges will include freight costs, expediting fees, procurement costs and handling fees for any non-stocked items. Bebcos will also charge reduced in-house labor rates as required, to pre-assemble and test mechanical parts and assemblies. This additional preparation ensures the components we bring will perform properly after they are installed.

However, as an added benefit to using Bebcos, please note that disposable air filters and supplies required to complete comprehensive, detailed and basic preventive maintenance procedures are provided free of charge!

Preventive Maintenance Program Initiation

To launch a preventive maintenance program by Bebcos at your facility, please begin by contacting a Bebcos Sales Associate. We'll require the following information to develop a proposal and send you a service contract, so ask that you first gather this data to expedite your request:

- **Your company's name and billing address**
- **Your full name, phone number and email address**
- **The job site name, physical street address and zip code**
- **A designated job site contact's name and phone number**
- **A preferred Preventive Maintenance Program initiation date**
- **Accessibility information regarding each unit to be serviced**
- **The installation or commission date of all units to be serviced**
- **The brand, model and serial number of all units to be serviced**
- **Service logs or maintenance records for all units to be serviced**
- **The preferred Maintenance Program for each unit to be serviced**

On Site Preparations & Expectations

Bebcos Technicians will come to your job site fully prepared to receive any necessary safety orientations at our expense and perform the prescribed preventive maintenance procedures. Delays in access to the units which may be caused by operations, inclement weather and other circumstances beyond the Technician's control are considered billable, so please be sure that all management, safety and operation personnel are fully briefed and prepared to provide immediate unimpeded access to the HVAC units.



**Bebcos Technicians
arrive fully prepared to
service your HVAC units!**

**We place the utmost emphasis
on providing pre-authorized
services safely and efficiently!**

Service may require provisions such as scaffolds, and hot work permits, which should be prepared well in advance of our Technician's arrival. For instance, in order to perform comprehensive or detailed service procedures, power must remain established to the units to facilitate key performance measurements and the Bebcos Technicians should be pre-approved to remove and reapply power to the units as required.

Anticipated Service Times

Preventive maintenance procedures should be anticipated to require no less than the following estimated man-hours:

- **Comprehensive Preventive Maintenance Procedures: 10-12 Hours/Unit**
- **Detailed Preventive Maintenance Procedures: 6-8 Hours/Unit**
- **Basic Preventive Maintenance Procedures: 4-6 Hours/Unit**

Phase 1 - Detailed Evaluation

Prior to service performance, Bebcos will evaluate your HVAC unit and create a detailed inspection report. We will present our report to the designated on site contact upon completion, detailing all performance measurements (if necessary) and all recommended repair services.

Phase 2 - Service Performance

Upon authorization, Bebcos will then proceed with repair services or schedule the services at another time, depending upon material and parts availability and the nature and scope of the service required. When repairs are complete, another report detailing all performance measurements and service provided will be provided to close the service event.

**Call now to learn more, and feel free to request
copies of our Service Contract and Highly Detailed
Service Inspection Reports for your review!**

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Sample Service Contracts and Inspection Reports available on request.