

Houk Mechanical Commercial HVAC System Maintenance Services

There are numerous benefits to ensuring the overall health of your mechanical systems with a well-planned preventative maintenance program. Not only are routine maintenance activities required by equipment manufacturers in order to keep warranties in effect, they protect capital investments in expensive mechanical equipment, reduce system downtime, and ensure that equipment is running efficiently, thereby helping to control energy costs and management to adhere to operational budgets.

Program Administration



This program is professionally developed based upon your management objectives and the requirements of your mechanical equipment, design, age, use, components, and its effect on your business budgets, and personnel. The specific scope is based upon manufacturers' recommendations, and our industry experience.

The proactive and reactive service of this program will be professionally managed under the direction of our professional staff. Upon completion of the service, you will receive a detailed service report outlining performed and recommended services. You stay informed, without staying involved.

Maintenance Tasking System



Preventive Maintenance Services may be scheduled using our proprietary Maintenance Tasking System. An important feature of this system is our customized service checklist, tailored to the specific systems at your facility and detailing the exact services and procedures we will perform to help keep your systems operating efficiently.

Maintenance frequency is determined by an analysis of your systems, which takes into account variables such as your equipment's operating hours, application, environment and manufacturer's recommendations. Based on this analysis, we will develop a maintenance frequency for your particular equipment. All completed service calls will be documented with a detailed customer service report, and this report will be reviewed with you or your representative after each service call.

Customer Service Review (C.S.R.)



The Customer Service Review (C.S.R.) program is designed to ensure that the services being provided continue to meet your changing business objectives and meet or exceed the level of services purchased. The C.S.R. program means that we must continue to earn your business. The program includes regularly scheduled communication to evaluate our service based upon your feedback and direction. It is our goal to exceed the expectations of the customer by providing quality services and on-going communication.

Operational Testing and Inspection Service



This program includes the professional operational inspection and testing of all listed equipment by a fully trained service technician. This service will ensure that equipment is operating according to manufacturers' recommendations, seasonal requirements and your business needs. Testing will be performed to ensure proper sequencing and operation. Our highly qualified service technician will provide you with recommendations for additional maintenance, as well as identify any worn, doubtful or broken parts.

Professional Preventive Maintenance

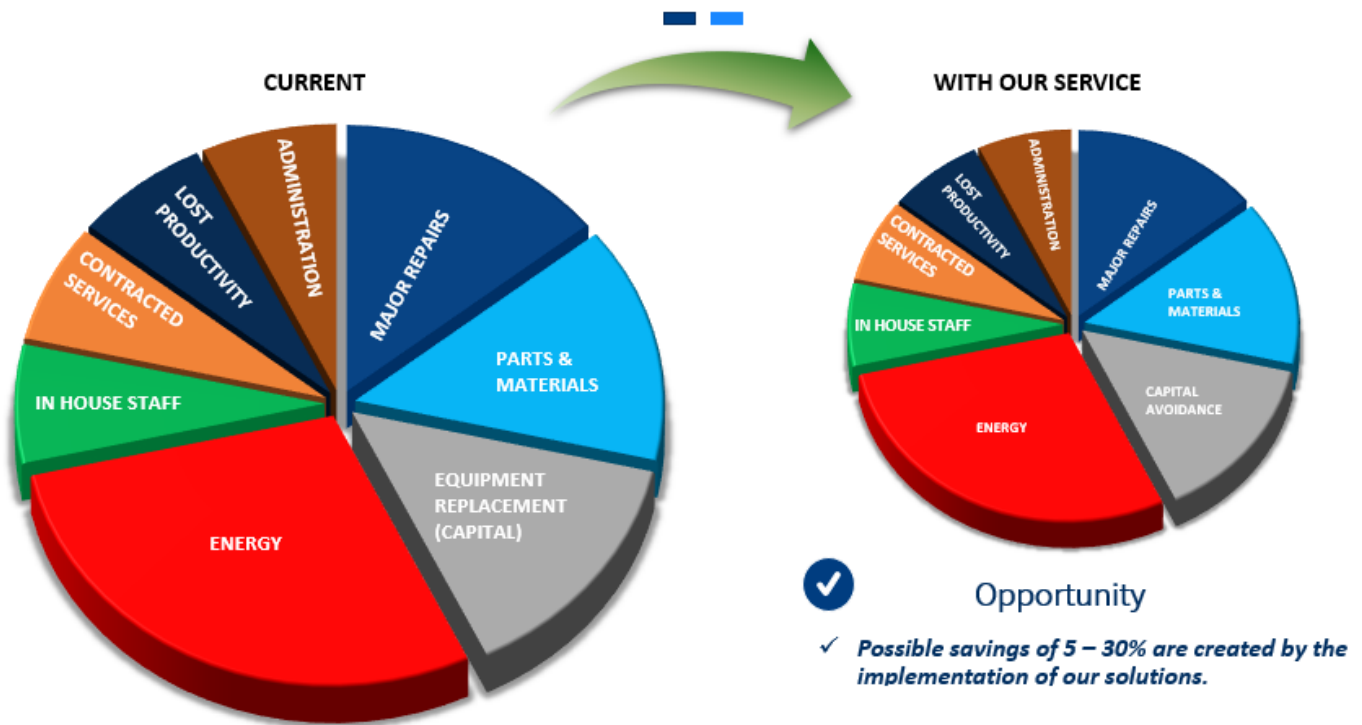


This program includes the highest level of professional preventive maintenance. Preventive maintenance services will be determined based upon your business objectives, risk tolerance, manufacturer's recommendations and our industry experience. This level of professional preventive maintenance is designed to keep your mechanical assets operating at peak performance to maximize equipment life while reducing operating cost and energy consumption.

MAINTENANCE IMPACT

Houk Air Conditioning's preventive maintenance program is the key to extending the life of your equipment. Our program provides the necessary labor, materials and test equipment to perform inspection, adjustment, calibration, and testing of the system's operation. By implementing our Maintenance Program you can ensure your system operates at optimal efficiency.

PROACTIVE APPROACH FINANCIAL SAVINGS



With Houk Air Conditioning you can expect:

- Expert operations and sales staff
- The highest standards and integrity in the industry
- Guaranteed performance
- Fast 24/7/365 emergency service
- Certified service professionals
- America's Best Service Experience
- Results oriented



According to the U.S. Department of Energy and the Building Owners and Managers Association (BOMA) energy savings of 5 to 30% can be realized through **improved operations and maintenance of building systems**.

Your Benefits

- Reduces energy consumption
- Extends equipment life
- Eliminates comfort problems
- Reduces costs
- Protects the value of your system
- Improves system performance
- Reduces down time

Tasking

Scheduled maintenance inspections are performed at various times throughout the year. Tasking Sheets provide an overview of the maintenance to be performed. Below are examples of some of the tasking that may or may not be provided.

Packaged DX with Gas Heat

Annual Cooling Inspection

- Shut unit down and perform LOTO
- Lube all motors/bearings
- Check and verify all belts, replace per contract, where applicable
- Check and verify fan wheels
- Check and verify fan scrolls
- Check and verify fan sheave wear
- Check and verify fan sheave alignment
- Check and verify fan-bearing alignment
- Check and verify fan-bearing supports
- Check and verify motor supports
- Check and verify motor hold-down bolts
- Check and verify damper operations, where applicable
- Check and verify damper linkages, where applicable
- Check and verify damper motor operation, where applicable
- Check and verify and clean condensate pans
- Check and verify and clean condensate drain
- Check and verify condenser coil condition, clean per contract
- Check and verify evaporator coil condition, clean per contract
- Check and verify air filters – replace per contract
- Check and verify and clean outside air intake screens
- Check and verify cap tubes/piping for chafing
- Check and verify starters and contact surfaces
- Check and verify and tighten all electrical connections
- Check and verify all safety controls
- Check and verify crankcase heaters
- Check and verify for oil/refrigerant leaks
- Check and verify moisture indicators
- Check and verify oil level, where applicable
- Check and verify oil contamination, where applicable
- Check and verify volts/amps of compressors
- Check and verify volts/amps of condenser fan motors, where applicable
- Check and verify operating temperatures
- Check and verify superheat and sub-cool
- Check and verify refrigerant charge
- Check and verify hot gas by-pass controls, where applicable
- Check and verify head pressure controls
- Check and verify unloader operation, where applicable
- Check and verify all operating controls
- Check and verify all operating parameters
- Check and verify unusual noises/vibrations

- Check and verify cabinetry/hardware conditions
- Check overall condition of unit
- Record any deficiencies found

Annual Heating Inspection

- Shut unit down and perform LOTO
- Lube all motors/bearings
- Check and tighten all electrical connections
- Check and verify starters and contact surfaces
- Check and verify all belts, where applicable
- Check and verify air filters, replace per contract
- Check and verify outside air intake screens
- Check and verify and clean condensate pans
- Check and verify and clean condensate drain
- Check and verify condenser coil condition
- Check and verify evaporator coil condition
- Check and verify all safety controls
- Check and clean gas burners, where applicable
- Check gas burner operation and inlet gas pressure
- Check heat exchanger for cracks and deterioration, where applicable
- Check flue pipe for deterioration and cleanliness
- Check exhaust system for proper draft
- Check for any gas leaks
- Check operation of pilot, where applicable
- Check and verify operating temperatures
- Check and verify all operating controls
- Check and verify all operating parameters
- Check and verify unusual noises/vibrations
- Check and verify cabinetry/hardware conditions
- Check overall condition of unit
- Record any deficiencies found

Operational Inspection

- Check and verify all operating parameters
- Check and verify all electrical connections for burnt wires
- Lube motors/bearings, where applicable
- Check and verify condenser coil
- Check and verify evaporator coil
- Check and verify air filters, replace per contract
- Check and verify outside air intake screens
- Check and verify all belts where applicable
- Check and verify all fans
- Check and verify and clean condensate pans
- Check and verify and clean condensate drain
- Check and verify and clean condensate pumps, where applicable
- Check and verify for oil/refrigerant leaks
- Check and verify oil level, where applicable
- Check and verify unusual noises/vibrations
- Check and verify cabinetry/hardware conditions
- Check overall condition of unit
- Record any deficiencies found

Split System DX Heat/ Cool

Cooling Annual Inspection

- Check volt/ amps of compressor (s)
- Check volt/ amps of condenser fan motor (s)
- Check volt/ amps of evaporator fan motor
- Check and tighten all electrical connections
- Check all starters/ contactors for wear
- Check all operating/ safety controls
- Check refrigerant pressures
- Check compressor oil levels if applicable
- Check for refrigerant/oil leaks
- Check and clean condensate drain pan and lines
- Check condenser coil/ clean per contract
- Check evaporator coil/ clean per contract
- Check economizer operation
- Check filters/ replace per contract
- Check belts/ replace per contract
- Check blower wheels/ clean surface
- Check sheaves wear/ alignment
- Check and lubricate motor bearings
- Check and lubricate blower bearings
- Check overall condition of unit

Heating Annual Inspection

- Check volts/ amps of evaporator fan motor
- Check volts/ amps of inducer fan motor if applicable
- Check and tighten all electrical connections
- Check all starters/ contactors for wear
- Check all operating/ safety controls
- Check heat exchanger for cracks/ corrosion if applicable
- Check and clean burner assembly if applicable
- Check ignition sequence of operation if applicable
- Check burner sequence of operation if applicable
- Check and clean inducer fan wheel if applicable
- Check electric heat strips and record volts/amps if applicable
- Check blower wheels
- Check and lubricate motor bearings
- Check and lubricate blower bearings
- Check overall condition of unit

Cooling Operational Inspection

- Check compressors operation if applicable
- Check condenser fan motors operation
- Check evaporator fan motors operation
- Check for visible refrigerant/ oil leaks
- Check filters/ replace per contract
- Check belts
- Check and lubricate motor bearings
- Check and lubricate blower bearings
- Check overall condition of unit

Heating Operational Inspection

- Check evaporator fan motors operation

- Check heating system
- Check filters/ replace per contract
- Check belts
- Check and lubricate motor bearings
- Check and lubricate blower bearings
- Check overall condition of unit

Make-up Air/Furnace Gas-Fired

Annual Inspection

- Check and verify volts/amps of compressors
- Check and verify volts/amps of condenser fan motor where applicable
- Check condition of control contacts for wear, pitting and erosion
- Check and verify operating temperatures
- Check and verify refrigerant charge
- Check and verify moisture indicators
- Check and verify site glasses
- Check and verify oil level
- Check and verify belts, replace per contract
- Check and verify all safety controls
- Check and verify superheat and adjustment
- Check and verify hot gas by-pass controls
- Check and verify head pressure controls
- Check and verify unloader operation where applicable
- Check and verify all operating controls
- Check and tighten electrical connections, as required
- Lube motors/bearings where applicable
- Check and verify and clean condenser coil per contract
- Check and verify water-cooled condenser where applicable
- Check and verify water-regulating valve where applicable
- Check and verify and clean evaporator coil per contract
- Check and verify compressor efficiency
- Check and verify cap tubes/piping for chafing
- Check and verify crankcase heaters
- Visual check and verify for oil/refrigerant leaks
- Check and verify fan wheels - clean as required
- Check and verify fan scrolls - clean as required
- Check and verify fan sheave wear
- Check and verify fan sheave alignment
- Check and verify fan-bearing alignment
- Check and verify fan-bearing supports
- Check and verify motor supports
- Check and verify motor hold down bolts
- Check and verify damper operation
- Check and verify damper linkages
- Check and verify damper motor operation
- Check and verify and clean coils - as required
- Check and verify and clean condensate pans
- Check and verify and clean condensate pumps where applicable
- Check and verify air filters, replace per contract
- Check and verify and clean outside air intakes
- Check and verify expansion valve bulb clamp
- Check and clean gas burners, where applicable

- Check gas burner operation and inlet gas pressure
- Check heat exchanger for cracks and deterioration, where applicable
- Check flue pipe for deterioration and cleanliness
- Check exhaust system for proper draft
- Check for any gas leaks
- Check operation of pilot, where applicable
- Check and verify unusual noises/vibrations
- Check and verify cabinetry/hardware conditions
- Check overall condition of unit

Operational Inspection

- Check overall operation of system
- Check and verify operating temperatures
- Check and verify moisture indicators
- Check and verify site glasses
- Check and verify oil level
- Check and verify belts
- Check and verify all operating controls
- Check and tighten electrical connections, as required
- Lube motors/bearings where applicable
- Check and verify coils
- Check and verify cap tubes/piping for chafing
- Visual check and verify for oil/refrigerant leaks
- Check and verify fan wheels
- Check and verify and clean condensate pans
- Check and verify and clean condensate pumps where applicable
- Check and verify air filters, replace per contract
- Check and verify unusual noises/vibrations
- Check and verify cabinetry/hardware conditions
- Check overall condition of unit