# YORK® Chillers Proactive Parts Replacement Recommendations

## Model YMAA/YMPA Air-Cooled Modular Scroll Chillers and Heat Pumps

Service Manual

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# Proactive not reactive

Chillers are important assets to any mechanical room. They can be expected to run for 15-25 years. In some situations, the cold water they provide for cooling or other processes is critical to a facility and its operations. There are proactive steps that can be taken to maximize uptime on a chiller. These proactive measures can be especially valuable in mission-critical applications. Johnson Controls provides guidelines for facilities seeking to take these types of proactive measures.

In conjunction with recommended planned standard maintenance and condition-based maintenance, proactive parts replacement can help improve uptime and extend the overall life of the chiller while maintaining peak performance.

Naturally, chillers age over time. Some mechanical components that move during operation may experience wear. Additionally, a variety of factors, including unstable power, extreme ambient conditions, or chilled water system issues, can contribute to increased wear on certain components.

The bottom line is proactive replacement can help prevent unplanned downtime – this approach maintains efficiency, boosts uptime, and can provide savings on unplanned repair costs.

# Proactive parts replacement for maximum uptime

Johnson Controls has experts that can advise you on parts that can be inspected and replaced proactively to prevent unexpected downtime. Using a combination of engineering expertise, field experience, and data analysis, these recommendations cover replaceable components in the chiller's major systems.

Based on the chiller's run hours, we can help you understand what parts could be proactively replaced in the off-season or during planned downtime in order to maintain maximum uptime for chillers, especially in mission-critical applications.

The time intervals provided are not the standard life expectancy of parts but are intended to provide guidance on parts replacement based on when we see mechanical components beginning to wear and before end of life.

The recommendations may be for a replacement or a simple inspection, to check if it is time to replace a component.

# Benefits of genuine YORK® parts

When proactively replacing parts, it is important to use genuine YORK® components to ensure the correct fit and to avoid potential damage to other systems of the chiller.

Non-YORK® parts may not meet the strict specifications or tolerance requirements to ensure correct compatibility with the chiller equipment. This may result in issues with reassembly, accelerated wear on mechanical parts, increased power consumption for the equipment, or premature failure of the replaced part.

YORK® replacement parts result in maintained energy consumption and provide longer service lifetimes. Also, by securing genuine YORK® parts, you ensure that you have the latest compatible version of the part and can take advantage of continued engineering improvements that may not have been available when the chiller was initially purchased.

## Global parts network – service wherever you are in the world

Johnson Controls has global parts supply centers and regional online portals to make sourcing replacement parts for your chillers as simple as possible.

If your original equipment originated from a **North American** factory, the Parts Navigator Customer Portal helps get the job done. Navigator provides the products, tools, support and expertise to find what you need at the Baltimore Parts Center. Find products and parts you need and then configure, quote, and price them all in a single location. Place your order, track your shipment, and manage your warranties without having to log on to multiple systems or download software for updates.

**Please visit https://www.hvacnavigator.com/ for more information.**

For equipment that originated from a **European** factory, our Parts Centre Service platform enables you to consult and retrieve technical specifications for YORK® chiller parts and place your order to ensure quick delivery. The Parts Centre Service platform makes ordering and servicing your facility easy to do, ensuring reliability and continuity with genuine parts.

**Please visit easyparts.johnsoncontrols.com for more information.**

For equipment that originated from a factory in **Asia**, the Johnson Controls team at the Shanghai Distribution Center is ready to help whenever you need spare parts. Contact your local Johnson Controls office and they will support you in finding the genuine YORK® chiller replacement parts you need and place an order for you.

# Proactive parts replacement recommendations for YMAA/YMPA

The following table provides recommendations on proactive inspection and replacement intervals based on the chiller age or run hours the equipment has experienced. The chiller run hours can be found in the chiller control panel.

Aging of components occurs through mechanical wear and static aging as the chiller operates at various conditions. As a result, for many components, both a run hour-based interval and a purely age-based interval are recommended. The replacement interval for the customer can be defined by either hours or years, whichever is reached first based on the application. The following table provides a baseline for these recommendations, but it can be modified for specific applications.

**Table 1: Proactive parts replacement recommendations for YMAA/YMPA chillers and heat pumps**

| Major component | Part description | Proactively check, inspect, or replace interval | |
|---|---|---|---|
| | | Run hours | Years |
| Chiller system sensors | Entering chilled water system temperature sensor | 35,040 | 6 |
| Chiller system sensors | Leaving chilled water system temperature sensor | 35,040 | 6 |
| Chiller system sensors | Leaving chilled water model temperature sensor | 35,040 | 6 |
| Chiller system sensors | Ambient temperature sensor | 35,040 | 6 |
| Chiller system sensors | Air coil temperature sensor | 35,040 | 6 |
| Chiller system sensors | Accumulator inlet temperature sensor | 35,040 | 6 |
| Chiller system sensors | Compressor discharge temperature sensor | 35,040 | 6 |
| Chiller system sensors | Discharge pressure transducer | 35,040 | 6 |
| Chiller system sensors | Suction pressure transducer | 35,040 | 6 |
| Chiller system sensors | Water flow switch | 35,040 | 6 |
| Chiller system sensors | High pressure switch | 46,720 | 8 |
| Chiller system sensors | Low pressure switch | 46,720 | 8 |
| Chiller system O-rings and gaskets | Relief valve gaskets | 58,400 | 10 |
| Chiller system valves and actuators | Electronic expansion valve actuator | 58,400 | — |
| Chiller system valves and actuators | Four-way reversing valve actuator | 58,400 | — |
| Water pump | Mechanical seal | 58,400 | 10 |
| Hydraulic parts | Water strainer | 58,400 | 10 |
| PCBAs | Main control board | 58,400 | — |
| PCBAs | Drive board | 58,400 | — |
| Control panel | Coin cell battery | — | 10 |
| Wire controller | Coin cell battery | — | 10 |
| Water pump | Pressure differential sensor | 66,667 | 11 |

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| Major component | Part description | Proactively check, inspect, or replace interval | |
|---|---|---|---|
| | | Run hours | Years |
| PCBAs | Gateway SC-EQ board | 66,667 | — |
| Control panel | IO board | 66,667 | — |
| Control panel | Display (backlight) | — | 11 |
| Hydraulic parts | Expansion tank | 87,600 | 15 |
| Compressor | Inverter speed compressor | 15 years<br>Check; replace only if necessary | |
| Compressor | Fixed speed compressor | 15 years<br>Check; replace only if necessary | |

**Note:**

- Chiller run hour intervals are based on an average chiller running 16 hours/day, 365 days/year.
- Johnson Controls scroll compressors are designed to last the life of the chiller. The average life of an air-cooled chiller is about 15 years. We may recommend overhaul or replacement of the compressor when it exceeds the life of the chiller or equivalent run hours. Please contact Product Technical Support for additional guidance.

This document does not cover recommended maintenance items. Refer to *Form 150.78-ICOM1.EN.CE* for detailed maintenance recommendations for your equipment.

This document is intended for YORK® chillers that are out of the standard factory warranty.

The guidance in this document is proactive, not reactive. The document is for indicative purposes only and is based on a wide variety of factors that differ globally, such as installation, usage, electrical power quality, environmental conditions, and maintenance performed since the initial start-up of the chiller. Additionally, not all parts are stocked in parts centers, and lead times are subject to change. For your specific chiller installation recommendations, lead times, and pricing guidance, please consult with your local Johnson Controls service team.