

KKT chillers - Training Series

Philips Healthcare Chiller Commissioning Process



Commissioning



❑ Commissioning

- Philips and KKT have agreed to a two stage process for chiller startups:
 - **Phase 1** – Starting the chiller in a bypass loop – before magnet is installed
 - **Phase 2** – Return visit to top off glycol and adjust fluid flow /pressure after magnet is fully installed

❑ Pre Startup checklist

- Philips and KKT worked together to create a pre-startup checklist
 - Purpose:
 - Ensure site readiness
 - Reduce Delays
 - Eliminate need for return visits
 - Reduce costs
 - Provide contact information
 - Confirm chiller information and site location

❑ Installation Guidelines

- KKT provides a detailed installation guideline document to assist the installing contractor

❑ Documentation portal

- KKT created an online documentation portal to make sure this information is available to Philips, your installing contractor and our local service partners.
- www.kkt-chillersusa.com/philips

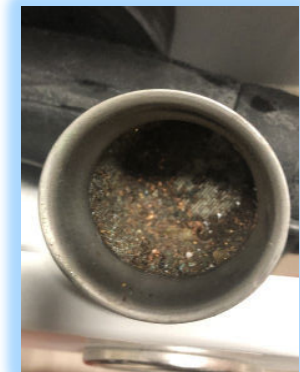
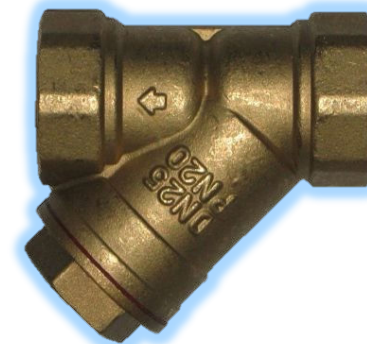
Site Readiness



❑ Challenges

○ Site Readiness:

- Clearance issues
 - Serviceability
 - Airflow
- Piping length exceeds specifications
- Incomplete piping
- Missing automatic air bleeders
- Site piping not flushed / clogged strainers
- Site piping not leak checked
- Site piping leaks
- Glycol / Distilled Water
 - Incorrect type
 - Not enough available
 - Incorrect concentration
 - Tap water
- Incomplete wiring
- No power to unit
- Remote display / remote cable not installed
- System filled incorrectly (tap water) or over-pressurized



General Requirements



❑ Chiller Location

- Must not be located near any other heat sources
- Must allow adequate clearance for airflow and serviceability
 - Min. 40" (1000mm) clearance on each side
 - Min. 8' (2500mm) clearance above unit

❑ Mounting / anchoring

- Must meet local building code and specifications provided in manual / installation guidelines

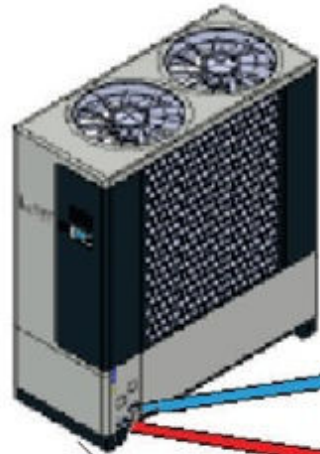


General Requirements



Outside

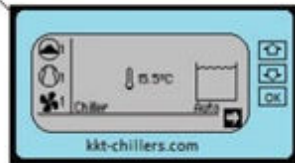
Chiller location TBD by customer / installing contractor



NOTE: Automatic air bleeder valves must be installed at the highest points in the site piping to allow air to vent from the system

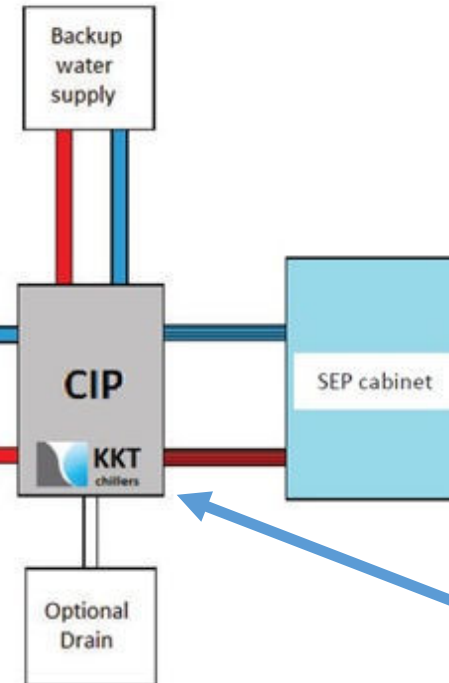
Remote Display / Controller for chiller.

Customer / installing contractor to mount remote display to wall in control room. Cable provided with chiller and installed by customer / installing contractor.



Equipment Room

Refer to Installation Guidelines and Chiller Operation Manual for additional installation guidelines and requirements



KKT Chiller Interface Panel (CIP)



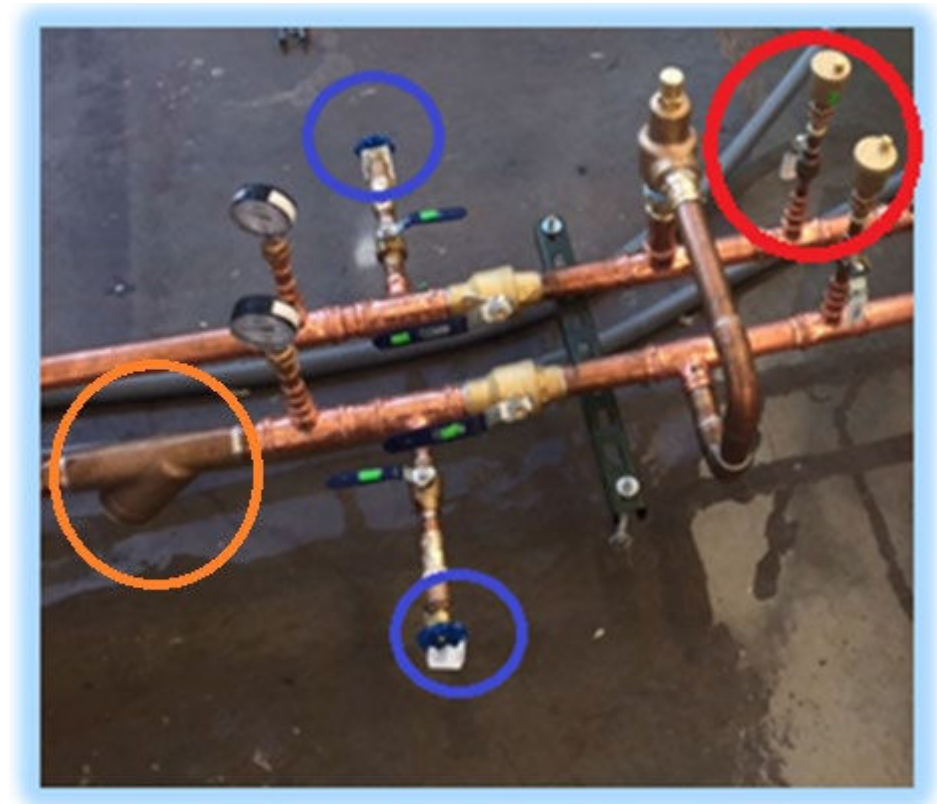
General Requirements

- ❑ **Fluid Piping**
 - Sized per specifications in manual / installation guidelines
 - Piping must be completed and all fluid connections made
 - Piping must be flushed with water prior to connecting to chiller.
 - Chiller must be isolated and site piping leak checked prior to our arrival

- ❑ **Air Bleeders**
 - Automatic air bleeders must be installed at highest point in site piping and in any locations where air might be trapped

- ❑ **Fill ports**
 - Hose bib connection to be installed in site piping near chiller for filling purposes

- ❑ **Strainer**
 - WYE strainer recommended in the return line of site piping connecting to the chiller.



General Requirements



❑ Glycol

- Proper type and amount of glycol must be provided at filling point near chiller
 - Automotive antifreeze cannot be used.
 - Tap Water cannot be used
- Adequate volume of glycol / distilled water must be on hand to ensure proper concentration
- KKT recommends using KKT Protect (37% premixed Glycol). Glycol can be ordered directly from KKT and delivered with the chiller.
- If 100% concentration is purchased, distilled water must also be provided to dilute to the proper concentration.
- KKT to fill system with glycol when onsite for phase 1 and will top off as needed during phase 2



General Requirements



❑ Electrical Service / Field Wiring

- Incoming power service must be sized according to local code based on chiller nameplate requirements
- All field wiring must be verified, connections must be tight and match prints.
- Wiring to the chiller should be routed through provided knockouts / grommets, no additional holes are necessary.
- Power must be supplied to crankcase heaters for a minimum of 8 hours prior to startup
- Remote display panel must be installed in control room
 - 1" conduit for remote display cable must be installed and cable pulled.
 - If total length exceeds 164' (50M), a long distance remote cable (KKT# M506106) must be installed.
 - **NOTE:** Maximum length allowed is 328' (100M).
 - Splicing is not allowed.
 - KKT will make wiring connections for remote display during startup.



Warranty



□ Warranty

- KKT's manufacturer's warranty begins upon completion of Phase 1
 - The warranty covers parts and labor on the chiller only
 - The warranty does not cover leaks external to the chiller cabinet or parts damaged due to improper rigging, installation, over pressurization, contamination or poor water quality.

- Return visits due to site readiness or issues outside of the chiller cabinet are considered billable events and are not covered under our manufacturer's warranty.



Service



□ If service is needed during the warranty period, KKT offers 24/7 support:

- KKT Technical Support :
 - 833.KKT.HELP (833.558.4357)
 - Techsupport@kkt-chillersusa.com

- KKT Customer Service *
 - 877.994.0991
 - kktservice@kkt-chillersusa.com



***Note – End Users should contact Philips to request service.**



Thank-you for your partnership and support!