

# SERVICE BULLETIN

Carrier Corporation



**Number:** SMB09-0007

**Date:** 1/30/2009 **Supersedes:** New

**Title:** 30XA Chiller Software Revisions

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**Category:** General Information,

**Dealer Bulletin Number:** None

**MODEL CATEGORY:**

Chillers (30 Series)

**MODELS AFFECTED:**

Carrier Model: 30XAA080 thru 30XAA500

Serial Number(s): Starting 0509Qnnnnn

**SITUATION:**

30XA AquaForce chillers manufactured in Charlotte, NC will be loaded with version 5.02 software beginning week 5 of 2009. This bulletin summarizes the changes associated with this version and prior versions per the information below.

**SOLUTION:**

**Factory Action:** Beginning with serial number 0509Qnnnnn the factory began installing version 5.02 on the MBB on all 30XAA chillers.

**Field Action:** Version 5.02 can be installed on any 30XAA chiller manufactured prior to 0509Qnnnnn. However the unit must be equipped with manual reset high pressure switches, part number 00PPG000444400A. Also they must have compressor protection modules (CPM) version 2 or 3 installed part number 00PSG00469000A. Installation of this version MBB software on units equipped with version 1.0 CPM (PSN 2806Qnnnnn) may cause sporadic P-91 (cooler flow switch failure) alarms.

**POLICY:**

There is no policy associated with this SMB.

- **Information**

**Version 5.02** (CSA-SR-20C470**502**) was released for production with units having serial numbers beginning with 0509Qnnnnn. This version includes the following changes:

- Allows operation with CPM version 1.
    - (Backward compatibility issue. MBB ver. 3.02 will not work with CPM ver. 1.0)
    - If abnormal operation occurs download MBB with ver. 2.06.
  - Integrate 30XW (water-cooled) application
  - Add fast load (Configuration>SERVICE>F.LOA) for future fast loading function
    - (not supported)
  - Change alarm text for alarms P-37 through 39 and P-81 through P-83
- The following chart shows a list of all the new parameters and where they are found in both Navigator and Touch Pilot display tables.

| MODE - CONFIGURATION |                          |        |               |         |                      |           |
|----------------------|--------------------------|--------|---------------|---------|----------------------|-----------|
| ITEM                 | EXPANSION                | RANGE  | COMMENT       | DEFAULT | TOUCH PILOT TABLE    | CCN POINT |
| <b>UNIT</b>          | UNIT CONFIGURATION       |        |               |         |                      |           |
| HGBP                 | Hot Gas Bypass           | No/Yes |               |         | Service/Factory      | hgbp_sel  |
| MCHX                 | MCHX Exchanger Select    | No/Yes |               |         | Service/Factory      | mchx_sel  |
| H.KIT                | Hydraulic Transducer Kit |        | Not Supported | No      | Service/Factory      | kithydro  |
| PA.NB                | Cooler Pass Number       | 1-3    |               |         | Service/Factory      | Cpass_nb  |
| VLT                  | VLT Fan Drive            |        | Not Supported | No      | Service/Factory      | Vh_sel    |
| RPM                  | VLT Fan Drive RPM        |        | Not Supported | No      | Service/Factory      | Vh_rpm    |
| H.CON                | High Condensing Select   |        | Not Supported | No      | Service/Factory      | highcond  |
| <b>SERVICE</b>       | SERVICE CONFIGURATION    |        |               |         |                      |           |
| LLWT                 | Brine Min. Fluid Temp.   |        |               |         | Service/Service1     | Mini_Lwt  |
| F.LOA                | Fast Load Select         | 0-4    |               | 0       | Service/Service1     | Fastload  |
| AVFA                 | Fan A Drive Attach       | No/Yes | Not Supported | No      | Maintenance/FANCNTRL | SET_DrvA  |
| AVFC                 | Fan B Drive Attach       | No/Yes | Not Supported | No      | Maintenance/FANCNTRL | SET_DrvB  |
| AVFB                 | Fan C Drive Attach       | No/Yes | Not Supported | No      | Maintenance/FANCNTRL | SET_DrvC  |
| EWT.S                | EWT Probe on Cir A Side  | No/Yes |               |         | Service/Service1     | ewt_cirA  |
| MAXL                 | Max Condenser Lwt=45degC | No/Yes | Not Supported | No      | Service/Service1     | max_clwt  |

Note: Parameter identified as Not Supported should remain at their default values.

**Version 3.02** (CSA-SR-20C470**302**) was released for production with units having serial numbers beginning with 1608Qnnnnn. This version includes the following changes:

- Pump 1 output is duplicated at MBB-J2B
  - Corrected "slide valve unverifiable" alert and improved slide valve reactivity.
  - Corrected issue with slide valve control on triple circuit units : it was possible to have 2 circuits with 30% load.
  - Add hydraulic kit sensors management (not supported)
  - Add welded contactor management
  - Change the item name "cpb\_cur" into "cpc\_cur" for circuit C maintenance table
  - Improve capacity control (fast unloading) to protect against freeze alarm in case of quick building load decrease
  - Device description change will now be saved and not overwritten.
- Anomalies
- This version is incompatible will with CPM ver. 1.0.
    - EXV's will remain at startup position. Repeated P-40,41,42 (low suction temp overrides) may occur.

**Version 3.01** (CSA-SR-20C470**301**) was released for production with units having serial numbers beginning with 4107Qnnnnn. This version includes the following changes:

- Improvement on compressor capacity control: at startup, 10% increase instead of 5% allows unit to load quicker.
- Remove access to heat reclaim and heat pump parameters on Navigator display.
- Add missing CCN variables for Data Collection tool and Best ++ access (CURREN\_A ...)
- Corrected problem with Start/Stop mode based on time schedule not working when using Touch Pilot display.
- Improve the timing management to detect oil pressure and economizer pressure failure

**Version 2.06** (CSA-SR-20C470**206**) was released for production with units having serial numbers beginning with 1107Qnnnnn. This version includes the following changes:

- Corrected unintentional operation of condenser fans
- Modified head pressure control routine for brine applications to eliminate P.78,P.79,P.80 high discharge temperature alarms
  - If LBT>28°F the condensing temperature set point is not allowed to increase at startup during low ambient conditions

**Version 2.01** (CSA-SR-20C470**201**) was released for production with units having serial numbers beginning with 2406Qnnnnn. This version includes the following changes:

- Software is modified to handle the Touch Pilot (“High Tier”) touch screen display.
  - The conditions for Suction Pressure Transducer Failure, **Pr.04**, **Pr.05**, **Pr.06**, now require that the EXV be less than 50% open. This eliminates declaration of these alarms under the conditions described in version 1.05 above.
  - When configured for medium brine, low saturated suction temperature capacity override now is based on the configured brine freeze point **LO.SP**.
  - “Black Box” data acquisition feature now supported
    - Discharge gas temperatures are added to the set of points collected.
  - Detection was added for swapped water temperature sensors.
  - EXV operation is modified for the case of discharge gas temperature below 180°F.
  - An extra 10 second delay is added before declaring a low suction temperature alarm for brine.
- Anomalies
- Operating compressor(s) in Service Test with Navigator does not work with Version 2.01.
  - Condenser fans will start and run for short periods of time when the unit is OFF.

**Version 1.05** (CSA-SR-20C470**105**) was released for production with units having serial numbers beginning with 0406Qnnnnn.

- The following operational issues have been reported involving 30XA software versions up to and including version 1.05.
- When operating at low loads, under some circumstances hot gas can pass uncondensed through portions of the condenser coils. The bypassed hot gas, mixed with condensed refrigerant, may boost cooler saturated suction temperature higher than cooler water temperatures. This can generate Alarms **Pr.04**, **Pr.05**, **Pr.06**, “Suction Pressure Transducer Failure”. The EXV will typically be fully open or close to fully open to pass the mixed phase fluid.
  - When configured for medium brine, low saturated suction temperature capacity override will be erroneously based on the default water freeze point (34°F) rather than the configured brine freeze point. Compressor will not load up.
  - Does not support “Black Box” feature.