Bosch Multi-Position Cased Coils
Cooling and Heat Pump Compatible
BMAC Series

Installation Manual
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1 Key to symbols and safety instructions

1.1 Key to symbols

Warnings

Warnings in this document are identified by a warning triangle printed against a grey background. Keywords at the start of a warning indicate the type and seriousness of the ensuing risk if measures to prevent the risk are not taken.

The following keywords are defined and can be used in this document:

- **DANGER** indicates a hazardous situation which, if not avoided, will result in death or serious injury.
- **WARNING** indicates a hazardous situation which, if not avoided, could result in death or serious injury.
- **CAUTION** indicates a hazardous situation which, if not avoided, could result in minor to moderate injury.
- **NOTICE** is used to address practices not related to personal injury.

Important information

This symbol indicates important information where there is no risk to people or property.

1.2 Safety

Please read safety precautions before installation

**WARNING:**
- These instructions are intended as an aid to qualified licensed service personnel for proper installation, adjustment and operation of this unit. Read these instructions thoroughly before attempting installation or operation. Failure to follow these instructions may result in improper installation, adjustment, service or maintenance and possibly resulting in fire, electrical shock, property damage, personal injury or death.

**WARNING:**
- Disconnect all power to the unit before starting any service and maintenance. Failure to do so could cause severe electrical shock resulting in personal injury or death.

**WARNING: INSTALLATION REQUIREMENTS**
- Installation or servicing of this unit can be hazardous due to parts, components and system pressure. Qualified and properly trained service personnel should perform installation and repair. Failure to do so could cause severe electrical shock resulting in personal injury or death.
2 General

These coils are approved for upflow or downflow, vertical and horizontal installation. For furnace applications, the coil must be installed downstream (in the air outlet) of the furnace.

2.1 Codes & regulations

This product is designed and manufactured to comply with national codes. Installation in accordance with such codes and/or prevailing local codes/regulations is the responsibility of the installer. The manufacturer assumes no responsibility for equipment installed in violation of any codes or regulations.

The United States Environmental Protection Agency (EPA) has issued various regulations regarding the introduction and disposal of refrigerants. Failure to follow these regulations may harm the environment and can lead to the imposition of substantial fines. Should you have any questions please contact the local office of the EPA.

2.2 Inspection upon unit arrival

As soon as unit is received, it should be inspected and noted for possible shipping damage during transportation. It is carrier’s responsibility to cover the cost of shipping damage. Manufacturer or distributor will not accept a claim from contractors for any transportation damage.

2.3 Clearances

Following clearances should be provided during installation:

1. Maintenance and service access, including coil cleaning and coil assembly removal
2. Refrigerant piping and connections
3. Condensate drain line

For ensure the proper installation, Select a solid and level site. Ensure enough space required for installation and maintenance.
2.4 Dimensional data

![Diagram of Bosch Multi-Position Cased Coils]

**Figure 3**

<table>
<thead>
<tr>
<th>Model</th>
<th>Unit Height &quot;H&quot;</th>
<th>Unit Width &quot;W&quot;</th>
<th>Supply Duct &quot;A&quot;</th>
<th>&quot;W1&quot;</th>
<th>Liquid line/Vapor Line</th>
<th>Weight /Shipping (LBS [kg])</th>
</tr>
</thead>
<tbody>
<tr>
<td>BMAC2430ANTD</td>
<td>20 [508]</td>
<td>14½ [368]</td>
<td>13 [330]</td>
<td>13½ [343]</td>
<td>% / %</td>
<td>44.1 / 64.8 [20.0/29.4]</td>
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<td>14½ [368]</td>
<td>13 [330]</td>
<td>13½ [343]</td>
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<td>44.1 / 64.8 [20.0/29.4]</td>
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<td>BMAC3036CNTD</td>
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<td>21 [553]</td>
<td>19½ [495]</td>
<td>20 [508]</td>
<td>% / %</td>
<td>50.5 / 77.6 [22.9/35.2]</td>
</tr>
</tbody>
</table>

Table 1

Data subject to change
LIQUID LINE CONNECTION

VAPOR LINE CONNECTION
COPPER (SWEAT)

AUXILIARY DRAIN CONNECTION
3/4” NPT FEMALE PIPE THREAD

COIL ACCESS PANEL

TOP AIR STOP

PRIMARY DRAIN CONNECTION
3/4” NPT FEMALE PIPE THREAD

AUXILIARY DRAIN CONNECTION
3/4” NPT FEMALE PIPE THREAD

PRIMAR Y DRAIN CONNECTION
3/4” NPT FEMALE PIPE THREAD

Table 2

<table>
<thead>
<tr>
<th>Model</th>
<th>Unit Height &quot;H&quot;</th>
<th>Unit Width &quot;W&quot;</th>
<th>&quot;A&quot;</th>
<th>&quot;W1&quot;</th>
<th>&quot;H&quot;</th>
<th>&quot;W1&quot;</th>
<th>Liquid line /Vapor Line</th>
<th>Weight /Shipping (LBS [kg])</th>
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</thead>
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<td>23  [584]</td>
<td>23½ [597]</td>
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<td>75.0/107.8 [34.0/48.9]</td>
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</table>
Figure 5

<table>
<thead>
<tr>
<th>Model</th>
<th>Unit Height &quot;H&quot; [in]</th>
<th>Unit Width &quot;W&quot; [in]</th>
<th>Supply Duct &quot;A&quot; [in]</th>
<th>&quot;W1&quot; [in]</th>
<th>Liquid line/Vapor Line</th>
<th>Weight/Shipping (LBS [kg])</th>
</tr>
</thead>
</table>

Table 3
3 Installation Instructions

3.1 Parts
Contact your distributor for authorized replacement parts.

3.2 Pre-installation instructions
Carefully read all instructions for installation prior to installing product. Make sure each step or procedure is understood and any special considerations are taken into account before starting installation. Assemble all tools, hardware and supplies needed to complete the installation. Some items may need to be purchased locally. Make sure everything needed to install the product is on hand before starting.

3.3 Installation and trap connection
1. See Fig. 6 & 7 for coil installation and drain connection.
2. Installation steps for cased coil:
   A. Shut off or disconnect gas furnace’s power and remove gas pipe if necessary.
   B. Disconnect and remove a sufficient portion of the supply ductwork to provide clearance for the cased coil.
   C. Ensure that the coil is level. Seal the gap between coil and furnace.
   D. Reconnect the ductwork to the coil case, and seal any leakage.
   E. Reconnect power line on gas furnace, turn on the furnace to check any sign of leakage.

See Figure 6 & 7. In case that coil and furnace sizes are not matched, use proper size of sheet metal or other material to fill the gap and seal the gap to prevent air leak.
4 Drain application

4.1 Condensate drain piping

Consult local codes for special requirements.

To provide extra protection from water damage, it is always recommended to install an additional drain pan, provided by installer, under the entire unit with a separate drain line. Manufacturer will not be responsible for any damages due to the failure to follow these recommendations.

4.2 Plastic drain pan installation

WARNING:

- Do not use the coil pan shipped with the unit on Oil furnaces or any application where the temperature of the drain pan may exceed 275°F. A field fabricated metal drain pan can also be used for these type of applications. Failure to follow this warning may result in property damage and/or personal injury.

The coil drain pan has a primary and an optional secondary drain with 3/4" NP T female connections; use either PVC or copper pipe and hand tighten to a torque of approximately 37 in-lbs. to prevent damage to the drain pan connection. An insertion depth between .355 to .485 inches (3-5 turns) should be expected at this torque setting.

Use male 3/4" NPT threaded fitting for outside connection and make sure the drain holes are not blocked.

Insulation may be needed for drain line to prevent sweating.

Drain pan has two drain connections on each side to provide flexibility of connection and drainage. Make sure pan has proper pitch and plugged if second connection is not used.

If the secondary drain line is required, run the line separately from the primary drain and terminate it where it can be easily seen.

Water coming from this line means the coil primary drain is plugged and needs clearing.

Install a trap in the drain line below the bottom of the drain pan. If using a copper drain line, solder a short piece of pipe to the connector before installing a drain fitting. DO NOT over torque the 3/4" copper connector to the plastic drain connection. Use a wet rag or heatsink material on the short piece to protect plastic drain pan, complete the drain line installation (Fig. 8). Use (Fig.9) as a template for typical drain pipe routing. This figure shows how to avoid interference with vent piping.
The condensate trap is not mandatory but is recommended for efficiency.

DO NOT OVERTIGHTEN DRAIN FITTING
UNIT MUST BE SLIGHTLY INCLINED TOWARD DRAIN CONNECTION
TO APPROVED DRAIN

Figure 8

Figure 9
5  Refrigerant connections

**NOTICE:**
- Gently remove the sealing plug of vapor line, use one wrench to fix the valve base, loosen the nut with another wrench, take out the flange pad and and sealing ring. The nitrogen pressure is about 10 PSIG.

To prevent refrigerant leak, use proper tools to ensure clean, burr-free cut.

**NOTICE:**
- TXV bulb MUST be protected (wrapped with wet rag) or removed, while brazing the tubing. Overheating of the sensing bulb will affect the functional characteristics and performance of the comfort coil.

Use brazing shield when brazing close to the cabinet surface and wet rag to protect rubber grommet. Brazing alloy should be at least 5% silver content.

5.1  Airflow performance [CFM vs pressure drop]:

<table>
<thead>
<tr>
<th>Model</th>
<th>Pressure Drop (Inches of Water) 0.05</th>
<th>0.1</th>
<th>0.15</th>
<th>0.2</th>
<th>0.25</th>
<th>0.3</th>
<th>0.35</th>
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</tbody>
</table>

Table 2  Pressure drop for cooling and heat pump coils

*Data based on wet coil with entering air at 80°F DB / 67°F WB without air filter.*
Water blow-off could occur in certain installation positions if the airflow setting exceeds the maximum values listed.

<table>
<thead>
<tr>
<th>Model / Coil</th>
<th>Maximum airflow setting, CFM</th>
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<tr>
<td></td>
<td>Upflow</td>
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<tr>
<td>BMAC4860DNF</td>
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</tbody>
</table>

Table 3
6 TXV replacement information

The TXV replacement options noted in this sheet supersede those in the installation guide. Please reference this sheet for all refrigerant metering options.

1. Remove the screws and front coil panel.
2. Remove the rubber plugs from the liquid and vapor lines.
3. Remove relevant ties and pipe insulation.
4. Unwrap and remove the TXV sensing bulb.
5. Remove the equalizer tube from vapor pipe. Wrap the TXV and coil panel with a wet rag to prevent overheating while brazing. Use a shield plate to prevent the copper pollution.
6. Disconnect the input pipe. Wrap the TXV and coil panel with a wet rag to prevent overheating while brazing. Use a nitrogen flow and braze all connections while brazing. Use a shield plate to prevent the copper pollution.
7. Remove the TXV fixed screws.
8. Replace a new TXV, wrap the TXV with a wet rag or dip into water to prevent overheating while brazing.
9. Allow tubing to cool and pressurize line sets with 150 PSI of nitrogen to check braze connections and flow assembly for leaks. Make repairs as needed.

WARNING:
- Wrap the TXV and coil panel with a wet rag to prevent overheating while brazing; and use a shield plate to prevent the fire and copper pollution.

Figure 10
10. Dry the TXV.

11. It is recommended to insulate the TXV and liquid line.

12. Connect and secure the TXV to the coil panel. Wrap a wet rag to prevent overheating while brazing. Use a shield plate to prevent the copper pollution.

13. Clean a straight section of the vapor line in original position. Use the straps to secure the TXV sensing bulb on top of the vapor line as picture, about 45 degrees.

14. Insulate the entire vapor line and sensing bulb. It is also recommended to insulate the TXV and liquid line between the valve and coil to prevent condensation in hot humid environments.

15. Replace the front coil panel and secure in place. Follow the steps in the installation guide for vacuum requirements and system start up procedures.

16. Allow system to run for a minimum of 10 minutes in the cooling mode, charge the system to 10 degrees of subcooling. Adjust the expansion valve to achieve 9 (± 3 degrees) of superheat.

17. Allow system to run for an additional 10 minutes to verify the subcooling and superheat readings.

---

**Expansion Valve (TXV) Spare Parts**

<table>
<thead>
<tr>
<th>Cased Coil Model Number</th>
<th>Spare Parts Material Number - Expansion Valve (TXV)</th>
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</thead>
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<td>BMAC2430ANTD</td>
<td>8733948235</td>
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*Table 4*

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*Figure 11*