



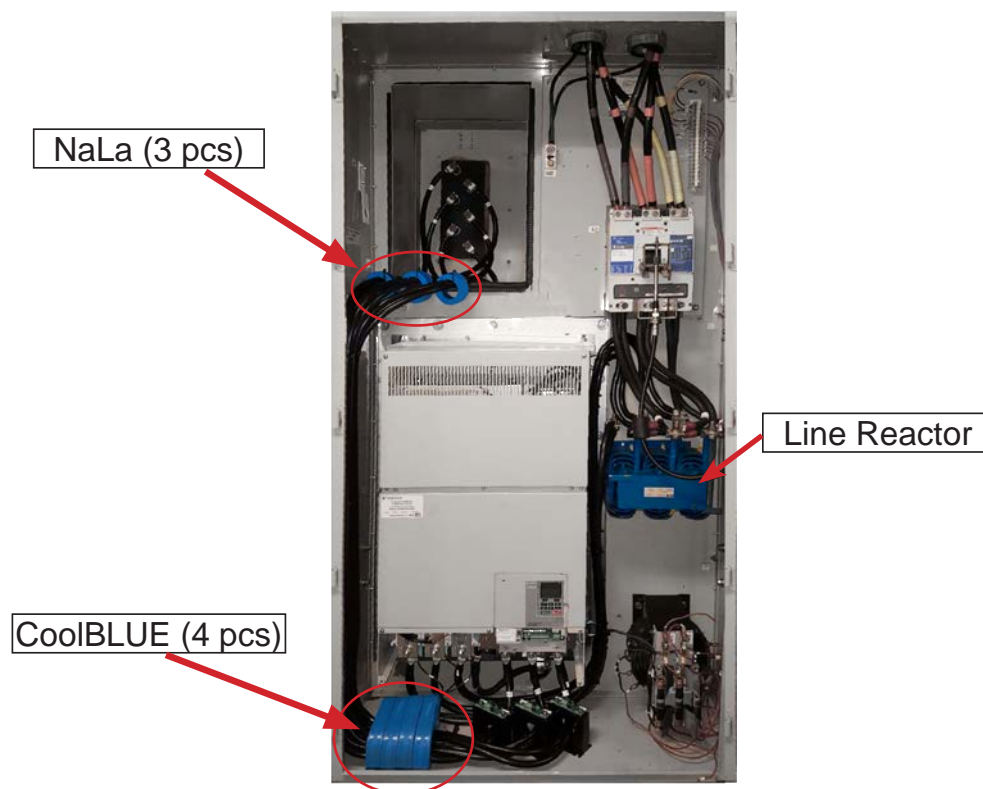
# APPLICATION NOTE

## APP #141

### Revision History

Date	Author	Description
11-26-19	DEW	Setup Cool Blue Installation
05-20-2020	DEW	Change App # - 138 used

## CoolBLUE and NaLa Installation Guide



Any questions regarding this release, contact: [support@mcscontrols.com](mailto:support@mcscontrols.com)

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CoolBLUE® and NaLA toroid are used to reduce damaging motor bearing currents in modern high power inverter systems operating at high switching frequencies. Results of these unwanted currents - Bearings cor-ruptate, leading to electrical breakdown in the lubrication, electrical discharge machining, and ultimately motor bearing failure.

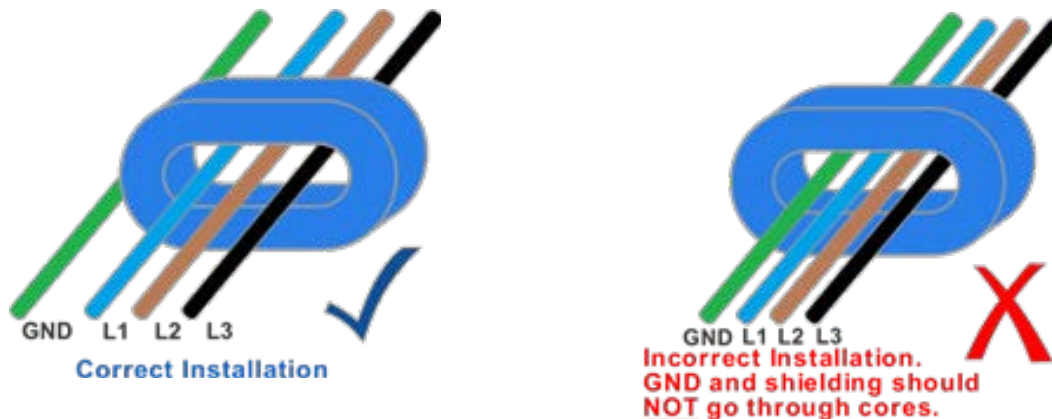
This method significantly increases the service life of the motor bearings and thus reduces maintenance costs and standstill periods.



Follow all workplace safety policies and procedures applicable to electrical testing, motor diagnoses, motor and electrical repair, and any other hazardous potentials. Wear all applicable personal protective equipment required by the applicable law including protective eye glasses, safety shoes, and hats if required.

#### Correct Installation of CoolBLUE cores

- 3 power phases must go through cores as shown below.
- No grounding wire or shielding.
- In the case of multiple conductors, all power conductors go through cores. Again, not ground or shielding.

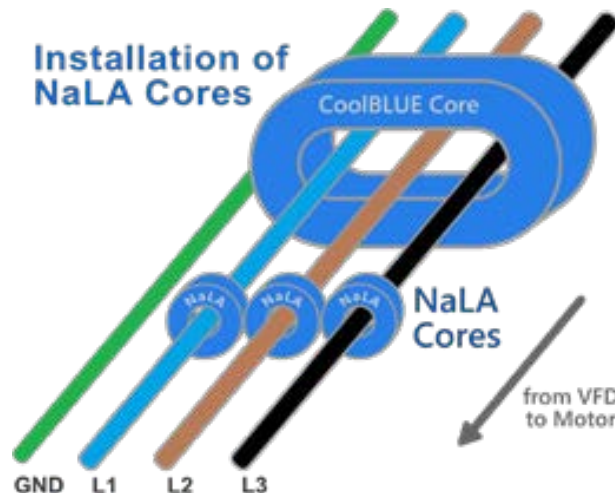


Below is example of multi-conductor cables per phase.



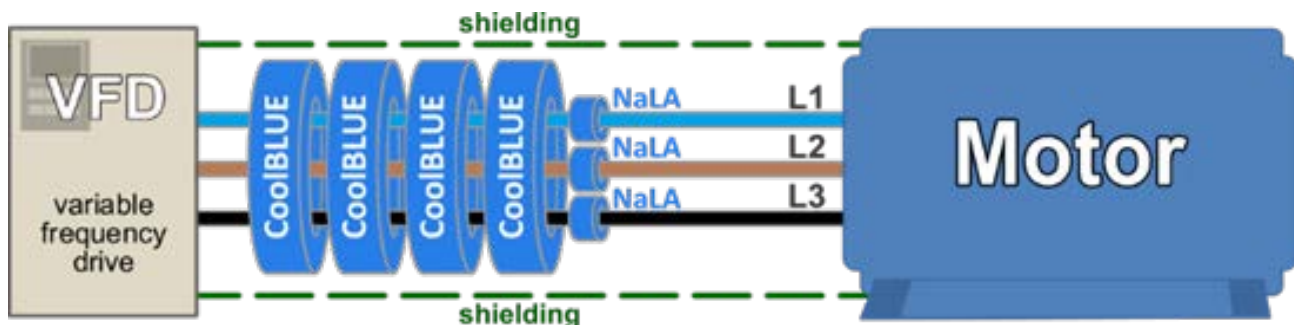
## Correct Installation of NaLA cores

- Each power cable must have at least one NaLA core installed, as shown below.
- No grounding wire or shielding.
- In the case of multiple conductors, all power conductors will need at least one core per cable. Again, not ground or shielding.



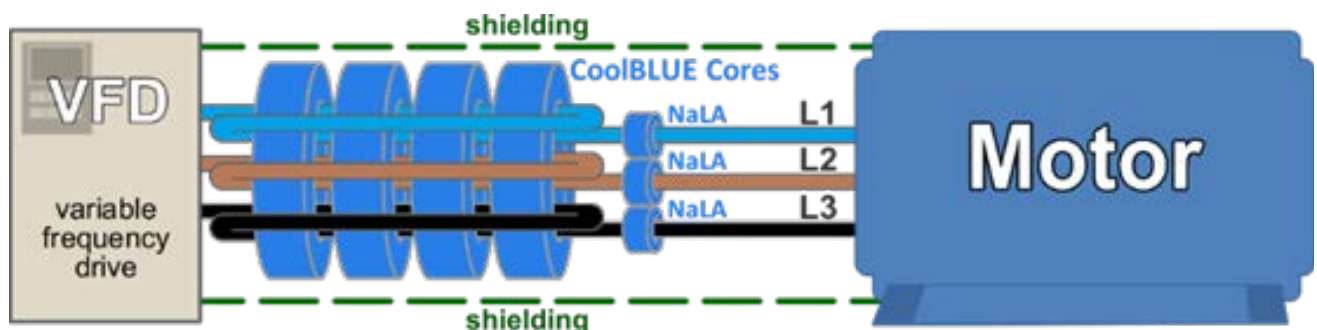
CoolBLUE and NaLA (if applicable) must be installed as close to the VFD as possible.

CoolBLUE cores are installed first, then NaLA (if applicable), as shown below.



¼ hp to 10hp must have power cables run through CoolBLUE cores twice (two turns) in order to provide enough inductance to properly suppress common mode peak current. NaLA is applicable in all ¼ hp to 10hp motors, and only one turn per NaLA core.

Below is a simple diagram showing two turns through CoolBLUE, and one pass through NaLA after CoolBLUE cores.





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