nanotech™

A POWERFUL SOLUTION

INSTALLATION GUIDE

MH&W presents Nanotech™ solutions, for the highest reliability and longevity of your VFD motor system!

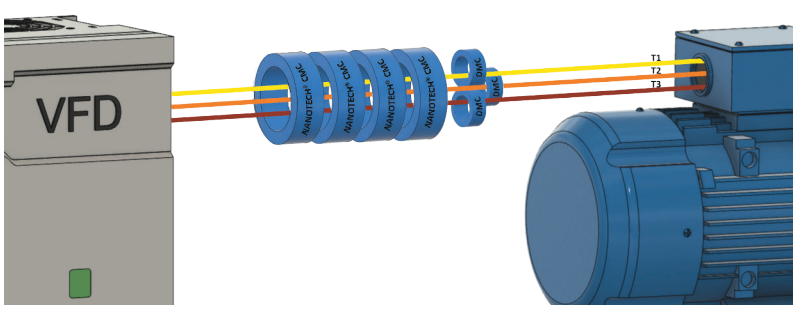
VFD's create high frequency damaging common mode currents which travel simultaneously from all outputs to the motor, but also couple back to earth ground.

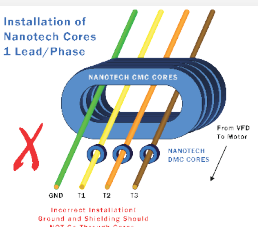
If these currents aren't "absorbed" the effect will be lubrication breakdown and electrical discharge machining (EDM) damage in the motor bearing, and electromagnetic interference which affects control signals, encoder feedback, communication links for programmable logic controllers, Remote I/O, metal detectors, pump monitors, and other types of sensors including, ultrasonic sensors, bar code/vision systems, weight, and temperature sensors.

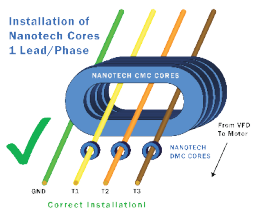
Follow workplace safety policies and procedures applicable to electrical testing, motor diagnosis, motor and electrical repair and any other hazardous potentials. Wear all applicable personal protective equipment required by the applicable law including protective eyeglasses, safety shoes and hats if required.
Employees should be informed of the relevant safety rules and employers should enforce compliance. The manufacturer shall not be liable for any injury, loss, or damage, direct or consequential arising out of the use, or attempt to use the product or procedures described in this guide.

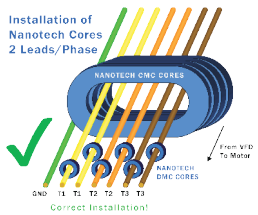
Correct Installation of Nanotech™ CMC & DMC Cores

- Cores must be installed as close to the VFD as possible, temperature dot visible.
- 3 power phases must go through Nanotech™ cores as shown.
- In the case of multiple conductors, all power conductors go through Nanotech™ cores.
- Each power cable must have at least one DMC core installed as shown; even in cases of multiple conductors.



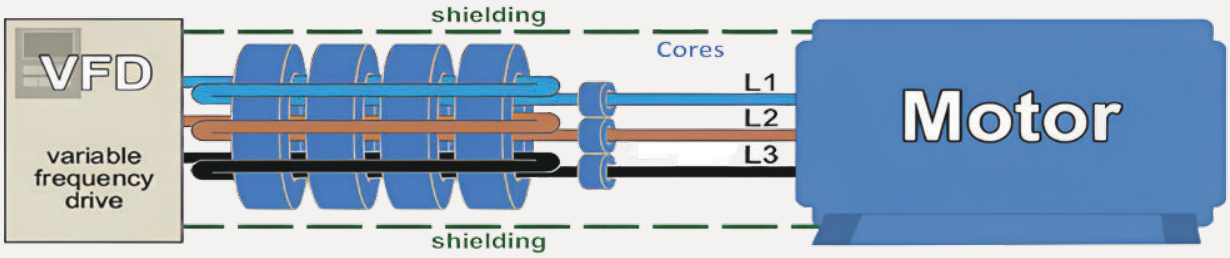




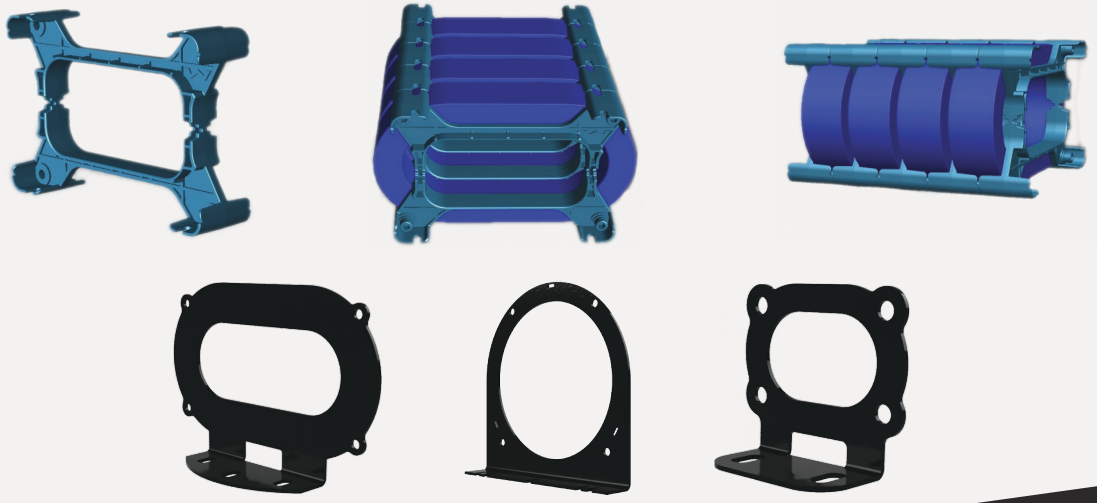


NANOTECH™ CMC & DMC INSTALLATION GUIDE

Applications 10HP and below must have power cables run through Nanotech™ cores twice (two turns) to provide enough inductance to properly suppress common mode peak current. DMC is applicable in all applications and only requires one turn per core.
Below is a simple diagram showing two turns through Nanotech™ CMC, and one pass through DMC after Nanotech™ CMC cores.



Because of the size and weight of Nanotech™ cores, it may be necessary to clamp and mount the cores to the wall of the drive, or other area between drive and motor. It is not required, but does make the system look more esthetic, and provides support for heavier cores. Available are special made brackets, with threaded rod, that can easily clamp and mount the cores to a structure.



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INSTALLATION INSTRUCTIONS

1. Choose appropriate kit per horsepower of VFD, and cable length.
2. Disconnect the three phases from the drive, carefully identifying the location of each power cable.
3. Place the appropriate type and amount of DMC cores around each individual power cable.
4. Place the appropriate type and amount of Nanotech™ CMC cores around ALL power cables, temperature dot visible.
5. Reconnect the power cables appropriately.
6. Temperature dot on Nanotech™ CMC cores is for monitoring purposes only. If the dot turns black, contact MH&W Engineering.

FOR MORE INFORMATION

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