

BECAUSE YOUR BUSINESS RUNS THROUGH US

CABLE TERMINATION BEST PRACTICES

A guide to improved cable performance through proper termination and installation.

Outstanding products are only the beginning. Optimum system performance can only be realized when the best products are paired with high-quality installations. Don't let hurried installation practices limit your system's performance.

CORRECT TERMINATION AND INSTALLATION MAXIMIZES SYSTEM PERFORMANCE.

At Berk-Tek, we make the highest performing cables available. Our superior engineering and manufacturing lay the foundation for structured cabling systems that deliver unparalleled performance.

But the foundation is just the beginning. Ensuring optimal system performance also requires accurate and conscientious installation practices. This best practices guide identifies key installation issues that could be sapping your system of its full potential.

CHECKPOINT | PANEL TERMINATION

FIG. 1A
Proper Termination

When terminating your Berk-Tek cable in the wiring closet, it is suggested that the cable be terminated so that a twist is always visible between the jacket and the punchdown (**Fig. 1A**). Terminations should never be done without this twist, as depicted in the illustration at right (**Fig. 1B**). The first twist must always be within 0.5" of the point of termination. If the solid and striped connectors of the pair are out of position to be punched, be sure to place an extra twist in the pair to properly position the conductors, rather than further untwisting the pair.

Proper care must also be taken to pinch the end of the jacket during the untwist process, so that proper pair twist remains inside the cable jacket. When the extra twist is placed between the end of the jacket and the punchdown (**Fig. 2A**), the core integrity will be maintained and will maximize crosstalk performance. If the end of the jacket is not pinched properly and the pair is allowed to untwist further inside the cable jacket (**Fig. 2B**), crosstalk performance will be significantly degraded.

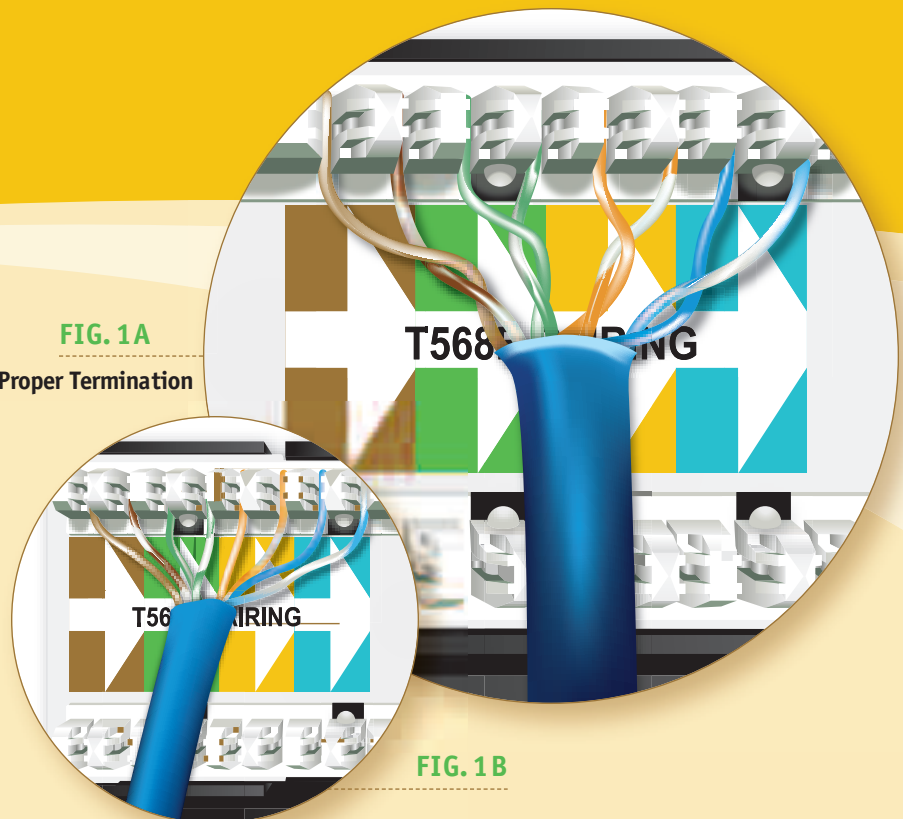


FIG. 1B

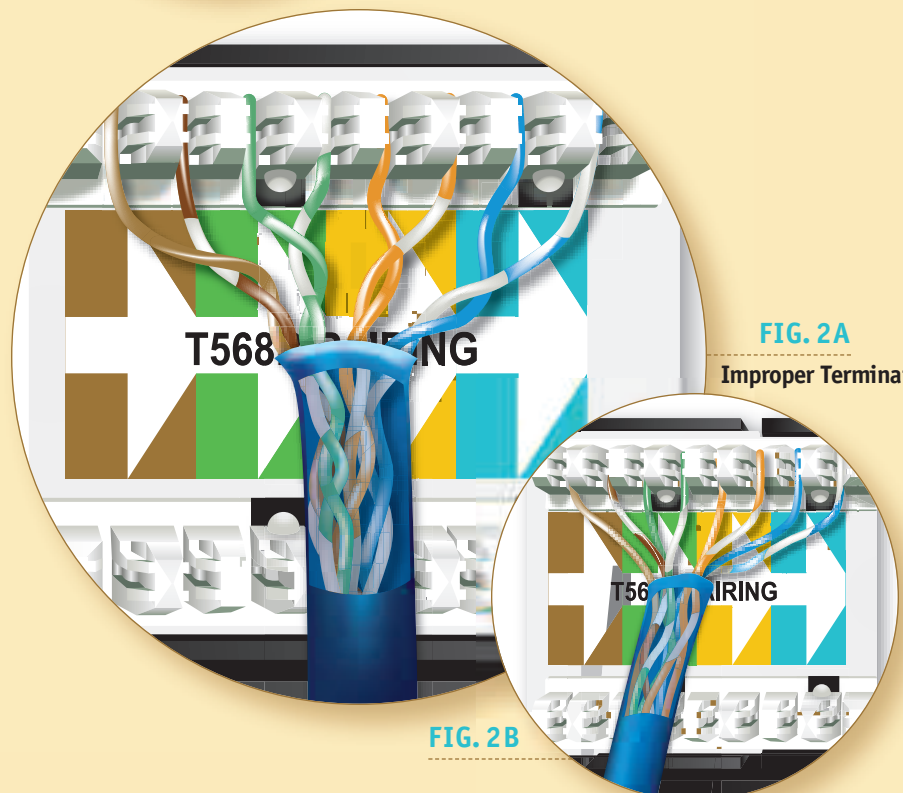


FIG. 2A
Improper Termination

FIG. 2B

CHECKPOINT | JACK TERMINATION PREP

One of the primary steps in maintaining the NEXT performance is to position the orange pair (**Fig. 3A**) and brown pair (**Fig. 3B**) appropriately for T568B style jack terminations. Proper positioning of the crossing pair— determined by the end of the cable being terminated and the color rotation of the jack— between the blue and green pairs maintains proper spacing and improves crosstalk performance of the Blue/Green combination.

Each end of the cable will have a mirror-image pair orientation before the pairs are rearranged to suit the jack to which it is being terminated.

Example Jack

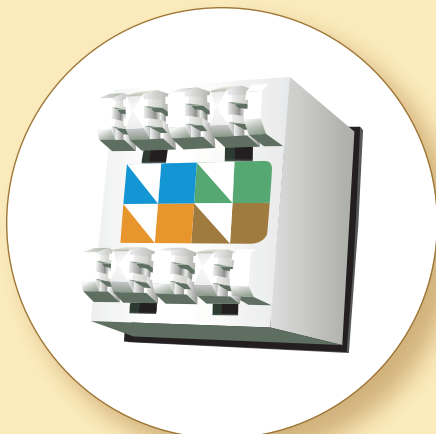


FIG. 3A

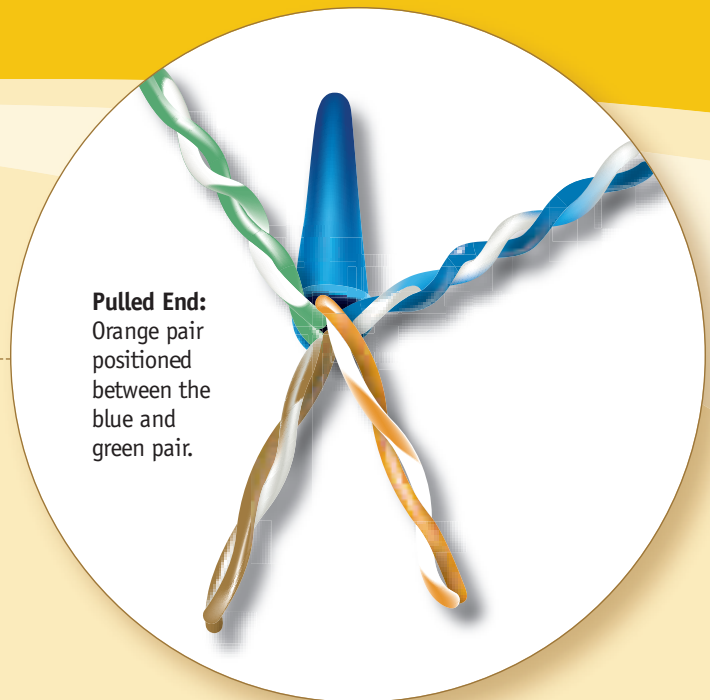
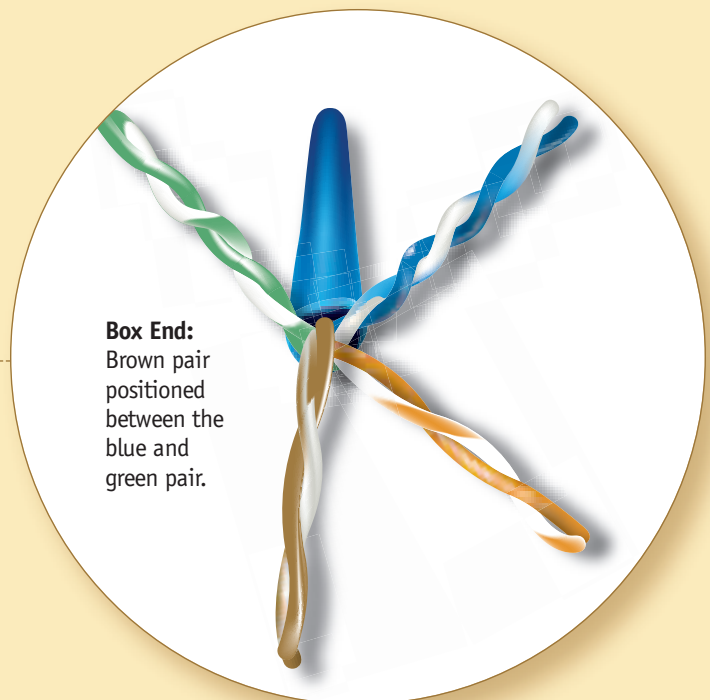


FIG. 3B



CHECKPOINT | JACK TERMINATION

Proper Termination



FIG. 4A

As in panel termination, it is extremely important to maintain a twist between the end of the jacket and within 0.5" of the punchdown to ensure proper cable performance (Fig. 4A). You should also be sure to pinch the end of the jacket to prevent any untwist from occurring within the jacket itself (Fig. 4B).

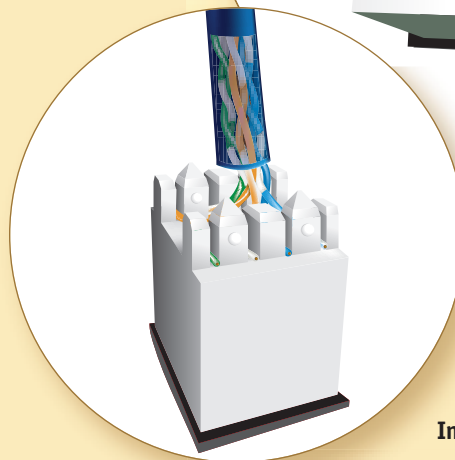


FIG. 4B

Improper Termination

Improper methods of maintaining twist to the end of the jacket (Fig. 5A) not only degrades the crosstalk performance, it also allows for too much untwist inside the cable jacket. And, too much untwist within the orange pair as well as improper routing of the orange pair around the blue pair, instead of between the blue and green pairs, (Fig. 5B) brings the blue and green pairs into close proximity with one another, creating a negative impact on overall cable performance.

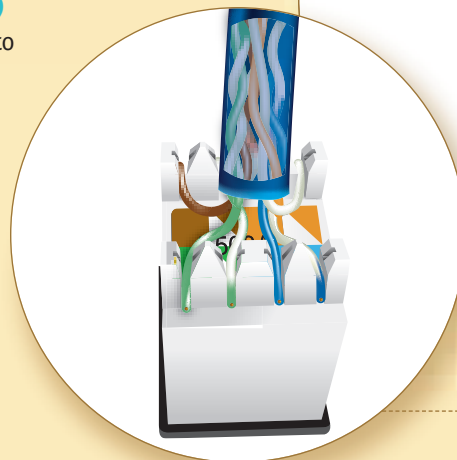


FIG. 5A



FIG. 5B

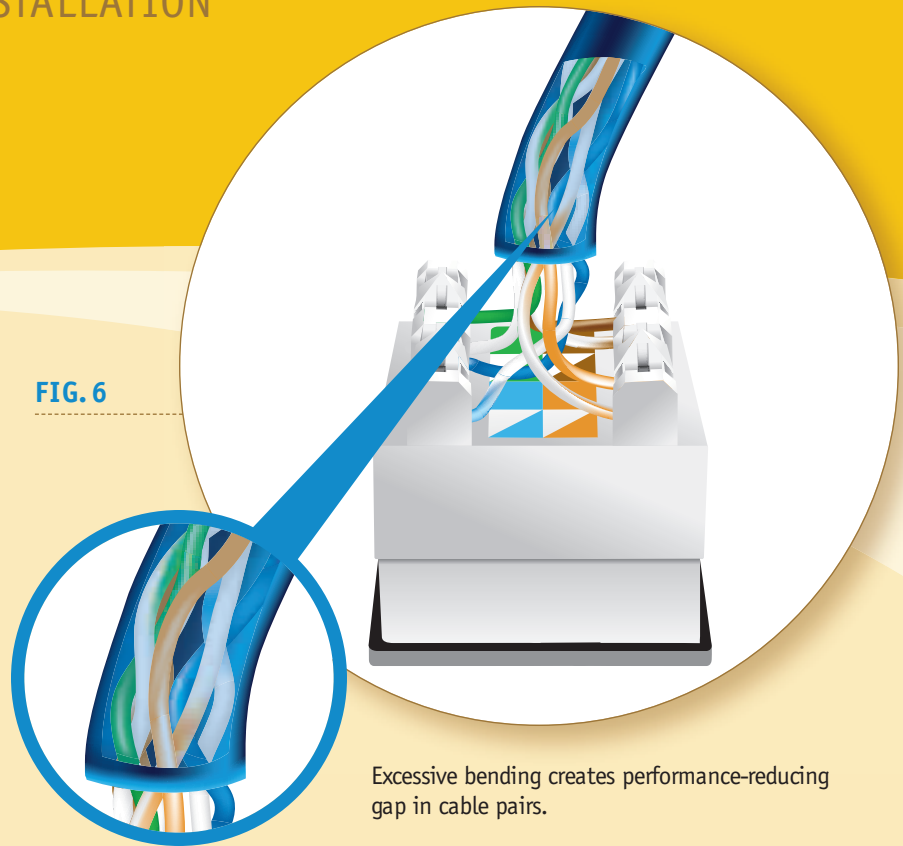
CHECKPOINT | JACK INSTALLATION

FIG. 6

When installing the jack, excessive bending at the termination point will cause the pairs with a minimal amount of twist to separate much more than they should (Fig. 6), further reducing the NEXT performance. Care should be taken to ensure that the angle of the cable entry onto the termination points of the jack will remain correct when the jack and faceplate are installed on the wall. Be certain that installation in the wall does not excessively change and untwist the pairs.

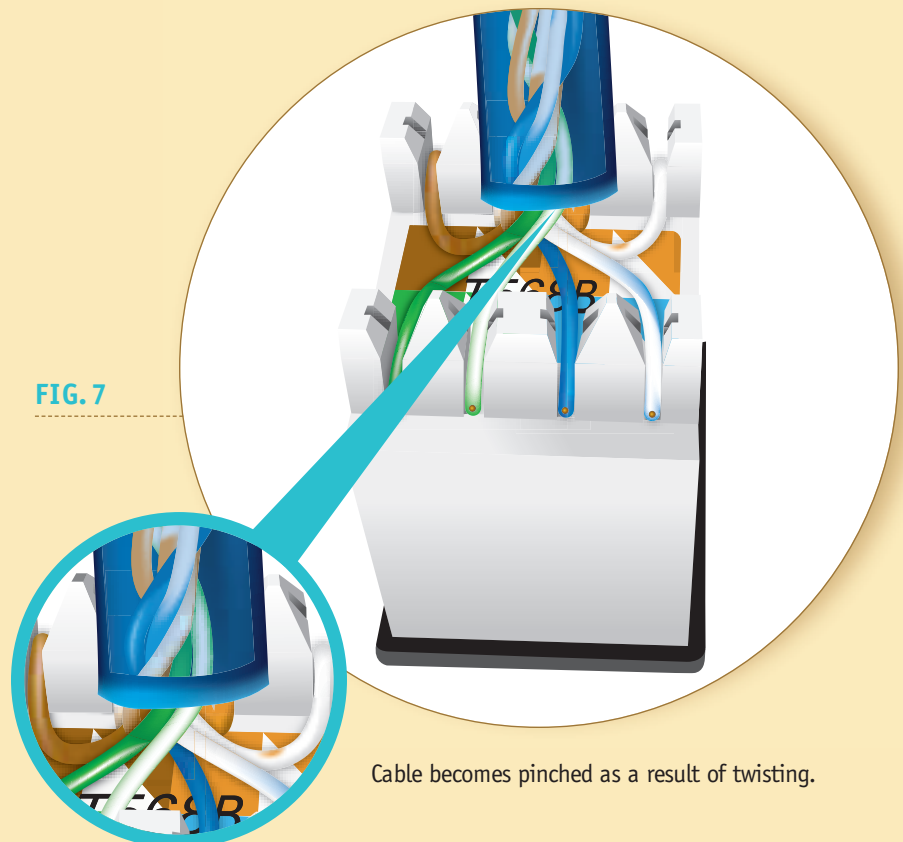
Be sure to take special care to not rotate or twist the entire jack once it has been terminated. This can easily happen if a coil is stored in the gang box and the jack is held while the cable is pushed back into the wall. This twisting motion will severely alter the core geometry at the point of termination (Fig. 7) and cause a marked reduction in NEXT performance.

Finally, if service loops are needed, they should be as far as possible from the wall outlet. Extra cable length should be coiled in a figure 8 pattern. If round coils are employed, the diameter should be larger than ten inches. Tie wraps should be avoided when possible, but if required, they should be loose and not visibly compress any part of the jacket.



Excessive bending creates performance-reducing gap in cable pairs.

FIG. 7



Cable becomes pinched as a result of twisting.



Corporate Headquarters

132 White Oak Road
New Holland, PA 17557
USA

TEL: 717-354-6200

TEL: 800-237-5835

FAX: 717-354-7944

www.berktek.com

In Canada, please contact:

Nexans Canada Inc.
140 Allstate Parkway
Markham, Ontario
L3R 0Z7 Canada

TEL: 905-944-4300

TEL: 800-237-5835

FAX: 905-944-4390

www.berktek.com