



APPLICATION PROCEDURES

DYNA-GRIP® & EVERGRIP™ TERMINATIONS + BSR

INSTALLATION GUIDELINES

1. Be sure to read and completely understand this procedure before applying this product.
2. PMI helical products are precision formed devices that should be handled carefully. To minimize grit loss, distortion, or damage, they should be safely stored until used.
3. PMI Terminations are designed for use on jacketed and un-jacketed steel armored cable and wire ropes. For un-jacketed cables, the lay direction of the outer armor layer must match the lay direction of the PMI helical rods.
4. The safe working load is provided for each model on our website. For assistance in determining the load rating for this product or its performance on jacketed cables, contact PMI Industries, Inc.
5. PMI helical rods may be removed and re-installed only once prior to any loading. If removal of the termination is necessary after it has been installed and loaded, the rods and insert must be replaced. Retermination kits are available for kits without epoxy.
6. Everflex™ bending strain relief application procedures are at the end of this document. If supplied with kit, Everflex BSR must be slid on cable prior to housing.

SAFETY GUIDELINES

1. For proper performance and personal safety, be sure to select the proper size product for your application.
2. This application procedure is not intended to supersede any company, industry or governmental safety standards. This procedure is offered only to illustrate safe application for the individual. Failure to follow these procedures may result in personal injury.
3. When assembling, installing or using this product, appropriate clothing and personal protective equipment should be used at all times. At a minimum, this includes use of leather gloves and safety glasses. However, there may be circumstances where additional clothing and personal protective equipment may be necessary. You should consult with your supervisor as to what

the appropriate (1) gloves or other hand protection, (2) safety glasses, face shield or other eye and face protection, and (3) other clothing and equipment, are necessary for your particular use and/or application of the product.

4. A two-part epoxy may be included to pot the termination (DYNA-GRIP only). Read epoxy MSDS prior to use.
5. The safe and proper assembly, installation and use of this product is ultimately the responsibility of the user. The user is expected to assemble, install and use the product in compliance with all applicable industry and government standards and regulations that apply to the use of the product, including without limitation: OSHA, ANSI, ASTM and other comparable standards and regulations.

MAINTENANCE GUIDELINES

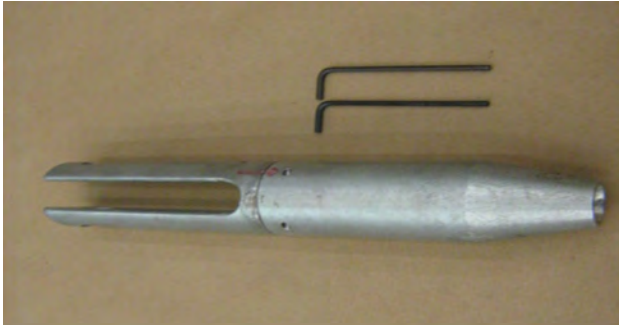
1. **IMPORTANT:** After each use of this product, inspect all parts for abnormal wear and tear and to ensure that no parts were damaged during use.
2. Replace all parts that are worn or damaged before further use of the products. **HELICAL RODS SHOULD BE REPLACED AFTER EVERY USE.**
3. If you have questions about whether a part should be replaced, please contact a PMI representative. PMI is not responsible for any damage or incident caused by the use of worn or damaged parts.

WARRANTY INFORMATION

Assembly, installation or use of this product in a manner inconsistent with these procedures and instructions may void any warranties that accompanied the purchase of this product.

APPLICATION PROCEDURE

1. The termination is shipped partially assembled.
2. Disassemble the adaptor (clevis), housing and retainer (inside housing) using the following steps.



3. Insert the hex keys into the two holes in the base of the adaptor as shown until they bottom out.



4. Clamp the housing in a vise. Unscrew the adaptor while keeping the hex keys pushed in until they engage the holes in the retainer. The retainer needs to be removed from the housing prior to any assembly. Note: There may be pre-applied anti-seize compound on the threads of the adaptor, retainer and housing. Continue unscrewing the retainer until it is separated from the housing and set it aside.



5. With the retainer removed, slide the housing, non-threaded end first as shown, over the cable and out of the way (Everflex BSR must be slid on first if it is included. Note: For use of an Everflex BSR, a special modified housing is required for attachment).



6. Slide the insert over the cable in the direction of the arrow as shown. Position this in the location where the DYNA-GRIP or EVERGRIP Termination is to be installed.

NOTE: On electro-mechanical cables, allow sufficient cable to extend beyond insert for electrical connections.

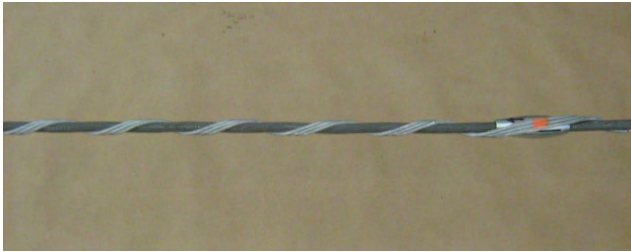


7. Begin application of the DYNA-GRIP or EVERGRIP Rods with one subset of rods. Position the rods by matching the color mark on the rods with the largest diameter on the insert. Wrap one subset on the cable for approximately two-thirds of the length of the rods.

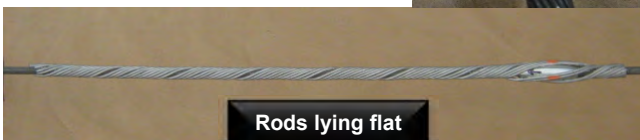


NOTE: Avoid winding the cable into the rods as this will make it difficult to fit the remaining rod subsets onto the cable. For flexible cables, apply the rods with the cable under some tension. Be careful during handling not to permanently bend the DYNA-GRIP or EVERGRIP Rods.

- Apply the remaining rod subsets, one at a time, for two-thirds of their length. Align the color marks of the rods closely with each other. Do not allow rods to cross over each other.



- Finish wrapping rod subsets, one at a time, around the cable by using the thumb to push rod ends while the fingers support the cable. (Rod subsets can be separated into single rods to ease application on larger sizes). Make sure all rod ends are snapped into place and are laying on the cable. If necessary tap rods down with a rubber mallet to help rods lie flat. Tape or bands may be used to serve the rod ends and avoid snags.



Rods lying flat against cable

- Slide housing back up cable and over the rods until firmly seated over the insert.



- PMI recommends using thread lubricant or anti-seize compound on the retainer and adaptor

threads to aid in future disassembly.

- Slide retainer over the cable toward the housing, threaded end last. Begin threading the retainer into the housing by hand.



- Clamp the housing in a vise and slide the adaptor over the cable toward the housing and the retainer, threaded end first. Place the hex keys in the adaptor holes as shown. Use the adaptor and hex keys as a spanner wrench to tighten the retainer firmly into the housing. The retainer is in correct position when it can no longer be screwed into the housing. When the retainer is properly in place there should be no looseness in the assembly.



NOTE: STEPS 14-1 ARE FOR EPOXY POTTING THE DYNA-GRIP. IF USING AN EVERGRIP, SKIP TO STEP 20.

- Remove adaptor and hex keys.
- Reposition and secure the housing in a vertical position for the epoxy fill, retainer end should be up.
- Fill the gaps between the DYNA-GRIP Rods at the nose end of the housing with sealing clay (provided) secured with electrical tape (not provided). A hose clamp (not provided) can be used to help squeeze the clay into the gaps to seal the end of the housing and rods to prevent epoxy leaks.
- Review the Epoxy Technical Bulletin instructions for mixing epoxies. Stir contents of container of Part A epoxy for 2 minutes before continuing. In a beaker, combine all of Parts A & B and thoroughly mix for 3 minutes. Do not vacuum degas this epoxy or wait more than 15 minutes before pouring. Slowly pour the epoxy into the housing via the gap between the rods and retainer, while occasionally tapping the

housing to help dislodge any trapped air bubbles. Fill the housing until the epoxy just covers the top of the retainer. Be careful to not drip or spill epoxy on the housing threads. Clean it off if it does! Cure the epoxy overnight at 77 Deg. F (minimum) room temperature with additional heat from a lamp (minimum 75 watt) placed 4 to 6 inches from the assembly. Cure can be accelerated using 150°F for 2 hours.

18. If outside, protect from rain and moisture. Check the assembly periodically during the first hour after pouring for epoxy leakage, top off as required. It is normal to have some epoxy leakage between the interstices of the rods. Save leftover beakers of mixed epoxy for an epoxy cure check. Do not move the assembly until after the epoxy has cured. Verify the epoxy has cured by scratching the surface of the exposed epoxy in the housing and in the leftover beakers with a screwdriver or a knife. The scratch should appear white and the epoxy should feel hard.
19. If the epoxy does not appear to be fully cured contact PMI Industries, Inc. for instructions. After the epoxy has cured, remove the clay (and tape & hose clamp, if used). Clean any cured epoxy from the housing at the adaptor threads and groove-pin hole which might prevent adaptor assembly.
20. Thread the adaptor firmly by hand into the housing making sure groove-pin holes are aligned. Do not over tighten.



21. Lock the adaptor and housing together by driving the groove pin into the hole in the mated threads using a properly sized drift pin and hammer. Try not to deform the pin. If desired, use a metal file to remove protruding ends of the pin after fully inserted, if present.



22. For attachment to equipment, use only the supplied PMI clevis pin. The termination assembly is now complete.

EVERFLEX™ BSR APPLICATION PROCEDURE

1. Everflex BSRs are intended to attach to the housing of the termination. The termination must come with a modified housing (external threads on nose) to accommodate BSR attachment.
2. Mate the tapered threads of the housing with the internal threads of the BSR.



3. Screw BSR onto housing firmly by hand. Do not attempt to screw housing into BSR. Assembly is complete when BSR is threaded firmly on housing.



TROUBLESHOOTING

If application problems or difficulties occur, please contact PMI Industries, Inc.