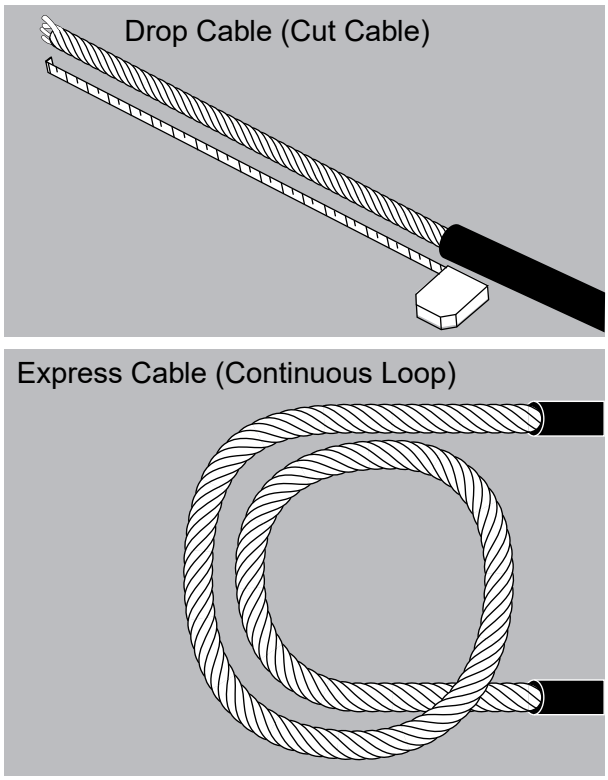
Installation Procedure for the FibreGuard™ Closure

be sure to read and completely understand this procedure before applying product. be sure to select the proper Pref Or MeD™ product before application.

Cable Preparation and Installation

1. Remove sheaths as per manufacturers' instructions. (Figure 1)



f IGUre 1

Drop Cable

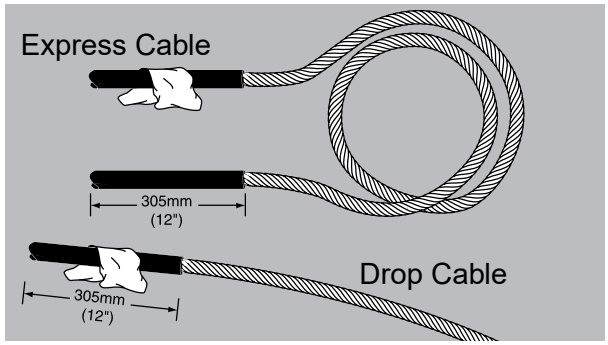
Closure Size	Minimum Sheath r emoval
650	1.93 m (76”)
800	1.93 m (76”)
500	1.93 m (76”)

express Cable

Closure Size	Minimum Sheath r emoval
650	3.86m (152”)
800	3.86m (152”)
500	3.00m (118”)

Sheath Cleaning

2. Using the cleaning tissue provided, clean and de-grease all prepared cable sheaths. (Figure 2)

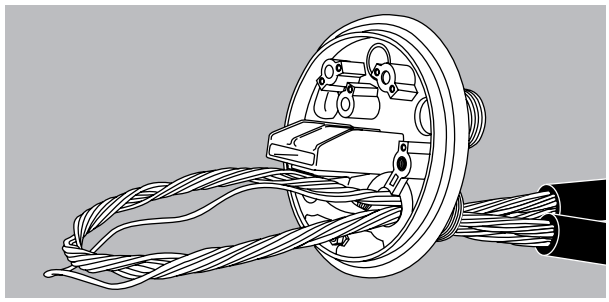


f IGUre 2

CAble Se Al In G

express Cable e ntry

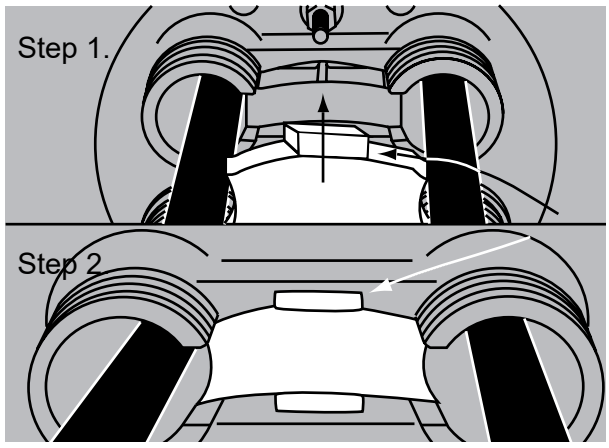
3. Feed the uncut express buffer tubes and cable butts through the end plate express opening. (Figure 3)



f IGUre 3

express Cable Center Wedge

4. Insert the center wedge grommet between the express cables, narrow end first, with the shape and keys aligned to the opening. Continue inserting until flush with the endplate. (Figure 4)

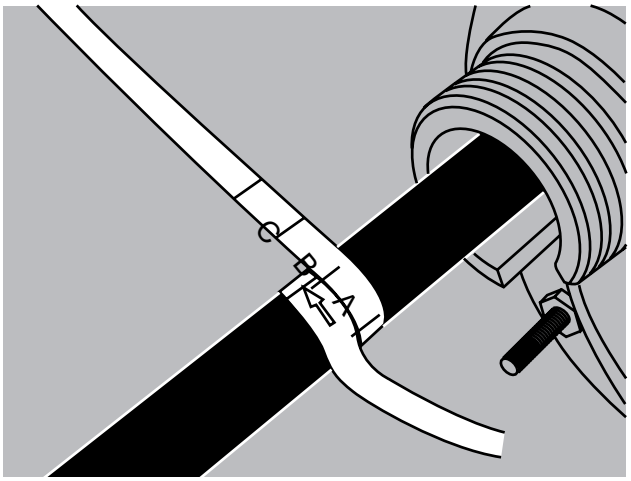


f IGUre 4

n OTe : Cut cable can utilize the express openings. To do so, proceed as described in the following notes except do not cut the cable grommets, as they can be slid over the cable end.

Grommet Selection and f itting

5. Measure the circumference of each express or drop cable entering the closure with the grommet measure tape to determine which size grommets are required to complete the sealing process. (Figure 5)



f IGUre 5

Grommet Selection

n OTe : The range of Grommets is designed to fit express and drop ports.

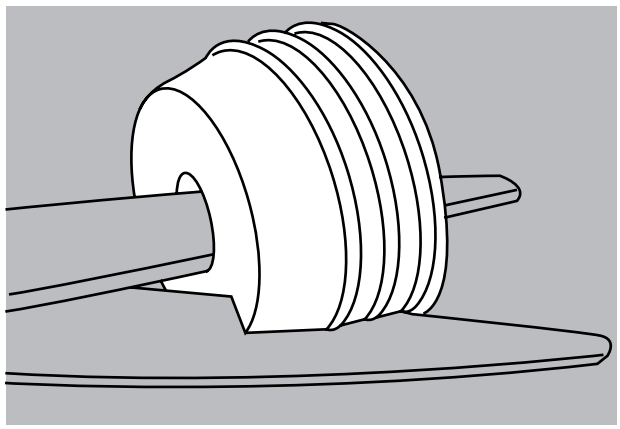
Tape Measure r eference	# of e ntries	Cable r ange (mm)	Cable r ange (inches)
Grommet A	1	10 to 15	.390 to .590
Grommet b	1	15 to 21	.590 to .820
Grommet C	1	21 to 25	.820 to 1.00
Additional multi-entry sizes are available. Note: Total OD of all cables entering grommet must not exceed 20 mm.			
Grommet 2H available but not referenced on tape	2	7 to 12 drop port only	.27 to .47 drop port only
Grommet 4H available but not referenced on tape	4	3 to 7 drop port only	.11 to .27 drop port only
Custom made grommets with selective cable entries are available.			
Individual Order	8	all 8 drop port only	0.19 drop port only
Individual Order	24	all 24 drop port only	all 0.074 drop port only

n OTe : Various sizes and combinations of grommets can be manufactured as specials. Please contact your local PLP offices for details.

Split Grommets

6. Express cable grommets <u>will</u> require splitting. The splitting operation can be completed with a clean cut through the grommet material with scissors.

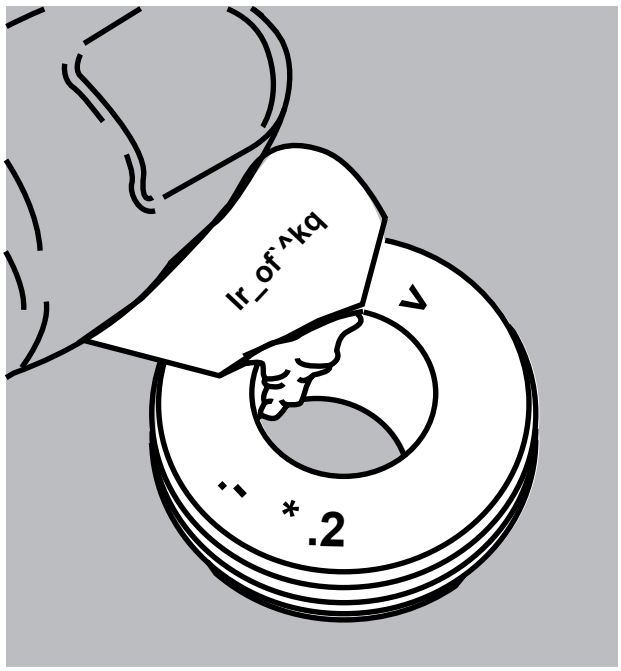
Drop cable grommets should be fitted over the cables prior to preparation without splitting unless the cable is already in operation and spliced. (Figure 6)



f IGUre 6

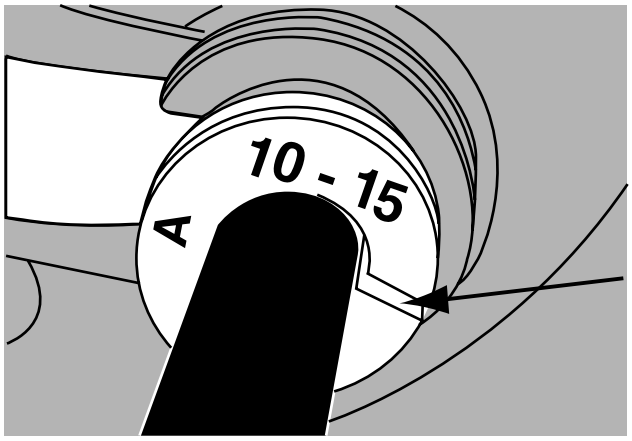
1st Grommet l ubrication <u>ex Pre SS CAble S Onl y</u>

7. From the packet provided apply a thin film of lubricant to the **inside** surfaces of the selected grommets. (Figure 7)



f IGUre 7

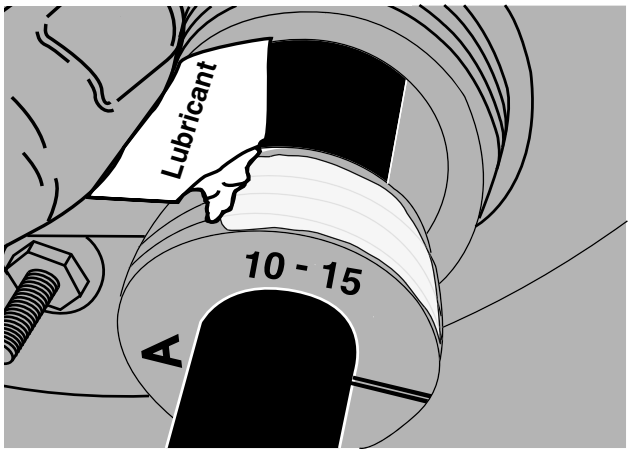
8. Fit the split grommet over the cable's narrow end to the endplate entrance and align the split opposite to the wedge. (Figure 8)



f IGUre 8

2nd Grommet l ubrication <u>ex Pre SS CAble S Onl y</u>

9. From the packet provided apply a thin film of lubricant to the **outer** surfaces of both grommets entering the closure. Using finger pressure maneuver the grommets as far as possible into the Express Ports of the end plate. (Figure 9)



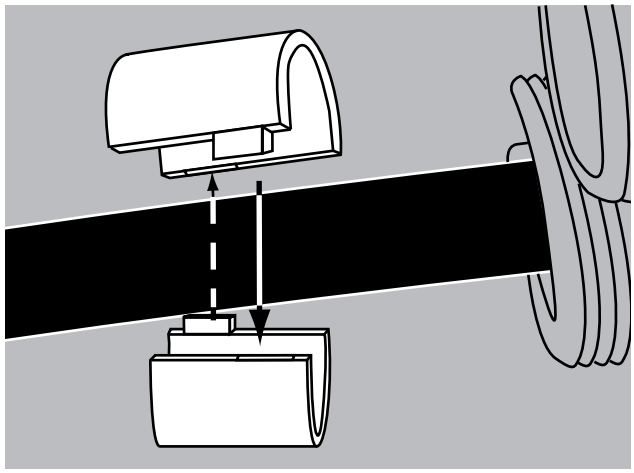
f IGUre 9

Driver Selection

10. Select the extended split driver for express ports. (Figure 10)

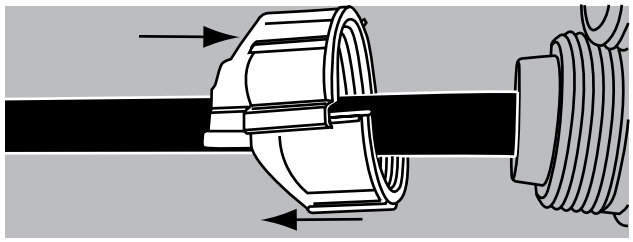
Fit the split driver over the cable and position against the grommet at both entrance locations.

PI P® Tip: Make sure to maintain both express cable grommet splits opposite to the wedge.



f IGUre 10

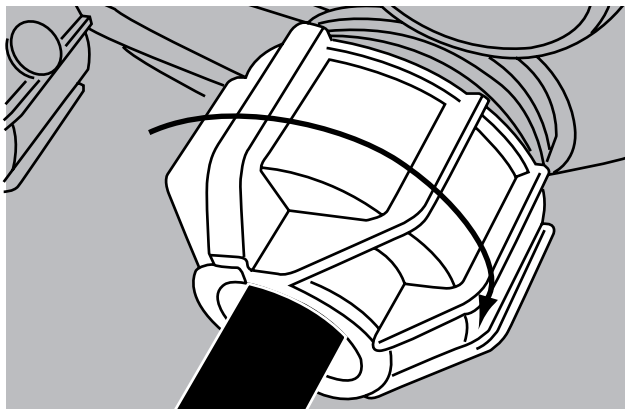
11. Select the correct size split Locking Cap, (larger one fits the express port, smaller one the drop port). Fit over the cable and lock the two halves together. (Figure 11)



f IGUre 1 1

12. Engage the Locking Cap onto the end plate threads with only 2 to 3 turns by hand. (Figure 12)

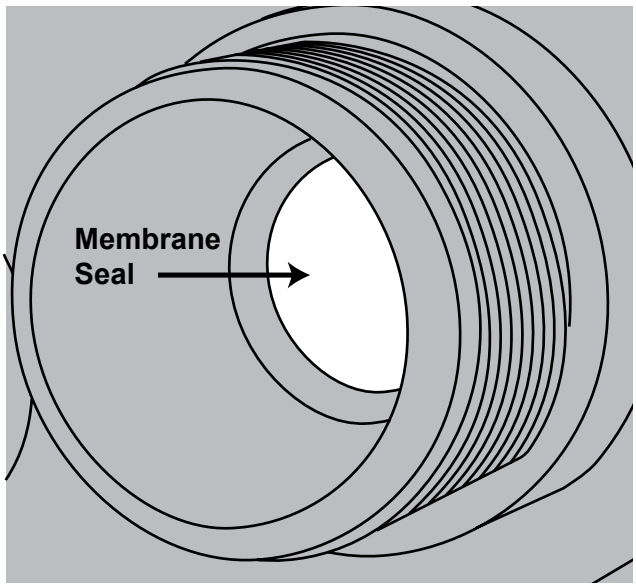
PI P Tip: While still loose, extend the cable butts a little further into the closure for easy work access.



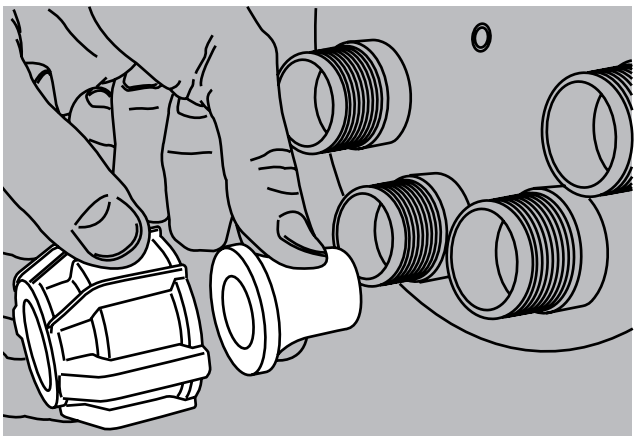
f IGUre 12

Drop "Cut" Cable and f uture Cable e ntry

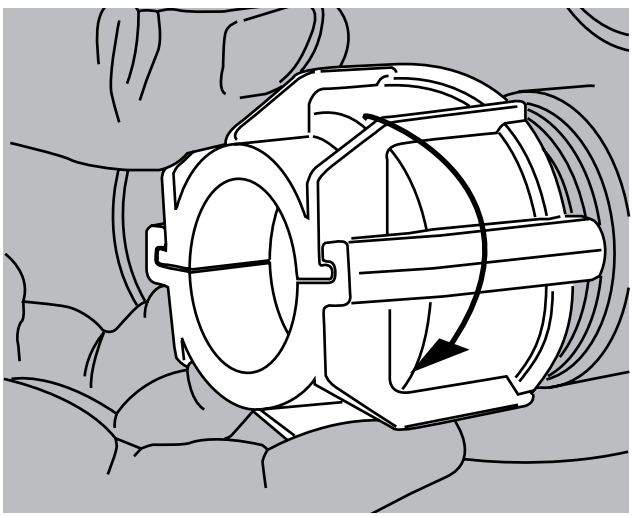
13. Select a drop port entrance and using the knockout tool (provided) and locking cap, break through the membrane seal. (Figures 13a, b & c)



f IGUre 13a



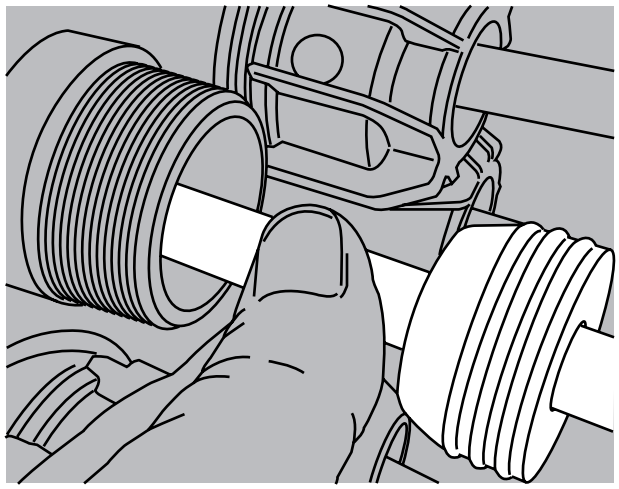
f IGUre 13b



f IGUre 13c

n OTe : Go to the Grommet selection table after paragraph 5 for drop port grommet selection.

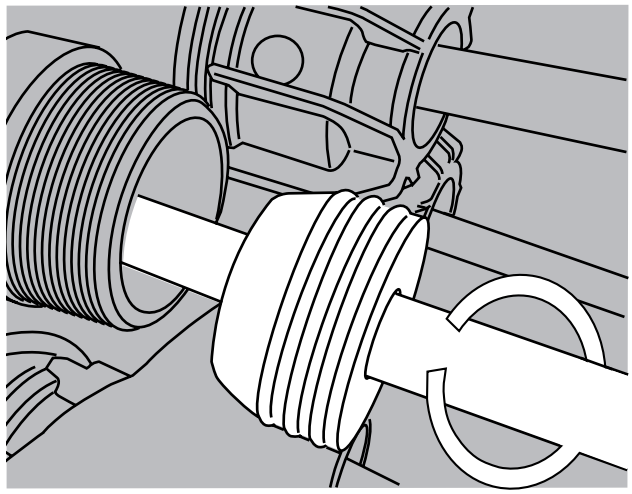
14. Feed the prepared drop cable through the selected grommet and the cable port up to the point where the cable butt is inside and clear of the end plate. (Figure 14)



f IGUre 14

Driver Selection

15. Select the small flat split driver for drop ports. (Figure 15)

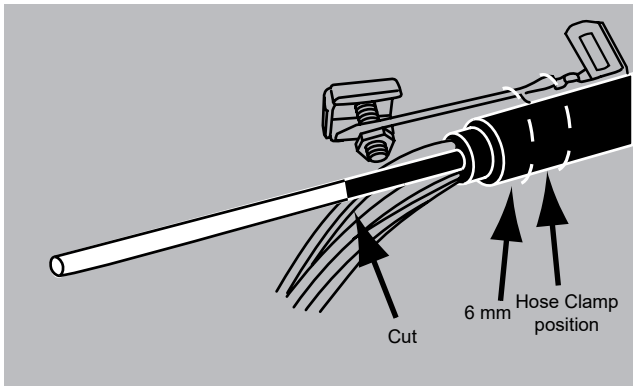


f IGUre 15

n OTe : For the initial cable sealing process, follow figures 11 and 12.

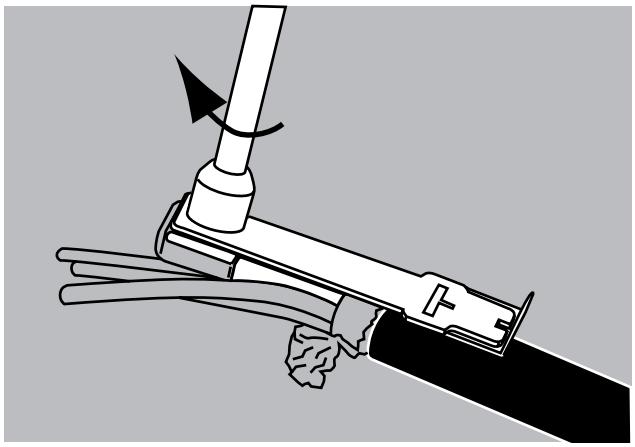
express and Drop Port Cable Attachments

16. Lay the strength member clamp along the cable to a position where the hose clamp will fit 6mm (.25”) from the cable butt. Trim the strength member to fit under the strength member end clamp. (Figure 16)



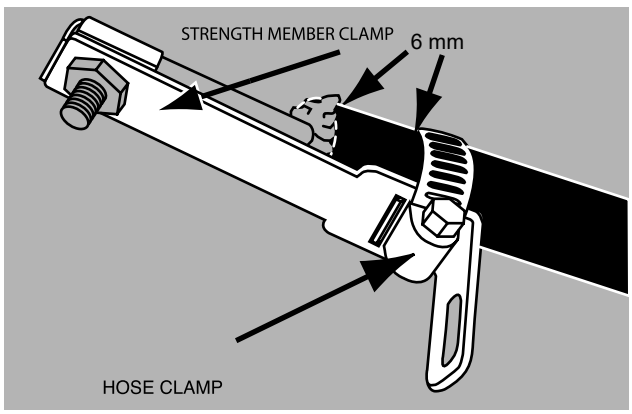
f IGUre 16

17. Secure the strength member tightly under the strength member clamp. (Figure 17)



f IGUre 17

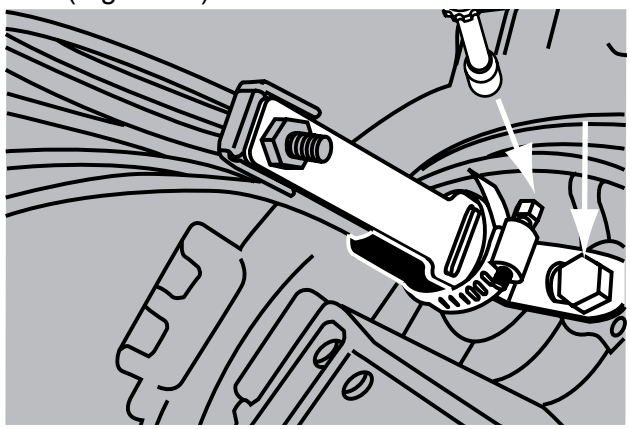
18. Attach the hose clamp around both the component and cable and fully tighten. (Figure 18)



f IGUre 18

Securing Cable Attachments to e nd Plate (e xpress and Drop Port)

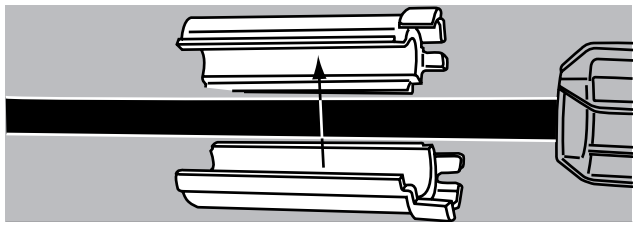
19. Maneuver the cable and attachments back to the end plate. With the bolt provided, attach the “L” bracket to the threaded end plate. Insert and fully tighten for creep-in/pull out requirements. (Figure 19)



f IGUre 19

CAble Se Al In G

20. Fit the split Tightening Assistant around the cable and lock both halves together. (Figure 20)

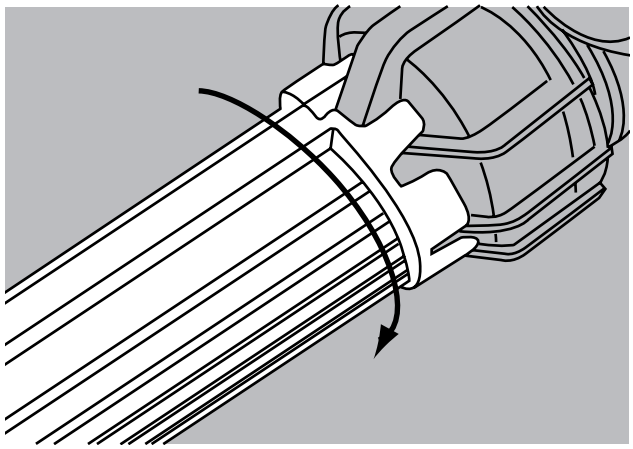


f IGUre 20

Drop Port Cables

21. Engage the Tightening Assistant onto the Locking Cap and fully tighten in a clock-wise direction. (Figure 21)

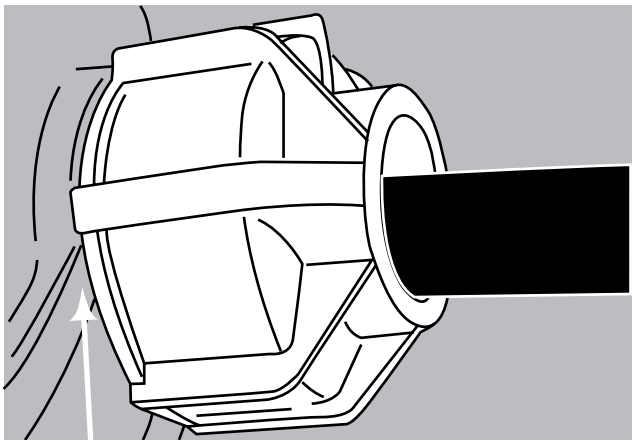
IMPOr TAnT nOTe: f or e xpress Cable, tighten using procedure described and shown in f igure 22.



f IGUre 21

express Cables

22. Evenly tighten both express locking caps with alternating 2/3 turns on each side until both locking caps are tight against the end plate and wedge grommet. (Figure 22)

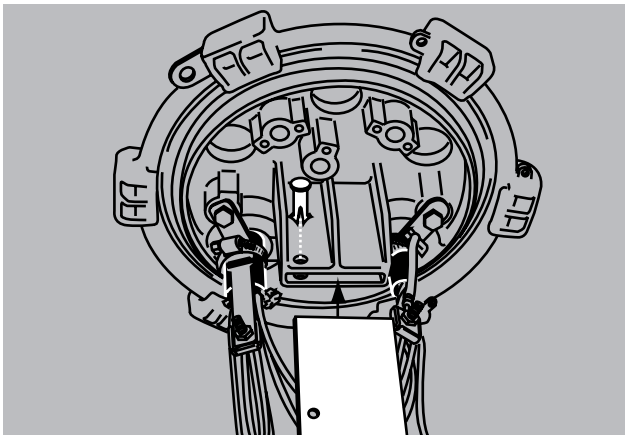


f IGUre 22

fI bre Or GAn Iz ATIOn

23. Slide the splice tray mounting plate into the end plate holder and lock in position with the pin provided. (Figure 23)

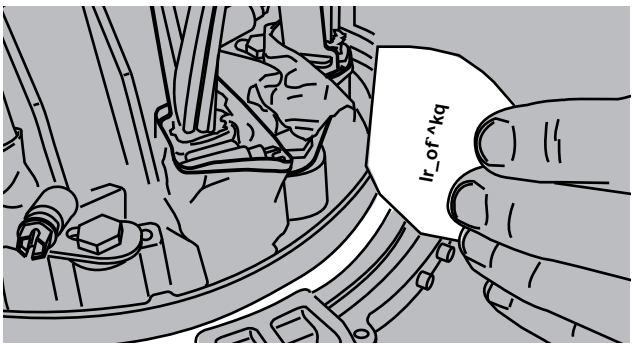
n OTe: Install your selected PLP Fibre Organizational System to separately provided installation practice.



f IGUre 23

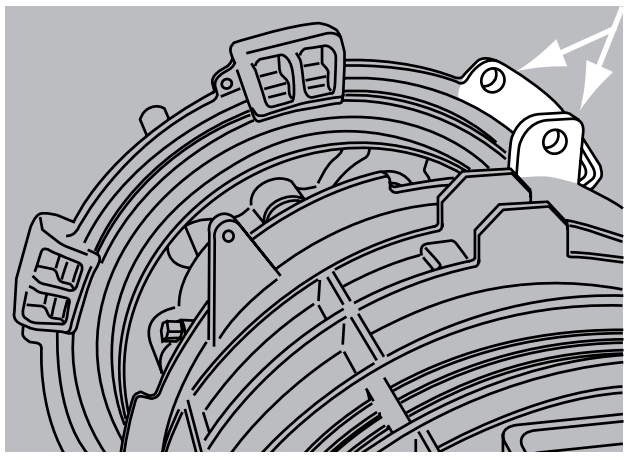
CI OSUre Se AI In G

24. A small amount of lubricant should be applied to the “O” ring prior to dome closing (Figure 24)



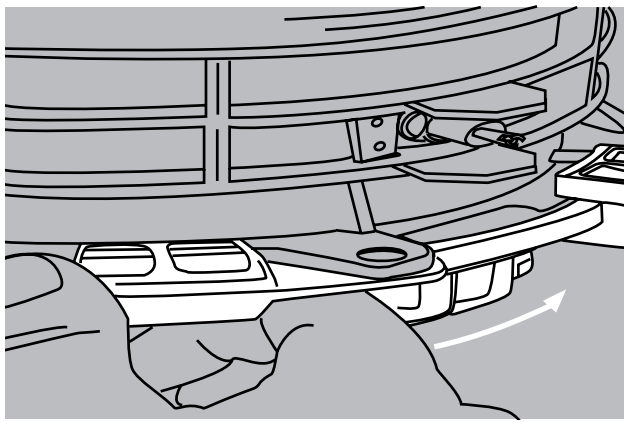
f IGUre 24

25. Carefully slide the FibreGuard™ Dome over the PLP management system, ensuring that the larger security locations on the closure and end plate line-up once sealed. (Figure 25)



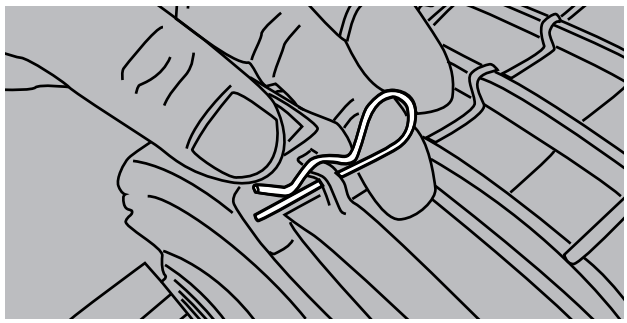
f IGUre 25

26. Allow the closure and end plate to locate/engage with the closure seated on the “O” ring. Rotate the sealing collar clockwise to seal both units together. (Figure 26)



f IGUre 26

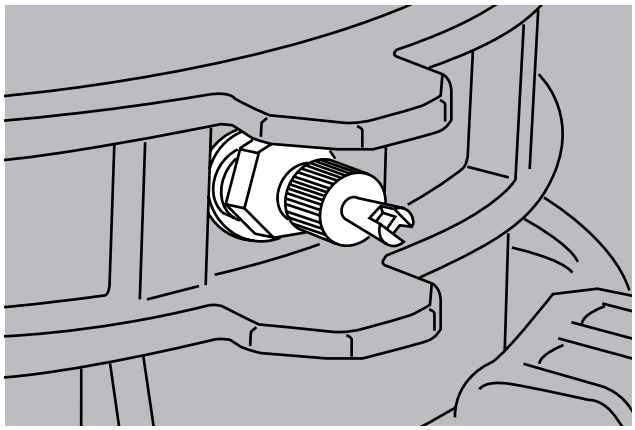
27 If the FibreGuard Closure is correctly sealed the safety cotter pin can be easily fitted into one of the smaller lined up end plate/collar holes. This ensures that the closure is secure prior to pressure testing. (Figure 27)



f IGUre 27

Pr OvInG Cl OSUre Se Al S

28. Via the fitted air valve, apply up to 700 milibars (10 psi) maximum of air pressure to the closure. Using a leak solution test all of the cable seals and end plate-to-closure seal for leaks. At the conclusion of the test, reduce the closure air content to zero. (Figure 28)



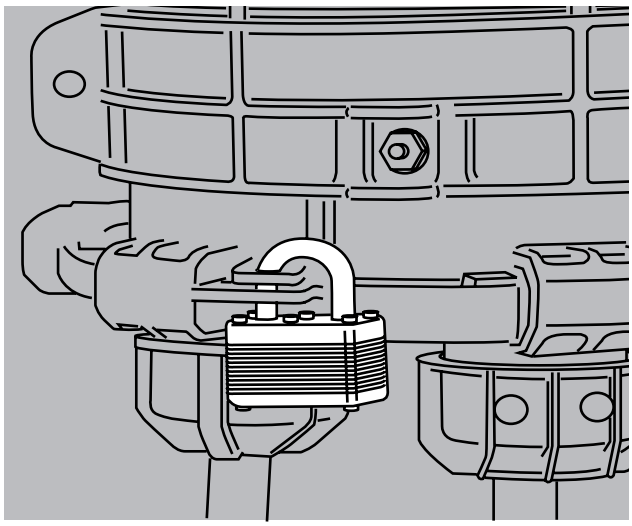
f IGUre 28

Safety note:

Ensure that the safety cotter pin is fitted in position during this operation.

Se CUr ITy OPTIOn

29. A locking mechanism (not supplied) can be fitted to restrict FibreGuard Closure access. (Figure 29)



f IGUre 29

Cl OSUre r e-en Tr y

Safety note:

First remove the core from the air valve to make sure that there is no air in the closure. Remove the safety cotter pin.

Twist the end plate collar in a counter clockwise direction to separate the end plate and closure. Carefully remove the dome to gain access to the internal organization system.

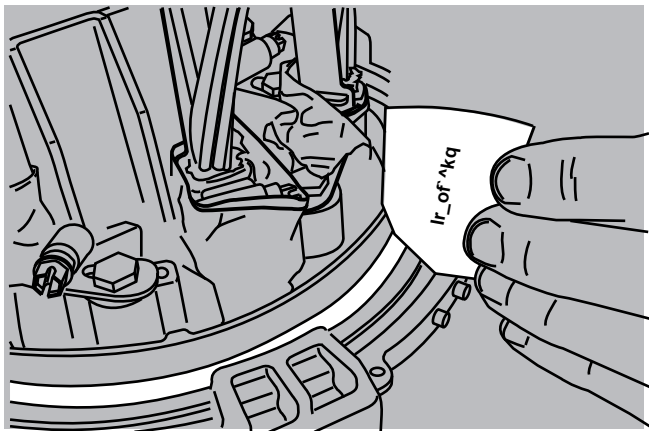
Cl OSUre r e-Se Al In G

f ollow steps:

Closure Sealing 24, 25, 26, 27 & 28.

MAIn Ten An Ce nOT e S:

30. A small amount of lubricant should be applied to the end plate “O” ring each time prior to closing following re-entry. (Figure 30)



f IGUre 30

n OTe: New grommets should be used if the sealing grommets are removed from the express or drop ports.

PREPARATION

1. Express Fibre Cable

From the expressed cable loop, identify and select the loose buffer tube with the fibres required for distribution and separate from the main group. (Figure 1)

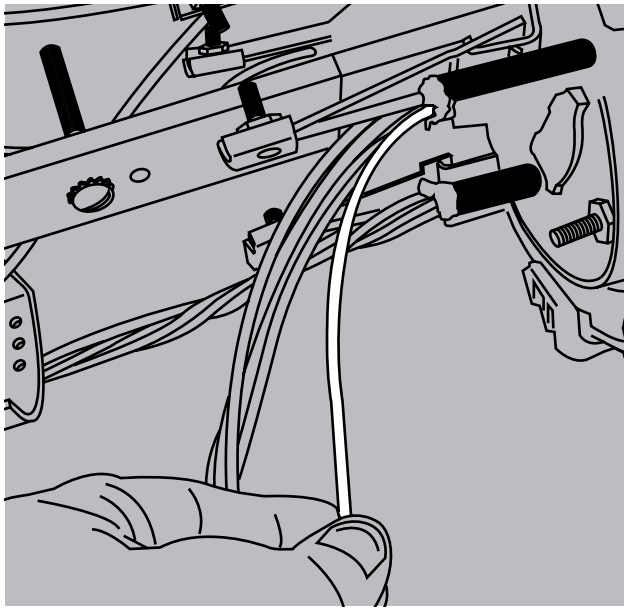


FIGURE 1

2. Identify which is the CO/Exchange (feed) side providing the service and cut the loose tube and fibres at the midway point, approximately 2 m (78”) from the End Plate or as per company practice. (Figure 2)

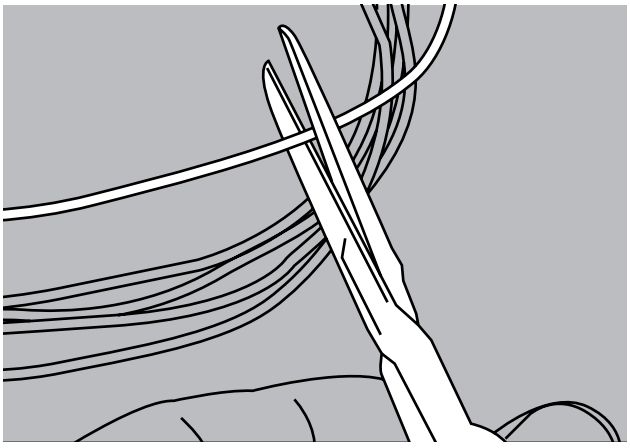


FIGURE 2

3. Route the loose buffer tube inside the buffer tube bracket storage and management system keeping to the inside of the FANG™ Bracket (FG 800 & 650) or 500 Bracket (FG 500) and protected pin (End Plate end) until the final turn which passes through the outside guides of the FANG™ Bracket (Figure 3) or 500 Bracket. (Figure 3a.)

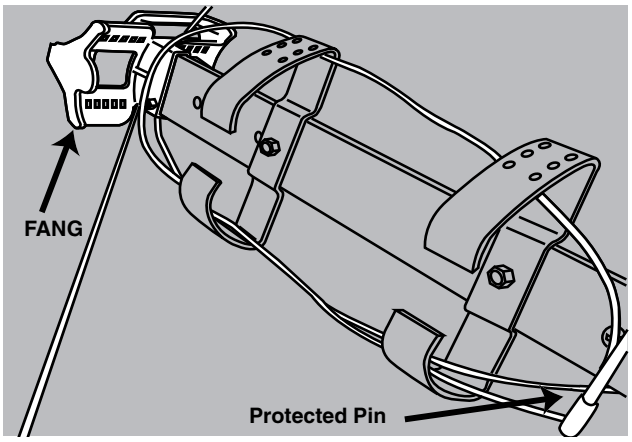


FIGURE 3

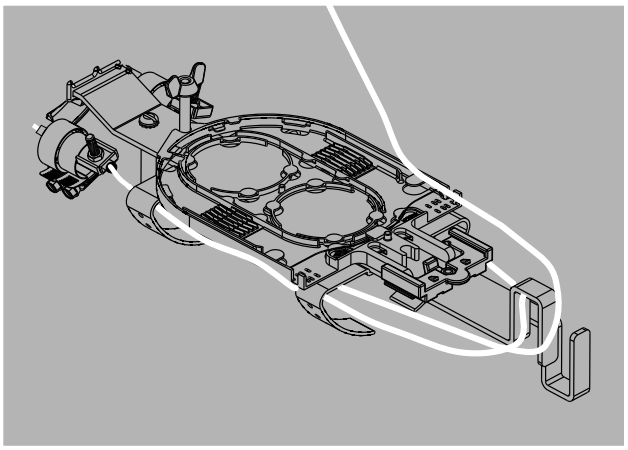


FIGURE 3a

4. Organize the loose buffer tube without stress or undue bending to enter the SLIDE-N-LOCK splice tray. (Figure 4)

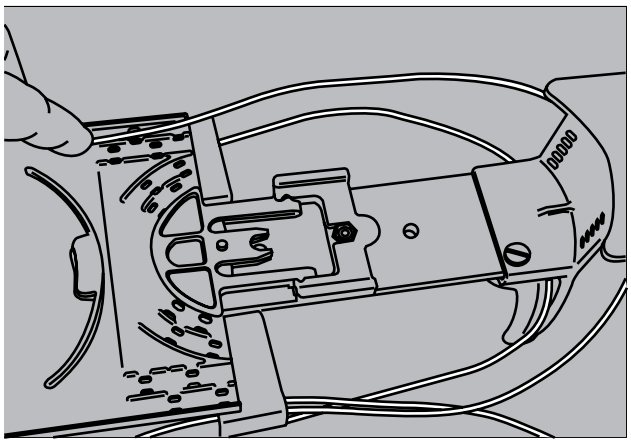


FIGURE 4

5. Mark the loose buffer tube at a point 50 mm (2”) inside the splice tray. (Figure 5)

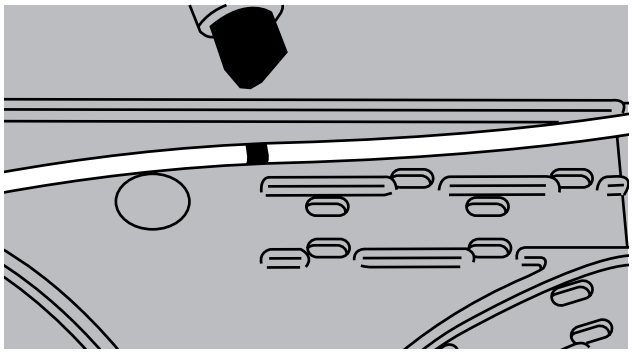


FIGURE 5

6. At the mark, use approved company tools and practice to remove the loose buffer tube to expose the fibres. (Figure 6)

PLP® Tip: Complete this job by removing a number of short manageable tube lengths one piece at a time.

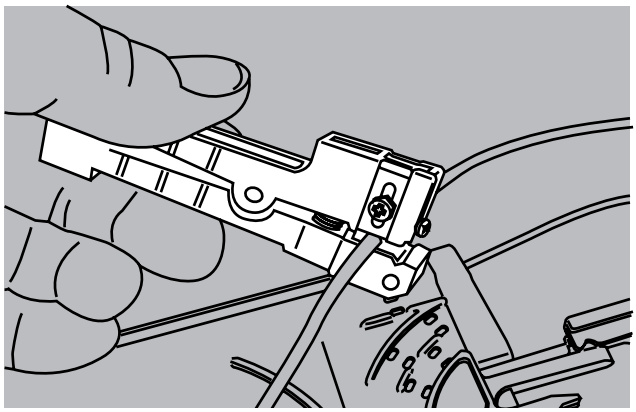


FIGURE 6

7. With the cleaning wipe provided, carefully remove the grease and clean the exposed fibres. (Figure 7)

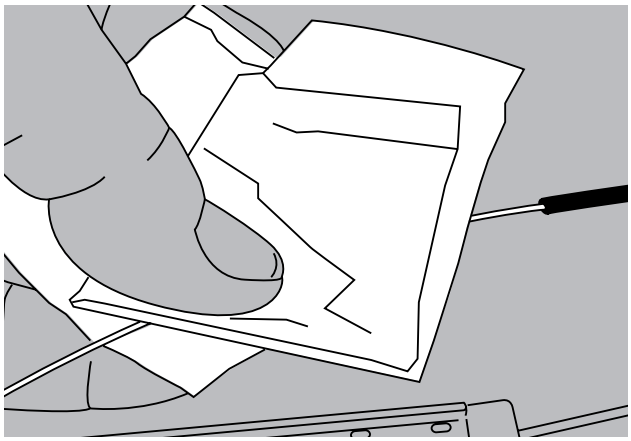


FIGURE 7

8. Apply 2 turns of protective sticky blue felt to the buffer tube 10 mm (0.4") from the cut end. (Figure 8)

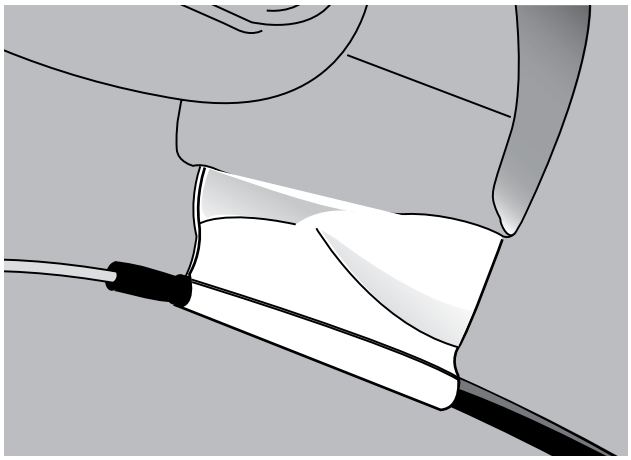


FIGURE 8

9. With the ties provided, secure the loose buffer tube in two slotted positions on the SLIDE-N-LOCK splice tray over the blue felt. (Figure 9)

PLP Tip: Organize the cleaned fibre group inside the SLIDE-N-LOCK splice tray.

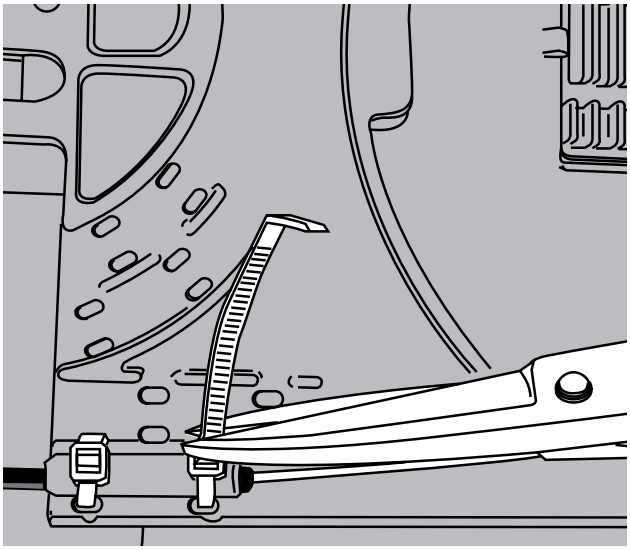


FIGURE 9

Drop Fibre Cable

10. Prepare the appropriate “drop cable” loose buffer tube to be spliced to the previously prepared “express cable” following steps 3 through 9. Once prepared, attach the “drop cable” loose buffer tube with the ties provided to the SLIDE-N-LOCK splice tray on the opposite side to the secured express cable loose buffer tube. (Figure 10)

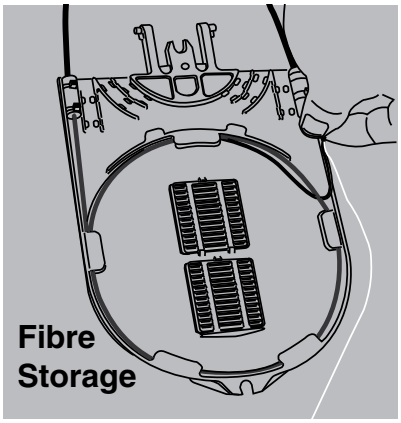


FIGURE 10

11. With the loose buffer tube attached, remove the SLIDE-N-LOCK splice tray from the SLIDE-N-LOCK splice tray bracket. (Figure 11)

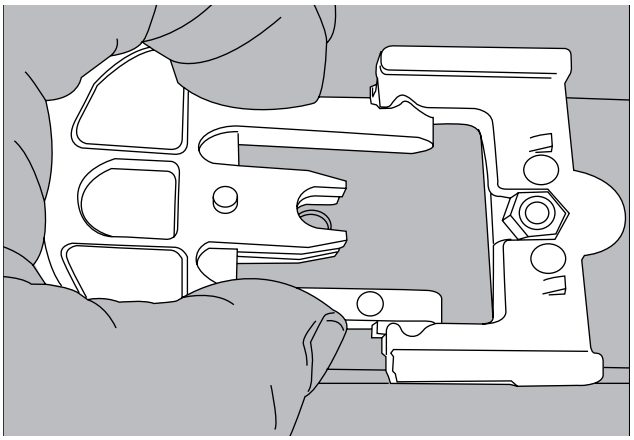


FIGURE 11

12. Extend the splice tray and buffer tubes away from the splice area and cable butt. This will be your reference point for all additional preparation and splicing. (Figure 12)

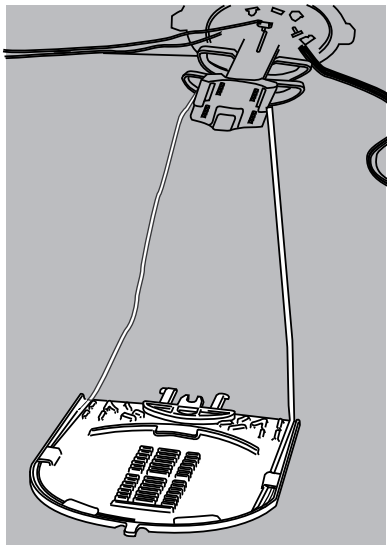


FIGURE 12

General Preparation

13. Prepare all “express” and “drop” loose buffer tubes and fibres to be spliced into additional SLIDE-N-LOCK splice trays following steps 3 through 12. (Figure 13)

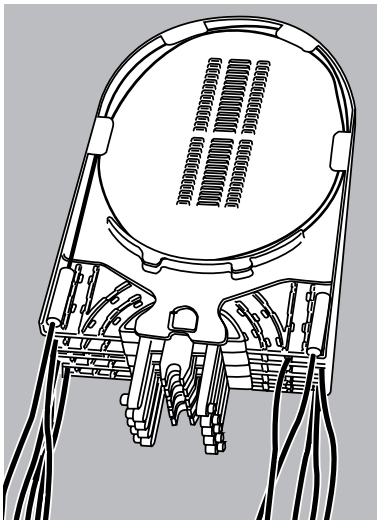


FIGURE 13

FIBRE SPLICING

14. By colour code, select the individual fibres from the “express” and “drop buffer tubes. These should be spliced and routed around the SLIDE-N-LOCK splice tray in opposite directions. Allow up to 1 meter (39”) of fibre to be stored each side of the splice and cut an overlap of approximately 60 mm (2.3”) at the point of splicing. (Figure 14)

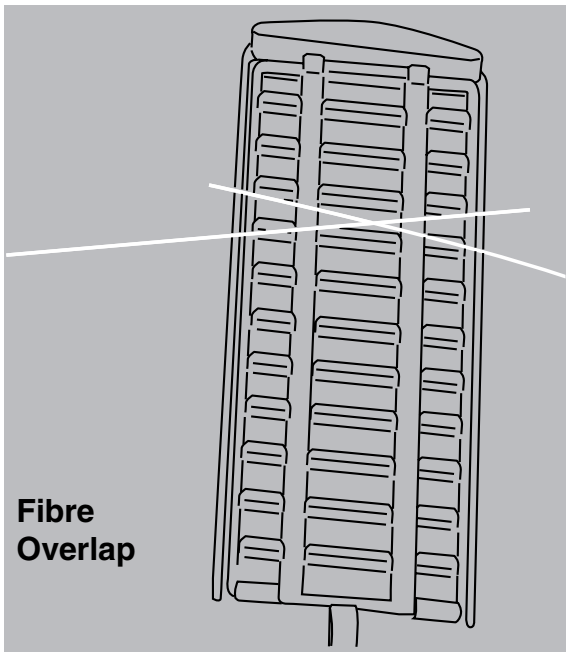


FIGURE 14

15. Select and carefully remove the two fibres to be spliced from splice tray. Position a splice protector over one fibre only, away from the work area. Prepare, clean and cleave both fibres for splicing as per company practice. (Figure 15)

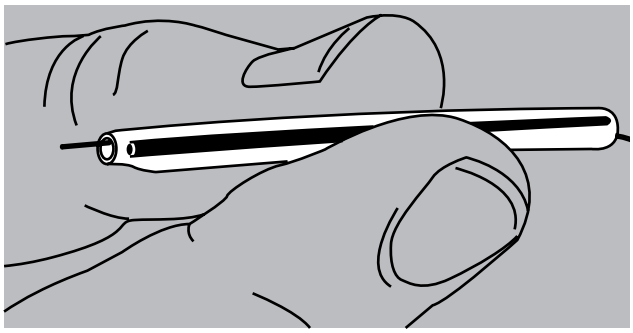


FIGURE 15

16. Splice the two prepared fibres together using tools and equipment as per company practices. Once the splice has tested acceptable, centrally position the splice protector over the fibre splice and shrink in position as per company practices. (Figure 16)

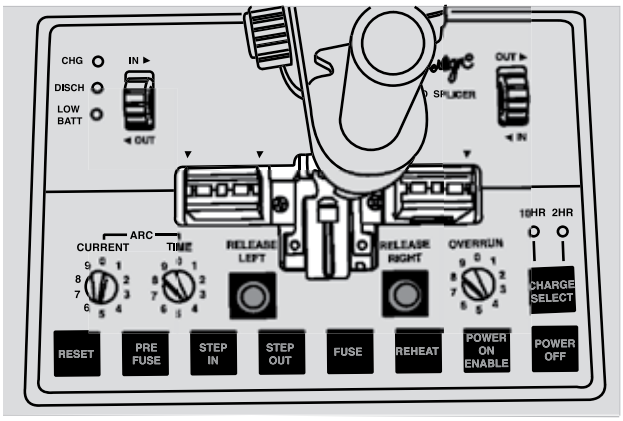


FIGURE 16

17. Once cool, reposition the splice protector back into the splice block. Carefully store and route the fibre around the splice tray with minimum bending. (Figure 17)

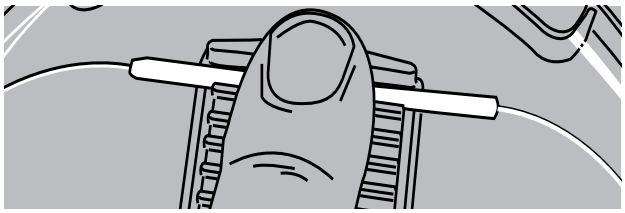


FIGURE 17

18. Continue the practice until the splice tray has been filled (24 splices). Introduce additional splice trays as required. (Figure 18)

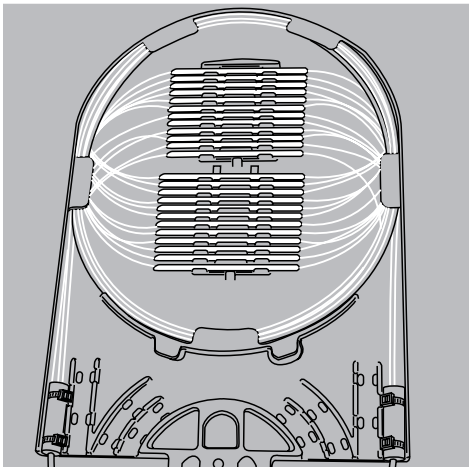


FIGURE 18

SPLICE PROTECTION

19. Protect the spliced fibres by fitting a tray cover to each completed SLIDE-N-LOCK splice tray. For FibreGuard 800 & 650 closures, locate the front cover indentations between the tray tabs and friction-fit a larger third indentation into the bottom recess. (Figure 19)

Top

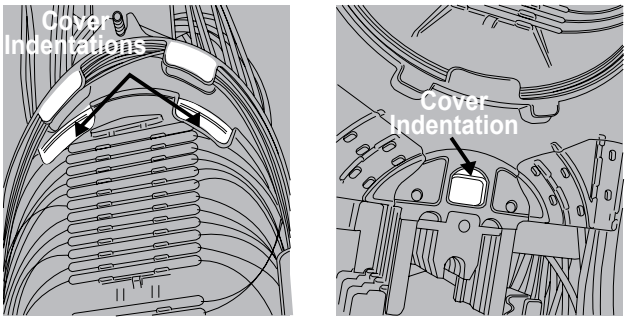


FIGURE 19

For the FibreGuard 500 slide the front of the cover between the tray tabs and bend the tray slightly to fit into a rear tray location. (Figure 19a)

PLP Tip & Upgrade: At times there is a need/advantage to route fibre in the opposite direction than provided by the “straight on” tray entrance. SLIDE-N-LOCK splice tray provides a facility allowing fibres to be routed from one entrance across the face of the tray and be organized to rotate in the opposite direction.

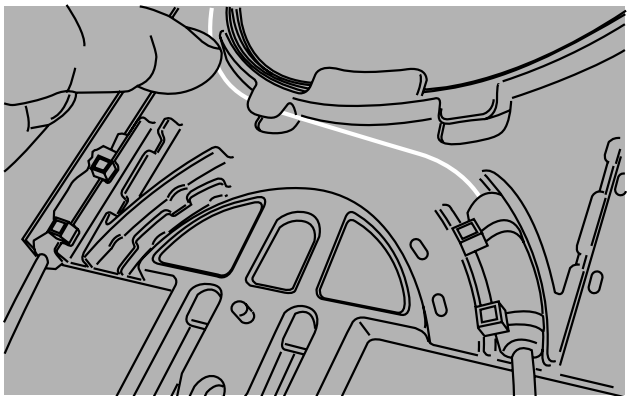


FIGURE 19a

SPLICE ORGANIZATION

20. Once the SLIDE-N-LOCK splice tray is full, re-route the buffer tubes back through the organization system. Be sure to keep the FANG Brackets/500 Brackets and protected pin inside until the final lay-up onto the splice tray which is routed through the outside FANG guide (Figures 20 or 3) or 500 guide (Figure 3a).

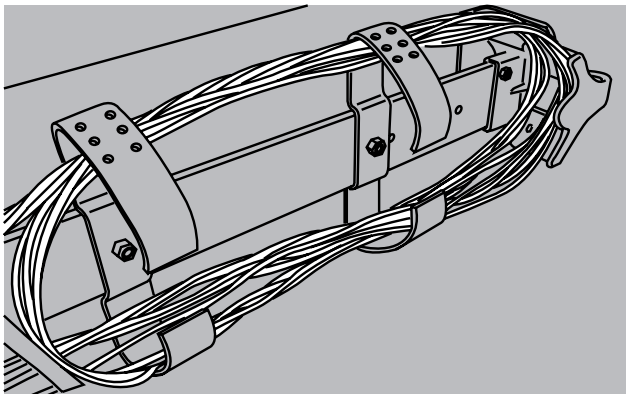


FIGURE 20

21. If necessary buffer tube crossovers can be made within the bracketed organizational system. (Figure 21)

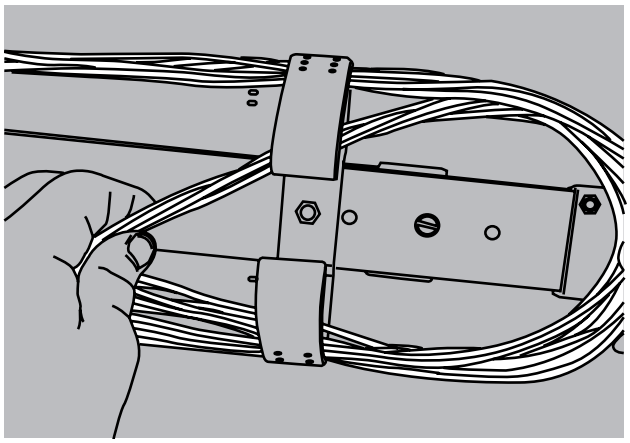


FIGURE 21

22. Securely replace the SLIDE-N-LOCK splice tray with the spliced fibres back in the SLIDE-N-LOCK Bracket. (Figure 22)

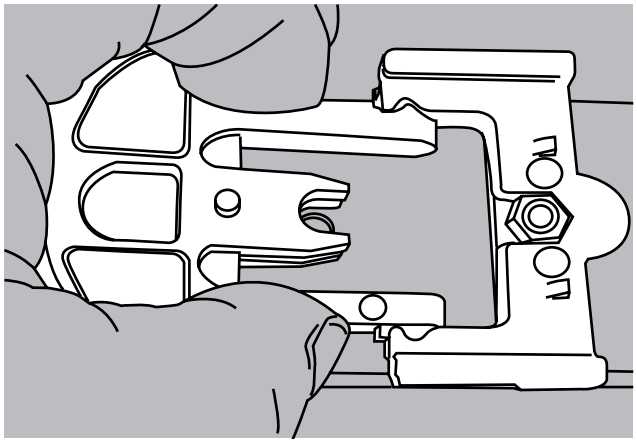


FIGURE 22

Additional Trays

23. To stack additional trays, first add another SLIDE-N-LOCK bracket to the one fitted to the mounting plate. Slide into position until the locking tabs are engaged. Additional units can be added up to the recommended SLIDE-N-LOCK splice tray capacity. (Figure 23)

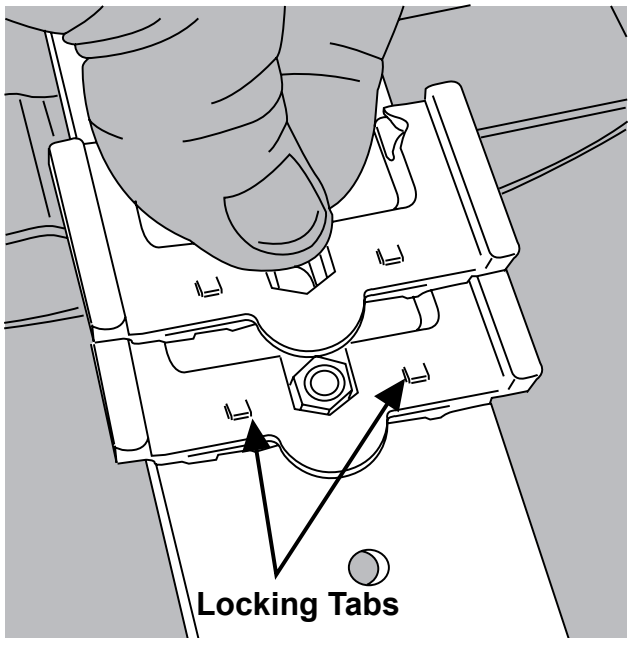


FIGURE 23

SECURE POSITIONING OPTIONS

24A. Secure the stacked SLIDE-N-LOCK trays in position with a wing/butterfly nut. (Figure 24)

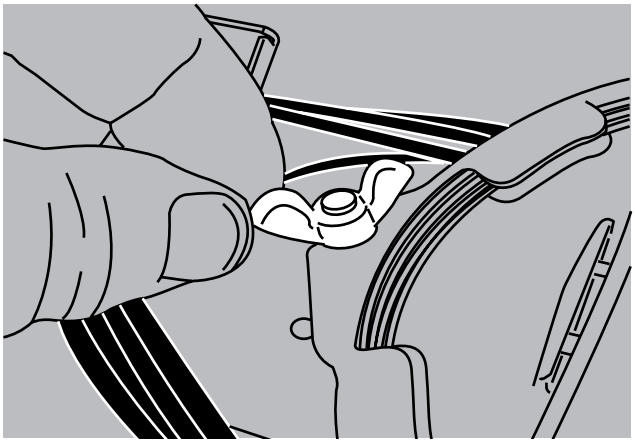


FIGURE 24

PLP Option & Tip: Individual fibres or groups of fibres can be fastened into a fixed position for additional stability on the buffer tube storage brackets and FANG Bracket. Note: Do not over-tighten and always remove the ties when maneuvering the splice trays. (Figure 24a)

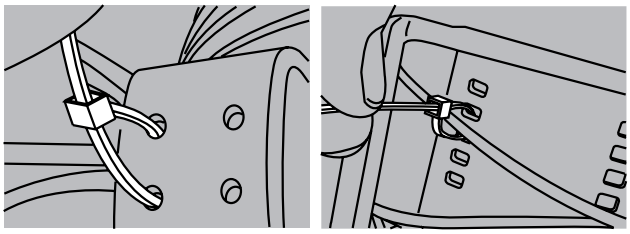


FIGURE 24a

24B. Secure the SLIDE-N-LOCK splice trays and position by securely tightening the velcro strap around the stack.(Figure 24b)

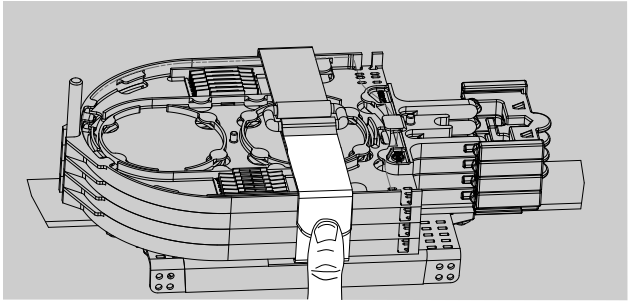


FIGURE 24b

25. The completed splice is now ready for the fitting of the FibreGuard Closure Dome. (Figure 25) See Installation Procedures for FibreGuard Closures.

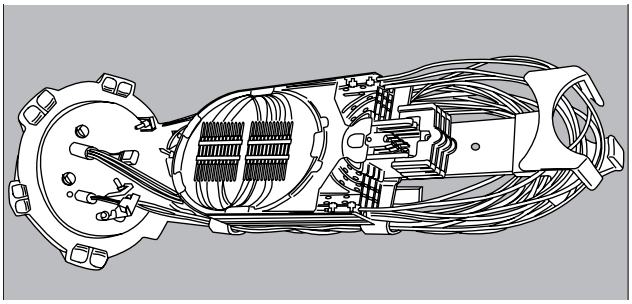


FIGURE 25

MAINTENANCE & SPLICE RE-VISITS

PLP SLIDE-N-LOCK Splice Tray technology and tips

Individual splice tray access is made simple by the SLIDE-N-LOCK fibre organization system.

26. Simply raise, slide and lock the stacked tray in one continuous upward - backward movement until the desired (horizontal) tray has been reached. (Figure 26)

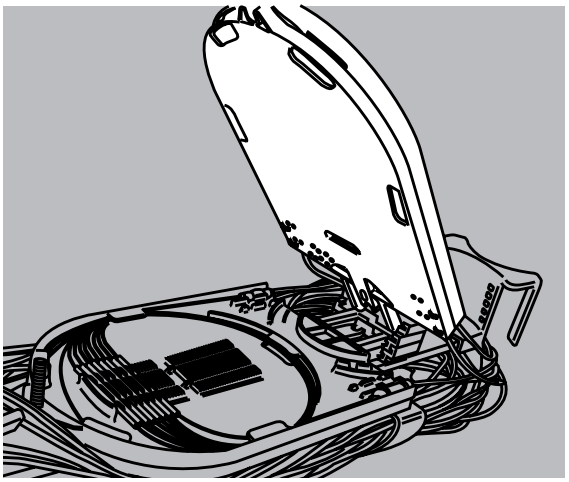


FIGURE 26

27. Any SLIDE-N-LOCK splice tray can be removed from the raised stack and positioned away from the splice for individual attention. (Figure 27)

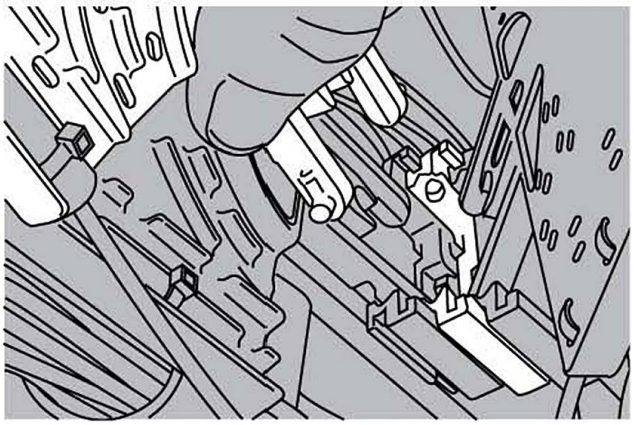


FIGURE 27

SAFETY CONSIDERATIONS

This application procedure is not intended to supersede any company construction or safety standards. This procedure is offered only to illustrate safe application for the individual.
FAILURE TO FOLLOW THESE PROCEDURES MAY RESULT IN PERSONAL INJURY OR DEATH.

Do not modify this product under any circumstances.

This product is intended for use by trained technicians only. **This product should not be used by anyone who is not familiar with, and not trained to use it.**

When working in the area of energized lines, extra care should be taken to prevent accidental electrical contact.

For proper performance and personal safety, be sure to select the proper size PREFORMED product before application.

PREFORMED products are precision devices. To insure proper performance, they should be stored in cartons under cover and handled carefully.

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