Customer Splicing Point (CSP)

The FTTP customer connection requires a spliced transition between external and internal network fibres, this splicing activity takes place at the customer premise in the Customer Splicing Point (CSP).
The products and practices described in this document support both External and Internal mounted CSPs; the preferred splicing location is External to the customer premise unless conditions dictate differently e.g. Multiple Dwelling Units (MDU) where security or a safe working environment cannot be guaranteed. The management of the input and output BFT and cables products are provided by the Customer Lead In (CLI).
The main delivery and build scenarios identified are documented but should not be considered definitive; guidance should be sought if deviations are encountered.

Installation Guide Section Details		
Section 1 - General	Description of the CSP and Associated Items	Supplied with product and available on the BT Intranet
Section 2 - Lead 2 Cash	CSP & CLI Locations	
Section 3 - Lead 2 Cash	Installation of CSP & Customer lead In (CLI)	Available on the BT Intranet
Section 4 - Lead 2 Cash	Installation of OUTPUT Cable	
Section 5 - Lead 2 Cash	Installation of INPUT Blown Fibre & Cables	

Section 1
General Description

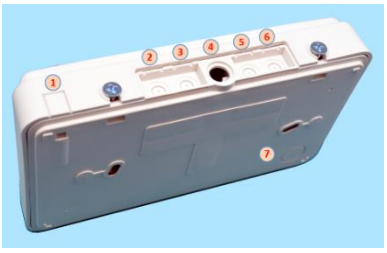
Customer Splicing Point (CSP) Colour Variants

	Item Code
Internal (white)	061817
External (grey)	061818
External (brown)	061819

CSP Installation Kit

Description	
Wall Rawlplugs & Fixing Screws	2
5mm & 6mm Rubber protection Boots	2
EZ Bend Rubber Grommets	2
5mm & 6mm Cable Saddles	2
Saddle Fixing Screws	2
CSP Cover Fixing Screws	2

CSP Port Layout



Port 1	Not Used
Ports 2 & 3	OUTPUT 1F Connectorised Cable
Port 4	INPUT 6mm UG BFT, BFD/Cu Hybrid, 2F EZ Bend Cable or 5mm Tube from Pullback Cable
Ports 5 & 6	OUTPUT 1F Connectorised Cable or FIRS 1 1F Connectorised Cable (via Uniter)
Port 7	INPUT 2F EZ Bend Cable or OUTPUT 1F Connectorised Cable

***Note** Ports 2, 3, 5 & 6 will accommodate an Optical Uniter for FIRs applications (described in Section 4).

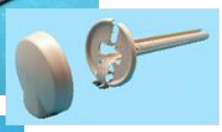
INPUT Cable Types

Description	Item Code
6mm UG BFT	049252
BFD/Cu Hybrid	061814
6mm OH BFD	028849
2F EZ Bend Cable Black 500m	062665
2F EZ Bend Cable White 300m	068392
2F EZ Bend Cable White 500m	062664
2F EZ Bend Cable White 1000m	068393
5mm Internal Pullback Droptube	064613
5mm External Pullback Droptube	064612

OUTPUT Cable Types

Description	Item Code
1F EZ Bend Lead White 20m	061820
1F EZ Bend Lead White 30m	061821
1F EZ Bend Lead Black 20m	061822
1F EZ Bend Lead Black 30m	061823
1F EZ Bend Lead Brown 20m	061824

External CLI
(IC 061826)



Internal CLI
(IC 061825)

BF Ext CLI
(IC 069581)

BF Int CLI
(IC 069582)

BF 90° Bend Kit
(IC 069584)

BF Int Cover & Tube
(IC 069583)

Section 2 – CSP & CLI Locations

The CSP can be installed internally or externally and installed in conjunction with various CLIs as shown in the table below.

Scenario	INPUT	Location Reference	OUTPUT 1F Connectorised Cable via	Location Reference	Installation Reference	OUTPUT via Internal	Location Reference	Installation Reference
External CSP	UG BFT	2.4	CSP Rear CLI	2.7	3.4 - 3.6	Internal Cable CLI	2.6	3.1 - 3.3
External CSP	UG BFT	2.4	External Cable CLI	2.3	3.7 - 3.10	Internal Cable CLI	2.6	3.1 - 3.3
External CSP	OH BFD	2.1	CSP Rear CLI	2.7	3.4 - 3.6	Internal Cable CLI	2.6	3.1 - 3.3
External CSP	OH BFD	2.1	External Cable CLI	2.3	3.7 - 3.10	Internal Cable CLI	2.6	3.1 - 3.3
			INPUT via External			INPUT via Internal		
Internal CSP	UG BFT		External Blown Fibre UG CLI	2.5	3.11 - 3.16	CSP Rear CLI	2.7	3.4 - 3.6
Internal CSP	UG BFT		External Blown Fibre UG CLI	2.5	3.11 - 3.16	Internal BF CLI	2.8 or 2.9	3.17 - 3.20
Internal CSP	OH BFD		External Blown Fibre OH CLI	2.2	3.11 - 3.15	CSP Rear CLI	2.7	3.4 - 3.6
Internal CSP	OH BFD		External Blown Fibre OH CLI	2.2	3.11 - 3.15	Internal BF CLI	2.8 or 2.9	3.17 - 3.20

⚠ If the distance to the Internal CSP from the point of entry is >1.5m then the BFT must be converted to 6mm Internal BFT using 6mm x 6mm straight connector (Item Code 028872) located in the External Blown Fibre CLI.
Internal Multi Dwelling Units (MDUs) CSPs are fed by either internal 2f EZ Cable or 5mm tube from a 24f Pullback Cable

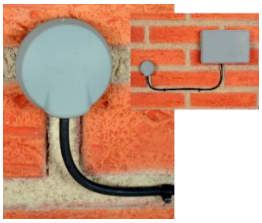
1 - External CSP (OH Feed)

Description	Item Code
CSP (Grey)	061818

2 - External Blown Fibre OH Customer Lead In (EBF CLI)

Description	Item Code
BF External CLI Capping	069581

3 - External Cable Customer Lead In (EC CLI)

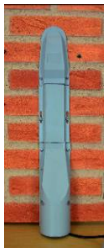


Description	Item Code
External CLI	061826

4 - External CSP (UG Feed)

Description	Item Code
CSP (Grey)	061818
Capping 25	072180
Connector Bend 4	095096

5 - External Blown Fibre UG Customer Lead In (EBF CLI)



Description	Item Code
BF External CLI Capping	069581
Capping 25	072180
Connector Bend 4	095096

6 - Cable Internal Customer Lead In (ICLI)

Description	Item Code
Internal CLI	061825

7 - Internal or External CSP with Rear CLI Feed

Description	Item Code
External CLI	061826

8 - Internal Blown Fibre Customer Lead In (IBF CLI) - Trunking

Description	Item Code
BF Int Cover & Tube	061825
BF 90° Bend Kit	069584

9 - Internal Blown Fibre Customer Lead In (IBF CLI) – NoTrunking

Description	Item Code
BF Internal CLI	069582

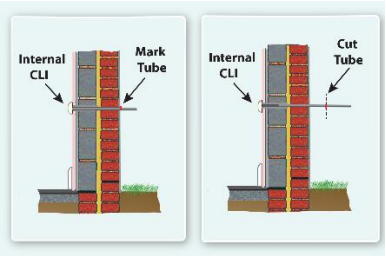
Section 3 - Installation of CSP & Customer Lead In (CLI)

Additional Tools Required	
Tensioner 5A	Item Code 126820

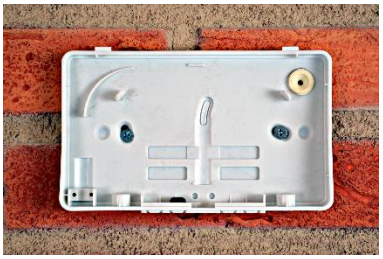
Additional Items Required	
Cable Tie	Item Code 060570
Cleat Wiring 11B Black - Bag of 250	Item Code 046536
Cleat Wiring 11B White - Bag of 250	Item Code 061020
Staple Cable 3/8 inch White	Item Code 073136
Cleats Wiring Round 6mm Black - Box of 100	Item Code 072356
Protector Splice 6 (30mm x 1.6mm diameter)	Item Code 061828
Sealant Silicone (Clear) - 300ml	Item Code 127865

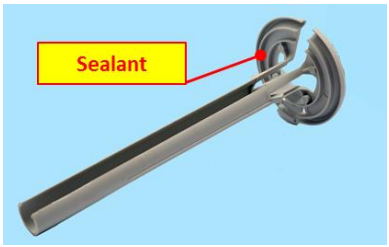
⚠ **Appropriate BT Safety Procedures MUST be followed at all times**

Internal Cable CLI (see Section 2.6)

1 – Internal Cable CLI Preparation	**2** – Internal Cable CLI Preparation	**3** – Internal Cable CLI Preparation
		
• Drill a 12mm hole from the inside of the customer's premises. • Insert the 8mm diameter protection conduit into the Customer Lead In ⚠ Check there are no gas pipes, water pipes or electrical wiring close to the planned drilling position	• Insert two small cable ties at the positions shown • Push the assembly into the wall ensuring the correct orientation for the incoming cable **Note:** A Thick Wall CLI Conduit Kit is available for walls of a greater thickness than a standard cavity wall	• Move to the outside • Mark the protruding protection conduit level with the wall, pull the conduit from the wall by approximately 75mm and cut at 20mm inside this mark. • Reinsert conduit and either fit CSP CLI (section 3.4) or External Cable CLI (section 3.7) **Note:** If you pull more than 75mm from the wall the conduit may pull out of the Internal CLI

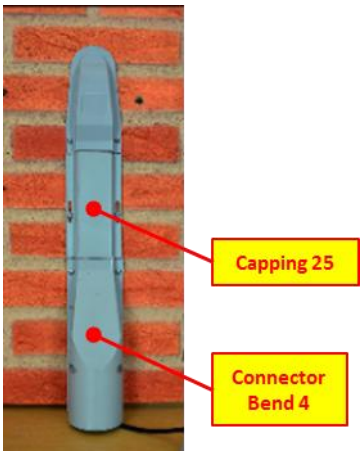
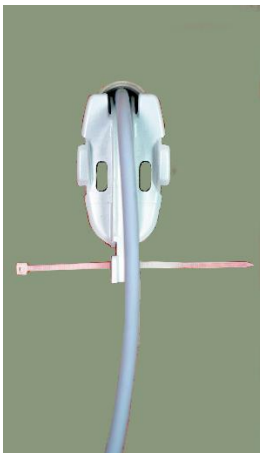
Internal or External CSP with CSP CLI (See Section 2.7)

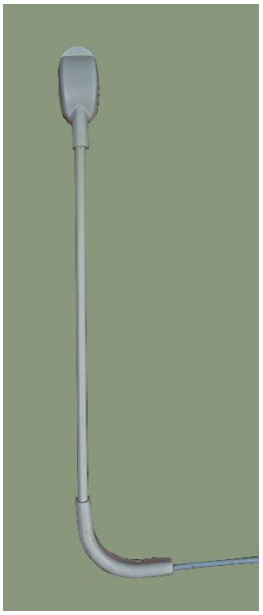
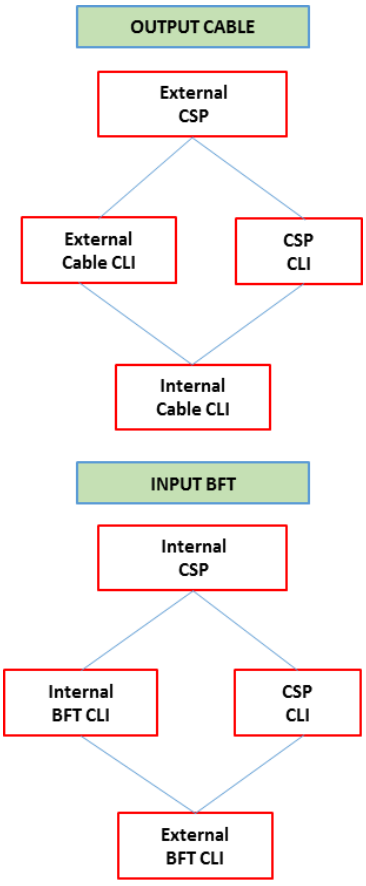
4 – CSP & CSP CLI Installation	**5** – CSP & CSP CLI Installation	**6** – CSP & CSP CLI Installation
		
• Carefully remove the large knockout in the top right hand corner of the Back Box	• Apply a bead of Clear Silicone Sealant to the wall facing shoulder of the CSP CLI as shown, ensure a full circle of sealant is applied • Push the CSP CLI onto the protruding protection conduit and push the assembly into the wall until as flush to the wall as possible	• Place the Back Box over the CSP CLI and mark the two fixing holes on the wall whilst ensuring the unit is level • Remove the Back Box and drill two holes in the wall • Secure CSP with raw plugs and screws supplied. • Apply Clear Silicone Sealant around the fixing screws

External Cable CLI (see Section 2.3)		
7 –External Cable CLI	**8** – External Cable CLI Installation	**9** – External Cable CLI Installation
		
• Insert two small cable ties at the positions shown	• Apply a bead of Clear Silicone Sealant to the wall facing shoulder of the External Cable CLI as shown, ensure a full circle sealant is applied	• Push the External Cable CLI onto the protruding protection conduit and push the assembly into the wall until as flush to the wall as possible. • Tighten cable ties and cut off surplus Note : Ensure the correct orientation for the outgoing cable

External Cable CLI (see Section 2.3)	**External Blown Fibre CLI (See Section 2.2)**	
10 – External Cable CLI Installation	**11** – External Blown Fibre CLI Installation	**12** – External Blown Fibre CLI Installation
		
• Fit External Cable CLI Cap as shown	• Enlarge the 12mm hole to 20 mm for a depth of 80mm • Place the BF CLI into the wall and mark the two fixing holes on the wall whilst ensuring the unit is vertical • Remove the BF CLI and drill two holes in the wall and insert rawlplugs supplied.	• Apply Clear Silicone Sealant around the fixing screws • Thread the internal BFT in the Tube Guide supplied with Blown Fibre external CLI kit

External Blown Fibre OH CLI (See Section 2.2)		
13 – External Blown Fibre CLI Installation	**14** – External Blown Fibre CLI Installation	**15** – External Blown Fibre CLI OH Capping Installation
		
• Thread a cable tie into the 2 central slots • Reinsert BFT Guide and fix in position with the screws provided	• Offer up both the external and the internal BFTs against the 6 x 6mm Connector and mark to achieve correct insertion depth in connector. • Cut both tubes to length and insert both tubes into the connector • Tighten cable tie and cut off surplus	• Fit Capping with the BFD OH Guide • Ensure the drip loop for the BFD is 72mm radius (12 x tube diameter) • Fix the BFD to the wall with 6mm cleats

External Blown Fibre UG CLI (See Section 2.5)	**External Blown Fibre CLI (See Section 2.8 or 2.9)**	
16 – External Blown Fibre CLI UG Capping Installation	**17** – Internal Blown Fibre CLI Installation	**18** – Internal Blown Fibre CLI Installation
		
• Install the External Blown Fibre CLI as per steps 11 to 14 in this section • Install the BF External CLI Capping as per step 15 (without the OH BFD insert) • Cut the Capping 25 to length as required and attach to the wall • Fit Connector Bend 4 over the Capping 25 and attach to the wall.	• Drill a 12mm hole from the inside out • Enlarge the hole in the internal wall to 15mm internal wall • Insert the Internal BFT into the CLI • Insert CLI into the wall and mark fixing holes positions • Remove BFT Guide • Drill the 2 marked holes and fit rawlplugs	• Insert cable tie to retain the BFT as shown • Fix CLI in position with screws provided • Push through BFT and leave a managed amount as required • Retain BFT with the cable tie • Cut off cable tie surplus

Internal Blown Fibre CLI (See Section 2.8 or 2.9)		**Summary – CSP, Cable CLI and BFT CLI**
19 – Internal Blown Fibre CLI Installation	**20** – Internal Blown Fibre CLI Installation	
		
• Fit Internal CLI Cover • If the CLI and ONT are not co-located then use the tube from the Internal Cover and Tube kit and the 90º Bend(s)	• Mark 90º Bend fixing holes in the location required • Drill holes and insert raw plugs • Fix 90º Bend rear section in position • Cut rigid BFT Cover to length required • Insert BFT and then into both CLI and around 90º Bend rear section • Clip 90º Bend front section in position	

Section 4 - Installation of CSP OUTPUT Cable

Additional Tools Required	
Tensioner 5A	Item Code 126820
BF Crimper/Tube Cutter (6 in 1 Tool)	Item Code 059924
Nipper Diagonal Cutting 160mm	Item Code 127405
Stripper Fibre 1A (grey peg)	Item Code 126826

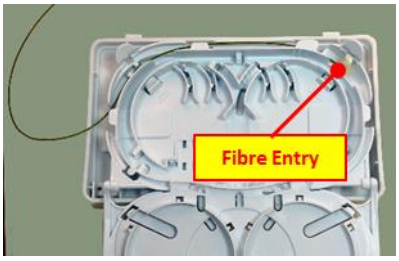
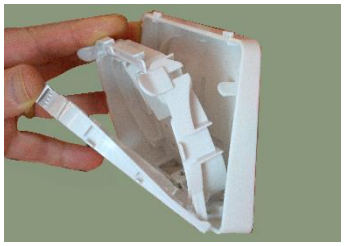
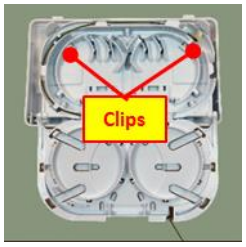
Additional Items Required	
Cable Tie	Item Code 060570
Cleat Wiring 11B Black - Bag of 250	Item Code 046536
Cleat Wiring 11B White - Bag of 250	Item Code 061020
Staple Cable 3/8 inch White	Item Code 073136
Cleats Wiring Round 6mm Black - Box of 100	Item Code 072356
Protector Splice 6 (30mm x 1.6mm diameter)	Item Code 061828

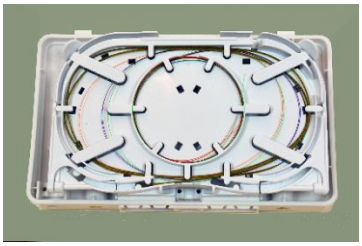
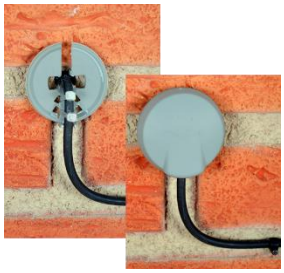
⚠ **Appropriate BT Safety Procedures MUST be followed at all times**

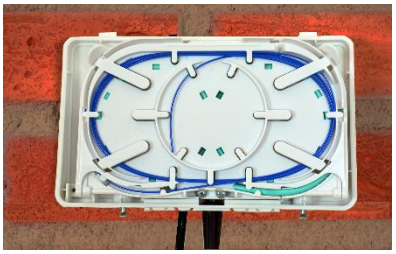
External CSP with CSP CLI (See Section 2.7) and Internal Cable CLI (See Section 2.6)

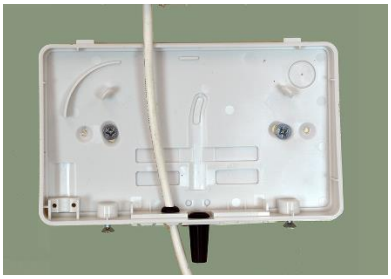
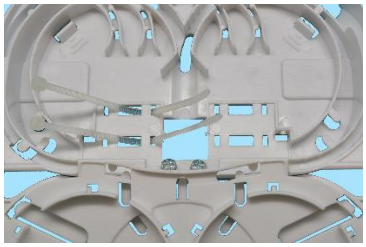
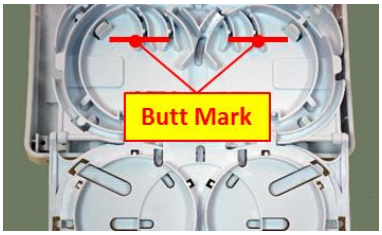
1 – Internal CLI and External CSP Installation	**2** – Internal CLI Installation	**3** – Internal CLI installation
		
• Insert the Internal Cable CLI as per Section 3.1 to 3.3 • Install the CSP as detailed in Section 3.4 to 3.6 including the CSP CLI	• Insert fibre connector into the ONT and manage the cable into the CLI • Mark the 1f Connectorised Customer Cable at the CLI as shown 'the Butt Mark' and cut 2.5m from this point • Strip back the sheath to approx. 200mm from the Butt Mark and feed the fibre from the cable through the internal and external CLIs until there is no slack. Note: If required use a short length of tube to aid the feeding of the fibre through the cavity wall	• Tighten cable ties and cut off surplus • Carefully fit the Internal Cable CLI Cover by aligning the output port with the 1f Connectorised Customer Cable and push fully home until positively clipped.

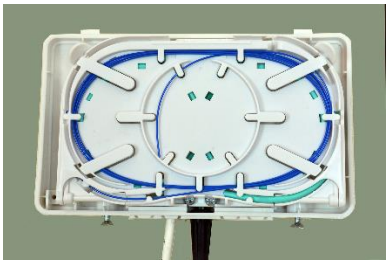
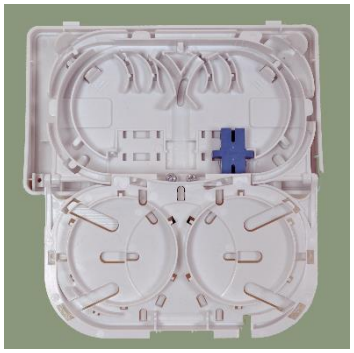
External CSP with CSP CLI (See Section 2.7) and Internal Cable CLI (See Section 2.6)

4 – External CSP Output Cable entry via CSP CLI	**5** – External CSP Cable Output **Option 1** Cable entry via CSP CLI	**6** – External CSP Cable Output **Option 1** Cable entry via CSP CLI
		
• Holding the Splice Tray Module in front of the Back Box take the 1f Connectorised Cable fibre from the CSP CLI and carefully feed the fibre through the entry in the Splice Tray Module top RH corner and around the outer track as shown • Temporarily store the ends of the fibres safely away from the Splice Tray Module assembly	• Rotate the splice tray back into the Splice Tray Module, but DO NOT clip into position. Ensure the stored fibres are not damaged • Locate the Splice Tray Module into the undercut in the Back Box and rotate into the Back Box • Rotate the Splice Tray open	• Position the Splice Tray Module in its resting position and clip into place as shown

External CSP with CSP CLI and Internal Cable CLI	**External CSP with External Cable CLI (See Section 2.3) and Internal Cable CLI (See Section 2.6)**	
7 – External CSP Cable Output **Option 1** Cable entry via CSP CLI	**8** – External CSP Cable Output Installation **Option 2** External CLI	**9** – External CSP Cable Output Installation **Option 2** External CLI
		
• Fold the Splice Tray into the Splice Tray Module until clipped • Store the fibre on the splice tray	• Install the External Cable CLI as per Section 3.7 to 3.10	• Insert the 1f Connectorised Cable through either ports 3-4 or 5-6. • Mark the cable at the 'Butt Mark' as shown • Remove cable from CSP • Measure a further 1.5m from the mark and remove any excess • Remove 1.5m of cable sheath using Stripper 1A • Remove the aramid using Cutters Diagonal 160mm

External CSP with External Cable CLI (See Section 2.3) and Internal Cable CLI (See Section 2.6		
10 – External CSP Cable Output Installation **Option 2** External CLI	**11** – External CSP Cable Output Installation **Option 2** External CLI	**12** – External CSP Cable Output Installation **Option 2** External CLI
		
• Route the blue fibre around the Splice Tray Module left hand outer channel and through the hinge area as shown • Ensure all the slack is taken up and the fibre is correctly located behind the outer channel tabs	• Close Splice Tray Module and ensure the tray is positively located in the top LH and RH clips • Store the fibres around the Splice Tray Module as shown	

Internal CSP Installation (See Section 2.7)		
13 – Internal CSP Cable Output Installation	**14** – Internal CSP Cable Output Installation	**15** – Internal CSP Cable Output Installation
		
• Knock out either ports 3 or 4 to accept the grommet from the installation kit • Insert the grommet • Push the 1f Connectorised Cable through the port/grommet as shown	• Before offering the Splice tray up to the Back Box Fit two small cable ties into the Splice Tray Module adjacent to the chosen port as shown • Fit Splice Tray to Back Box as detailed in Section 4.5 above and clip in place as per Section 4.6 above	• Route the 1f Connectorised Customer Cable to 1 of 4 output ports and mark the 'Butt Mark' as shown • Cut the Customer Premises Cable 1.5m from the Butt Mark and remove the sheath to the Butt Mark • Feed the stripped end through the port & through the cable ties.

Internal CSP Installation (See Section 2.7)		**Additional FIRS Output**
16 – Internal CSP Cable Output Installation	**17** - Internal CSP Cable Output Installation	**18** – Internal CSP Fibre IRS Installation
		
• Secure the sheath with the cable ties ensuring alignment with the Butt Mark • Insert the fibre through the Splice Tray hinge area • Route the blue fibre around the Splice Tray Module left hand outer channel and through the hinge area as shown	• Route the fibre around the tray ready for splicing to the blue fibre in the input BFU/cable	• Fit Uniter in 1 of 4 selected slots as shown • Insert 1f connectorised cable into the 'internal' side of the uniter • To strip back the cable sheath and route the fibre around the Splice Tray Module follow steps 9 to 11, except the fibre is spliced to the orange fibre in the input BFU/cable

Section 5 - Installation of CSP INPUT Blown Fibre & Cable

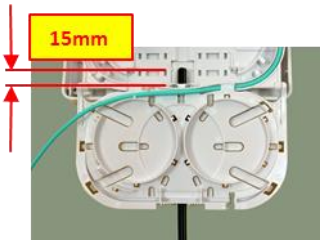
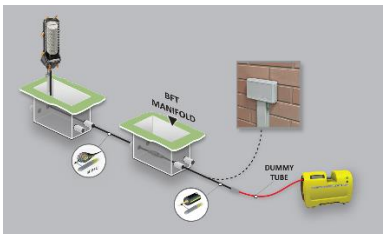
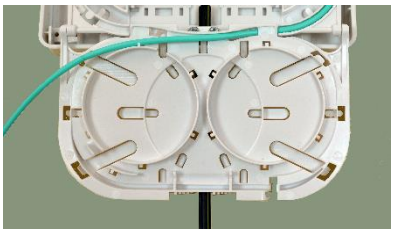
Additional Tools Required	
Tensioner 5A	Item Code 126820
BF Crimper/Tube Cutter (6 in 1 Tool)	Item Code 059924
Nipper Diagonal Cutting 160mm	Item Code 127405
Stripper Fibre 1A (grey peg)	Item Code 126826

Additional Items Required	
Cable Tie	Item Code 060570
Cleat Wiring 11B Black - Bag of 250	Item Code 046536
Cleat Wiring 11B White - Bag of 250	Item Code 061020
Staple Cable 3/8 inch White	Item Code 073136
Cleats Wiring Round 6mm Black - Box of 100	Item Code 072356
Protector Splice 6 (30mm x 1.6mm diameter)	Item Code 061828

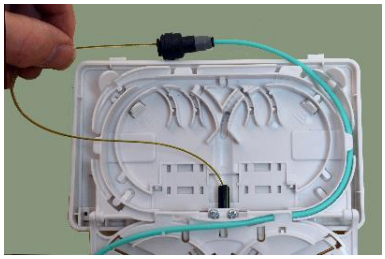
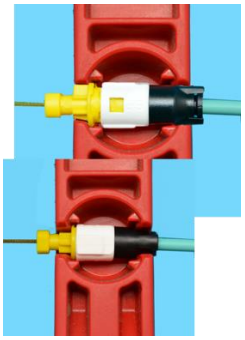
Appropriate BT Safety Procedures MUST be followed at all times

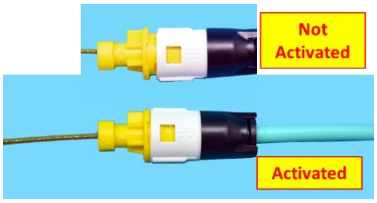
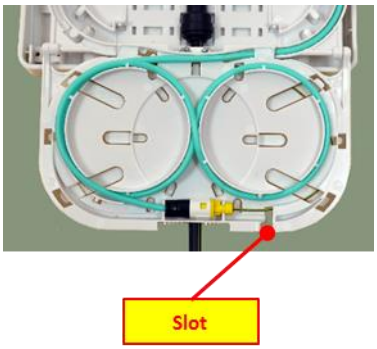
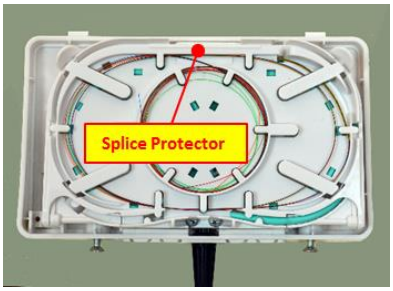
⚠ **External polyethylene insulated cables should not be run more than 2 metres internally without special precautions being taken. If external cables are run internally then they must be run inside conduit or duct to a proper fire standard. Loft spaces outside of the living accommodation are classed as external areas as they are not within the ceiling/wall fire barrier.**

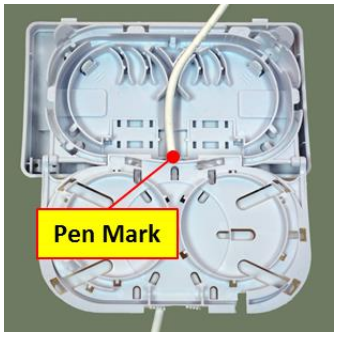
Internal CSP installation with Blown Fibre Input

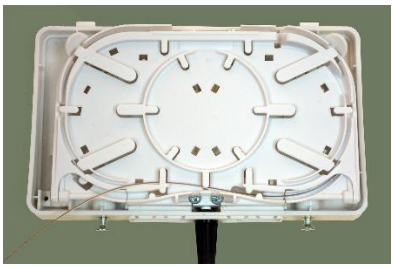
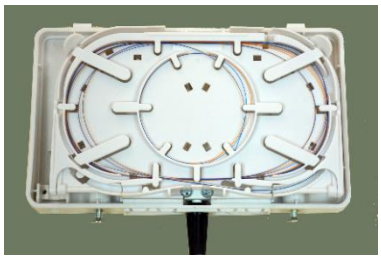
1 – CSP Blown Fibre Input	**2** – CSP Blown Fibre Input	**3** – CSP Blown Fibre Input
		
• Feed the BFT either through the External BFT CLI (section 3.11) and Internal BFT CLI (section 3.17) or direct via an UG internal duct. • Fit BFU/cable clamp with the 2 screws provided • Mark either the UG or OH Droptube at the top of the BFT grip. Add a further 15mm form this point and cut to length as shown • Remove Droptube from the CSP	• Using a 6mm connector attach a 2m dummy length of BFT • Fit an Airstone to the end of the tube • Install the 4f BFU in accordance with blown fibre practices. • After the installation remove the airstone, dummy tube and connector	• Insert the BFU and the Droptube into the CSP • Remove the Locking Tube from the back of the Splice Tray

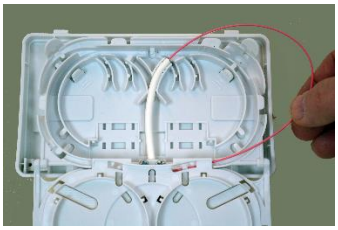
Internal CSP installation with Blown Fibre Input

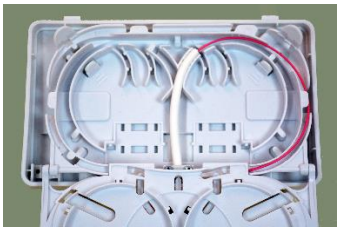
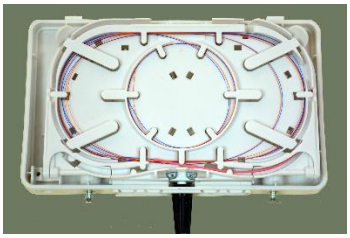
4 – CSP Blown Fibre Input	**5** – CSP Blown Fibre Input	**6** – CSP Blown Fibre Input
		
• Insert the BFU into the 6 x 3mm connector and Locking Tube until all the slack is taken up	• Hold the connector in position and plug the Droptube into the connector. • Pull the Droptube and connector down until the Locking Tube sits in the tray as shown. • Tighten BFU/cable clamp	• Feed the BFU through the Gas Block Connector (3mm collet end) and insert connector onto the 3mm Locking tube • Using the 6 in 1 tool (item code 059924) to activate the Gas Block push the assembly into the recess in the tool until two clips are heard

Internal CSP installation with Blown Fibre Input		
7– CSP Blown Fibre Input	**8** – CSP Blown Fibre Input	**9** – CSP Blown Fibre Input
		
• Ensure the raised 'pip' is showing in both square windows in the connector as shown • **Note:** Unless correctly activated the Gas Blocking Connector will not fit into the Splice Tray	• Replace the Locking Tube and Gas Block Connector as shown Feed the BFU through the slot in the Splice Tray	• Close the Splice tray – ensure both clips are engaged • Measure 1.5m of BFU and remove any excess • Expose the 4 fibres in the BFU up to approximately 50mm from the point of entry on the front of the Splice Tray • Splice the blue fibre to the 1f Connectorised Cable and store the splice protector in the area indicated. • Store the remainder of fibres as shown

Internal CSP installation with Blown Fibre Input	**Internal CSP installation with 2f EZ Bend Cable Input**	
10 – CSP Blown Fibre Input	**11** – CSP 2f EZ Bend Cable Input	**12** – CSP 2f EZ Bend Cable Input
		
• Fit the CSP Front cover • Tighten the 2 Front Cover retaining screws • Fix the remainder of Droptube as necessary	• For Internal 2f EZ Bend cable input applications remove the locking tube and Gas Blocking connector completely	• Insert the 2f EZ Bend through the input grommet and cable clamp • Mark the cable at the cable clamp • Remove cable from CSP • Measure a further 1.6m from the mark and remove any excess • Remove 1.5m of cable sheath using Stripper 1A • Remove the aramid using Cutters Diagonal 160mm

Internal CSP installation with 2f EZ Bend Cable Input		
13 – CSP 2f EZ Bend Cable Input	**14** – CSP 2f EZ Bend Cable Input	**15** – CSP 2f EZ Bend Cable Input
		
• Re-insert cable through the cable clamp with the sheath protruding approximately 75mm into the CSP as shown • Route the 2f element around the Splice Tray Module outer channel and through the hinge area as shown • Ensure all the slack is taken up and the element is correctly located behind the outer channel tabs	• Close Splice Tray Module and ensure the tray is positively located in the top LH and RH clips • Breakout fibres for approximately 1.5m	• Store the fibres around the Splice Tray Module as shown •

Internal CSP installation with External or Internal Pullback Cable Input		
16 – CSP Pullback Cable Input	**17** – CSP Pullback Cable Input	**18** – CSP Pullback Cable Input
		
For Internal 2f element pullback cable input applications remove the locking tube and Gas Blocking connector completely	• Insert the 5mm pullback tube through the input grommet and cable clamp approximately 75mm into the CSP as shown • Remove any excess • Insert the 2f element into the 5mm pullback tube	• Mark the element 1.5m from the pullback tube end and remove any surplus • Route the 2f element around the Splice Tray Module outer channel and through the hinge area as shown •

Internal CSP installation with External or Internal Pullback Cable Input	
19 – CSP Pullback Cable Input	**20** – CSP Pullback Cable Input
	
• Ensure all the slack is taken up and the element is correctly located behind the outer channel tabs • Breakout fibres for approximately 1.3m	• Store the fibres around the Splice Tray Module as shown