

Flex Tube™

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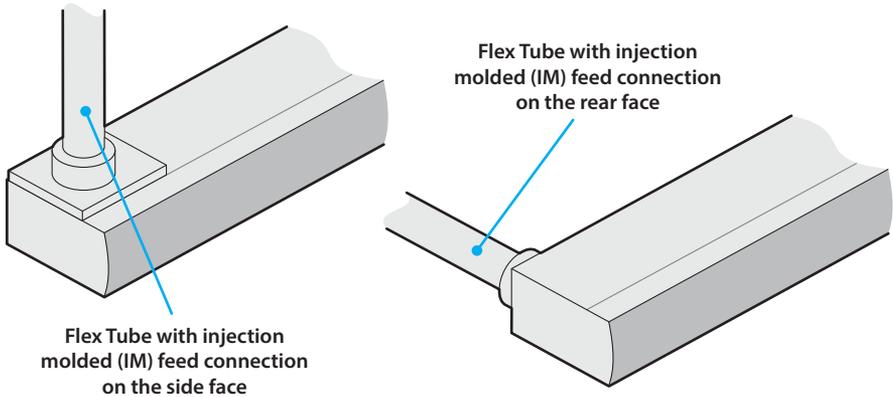
INTRODUCTION

WELCOME

Welcome to the Flex Tube range from Acclaim Lighting. These flexible LED powered strips produce a greatly homogenized light output along their full length to provide a viable alternative to other linear light sources, such as neon or cold cathode. Designed from the outset for external applications, Flex Tubes are rated to IP68 and can be submersed up to 3 feet (1m) in depth.

There are three main types of Flex Tube available:

- A standard version with bare ends and no connection points. A feed cable kit must be added to provide the connection.
- An injection molded (IM) variant that has the feed connection pre-installed on its side.
- An injection molded (IM) variant that has the feed connection pre-installed on its rear face.



All three of these Flex Tube types are available with two LED color options:

- Single color (SC) - Has a two-wire connection for 24VDC static powering or 24V PWM for dimming.
- Multi-color (RGB) versions - Has a four-wire (common anode) connection for 24V PWM dimming.

A range of dimming driver and static power supply options are available from Acclaim Lighting. See the section *Connecting and controlling Flex Tubes* on page 20 and also www.acclaimlighting.com for further details.

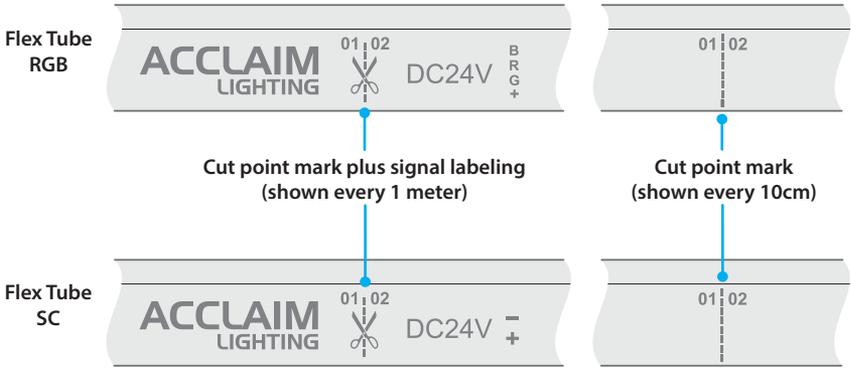
SAFETY

- Ensure that the power input is supplied from a correctly fused and environmentally protected location.

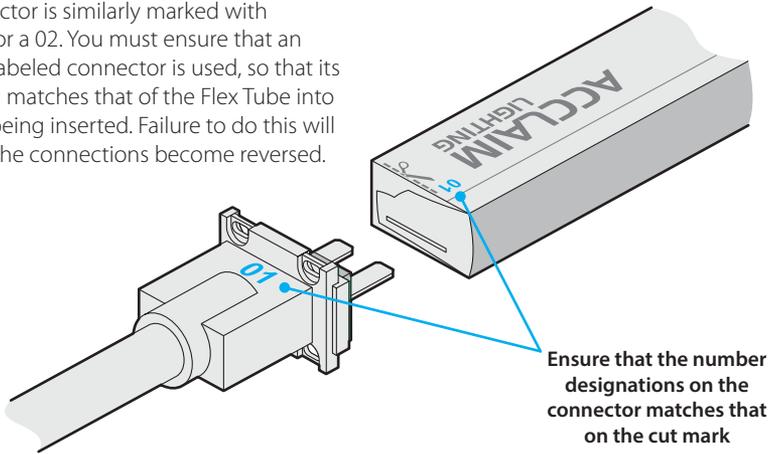
INSTALLATION

FLEX TUBE ORIENTATION

When attaching connections to a Flex Tube it is important to know which way it is orientated. Each Flex Tube has an O1 end and an O2 end; these are usually marked at each 4" (10cm) cut point:

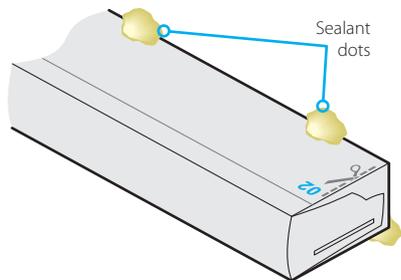


Each connector is similarly marked with either a O1 or a O2. You must ensure that an identically labeled connector is used, so that its designation matches that of the Flex Tube into which it is being inserted. Failure to do this will mean that the connections become reversed.



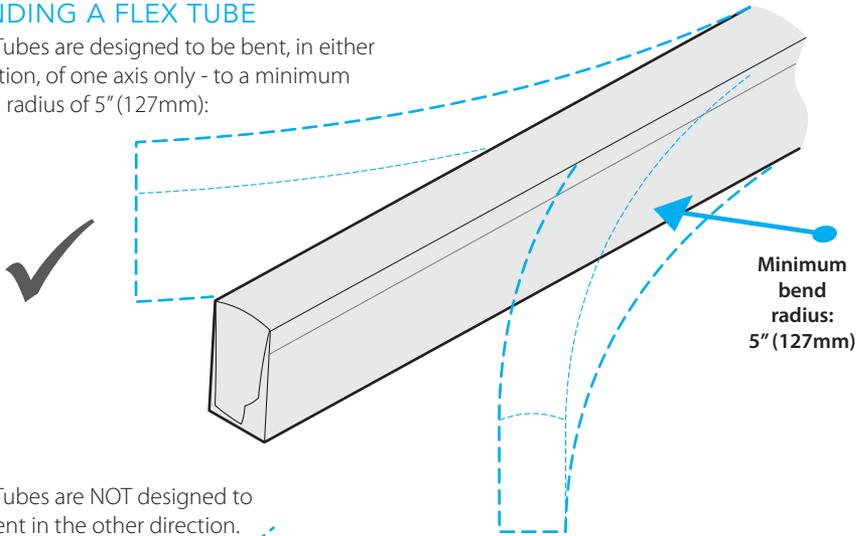
WHEN MOUNTING ON THE SIDES OR UNDERSIDES OF SURFACES

We recommend that you add small dots of silicone sealant along both sides of the Flex Tube (to overlap the tape edge and mounting surface) using Dow Corning 700 or equivalent. This will provide additional stability and help to prevent any separation of the tube from the mounting surface over time. The silicone dots are best applied once the Flex Tube is fixed in place; then the whole installation should not be disturbed until the sealant has fully cured.

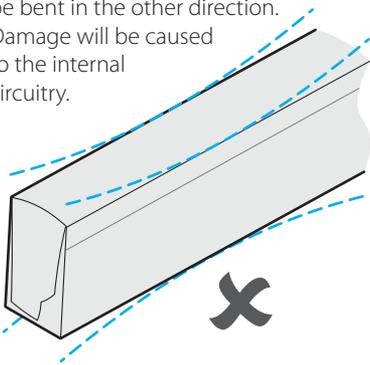


BENDING A FLEX TUBE

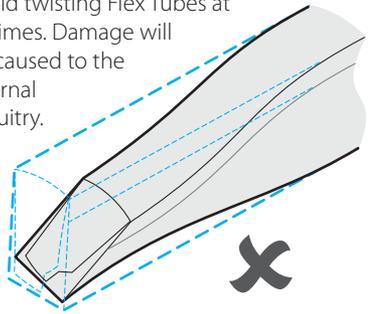
Flex Tubes are designed to be bent, in either direction, of one axis only - to a minimum bend radius of 5" (127mm):



Flex Tubes are NOT designed to be bent in the other direction. Damage will be caused to the internal circuitry.



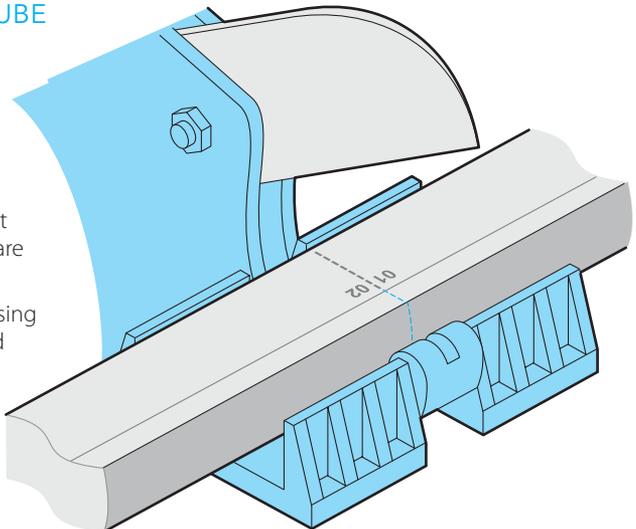
Avoid twisting Flex Tubes at all times. Damage will be caused to the internal circuitry.



CUTTING A FLEX TUBE

Each Flex Tube is marked every 4" (10cm) with cut marks. It is important that cuts are only made at these points to ensure internal components are not damaged and also that the connection terminals are readily available.

All cuts should be made using the special shears supplied within the toolkit.



CONNECTION AND MOUNTING KITS

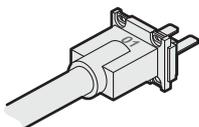
To make your Flex Tube installation as adaptable as possible there are a range of connection and mounting kits available, including the following:

- **Feed cable kit** - used for linking a Flex Tube with driver circuitry. See below
- **End cap kit** - used to seal an open end of Flex Tube. See page 8
- **Self-locking mounting channel** - used to fix a Flex Tube to a surface. See page 10
- **Flexible link kit** - used to link two Flex Tubes with a flexible gap. See page 12
- **Seamless link kit** - used to link two Flex Tubes with no gap. See page 16

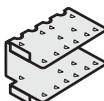
FEED CABLE KIT

This kit adds a connection point to a Flex Tube. There are two types of Feed cable kit: SC for single color Flex Tubes and RGB for multi-color Flex Tubes.

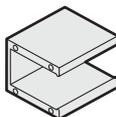
KIT CONTENTS



01 feed connector
with silicone gasket
[x1]



Grip clip
(end-type)
[x1]



Collar
[x1]

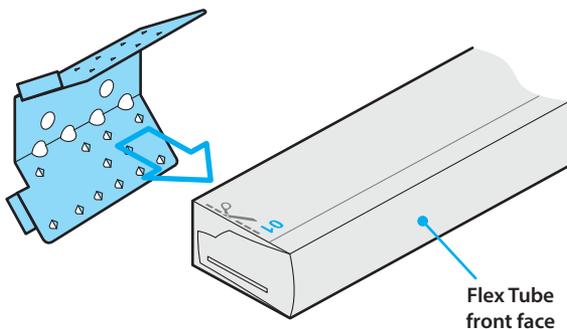


Screw
[x4]

TO INSTALL A FEED CABLE KIT

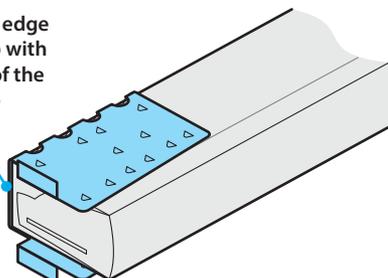
1 Check the orientation of the Flex Tube (see page 3) and, if necessary, carefully cut the Flex Tube to the correct length (see page 4).

2 Fit the grip clip to the 01 end of the Flex Tube so that wraps tightly around the rear face...



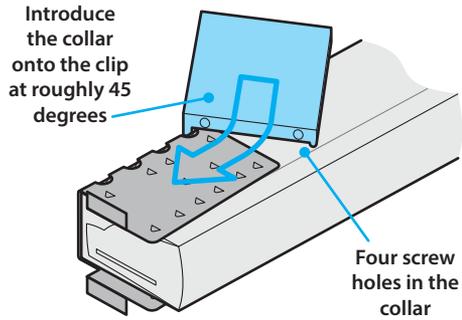
Flex Tube
front face

Align the back edge
of the grip clip with
the cut edge of the
Flex Tube



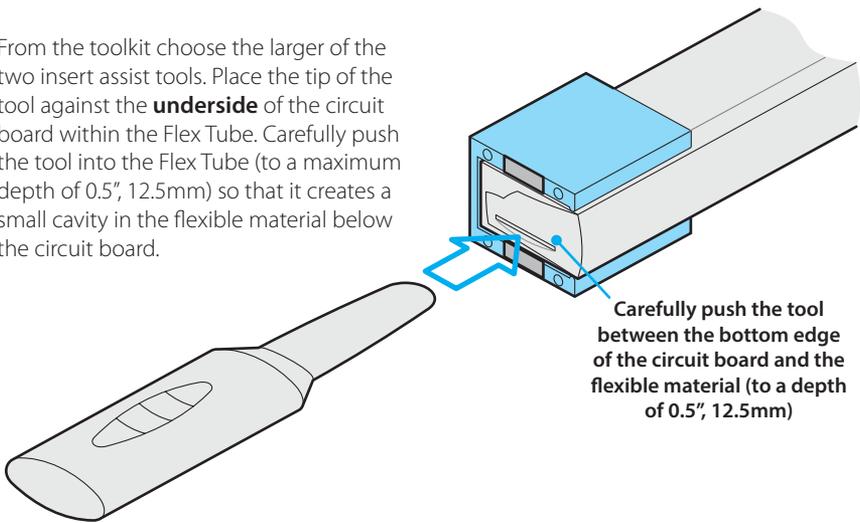
...and its back edge is aligned with
the cut edge of the Flex Tube.

3 Place the collar onto the Flex Tube (with its four screw holes facing towards the cut edge) and then slide it onto the grip clip - you will find it easier to introduce the collar at approximately 45 degrees before sliding it along the Flex Tube. The clip has tapered sides and will pull the collar in tighter as it slides towards the end tabs.

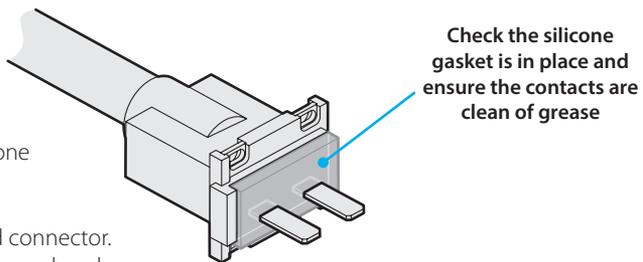


4 Once the collar is in place, press the front face of the tape to ensure that the clip is fully seated into the collar.

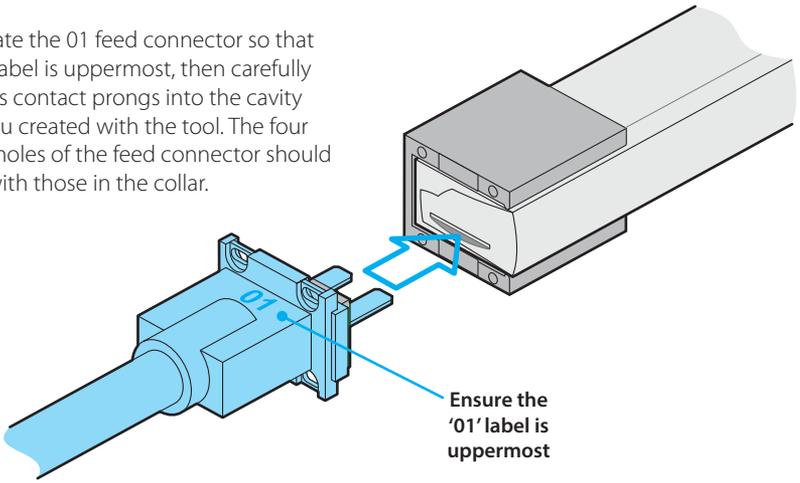
5 From the toolkit choose the larger of the two insert assist tools. Place the tip of the tool against the **underside** of the circuit board within the Flex Tube. Carefully push the tool into the Flex Tube (to a maximum depth of 0.5", 12.5mm) so that it creates a small cavity in the flexible material below the circuit board.



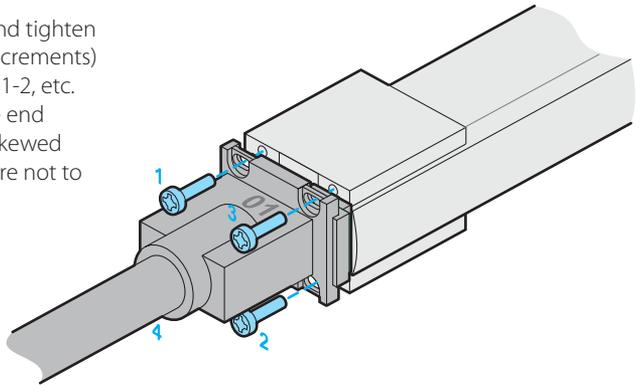
6 Check that the silicone gasket is correctly positioned over the contacts of the feed connector. The gasket is pre-greased; make sure no grease gets on the contacts.



- 7 Orientate the 01 feed connector so that its '01' label is uppermost, then carefully push its contact prongs into the cavity that you created with the tool. The four screw holes of the feed connector should align with those in the collar.



- 8 Insert the four screws and tighten them evenly (in small increments) using the order 1-2-3-4-1-2, etc. shown right, so that the end cap does not become skewed in any direction. Take care not to overtighten the screws.



END CAP KIT

This kit is used to seal off the bare end of a Flex Tube.

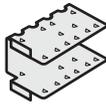
KIT CONTENTS



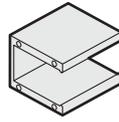
End cap
[x1]



Silicone
gasket
[x1]



Grip clip
(end-type)
[x1]



Collar
[x1]

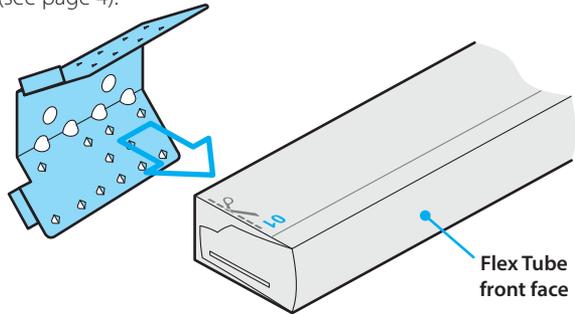


Screw
[x4]

TO INSTALL AN END CAP KIT

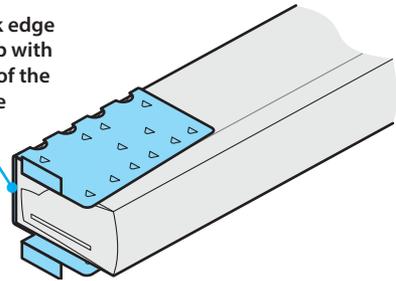
1 Check the orientation of the Flex Tube (see page 3) and, if necessary, carefully cut the Flex Tube to the correct length (see page 4).

2 Fit the grip clip to the end of the Flex Tube so that wraps tightly around the rear face...



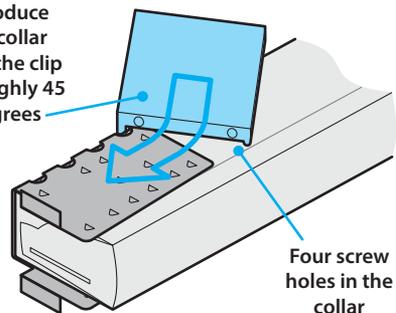
Align the back edge of the grip clip with the cut edge of the Flex Tube

...and its back edge is aligned with the cut edge of the Flex Tube.



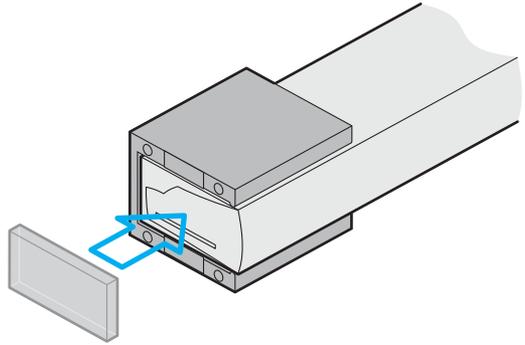
Place the collar onto the Flex Tube (with its four screw holes facing towards the cut edge) and then slide it onto the grip clip - you will find it easier to introduce the collar at approximately 45 degrees before sliding it along the Flex Tube. The clip has tapered sides and will pull the collar in tighter as it slides towards the end tabs.

Introduce the collar onto the clip at roughly 45 degrees

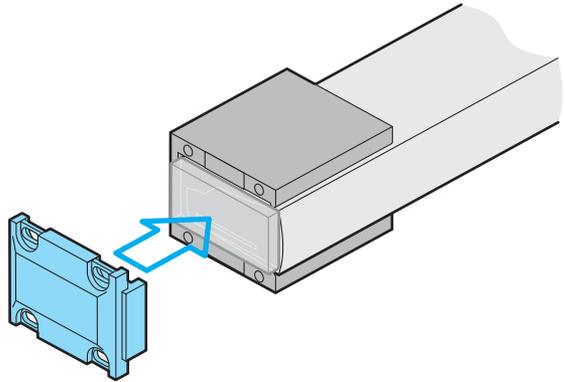


3 Once the collar is in place, press the front face of the tape to ensure that the clip is fully seated into the collar.

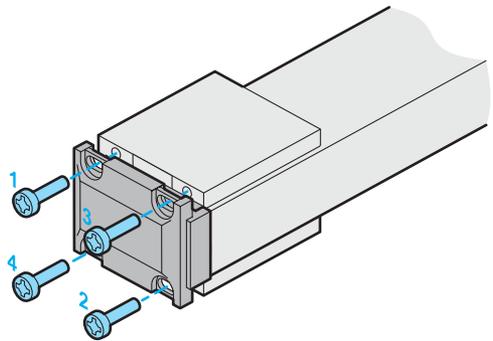
- 4 Place the pre-greased silicone gasket squarely onto the end face of the Flex Tube.



- 5 Place the end cap onto the end of the Flex Tube so that the four screw holes of the end cap align with those in the collar. Also ensure the gasket sits neatly within the face of the end cap.



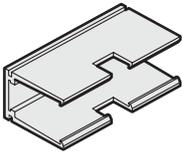
- 6 Insert the four screws and tighten them evenly (in small increments) using the order 1-2-3-4-1-2, etc. shown right, so that the end cap does not become skewed in any direction. Take care not to overtighten the screws.



SELF-LOCKING MOUNTING CHANNEL KIT

These kits are used to mount Flex Tubes onto solid surfaces.

KIT CONTENTS



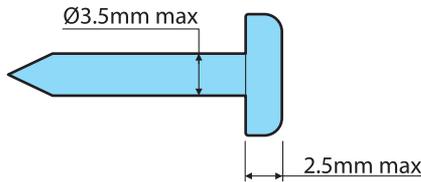
Mount channel
(5cm or 1 meter lengths)



Grip clip
(mount-type)

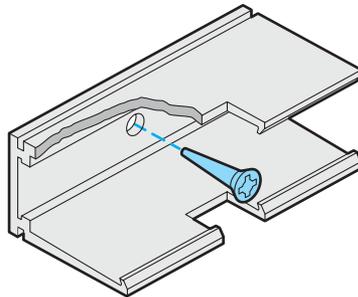
TO INSTALL A SELF-LOCKING MOUNTING CHANNEL KIT

1 Choose appropriate screws and fixings for the intended mounting surface. The limited space within the mount channel restricts the screws used to the following dimensions:

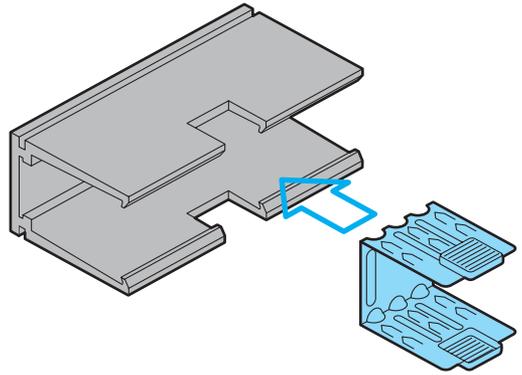


2 Attach the mount channel to the intended surface, taking all appropriate precautions as you do so.

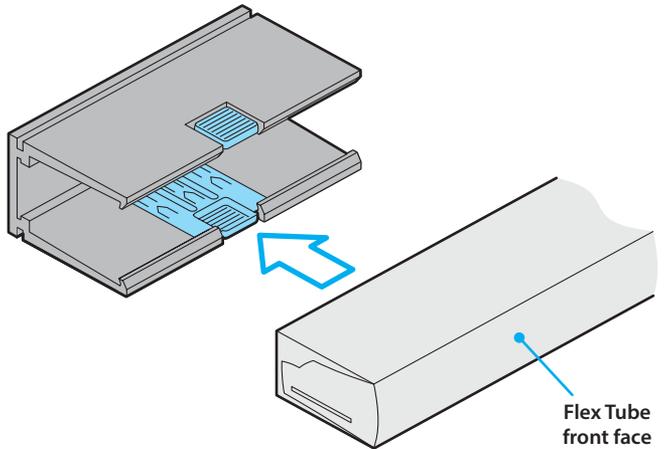
- 5cm mounts have just one hole.
- 1 meter mounts have five holes, spaced 20cm apart.



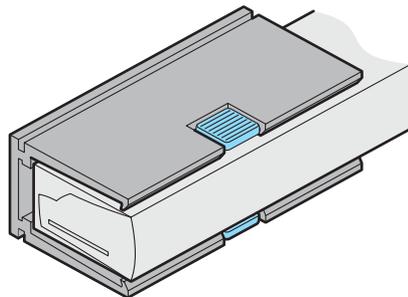
- 3 If they are not already in position, place the grip clip(s) into the mount channel.



- 4 Push the Flex Tube (front face outwards) fully into the mount channel until it engages fully with the grip clip(s).



- If you should need to remove the Flex Tube, press and hold the two raised buttons while you gently pull the Flex Tube out from the mount channel.

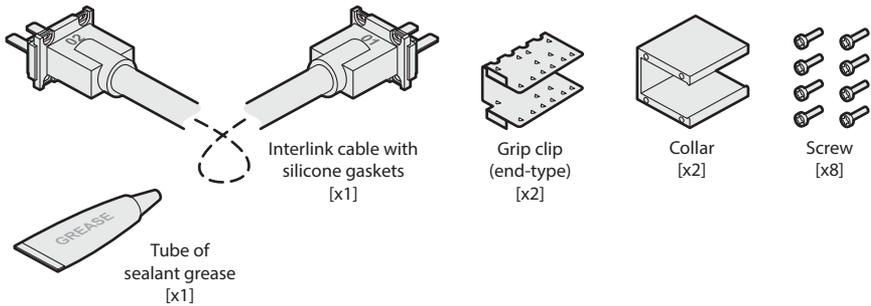


FLEXIBLE LINK KIT

This kit allows you to join two lengths of Flex Tube with a 10" (25cm) flexible cable link between them. There are two types of flexible link kit: SC for single color Flex Tubes and RGB for multi-color Flex Tubes.

IMPORTANT: The maximum overall length for any linked Flex Tubes is 32 feet (10 meters).

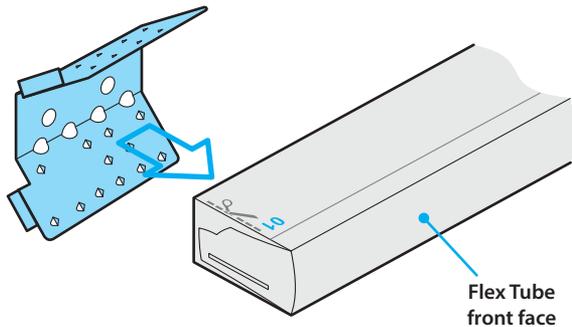
KIT CONTENTS



TO INSTALL A FLEXIBLE LINK KIT

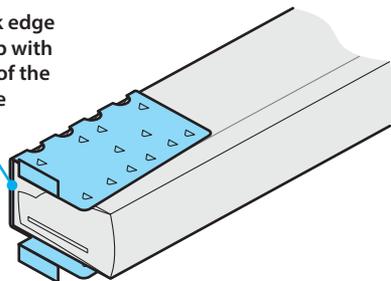
- 1 Check the orientation of both Flex Tubes (see page 3). Most often power is applied to the 01 end of a Flex Tube and exits at its 02 end ready to feed the next Flex Tube.
If necessary, carefully cut the Flex Tube(s) to the required length(s) (see page 4).

- 2 Fit one of the grip clips to the 01 end of one of the Flex Tubes so that wraps tightly around the rear face...

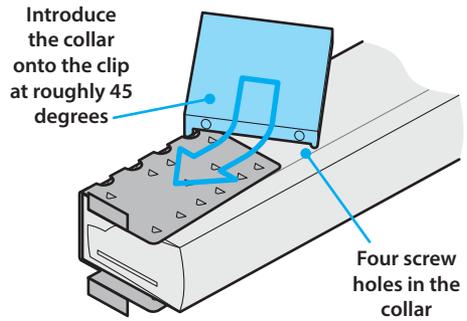


Align the back edge of the grip clip with the cut edge of the Flex Tube

...and its back edge is aligned with the cut edge of the Flex Tube.

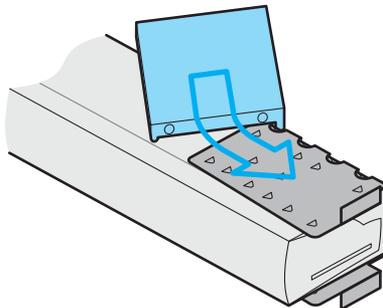
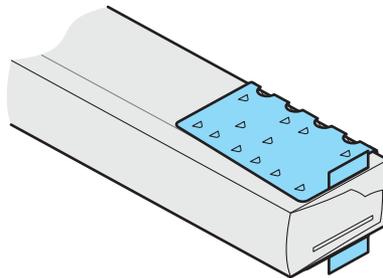
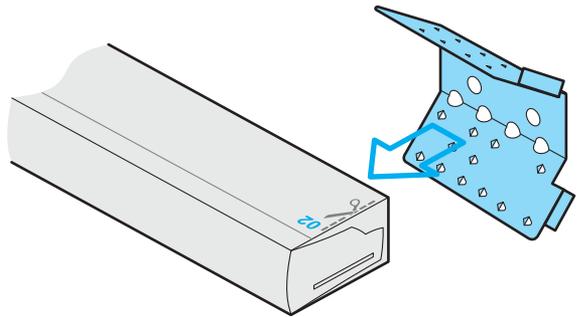


- 3 Place the collar onto the Flex Tube (with its four screw holes facing towards the cut edge) and then slide it onto the grip clip - you will find it easier to introduce the collar at approximately 45 degrees before sliding it along the Flex Tube. The clip has tapered sides and will pull the collar in tighter as it slides towards the end tabs.



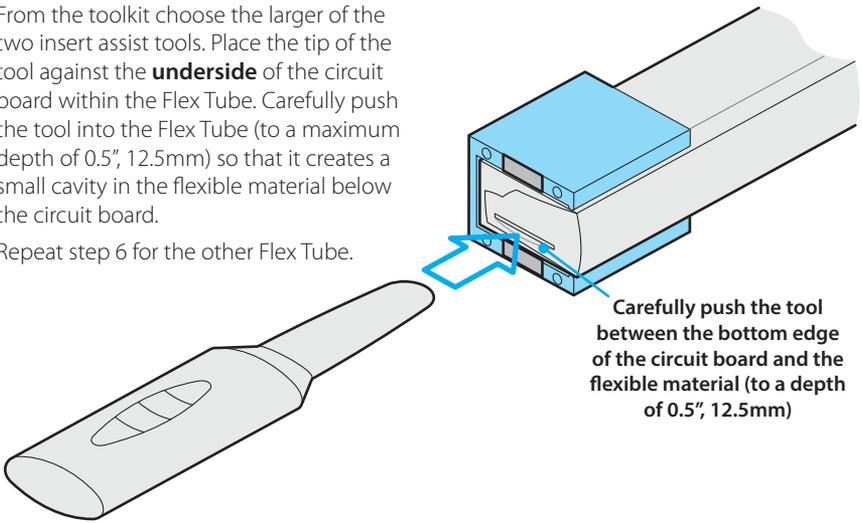
- 4 Once the collar is in place, press the front face of the tape to ensure that the clip is fully seated into the collar.

- 5 Repeat step 2 for the 02 end of the other Flex Tube.



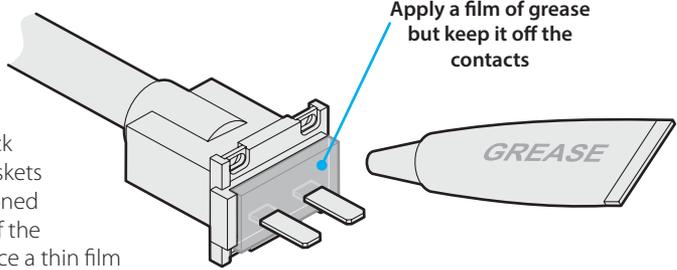
6 From the toolkit choose the larger of the two insert assist tools. Place the tip of the tool against the **underside** of the circuit board within the Flex Tube. Carefully push the tool into the Flex Tube (to a maximum depth of 0.5", 12.5mm) so that it creates a small cavity in the flexible material below the circuit board.

7 Repeat step 6 for the other Flex Tube.



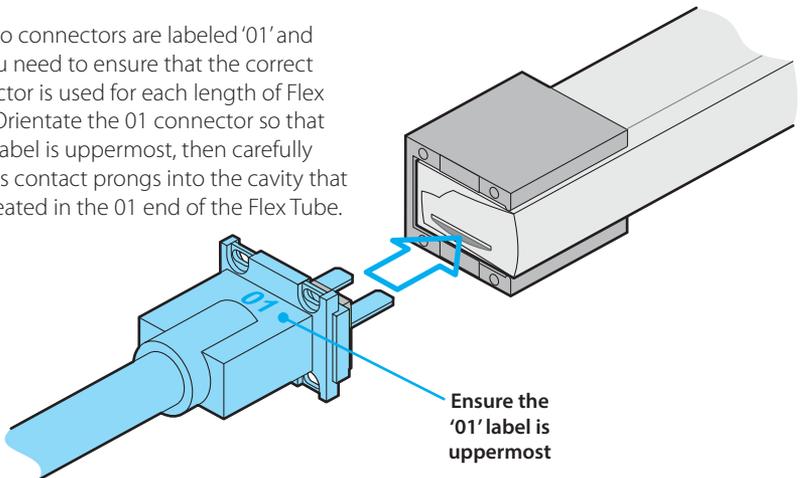
Carefully push the tool between the bottom edge of the circuit board and the flexible material (to a depth of 0.5", 12.5mm)

8 At each end of the Interlink cable, check that the silicone gaskets are correctly positioned over the contacts of the connectors and place a thin film of grease to cover the front face of the gasket - take care to keep the grease off the connector contacts.



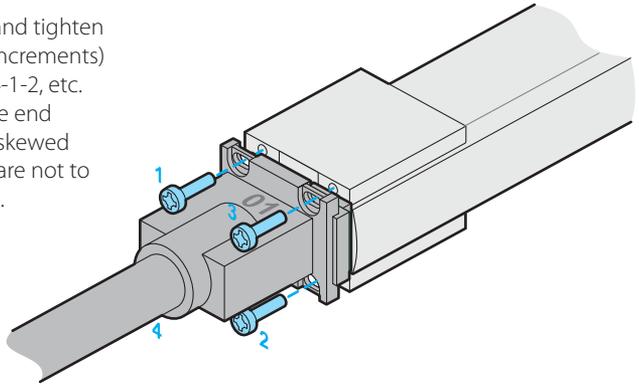
Apply a film of grease but keep it off the contacts

9 The two connectors are labeled '01' and '02'. You need to ensure that the correct connector is used for each length of Flex Tube. Orientate the 01 connector so that its '01' label is uppermost, then carefully push its contact prongs into the cavity that you created in the 01 end of the Flex Tube.

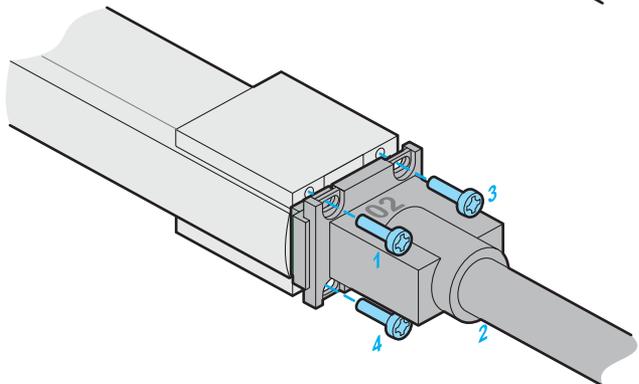
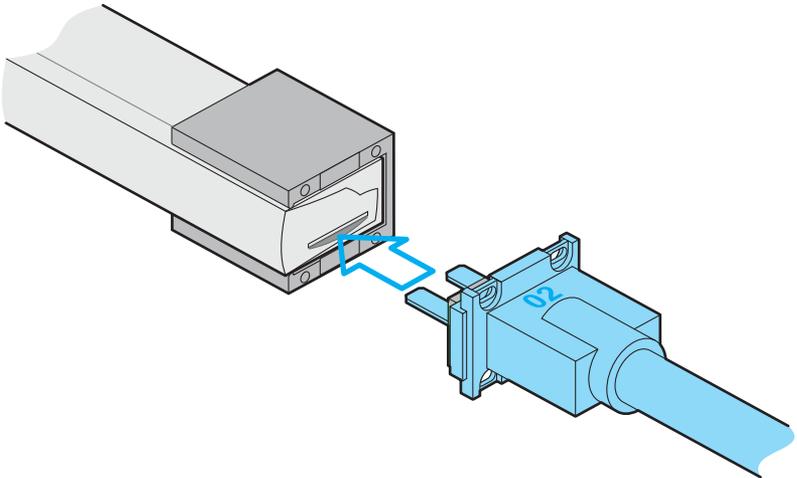


Ensure the '01' label is uppermost

10 Insert the four screws and tighten them evenly (in small increments) using the order 1-2-3-4-1-2, etc. shown right, so that the end cap does not become skewed in any direction. Take care not to overtighten the screws.



11 Repeat steps 9 and 10 for the '02' connector at the other end of the Interlink cable and the other Flex Tube.

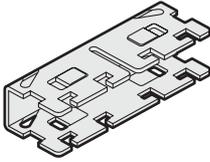


SEAMLESS LINK KIT

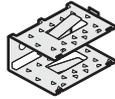
This kit allows you to rigidly join two lengths of Flex Tube with no perceptible gap between them. There are two types of seamless link kit: SC for single color Flex Tubes and RGB for multi-color Flex Tubes.

IMPORTANT: The maximum overall length for any linked Flex Tubes is 32 feet (10 meters).

KIT CONTENTS



Steel joiner
[x1]



Grip clip
(mid-type)
[x2]



Interlink
board
[x1]



Silicone
gasket
[x1]

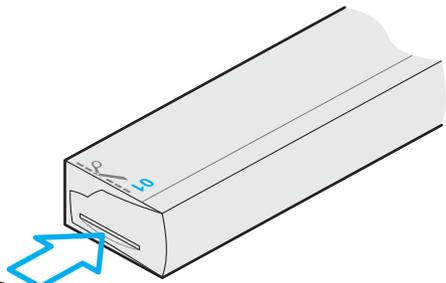


Tube of
sealant grease
[x1]

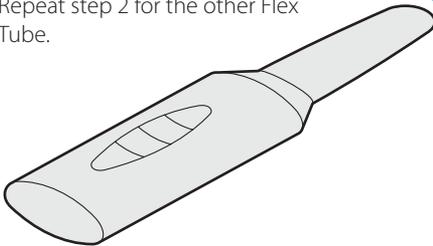
TO INSTALL A SEAMLESS LINK KIT

- 1 Check the orientation of both Flex Tubes (see page 3). Most often power is applied to the 01 end of a Flex Tube and exits at its 02 end ready to feed the next Flex Tube.
If necessary, carefully cut the Flex Tube(s) to the required length(s) (see page 4).

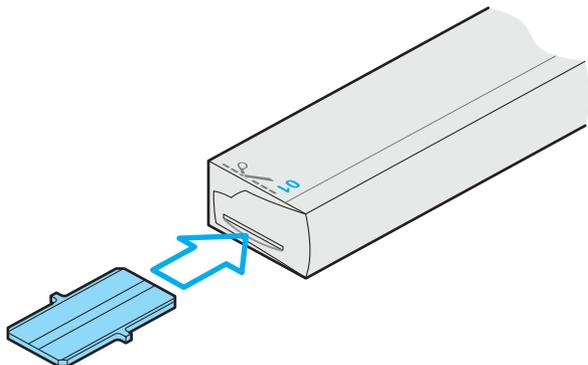
- 2 From the toolkit choose the larger of the two insert assist tools. Place the tip of the tool against the **underside** of the circuit board within the Flex Tube. Carefully push the tool into the Flex Tube (to a maximum depth of 0.5", 12.5mm) so that it creates a small cavity in the flexible material below the circuit board.



- 3 Repeat step 2 for the other Flex Tube.

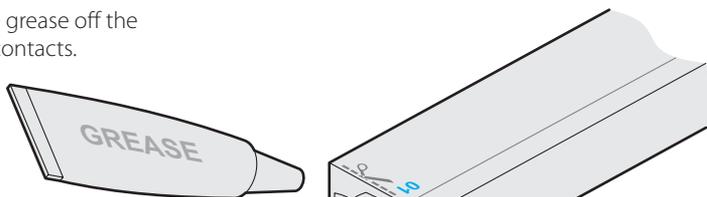


- 4 Carefully insert one end of the Interlink board into the cavity that you created in the end of either Flex Tube.

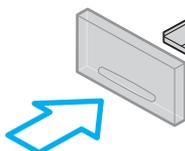


IMPORTANT: Be very careful not to flex or bend the Interlink board.

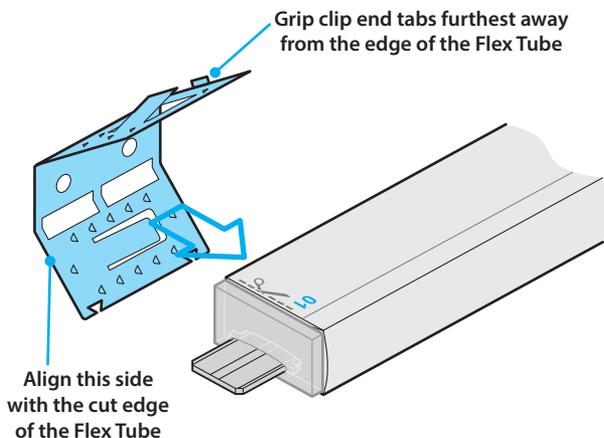
- 5 Place a thin film of grease to cover the cut face of the Flex Tube - take care to keep the grease off the interlink board contacts.



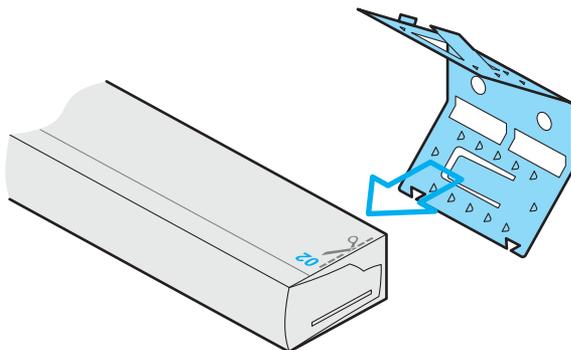
- 6 Fit the silicone gasket onto the Interlink board such that it aligns with the profile of the Flex Tube - use the insert assist tool to create a slot in the gasket.



- 7 Place one of the grip clips onto the Flex Tube. Ensure that the tabs are furthest from the cut edge of the Flex Tube while the opposite edge of the clip aligns with the cut edge of the Flex Tube.



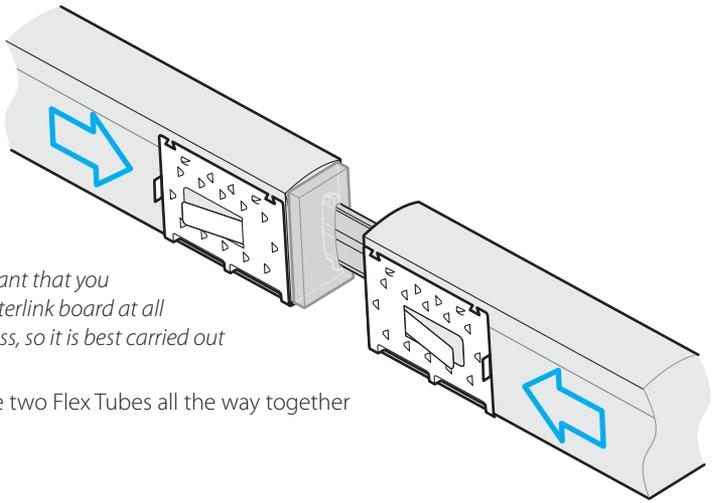
- 8 Place the second grip clip onto the other Flex Tube, following the guidelines given in step 6.



- 9 Carefully insert the end of the interlink board into the cavity created within the second Flex Tube.

Note: It is important that you do not flex the interlink board at all during this process, so it is best carried out on a flat surface.

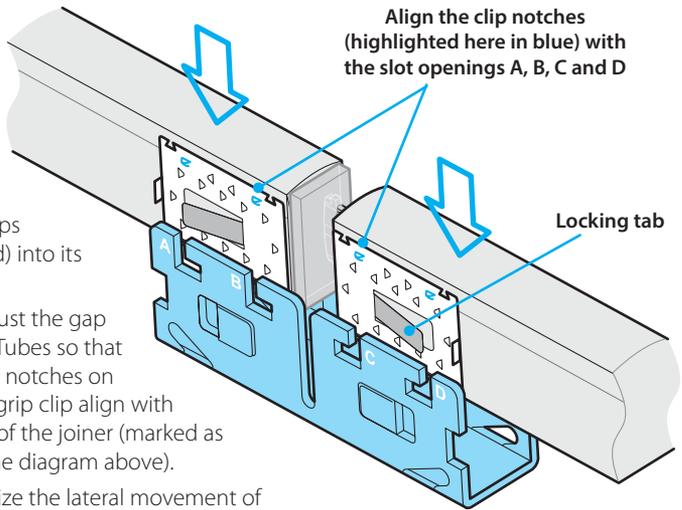
Do not push the two Flex Tubes all the way together at this stage.



- 10 Position the steel joiner alongside the Flex Tubes and begin to carefully introduce the two Flex Tapes (plus clips and interlink board) into its open side.

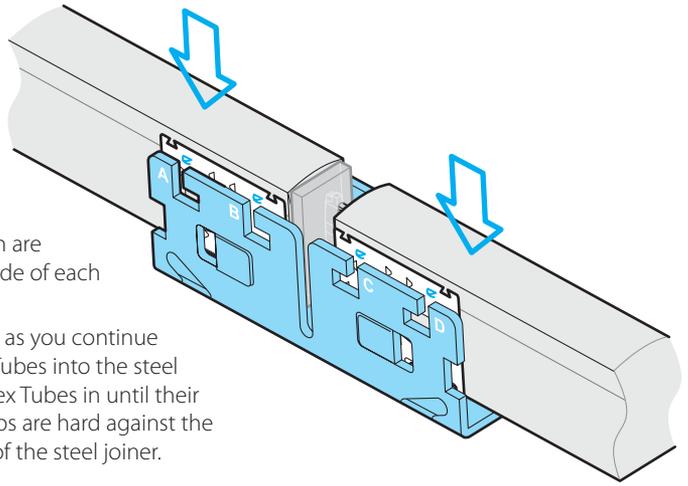
As you do this, adjust the gap between the Flex Tubes so that the two raised clip notches on each side of each grip clip align with the slot openings of the joiner (marked as A, B, C and D on the diagram above).

At all times minimize the lateral movement of the Flex Tubes in order to reduce the chances of damaging the fragile interlink board.

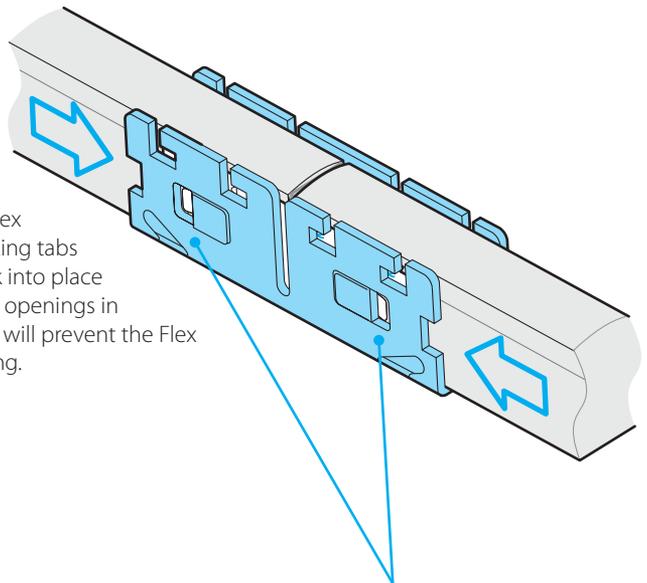


11 Continue to push the two Flex Tubes evenly into the steel joiner. To go any further you will need to compress the locking tabs which are located on each side of each grip clip.

Push these tabs in as you continue to insert the Flex Tubes into the steel joiner. Push the Flex Tubes in until their respective grip clips are hard against the rear internal face of the steel joiner.



12 Now push each Flex Tube in towards the center of the steel joiner so that the interlink board inserts itself further into the cavity of the second Flex Tube and also the locking tabs on both grip clips click into place within their respective openings in the steel joiner - these will prevent the Flex Tubes from disengaging.



Once the Flex Tubes are fully inserted, the locking tabs on the grip clips should click into place within the steel joiner.

CONNECTING AND CONTROLLING FLEX TUBES

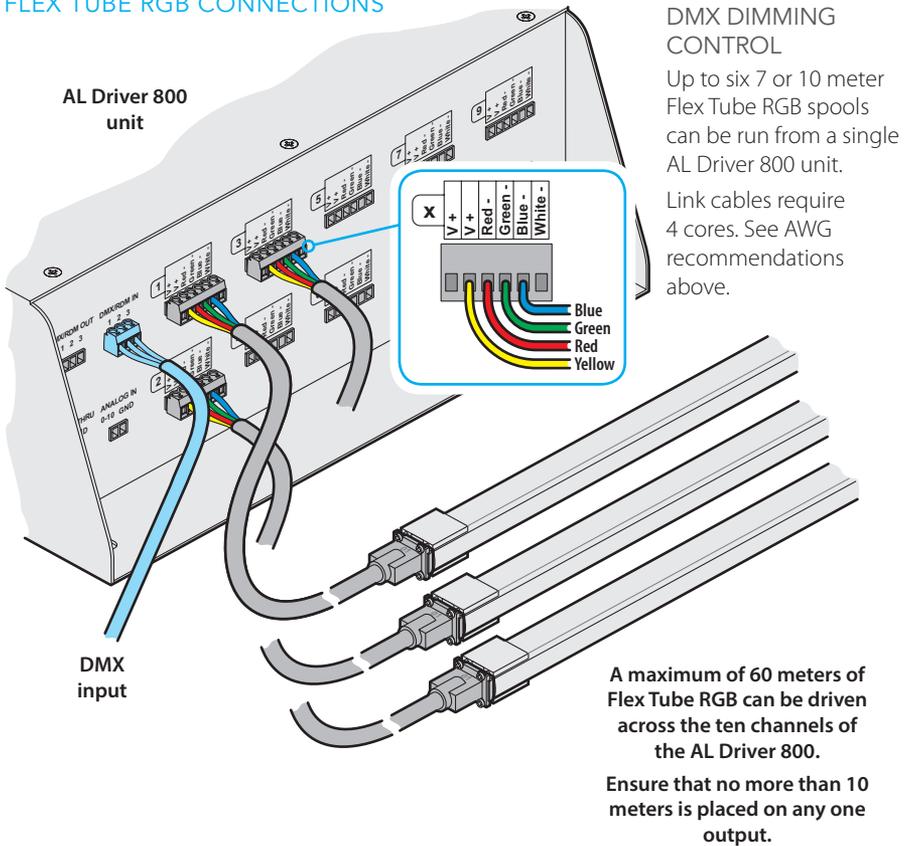
Flex Tubes are run at 24VDC and consume 3.75W per foot (or 12W per meter).

Connection cables (not supplied) used to link Flex Tubes to the power/driver unit should follow these guidelines:

- Up to 50 feet (15m) 18 AWG (0.823mm²)
- Up to 120 feet (36.5m) 14 AWG (2.081mm²)
- Up to 200 feet (61m) 12 AWG (3.309mm²)

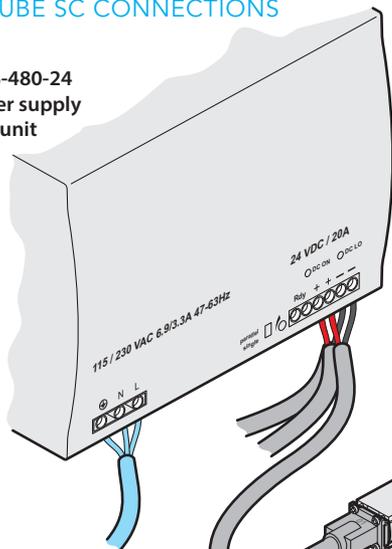
In all cases, ensure that the voltage drop at the fixture end of the link cable is no greater than 8% (1.92V) of the original 24VDC supply.

FLEX TUBE RGB CONNECTIONS



FLEX TUBE SC CONNECTIONS

**APS-480-24
power supply
unit**

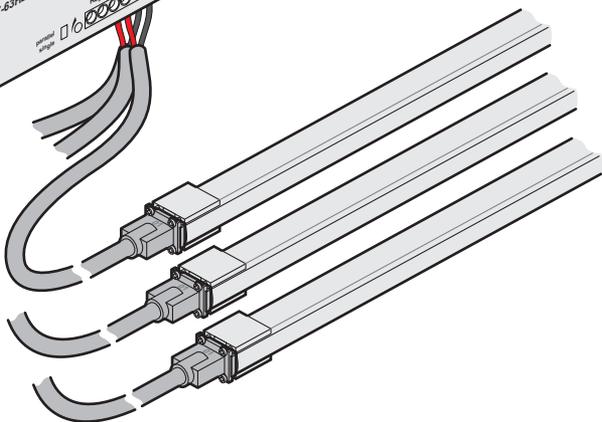


**Mains input
(115-230VAC
47-63Hz)**

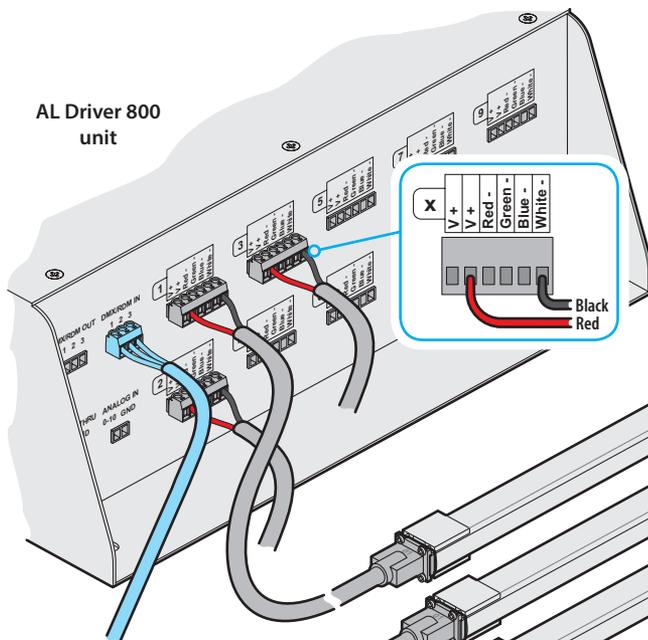
NON-DIM

Up to three 7 or 10 meter Flex Tube SC spools can be run from a single APS-480-24 power supply unit.

Link cables require 2 cores. See AWG recommendations left.



**AL Driver 800
unit**

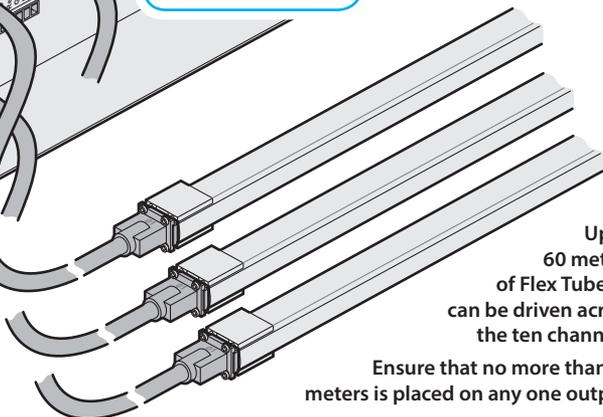


**DMX
input**

DMX & 0-10V DIMMING CONTROL

Up to six 7 or 10 meter Flex Tube SC spools can be run from a single AL Driver 800 unit.

Link cables require 2 cores. See AWG recommendations left.



Up to
60 meters
of Flex Tube SC
can be driven across
the ten channels.

Ensure that no more than 10
meters is placed on any one output.

FURTHER INFORMATION

TROUBLESHOOTING

NO LIGHT OUTPUT IS VISIBLE WHEN EXPECTED.

- Check that power is correctly applied to the fixture and that there is no damage to the power input cord.
- Check that the connections to the feed cable have the correct polarity.
- If external DMX control is being used, check that the DMX address set within the fixture matches that being output by the controlling source device.

FLEX TUBE SPECIFICATIONS

	Single color (SC)	Multi-color (RGB)
Beam angle	160°	160°
Lumens per foot	120	37
Operating voltage	24VDC	24VDC
Power consumption	3.75W per foot 12W per metre 120W per 32' (10m) spool	3.75W per foot 12W per metre 120W per 32' (10m) spool
Dimming	Pulse Width Modulation	Pulse Width Modulation
Maximum overall length	32' (10m)	32' (10m)
Installation temperature	32°F to 113°F 0°C to 45°C	32°F to 113°F 0°C to 45°C
Operation temperature	-40°F to 131°F -40°C to 55°C	-40°F to 131°F -40°C to 55°C
Housing	UV coated, flexible silicone jacket	UV coated, flexible silicone jacket
Ingress protection	IP68 wet location submersible to 3' (1m)	IP68 wet location submersible to 3' (1m)
Impact resistance	IK08 Protected up to a 5 Joule impact	IK08 Protected up to a 5 Joule impact
Certifications		

Release 1.3a

LIMITED PRODUCT WARRANTY

A. Acclaim Lighting™ hereby warrants, to the original purchaser, Acclaim Lighting finished products to be free of manufacturing defects in material and workmanship for a standard period of:

- Fixtures: 5 Years (1,825 days) from the date of purchase.
- Drivers, power supplies and accessories: 5 Years (1,825 days) from the date of purchase.
- Flex Products: 3 Years (1,095 days) from the date of purchase.
- Controllers: 2 Years (730 days) from the date of purchase.

It is the owner's responsibility to establish the date and place of purchase and warranty terms by acceptable evidence, at the time service is sought.

B. For warranty service, send the product only to the Acclaim factory. All shipping charges must be pre-paid. If the requested repairs or service (including parts replacement) are within the terms of this warranty, Acclaim Lighting will pay return shipping charges only to a designated point within the United States. If the entire instrument is sent, it must be shipped in its original package. No accessories should be shipped with the product. If any accessories are shipped with the product, Acclaim Lighting shall have no liability whatsoever for loss of or damage to any such accessories, nor for the safe return thereof. Acclaim reserves the right to replace the item with same or similar product at its discretion.

C. This warranty is void if the serial number has been altered or removed; if the product is modified in any manner which Acclaim concludes, after inspection, affects the reliability of the product; if the product has been repaired or serviced by anyone other than the Acclaim Lighting factory unless prior written authorization was issued to purchaser by Acclaim Lighting; if the product is damaged because not properly maintained as set forth in the instruction manual.

D. This is not a service contract, and this warranty does not include maintenance, cleaning or periodic check-up nor do we guarantee as part of this warranty any lumen performance during period. Parts not covered by this warranty include: fuses, external power supplies, third party items not manufactures by Acclaim lighting. During the period specified above, Acclaim Lighting will replace defective parts at its expense, and will absorb all expenses for warranty service and repair labor by reason of defects in material or workmanship. The sole responsibility of Acclaim Lighting under this warranty shall be limited to the repair of the product, or replacement thereof, including parts, at the sole discretion of Acclaim Lighting. At no time will installation or re-installation or products labor or liability costs will be assumed by Acclaim Lighting. All products covered by this warranty were manufactured after January 1, 2012, and bear identifying serial number marks to that effect.

E. Acclaim Lighting reserves the right to make changes in design and/or improvements upon its products without any obligation to include these changes in any products theretofore manufactured. No warranty, whether expressed or implied, is given or made with respect to any accessory supplied with products describe above. Except to the extent prohibited by applicable law, all implied warranties made by Acclaim Lighting in connection with this product, including warranties of merchantability or fitness, are limited in duration to the warranty period set forth above. And no warranties, whether expressed or implied, including warranties of merchantability or fitness, shall apply to this product after said period has expired.

F. Marine or extreme weather location applications using Acclaim lighting products are subject to a 2 year limited warranty and Acclaim must be notified prior to delivery of units for such applications so that preventative treatment can be made to the products to ensure proper performance and product life with a special marine code coating / sealing process at an additional cost.

G. The consumer's and or dealer's sole remedy shall be such repair or replacement as is expressly provide above; and under no circumstances shall Acclaim Lighting be liable for any loss or damage, direct or consequential, arising out of the use of, or inability to use, this product. This warranty is the only written warranty applicable to Acclaim Lighting products and supersedes all prior warranties and written descriptions of warranty terms and conditions heretofore published.

www.acclaimlighting.com