The DAESSY Mounting System Handbook

Original Series

Daedalus Technologies, Inc. is the manufacturer of DAESSY Mounting Systems hardware to support communication devices, laptop computers or switches for use in the Assistive Technology field. The DAESSY Mounting System Handbook provides descriptions and instructions on the installation and use of the DAESSY product line.

1 History of DAESSY

In 1986 Daedalus Technologies, Inc. developed and introduced the Daedalus Support System for mounting communication devices and laptop computers on wheelchairs. Between 1988 and 1991 the Daedalus Support System was known as and marketed as the 'Quick 'n Easy' wheelchair mounting system. In 1991 the mounting component system became known as DAESSY, an acronym derived from Daedalus Support System.

Since 1991 the DAESSY product line designed and manufactured by Daedalus Technologies, Inc. has expanded to include a variety of desk stand options, the Lite Mount for switch mounting and small devices, the Rolling Mount series of floor stands as well as the M-Series Mini Mounts for mid-weight device wheelchair mounts.

2021 marks Daedalus Technologies, Inc. and DAESSY's 35th year in Assistive Technology.

1.1.1 The DAESSY Mounting System

Over the years, the DAESSY Mounting System has expanded and evolved its range of mounting systems. We now offer numerous DAESSY wheelchair mounts, free standing floor stands, desk stands and a switch mounting options.

Complementing the standard assemblies is a range of additional mounting components that can be used to adapt the DAESSY Mounting System to a wide variety of situations. Clamps and plates are available for mounting to walls, desks, bed frames, or any other sturdy support structure.

2 DAESSY Mounting System Overview– Original Series

Not all DAESSY wheelchair mounts are appropriate for all situations. The choice of assembly will depend on a number of factors including the abilities of the user, the type of device to be mounted, and the type of wheelchair and seating system. The team of professionals involved with any person using an augmentative device must determine which mount is most suitable for a particular application. In some cases it may be necessary to modify the standard assembly or construct a custom mount assembly. Contact Daedalus Technologies, Inc. for information on custom mounts.

Caution:
Included in these descriptions are some specific cautions. These cautions should be used as a guide to the type of details to consider when mounting any device on a wheelchair. All applications have their unique aspects and some situations may be impossible to address with any mounting assembly. Most of the DAESSY mounting assemblies can be used with most augmentative communication devices and laptop computers but extra attention must be given to mounting heavy devices.

Additional information on each of the Original Series DAESSY mounts can be found in the Assembly instructions located in the Appendix.

Name	Code(s)
Rigid Mount / Rigid Mount ROP	DRM1 / DRM1ROP
Folding Mount / Folding Mount ROP	DFM2 / DFM2ROP
Swing Aside Mount	DSAM4
Positioner Mount	DPM9
Lockable Rear Folding Mount	DLRFM8

2.1 Rigid Mounts (DRM1 / DRM1ROP)

2.1.1 Rigid Mount (DRM1)

The DAESSY Rigid Mount DRM1 provides a simple but highly adaptable and adjustable support for mounting a laptop computer or communication device on to a wheelchair.

- Mount consists of two lengths of tube connected at 90°.
- Non-directional; can be attached to either side of the wheelchair with the same components.
- Can be precisely positioned for user accessibility.
- The mount can be lifted up completely out of the Frame Clamp quickly and easily.
- The mount can be slightly lifted and swung to the side.
- Variations can be made in the length and shape of the tubes, and in the other parts to adapt the DAESSY Rigid Mount to any wheelchair.
- For more information see the DRM1 Assembly Instructions in the Appendix Section 15.1 below

*A version of the Rigid Mount with a single right angle bent tube is available (DBTRM1).

Caution:
The Rigid Mount can support equipment that is heavy enough to unbalance an unoccupied wheelchair, particularly when the mount is swung aside. The mount should be completely removed or the device detached from the mount before the wheelchair is vacated.

2.1.2 Rigid Mount ROP (DRM1ROP)

The Rigid Mount ROP is similar to the standard Rigid Mount (described above).

- Allows for attachment to Tilting Seat Systems and installation beyond 15° from vertical.
  See more on Tilting Seat Systems (section 3).
- ROP+RFCR allow the mount assembly to be ‘locked’ in place.

- Easily removed from the wheelchair.
- Non-directional; can be attached to either side of the wheelchair with the same components.
- Cannot be swung to the side.
- The mount must be unlocked and removed for access to the user, or any time the wheelchair is vacated.
- For more information see the DRM1 Assembly Instructions in Appendix Section 15.1.

Caution:
The DAESSY Rigid Mount ROP can support equipment that is heavy enough to unbalance an unoccupied wheelchair when the attached device is positioned outside the wheelbase. It is recommended that the device be detached, or the mount be removed from the wheelchair before the wheelchair is vacated.

2.2 Folding Mounts (DFM2 / DFM2ROP)

2.2.1 Folding Mount (DFM2)

The DAESSY Folding Mount DFM2 is similar to the DAESSY Rigid Mount (DRM1) with the addition of a folding joint allowing the Horizontal Tube to be folded in a two-step motion from its in-use position to a storage position beside the wheelchair.

- Folded configuration is compact and convenient for storage.
- Quickly and easily removed from the wheelchair.
- The folding operation is most often performed by an attendant or assistant (not the user).
- Non-directional; can be attached to either side of the wheelchair with the same components.
- For more information see the assembly instructions in the Appendix Section 15.2.

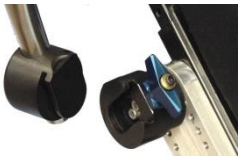
Caution:
In the folded position the attached device protrudes beyond the side of the wheelchair making it vulnerable to collisions when the wheelchair is in motion. The screen of a laptop MUST be closed prior to folding the mount. When the wheelchair is moved with the mount folded, it is recommended that the device be removed from the mount. In some cases use of a Folding Quick Release Base (USBF) may allow the device to be folded to a more protected configuration when stored beside the wheelchair (see Section 11.1.8). When the mount is folded the unbalancing effect of heavy devices on small wheelchairs is reduced but not eliminated. It is recommended that the device be detached, or the mount be removed from the wheelchair before the wheelchair is vacated.

2.2.2 Folding Mount ROP (DFM2ROP)

The DAESSY Folding Mount ROP (DFM2ROP) is functionally identical to the standard DAESSY Folding Mount (DFM2) described above. Features include:

- Suitable for Tilting Seat Systems and installation beyond 15° from vertical.
  See more on Tilting Seat Systems (section 3).

- The ROP+RFCR allow the mount to be 'locked'.



- Non-directional; can be attached to either side of the wheelchair with the same components.

- The folding operation is most often performed by an attendant or assistant (not the user).

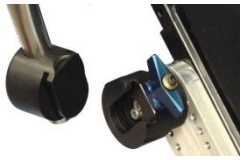
- For more information see the DFM2 Assembly Instructions in Appendix Section 15.2.

Caution:
In the folded position the attached device protrudes beyond the side of the wheelchair making it vulnerable to collisions if the wheelchair is moved or driven; the screen of a laptop computer MUST be closed prior to folding the mount. A device that is tilted to allow the user full access when in use may protrude a considerable amount when folded. Whenever the wheelchair is moved with the mount folded, it is recommended that the device be removed from the mount. In some cases use of a Folding Quick Release Base (USBF) may allow the device to be folded to a more protected configuration when stored beside the wheelchair (see Section 11.1.8). When the mount is folded the unbalancing effect of heavy devices on small wheelchairs is reduced but not eliminated. It is recommended that the device be detached, or the mount be removed from the wheelchair before the wheelchair is vacated.

2.3 Swing Aside Mount (DSAM4)

The Swing Aside Mount combines the features of the original DLSA7 Locking Swing Away Mount with the additional ability to use it on a tilting seat system. Features include

- ROP+RFCR System allow the mount assembly to be 'locked' in the frame clamp.



- The mount can be swung away from the user by releasing the lock pin connected to the cable that runs below the horizontal tube.
- Non-directional; Attaches to either side of the wheelchair with the same components.
- For greater independence the user may release the lock pin to swing the mount away.
- Easily removed from the wheelchair.
- Suitable for Tilting Seat Systems.
  See more on Tilting Seat Systems (section 6).
- For more information see the DSAM4 Assembly Instructions in Appendix Section 0.

Caution:
The Swing Aside Mount can support equipment that is heavy enough to unbalance an unoccupied or lightweight manual wheelchair when swung out to the side. It is recommended to remove the device and/or mount before the wheelchair is vacated. The horizontal tube assembly is pre-installed; tube length cannot be changed after ordering (standard 16").

2.4 Lockable Rear Folding Mount (DLRFM8)

The DAESSY Lockable Rear Folding Mount DLRFM8 with the added feature of a Lock Mechanism to hold the mount in place while in use allows folding to the back for storage.

- The Lock Mechanism allows this mount assembly to be used on a wheelchair with at tilting seat system; special considerations must be made see **Error! Reference source not found.**.
- This mount is side specific; the attachment side of the wheelchair must be specified at time of order.

Caution:
The Lockable Rear Folding Mount is suitable only for power wheelchairs. The user cannot perform the complete rear folding sequence assistance is essential. The Lock Mechanism must be unlocked prior to folding and relocked when brought to the front. The extended position of the Horizontal Tube during the folding sequence forma a long 'lever-arm' and the device must be guided through the entire rearward or forward motion and not permitted to drop suddenly onto the stops. As the Vertical Tube passes down the side of the wheelchair during the folding action care must be taken that the user keeps their arm or hand clear. Large devices may protrude behind the wheelchair when folded and may pass very close to the user during the folding sequence if they are mounted at an angle to provide user access in-use. In some cases use of a Folding Quick Release Base (USBF) may allow the device to be folded to a more protected configuration when stored behind the wheelchair (see Section 11.1.8).

2.5 Positioner Mount (DPM9)

The DAESSY Positioner Mount (DPM9) allows the achievement of the ideal position and angle of an attached AAC device or laptop through 6 points of adjustment.

- Vertical height adjustment of 16”.
    - An adjustable height clamp (AHC1) is easily unlocked (without tools) to change the vertical tube height through 8” of adjustment.
    - Vertical tube is also adjustable through 8” at the Adjustable Height Outer Piece (AHOP) see Section 8.4. The AHOP attaches to the vertical tube at the base of the mount.
- Two 360° articulating ball joints; enable infinite device positioning & adjustment. Each articulating joint locks independently. Once a rotation and position is selected each articulating joint must be tightened and locked in position individually to secure the position.
- The attached device’s horizontal position along the tube is adjusted by the location of the quick release base.

Caution:
When installed on a tilting seat system the wheelchair seat should be in the upright position while adjustments are made. All joints must be tightly secured prior to tilting the seat and mount. When adjusting and/or loosening any joint of the Positioner Mount the weight of the mount arm and attached device must be supported to prevent it from swinging or falling towards the user. Heavy or large devices should be removed during adjustments.

3 Mounting to Tilting Seat Systems

3.1 DAESSY Rigid Mount – DRM1

The DAESSY Rigid Mount can be used on a tilting seat system up to a moderate angle of tilt. When the mount is to be tilted rearward beyond 15° from vertical it is possible to install the Vertical Tube tilting forward up to 10° when the seat system is in the upright position and this reduces the maximum rearward tilt the mount undergoes. However, when tilted from vertical, particularly beyond 25°, the security of the Index Pin that prevents the rotating of the Vertical Tube in the Frame Clamp Outer Piece is reduced and the increased load on the Index Pin will lead to premature wear and elongation of the Index Clamp hole. The DAESSY Rigid Mount ROP is preferred for mounting on a tilt system with significant angle change.

3.2 DAESSY Rigid Mount ROP– DRM1ROP

The Removable Outer Piece and Receiver of the DAESSY Rigid Mount ROP allow the mount to be locked onto the wheelchair and provide a secure attachment for mounting on a tilting seat system.

3.3 DAESSY Folding Mount – DFM2

The DAESSY Folding Mount can be used on a tilting seat system up to a moderate angle of tilt. When the mount is to be tilted beyond 15° from vertical the security of the Index Pin that prevents the rotating of the Vertical Tube in the Frame Clamp Outer Piece is reduced and the increased load on the Index Pin will lead to premature wear and elongation of the Index Clamp hole. The DAESSY Folding Mount ROP is preferred for mounting on a tilt system.

3.4 DAESSY Folding Mount ROP– DFM2ROP

The Removable Outer Piece and Receiver of the DAESSY Folding Mount ROP allow the mount to be locked onto the wheelchair and provide a secure attachment for mounting on a tilting seat system.

3.5 DAESSY Swing Aside Mount – DSAM4

The Removable Outer Piece and Receiver of the DAESSY Swing Aside Mount allow the mount to be locked onto the wheelchair and provide a secure attachment for mounting on a tilting seat system.

3.6 DAESSY Positioner Mount – DPM9

The DAESSY Positioner Mount uses an Adjustable Height Outer Piece (AHOP) that is pre-installed on the vertical tube and a Removable Frame Clamp Receiver (RFCR) to provide a secure attachment for mounting on a tilting seat system.

3.7 DAESSY Lockable Rear Folding Mount – DLRFM8

The DAESSY Lockable Rear Folding Mount may be used on a power wheelchair with a tilting seat system. With the mount locked in the forward position the stability of the mount is not affected when the seat system is tilted and it is not likely the mount and device will interfere with anything when tilted. However, when the mount is folded to the rearward position it is possible that there will be interference with the mount when the seat system is tilted and this MUST be considered when fitting the mount. Sufficient room behind the backrest must remain in the tilted and upright position of the seat.

4 The Frame Clamp Assembly

All DAESSY mounts are attached to the wheelchair with a multi-part component called the Frame Clamp Assembly. The Frame Clamp Assembly consists of an Inner Piece that bolts to the wheelchair frame in a suitable location, and an Outer Piece that supports the Vertical Tube of the mount. The Frame Clamp Inner Piece is available in a variety of sizes and shapes to suit the tubing of many styles of wheelchairs. When no tubing is available it may be possible to use Bolt-on Adapter to bolt to another location of the seat frame. The style of the Frame Clamp Outer Piece is determined by the choice of mounting assembly. Frame Clamp Outer Pieces fall into three general categories: Standard, Rear Folding, and ROP.

Frame Clamp components are connected together with Swivel Clamps. The Swivel Clamp allows the components to be connected firmly to each other in any orientation. Circular grooves are machined into the matching faces of Frame Clamp components. The term ‘inner’ is used to refer to a direction closer towards the wheelchair, while the term ‘outer’ is used to refer to a direction farther away from the wheelchair. Although the most obvious application of DAESSY mounts is to wheelchairs, Frame Clamps can be affixed to any surface or support structure.

4.1 The Swivel Clamp

Swivel Clamps are used to connect parts of a Frame Clamp Assembly. The unthreaded head end of a Swivel Clamp has two 1/4” holes. The threaded end (also referred to as nut end). The standard bolt length provided with a Swivel Clamp is 1”. Longer bolts are required for using a Frame Clamp Spacer (UFCSPCR). Always use the supplied Swivel Clamp bolts.

The threaded end of the Swivel Clamp should be engaged with a minimum of 4 complete turns of each bolt. The ends of the bolts should not protrude appreciably beyond the face of the Swivel Clamp nut end. Bolts should be tightened alternately to achieve the best grip. In some cases it may be necessary to use the long arm of the 3/16” Allen Key to reach the heads of the Swivel Clamp bolts within the Frame Clamp Outer Piece. A Tommy Bar is provided to extend the short end of the Allen Key to allow sufficient torque to be applied. The Tommy Bar should not be used to extend the long arm of the Allen Key for tightening any bolts.

4.2 Frame Clamp Assembly – The Frame Clamp Inner Piece

Frame Clamp (UFCxxxxIP)

Frame Clamp Cap

Frame Clamp Body

The Frame Clamp Inner Pieces are manufactured to precise sizes to fit a wide range of wheelchair tubing styles – round, rectangular and elliptical. Frame Clamps must be installed on the tube size for which they are designed. Wheelchair manufacturers are constantly changing tube sizing, do not rely on chair specifications or previous tube sizes, measure the tube of the actual chair that is being assessed for mounting. Specific wheelchair models may be referred to in this manual however it is no guarantee that it will be the correct size. Always measure the wheelchair tube before ordering.

4.2.1 Standard Round (UFCxxxxIP)

Standard Frame Clamp Inner Pieces (UFCxxxxIP) consist of a Cap and Body that fit around the wheelchair frame and are secured together with two bolts. The Cap is has two unthreaded bolt holes. The Body has two threaded bolt holes and an axial hole that holds the threaded half of a Swivel Clamp. The Swivel Clamp is described in Section 4.1 above.

The outer face of the Frame Clamp Inner Piece is machined with circular grooves. The selected location where the Frame Clamp Inner Piece will be attached to the chair should be accessible from both the outside and the inside of the wheelchair frame. About 2” to 2 1/2" of wheelchair frame tubing must be clear for attachment of the Frame Clamp. Common sizes of round frame clamps are listed below.

Tube Diameter	Part Code
1”	UFC1000IP
1-1/8”	UFC1125IP
1-1/4"	UFC1250IP
1-3/8”	UFC1375IP
1-1/2"	UFC1500IP
1-3/4”	UFC1750IP*
2”	UFC2000IP*

Tube Diameter	Part Code (Modified Versions)
1”	UFC1000IPMOD**
2"	UFC2000IPMOD***

* UFC1750IP & UFC2000IP cannot be used with sleeves (see UFC2000IPMOD***).
**UFC1000IPMOD is narrower to allow fit into clamp locations as low as 1-1/4”
***UFC2000IPMOD is wider for use with sleeves.

4.2.2 UFC1000IPMOD

The UFC1000IPMOD is a narrowed version of the 1” Frame Clamp Inner Piece for situations when less than two inches of wheelchair frame tubing is clear for attachment. The Narrow 1” Frame Clamp Inner Piece requires only 1 1/4” clear length of wheelchair frame tubing. See photo on the right.

4.2.3 UFC2000IPMOD

The UFC2000IPMOD is a modified version of the 2” Frame Clamp Inner Piece. It is wide enough to accommodate sleeves. Using sleeves, the UFC2000IPMOD can accommodate tubing between 1.5 and 2” diameter. For more information on sleeves see Section 4.3. See photo on the left.

4.2.4 Frame Clamp Inner Piece: Side Mount (UFCxxxxSMIP)

When a seat pan restricts access to the upper edge of the wheelchair frame tubing, it may be possible to use a Side Mount Frame Clamp Inner Piece, which requires no clearance on the topside of the tube and only 1 1/4" clearance on the bottom side. Side Mount Frame Clamps consist of an unthreaded Cap and a threaded Body, which are often silver or gold in colour, and an Inner Piece Adapter that is black. The Side Mount Cap and Side Mount Body each have a cut-out, or 'jaw', which seats on the wheelchair frame. This cut-out is offset from the axis center of the Side Mount Inner Piece, requiring no clearance on the topside of the wheelchair tubing. See photo to the right.

There are two styles of Side Mount Inner Pieces. The standard style, UFCxxxxSMIP, has a Side Mount Cap and Side Mount Body held together with three bolts that can only be accessed from the interior of the wheelchair frame. An Inner Piece Adapter bolts to the Side Mount Body to provide an interface with the outer components of the Frame Clamp Assembly. If the interior of the wheelchair is not accessible a Front Side Mount Inner Piece (xxxxFSMIP) is available see Section 4.2.5.

The table below shows all of the Standard Side Mount Inner Pieces.

Wheelchair tube Diameter	**Part Code**
7/8"	UFC875SMIP
1"	UFC1000SMIP
Narrow 1"**	N1SMIP

*Adapter sleeves must NOT be used in Side Mount Style Inner Pieces.
**The N1SMIP is a narrower version of the 1" Side Mount Inner Piece (1.5" width) to fit tight seat frame clearance, however it extends further below the frame tube.

4.2.4.1 N1SMIP

The N1SMIP (Narrow 1" Side Mount Inner Piece) is a narrow version of the 1" Frame Clamp Side Mount Inner Piece for situations when less than three inches of wheelchair frame tubing is clear for attachment. The N1SMIP requires only 1 ½" clear length of wheelchair frame tubing.

See photo on the right.

4.2.5 Frame Clamp Inner Piece: Front Side Mount (UFCxxxxFSMIP)

The Front Side-Mount Inner Piece does not require using tools to access the inside of the wheelchair frame for installation; all the bolts are accessed from the 'front' side, facing out from the wheelchair frame.

To install the Front Side Mount Inner Piece the Inner Piece Adapter (IPA) must first be removed from the Front Side Mount Body. The Front Side Mount Body is bolted to the Front Side Mount Cap around the wheelchair frame tubing using three bolts. The IPA is then re-installed to provide an interface with the outer components of the Frame Clamp Assembly. The IPA retains a threaded half of a Swivel Clamp – care must be taken that this piece is not lost when re-installing the IPA.

Wheelchair tube Diameter	**Part Code**
7/8”	875FSMIP
1”	1000FSMIP

*Adapter sleeves may NOT be used in Front Side Mount Style Inner Pieces.

Installation Note:

When installing a Front Side Mount Inner Piece it may be necessary to loosely assemble the entire Frame Clamp Assembly so that the mount can be properly aligned, then disassemble the components to access the Inner Piece bolts for final tightening.

4.2.6 Frame Clamp Inner Piece: Square & Rectangular

Common sizes of square and rectangular tubing found on wheelchair frames are listed on the right, along with the part code for the Standard Frame Clamp Inner Piece that will fit. Sleeves are available for Square and Rectangular Frame Clamp Inner Pieces.

Wheelchair tube dimensions	**Part Code**
1” x 1”	UFC1000SIP
3/4” x 1 1/2”	UFCRTIP
1 3/8” x 2 1/4"	UFCSTIP
Variable 1”-3” x 1”-3”	UFCMFIP (for assessment only)

4.2.6.1 UFC1000SIP (1” Square)

The UFC1000SIP is a square inner piece for mounting to 1” square tubing. It can be used with Square Sleeves to accommodate square tubing that is ¾” or 7/8” square. For more information sleeves see Section 4.3 below.

4.2.6.2 UFCRTIP (3/4” x 1 ½” Rectangular)

The UFCRTIP fits tubing that is ¾” x 1 ½” and can be combined with sleeves to fit smaller rectangular tubes.

4.2.6.3 UFCSTIP (1 3/8" x 2 1/4" Rectangular)

The UFCSTIP was originally designed for Invacare Storm Series of chairs – however the tubing size may have changed. Always check the actual chair before ordering. Sleeves can be used with this Frame Clamp for smaller sized rectangular frames.

4.2.6.4 UFCMFIP (Frame Clamp Inner Piece Multi Fit)

The Frame Clamp Inner Piece Multiple Fit (UFCMFIP) is a four-piece assessment tool that will fit a wide range of square or rectangular tubing from 1” to 3” in either dimension.

The UFCMFIP cannot be used on wedge shaped or round tubing. It is very important that the bolts in the Multiple Fit Inner Piece are screwed in at least 8 turns before they pull tight, however the bolt ends must not touch the bottom of the threaded holes.

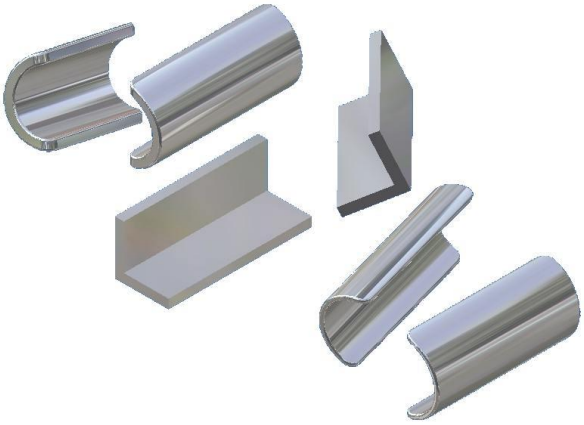
Different lengths of bolts will be needed to span the full size range of the UFCMFIP. The bolts must be tightened evenly. The UFCMFIP is not intended for permanent installation with a mounting assembly and is best used only for assessment purposes.

4.3 Frame Clamp Inner Piece: Adapter Sleeves

Round tubing sizes between any Standard sizes or below 7/8” diameter are fitted using Adapter Sleeves. Rectangular and Square sizes between Standard sizes, and some non-Standard tube shapes are fitted using Adapter Sleeves.

The available Standard sizes of round Adapter Sleeves are:

- 7/8 inch to 3/4 inch
- 1 inch to 3/4 inch
- 1 inch to 7/8 inch
- 1 1/2 inch to 1 1/8 inch
- 11/2 inch to 11/4 inch



Right-angle Adapter Sleeves for use on square and rectangular tubes are available in the following Standard sizes:

- 1 inch to 7/8 inch (SLVSQR)
- 1 inch to 3/4 inch (SLVSQR)
- 1 3/8 x 2 1/4 inch to 1 x 2 inch (SLV2X1)

Adapter Sleeves are available in custom sizes on special order. Contact Daedalus Technologies for more information.

Adapter sleeves may not be used in Side Mount or Front Side Mount Inner Pieces or with certain wheelchair model specific Frame Clamp Inner Pieces.

4.4 Frame Clamp Inner Piece: Bolt-on & Track Adapters

Some wheelchairs do not have tubing onto which a Frame Clamp Inner Piece can be attached. When the wheelchair has bolt holes pre-drilled through the frame a Bolt-on Adapter can be used. The wheelchair frame can be square or round. Standard Bolt-on Adapters are listed below.

Caution: If the wheelchair frame tubing to which the Multi-hole Adapter will be bolted is round, the Round Tube Adapters (RTA) ***must*** *be used.*

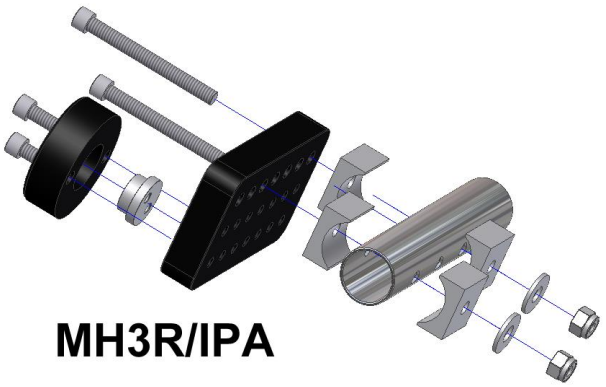
In situations where a Standard Bolt-on Adapter cannot be used a custom Bolt-on Adapter can often be made, contact Daedalus Technologies, Inc., for information.

The table below is a list of Standard Bolt on Adaptors at time of printing.

Standard Bolt-on Adapter	**Part Code**
Multi-hole 3” Bolt-on Adapter with Inner Piece Adapter	MH3/IPA
Multi-hole 3” Round Tube Bolt-on Adapter with Inner Piece Adapter	MH3R/IPA
Centre Multi-hole 3” Adapter with Inner Piece Adapter	CM3/IPA
Multi-hole 2” Bolt-on Adapter with Inner Piece Adapter	MH2/IPA
Multi-hole 2” Round Bolt-on Adapter with Inner Piece Adapter	MH2R/IPA
UniTrack Permobil Inner Piece Adapter	UTPA/IPA

4.4.1 MH3/IPA and MH3R/IPA (Multi-hole 3” Bolt-on Inner Piece Adapter, Square tube & Round tube versions)

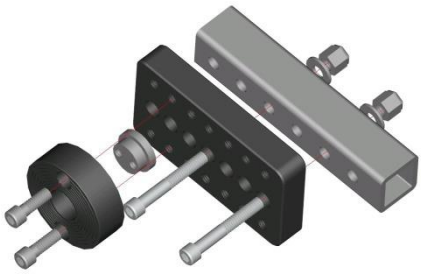
Both the Multi-hole 3” Bolt-on Adapter and the Multi-hole 3” Round Tube Bolt-on Adapter has a row of seven holes for attachment to a variety of different wheelchairs. The seven bolt holes are spaced 1/2" centre-to-centre with a distance of 3” from the first to the last hole. The Inner Piece Adapter (IPA) can be affixed wherever necessary on the MH3 Adapter along the two rows of threaded bolt holes. Note dimensions: 4” Long x 2-1/4 Wide x 5/8” Thick.



MH3R/IPA

4.4.2 CM3/IPA
(Centre Multi-hole 3” Inner Piece Adapter)

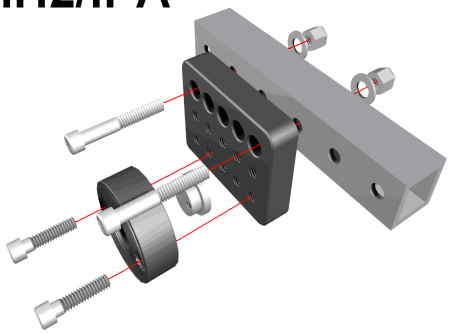
The CM3/IPA is a variation on the standard Multi-hole Inner Piece Adapter. The mounting bolt holes are located in the middle row and the threaded holes above and below on the CM3/IPA.

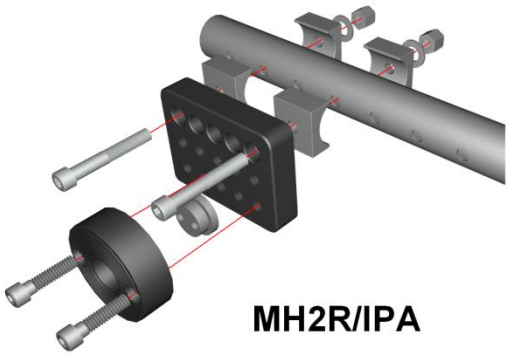


4.4.3 MH2/IPA and MH2R/IPA
(Multi-hole 2” Bolt-on Inner Piece Adapter, Square and Round Tube Versions)

The Multi-hole 2” Bolt-on Adapter and the Multi-hole 2” Round Tube Bolt-on Adapter is designed the same way as the 3” model. The five bolt holes are spaced 1/2" centre-to-centre with a distance of 2” from the first to the last hole. Note dimensions: 3” Long x 2-1/4 Wide x 5/8” Thick.

MH2/IPA





MH2R/IPA

4.4.5 UTPA/IPA
(UniTrack Permobil Inner Piece Adapter)

The UniTrack Permobil Inner Piece Adapter is suitable for Permobil wheelchairs with the UniTrack double track system on the seat frame.

4.4.6 Track Systems

The track system channel slot on several wheelchair manufacturers' seat frame can be fitted with a track nut that allows the MH3/IPA, CM3/IPA or MH2/IPA Inner Piece Adapter to be connected to the track.

The table below is a list of common track nuts at time of printing.

Track Nut (used with)	**Part Code**
Invacare & Quantum/Pride tracks (used with MH3/IPA or MH2/IPA)	TNUT
Motion Concepts Maxx track (used with MH3/IPA)	MCNUT
Amy System Seat track (used with MH3/IPA)	ASNUT
Quickie Sedeo Pro track (used with CM3/IPA)	QSNUT

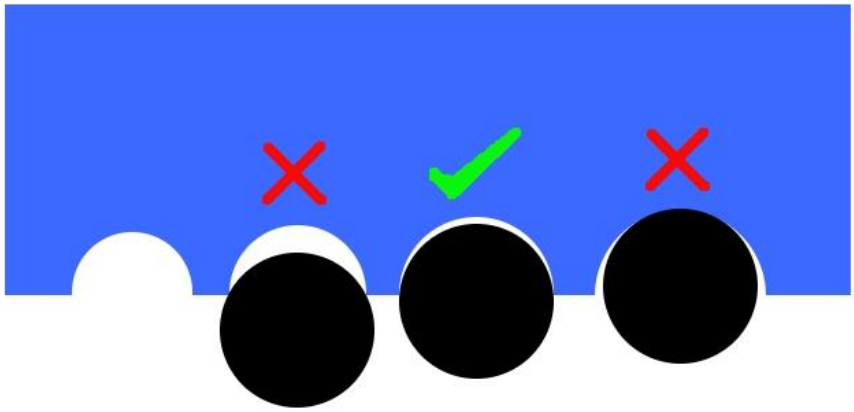
5 Frame Clamp Inner Piece - Measuring and Specifying Size

5.1 Measuring Round Tube Diameter - DAESSY Gauge Method

The DAESSY Gauge is a specially designed tool provided with DAESSY Assessment Kits.

The calibrated semi-circular cut outs along three edges of the DAESSY Gauge can be used to quickly determine the diameter of wheelchair tubing.

It is acceptable to have a slight gap (as much as 1/8”) between the gauge and tube. The image below provides an example of this gap.

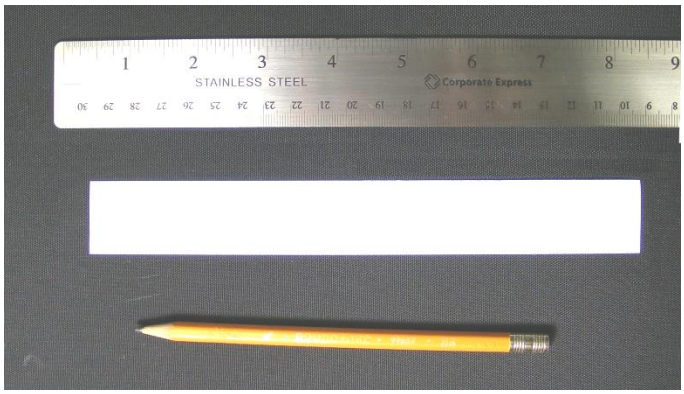


5.2 Measuring Round Tube Diameter – Micrometer Method

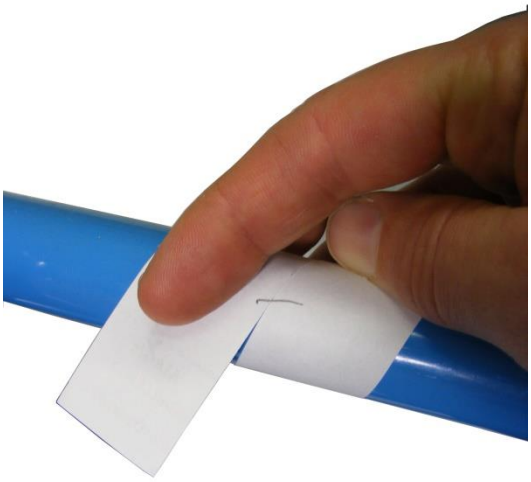
The preferred method for measuring the exact size of round wheelchair frame tubing is to use a micrometer or dial caliper to directly measure the diameter. The image shows a 1” diameter tube.

5.3 Measuring Round Tube Diameter – Paper and Ruler Method

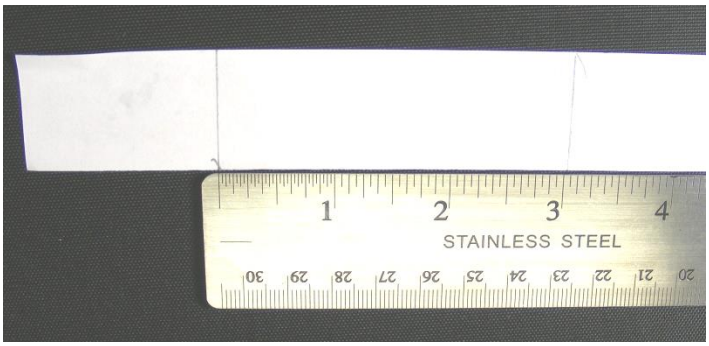
If no DAESSY Gauge or Calipers are available an alternative method is to measure the circumference of the tube. A thin strip of paper, a pencil, and a straight ruler marked in inches are the required tools.



Wrap the strip of paper around the tube so that it overlaps slightly. Draw a line across the edge of the paper to put a mark on both the inner and outer wrap.



Next, unwrap the strip of paper from the tube and using the ruler measure the distance between the two pencil marks – this is the circumference of the round tube.



The measured circumference can be converted to the corresponding diameter measurement using the following table. In this case the tube diameter is 1” since it measures slightly less than 3-3/16”.

Circumference	Diameter	Correct Frame Clamp Size
2.36” – slightly less than 2 3/8”	3/4"	UFC750IP (or UFC1000IP+SLV)
2.75” – exactly 2 3/4"	7/8”	UFC875IP
3.14” – slightly less than 3 3/16”	1”	UFC1000IP
3.53” – slightly more than 3 1/2"	1 1/8”	UFC1125IP (or UFC1500IP+SLV)
3.93” – slightly less than 3 15/16”	1 1/4"	UFC1250IP (or UFC1500IP+SLV)
4.71” – slightly less than 4 3/4"	1 1/2"	UFC1500IP
6.28” – slightly more than 6 1/4"	2”	UFC2000IP

5.4 Measuring Square or Rectangular Tube

The dimensions of square or rectangular tube can be measured with a good ruler; normally the square tube will have square corners and the ruler can be held accurately against the tube. It is unusual to find any sizes other than 3/4 inch, 7/8 inch, 1 inch, or 1 ½ inch.

Some wheelchairs have what appears to be rectangular tube, but are actually an aluminum extrusion. These nearly rectangular shapes are more difficult to measure particularly when the corners or sides are rounded and it is almost essential to use a proper measuring instrument such as dial calipers. The circumference measurement is not useful for rectangular or oval tube. Refer to Section 4.2.6 above find the appropriate Frame Clamp for the measured dimensions.

6 Frame Clamp Inner Piece: Attaching to the Wheelchair

6.1 Selecting an Attachment Location

All DAESSY mounting assemblies can be mounted on either the left or right side of a wheelchair, with the exception of the DAESSY Lockable Rear Folding Mount DLRFM8 the parts comprising each mount may be mounted on either side of the wheelchair. The Lock Mechanism of the DLRFM8 is specific to either the right or left side of the wheelchair from the User's point-of-view, and this side must be specified at the time of order.

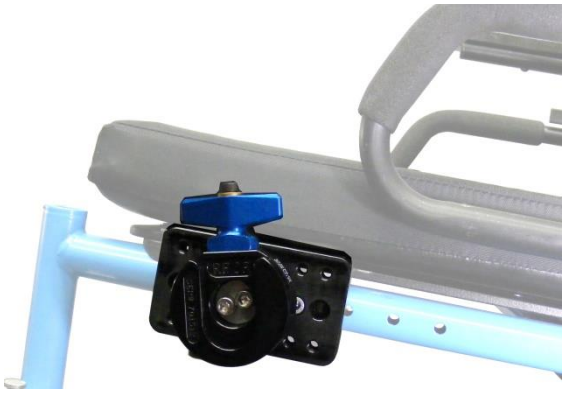
6.2 Attaching the Frame Clamp: Non-Tilting Seat Systems

The Frame Clamp Inner Piece (UFCxxxxIP) requires slightly more than two inches of length and three-quarter inches of space above and below the wheelchair frame tube to which it will be clamped. There should be sufficient room for a hand to reach behind the tube to tighten bolts. An effective way to check for enough room for the Frame Clamp is to grasp the tube, if three fingers can fit around the tube this indicates that there should be enough room (see photo).

The figure below provides an example of different Frame Clamp attachment points on the wheelchair frame. A Frame Clamp Outer Piece is connected directly to the Inner Piece in each case. A Swivel Clamp allows the Outer Piece to be oriented vertically independent of the angle of the Inner Piece.

Caution:
The selected location must be part of the wheelchair frame, NOT a removable armrest or footrest
Often the best location for the Frame Clamp assembly will be near the front caster wheel but preferably not above it. The Vertical Tube for the mount protrudes down through the hole in the Frame Clamp Outer Piece and the range of height adjustment for the mount may be limited if the tube interferes with the caster wheel.
In most situations the Frame Clamp Inner Piece will be located forward or backward from the position for the mounted device and the Vertical Tube supported by the Frame Clamp Outer Piece will have an S-bend.

6.3 Attaching the Frame Clamp: Tilting Seat Systems



On a wheelchair with a tilting seat system, the mounting assembly should be attached to the tilting seat to maintain positioning of the device relative to the user, independent of the configuration of the wheelchair. On tilting seat systems it is strongly recommended that a Removable Frame Clamp Receiver and Outer Piece be used, ROP+RFCR etc.

The figure to the right provides an example of a Frame Clamp attachment to a tilting seat system. The Multi-hole 3” Adapter with Round Tube Adapter (MH3R/IPA) is bolted through holes in the seat frame. A Removable Frame Clamp Receiver is attached to the Inner Piece Adapter.

6.4 Attaching the Frame Clamp: Common Problems and Obstructions

Obstructions directly above the selected location, such as the brake lever or other controls that are closer than 10 inches, may interfere with insertion and removal of the Vertical Tube. To avoid this interference it may be necessary to use an Offset Link (O3L) or a Frame Clamp Spacer (UFCSPCR) between the Inner and Outer Piece of the Frame Clamp to move the Outer Piece farther out or position it sideways from the location of the Inner Piece. For more information on Offset Links and Spacers see Section 7.

Some wheelchairs do not have any tubing freely accessible on the frame or may not have a tube frame. When a seat pan restricts access to the upper edge of the wheelchair frame tubing, it may be possible to use a Side Mount Frame Clamp Inner Piece, which requires no clearance on the topside of the tube and only 1 1/4” clearance on the bottom side.

When the wheelchair does not have a tube frame it may have bolt holes or other possible attachment methods in a suitable location. In some cases an adapter may be substituted for the Inner Piece, see Section 4.4 for options of Bolt-on Adapters.

6.5 Frame Clamp Inner Piece Adapter (IPA)

The Inner Piece Adapter (IPA) is a DAESSY component that can be bolted to any flat surface with two 1/4" holes exactly 1 1/2" apart to provide an attachment point for a mount assembly. The outer face of the Inner Piece Adapter is machined with circular grooves that interface with the outer components of the Frame Clamp Assembly. The IPA is an extremely versatile component that is used in numerous ways to solve difficult mounting applications.

7 Frame Clamp Assembly – Offset Links and Spacers

When attaching a mount to a wheelchair it is not uncommon for encounter challenges; working around obstructions such as armrests, or Frame Clamp attachment points that are not in alignment with the device location. DAESSY offers a variety of solutions to overcome these challenges. Offset Links and Spacers are a common way to overcome mounting challenges. Custom tubes are another way to bypass obstructions, for more information on custom tubes refer to Section 10.6.

7.1 Standard Offset Link – O3L

Figure 7.1 The Standard Offset Link (O3L).

One Offset Link provides three inches of offset between the location of the Frame Clamp Inner Piece and the position of the Frame Clamp Outer Piece. In most cases the Offset Link can be set at any angle, thus the horizontal distance between the Inner Piece and the Outer Piece may be any measure between zero and 3 inches.

The grooved faces of the O3L are marked IP at one end and OP at the other. The IP end attaches to any inner piece and the OP end attaches to any outer piece. When two Offset Links are connected together, the IP end of one is attached to the OP end of the other. Each Offset Link is 1/2" thick and will move the Outer Piece this distance further away from the wheelchair attachment location of the Inner Piece.

One Offset Link is always used on the Locking Rear Folding Adapter of the Lockable Rear Folding Mount DLRFM8 and provides the only method of attachment to the Frame Clamp Inner Piece. An additional Offset Link may be used.

7.2 Single Sided Offset Link – O3LS

The Single Sided Offset Link O3LS has the grooves for the Inner and Outer Pieces both on the same side. When the O3LS is used the Inner Piece is attached facing inwards towards the frame of the wheelchair and the Outer Piece is located directly in line with the Inner Piece and does not protrude as far as a standard Frame Clamp Assembly. Single Sided Offset Links may be used with the Lockable Rear Folding Mount DLRFM8 to position of the LRFA closer to the wheelchair.

7.3 Frame Clamp Spacer – UFCSPCR

The Frame Clamp Spacer (UFCSPCR) is 3/4” thick and a maximum of two Frame Clamp Spacers can be used to move an Outer Piece 1 1/2” farther away from the wheelchair attachment location. One side of the Frame Clamp Spacer has grooves to complement an Inner Piece and the other side to complement an Outer Piece. The Frame Clamp Spacer can be used in combination with the Offset Link (O3L).

Figure 0.1 UFCSPCR. The Frame Clamp Spacer shown above, in use as a spacer to move the components away from the edge of the chair allowing the mount to bypass the armrest.

7.4 Right Angle Frame Clamp Spacer – UFC90

The Right Angle Frame Clamp Spacer UFC90 changes the plane of the Frame Clamp components by 90 degrees. This may be necessary if the only available location for the Frame Clamp Inner Piece is on an upright cross-tube that is perpendicular to the side of the wheelchair.

8 Frame Clamp Assembly – Outer Piece

The Frame Clamp Outer Piece supports the Vertical or Side Tube of a DAESSY Mounting Assembly.
The style of the Frame Clamp Outer Piece is determined by the choice of mounting assembly

8.1 Outer Piece: Frame Clamp Outer Piece (UFCOP) and Index Clamp (IC1)

The Frame Clamp Outer Piece (UFCOP) used with the DAESSY Rigid Mount (DRM1) and DAESSY Folding Mount (DFM2) has circular grooves on one face to complement the grooves on the Frame Clamp Inner Piece. A Swivel Clamp holds the UFCOP to inner components of the Frame Clamp Assembly.

A hole through the UFCOP holds the Vertical Tube. Adjacent to the Vertical Tube hole is an Index Pin that fits in any of the holes in the Index Clamp (IC1) to prevent the Vertical Tube rotating. The three holes in the Index Clamp allow the DAESSY Rigid Mount (DRM1) to be lifted slightly up, rotated away from the user and re-set in a position that allows access to the user.

Figure 8.1.1 The standard Frame Clamp Outer Piece (UFCOP – two views) and Index Clamp (IC1) are used with the DAESSY Rigid Mount and DAESSY Folding Mount. Note the three index holes in the underside of the IC1 which receive the index pin of the UFCOP

8.3 Outer Piece: Removable Frame Clamp Receiver (ROP-RFCR) - locking

Removable Outer Pieces perform two functions: Adaptation for use on tilting seat systems, and easy removal from the wheelchair. Removable Outer Piece versions are available for all DAESSY Mounting Assemblies except the DAESSY Lockable Rear Folding Mount (DLRFM8).

The Removable Outer Piece and Receiver (ROP-RFCR) replace the Frame Clamp Outer Piece (UFCOP) and Index Clamp (IC1) in supporting the Vertical Tube on the DAESSY Rigid Mount ROP (DRM1ROP) and DAESSY Folding Mount ROP (DFM2ROP).

Figure 8.3.1. The Removable Frame Clamp Receiver (RFCR) connects to the Inner Piece of the Frame Clamp

Figure 8.3.2. The Removable Outer Piece supports the Vertical Tube of the DRM1ROP and DFM2ROP

Figure 8.3.3. When the ROP is locked securely in the RFCR the mount may be used on a tilting seat system.

One face of the Removable Frame Clamp Receiver (RFCR) has circular grooves to match with the inner components of the Frame Clamp Assembly. A hole through the RFCR holds the unthreaded end of a Swivel Clamp. A blue Locking Knob is used to secure the Removable Outer Piece (ROP). The Removable Frame Clamp Receiver may be positioned on any angle; it is not necessary for the Locking Knob to be on the top side.

The Removable Outer Piece (ROP) slides on to the Vertical Tube and provides height adjustment. A slotted face fits into the Removable Frame Clamp Receiver. When installed and locked into position the ROP-RFCR provides a secure attachment for use on tilting seat systems.

The ROP Versions of the DAESSY Rigid Mount and DAESSY Folding Mount cannot be lifted slightly to swing away. The mount must be removed to gain access to the user.

8.4 Outer Piece: Removable Frame Clamp for DPM9 Positioner Mount (AHOP & RFCR)

The Adjustable Height Outer Piece (AHOP) is specific to the DAESSY Positioner Mount (DPM9) which is discussed in more detail in Section 2.5 and in the Appendix Section **Error! Reference source not found.**. The AHOP is not ompatible with any other mount as it clamps to 1” O.D. tubing ONLY. The AHOP combines with the RFCR to make the DPM9 removable. The AHOP and RFCR work in the same fashion as the ROP-RFCR as described above. Loosening the bolt that clamps the AHOP to the 1” tube will allow the tube to slide vertically to adjust the set height of the mount.

8.5 Outer Piece: Lockable Rear Folding Adapter (LRFA+RTHTM+O3L)

The Side Tube of the DAESSY Lockable Rear Folding Mount is held in a Tube Mount (RTHTM) bolted to the outer side of the Locking Rear Folding Adapter (LRFA). The inner side of the LRFA is machined with circular grooves to mate with an Offset Link (O3L), or with other Frame Clamp components. Two threaded bolt holes in the center of the grooved face receive the bolts of the Swivel Clamp connecting the LRFA to the inner components of the Frame Clamp Assembly; usually an Offset Link is installed here. A blue Lock Mechanism on the upper end of the LRFA locks the Side Tube in place so that it cannot rotate at the LRFA. The Side Tube is permanently attached to the wheelchair.

Figure 0.1. The Lockable Rear Folding Adapter is shown in the Unlocked and Locked Positions. The tube hole is outlined in red.

9 The Frame Clamp Assembly – Attaching Inner and Outer Pieces

9.1 The Swivel Clamp

The Swivel Clamp is the component for connecting the Inner Piece with the Outer Piece. The Swivel Clamp is held in place by two bolts which must be fastened securely.

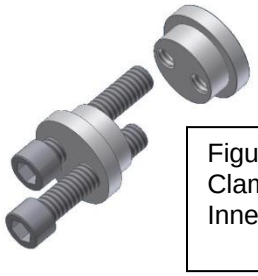


Figure 9.1.a. The Swivel Clamp connects the Inner and Outer Piece.

9.2 Circular Grooved Faces

The adjoining faces of all the parts for a Frame Clamp Assembly have circular grooves to give extra friction against movement when assembled. The grooves on an Inner Piece "mate" with the grooves on an Outer Piece. The grooved surfaces on Outer Pieces do NOT mate with other Outer Pieces, nor do Inner Pieces mate with Inner Pieces. Offset Links and Frame Clamp Spacers have the letters IP stamped into the metal beside the grooves that attach to the Inner Piece and OP stamped into the metal beside the grooves that attach to the Outer Piece.

Caution: All the grooved faces must be correctly matched and engaged before the Swivel Clamp bolts are tightened. When the grooved faces are correctly matched it will be possible to turn the mated components in a circle, but they will not slide across each other at the grooved face.

In straight-forward applications of the DAESSY Rigid Mount and DAESSY Folding Mount it is possible to connect the Frame Clamp Outer Piece (UFCOP) directly to the Frame Clamp Inner Piece (UFCxxxxIP) using a Swivel Clamp.

Figure 9.a. Basic Frame Clamp Assembly Components.

In some situations the Outer Piece will be offset from the Frame Clamp Inner Piece location. This offset may be necessary to achieve sufficient clearance for the folding movements of the mount assembly, to avoid interference with other wheelchair fittings, and to position the Outer Piece in the best location for access to the mounted device. Offset of the Outer Piece is achieved primarily with Offset Links (O3L) and/or Frame Clamp Spacers (UFCSPCR). All DAESSY Frame Clamp components are designed for firm attachment with a system of circular grooved faces and Swivel Clamps.

10 Attaching and Positioning: Tube Lengths and Shapes

10.1 Position Adjustment with S-Bend Tube

The S-Bend Tube is a length of stainless steel tube with closely placed bends that produce an offset between the ends of the tube. The S-Bend Tube is used with the Rigid Mount, the Folding Mount and the Swing Aside Mount to set the vertical height and front-to back horizontal position of the Horizontal Tube and attached device or laptop. It can also be used to set the sideways position of the connection between the Side Tube and Horizontal Tube when there are obstructions on the wheelchair that the mount has to pass around (for example a lap tray).

10.2 Height Adjustment with S-Bend Tube

The length of the S-Bend Tube and the position of the Index Clamp (IC1) or Removable Outer Piece (ROP) determine the height of the Horizontal Tube on the mount with some height adjustment available by changing the vertical position of the IC1 or ROP along the lower section of the tube. The range of adjustment is limited by the amount of tube that can protrude down through the Frame Clamp Outer Piece or Frame Clamp Receiver without interference with the front caster wheel, floor or other part of the wheelchair.

10.3 Front-Back Adjustment with S-Bend Tube

The S-Bend Tube may be installed with the offset forward or backward to position the Horizontal Tube and attached device ahead, or behind the point of the Frame Clamp Assembly.

10.4 Left-Right Adjustment with S-Bend Tube

The offset bend on the S-Bend Tube can be installed with the upper end closer to or further away from the side of the wheelchair than the lower end. This can allow a mount assembly to come around the edge of a lap tray or similar obstruction.

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10.5 Position matching on two wheelchairs

When a single mount assembly is used on two different wheelchairs it is often necessary to fit the assembly on one wheelchair using the S-Bend Tube dimensions and then correct any errors in position on the other wheelchair by adjusting the position of the Frame Clamp Outer Piece or Frame Clamp Receiver using one or more Offset Links.

10.6 Standard and Custom S-Bend Tubes

The S-Bend Tube is specified by three (3) measurements **L**, **O**, **S**.

L = Overall length

The shortest possible S-Bend Tube overall length **L** is 14”. Maximum overall length 36” with all offset sizes, or 40” with 3” or 6” offset only.

O = Offset Distance

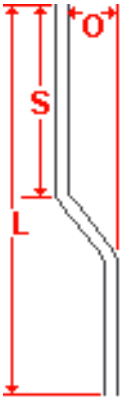
The minimum S-Bend Tube offset **O** is 3”. Alternate offset sizes available are 6”, 9” or 12”

S = Shortest straight length before a bend starts

The shortest straight length on an S-Bend Tube **S** is 4”.

When fitting measurements are provided or when the S-Bend Tube dimensions are specified on an order the appropriate custom S-Bend Tube is supplied. The default S-Bend Tube included with a mount is 16” length with 3” offset.

The accuracy of the lengths and bends on custom S-Bend Tubes is plus or minus 3/4 inches.



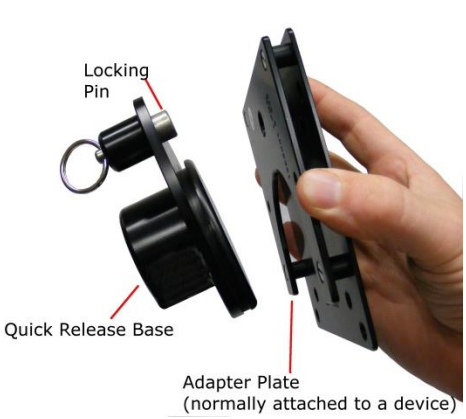
Caution: The ends of the stainless steel tube provided by Daedalus Technologies, Inc. are fully machined and chamfered to minimize sharp edges. Daedalus Technologies, Inc. strongly disapproves of the tube being cut to length by purchasers. Cutting the stainless steel tube by any method produces very sharp and hazardous edges.

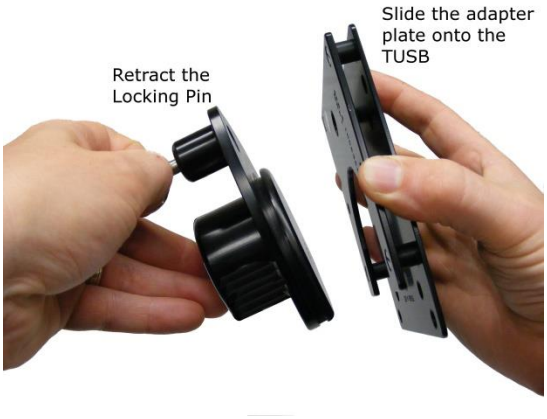
11 Attachment of Devices to DAESSY Mounts – The Quick Release System

The most common method of attaching communication devices or laptop computers on to DAESSY Mounting Assemblies is with the DAESSY Quick Release System. The DAESSY Quick Release System consists of a Quick Release Base mounted to the Horizontal Tube of a mount, and an Adapter, Plate or Device Holder attached to the device or computer.

A semi-circular cut out on the bottom face of the Adapter Plate or Holder mates with a machined surface on the Quick Release Base, and is held in place with an adjacent spring-loaded Locking Pin. The Locking Pin has a ring that allows it to be retracted for removing the device.

Commonly a mounting application will use the Total Quick Release Base (TUSB); however other Quick Release Bases are available to suit non-standard applications. In the Quick Release Bases section below there is information on the Holders and Adapters available from DAESSY. If none of the Quick Release Bases are suitable for your application, please contact DAESSY to find a suitable solution.





Note:
Some DAESSY Mounts (when purchased through communication device manufacturers) may be supplied with a different device connection system that is not manufactured by DAESSY.

11.1 DAESSY Quick Release Bases

There are a number of quick release bases available, making it possible to find a suitable solution to almost any mounting requirement. All Quick Release Bases have a spring loaded Lock Pin for secure device placement. All quick release bases are compatible with all DAESSY Adapter plates.

TUSB	Total Quick Release Base (default quick release included with most mounts)
AQRL Series	Articulating Quick Release Base (Standard Face) Series
AQR Series	Articulating Quick Release Base (Small Face) Series
MUSB	Mini Quick Release Base
USB	Flat Quick Release Base (excludes tube mount)
USB2IPCAP	Quick Release Base to fit 1” diameter tube
USBA+TMAT	Sideways Tilting Quick Release Base
USBF	Folding Quick Release Base
VUSB	VESA Quick Release Base

11.1.1 TUSB – Total Quick Release Base

The standard Quick Release Base supplied with a mounting assembly is the Total Quick Release Base (TUSB). Other styles of Quick Release Base are available (with an adjustment in price).

TUSB features:

- Integrated tube mount for attachment to the Horizontal Tube of a mount assembly, or other mount with 7/8” OD tube.
- Can be rotated around the Horizontal Tube to tilt the keyboard or key surface of the mounted device.
- Uses a Pinch Clamp to fasten onto the tube.

11.1.2 AQRL Series – Articulating Quick Release Base (Standard Face) Series

The Articulating Quick Release Base (Standard Face) (AQRL) has ball and rotate joints allowing multiple angle and tilt adjustments. The standard face size is well suited to full-size and larger communication devices or computers. There are options available with the AQRL Quick Release Base Series including:

- Optional quick handle for adjustment of ball joint (RH)
- Optional quick handle for adjustment of position on the tube and removal from tube (2H)

AQRL Models are as follows:

Part Code	Description / Features
AQRL87	Standard
AQRL87-RH	Single Handle for Adjusting Ball / Rotate Joints
AQRL87-2H	Dual Handles for Adjusting Ball / Rotate Joints and Tube Clamp

11.1.3 AQR Series – Articulating Quick Release Base (Mini Face) Series

The Articulating Quick Release Base (Mini Face) (AQR) has all of the same features of the AQRL with a smaller Face on the Quick Release portion. The AQR has ball and rotate joints allowing multiple angle and tilt adjustments. The smaller face is well suited to smaller lighter weight communication devices or computers. There are options available with the AQR Quick Release Base Series including:

- Optional quick handle for adjustment of ball joint (RH)
- Optional quick handle for adjustment of position on the tube and removal from tube (2H)

AQR Models are as follows:

Part Code	Description / Features
AQR87	Standard
AQR87-RH	Single Handle for Adjusting Ball / Rotate Joints
AQR87-2H	Dual Handles for Adjusting Ball / Rotate Joints and Tube Clamp

11.1.4 Mini Quick Release Base (MUSB)

The Mini Quick Release Base has the same features as the standard TUSB however with a smaller face. The smaller face is well suited to smaller lighter weight communication devices or computers. The MUSB features:

- Integrated tube mount for attachment to mount assembly
- Can be rotated around the Horizontal Tube to tilt the keyboard or key surface of the mounted device
- Allen Key required for adjustment

11.1.5 Flat Quick Release Base (USB)

The Flat Quick Release Base (USB) is a flat plate machined with a semi-circular groove to receive a DAESSY Adapter or Holder. Two 1/4" diameter holes are drilled through on an exact 1 1/2" spacing and can be fastened to any flat surface independently (for example a lap tray). When used on a flat surface a hole must be cut for the Locking Pin socket and ring. The ring must be retracted from underneath the surface. The USB may be attached to other components of the mounting system to allow it to be mounted at the top of a Vertical Tube off to one side of the wheelchair, on the cross tube of a walker or to some scooter tiller bars.

11.1.6 Quick Release Base to fit 1" tube (USB2IPCAP)

The Quick Release Base to fit 1" tube is the combination of the USB quick release and two IP Caps. It allows a Quick Release Base to be attached on a "captive" 1" diameter tube, a tube which does not have a free end to slide the Quick Release onto. USB+2IPCaps

Features:

- With the addition of sleeves this quick release can be used with any tube diameter less than 1" diameter
- Attaches to Captive Tubing
- Allen Key required for adjustment

11.1.7 Sideways Tilting Quick Release Base (USBA+TMAT)

The Sideways Tilting Quick Release Base (USBA+TMAT) is a version of the Quick Release Base which is attached to a Tube Mount by a collar that allows it to be rotated sideways. The USBA+TMAT allows positioning for a user who requires the device to be tilted to one side. USBA+TMAT features:

- Can be rotated around the Horizontal Tube by adjusting the Pinch Clamp
- Sideways tilt can be adjusted
- Allen Key required for adjustment

11.1.8 Folding Quick Release Base (USBF)

The Folding Quick Release Base (USBF) provides real-time adjustment to rotate the Quick Release Base and attached device around the Horizontal Tube. USBF Features:

- 6 stop positions in the range of rotation
- Retractable Lock Pin secures the USBF in each position
- Angle adjustment can help reduce glare in different lighting environments
- Angle adjustment can allow device to be placed in a lower profile configuration when the mount is folded

11.1.9 VESA Quick Release Base (VUSB)

The VESA Quick Release Base (VUSB) can be used to place a Quick Release Base onto a VESA Compliant Mounting Arm with holes at 75mm spacing. This allows users to attach a device to a VESA compliant monitor arm using the DAESSY Quick Release System.

12 Attachment of Devices to DAESSY Mounts: Plates, Adapters and Holders

A mounting plate, adapter or holder holds a communication device or computer to connect with a DAESSY mounting assembly. The style of holder or adapter required must be specified separately from the style of mount, and is a separately sold item.

Mounting plates and adapters are attached to the device with screws in pre-existing holes. Many devices and laptop computers do not have any location where an adapter can be screwed on, and are instead mounted with a specially designed holder that secures the device with stainless steel clips. All plates, adapters and holders have in common a semi-circular cut out to mate with the Quick Release Base, and a small hole to hold the Quick Release Locking Pin.

12.1 Standard Device Holders and Adapters

Below is a Table that includes the common DAESSY Adapters and Holders at time of printing.
If a device is not listed, contact DAESSY for more information.

Device	**Code**	**Type**
AMDi devices	**A17P**	Adapter
Dynavox Maestro	**DMAE**	Adapter
Dynavox T-series Device Adapter (T10-T15)	**DYNT1**	Adapter
Evaluation/Assessment Plate (temporarily hold a device)	**EVALPLATE**	Holder
FRS device 4-bolt adapter	**FR4A**	Adapter
Tobii i-12, i-15 device adapter (not for i13, i16)	**IDTAD**	Adapter
Laptop Computer (custom made to order)	**LAPTPH (specify measurements)**	Holder
General Mounting Plate 11-3/4” x 7-7/8”	**MDMT**	Plate
PRC Device (any)	**PRC6**	Adapter
Quick Release Plate (4.8” x 4.3”)	**QRP1**	Plate
Saltillo Devices Adapter	**SAL5**	Adapter
SL40/SL50 Device Adapter	**SL40**	Adapter
Tobii S-32 Adapter	**TBS32**	Adapter
Tobii i-110 device adapter	**TDI110**	Adapter
Vesa 75 compatible device (twist orientation feature)	**V75TA**	Adapter
Vesa 75/100 compatiable device	**VMAD**	Adapter
Standard Holder for iPad (must identify size, model and generation)	**SHSU____**	Holder
Twist holder for iPad (must identify size, model and generation)	**THSU____**	Holder
Microsoft Surface Pro 4,5,6,7 (twist orientation feature)	**RCT-MSP4U**	Holder

12.2 Attachment of Devices to DAESSY Mounts: Custom Laptop Holders

Laptop computers are available in a large range of makes, models and configurations. It is not possible to have specific holders for each one, however in many cases a custom holder can be made using measurements of the specific laptop to be mounted. The purchaser must provide these measurements. A worksheet is available to help with this measurement step, see our website link below.

The Laptop Holder uses a cut-to-size polycarbonate plastic base plate attached to a Quick Release Plate (QRP1). Custom-bent stainless steel clips at suitable locations around the case of the laptop, and adhesive Velcro secure the computer. For this holder the purchaser must provide accurate sizes for the length and width of the laptop and for the height of the case at the potential clip locations.

The stainless steel clips are 1/2" to 1” wide and bent to overlap the edge of the computer case by 1/4" to 1/2", and fit firmly over the combined thickness of the base plate and computer case. Each clip is fastened to inserts in the plastic base with two small screws. The clips can be readily removed to take the laptop off the base plate (screwdriver required).

The laptop will be held most securely when there are four clips evenly spaced, this means there should be a clip near each corner of the case or a clip in the middle of each side. When clips can be placed on the front but not on the back the side clips should be placed close to the back. The opposite applies when clips are at the back but not the front.

Measurement worksheets and up to date information available at
http://www.daessy.com/dms/qrs/laptop.html

13 Maintenance and Adjustment of DAESSY Mounts

13.1 Maintenance - Bolt Tightness

Maintenance of DAESSY Mount Assemblies and Components mainly involves checking the tightness of bolts, particularly those of the Swivel Clamp securing the Frame Clamp Assembly together and those securing the Inner Piece cap to body, and the IPA or track nut where applicable. Under rough conditions of use or through vibration bolts may become loose and need re-tightening. Periodically check all bolts of the mount and tighten as soon as any loosening is apparent.

Swivel Clamp notes: The Swivel Clamp secures an inner piece and outer receiver of the Frame Clamp Assembly and allows for slip when a mount is overloaded to minimize damage to mount components by an overload. It is important to regularly check and re-tighten as necessary. Alternately tighten the two bolts changing between each until both are secure; this will draw the clamp together evenly and securely.
*Swivel Clamps are available for purchase individually to replace worn parts.

13.2 Maintenance - Lubrication

DAESSY Mounting Assemblies are supplied with Vaseline™ used as a lubricant. Occasional re-lubrication may be necessary for the pull pins of the quick release base and this may be done with Vaseline™ or with the 'dry' lubricants that may be purchased for use with locks. Lubrication at the hole for the stainless steel tube on the Frame Clamp Outer Piece (UFCOP) is optional. These are not lubricated when supplied but after some use the tube may slide easier if the hole is lubricated with a 'dry' lock lubricant.

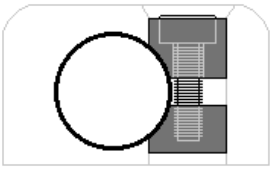
13.3 Maintenance - Cleaning

Surfaces of the DAESSY Mount Assemblies and Components may be cleaned by wiping down with a solution of mild dish detergent or disinfectant wipes. Components with smaller gaps and openings such as the quick release bases and the RFCR receiver should be cleaned periodically with a cotton swab (Q-Tip™) to clear any dirt or debris that may affect the fit of associated components.

13.4 Adjustments

The DAESSY Mounting System is designed to allow very good positioning for a mounted device but is not intended for frequent adjustment and all the locking and clamping systems use bolts and Allen keys. Some adjustment may occasionally be required when the mount has been accidentally pushed out of position and movement has taken place at the connections between parts and the tube that are held by Pinch Clamps or when reconfiguration is needed.

The Pinch Clamp does not normally damage the stainless steel tube unless severely over-tightened and will slip on the tube when overloaded. However, loosening the Pinch Clamp for re-adjustment is sometimes difficult as they can jam when strongly tightened. The pieces of the Pinch Clamp can turn in the hole such that the radiused cutouts are not aligned with the hole wall and the path for the tube through the fitting is obstructed. The Pinch Clamp is easily re-aligned by very carefully inserting a finger into the tube hole before the tube is installed; the edges where the holes intersect are sometimes sharp so caution is required.



13.4.1 Adjustments - Tightening Pinch Clamps:

Do not attempt to clamp the tube so tight that it will not move – this is simply not possible. Over-tightening the Pinch Clamps will damage and deform the tube, possibly jamming it in the tube hole.

13.4.2 Adjustments - Removing Jammed Pinch Clamps:

Pinch Clamps may jam when they have been strongly tightened. This may happen at the Index Clamp (IC1), Removable Outer Piece (ROP) and at the Folding Mechanism tube mounts (RTH2RTHTM).

- For removal first slacken the bolt about 2-3 turns.
- Tap on the bolt head until the Pinch Clamp is loose or shows some movement.
- Rotate the stainless steel tube and wiggle the component. (WD40™ may be used for very tight instances)
- Completely remove Pinch Clamp and tube, clean openings and lubricate as needed (lubrication notes above).

14 DAESSY Mounting System Tube Connectors & Tube Joints

DAESSY Mounting System includes a wide range of clamps and connectors to join 7/8" tubes at a variety of angles. This collection gives enormous versatility for building complex structures. .

14.1 Tube Connectors

Tube Connectors hold two 7/8” stainless steel tubes at a fixed angle. The sides of the connector are held together with two bolts. Usually the entire connector will have to be disassembled to adjust the position of the tubes, as the components are machined to provide a tight secure fit.

14.1.1 90° Tube Connector (TC90)

TC90 holds the ends of two 7/8” tubes at a 90-degree angle.

14.1.2 90° Tube Connector Open Ended (TC90A)

Similar to the TC90, the TC90A holds two 7/8” tubes at a 90-degree angle. One tube hole extends entirely through the connector forming a ‘T’-shaped connection

14.1.3 180° Tube Connector (TC180A)

TC180A holds two tubes in parallel. Both tube holes extend entirely through the connector.

14.1.4 135° Tube Connector(TC135A)

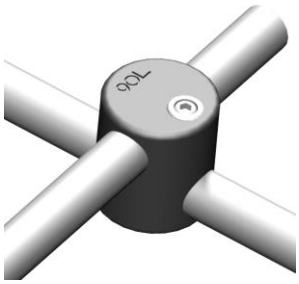
TC135A holds the end of one 7/8” tube at a 135-degree angle to a second tube that may extend through the connector. The narrow angle between the two tubes is 45 degrees.

14.2 Tube Joints

Tube Joints hold the 7/8” stainless steel tube at a fixed angle however each tube is secured with a Pinch Clamp, which allows independent adjustment of the tube positions.

14.2.1 90° Tube Joint (90L)

90L Tube Joint holds two 7/8” tubes at a 90-degree angle. The tubes extend through the 90L and are held in position with Pinch Clamps. The 90L cannot be installed on a tube with no accessible end.



14.2.2 135° Tube Joint (135L)

135L Tube Joint holds two 7/8” tubes at a lesser angle of 45-degrees and a greater angle of 135-degrees. The tubes extend through the 135L and are held in place with Pinch Clamps. The 135L cannot be installed on a tube with no accessible end.

14.2.3 180° Tube Joint (180L)

180L Tube Joint holds two 7/8” tubes parallel to each other. The tubes extend through the 180L and are held in place with Pinch Clamps. The 180L cannot be installed on a tube with no accessible end.

15 Appendix A – Assembly Instructions – Original Series Mounts

15.1 Rigid Mount (DRM1 and DRM1ROP)

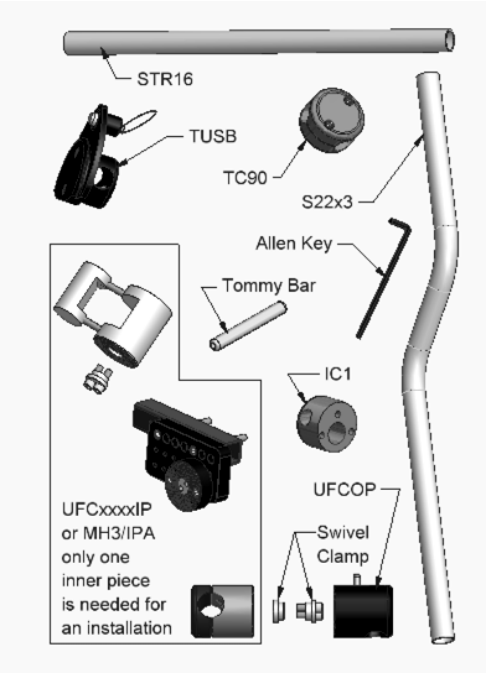
15.1.1 Identify Mount Type

The following instructions include details on both the DRM1 and the DRM1ROP Mounts. Identify the mount-type and follow the appropriate instructions. **DRM1** The DRM1 is the DAESSY Rigid mount; this is the standard version of the mount. **DRM1ROP** The DRM1ROP is the DAESSY Rigid Mount which has a locking removable outer piece (ROP) for chairs with a tilting mechanism.

15.1.2 Identify the Parts

Use the parts list and diagram below to identify each part and ensure all parts are included.

Part Code	Part Name	DRM1	DRM1ROP
STR16	Straight Tube – 16”	☐	☐
S22x3	Vertical S-bend Tube (22” long with 3” offset)	☐	☐
TC90	Tube Connector - 90°	☐	☐
TUSB	Total Quick Release Base	☐	☐
UFCxxxxIP or MH3/IPA	**Frame Clamp** (parts will vary based on wheelchair, look for anything with an IP or IPA engraved on it)	☐	☐
UFCOP	Frame Clamp Outer Piece w/ Swivel Clamp	☐	
IC1	Index Clamp	☐	
RFCR	Removable Frame Clamp Receiver		☐
ROP	Removable Outer Piece		☐
DMSTools	Assembly Tools	☐	☐
	Instruction Papers	☐	☐



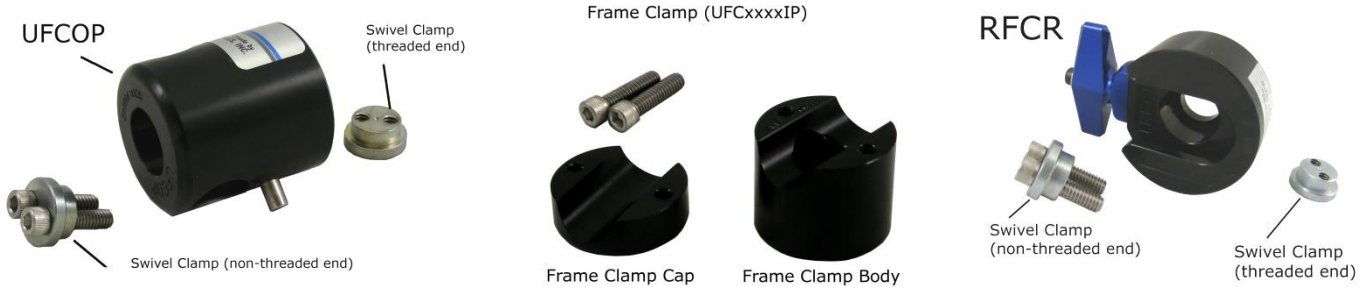
15.1.3 DRM1 & DRM1ROP Frame Clamp Assembly Parts

This step requires:

- Frame Clamp (UFCxxxxIP)
- UFCOP (**DRM1** Version) or RFCR (**DRM1ROP**)

The Frame Clamp varies depending on the type of wheelchair, it may not be exactly as shown, “Frame Clamp” most commonly refers to UFCxxxxIP, but there are others all of which will include IP or IPA in their part code. These instructions are specific to mounts with a UFCxxxxIP; other types of Frame Clamps will include separate assembly instructions and may require attachment to the wheelchair before the UFCOP or RFCR can be connected.

Identify the Frame Clamp Inner Piece and the UFCOP (DRM1), or RFCR (DRM1ROP).



- **DRM1** - Remove the Swivel Clamp from the UFCOP (above left).
- Remove the cap from the Frame Clamp (above middle).
- **DRM1ROP** - Remove the Swivel Clamp from the RFCR (above right).

15.1.4 DRM1 & DRM1ROP Assemble “Frame Clamp Assembly”

DRM1 - Align the grooves on the UFCOP with the grooves on the Frame Clamp (photo below left). Put the non-threaded half of the swivel clamp into the UFCOP (with the bolts pushed through). Put the threaded half into the Frame Clamp body and begin tightening the bolts, alternating between the two. Do not fully tighten the bolts. The UFCOP and the UFCxxxxIP should be able to swivel freely. See photos below.

DRM1ROP– Align the grooves on the RFCR with the grooves on the Frame Clamp (photo below left). Put the non-threaded half of the swivel clamp into the RFCR (with the bolts pushed through). Put the threaded half into the Frame Clamp body and begin tightening the bolts, alternating between the two. Do not fully tighten the bolts. The RFCR and the UFCxxxxIP should be able to swivel freely. See photos below.

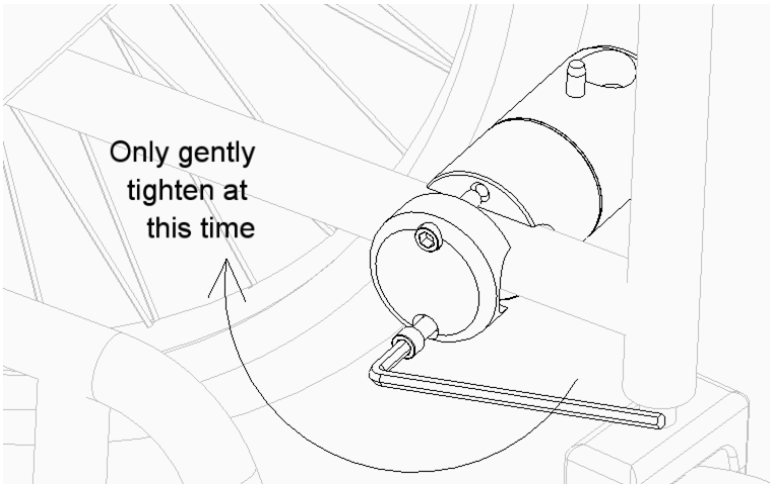
15.1.5 DRM1 & DRM1ROP Attach Frame Clamp Assembly to Wheelchair Frame

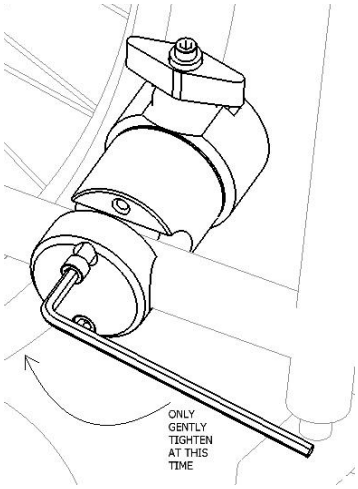
This step requires:

- Wheelchair
- Frame Clamp Assembly (either DRM1 or DRM1ROP)

Find the location on the wheelchair to attach the Frame Clamp Assembly (this should have been identified prior to ordering); most often the location will be either near the front caster wheel or on the seat frame. Make sure the location is part of the wheelchair frame, not a movable attachment like the footrest.

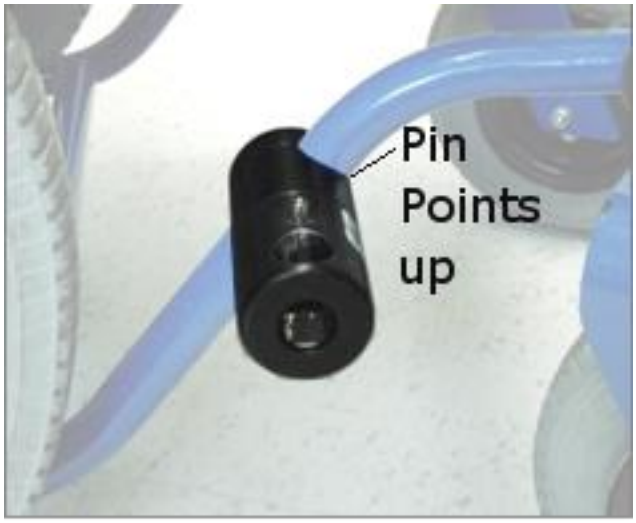
At the selected location; fit the Frame Clamp Assembly around the tube. Replace the bolts and gently tighten them, do NOT fully tighten them at this time. The Frame Clamp "cap" should face towards the **inside** of the wheelchair.





15.1.6 DRM1 & DRM1ROP Orient Frame Clamp Assembly

DRM1 - Orient the Assembly so that the Pin on the UFCOP is pointing upwards (as shown in the photos below). All bolts should still be loose enough to allow adjustment.



DRM1ROP– The most common option is to assemble this mount with the Blue Handle at the top (pointing upwards). The Frame Clamp "Cap" must be on the inside and the RFCR on the outside of the chair (as shown in the photos to right). All bolts should still be loose enough to allow adjustment.

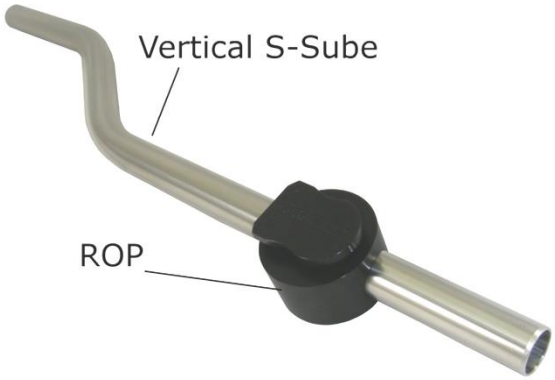
15.1.7 Align the Frame Clamp Assembly (DRM1ROP only)

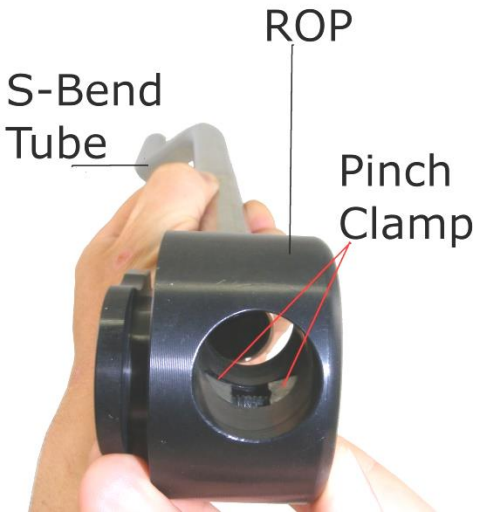
(Skip to next step for DRM1)

This step requires:

- Wheelchair
- Frame Clamp Assembly (loosely attached to chair)
- Vertical S-bend Tube
- ROP

Attach the ROP to the Vertical S-bend Tube. Using one finger, align the Pinch Clamp with the inside of the tube-hole in the ROP. Slide the ROP onto the tube to the desired position, and then tighten the Pinch Clamp. The photo below is the typical orientation.





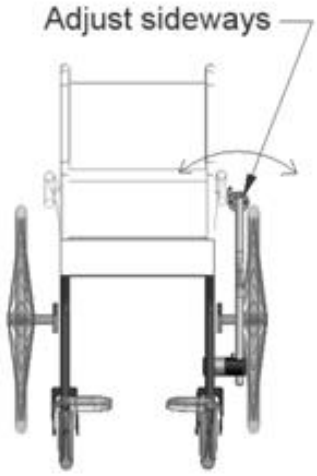
15.1.8 DRM1 & DRM1ROP Align the Frame Clamp Assembly

This step requires:

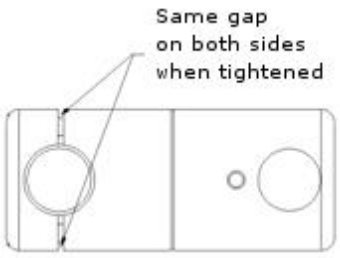
- Wheelchair
- Frame Clamp Assembly (loosely attached to chair)
- Vertical S-bend Tube

Slide the Vertical S-Bend Tube into the Frame Clamp Assembly. Use the tube as a lever in the outer piece to align the Frame Clamp Assembly.

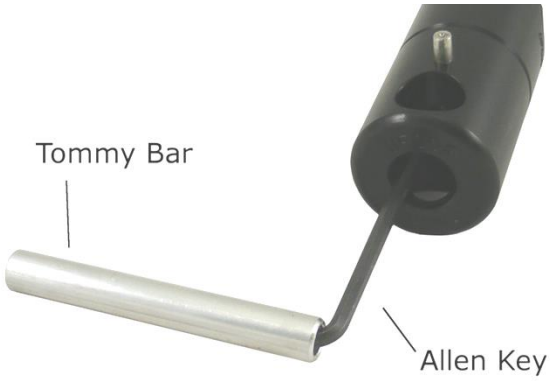
Sideways alignment: Hold the Vertical S-Bend Tube parallel to the wheelchair and tighten the Frame Clamp "Cap" bolts alternating between each bolt.



When completely tight there should be a gap of 1/32" to 1/64" between the Cap & Body of the Frame Clamp on round tube. A larger gap indicates the Frame Clamp may be too small for the tube. If there is no gap and the inner piece does not clamp the wheelchair tube firmly; up to 4 layers of aluminum foil may be wrapped around the wheelchair tube, however if more layers are needed it indicates the Frame Clamp is too large. Contact Daedalus Technologies for information on adapter sleeves.



Forward/Backward Alignment (DRM1): Align the Vertical S-Bend Tube then carefully remove the tube to access the Swivel Clamp bolts taking care not to move the UFCOP. Use the Tommy bar to get leverage while tightening the bolts. Alternate between the two bolts several times, tightening each one until the two bolts are as tight as possible.



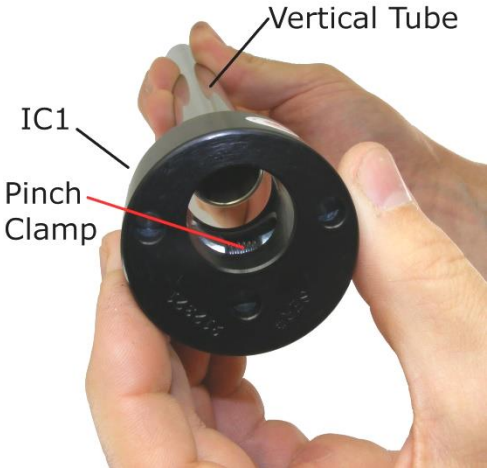
Forward/Backward Alignment (DRM1ROP): Align the Vertical S-Bend Tube then carefully remove the tube to access the Swivel Clamp bolts taking care not to move the RFCR. Alternate between the two bolts several times, tightening each one until the two bolts are as tight as possible.

15.1.9 Attach the IC1 to Vertical S-Bend Tube (DRM1)

This step requires:

- IC1 (with Pinch Clamp)
- Vertical S-Bend Tube

Using one finger, align the Pinch Clamp with the inside of the tube hole in the IC1. Slide the IC1 onto the tube to the desired position, and then tighten the Pinch Clamp. There are 3 holes on the bottom of the IC1 which should be oriented downward. Either end of the Vertical S-Bend Tube can be used as the lower end. The photo below is the typical orientation.



15.1.10 Install the Vertical S-Bend Tube (DRM1)

This step requires:

- Vertical S-Bend Tube (with IC1 attached)
- Wheelchair (with Frame Clamp Assembly Attached)

Slide the Vertical S-Bend Tube into the Frame Clamp assembly on the wheelchair. Note: the Pin on the Frame Clamp assembly will slide into one of 3 holes on the underside of the IC1.

15.1.11 Determine In-Use Position (DRM1)

This step requires 2 components:

- Vertical S-Bend Tube (with IC1 attached)
- Wheelchair (with Frame Clamp Assembly Attached)

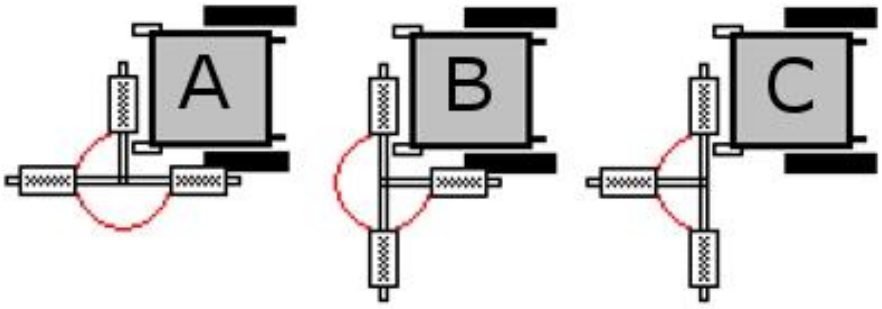
The In-use position of the Vertical S-Bend Tube needs to be determined before continuing. Orient the Vertical S-Bend Tube into the ideal position for the user. Ensure that the S-bend will avoid obstructions and the top end of the tube is the correct distance front-to-back. Tighten the Pinch Clamp enough to hold the Vertical S-Bend Tube firmly in place. This will now be referred to as the "**In-Use Position**".

15.1.12 Determine Swing-Away Positions (DRM1)

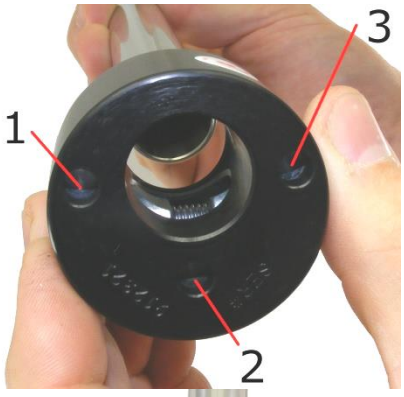
This step requires:

- Vertical S-Bend Tube (with IC1 attached)
- Wheelchair (with Frame Clamp Assembly Attached)

Choose how the Swing arm will rotate.
There are 3 possible configurations in the figure (A, B or C).

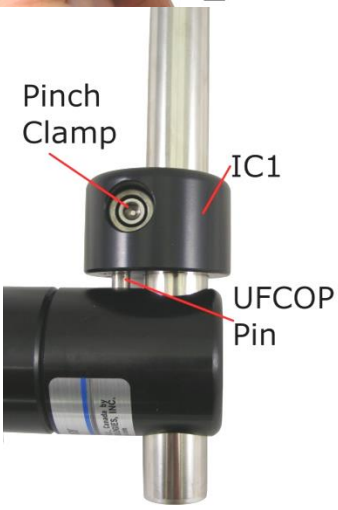


Loosen the Pinch Clamp on the IC1 enough to allow adjustment.



Use the table to determine the Pin Orientation for the In-Use position (1, 2, or 3). The number corresponds to the Hole in the bottom of the IC1.

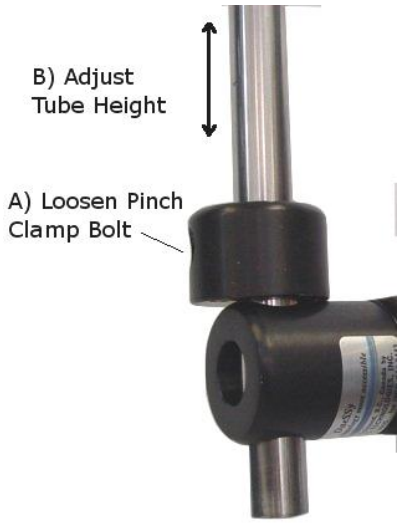
In order to get the Configuration chosen the IC1 needs to be rotated on the Vertical S-Bend Tube. Hold the Vertical S-Bend Tube in the “in-use” position while rotating the IC1 until the UFCOP Pin is engaged in the correct hole on the IC1 (Hole 1,2 or 3 as shown in the photo). For example: For configuration “A” the UFCOP Pin must be in hole #2 of the IC1 when the tube is in the “In-Use” Position. Once the tube and IC1 have been positioned, tighten the Pinch Clamp on the IC1.



Side (Left of Right of Chair)	Configuration	Pin Orientation for “In-Use” Position
Left	A	2
	B	3
	C	1
Right	A	2
	B	1
	C	3

15.1.13 Adjust the height and S-bend orientation (DRM1)

To set the height of the DRM1 slide the IC1 down the Vertical S-Bend tube until the “in-use” pinhole engages the Index Pin and the IC1 is resting on the UFCOP. Lower the Vertical S-Bend Tube through the tube hole in the UFCOP until the top end is at approximately the correct height for the mounted device. Tighten the Pinch Clamp.



15.1.14 Adjust the height and S-bend orientation (DRM1ROP)

Loosen the Pinch Clamp on the ROP. Adjust the height and orient the Vertical S-Bend Tube into the desired position. Tighten the Pinch Clamp.

Caution:
The bolt on the Pinch Clamp should not be excessively tightened. The Pinch Clamp grips the Vertical S-Bend tube sufficient to prevent it rotating in the Index Clamp or Removable Outer Piece when the Horizontal Tube is pushed firmly by a user. By design the Pinch Clamp does not provide an immoveable grip. Extreme tightening of the Pinch Clamp bolt on the Vertical S-Bend tube in an attempt to prevent the Horizontal Tube from moving when very forcefully pushed will crush the tube and jam the Pinch Clamp. DAESSY mounting assemblies are designed to carry the weight of a computer or communication device and are not intended to resist a strong force exerted by the user.

15.1.15 Connect the Horizontal Tube

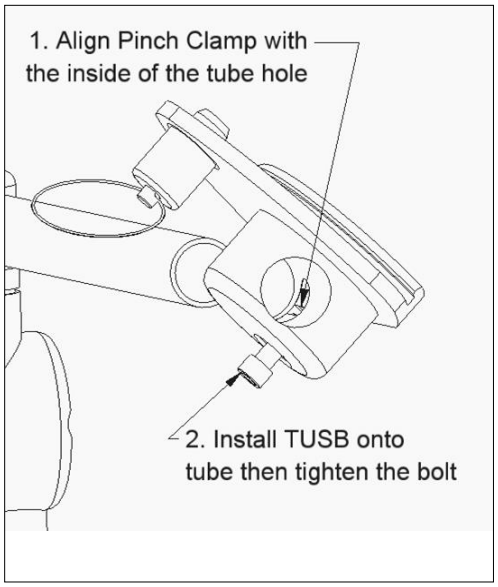
This step requires:

- TC90
- Vertical Tube Assembled
- Horizontal Tube (16” Tube default)

The TC90 joins the Vertical S-Bend tube to the Horizontal Tube at a right angle. Separate the two halves of the TC90 and insert the Horizontal and Vertical S-Bend Tube into the half of the TC90 with the threaded holes. Align the Horizontal Tube straight across the wheelchair. Bolt on the unthreaded half of the TC90 and tighten the bolts alternately until they are fully tight. There will be a slight gap between the halves of the Tube Connector when the bolts are fully tight; this gap should be even around the Tube Connector.
If the connection between the two tubes needs to be reoriented the Tube Connector joint must be fully dismantled. The tube holes in the TC90 are a tight fit on the tubes and will not rotate easily when the bolts are loosened.

15.1.16 DRM1 & DRM1ROPInstall the Total Quick Release Base – TUSB

Remove the foam plug retaining the Pinch Clamp in its hole in the TUSB and slide it onto the Horizontal Tube. The Pinch Clamp must be aligned in its hole so that it is even with the inside of the tube hole to allow the tube to slide through.



15.1.17 DRM1 & DRM1ROP Quick Release Orientation

1 The Total Quick Release Base can be clamped at any location along the Horizontal Tube and may be rotated around the tube to place the mounted device at any angle. The normal orientation for the TUSB is with the Locking Pin positioned away from the user. Adapters and Holders that attach devices and computers onto the TUSB are assembled for this orientation.

15.1.18 DRM1 & DRM1ROP Final Adjustments

Ensure that all of the bolts are tight including; Frame Clamp, swivel clamp, and pinch clamp.

15.2 Folding Mount (DFM2 and DFM2ROP)

The following instructions include details on both the DFM2 and the DFM2ROP Folding Mounts. Identify the mount-type and follow the appropriate instructions.

DFM2 The DFM2 is the DAESSY Folding Mount; the standard version of the mount.

DFM2ROP The DFM2ROP is the DAESSY Folding Mount which has a locking removable outer piece (ROP) for chairs with a tilting mechanism.

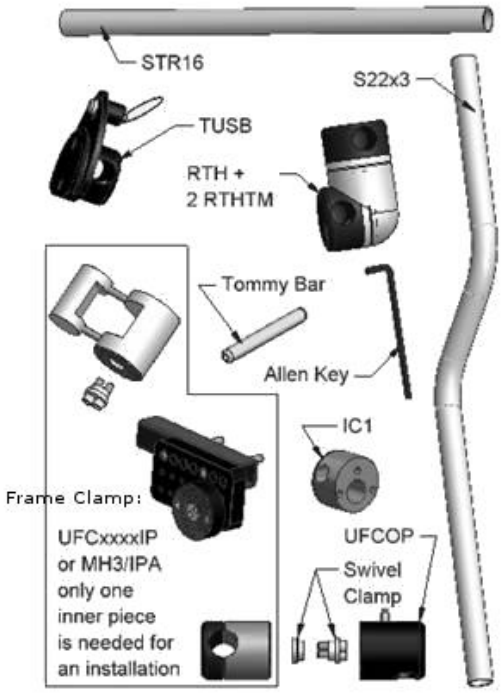
DFM2

DFM2ROP

15.2.1 Identify the Parts

Use the parts list and diagram below to identify each part and ensure all parts are included.

Part Code	Part Name	DFM2	DFM2ROP
STR16	Horizontal Tube (Straight 16" Tube)	□	□
S22x3	Vertical S-bend Tube (22" long with 3" offset)	□	□
RTH2RTHTM	Folding Mechanism	□	□
TUSB	Total Quick Release Base	□	□
UFCxxxxIP or MH3/IPA	**Frame Clamp** (parts will vary based on wheelchair, look for anything with an IP or IPA engraved on it)	□	□
UFCOP	Frame Clamp Outer Piece w/ Swivel Clamp	□	
IC1	Index Clamp	□	
RFCR	Removable Frame Clamp Receiver		□
ROP	Removable Outer Piece		□
Tools	Assembly Tools	□	□
	Instruction Papers	□	□



15.2.2 DFM2 & DFM2ROP Frame Clamp Assembly

This step requires:

- Frame Clamp (UFCxxxxIP)
- UFCOP (**DFM2** Version) or RFCR (**DFM2ROP** Version)
-

The Frame Clamp varies depending on the type of wheelchair, it may not be exactly as shown, “Frame Clamp” most commonly refers to UFCxxxxIP, but there are others all of which will include IP or IPA in their part code. These instructions are specific to mounts with a UFCxxxxIP; other types of Frame Clamps will include separate assembly instructions and may require attachment to the wheelchair before assembling the Frame Clamp Assembly. Identify the Frame Clamp and the UFCOP (DFM2), or RFCR (DFM2ROP).

Remove the cap from the Frame Clamp (above left). For the **DFM2** - Remove the Swivel Clamp from the UFCOP (above center). For the **DFM2ROP** - Remove the Swivel Clamp from the RFCR (above right).

DFM2 - Align the grooves on the UFCOP with the grooves on the Frame Clamp (photo below left). Put the non-threaded half of the swivel clamp into the UFCOP (with the bolts pushed through). Put the threaded half into the Frame Clamp body and begin tightening the bolts, alternating between the two. Do not fully tighten the bolts. The UFCOP and the UFCxxxxIP should be able to swivel freely. See photos below.

DFM2ROP– Align the grooves on the RFCR with the grooves on the Frame Clamp (photo below left). Put the non-threaded half of the swivel clamp into the RFCR (with the bolts pushed through). Put the threaded half into the Frame Clamp body and begin tightening the bolts, alternating between the two. Do not fully tighten the bolts. The RFCR and the UFCxxxxIP should be able to swivel freely. See photos below.

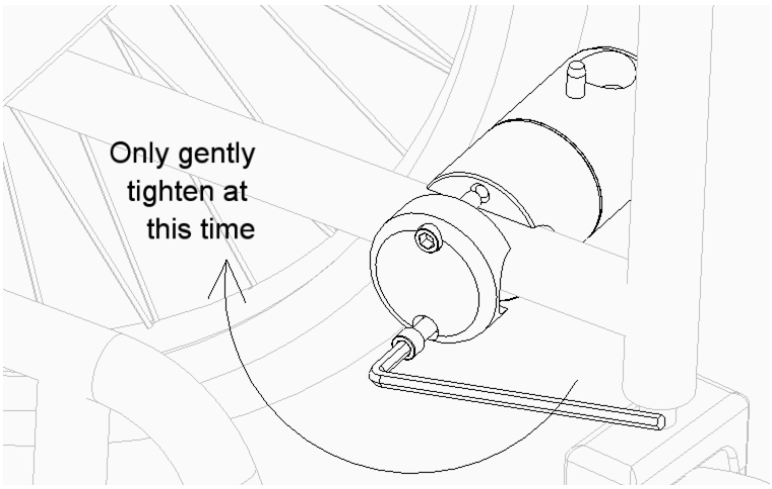
15.2.3 DFM2 & DFM2ROP Attach Frame Clamp Assembly to the Wheelchair

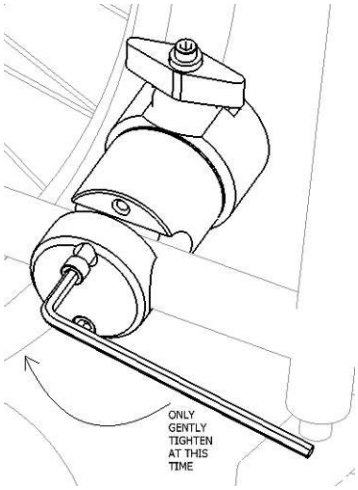
This step requires:

- Wheelchair
- Frame Clamp Assembly (either DFM2 or DFM2ROP)

Find the location on the wheelchair to attach the Frame Clamp Assembly (this should have been identified prior to ordering); most often the location will be either near the front caster wheel or on the seat frame. Make sure the location is part of the wheelchair frame, not a movable attachment like the footrest.

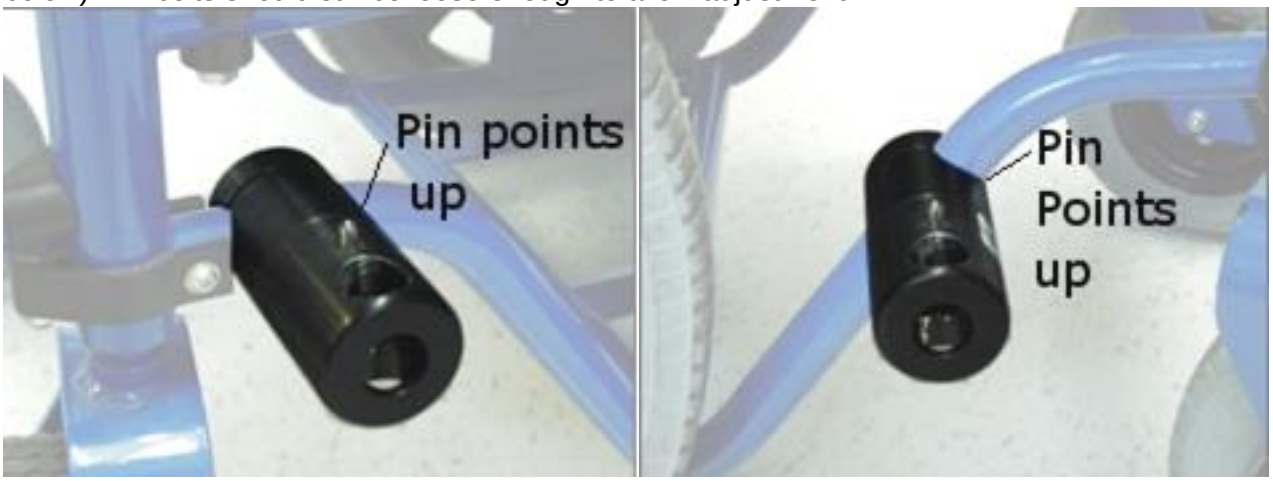
At the selected location; fit the Frame Clamp Assembly around the tube. Replace the bolts and gently tighten them, do NOT fully tighten them at this time. The Frame Clamp "cap" should face towards the **inside** of the wheelchair.





15.2.4 DFM2 & DFM2ROP Orient Frame Clamp Assembly

DFM2 - Orient the Assembly so that the Pin on the UFCOP is pointing upwards (as shown in the photos below). All bolts should still be loose enough to allow adjustment.



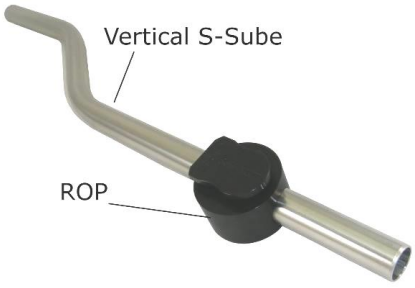
DFM2ROP– The most common option is to assemble this mount with the Blue Handle at the top (pointing upwards). The Frame Clamp "Cap" must be on the inside and the RFCR on the outside of the chair (as shown in the photos to right). All bolts should still be loose enough to allow adjustment.

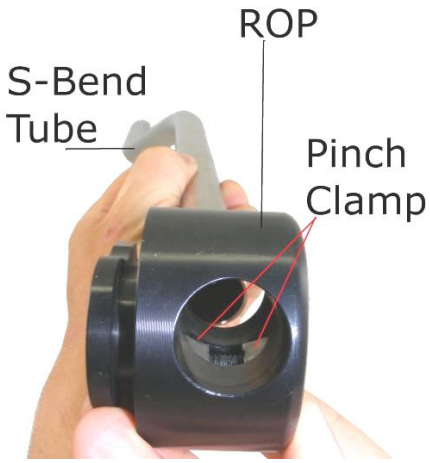
15.2.5 Attach Vertical S-Bend Tube to the ROP (DFM2ROP)

This step requires:

- Wheelchair
- Frame Clamp Assembly (loosely attached to chair)
- Vertical S-bend Tube
- ROP

Attach the ROP to the Vertical S-bend Tube. Using one finger, align the Pinch Clamp with the inside of the tube-hole in the ROP. Slide the ROP onto the tube to the desired position, and then tighten the Pinch Clamp. The photo below is the typical orientation.





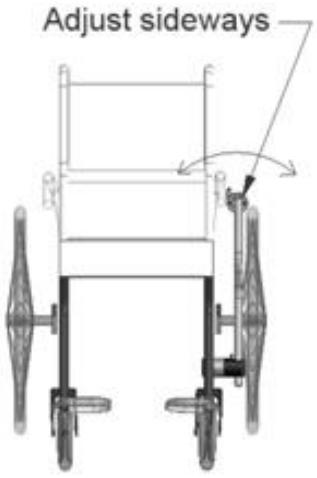
15.2.6 Align the Frame Clamp Assembly (Both DFM2 & DFM2ROP)

This step requires:

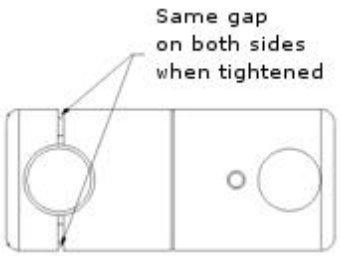
- Wheelchair
- Frame Clamp Assembly (loosely attached to chair)
- Vertical S-bend Tube

Slide the Vertical S-Bend Tube into the Frame Clamp Assembly. Use the tube as a lever to align the Frame Clamp Assembly as described below.

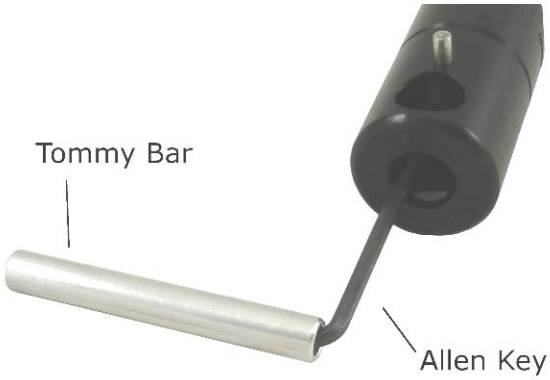
Sideways alignment: Hold the Vertical S-Bend Tube parallel to the wheelchair and tighten the Frame Clamp "Cap" bolts alternating between each bolt until tight. Fully tighten the bolts.



When completely tight there should be a gap of 1/32" to 1/64" between the Cap & Body of the Frame Clamp on round tube. A larger gap indicates the Frame Clamp may be too small for the tube. If there is no gap and the inner piece does not clamp the wheelchair tube firmly; up to 4 layers of aluminum foil may be wrapped around the wheelchair tube, however if more layers are needed it indicates the Frame Clamp is too large. Contact Daedalus Technologies for information on adapter sleeves.



Forward/Backward Alignment (DFM2): Align the Vertical S-Bend Tube then carefully remove the tube to access the Swivel Clamp bolts taking care not to move the UFCOP. Use the Tommy bar to get leverage while tightening the bolts. Alternate between the two bolts several times, tightening each one until the two bolts are as tight as possible.

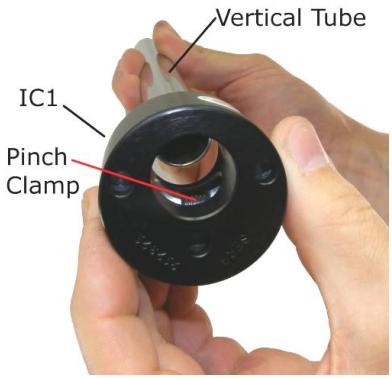


Forward/Backward Alignment (DFM2ROP): Align the Vertical S-Bend Tube then carefully remove the tube to access the Swivel Clamp bolts taking care not to move the RFCR. Alternate between the two bolts several times, tightening each one until the two bolts are as tight as possible.

15.2.7 Attach IC1 to the Vertical S-Bend Tube (DFM2)

This step requires:

- IC1 (with Pinch Clamp)
- Vertical S-Bend Tube



Using one finger, align the Pinch Clamp with the inside of the tube hole in the IC1. Slide the IC1 onto the tube to the desired position, and then tighten the Pinch Clamp. There are 3 holes on the bottom of the IC1 which should be oriented downward.

Either end of the Vertical S-Bend Tube can be used as the lower end. The photo below is the typical orientation.

15.2.8 Install the Vertical S-Bend Tube (DFM2)

This step requires:

- Vertical S-Bend Tube (with IC1 attached)
- Wheelchair (with Frame Clamp Assembly Attached)

Slide the Vertical S-Bend Tube into the Frame Clamp assembly on the wheelchair. Note: the Pin on the Frame Clamp assembly will slide into one of 3 holes on the underside of the IC1.

15.2.9 Determine In-Use Position (DFM2)

This step requires:

- Vertical S-Bend Tube (with IC1 attached)
- Wheelchair (with Frame Clamp Assembly Attached)

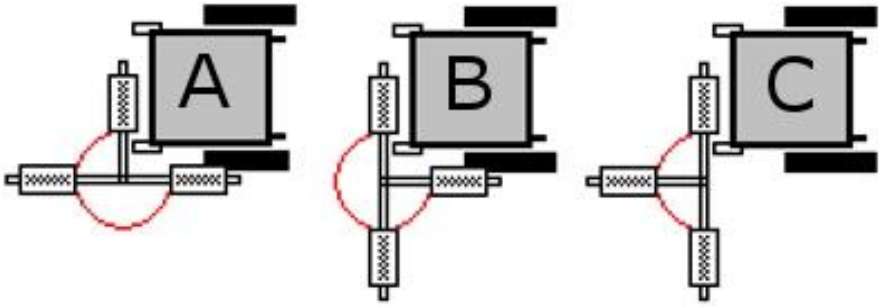
The In-use position of the Vertical S-Bend Tube needs to be determined before continuing. Orient the Vertical S-Bend Tube into the ideal position for the user. Ensure that the S-bend will avoid obstructions and the top end of the tube is the correct distance front-to-back. Tighten the Pinch Clamp enough to hold the Vertical S-Bend Tube firmly in place. This will now be referred to as the "**In-Use Position**".

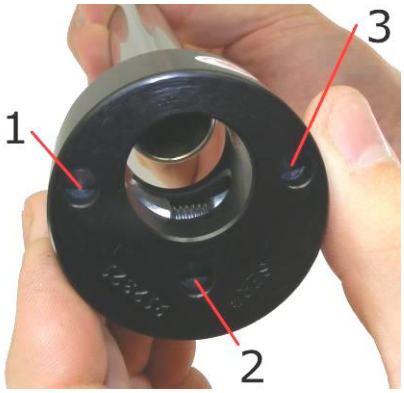
15.2.10 Determine Swing-Away Positions (DFM2)

This step requires:

- Vertical S-Bend Tube (with IC1 attached)
- Wheelchair (with Frame Clamp Assembly Attached)

Choose how the Swing arm will articulate. There are 3 possible configurations in the figure (A, B or C).

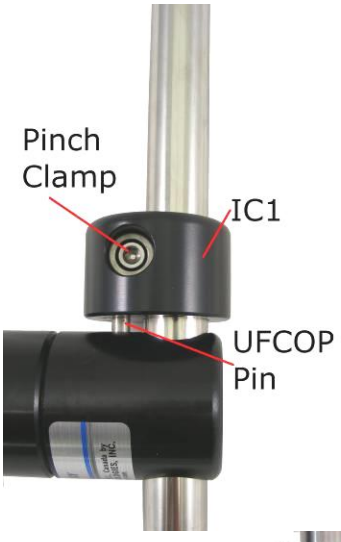




Loosen the Pinch Clamp on the IC1 enough to allow adjustment.

Use the table to determine the Pin Orientation for the In-Use position (1, 2, or 3). The number corresponds to the Hole in the bottom of the IC1.

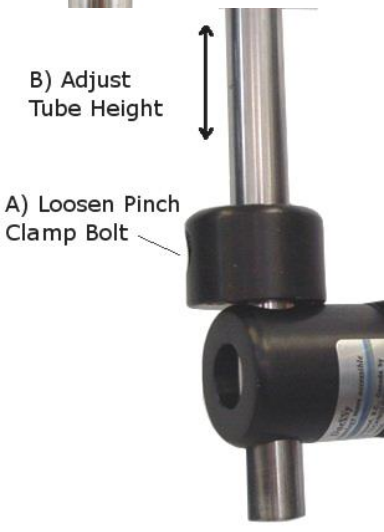
In order to get the Configuration chosen the IC1 needs to be rotated on the Vertical S-Bend Tube. Hold the Vertical S-Bend Tube in the "in-use" position while rotating the IC1 until the UFCOP Pin is engaged in the correct hole on the IC1 (Hole 1,2 or 3 as shown in the photo). For example: For configuration "A" the UFCOP Pin must be in hole #2 of the IC1 when the tube is in the "In-Use" Position. Once the tube and IC1 have been positioned, tighten the Pinch Clamp on the IC1.



Side (Left of Right of Chair)	Configuration	Pin Orientation for "In-Use" Position
Left	A	2
	B	3
	C	1
Right	A	2
	B	1
	C	3

15.2.11 Adjust Height and S-bend orientation (DFM2)

To set the height of the DFM2 slide the IC1 down the Vertical S-Bend tube until the "in-use" pinhole engages the Index Pin and the IC1 is resting on the UFCOP. Lower the Vertical S-Bend Tube through the tube hole in the UFCOP until the top end is at approximately the correct height for the mounted device. Tighten the Pinch Clamp.

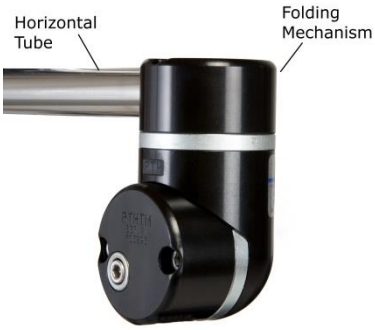


15.2.12 Adjust Height and S-bend orientation (DFM2ROP)

Adjust Height and S-bend Orientation (DFM2ROP)
Loosen the Pinch Clamp on the ROP. Adjust the Vertical S-Bend tube to correct height and orientation. Tighten the Pinch Clamp.

Caution:
The bolt on the Pinch Clamp should not be excessively tightened. The Pinch Clamp grips the Vertical S-Bend tube sufficient to prevent it rotating in the Index Clamp or Removable Outer Piece when the Horizontal Tube is pushed firmly by a user. By design the Pinch Clamp does not provide an immoveable grip. Extreme tightening of the Pinch Clamp bolt on the Vertical S-Bend tube in an attempt to prevent the Horizontal Tube from moving when very forcefully pushed will crush the tube and jam the Pinch Clamp. DAESSY mounting assemblies are designed to carry the weight of a computer or communication device and are not intended to resist a strong force exerted by the user.

15.2.13 DFM2 & DFM2ROP Attach Horizontal Tube onto the Folding Mechanism



This step requires:

- Folding Mechanism (RTH+2RTHTM)
- Horizontal Tube

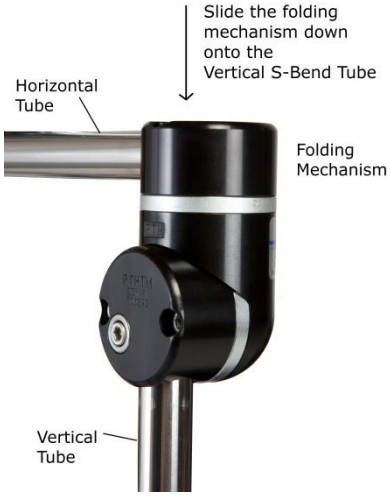
Remove the foam plugs holding the Pinch Clamps in the Folding Mechanism. Using one finger, align the Pinch Clamp with the inside of the tube-hole in the Folding Mechanism. Check that the Pinch Clamp is correctly aligned and install the Horizontal Tube and tighten the Pinch Clamp Bolt (as shown to the right).

15.2.14 Attach Folding Mechanism to the Vertical S-Bend Tube

This step requires:

- Folding Mechanism (with Horizontal tube attached)
- Vertical S-Bend Tube

Using one finger, align the Pinch Clamp with the inside of the tube-hole in the Folding Mechanism. Slide the Folding Mechanism onto the Vertical S-Bend Tube (as shown). Gently tighten the Pinch Clamp leaving it loose enough to rotate about the tube.



15.2.15 Folding Mechanism Set-Up (Right Side of Wheelchair)

This step requires:

- Folding Mechanism installed onto Vertical S-Bend Tube
- Horizontal Tube

Rotate the folding mechanism so that it faces the chair (as shown below right). The horizontal tube should be positioned as it would for the user during “use” of the device. Tighten the pinch clamp.

15.2.16 DFM2 & DFM2ROP Folding Mechanism Set-Up (Left Side of Wheelchair)

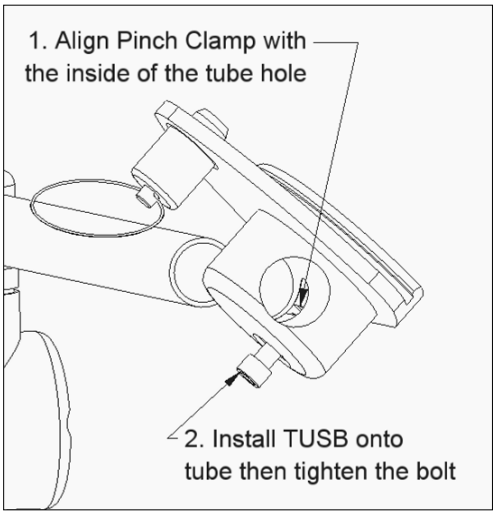
The folding mechanism is shipped to be set up on the RIGHT side of a wheelchair (from the perspective of the occupant). To convert for use on the LEFT side of the wheelchair follow the steps below.

The letters “R” and “L” are stamped into the silver colored ring the horizontal tube mount is attached to. The mount is shipped with the tube hole located over the “R” for mounting to the Right side of the chair.

Remove the tube mount by removing the two tube mount bolts. Rotate the tube mount 180 degrees to position the tube hole over the “L”. Attach the tube mount in the new position.

15.2.17 DFM2 & DFM2ROP Install the Total Quick Release Base – TUSB

Remove the foam plug retaining the Pinch Clamp in its hole in the TUSB and slide it onto the Horizontal Tube. The Pinch Clamp must be aligned in its hole so that it is even with the inside of the tube hole to allow the tube to slide through.



15.2.18 DFM2 & DFM2ROP Quick Release Orientation

The Total Quick Release Base can be clamped at any location along the Horizontal Tube and may be rotated around the tube to place the mounted device at any angle. The normal orientation for the TUSB is with the Locking Pin positioned away from the user. Adapters and Holders that attach devices and computers onto the TUSB are assembled for this orientation.

15.2.19 DFM2 & DFM2ROP Final Adjustments

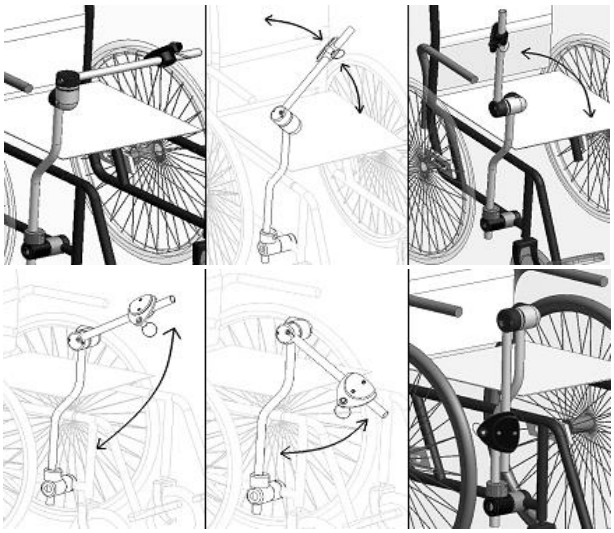
Ensure that all of the bolts are tight including; Frame Clamp, swivel clamp, and all pinch clamps.

15.2.20 DFM2 & DFM2ROP Folding Sequence (When Mounted on RIGHT Side)

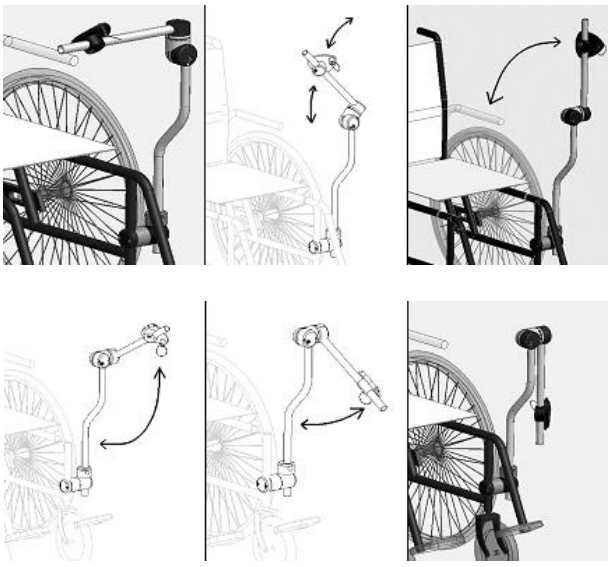
From the In-use position:

A) Lift the Horizontal Tube upwards

B) Then rotate the Horizontal Tube forward bringing the device down to the side of the wheelchair



15.2.21 DFM2 & DFM2ROP Folding Sequence (When Mounted on LEFT Side)



From the In-use position the Horizontal Tube is:

A) Lifted upwards

B) Rotated forward and down bringing the device down to the side of the wheelchair

Caution:
In the folded position the attached device protrudes beyond the side of the wheelchair making it vulnerable to collisions if the wheelchair is moved or driven. It is recommended to remove the device from the mount.
When folded the unbalancing effect of heavy devices mounted to small lightweight wheelchairs is reduced but not eliminated. It is advisable to remove the device and/or mount before the wheelchair is vacated.
The User is unlikely to be able to perform the folding sequence independently; assistance is often required.

15.2.22 DFM2 & DFM2ROP Folding Sequence – Special Notes

When the wheelchair user has the ability to perform the folding sequence the movements may be easier with backward folding. Backward folding is simply the opposite folding as described above; in step “B”, instead of folding the device **forwards** to the side of the chair it would fold **backwards** to the side of the chair. Backward folding can be achieved by following the “Folding Mechanism Setup (For Left Side of Wheelchair” but keeping the device on the right side of the wheelchair. These directions can be reversed for mounting on the Left side of the wheelchair.

The Horizontal Tube and mounted device must be held though the entire sequence – not merely lifted and dropped – and the backwards and down motion may be better suited to the natural motion of the user’s arm. When an aide folds the mount, there is little or no advantage to backward folding.

15.3 Swing Aside Mount (DSAM4)

Caution:
The Swing Aside Mount can support equipment that is heavy enough to unbalance an unoccupied or lightweight manual wheelchair when swung out to the side. It is recommended to remove the device and/or mount before the wheelchair is vacated. The horizontal tube assembly is pre-installed; tube length cannot be changed after ordering. Standard length tube length is 16". Contact Daedalus Technologies for more information.

15.3.1 DSAM4 Identify the Parts

Use the parts list and diagram below to identify each part and ensure all parts are included.

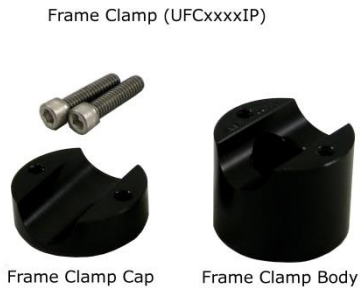
Part Code	Part Name
S22x3	Vertical S-bend Tube (22" long with 3" offset)
LSARH/TM/16	Horizontal Tube Assembly (consists of: Swing Aside Rotate Head, Tube & Cable)
ROP-RFCR	Removable Outer Piece & Receiver
UFCxxxxIP or MH3/IPA	**Frame Clamp Inner Piece** (*parts will vary based on wheelchair, look for anything with an IP or IPA engraved on it)
TUSB	Total Quick Release Base
Tools	Assembly Tools
	Assembly Instructions

15.3.2 DSAM4 Frame Clamp Assembly

This step requires:

- Frame Clamp Inner Piece (UFCxxxxIP)
- RFCR

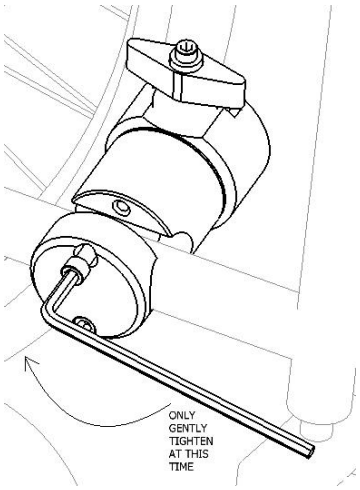
The Frame Clamp varies depending on the type of wheelchair, it may not be exactly as shown, “Frame Clamp” most commonly refers to UFCxxxxIP, but there are others all of which will include IP or IPA in their part code. These instructions are specific to mounts with a UFCxxxxIP; other types of frame clamps will include separate assembly instructions and may require attachment to the wheelchair before connecting the RFCR. Identify the Frame Clamp and the RFCR.



- Remove the cap from the Frame Clamp.
- Remove the Swivel Clamp from the RFCR.

Align the grooves on the RFCR with the grooves on the frame clamp (photo below left). Put the non-threaded half of the swivel clamp into the RFCR (with the bolts pushed through). Put the threaded half into the Frame Clamp body and begin tightening the bolts, alternating between the two. Do not fully tighten the bolts. The RFCR and the UFCxxxxIP should be able to swivel freely. See photos below.

15.3.3 DSAM4 Attach Frame Clamp Assembly to Wheelchair Frame



This step requires:

- Wheelchair
- Frame Clamp Assembly

Find the location on the wheelchair to attach the Frame Clamp Assembly (this should have been identified prior to ordering); most often the location will be either near the front caster wheel or on the seat frame. Make sure the location is part of the wheelchair frame, not a movable attachment like the footrest.

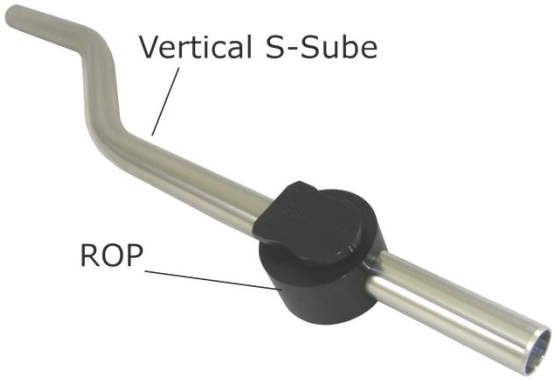
At the selected location; fit the Frame Clamp Assembly around the tube. Replace the bolts and gently tighten them, do NOT fully tighten them at this time. The frame clamp "cap" should face towards the **inside** of the wheelchair.

15.3.4 DSAM4 Orient Frame Clamp Assembly

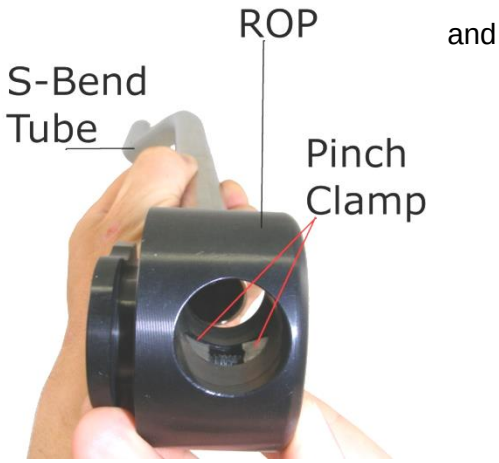
The most common option is to assemble this mount with the Blue Handle at the top (pointing upwards). The Frame Clamp "Cap" must be on the inside and the RFCR on the outside of the chair (as shown in the photos to right). All bolts should still be loose enough to allow adjustment.

15.3.5 *DSAM4 Attach the ROP to the Vertical S-bend Tube*

Using one finger, align the Pinch Clamp with the inside of the tube-hole in the ROP. Slide the ROP onto the tube to the desired position, then tighten the Pinch Clamp.



and

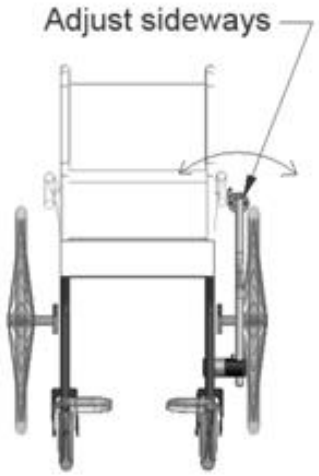


15.3.6 DSAM4 Align the Frame Clamp Assembly

This step requires:

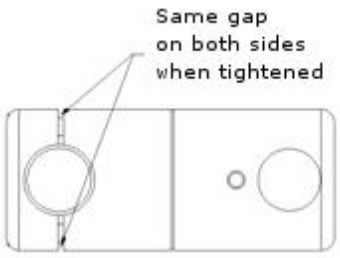
- Wheelchair
- Frame Clamp Assembly (loosely attached to chair)
- Vertical S-bend Tube (ROP Attached)

Slide the Vertical S-Bend Tube into the Frame Clamp Assembly. Use the tube as a lever in the outer piece to align the Frame Clamp Assembly.



Sideways alignment: Hold the Vertical S-Bend Tube parallel to the wheelchair and tighten the Frame Clamp "Cap" bolts alternating between each bolt.

When completely tight there should be a gap of 1/32" to 1/64" between the Cap & Body of the frame clamp on round tube. A larger gap indicates the frame clamp may be too small for the tube. If there is no gap and the inner piece does not clamp the wheelchair tube firmly; up to 4 layers of aluminum foil may be wrapped around the wheelchair tube, however if more layers are needed it indicates the frame clamp is too large. Contact Daedalus Technologies for information on adapter sleeves.



Forward/Backward Alignment

Align the Vertical S-Bend Tube then carefully remove the tube to access the Swivel Clamp bolts taking care not to move the RFCR. Alternate between the two bolts several times, tightening each one until the two bolts are as tight as possible.

15.3.7 DSAM4 Adjust the height and S-bend orientation

Loosen the Pinch Clamp on the ROP. Adjust the Vertical S-Bend tube to correct height and orientation. Tighten the Pinch Clamp.

Caution:
The bolt on the Pinch Clamp should not be excessively tightened. The Pinch Clamp grips the Vertical S-Bend tube sufficient to prevent it rotating in the Index Clamp or Removable Outer Piece when the Horizontal Tube is pushed firmly by a user. By design the Pinch Clamp does not provide an immoveable grip. Extreme tightening of the Pinch Clamp bolt on the Vertical S-Bend tube in an attempt to prevent the Horizontal Tube from moving when very forcefully pushed will crush the tube and jam the Pinch Clamp. DAESSY mounting assemblies are designed to carry the weight of a computer or communication device and are not intended to resist a strong force exerted by the user.

15.3.8 DSAM4 Setting the Swing Aside Direction

The DAESSY Swing Aside Mount is shipped with the Rotate Head setup for installation on the Right side of a wheelchair. If necessary follow the below steps to change for Left side installation.

Remove the center bolt from the blue direction pin.
Remove the pin, rotate it 180° until the diamond (◊) is positioned under the 'L', and re-insert the pin.

Reinstall the center bolt and tighten snug but not too tight.

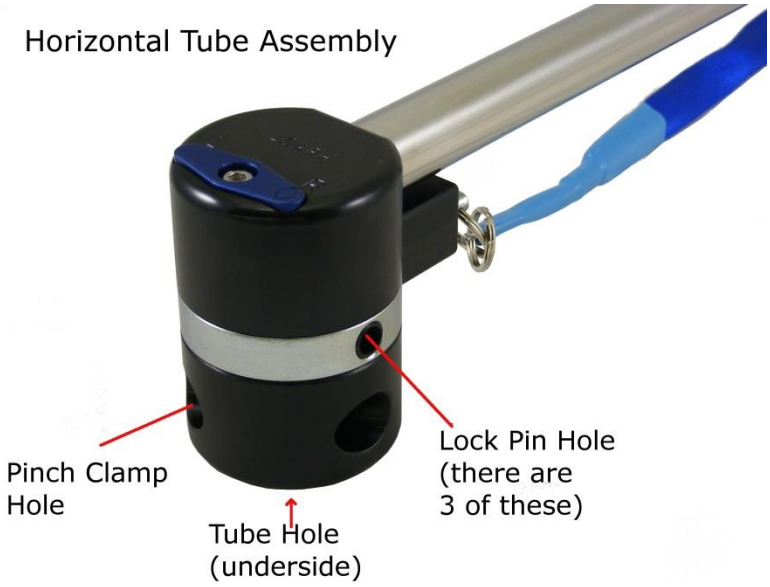
15.3.9 DSAM4 Install Horizontal Tube Assembly

The Swing Aside Rotate Head has three lock-pin position holes around the silver collar.

The mount is shipped with the attached tube positioned with the lock-pin in the center position hole; this is the "in-use" position.

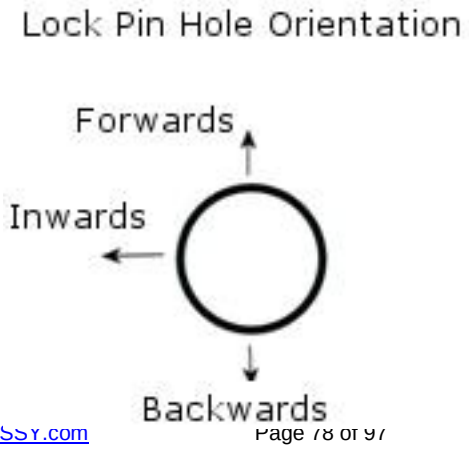
Remove the packing material from the tube hole retaining the Pinch Clamp. Be careful not to lose the Pinch Clamp.

Slide the Assembly onto the top of the Vertical Tube. The Pinch Clamp must be aligned in its hole so that it is even with the inside of the tube hole to allow the tube to slide through completely. Gently tighten the Pinch Clamp bolt.



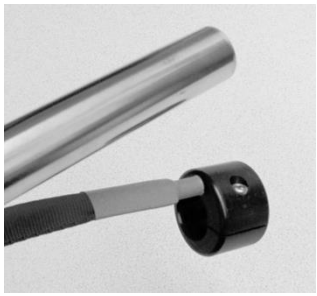
Adjust the positioning of the Assembly so the lock-pin position holes are oriented with one facing forward, one towards the inside of the wheelchair, and one facing rearward. The assembly is shipped such that this will position the horizontal tube across the chair ("in-use" position).

Tighten the Pinch Clamp bolt firmly.

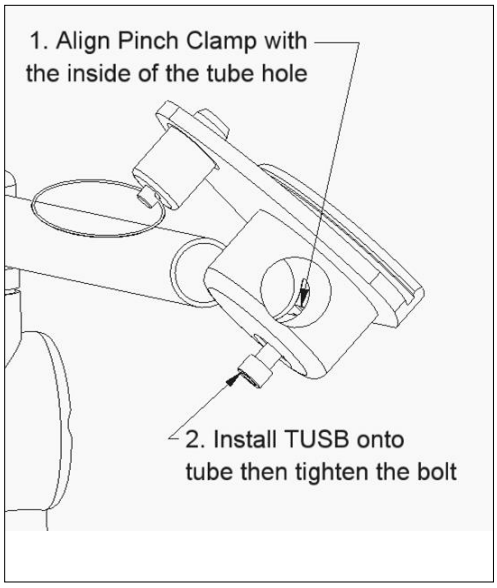


15.3.10 DSAM4 Install the Total Quick Release Base – TUSB

Remove the foam plug retaining the Pinch Clamp in its hole in the TUSB and slide it onto the Horizontal Tube. The Pinch Clamp must be aligned in its hole so that it is even with the inside of the tube hole to allow the tube to slide through.



1. Loosen the cable anchor bolt and slide the anchor off the end of the horizontal tube.



2. Slide the TUSB onto the Horizontal Tube. The Pinch Clamp must be aligned in its hole so that it is even with the inside of the tube hole to allow the tube to slide through.

3. Position the angle of the quick release base and tighten the Pinch Clamp bolt firmly to hold the TUSB in place.

4. Reinstall the cable anchor and firmly tighten the anchor bolt.

15.3.11 DSAM4 Quick Release Orientation

The Total Quick Release Base can be clamped at any location along the Horizontal Tube and may be rotated around the tube to place the mounted device at any angle. The normal orientation for the TUSB is with the Locking Pin positioned away from the user. Adapters and Holders that attach devices and computers onto the TUSB are assembled for this orientation.

15.3.12 DSAM4 Final Adjustments

Ensure that all of the fasteners are tight including; frame clamp, swivel clamp, and pinch clamp.

15.4 Positioner Mount (DPM9)

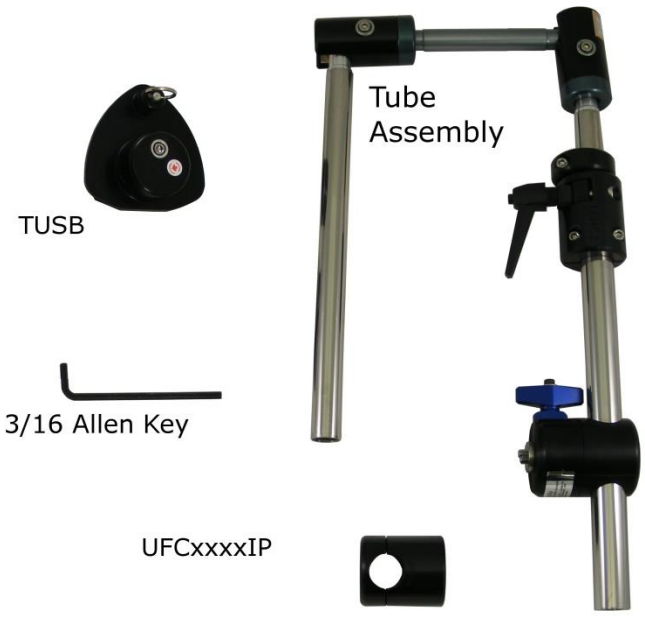
Caution:
When installed on a tilting seat system the wheelchair seat should be in the upright position while adjustments are made. All joints must be tightly secured prior to tilting the seat and mount.

When adjusting and/or loosening any joint of the Positioner Mount the weight of the mount arm and attached device must be supported to prevent it from swinging or falling towards the user.
Heavy or large devices should be removed during adjustments.

15.4.1 DPM9 Identify the Parts

Use the parts list and diagram below to identify each part and ensure all parts are included.

Part Code	Part Name
Tube Assembly	Positioner Mount Arm; including 2 Ball Joints, AHC1 (Adjustable Height Clamp), Stainless Tubes, Limit Collar, and RFCR (Removable Frame Clamp Receiver).
UFCxxxxIP or MH3/IPA	**Frame Clamp** (parts will vary based on wheelchair, look for anything with an IP or IPA engraved on it)
TUSB	Total Quick Release Base
Tools	Assembly Tools (3/16 Allen Key)
	Instruction Papers



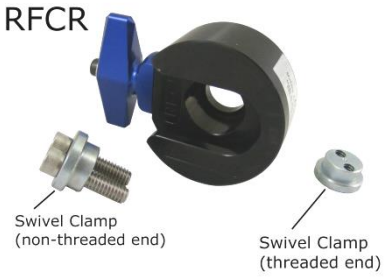
15.4.2 DPM9 Frame Clamp Assembly

This step requires:

- Frame Clamp (UFCxxxxIP)
- RFCR

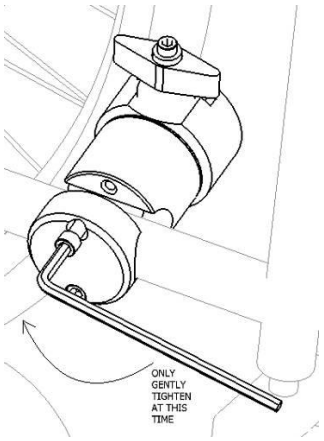
The Frame Clamp varies depending on the type of wheelchair, it may not be exactly as shown, “Frame Clamp” most commonly refers to UFCxxxxIP, but there are others all of which will include IP or IPA in their part code. These instructions are specific to mounts with a UFCxxxxIP; other types of Frame Clamps will include separate assembly instructions. Identify the Frame Clamp and the RFCR.

Frame Clamp (UFCxxxxIP)



Remove the cap from the Frame Clamp (above left). Remove the Swivel Clamp from the RFCR (above right). Align the grooves on the RFCR with the grooves on the Frame Clamp (photo below left). Put the non-threaded half of the swivel clamp into the RFCR (with the bolts pushed through). Put the threaded half into the Frame Clamp body and begin tightening the bolts, alternating between the two. Do not fully tighten the bolts. The RFCR and the UFCxxxxIP should be able to swivel freely. See photos below.

15.4.3 DPM9 Attach the Frame Clamp Assembly to Wheelchair



This step requires:

- Wheelchair
- Frame Clamp Assembly

Find the location on the wheelchair to attach the Frame Clamp Assembly (this should have been identified prior to ordering); most often the location will be either near the front caster wheel or on the seat frame. Make sure the location is part of the wheelchair frame, not a movable attachment like the footrest.

At the selected location; fit the Frame Clamp Assembly around the tube. Replace the bolts and gently tighten them, do NOT fully tighten them at this time. The Frame Clamp "cap" should face towards the **inside** of the wheelchair.

15.4.4 DPM9 Orient Frame Clamp Assembly

The most common option is to assemble this mount with the Blue Handle at the top (pointing upwards). The Frame Clamp "Cap" must be on the inside and the RFCR on the outside of the chair (as shown in the photo). All bolts should still be loose enough to allow adjustment by hand.

15.4.5 DPM9 Prepare the Tube Assembly

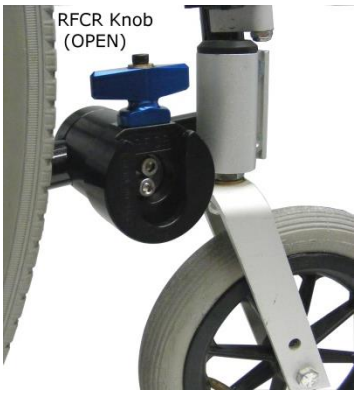
Loosen the bolts on the Ball Joints, leaving enough friction for them to maintain position but loose enough to move. Loosen the Handle on the AHC1 (as shown in the photo below). Extend the tube lengthwise and adjust the Tubes such that they are extended into an “L” Shape as shown in the photo to the right.

15.4.6 DPM9 Slide the Tube Assembly into the RFCR

This step requires:

- Wheelchair
- Frame Clamp Assembly (loosely attached to chair)
- Tube Assembly (with the AHOP Attached)

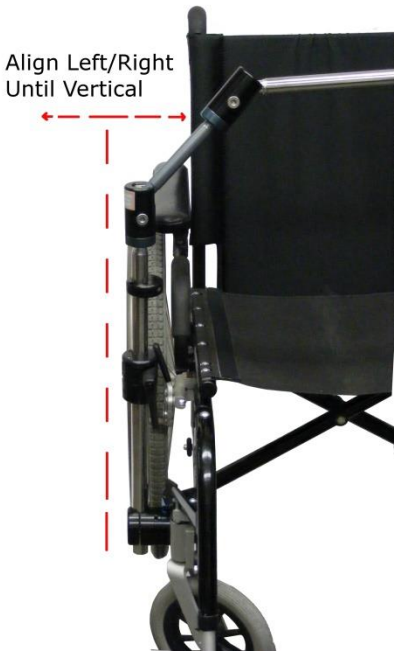
The AHOP is pre-installed on the vertical tube of the Tube Assembly. With the blue knob on the RFCR in the unlocked position, slide the AHOP into the RFCR and turn the knob to lock the mount in place. The Bolts on the swivel clamp will remain loose; the following steps involve aligning the mount before tightening the swivel clamp.



15.4.7 DPM9 Sideways Alignment of the Frame Clamp Assembly

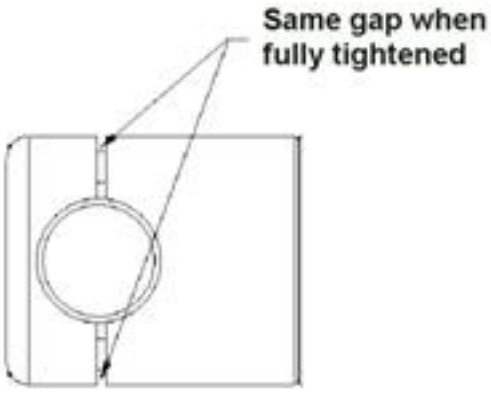
This step requires:

- Wheelchair
- Frame Clamp Assembly (loosely attached to chair)
- Tube Assembly (loosely attached to chair)



Use the Tube Assembly as a lever to align the Frame Clamp Assembly from Left to Right. When the Tube Assembly is parallel to the wheelchair tighten the Frame Clamp bolts alternating between each bolt. (When attached to square or rectangular tube or with a bolt-on adapter this step is not necessary).

When completely tight there should be a gap of 1/32” to 1/64” between the Cap & Body of the inner piece on round tube. A larger gap indicates the inner piece may be too small for the tube. When there is no gap and the inner piece does not clamp the wheelchair tube firmly up to 4 layers of aluminum foil may be wrapped around the wheelchair tube, however if more layers are needed it indicates the inner piece is too large.
Contact Daedalus Technologies for information on adapter sleeves.



15.4.8 DPM9 Forward/Backward Alignment of the Frame Clamp Assembly

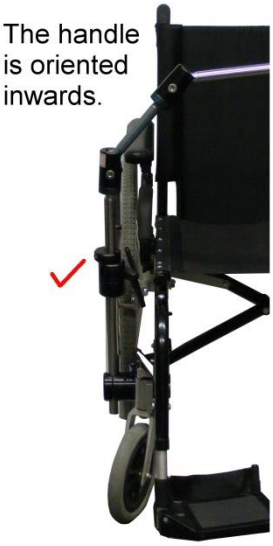
This step requires:

- Wheelchair
- Frame Clamp Assembly (loosely attached to chair)
- Tube Assembly (loosely attached to chair)

Use the Tube Assembly as a lever to align the assembly so that it is vertical or at the desired angle from front to back. Once aligned, carefully open the RFCR Knob and slide the Tube Assembly out of the RFCR to access the Swivel Clamp bolts. Tighten the bolts, alternating between the bolts several times to get the two bolts as tight as possible.

15.4.9 DPM9 Setting Tube Height and AHC1 Handle Orientation

Loosen the single bolt (using the Allen Key) on the AHOP and move the Tube up or down (see photo below left). This height is commonly adjusted so that it is at a midpoint for using the handle-adjust method (described later). The Tube must be flush or extended below the bottom of the AHOP. To ensure that the handle does not get broken off, rotate the tube so that the AHC1 Handle does not protrude outside of the chair's footprint. When the desired height and orientation is reached, tighten the bolt firmly.

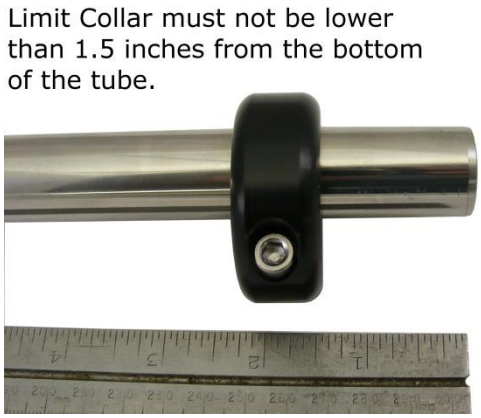


15.4.10 DPM9 Adjusting Mount Height and Rotation

Loosen the handle on the AHC1 and move the Tube up or down (see photo right). This can be used for routine adjustment of height and for rotating the mount away from and towards the user. When the desired height is reached, tighten the handle firmly.

15.4.11 DPM9 Setting the Limit Collar

Once the desired height has been determined, loosen the Limit Collar and slide it down until it rests on top of the AHC1. Tighten the Limit Collar. The Limit Collar prevents the Mount from sliding to the bottom of its travel whenever the AHC1 is loosened. The Limit Collar must not be less than 1.5” from the bottom of the tube. See photo.

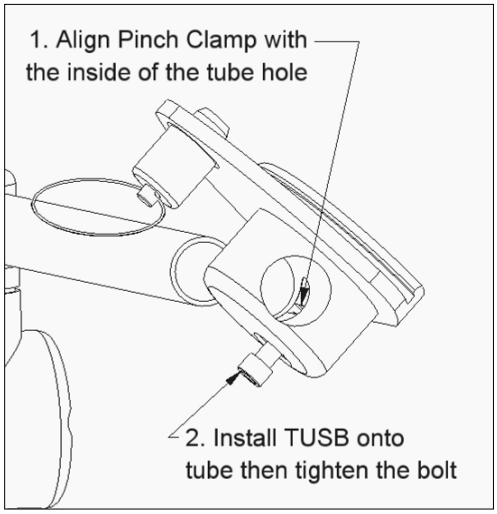


15.4.12 Orient the Elbow Connections

The Elbow Connections can be adjusted to fine tune the position of the mount in relation to the user. At this stage the Bolts on the Elbow Connections should still be loose enough to allow manipulation. Orient the elbows to get the desired positioning of the mount. Once the desired position is reached tighten the bolts on the Elbow Connections.

15.4.13 DPM9 Install the Total Quick Release Base – TUSB

Remove the foam plug retaining the Pinch Clamp in its hole in the TUSB and slide it onto the Horizontal Tube. The Pinch Clamp must be aligned in its hole so that it is even with the inside of the tube hole to allow the tube to slide through.



15.4.14 DPM9 Quick Release Orientation

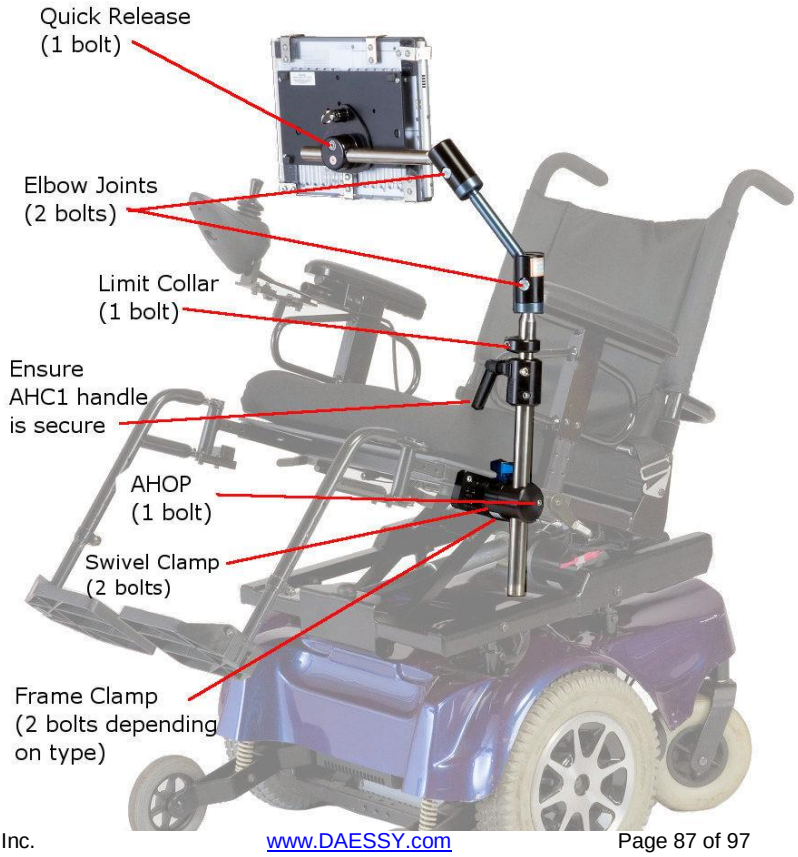
The Total Quick Release Base can be clamped at any location along the Horizontal Tube and may be rotated around the tube to place the mounted device at any angle. The normal orientation for the TUSB is with the Locking Pin positioned away from the user. Adapters and Holders that attach devices and computers onto the TUSB are assembled for this orientation.

Caution:
The bolt on the Pinch Clamp should not be excessively tightened. The Pinch Clamp grips the Vertical S-Bend tube sufficient to prevent it rotating in the Index Clamp or Removable Outer Piece when the Horizontal Tube is pushed firmly by a user. By design the Pinch Clamp does not provide an immoveable grip. Extreme tightening of the Pinch Clamp bolt on the Vertical S-Bend tube in an attempt to prevent the Horizontal Tube from moving when very forcefully pushed will crush the tube and jam the Pinch Clamp. DAESSY mounting assemblies are designed to carry the weight of a computer or communication device and are not intended to resist a strong force exerted by the user.

15.4.15 DPM9 Final Checklist

Ensure all bolts are fully tightened, including:

- Quick Release Bolt
- Elbow Joints
- Limit Collar
- Ensure that the AHC1 Handle is secure
- AHOP
- Frame Clamp Bolts
- Swivel Clamp Bolts

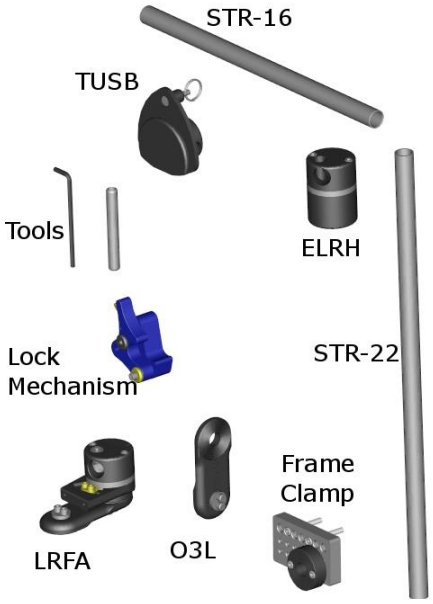


15.5 Lockable Rear Folding Mount (DLRFM8)

15.5.1 DLRFM8 Identify the Parts

Use the parts list and diagram below to identify each part and ensure all parts are included.

Part Code	Part Name
STR-16	Straight Tube – 16”
STR-22	Straight Tube – 22”
TUSB	Total Quick Release Base
UFCxxxxIP or MH3/IPA*	**Frame Clamp** *(parts will vary based on wheelchair, look for anything with an IP or IPA engraved on it)
O3L	Offset Link (*optional)
LRFA	Locking Rear Folding Adaptor
LRFA Lock	Locking Rear Folding Adaptor Locking Mechanism (Left or Right Side)
ELRH	Elbow Rotate Head
Tools	Assembly Tools
	Instruction Papers



15.5.2 DLRFM8 Attach the LRFA Lock onto the LRFA

This step requires:

- LRFA
- LRFA Lock (with bolts provided)

The LRFA Lock is available in 2 different versions (“Left” and “Right”). The images below depict the “Right Side” Version of the LRFA Lock the “Left Side” version will appear slightly different.

- Loosen the Swivel Clamp bolts on the O3L portion of the LRFA.
- Rotate the O3L to allow the LRFA Lock to be attached.
- Attach the LRFA Lock onto the bolt holes on the LRFA.

The partial circle on the Lock should be located above the tube hole. If the Lock does not line up with the tube hole; the RTHTM portion of the mechanism will need to be rotated in order for it to line up. This may require inserting the stainless tube into the tube hole for leverage.

15.5.3 DLRFM8 Optional O3L

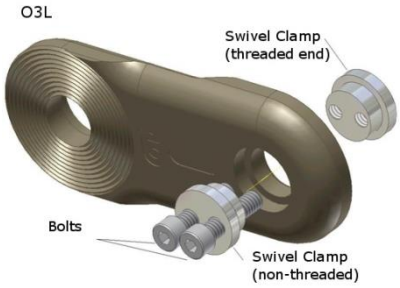
This mount includes two O3Ls; one which is preassembled as part of the LRFA mechanism and a second O3L which is optional. Depending on the chair and the desired position of the mount the second O3L may or may not be required. These instructions include the second O3L as part of the procedure. If the second O3L is not required, simply attach the frame clamp directly to the LRFA.

15.5.4 DLRFM8 Frame Clamp Assembly

This step requires:

- Frame Clamp (UFCxxxxIP)
- O3L

The Frame Clamp varies depending on the type of wheelchair, it may not be exactly as shown, “Frame Clamp” most commonly refers to UFCxxxxIP, but there are others all of which will include IP or IPA in their part code. These instructions are specific to mounts with a UFCxxxxIP; other types of Frame Clamps will include separate assembly instructions. Identify the Frame Clamp inner piece and the O3L.



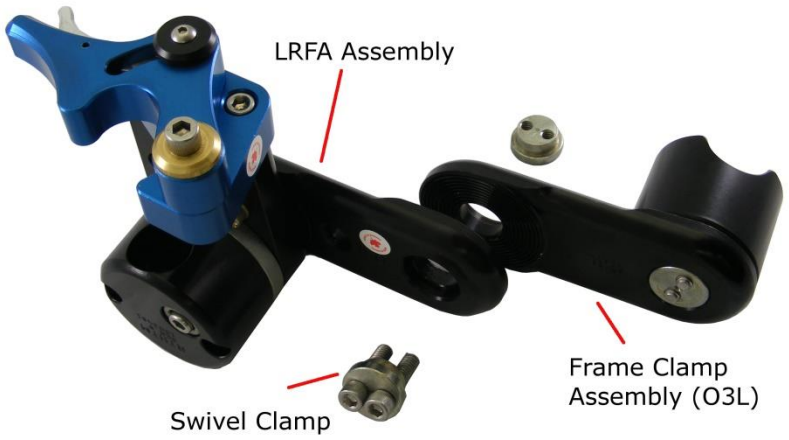
Remove the cap from the Frame Clamp Inner Piece (above left). Remove the Swivel Clamp from the O3L (above right).

Align the grooves on the side of the O3L with the letters “IP” engraved with the grooves on the Frame Clamp (photo below left). Put the non-threaded half of the swivel clamp (with the bolts pushed through) into the O3L. Put the threaded half into the Frame Clamp body and begin tightening the bolts, alternating between the two. Do not fully tighten the bolts. The O3L and the UFCxxxxIP should be able to swivel freely. See photos.

15.5.5 DLRFM8 Attach the O3L to the LRFA

This step requires:

- O3L (with the Frame Clamp IP attached)
- LRFA (with the LRFA Lock attached)



Remove the swivel clamp from the LRFA. Align the grooves on the side of the O3L with the letters “OP” engraved with the grooves on the LRFA. Put the non-threaded half of the swivel clamp (with the bolts pushed through) into the hole on the LRFA. Put the threaded half into the Frame Clamp Assembly and begin tightening the bolts, alternating between the two. Do not fully tighten the bolts. The parts should be able to swivel freely. See photo.

15.5.6 DLRFM8Attach the Frame Clamp Assembly to the Wheelchair

The location for the Frame Clamp should have been determined during the Fitting procedure. The Locking Rear Folding Adapter (LRFA) must be positioned partway down the side of the wheelchair and 2”- 5” below the seat base. The location selected for the Inner Piece can be below, ahead or behind the LRFA position; the Offset Links span the distance between the location for the Inner Piece and the position of the Locking Rear Folding Adapter.

Caution:
The Inner Piece cannot be located directly above the position for the Locking Rear Folding Adapter as there will not be enough space for correct operation of the Locking Mechanism and the Lock Mechanism may not be releasable to fold the mount behind the backrest.

At the selected location fit the Cap and Body of the Frame Clamp Inner Piece around the tube. Do not fully tighten the bolts yet. The Cap should face towards the inside of the wheelchair and the Body, connected to an Offset Link should face towards the outside.

Position the Locking Rear Folding Adapter LRFA at the chosen location midway down the side of the wheelchair and a little below the seat level before gently tightening the bolts on the Swivel Clamps. These bolts may need to be loosened during the Final Adjustment.

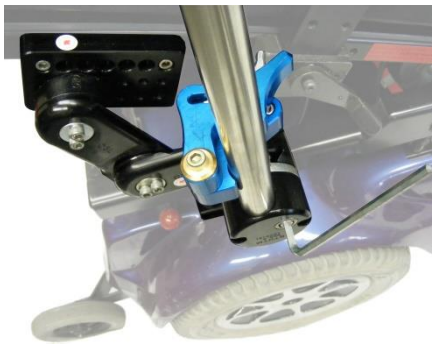
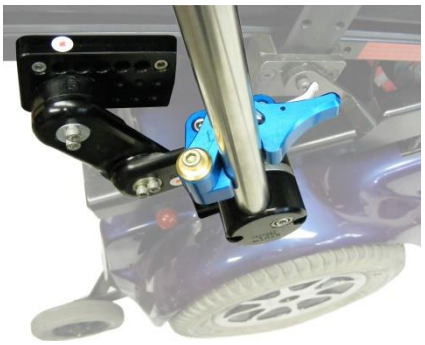
The photograph shows LRFA Assembly attached to a chair using the MH3/IPA instead of the UFCxxxxIP frame clamp.

15.5.7 DLRFM8 Install the Vertical Tube into the LRFA

This step requires:

- Straight 22” Tube
- Wheelchair (with Frame Clamp and LRFA Assembly installed)

Remove the foam plug from the RTHTM portion of the LRFA Assembly. The pinch clamp will be able to slide freely, use a finger to align the pinch clamp and slide the vertical tube (STR-22) into the Tube hole. Tighten the Pinch Clamp Bolt. Close the LRFA Lock to ensure that it is aligned correctly.

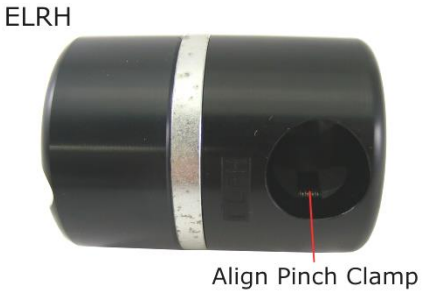
The RTHTM portion of the LRFA Assembly may need to be rotated slightly to align the Tube with the Lock Mechanism.

15.5.8 DLRFM8Attach the ELRH

This step requires:

- Straight 16” Tube
- Straight 22” Tube (attached to wheelchair)
- ELRH

Remove the foam plugs from the Tube holes on the ELRH. Align the pinch clamp and slide the ELRH onto the 22” Tube (which is already attached to the wheelchair). Next, install the horizontal tube (STR-16) which should install so that it is across the front of the wheelchair.

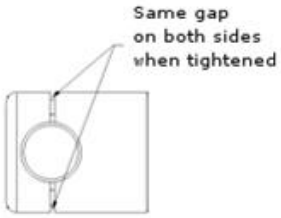




15.5.9 DLRFM8 Align the Vertical Tube (Left/Right)

Note: This step is not required for MH3 style or square frame clamps.

Ensure the bolts holding the Frame Clamp Assembly are still loose enough to allow adjustment. Align the vertical tube by moving it left or right until it is straight as shown in the photo (right). Tighten the frame clamp alternating between the two bolts.



When completely tight there should be a gap of 1/32” to 1/64” between the Cap & Body of the Frame Clamp on round tube. A larger gap indicates the Frame Clamp may be too small for the tube. If there is no gap and the inner piece does not clamp the wheelchair tube firmly; up to 4 layers of aluminum foil may be wrapped around the wheelchair tube, however if more layers are needed it indicates the Frame Clamp is too large. Contact Daedalus Technologies for information on adapter sleeves.

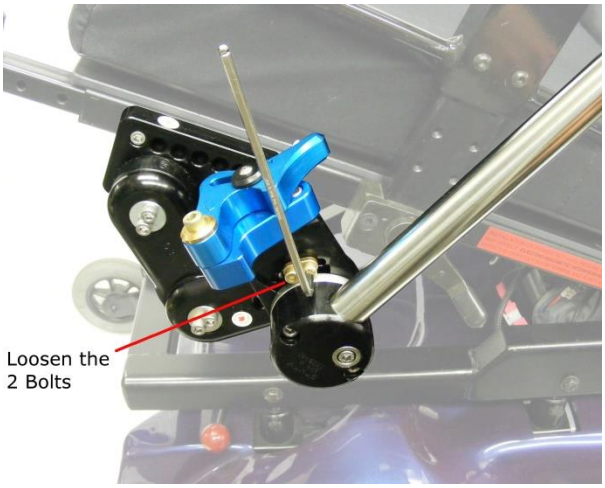
15.5.10 DLRFM8 Set the In-Use Position

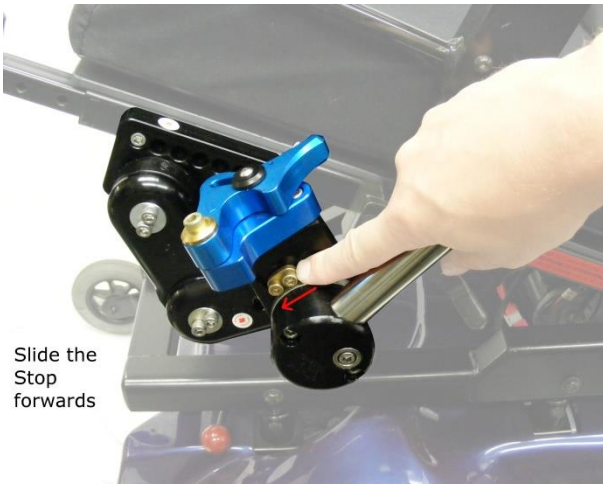
Fold the Mount into the “In-Use” position (so that the horizontal tube is across the front of the chair). Lock the Vertical Tube into the LRFA. Slightly loosen both of the Swivel Clamp bolts on both of the O3Ls. Adjust the mount positioning by rotating the O3Ls until the desired position is reached. Once the desired position is reached, tighten the Swivel Clamp bolts. Tighten the bolts firmly, alternating back and forth between the two bolts until tight.

15.5.11 DLRFM8 Set the Rear Stop Position

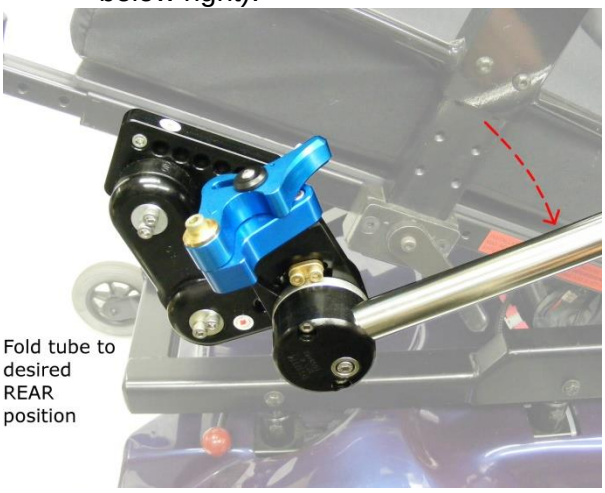
The Locking Rear Folding Adapter body (LRFA) has an adjustable stop for setting the rear folded location. Follow the steps below to set the stop position, if more range of motion is required see the next section “Further Stop Adjustment”.

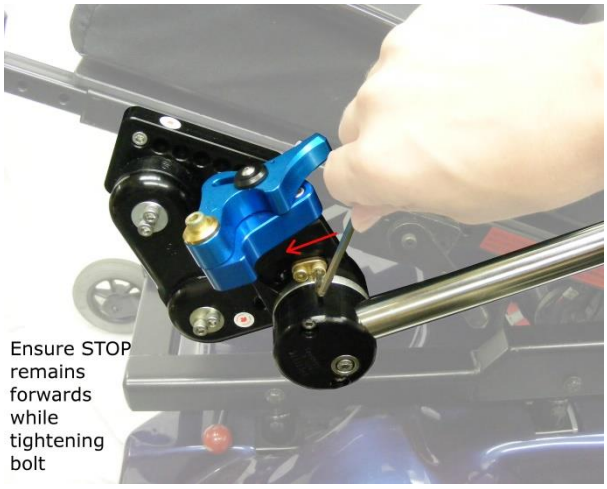
- Loosen the 2 bolts (4mm Allen Key) see photo left.
- Slide the stop as far forwards as it will go (the tube may need to be folded partially forwards) see photo.





- Fold the Tube backwards behind the chair to the desired “Rear Folded” position (see photo below left).
- While ensuring that the stop remains as far forwards as possible, tighten the bolts firmly (see photo below right).



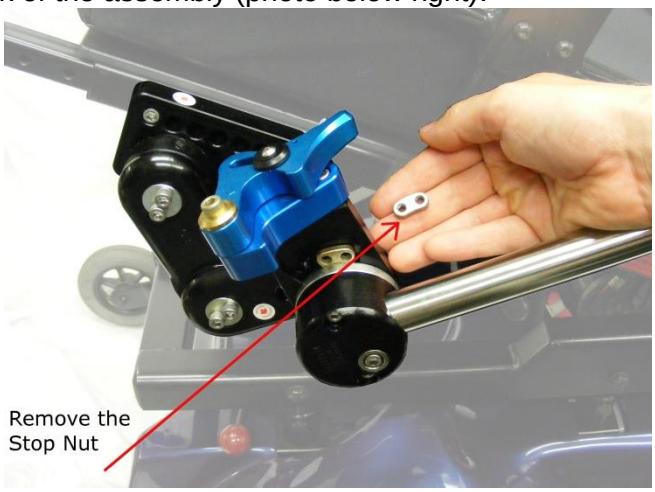


- Once the Bolts have been tightened test the stop to ensure that it folds back to the desired position.

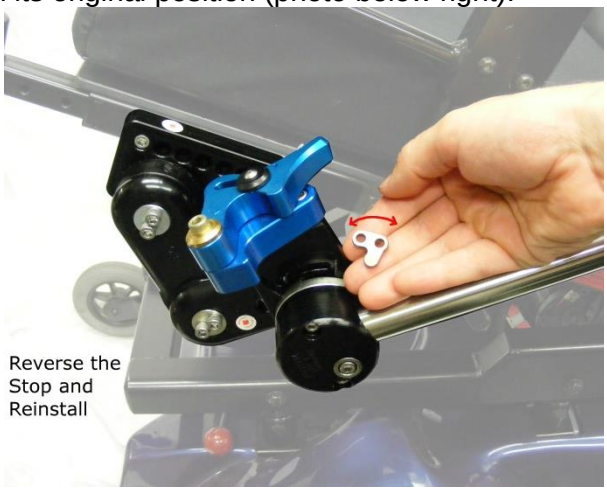
*15.5.12 DLRFM8 Further Stop Adjustment (*if required)*

If the Vertical Tube cannot be folded as far as required, further adjustment to the Stop is required. This is done by removing the stop and reversing it, which will displace the adjustable region by 10 degrees. In this case reversing the stop will result in the Tube being able to rotate further behind the chair.

- Remove the 2 bolts using the 4mm Allen Key (photo below left).
- Carefully remove the Stop Nut from the back of the assembly (photo below right).



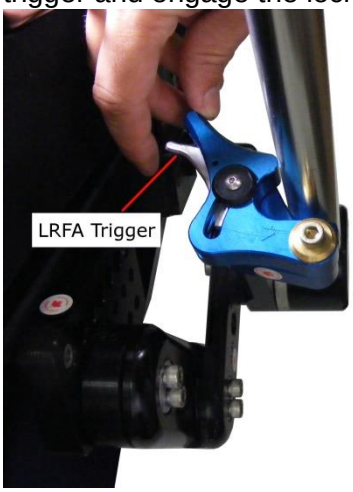
- Remove the stop from the slot it may be helpful to use the Allen key to hold the stop (photo below left).
- Invert the stop so that it is reversed from its original position (photo below right).

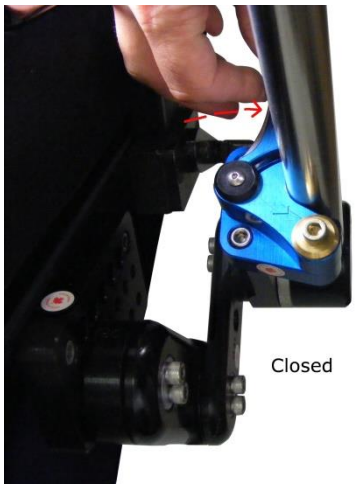


- Reinstall the Stop and Stop Nut and gently fasten the bolts using the 4mm Allen Key.
- The Tube should now be able to rotate 10 degrees further behind the wheelchair.
- Refer to the step above “Setting the Rear Stop Position” to set the Rear Stop Position.

15.5.13 DLRFM8 Using the Lock Mechanism

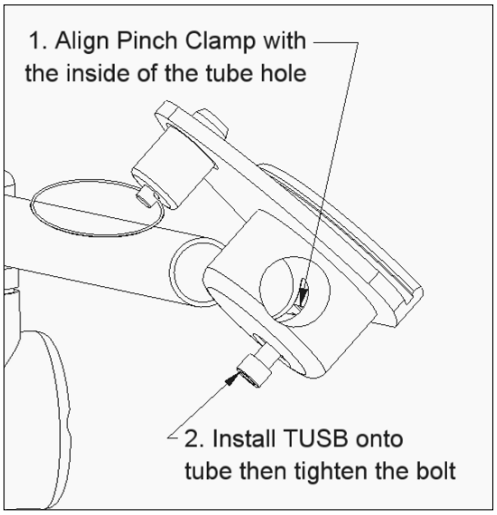
The Lock Mechanism is designed to lock the device in place preventing it from folding forwards or back when the chair is tilted. To use the lock mechanism, fold the device to the forward (in-use) position. Depress the trigger and engage the lock by pulling it over the tube. There will be a definitive click.





15.5.14 DLRFM8 Install the Total Quick Release Base – TUSB

Remove the foam plug retaining the Pinch Clamp in its hole in the TUSB and slide it onto the Horizontal Tube. The Pinch Clamp must be aligned in its hole so that it is even with the inside of the tube hole to allow the tube to slide through.



The Total Quick Release Base can be clamped at any location along the Horizontal Tube and may be rotated around the tube to place the mounted device at any angle. The normal orientation for the TUSB is with the Locking Pin positioned away from the user. Adapters and Holders that attach devices and computers onto the TUSB are assembled for this orientation.

15.5.15 DLRFM8 Final Checklist

Ensure all fasteners are fully tightened, including:

- Quick Release Pinch Clamp Bolt
- ELRH (2 Pinch Clamp Bolts)
- LRFA Pinch Clamp
- LRFA Lock – 2 bolts
- LRFA Lock Stop – 2 bolts
- O3L Swivel Ring Bolts – 2 – 4 bolts depending on number of O3L
- Frame Clamp Bolts – 2 bolts depending on Frame Clamp type.

Caution:

- The user cannot perform the complete rear folding action and assistance is required. The device must be guided through the entire folding action and not permitted to drop suddenly on the forward or rearward stops. As the side tube passes down the side of the wheelchair during folding, care must be taken that the user keeps their arm or hand clear.
- When large devices are attached or a longer side tube is used the device may protrude behind the wheelchair when folded.
- Tightening Pinch Clamps: The bolt on the Pinch Clamp should not be excessively tightened. The Pinch Clamp grips the Vertical Tube sufficient to prevent it rotating in the Index Clamp or Removable Outer Piece when the Horizontal Tube is pushed firmly by a user. By design the Pinch Clamp does not provide an immoveable grip. Extreme tightening of the Pinch Clamp bolt on the Vertical Tube in an attempt to prevent the Horizontal Tube from moving when very forcefully pushed will crush the tube and jam the Pinch Clamp. DAESSY mounting assemblies are designed to carry the weight of a computer or communication device and are not intended to resist a strong force exerted by the user.