3. DAESSY Folding Mount – DFM2 and DFM2ROP ................................................................. 3

3.1 Applications and Restrictions ....................................................................................... 3
    Caution: ............................................................................................................................. 4
    Choice of Folding Direction .............................................................................................. 5
    Right Side Folding Sequence – Default Setting ............................................................... 5
    Left Side Folding Sequence – Default Setting ................................................................. 6

3.2 Parts of the DFM2 and DFM2ROP .................................................................................... 7

3.3 Fitting the DAESSY Folding Mount DFM2, DFM2ROP .................................................. 8
    Standard Mounting Assemblies and Fitting Exceptions.................................................. 8
    Caution: ............................................................................................................................. 8
    Steps in the Fitting Procedure .......................................................................................... 8
    3.3.1 Selecting the Frame Clamp attachment location .................................................. 9
        Caution: ........................................................................................................................ 9
        Obstructions.................................................................................................................... 9
        Quick Check .................................................................................................................. 9
        Unusual Situations ......................................................................................................... 9
    3.3.2 Determining the Frame Clamp size ......................................................................... 9
    3.3.3 Measure and Specify tube lengths and shapes .......................................................... 10
        Vertical Tube dimensions (Length and Offset) ............................................................... 10
        Interference between Vertical Tube and Fittings on a Wheelchair ................................ 10
        Position and Orientation of S-bend ............................................................................. 10
        Interference within 10 inches of the Frame Clamp location ....................................... 10
        Specifying the Dimensions of the Vertical Tube .......................................................... 10

3.4 Installing the DAESSY Folding Mount DFM2, DFM2ROP ............................................. 11
    Steps in the Installing Procedure .................................................................................... 11
    3.4.1 Identify the Parts ...................................................................................................... 11
        Caution: ........................................................................................................................ 11
    3.4.2 Install the Frame Clamp .......................................................................................... 13
        Assemble the Frame Clamp pieces .............................................................................. 13
        Caution: ........................................................................................................................ 14
        Attach the Frame Clamp to the wheelchair .................................................................. 15
        Align the Frame Clamp ................................................................................................. 15
        Sideways Alignment ....................................................................................................... 15
        Important Note: ............................................................................................................ 16
        Front-Back Alignment .................................................................................................... 16
        Important Note: ............................................................................................................ 16
    3.4.3 Install the Vertical Tube and Index Clamp or ROP .................................................. 17
        DFM2 – Install the Vertical Tube and Index Clamp ....................................................... 17
        Setting the In-Use and Swung-Away positions of the DFM2 ....................................... 17
        DFM2ROP – Install the Vertical Tube and Removable Outer Piece ................................. 17
        Notice: .......................................................................................................................... 17
        Adjust the height and S-bend orientation ..................................................................... 18
        Caution: ........................................................................................................................ 18
    3.4.4 Connect the Horizontal and Vertical Tubes with the Folding Mechanism .................. 19
        Orientation of the Folding Mechanism ........................................................................... 19
        Choice of Folding Direction .......................................................................................... 19
        Changing from Right Hand to Left Hand Assembly ..................................................... 20
        Install the Folding Mechanism (RTH+2RTHTM) and Horizontal Tube ......................... 21
        Caution: ........................................................................................................................ 21
    3.4.5 Install the Total Quick Release Base – TUSB ......................................................... 22
        Quick Release Orientation ............................................................................................. 22
    3.4.6 Final Adjustments and Checklist ............................................................................. 22
3. DAESSY Folding Mount – DFM2 and DFM2ROP

3.1 Applications and Restrictions

The DAESSY Folding Mount – DFM2 consists of two lengths of stainless steel tube joined by a Folding Mechanism. The Horizontal Tube can be lifted through an angle of 90° and rotated down 180° to place the Horizontal Tube and Vertical Tube parallel along the side of the wheelchair. The complete mount can be removed leaving only the Frame Clamp assembly attached to the wheelchair frame; in its folded configuration the DFM2 is a very compact unit for storage or transportation.

The mount is supported on the wheelchair by a Frame Clamp Assembly, which is permanently attached to either the left or right side of the wheelchair.

For the standard DFM2 the Frame Clamp Assembly is composed of a Frame Clamp Inner Piece and a Frame Clamp Outer Piece. The Inner Piece is clamped to the wheelchair frame while the Outer Piece holds the vertical mount tube. An Index Clamp (IC1) secured around the lower end of the Vertical Tube engages with a positioning pin on the Frame Clamp Outer Piece to position the tube and prevent rotation.

The ROP Version of the Folding Mount – DFM2ROP incorporates a Locking Mechanism at the Frame Clamp. The increased security of the connection between the Removable Frame Clamp Receiver and the Removable Outer Piece makes the Folding Mount ROP Version suitable for tilting seat systems.
**Caution:**
Rarely does the user have the necessary combination of strength and dexterity to perform the folding operation unaided.

In the folded position the attached device protrudes beyond the side of the wheelchair making it vulnerable to collisions if the wheelchair is moved. In particular large keyboard devices that are tilted to allow the user full access may protrude a considerable amount and the DFM2 may not be appropriate for these devices. In some cases use of a Folding Quick Release Base (USBF) will allow the device to be folded to a more protected configuration when stored beside the wheelchair. *1.5 Attachment of Devices to DAESSY – The Quick Release System* contains more information on the USBF.

Whenever the wheelchair is moved with the mount folded, it is recommended that the device be detached from the mount and carried separately.

When the mount is folded the unbalancing effect of heavy devices on small wheelchairs is reduced but not eliminated, and it may be advisable to remove the device or mount before the wheelchair is vacated.
**Choice of Folding Direction**

The folding sequence has two steps. The first movement rotates the Horizontal Tube up through an angle of 90°. The second movement is a rotation of the Horizontal Tube down through 180° to place it parallel to the Vertical Tube. The initial direction of the second rotation can be either forward or backward. The factory default assembly of the Folding Mechanism (RTH+2RTHTM) will result in forward rotation when the mount is installed on the right side of the wheelchair (user’s perspective) and backward rotation when the mount is assembled on the left side of the wheelchair. The Folding Mechanism can be converted to provide opposite directions of downward rotation (see 3.4.4 Changing from Right Hand to Left Hand Assembly).

**Right Side Folding Sequence – Default Setting**

From the In-use position the Horizontal Tube is lifted up, rotating at the Folding Mechanism, to bring it parallel to the Vertical Tube.

From the Vertical Position the Horizontal Tube is rotated forward and down through 180-degrees to bring it down to a position beside the wheelchair.
Left Side Folding Sequence – Default Setting

From the In-use position the Horizontal Tube is lifted up, rotating at the Folding Mechanism, to bring it parallel to the Vertical Tube.

From the Vertical Position the Horizontal Tube is rotated backward and down through 180-degrees to bring it down to a position beside the wheelchair.

When the wheelchair user has the strength and dexterity needed to perform the folding sequence the movements may be easier with backward folding. 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.

On many wheelchairs, the backwards rotation of the Horizontal Tube will be obstructed by the rear wheel or other fittings, and the S-Tube must be positioned to hold the Folding Mechanism further out from the wheelchair to avoid these obstructions.
3.2 Parts of the DFM2 and DFM2ROP

The Standard Parts of the DAESSY Rigid Mount and common variations are listed below; Parts which may differ from situation to situation are indicated with a *.

<table>
<thead>
<tr>
<th>Part Code</th>
<th>Part Name</th>
<th>DFM2</th>
<th>DFM2ROP</th>
</tr>
</thead>
<tbody>
<tr>
<td>STR16</td>
<td>Horizontal Tube</td>
<td>✓</td>
<td>✓</td>
</tr>
<tr>
<td>*S22x3</td>
<td>Vertical Tube</td>
<td>✓</td>
<td>✓</td>
</tr>
<tr>
<td>RTH+2RHTHM</td>
<td>Folding Mechanism with 2 Tube Mounts</td>
<td>✓</td>
<td>✓</td>
</tr>
<tr>
<td>*TUSB</td>
<td>Total Quick Release Base</td>
<td>✓</td>
<td>✓</td>
</tr>
<tr>
<td>*UFxxxxIP</td>
<td>Frame Clamp Inner Piece</td>
<td>✓</td>
<td>✓</td>
</tr>
<tr>
<td>UFCOP</td>
<td>Frame Clamp Outer Piece</td>
<td>✓</td>
<td></td>
</tr>
<tr>
<td>IC1</td>
<td>Index Clamp</td>
<td>✓</td>
<td></td>
</tr>
<tr>
<td>RFCR</td>
<td>Removable Frame Clamp Receiver</td>
<td>✓</td>
<td></td>
</tr>
<tr>
<td>ROP</td>
<td>Removable Outer Piece</td>
<td>✓</td>
<td></td>
</tr>
<tr>
<td>Swivel</td>
<td>Swivel Clamp</td>
<td>✓</td>
<td>✓</td>
</tr>
<tr>
<td>DMSTools</td>
<td>Assembly Tools</td>
<td>✓</td>
<td>✓</td>
</tr>
</tbody>
</table>

The size and shape of the required Frame Clamp Inner Piece must be specified with the order of a standard mount. 1.3 Attaching and Positioning DAESSY – Frame Clamps provides comprehensive information on DAESSY Frame Clamp options.

The standard part list will be appropriate for many mounting situations. Variations in the standard list will be necessary for some situations. Common variations include changes in the length and shape of the Vertical Tube, additional Frame Clamp components to avoid obstructions with other wheelchair fittings, and different styles of the Quick Release Base. More information can be found in 1.4 Attaching and Positioning DAESSY – Tube Lengths and Shapes and 1.5 Attachment of Devices to DAESSY Mounts – The Quick Release System. The Fitting Procedure (3.3 Fitting the DAESSY Folding Mount DFM2, DFM2ROP) will identify what variations are necessary.

In addition to the standard and variation parts an adapter plate or device holder is necessary to complete the mount. 1.6 Attachment of Devices to DAESSY Mounts – Adapters and Holders provides comprehensive information on DAESSY Adapters plates and Holders.
3.3 Fitting the DAESSY Folding Mount DFM2, DFM2ROP

A communication device or laptop computer, when mounted on a wheelchair, must be correctly positioned to make it comfortably accessible to the user. The Fitting procedure for the determines the attachment point for the Frame Clamp assembly on the wheelchair, and the tube lengths required to place the device correctly relative to this attachment location. Before the fitting procedure is started it is necessary to first determine the required position for the device. This position will depend on the needs of the user and the device to be mounted.

The fitting procedure is the same for the DAESSY Rigid Mount and the DAESSY Folding Mount.

**Standard Mounting Assemblies and Fitting Exceptions**

The standard tube length of 22 inches with an S-bend offset of 3 inches is suitable for many situations when the device is mounted for direct access on a medium size wheelchair but it is essential that the fitting procedure be followed for mounting a scanning or headpointer operated device as these are normally mounted higher and further away from the user than is possible with the standard tube dimensions. When the mount will be installed on a small wheelchair for a young or smaller user, the fitting procedure should be followed to ensure the correct tube dimensions are ordered. Tubing is available in a wide range of lengths and S-bend offsets.

**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.

**Steps in the Fitting Procedure**

- Selecting the Frame Clamp attachment location
- Determining the Frame Clamp size
- Measuring and Specifying the Tube Length and Shape
3.3.1 Selecting the Frame Clamp attachment location

The DAESSY Folding Mount – DFM2 can be mounted on either the left or right side of a wheelchair with left and right defined from the position of the person seated in the wheelchair.

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. It does not matter how the wheelchair frame tube is oriented because the Swivel Clamps allow the Offset Links and Rear Folding Adapter to be rotated to any angle relative to the Frame Clamp Inner Piece.

**Caution:**

The selected location must be part of the wheelchair frame, not a removable armrest or footrest.

Most 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.

**Obstructions**

Obstructions directly above the selected location, such as the brake lever or other controls, which are closer than 10” 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 further out or position it sideways from the location of the Inner Piece.

**Quick Check**

A quick check for a suitable location for the Frame Clamp Inner Piece is to find a part of the frame tube which has enough space to be gripped by three fingers when reaching from inside the wheelchair frame.

**Unusual Situations**

Some wheelchairs do not have any tubing freely accessible on the frame or do 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 bottomside. 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 Bolt-on Adapter may be substituted for the Inner Piece.

3.3.2 Determining the Frame Clamp size

Comprehensive information for determining the correct Frame Clamp size can be found in 1.3 Attaching and Positioning DAESSY – Frame Clamps.
3.3.3 Measure and Specify tube lengths and shapes

The Vertical Tube of the DFM2 is supported in the Frame Clamp Outer Piece and connected to the Horizontal Tube by the Folding Mechanism (RTH+2RTHTM). Often the correct position for the device requires the Horizontal Tube to be offset forward or backwards from the location of the Frame Clamp Outer Piece, and the Vertical Tube will have two bends to form an S-shape that offsets the ends of the tube. On some wheelchairs an offset may be needed to allow the upper end of the Vertical Tube to clear a lap tray or control module.

**Vertical Tube dimensions (Length and Offset)**

Two measurements are needed to determine the length and shape of the Vertical Tube. As shown in the diagram, these measurements are the horizontal distance (X) and vertical distance (Y) up the side of the wheelchair, between the Frame Clamp Outer Piece and the intended location of the Horizontal Tube. These measurements must be taken from the location of the Frame Clamp Outer Piece not the location of the Frame Clamp Inner Piece. When an Offset Link is used the Outer Piece will not be located at the same place as the Inner Piece.

When the DAESSY Quick Release is used to attach the device to the Horizontal Tube the centerline of most devices is between 1” and 3” forward of the tube (away from the user). For very precise horizontal positioning contact DAESSY for more information.

**Interference between Vertical Tube and Fittings on a Wheelchair**

Fittings on the wheelchair between the location of the Frame Clamp Outer Piece and the position of the Horizontal Tube may interfere with the Vertical Tube. Sometimes this can be avoided by the correct placement of the S-bend. This is often possible when the S-bend can be nearer one end of the tube with the offset above the obstruction.

**Position and Orientation of S-bend**

The S-bend on the Vertical Tube can be placed near one end of the tube or at the midpoint. The standard tube has 4 inches of straight tube at one end and 12 inches at the other. Either end may be at the top or bottom and the only limit on the location of the bend is that the shortest straight end possible is 2 inches.

**Interference within 10 inches of the Frame Clamp location**

When the obstruction is directly above the location of the Frame Clamp Inner Piece and at a distance of less than 10 inches it may not allow sufficient clearance for the Vertical Tube to be lowered into the hole in the Frame Clamp Outer Piece. When the Frame Clamp Inner Piece is located very low on the wheelchair frame or above the front caster wheel, height adjustment of the mount by moving the Index Clamp up and down the Vertical Tube will be limited to the amount of clearance between the bottom of the Frame Clamp Outer Piece and the obstruction. In both these cases it may be necessary to use an Offset Link (O3L) or Spacer (UFCSPCR) to move the Outer Piece away from the location of the Inner Piece.

**Specifying the Dimensions of the Vertical Tube**

When the X and Y measurements are used for specifying the length and offset the Y measurement will be rounded up to the nearest even number of inches and this will be the L distance for the tube supplied. The X measurement will be the O distance for the tube supplied and the S distance will be 4 inches.

When the S-bend must be a different distance from the end, or when extra length is added to provide a greater range of height adjustment the complete for overall length L, S-bend Offset O, and straight length on one end S should be included in any order.
3.4 Installing the DAESSY Folding Mount DFM2, DFM2ROP

Steps in the Installing Procedure

- Identify the Parts
- Install the Frame Clamp Inner Piece (and RFCR – ROP Version)
- Install the Vertical Tube with Index Clamp (or ROP – ROP Version)
- Install the Folding Mechanism and Horizontal Tube
- Install the Total Quick Release Base

3.4.1 Identify the Parts

The standard DAESSY Folding Mounts consist of the following parts:

<table>
<thead>
<tr>
<th>Part Code</th>
<th>Part Name</th>
<th>DFM2</th>
<th>DFM2ROP</th>
</tr>
</thead>
<tbody>
<tr>
<td>STR16</td>
<td>Horizontal Tube</td>
<td>✓</td>
<td>✓</td>
</tr>
<tr>
<td>S22x3</td>
<td>Vertical Tube</td>
<td>✓</td>
<td>✓</td>
</tr>
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<td>✓</td>
<td>✓</td>
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<tr>
<td>TUSB</td>
<td>Total Quick Release Base</td>
<td>✓</td>
<td>✓</td>
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<tr>
<td>UFCxxxIP</td>
<td>Frame Clamp Inner Piece</td>
<td>✓</td>
<td>✓</td>
</tr>
<tr>
<td>UFCOP</td>
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<td>✓</td>
<td>✓</td>
</tr>
<tr>
<td>IC1</td>
<td>Index Clamp</td>
<td>✓</td>
<td>✓</td>
</tr>
<tr>
<td>RFCR</td>
<td>Removable Frame Clamp Receiver</td>
<td></td>
<td>✓</td>
</tr>
<tr>
<td>ROP</td>
<td>Removable Outer Piece</td>
<td>✓</td>
<td>✓</td>
</tr>
<tr>
<td>Swivel</td>
<td>Swivel Clamp</td>
<td></td>
<td>✓</td>
</tr>
<tr>
<td>DMSTools</td>
<td>Assembly Tools</td>
<td>✓</td>
<td>✓</td>
</tr>
<tr>
<td></td>
<td>Installation Instructions</td>
<td>✓</td>
<td>✓</td>
</tr>
</tbody>
</table>

All the black anodized aluminium components have a part code stamped into the metal and these should be identified and laid out as shown in the picture. The Frame Clamp Inner Piece (UFCxxxIP), Vertical Tube (S22x3) and Quick Release Base (TUSB) may not be exactly as shown, and an Offset Link may be included. The ROP Version will have a Removable Frame Clamp Receiver and a Removable Frame Clamp Outer Piece in place of the UFCOP and the Index Clamp IC1.

Caution:

It is very important that all packaging be thoroughly inspected for loose parts and instruction papers. All the mount components must be identified and checked against the standard parts list, and the order list BEFORE any packaging is thrown away.
The Swivel Clamp for joining the UFCxxxIP and UFCOP (or RFCR) is normally fastened into the longitudinal hole of the UFCOP. Pinch Clamps for securing the tubes into the TUSB and IC1 (or ROP) are normally installed in their holes in the parts and retained by a plastic plug in the tube hole.

The parts shown in Figure 3.4-1 are for a standard order. A customized mount may have different parts substituted.

Specific installation instructions may be supplied with components, especially components that vary from the standard parts list. In the case of contradictory instructions, component specific instructions provided with the mounting components will supersede the installation procedures outlined in this document.
3.4.2 Install the Frame Clamp

The DAESSY Folding Mount (DFM2) can be mounted on either the left or right side of a wheelchair with left and right defined from the position of the person seated in the wheelchair.

Find the location on the wheelchair to attach the Frame Clamp Inner Piece. This should have been chosen during the Fitting Procedure as described in 3.3.1 Selecting the Frame Clamp attachment location. Frequently the Frame Clamp will be installed near the front caster wheel, but make sure the selected location is part of the wheelchair frame, not a movable armrest or footrest.

Check that both the Frame Clamp and the Vertical Tube will not interfere with any of the wheelchair fittings or components. The caster wheel at the bottom should be free to spin; the brake lever and any other controls should remain accessible. If there is interference it may be necessary to use an Offset Link (O3L) or Frame Clamp Spacer (UFCSPCR) to displace the Frame Clamp Outer Piece forward, backward or further out from the position of the Frame Clamp Inner Piece. These components can be ordered individually from DAESSY if they have not been provided with the mount.

It does not matter how the wheelchair frame tube is oriented because the Swivel Clamp allows the Frame Clamp Outer Piece to be rotated to any angle relative to the Frame Clamp Inner Piece.

Assemble the Frame Clamp pieces

![Diagram of Frame Clamp Assembly](image)

The pieces of the complete Frame Clamp Assembly should be connected together before the Frame Clamp is installed on the wheelchair frame. For a standard mount these pieces will include a Frame Clamp Inner Piece (UFCxxxxIP) and a Frame Clamp Outer Piece (UFCOP) and a Swivel Clamp. The ROP Version mount will have a Frame Clamp Assembly consisting of a Frame Clamp Inner Piece (UFCxxxxIP), a Removable Frame Clamp Receiver (RFCR) and a Removable Outer Piece (ROP). The UFCxxxxIP and RFCR will be connected with a Swivel Clamp. Additionally the Frame Clamp Assembly may include Offset Links (O3L) and/or Frame Clamp Spacers (UFCSPCR) to clear any obstructions.

When the Inner Piece has a Cap and Body fastened with two screws the Cap must be removed so that the threaded end of the Swivel Clamp can be fitted in the long hole through the Inner Piece. Some Inner Pieces have integrated threaded holes for the Swivel Clamp bolts and do not use the threaded end.

On the standard Frame Clamp Assembly the unthreaded end of the Swivel Clamp fits in the hole through the length of the UFCOP. The long arm of the 3/16" Allen Key will be needed to reach the heads of the two bolts through the hole in the UFCOP. For the ROP Version the unthreaded end
of the Swivel Clamp fits in the centre hole of the RFCR.

If there are no Offset Links or Spacers needed to avoid obstructions the Frame Clamp Inner Piece is connected directly to the UFCOP or RFCR with one Swivel Clamp. If Offset Links or Frame Clamp Spacers are needed, these are connected between the UFCxxxxIP and UFCOP or RFCR with a Swivel Clamp at each joint. Longer Swivel Clamp bolts are provided with the UFCSPCR. The Swivel Clamps should be inserted into each joint so that the threaded end is closest to the wheelchair and the bolt heads remain accessible.

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 engage with the grooves on an Outer Piece but will not engage with the grooves on another Inner Piece. 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. The bolts do not need to be fully tightened at this step. However when the bolts are finally tightened it may be necessary to use an extender on the short arm of the Allen Key to obtain sufficient torque. A four-inch length of aluminium with a long hole to fit the Allen Key is provided for this purpose. This tool is called the Tommy Bar.

**Caution:**

- All the grooved faces must be correctly matched and engaged before the swivel clamp bolts are tightened.
- Do not use the Tommy Bar to extend the long arm of the Allen Key.

With the DFM2ROP the Removable Outer Piece (ROP) should be inserted and locked into the Removable Frame Clamp Receiver (RFCR) to complete the assembly of the Frame Clamp. It may be necessary to loosen or remove the Pinch Clamp inside the ROP so that the Vertical Tube can be temporarily inserted for aligning the Frame Clamp.

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making technology more accessible
**Attach the Frame Clamp to the wheelchair**

At the selected location fit the Cap and Body of the Frame Clamp Inner Piece around the tube. Replace the bolts but do not fully tighten them yet. The Cap should face towards the inside of the wheelchair and the Body, connected to the Outer Piece, should face away from the wheelchair.

![Figure 3.4-4](image)

*Figure 3.4-4*  
The Cap and Body of the Frame Clamp Inner Piece fit around the wheelchair tube at the selected location. The two bolts are evenly, but gently tightened.

**Align the Frame Clamp**

On the standard version (non-ROP) the Frame Clamp Assembly must be aligned in two ways. The Inner Piece must be adjusted on the wheelchair frame tube so that the Outer Piece is facing directly outward. This is referred to as Sideways Alignment and is only necessary when the UFCxxxxIP is attached to round tubing. The Outer Piece must be rotated around the Swivel Clamp so that the tube hole is oriented vertically and the Index Pin is pointing up. This is referred to as Front-Back Alignment.

It is not necessary that the ROP Version of the DFM2 be aligned with the Vertical Tube oriented vertically front to back, however the Vertical Tube should still be aligned sideways to be parallel to the side of the wheelchair.

![Figure 3.4-5](image)

*Figure 3.4-5*  
The Vertical Tube is used as a lever and guide to align the Frame Clamp Sideways and Front to Back

**Sideways Alignment**

Use the Vertical Tube in the tube hole of the Outer Piece as a lever and alignment guide as shown in Figure 3.4-5. Hold the Vertical Tube parallel to the side of the wheelchair and alternately tighten the bolts connecting the Cap and Body of the Frame Clamp Inner Piece to clamp the wheelchair tube evenly.
Important Note:
When the bolts are fully tight and the tube is firmly gripped there should be a slight gap of 1/64” to 1/32” between the Cap and Body of the Frame Clamp Inner Piece. If the gap is wider than 1/16” the Frame Clamp Inner Piece is probably too small. If there is no gap and the tube is not gripped firmly when the bolts are fully tight remove the Inner Piece and tightly wrap some aluminium foil around the wheelchair tube at the attachment location. There is some variation in the tube size on different wheelchairs so it is sometimes necessary to use the foil. Make sure the aluminium foil does not get caught between the Cap and Body when the UFCxxxxIP is replaced and the bolts are tightened. Do not use paper or plastic. Do not use more than four layers of aluminium foil; more than this probably means the UFCxxxxIP is too large. Adapter Sleeves (SLV) can be purchased to downsize an overlarge Frame Clamp Inner Piece.

Front-Back Alignment
With the UFCxxxxIP attached firmly to the wheelchair, the tube hole in the Outer Piece is aligned vertically by rotating the Vertical Tube forward or backward before tightening the two bolts on the Swivel Clamp. The Vertical Tube has to be removed to do this so care must be taken not to move the Outer Piece. Use the Tommy Bar to get enough leverage and tighten the two bolts alternately to get the most efficient grip.

With the standard DFM2 (non ROP) the Vertical Tube may lean no more than 15º forward or backward from the vertical if this is necessary to obtain the correct position for the mounted device. Installation of the DFM2 at a greater angle from the vertical places extra load on the Index Pin in the Frame Clamp Outer Piece. In situations when the correct position for the device cannot be reached without leaning the tube beyond 15º, custom S-Tube with a larger bend and/or Offset Links should be used to obtain the correct position, or the ROP Version DFM2ROP may be used.

Important Note:
All the bolts should be tightened sufficient to hold the mounting assembly for normal loads; when excessive force is applied the mount may move and should move before the wheelchair frame is likely to bend.

It is the responsibility of the installer to ensure the mount is firm enough for their needs, but not overtight, and to periodically check that the bolts have not vibrated loose.
3.4.3 Install the Vertical Tube and Index Clamp or ROP

**DFM2 – Install the Vertical Tube and Index Clamp.**

The Index Clamp (IC1) is installed on the lower end of the Vertical Tube with the three holes downwards. Either end of the S-bent Vertical Tube can be used as the lower end. When there are obstructions directly above the Outer Piece it will be necessary to have the shorter end of the S down. When the tube is several inches longer than the vertical distance from the Outer Piece to the required location of the Horizontal Tube the longer end of the S will be down to allow the extra length of tube to pass down through the Outer Piece.

Remove the plastic plug retaining the Pinch Clamp in its hole in the IC1 and insert the end 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.

Refer to 1.7 Adjustment and Maintenance if the Pinch Clamp is not aligned and the tube will not enter the hole. Tighten the bolt in the Pinch Clamp only enough to prevent the IC1 falling off when the tube is held upright.

**Setting the In-Use and Swung-Away positions of the DFM2**

On the underside of the Index Clamp (IC1) are three pinholes, which receive the Index Pin on the UFCOP. For the DFM2 it does not matter which pinhole is chosen to receive the Index Pin on the Outer Piece.

**DFM2ROP – Install the Vertical Tube and Removable Outer Piece**

The Removable Outer Piece (ROP) is installed on the lower end of the Vertical Tube oriented to match the Removable Frame Clamp Receiver (RFCR) that is connected to the wheelchair. Either end of the S-bent Vertical Tube can be used as the lower end. When there are obstructions directly above the Removable Outer Piece it will be necessary to have the shorter end of the S down. When the tube is several inches longer than the vertical distance from the Removable Outer Piece to the required location of the Horizontal Tube the longer end of the S will be down to allow the extra length of Vertical Tube to pass down through the Outer Piece.

Remove the plastic plug retaining the Pinch Clamp in its hole in ROP and insert the end 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 Vertical Tube to slide through.

**Notice:**

Refer to 1.7 Adjustment and Maintenance if the Pinch Clamp is not aligned and the tube will not enter the hole.

Tighten the bolt in the Pinch Clamp only enough to prevent the ROP falling off when the Vertical Tube is held upright.
**Adjust the height and S-bend orientation**

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

![Figure 3.4-6](image1) **Figure 3.4-6**
The Vertical Tube height, and the orientation of the S-bend are adjusted at the Index Clamp.

To set the height of the DFM2ROP, insert the ROP into the RFCR and lower the Vertical Tube through the tube hole in the ROP until the top end is at approximately the correct height for the mounted device.

Rotate the Vertical Tube within the Outer Piece tube hole until the S-bend is in the correct orientation to 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 Tube firmly in place.

**Caution:**

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.
3.4.4 Connect the Horizontal and Vertical Tubes with the Folding Mechanism

Orientation of the Folding Mechanism
When the DAESSY Folding Mount is on the right side of the wheelchair the Tube Mount (stamped with the letters RTHTM), which is mounted on the end of the Vertical Tube, faces toward the rear of the wheelchair. When the DFM2 is on the left side of the wheelchair the Tube Mount, which is mounted on the end of the Vertical Tube, faces away from the wheelchair.

Choice of Folding Direction
The folding sequence has two steps. The first movement rotates the Horizontal Tube up through an angle of 90°. The second movement is a rotation of the Horizontal Tube down through 180° to place it parallel to the Vertical Tube. The initial direction of the second rotation can be either forward or backward. The Folding Mechanism can be converted to provide opposite directions of downward rotation.

When the wheelchair user has the strength and dexterity needed to perform the folding sequence the movements may be easier with backward folding. The Horizontal Tube and mounted device must be held through 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 is folding the mount, there is little or no advantage to backward folding.

On many wheelchairs, the backwards rotation of the Horizontal Tube will be obstructed by the rear wheel or other fittings, and the S-Tube must be positioned to hold the Folding Mechanism further out from the wheelchair to avoid these obstructions.
Changing from Right Hand to Left Hand Assembly

The Folding Mechanism is usually supplied with the Tube Mount (RTHTM) for the Horizontal Tube assembled for right-hand installation with forward folding. The letters R and L are stamped into the silver coloured ring to which the Tube Mount bolted. The default assembly has the tube hole located over the R for right-hand.

Figure 3.4-8 The hole in the tube-mount for the Horizontal Tube is located over the stamped letter R.

The following steps change the Folding Mechanism to left-hand folding:

- 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
- Reattach the tube mount in the new position (the horizontal tube will point away from the wheelchair)
- Fold the horizontal straight tube down toward the floor (the mount is now in the folded position)
Install the Folding Mechanism (RTH+2RTHTM) and Horizontal Tube

Remove the plastic plug holding the Pinch Clamp in the Tube Mount for the Vertical Tube. Check that the Pinch Clamp is correctly aligned and slide the Tube Mount onto the end of the Vertical Tube. Orient the Folding Mechanism to face towards the rear of the wheelchair if the mount is installed on the right-hand side of the wheelchair or to face toward the front if the mount is installed on the left-hand side. Tighten the Pinch Clamp Bolt. Remove the plastic plug holding the Pinch Clamp in the Tube Mount for the Horizontal Tube. Check that the Pinch Clamp is correctly aligned and install the Horizontal Tube and tighten the Pinch Clamp Bolt.

Caution:
The bolts on the Pinch Clamps should not be excessively tightened. The Pinch Clamps grip the tubes sufficient to prevent rotation when the mount is pushed firmly by a user. By design a Pinch Clamp does not provide an immoveable grip. Extreme tightening of the Pinch Clamp bolt in an attempt to prevent the 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.


**3.4.5 Install the Total Quick Release Base – TUSB**

Remove the plastic 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. Refer to 1.7: *Adjustment and Maintenance* if the Pinch Clamp is not aligned and the tube will not enter the hole.

![Diagram](image1.png)

1. Align Pinch Clamp with the inside of the tube hole
2. Install TUSB onto tube then tighten the bolt

**Figure 3.4-11**
The Quick Release Base slides on the end of the Horizontal Tube and is held in place with a Pinch Clamp. Normally the Locking Pin is oriented away from the user.

**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.

**3.4.6 Final Adjustments and Checklist**

Before attaching a device to the DAESSY Folding Mount DFM2 check that the following steps in the installation procedure have been completed.

- Bolts on Frame Clamp Inner Piece fully tight
- Bolts on Swivel Clamp fully tight. Tighten these bolts alternately to get the most effective grip.
- Pinch Clamp bolts tight