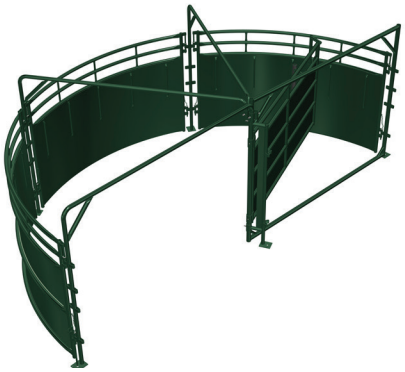
Hi-Hog Farm & Ranch Equipment Ltd.

Questions
Call toll free 1-800-661-7002
(Mon-Fri 8:00 am to 4:30 pm MST)
www.hi-hog.com

Cattle Tub Installation Instructions

Please read the instructions completely before before installing.

Tub components:

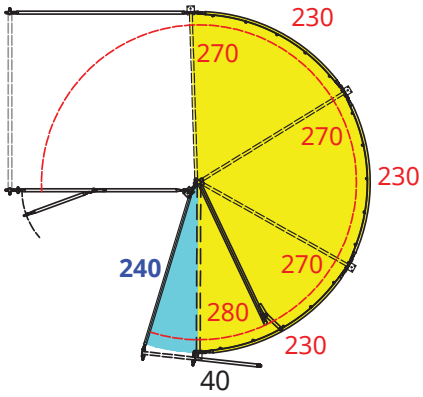


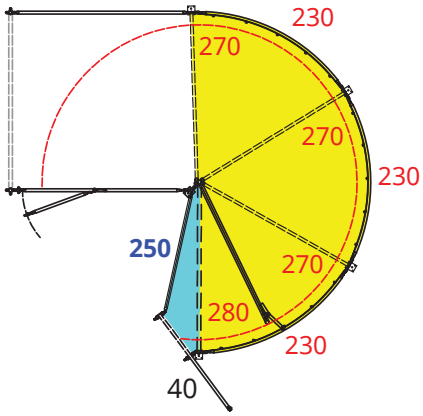
Standard Tub Components:

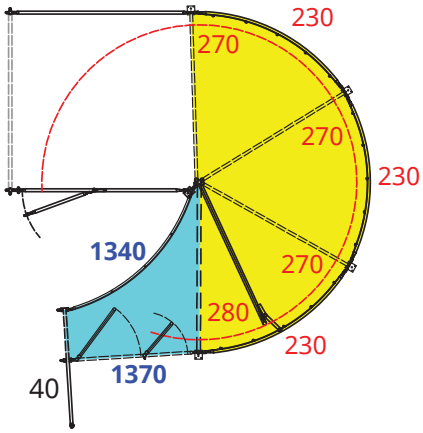
- Item 280 - Pivot Gate with integrated full-frame tub spreader.
- Item 270 - Overhead tub spreader
- Item 230 - Tub exterior - curved panel

Standard Tub Transition Components:

- Item **240** - Sheeted Straight Panel, 9'-3" long by 66" high
- Item **250** - Sheeted Straight Panel, 6'-8" long by 66" high
- Item **1340** - Sheeted Curved Panel, 110" long by 66" high
- Item **1370** - Sheeted Straight Panel, 6'-8" long by 66" high, comes with man-gate and sort-gate







Miscellaneous Tub Transition Components (sample tubs are provided at the end of this guide)

- Item 1375 - Sheeted Straight Gate in Frame, 6'-8" long by 66" high
- Item 1380 - Sheeted Straight Panel, 6'-8" long by 66" high, comes with sort-gate
- Item 85 - Sheeted Gate in Frame, 4'-0" long by 66" high
- Item 86 - Sheeted Panel, 4'-0" long by 66" high
- Item 1341 - Sheeted Curved Panel, 11'-2" long by 66" high
- Item 1342 - Sheeted Curved Panel, 6'-11" long by 66" high
- Etc. (See Appendix)

Note: For simplicity, the beginning of the working alley is represented with a rolling door (Item 40). There are however, several optional alley spreaders that could be used to start your working alley.

Site Preparation

Footing
As with all livestock working areas, your tub should be installed on a surface that provides secure footing for both livestock and livestock handlers.

Some options for secure footing are:
- Pour a concrete slab with a high traction finish
- Install traction mats
- Install Hi-Hog's Paddock Slabs
- At a minimum, select the best location to minimize the risk of developing poor footing. Poor footing, such as mud, will cause your livestock to move more cautiously, and be at greater risk of injury.

Grading
Hi-Hog's tub can be set-up on an irregular grade. For best performance however, your tub should be installed on a level flat surface.

Cattle Tub Design

Hi-Hog offers dozens of cattle tub designs. Each of these designs are available for clockwise, or counter-clockwise cattle flow (see next page for full description).

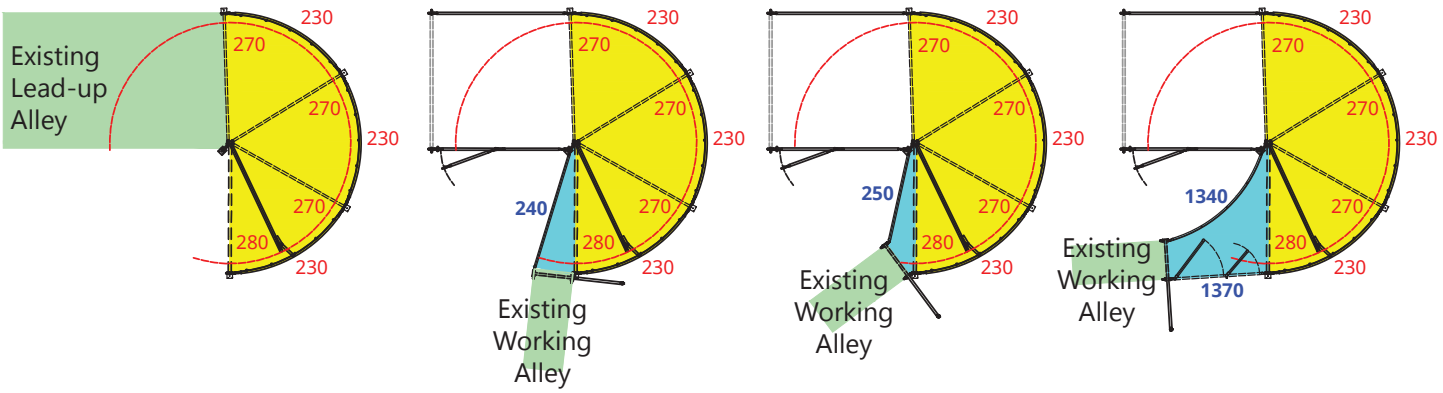
Choosing the right tub for your operation depends largely on your existing facilities. If you have no existing facilities, and no site restrictions, you can simply install a standard cattle tub. If however, your new tub needs to transition between an existing corral set-up and an existing squeeze chute or loading chute, you will need to be more selective about what parts you need, and more precise with how you install these parts.

If you are trying to fit your tub into an existing facility, you may wish to contact Hi-Hog's design team. Hi-Hog's design team offers free design assistance for Hi-Hog customers. Hi-Hog will work with you to prepare a scaled drawing of your facility and show you how to best configure your new cattle tub to satisfy your cattle handling needs.

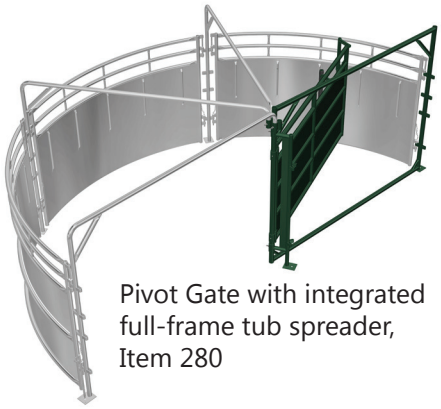
Layout

Where you start your installation depends largely on your existing facilities.
1. If you have an *existing working alley* that you need to connect to, then this is where you will begin your installation.
2. If you have an existing *lead up alley* that will be feeding your tub, then this is where your installation will begin.

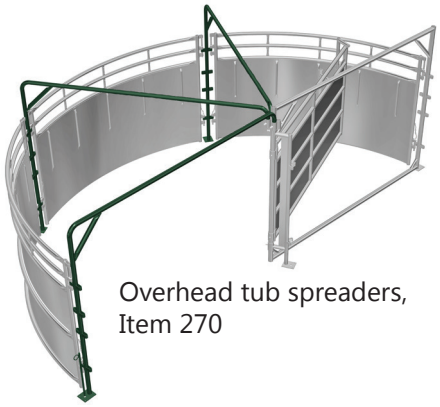
Hi-Hog's cattle tubs are assembled by pinning a variety of parts together. Each of these pin connections offer the installer some flexibility. To see how different installation variables will impact the layout of your tub, see the Appendix Notes beginning on page 10.



Cattle Tub - Basic Parts



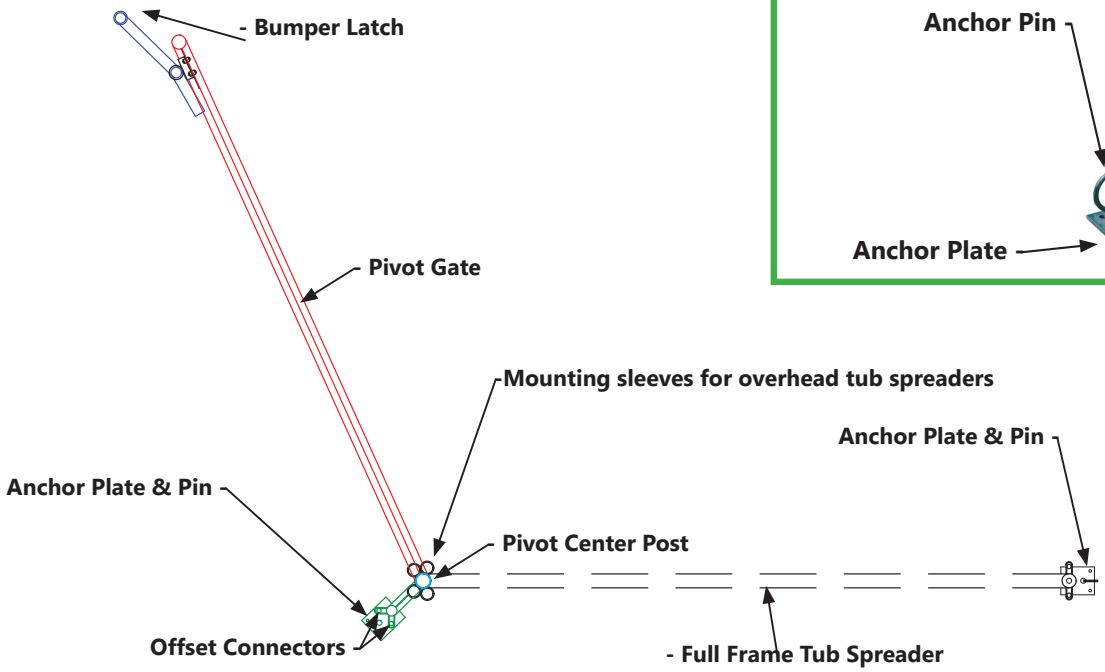
Pivot Gate with integrated full-frame tub spreader, Item 280



Overhead tub spreaders, Item 270

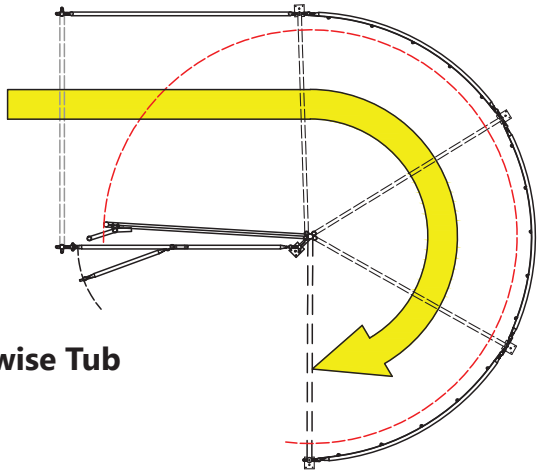
Tub exterior - curved panels Item 230

Pivot Gate Parts:

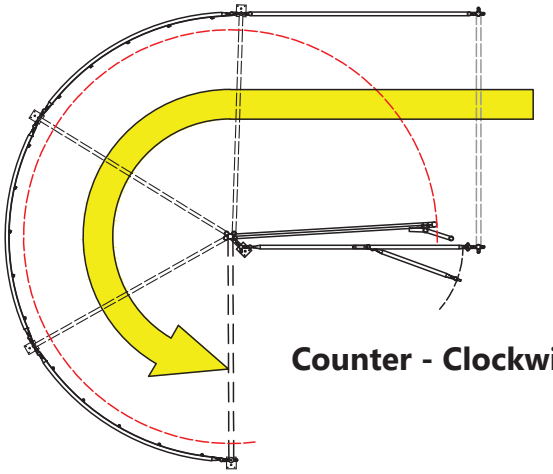


Clockwise or Counter-Clockwise

Before you begin, identify if your livestock will travel through your tub in a **Clockwise** or **Counter-Clockwise** direction. The two sample tubs shown below use the same components. The only difference is which side of the pivot gate your pivot gate bumper latch is located.



Clockwise Tub

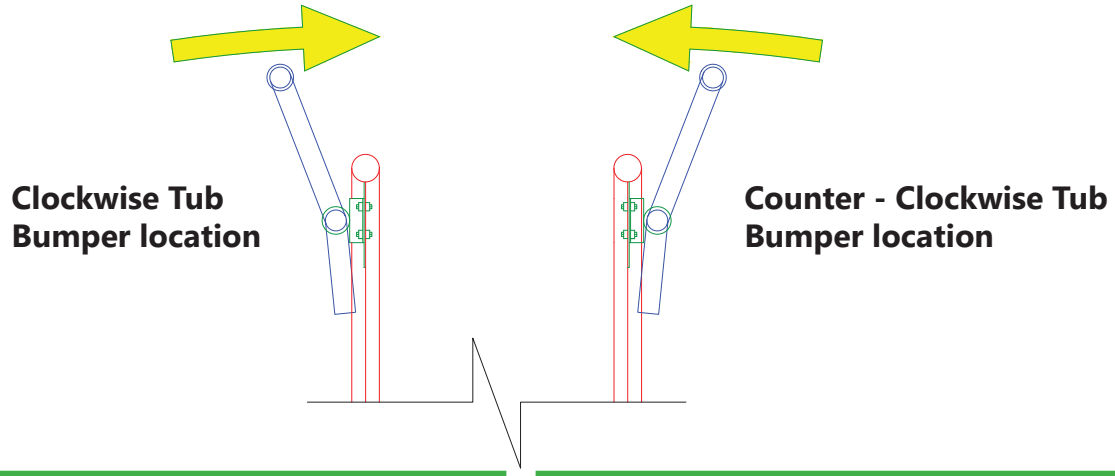


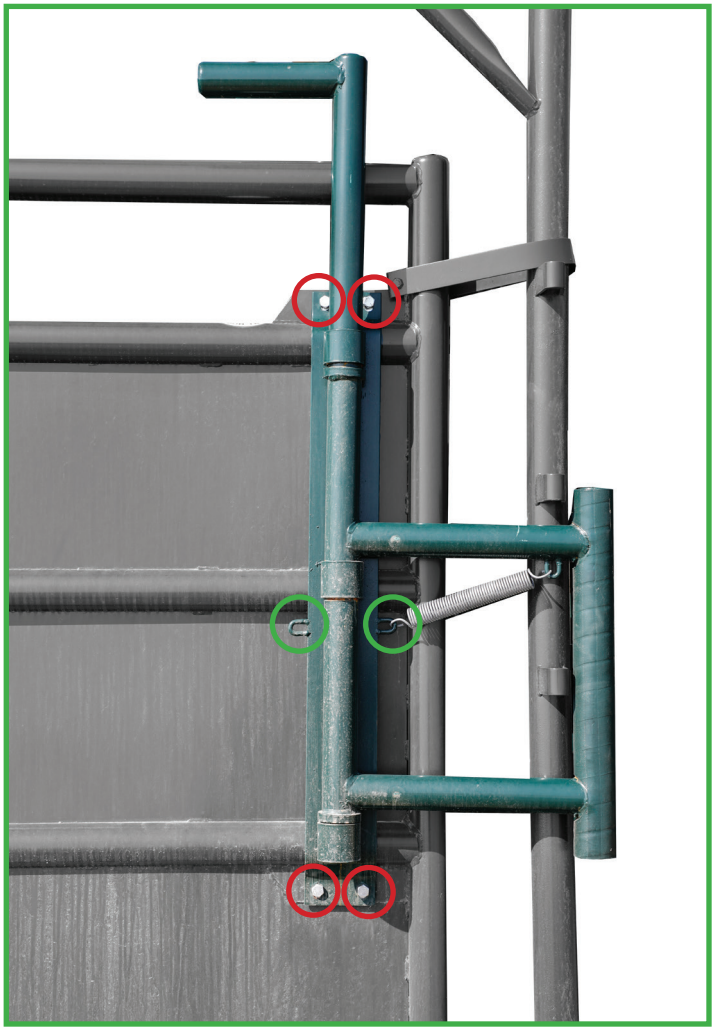
Counter - Clockwise Tub

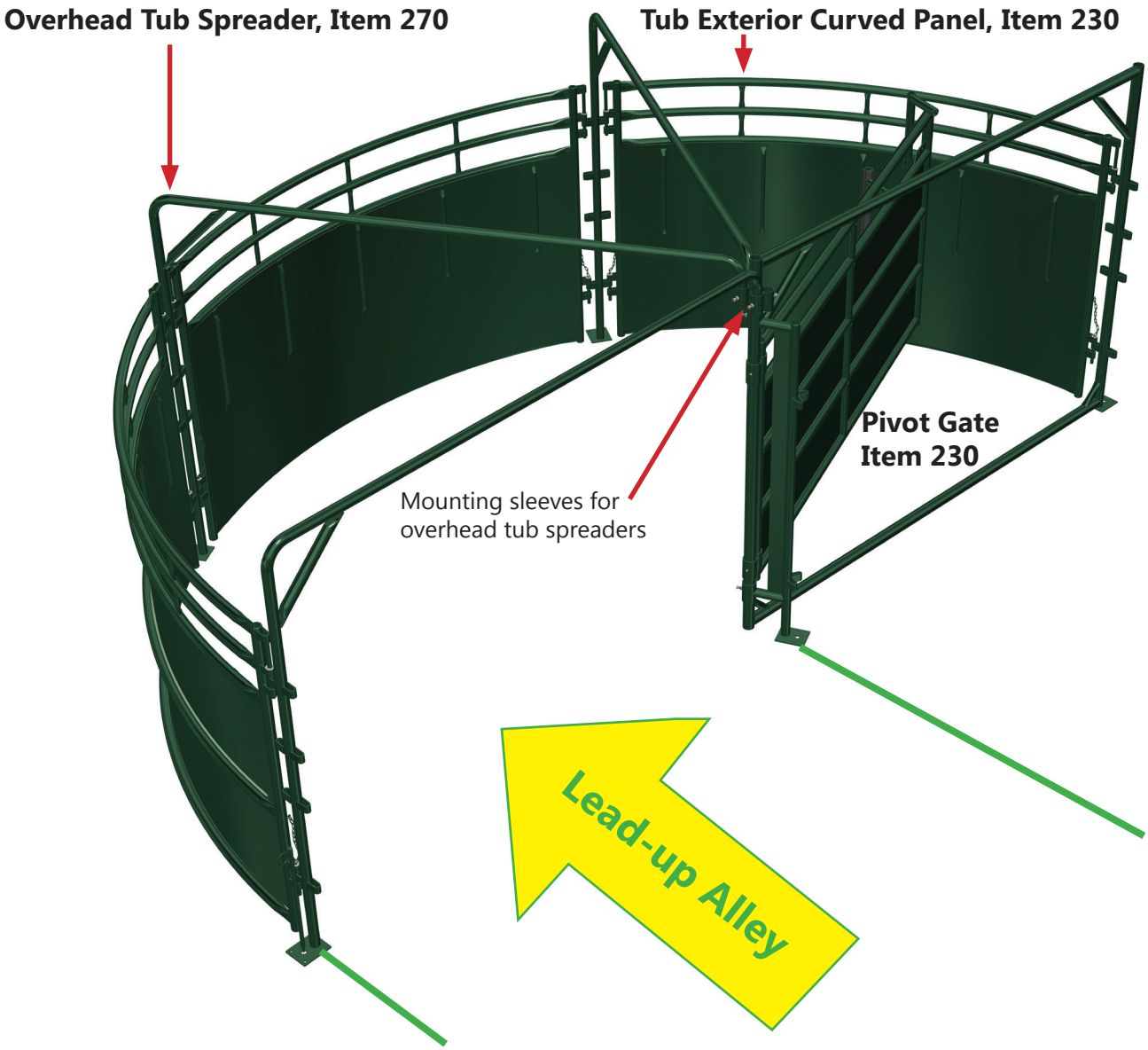
Note: When you receive your pivot gate it may include a *shipping stay* (see photo below left). The shipping stay prevents the pivot gate from swinging while in transport. Once you've securely installed your pivot gate, you can safely remove the shipping stay.

Relocating the Pivot Gate Bumper Latch

The *bumper latch* on a counter clockwise cattle tub is shown in the image below right. To relocate the bumper to the other side of the pivot gate (for clockwise tubs) simply remove the four bolts (see red circles in photo below right) and re-attach the bumper to the other side of the pivot gate. The tension spring also needs to be detached from the chain link (see green circles in photo below right) and re-attached to the chain link on the opposite side of the mounting plate.







Overhead Tub Spreader
Item 270

Pivot Gate
Item 280

Each of the overhead tub spreaders insert into the mounting sleeves located at the top of the center post on the pivot gate.

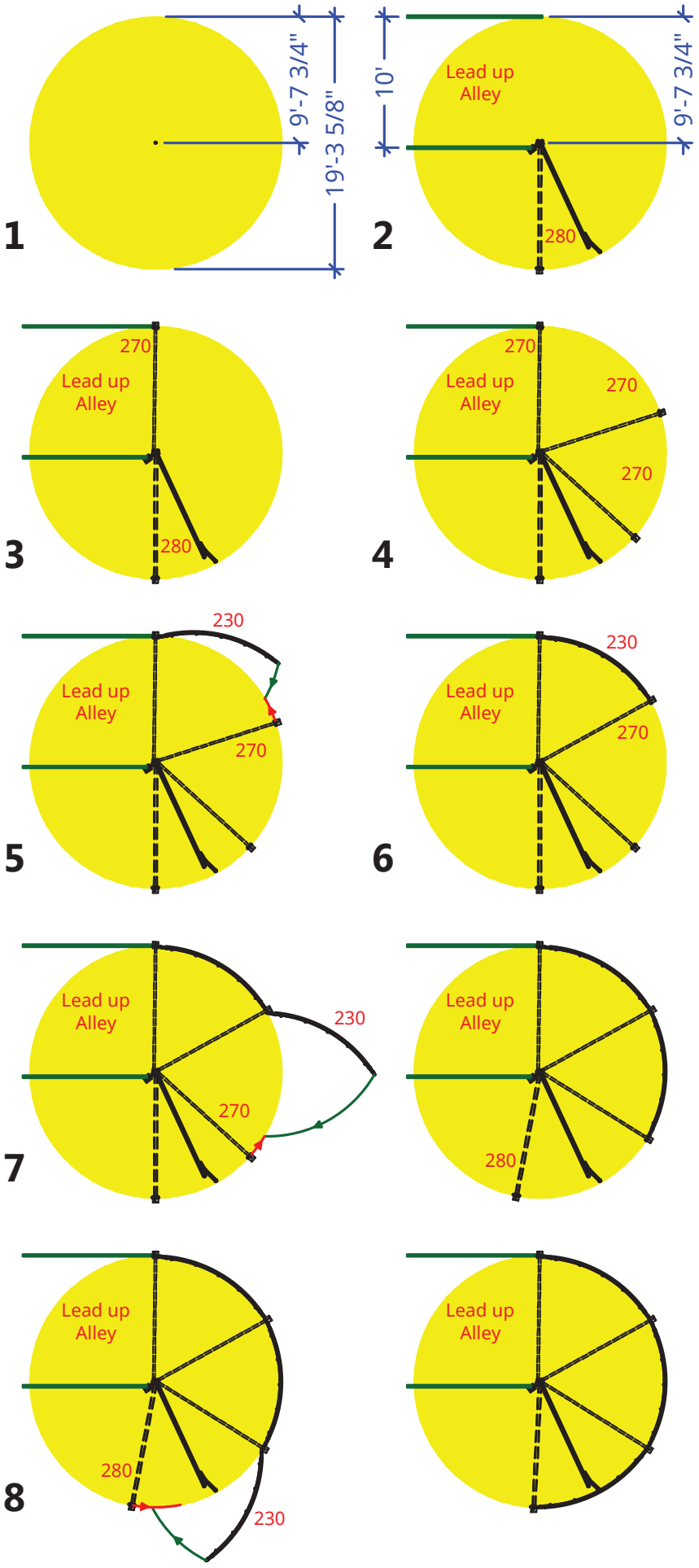
Mounting sleeves for overhead tub spreaders

Note: The hinge collars on the pivot gate's central post include grease zerks. All grease zerks are greased at the factory. As part of your system maintenance you should check your grease zerks to see if they need re-greasing.

Grease zerk fitting

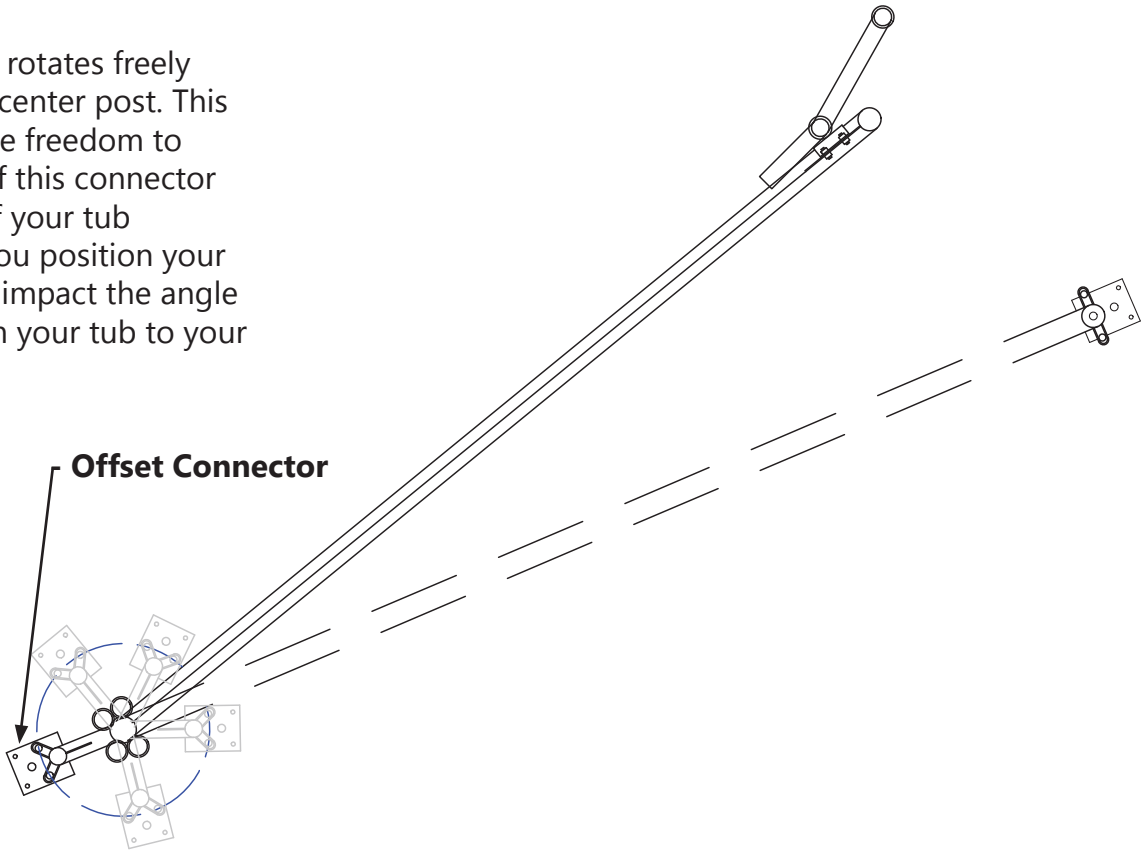
Standard 3-Section Tub Installation

1. Your tub will have a radius of approximately 9'-8".
2. The center pivot post on the pivot gate (item 280) will be positioned at the center mark of this circle. Note: The pivot gate is very heavy. Keep it safely secured until all the overhead spreaders have been installed and secured.
3. At the top of the pivot post there are four short lengths of tubing. Insert an overhead spreader in the sleeve closest to your lead up alley. The outside of your lead up alley will attach to this overhead spreader (item 270) with the pin connection. The inside of your lead up alley will attach to the offset connector on your pivot gate (item 280)
4. Insert the remaining overhead spreaders into the sleeves on your pivot gate center post. Spread the overhead spreaders out so that you have room to insert the outside tub sections (item 230). Do not tighten the bolts on the Pivot gate sleeves.
5. Connect an outside tub panel (item 230) to the first overhead spreader
6. Align the other end of the outside tub panel with the next overhead spreader
7. Attach another outside tub panel to the other side of this overhead tub spreader and align the other end with the next overhead tub spreader.
8. Attach the last outside tub panel to the other side of this overhead tub spreader and align with the full frame tub spreader that comes with the pivot gate.



Pivot Gate - Offset Connector

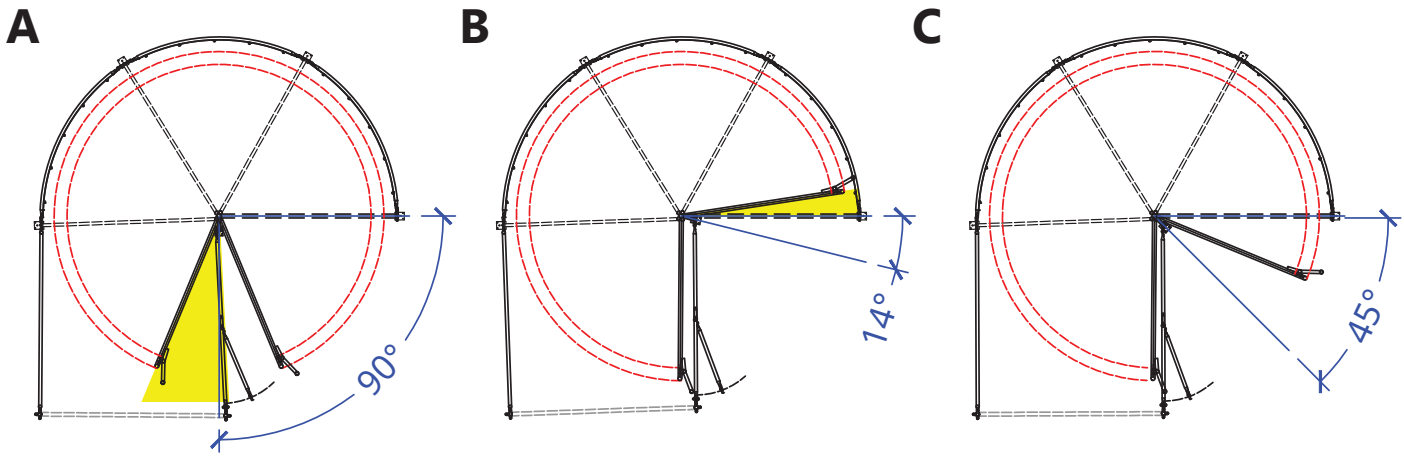
The offset connector rotates freely off of the pivot gate center post. This rotation gives you the freedom to adjust the location of this connector to meet the needs of your tub installation. Where you position your offset connector will impact the angle of the transition from your tub to your working alley.



Take care to position your offset connector so that it does not interfere with the operation of the pivot gate.

In example **A** below, the offset connector is set at 90° from the pivot gate frame. In this position however, the offset connector will interfere with the swing of the pivot gate and restrict the pivot gate from opening fully. In example **B** below, the offset connector is almost in-line with the pivot gate frame. In this position the offset connector restricts the closing of the pivot gate. In example **C** below, the offset connector is set at 45° from the pivot gate frame. With the tub design shown below, this would be a good position for the offset as it does not interfere with the pivot gates movement.

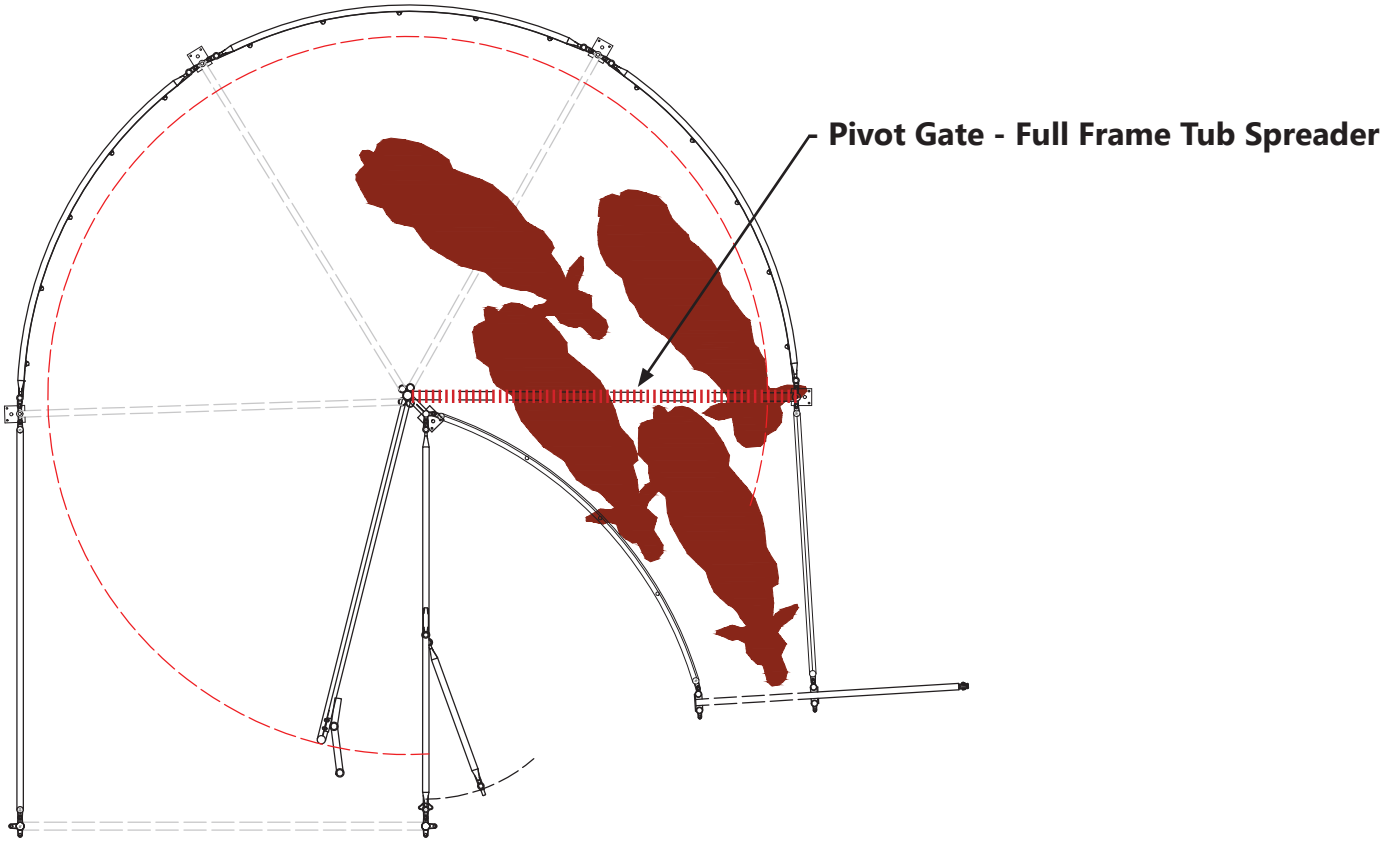
Note: The design of your tub will impact how much range the offset connector will have without interfering with the picot gate. A 2-Section tub, for example, offers a greater range of flexibility.



Tip: Before you anchor the offset pivot connector, swing the pivot gate fully open and closed. If the pivot gate contacts the offset connector, you can often simply push the pivot gate against the offset connector until the offset connector has shifted to a more desirable position.

Pivot Gate - Full Frame Tub Spreader
The pivot gate (item 280) comes with a full frame tub spreader. Unlike the other overhead tub spreaders (item 270), the full frame tub spreader that comes with the pivot gate includes a ground bar.

While you can position this full frame tub spreader anywhere, we recommend that you locate it where your tub begins to narrow towards the working alley (as illustrated below). This location will likely see the most pressure as your cattle shift from a group to a single file of cattle. Locating the full frame tub spreader at the transition to the working alley also minimizes the risk of the tub operator tripping on the ground bar.



Final Steps

Once your cattle tub has been pinned together:
- check the pivot gate to ensure it opens and closes fully.
- if required, adjust the transition from tub to working alley to ensure it provides an exit trajectory that meets your livestock handling needs.
-

Once you are satisfied with your installation,
- tighten the nuts on the pivot gate that hold the overhead tub spreaders in place.
- drive the tub pins to secure the base plates on your overhead tub spreaders and pivot gate (alternatively, you can use lag bolts to secure the base plates to a concrete floor).

Questions:
Call 1-800-661-7002

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THE OUTSTANDING BRAND

Appendix

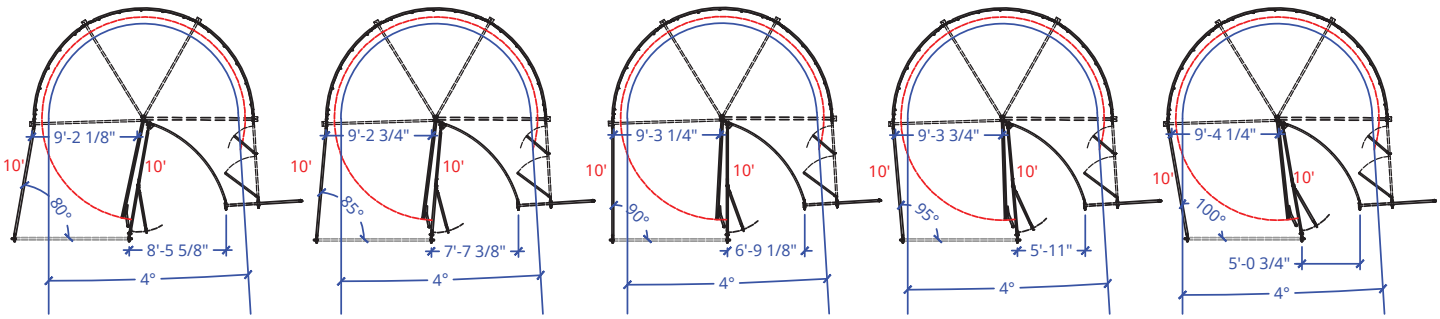
Hi-Hog's cattle tubs are composed of several component parts. The various connections provide some flexibility to help you fit your tub between your lead-up alley and working alley. The following pages provide descriptions of how specific installation decisions will impact the final geometry of your individual cattle tub.

This section will look at the following installation variables:

- Vary the angle of the lead-up alley (skew the lead-up alley)
- Vary the lengths of the panels in your lead-up alley
- Vary the connections between components (tight pin connection - loose pin connection)
- Vary the number of tub sections you use
- Vary the angle of the Pivot Gate Offset Connector

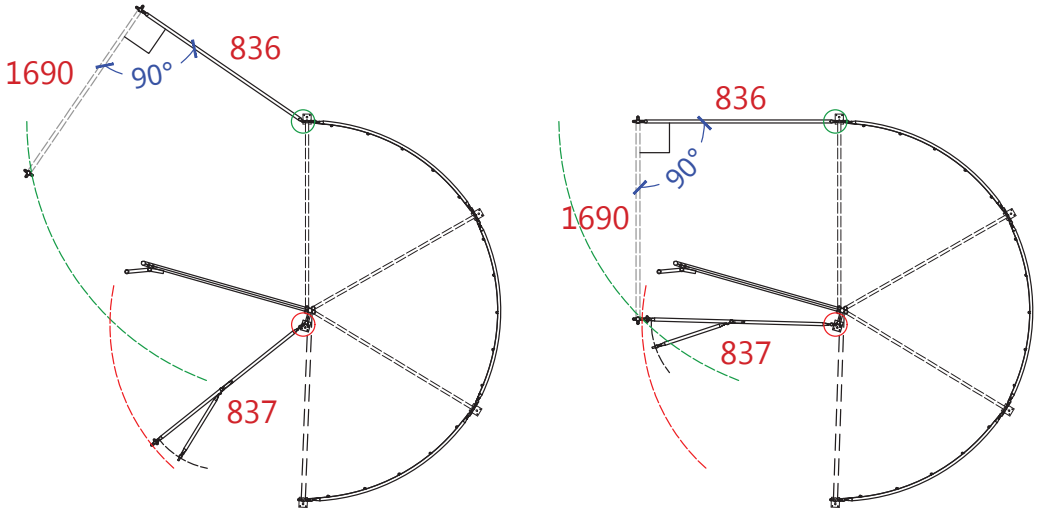
Skew the Lead-Up Alley

- When you change the angle of the Lead-Up Alley to be something different than 90° it has no impact on the resulting angle of the working alley. It will however, shift the alley laterally as shown below.



Lead-Up Alley

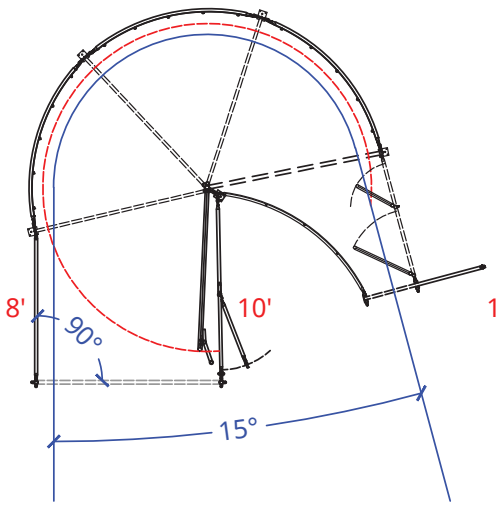
- For the purpose of consistency, the remaining drawings in this guide are all drawn with the 10' alley spreader (Item 1690) and 10' heavy duty panel (Item 836) connected at 90° to each other. They are then aligned, as a set, to connect with the 10' heavy duty panel with a man gate (Item 837) as per the drawing below.



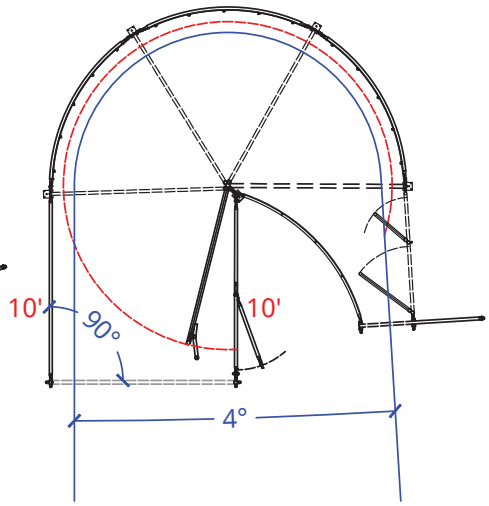
Adjusting the length of the Lead-Up Alley panels

In the examples below we change the length of the outside Lead-Up Alley panel that connects up to a 3-section cattle tub. This change will cause your cattle tub to rotate relative to your lead-up alley, which will then cause your working alley to also rotate. Replacing one of these panels with a panel that is 2′ longer or shorter will cause the working alley to change its trajectory by about 10 degrees.

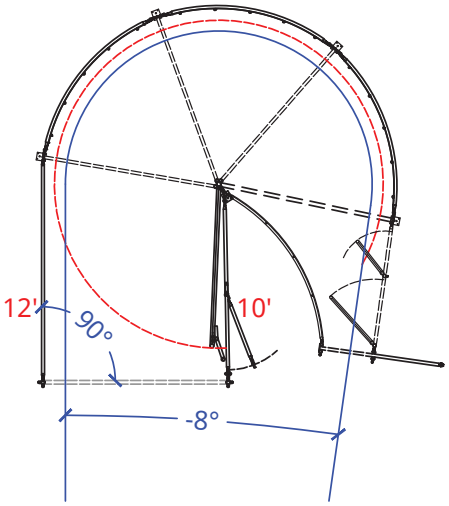
2′ Shorter Outside Panel



Equal Outside Panel



2′ Longer Outside Panel



Note: In the sample drawings that follow we only use two 10′ panels for the Lead-Up Alley.

Pin Connections

Each of the tub components pin together. All the drawings in this guide show the tub assembled with the pins in a middle position (see the middle example below).

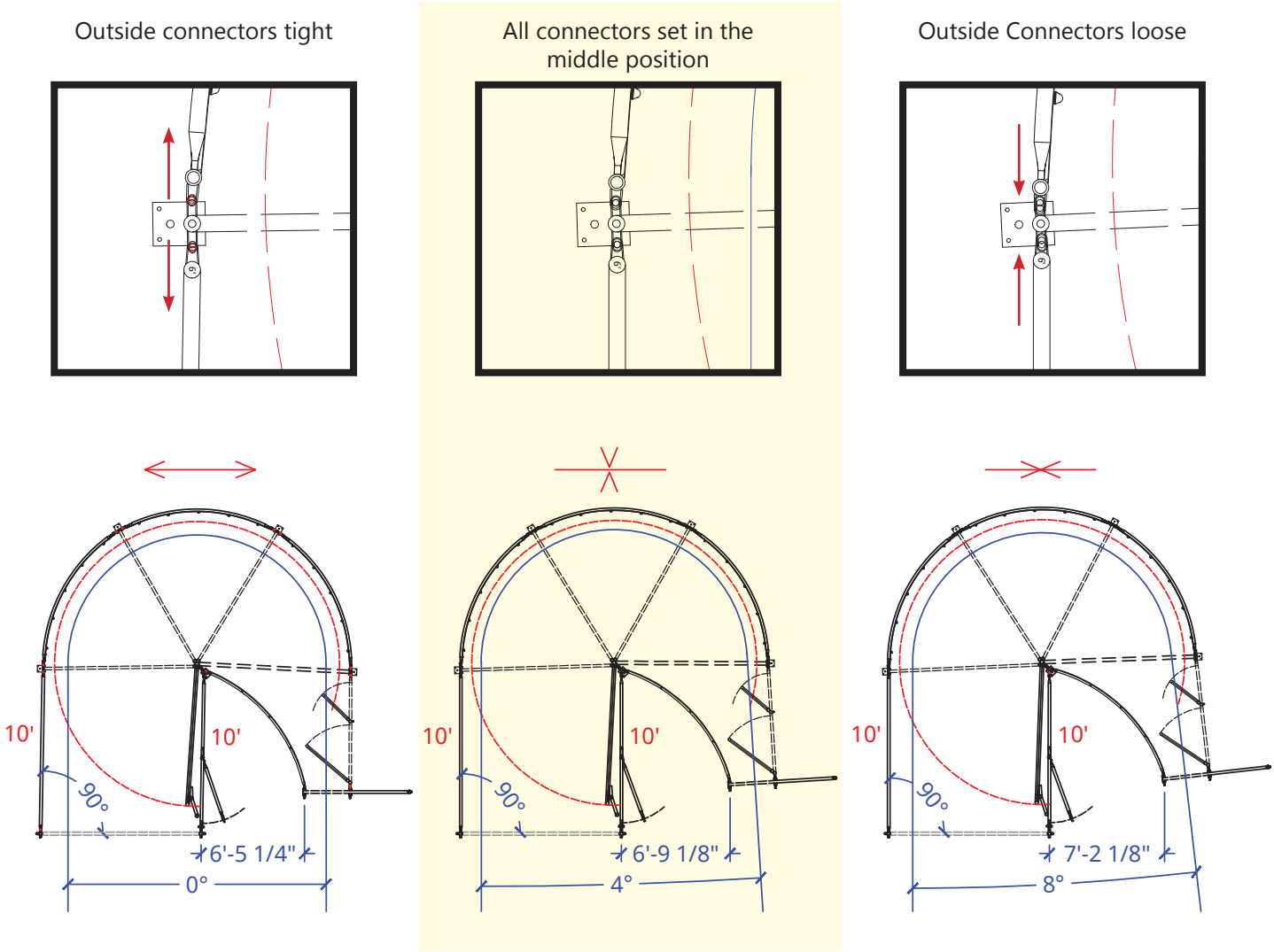
If we change the pin connections however, we can have an impact on the trajectory of the working alley.

Outside connectors tight : If you pull all the outside components so that the connectors are held tight, the length of the outside of the tub will become longer. Similarly, if you push all the interior connectors together, so the pins are hanging loosely, you will pull the inside of the tub inward. The result of these changes will cause the working alley to pivot (in the example below the working alley will pivot clockwise).

All connectors in middle position : All the tubs shown in this guide have the pins in the middle position. This provides an average position that should be able to accommodate adjustment in either direction to meet your needs.

Outside connectors loose If you push all the outside components together so that the connectors are loose, the length of the outside of the tub will become shorter. Similarly, if you pull all the interior connectors away from each other, so the pins held tight, you will push the inside of the tub outward. The result of these changes will cause the working alley to pivot (in the example below the working alley will pivot counter-clockwise).

Note: installation on uneven ground will limit the amount of play available in each of the connections.

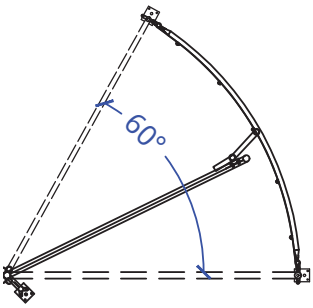


Adjusting the number of cattle tub sections

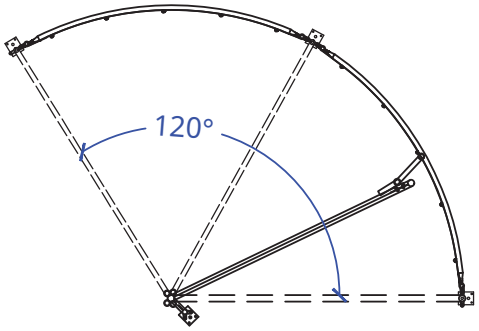
In the examples below we show a 1-section, 2-section, and 3-section tub (left to right). Each section of tub you add you will adjust the direction of your working alley by approximately 60°.

- A 1-Section tub covers approximately 1/6th of a circle, or 60°
- A 2-Section tub covers approximately 1/3rd of a circle, or 120°
- A 3-Section tub covers approximately 1/2 of a circle, or 180°

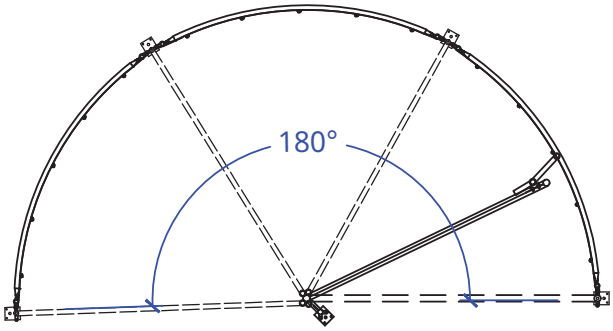
1-Section Tub



2-Section Tub

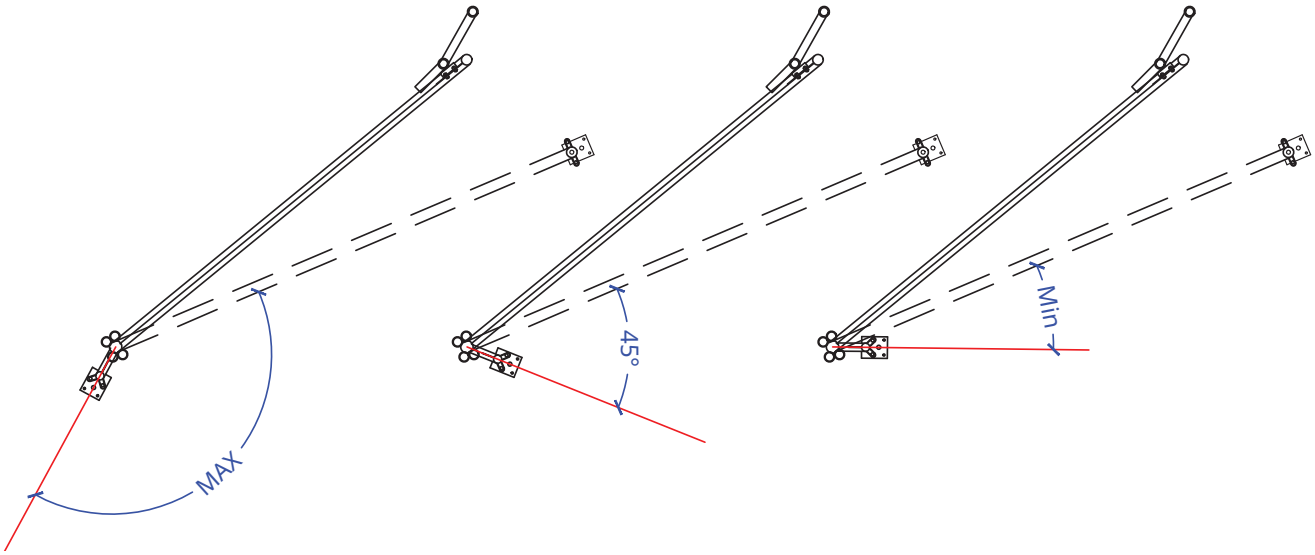


3-Section Tub



Adjusting the Pivot Gate Offset

You can also vary the angle of the pivot offset in relation to the pivot gate frame. The drawing tables n the following pages show the pivot gate offset in a minimum offset, 45° offset, and maximum offset. The angle of the minimum and maximum offset will vary depending on the layout of the entire tub. The more tub sections you have in your tub, the less the impact the pivot gate offset will have on the trajectory of your working alley.



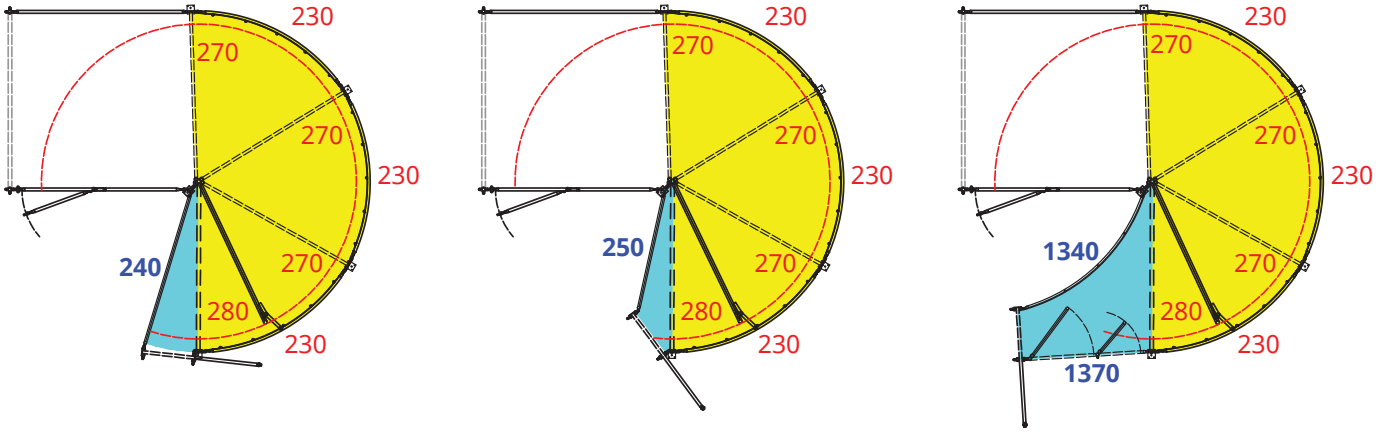
Maximum Offset

45° Offset

Minimum Offset

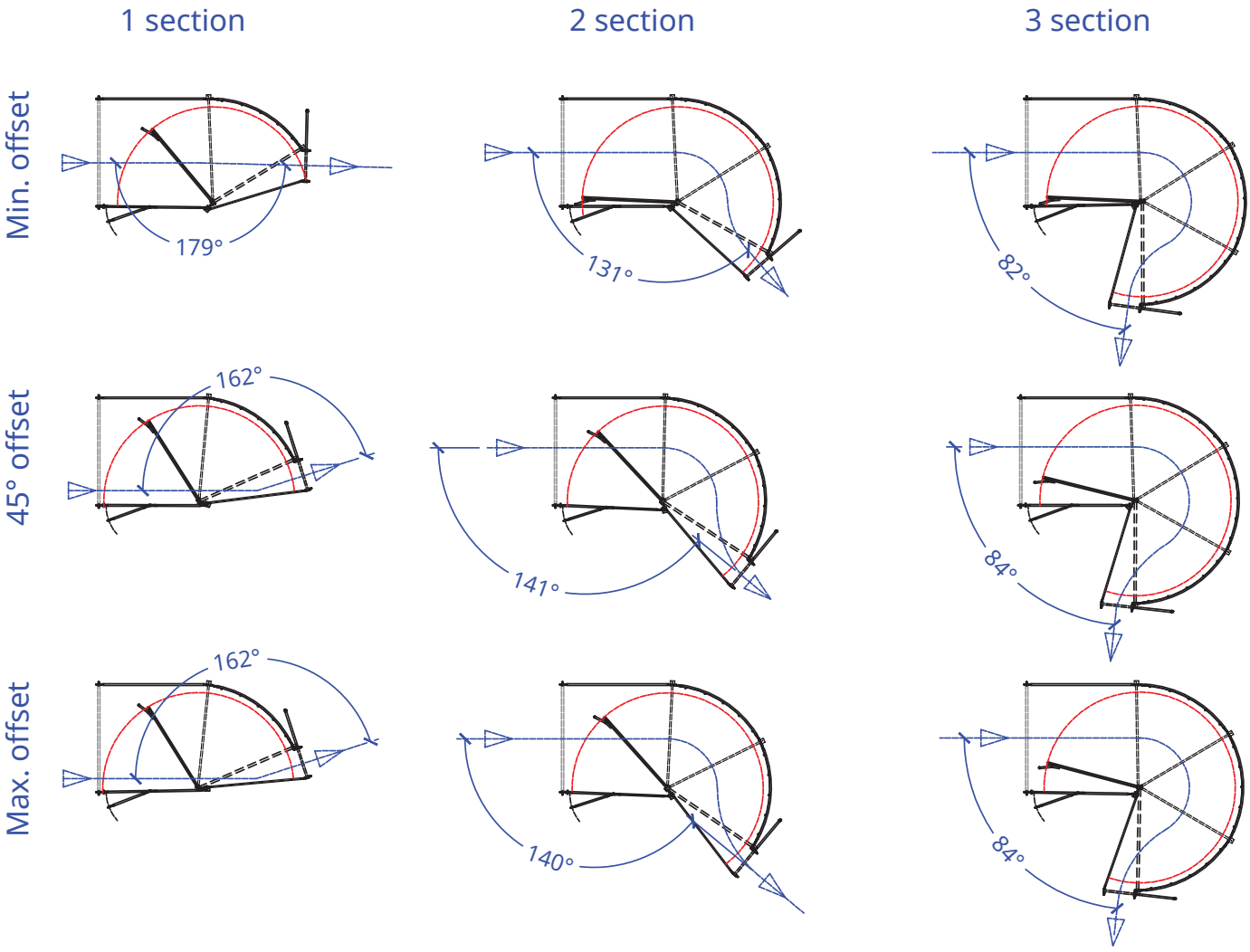
Select a different transition between the standard tub and your working alley

In the following three examples you can see a #240 transition, #250 transition, and #1340, 1370 transition (also known as a funnel tub).

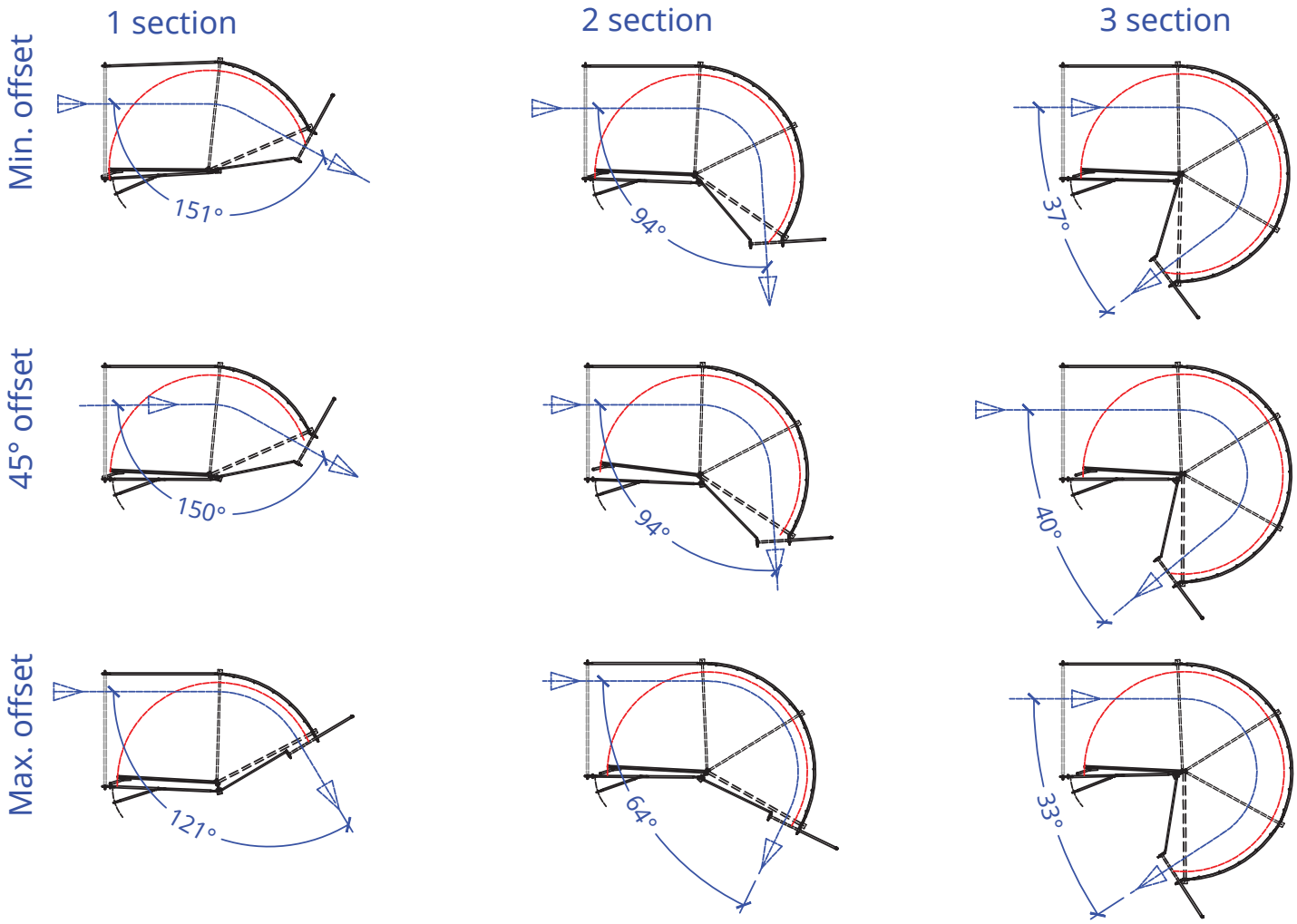


The following drawing tables show samples of each of these transitions with variations in the number of tub sections and different settings for the pivot gate offset. Each drawing shows the estimated change in flow direction (angle of trajectory) based on the variable selection.

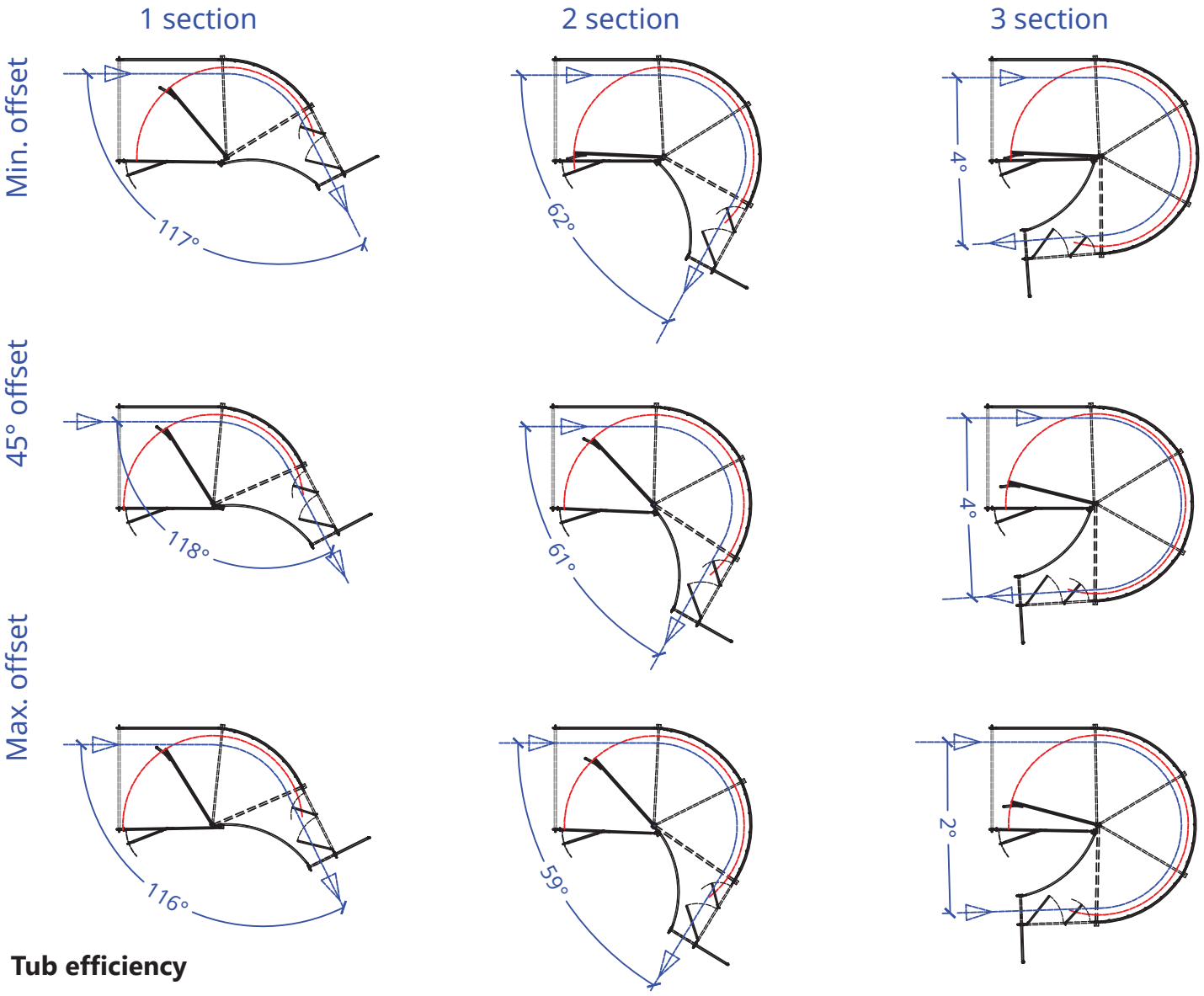
Tub with #240 transition



Tub with #250 transition



Tub with #1340 & 1370 transition



Tub efficiency

A wide variety of cattle tubs are shown in this installation guide. The most efficient designs will be those designs that allow cattle entering the tub to quickly find the entrance to the working alley, and be able to see far enough into that alley that they are encouraged to move forward.

How you use your tub will also impact how efficient your tub performs. For best performance, only bring as many animals into the tub that can move directly through the tub and into the working alley (do not hold animals in the tub while you wait for the working alley to empty). Additionally, do not overfill the tub. When you crowd livestock in the tub you restrict their movement and restrict their ability to locate the exit.

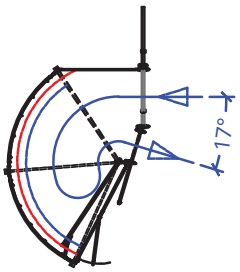
Site restrictions sometimes limit the available area and access for your tub. If you have restrictions that may impact the design of your cattle tub we highly recommend you contact Hi-Hog for design assistance. Toll free 1-800-661-7002.

Other Cattle Tub Solutions

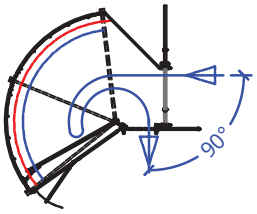
While the above cattle tubs satisfy most applications, there are times where alternate tub designs will better fit the needs of the individual ranch. The table below shows some Bud Style Tubs.

Bud Style Tub

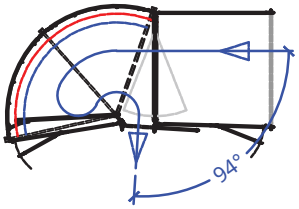
2 section



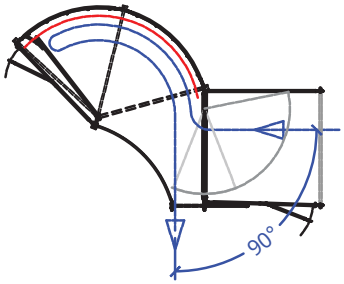
2 section



2 section



2 section



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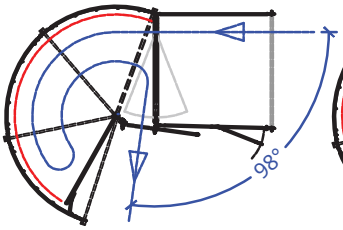

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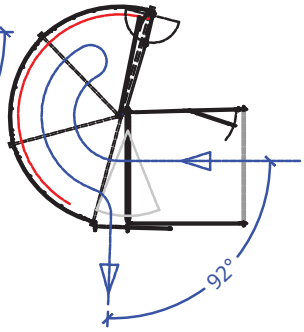

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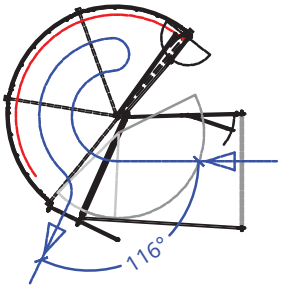

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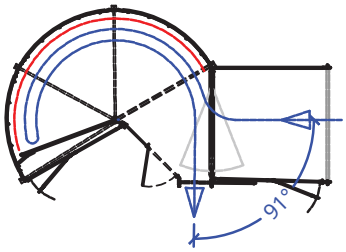

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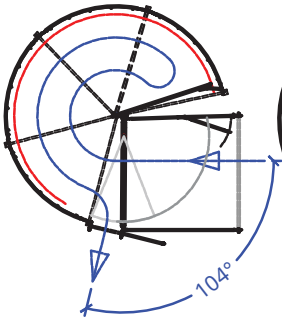

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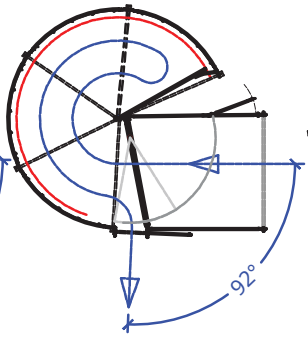

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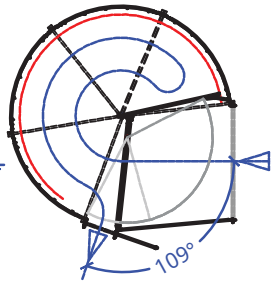

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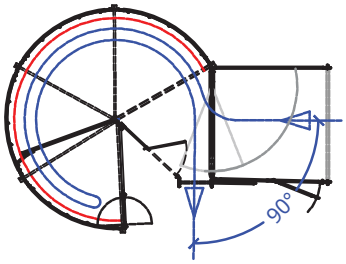

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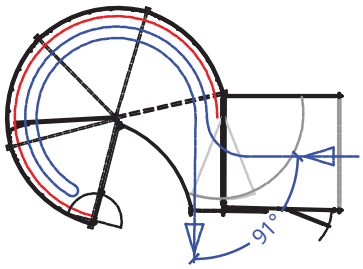
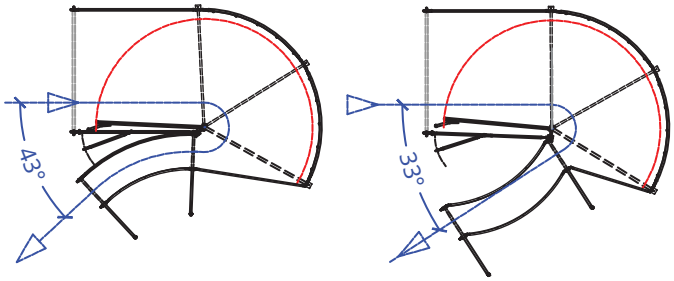


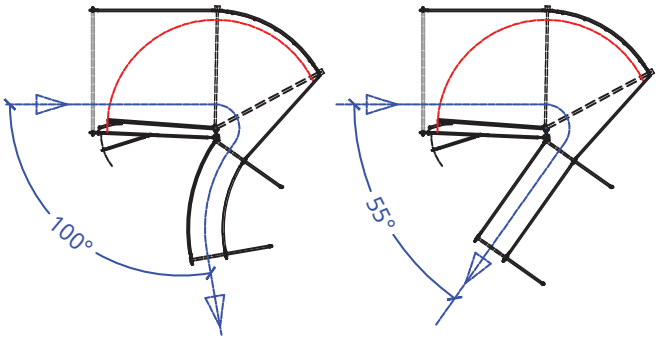
Miscellaneous Tub Designs

From time to time, customers face challenging design conditions where Hi-Hog's standard tub designs will not fit. On these occasions, our designers work with customer's to find a custom solution using Hi-Hog's stock products. The examples below illustrate *some* of the possible alternate tubs available. All of the tubs shown can be set up for clockwise or counter-clockwise pivot gate operation.

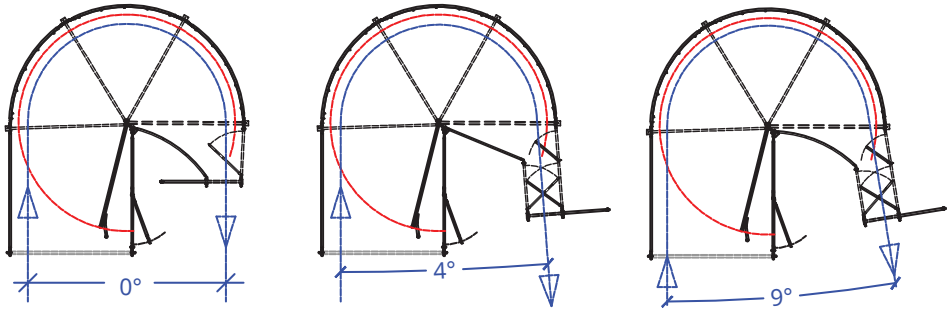
1/3 Circle - Reverse Tub



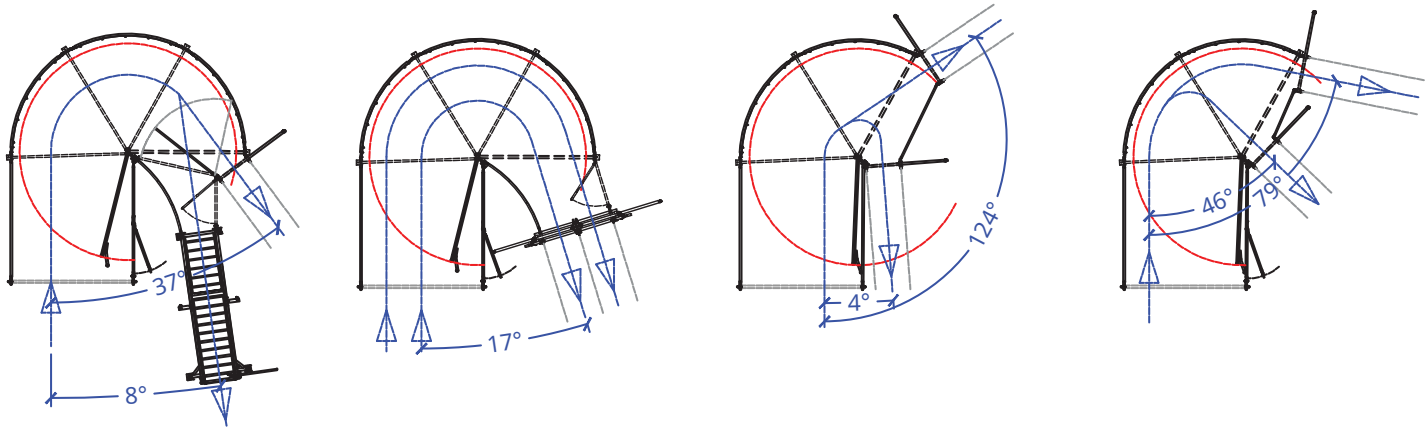
1/6 Circle - Reverse Tub



Short funnel



Misc. Tubs



Impact of tub trajectory on squeeze location

The chart below can be used to estimate where your palpation cage and squeeze chute might attach to the end of your S-Alley based on the angle of trajectory and the length of your S-alley. The blue arcs correlate to the connection points in the alley.

Note: If you incorporate alley spreaders with a rolling door, the length of the alley will increase by approximately 8" per alley spreader.

Note: If you incorporate a U-Alley you can alter the trajectory by either 45°or 60°. per U-Alley section.