



# The Stanchion Handbook

A Practical Guide for Group Housing with Stanchions



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The information presented in this booklet is the result of Hog Slat’s working relationship with several large integrated production systems as they worked through the challenges of converting existing stall gestation facilities to group housing. The suggested guidelines were gathered from actual field experience from our role in building and installing equipment for over 300,000 sow places.

Hog Slat makes no performance guarantee for facilities constructed or remodeled with information from this pamphlet. This information is offered to the producers for help in determining possible options for group sow housing. For complete floor plans customized to your particular farm or facilities, please contact our home office in Newton Grove, NC or your local Hog Slat representative.

## Introduction

U.S. producers first began to move gestating sows into stalls during the late 1960's. Sow stalls provided producers with individual care of animals, controlled feed intake and protection of animals from aggressive pen mates. Because of these benefits, gestation stalls increased in popularity and became the sow housing system of choice as the industry expanded through the '90s and into the present.



**MCDONALD'S SET TO  
PHASE OUT SUPPLIERS'  
USE OF SOW CRATES**

**SAFEWAY PLANS FOR GESTATION  
STALL-FREE PORK SUPPLY**

Due to pressure from animal activist groups, Europe and several U.S. states banned gestation stalls. As consumer awareness increased, food retailers began to question the practice of using gestation stalls. Fast food companies and grocery chains put plans in place to buy from alternative "humane" production systems. Several large integrators announced their intentions to convert their stall systems to group housing to satisfy these large buyers of pork products.

## Types of Group Housing

Implementing this kind of wholesale change into already successful production was not taken lightly. Every integrator group designated some of their top sow production management to research options available before beginning the change. Most of these groups traveled to Europe to study and tour existing group housing in operation.



They utilized the best information gathered from existing research and filtered what they had seen in Europe, but in practical terms these early adaptors were forced to refine their systems through a certain amount of trial and error.

As these producers studied the different types of alternative group sow systems available, advantages and disadvantages of each system became apparent.

## Electronic Sow Feeding

Electronic Sow Feeding or ESF was first considered the easiest method for moving to group housing. This type of system has an advantage for remodeling, as the pen configurations are more flexible. To arrive at your specific area requirements, first calculate your group size, and multiply by the chosen square footage per head.



This type of system represents a major management shift for U.S. producers. Traditional stall systems are straightforward; sows are weaned individually into a stall, bred there, and managed for condition by controlling feed intake. ESF represents a completely different management style; animals must undergo a training period where they learn to eat using an ESF station. During this training phase, a certain percentage of animals are eliminated as untrainable. ESF systems utilize computers, RFID tags, and scanners, requiring farm staffs to be trained for use and maintenance, plus local support from dealers. Considering the remote location of many farms and the high staff turnover, ESF systems are not a practical option for many production systems.



## Free Access Stalls

Free Access Stalls are a very user-friendly system and would probably be the preferred system if it wasn't for high installation costs. The major concerns with this system are the higher square footage requirements (up to 37 square feet), higher equipment costs, and increased maintenance costs. The locking mechanisms that allow the sows to move in and out of the feeding stalls add cost and require extra maintenance.

## Pens with Floor Feeding

Group pens with floor feeding were the first systems used as sows were brought into confinement in the early 1960s. It is the lowest cost system and if managed correctly can be very successful. Typical group size is small, between five and eight sows. Grouping by size is critical, as the most aggressive animals tend to get the most feed.

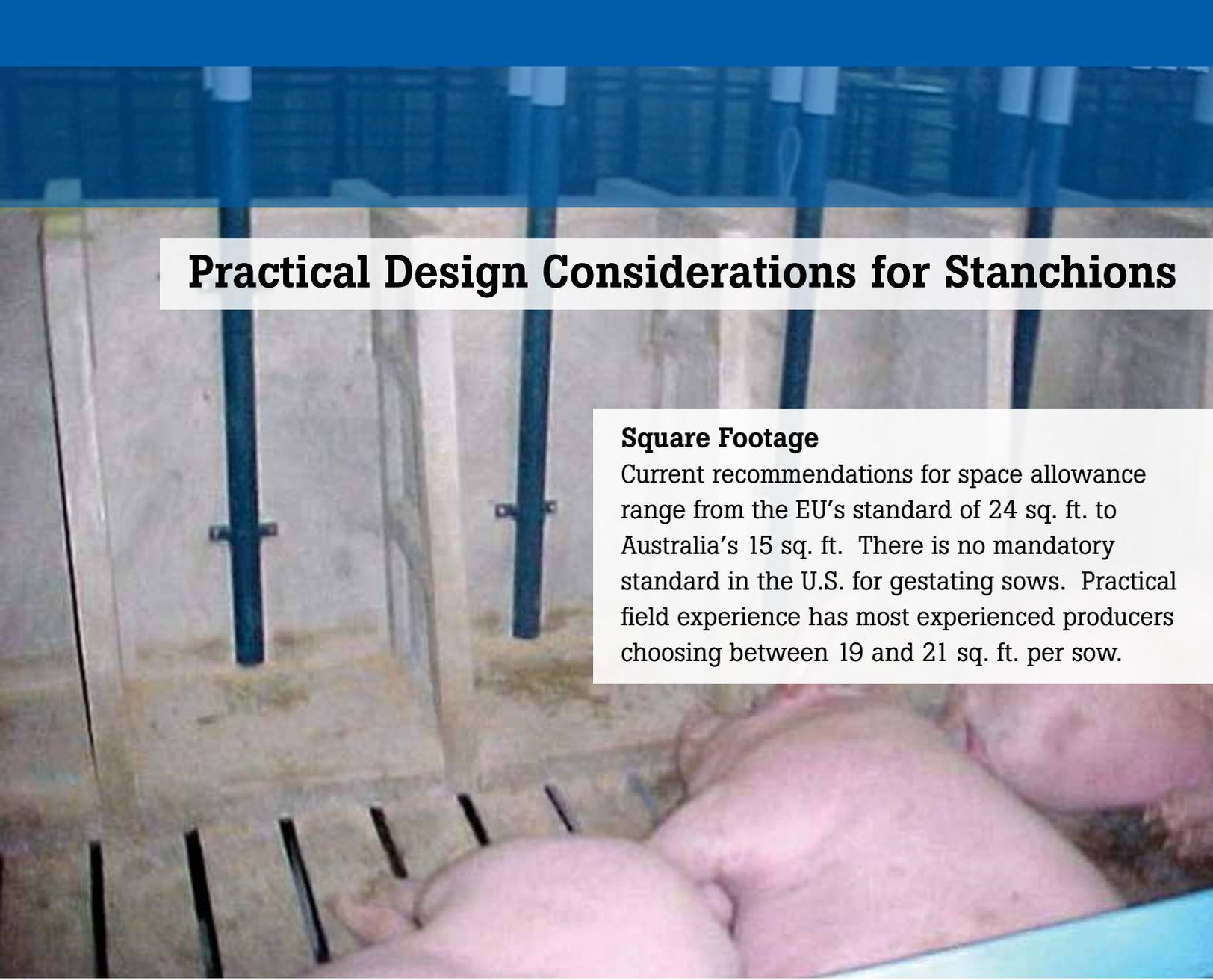




## Stanchions

Group housing with feeding stanchions has been the most popular choice by large integrated production systems. This system uses loose housing in pens with short shoulder dividers or stanchions to protect the animals at feeding times.

Stanchion production methods adapt well to current U.S. production practices. A farm's staff can better manage a stanchion system because it utilizes the same feed delivery system and penning equipment. There are no electronic systems to manage, and no required training for either the animal caretakers or animals themselves. In addition, the pen layout can be adapted to existing buildings with stall layouts.



## Practical Design Considerations for Stanchions

### Square Footage

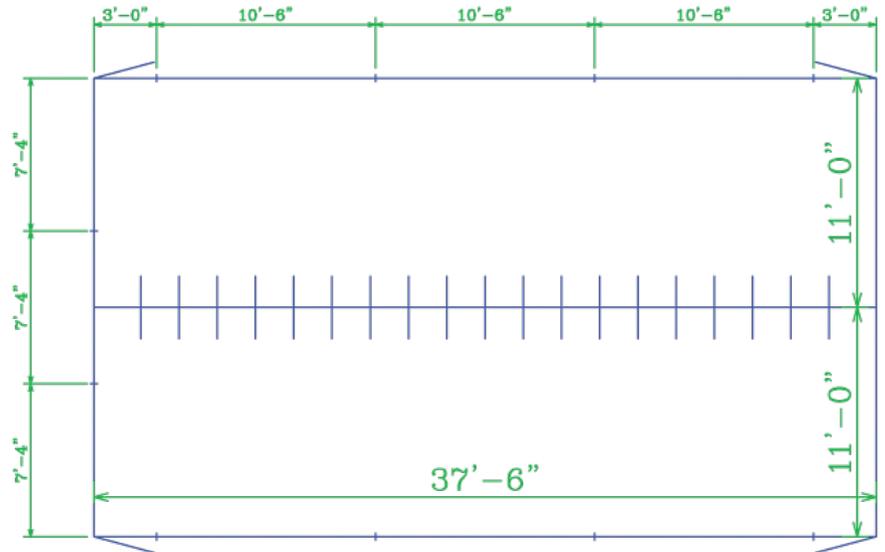
Current recommendations for space allowance range from the EU's standard of 24 sq. ft. to Australia's 15 sq. ft. There is no mandatory standard in the U.S. for gestating sows. Practical field experience has most experienced producers choosing between 19 and 21 sq. ft. per sow.

## Group Size

The earliest stanchion systems that Hog Slat supplied featured group sizes of 50 sows. After recording some drop off in production compared to stall systems, these groups were cut in half. After the 25 head groups still did not compete favorably with the stall systems the groups were downsized again. Current installed systems show groups sizes of 6 to 12 animals recording production figures that compare favorability with stall type systems. These production numbers are due to improved stockmanship, with visual observation made easier and the ability to closely group animals by size and condition.

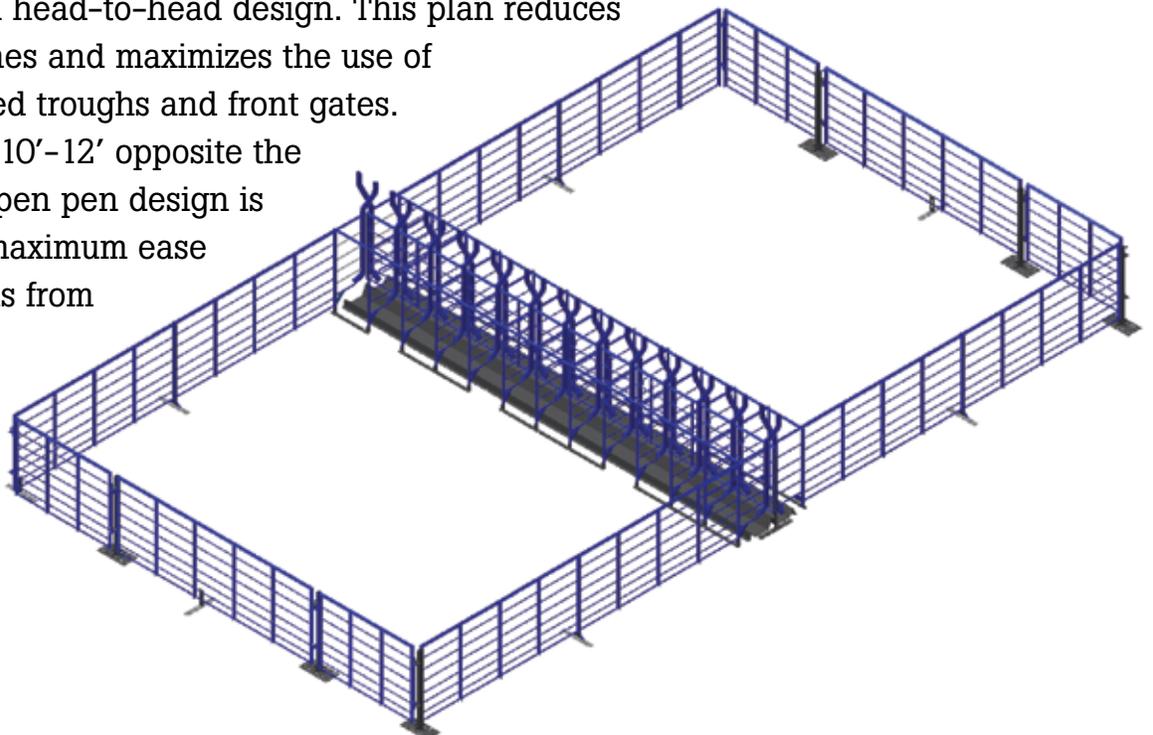
# Pen Layout

In many instances, pen dimensions will be determined by the need to adapt to the building's existing layout. In general, a minimum pen depth of 10'-12' is needed for stanchion pens. This distance is required to prevent a dominant sow from lying down and blocking pen traffic.



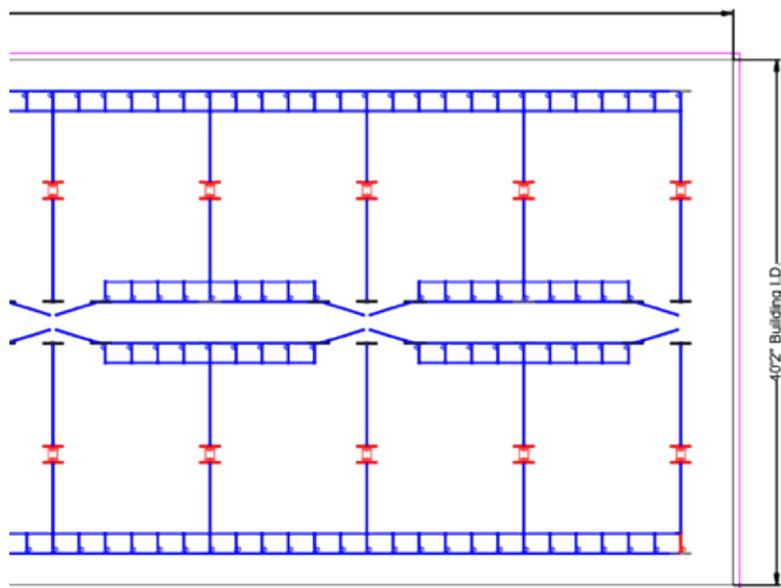
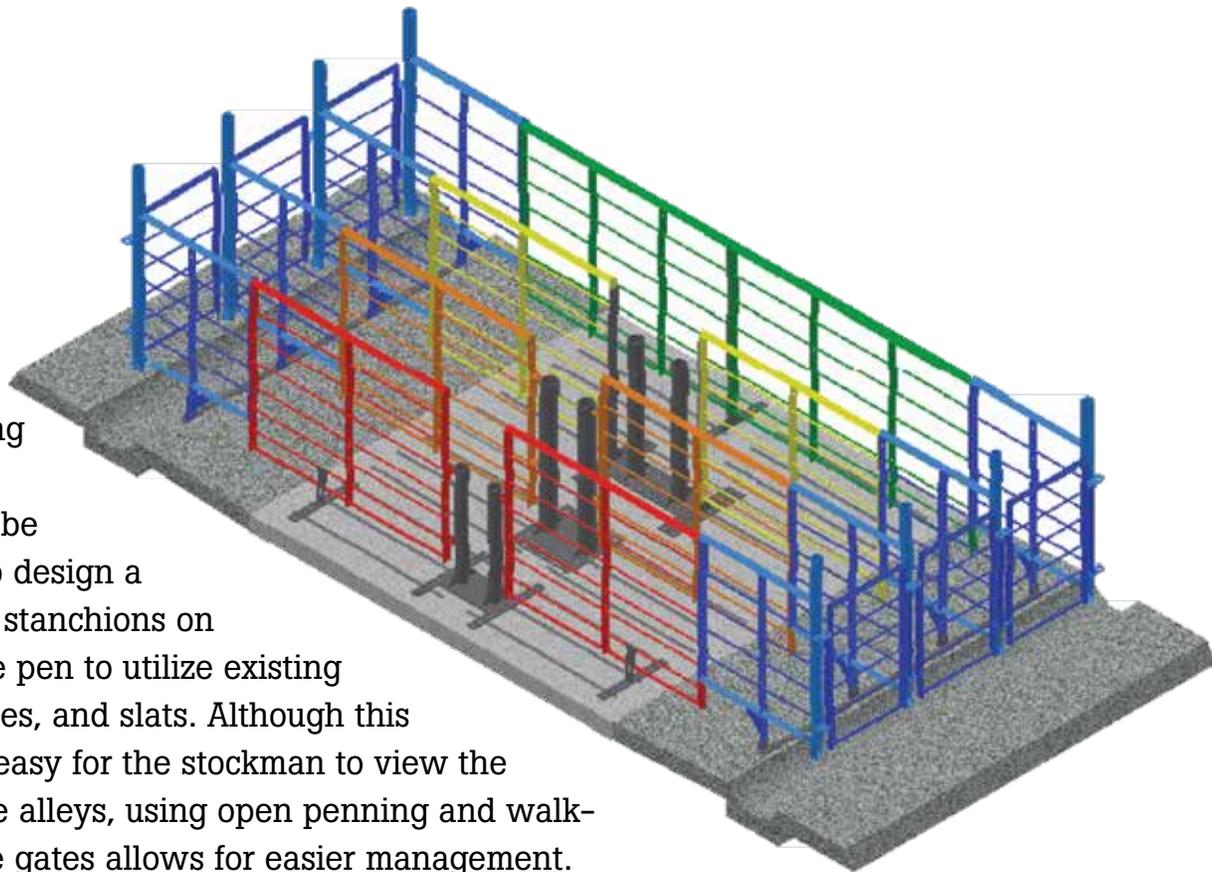
**Pen Detail**

A preferred layout is a head-to-head design. This plan reduces the number of feed lines and maximizes the use of equipment such as feed troughs and front gates. With an alley located 10'-12' opposite the stanchions, a clean, open pen design is created allowing for maximum ease in viewing the animals from the aisles.

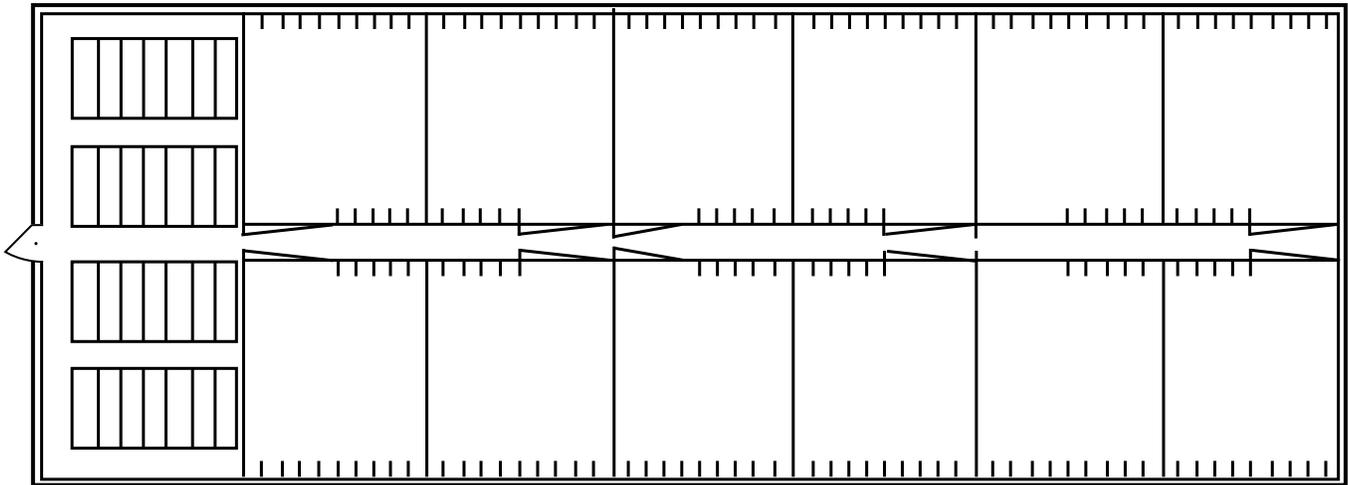


## Practical Design Considerations for Stanchions

When remodeling an existing stall building, it may be most practical to design a pen layout with stanchions on both sides of the pen to utilize existing troughs, feed lines, and slats. Although this layout is not as easy for the stockman to view the animals from the alleys, using open penning and walk-through passage gates allows for easier management.



# Gestation Stalls



Most layouts make provisions for each breeding group to be housed in stalls for a period of 42 to 49 days post weaning for the management of breeding and preg-checking. In addition, it is advisable to provide additional stalls equal to 3-7% of the herd total to provide a “safe haven” for animals needing individual care.





## Penning Equipment

Recommended penning equipment consists of paneling with seven solid horizontal bars with an overall height of 44 inches. These panels are available in a baked epoxy painted or hot dipped galvanized finish.

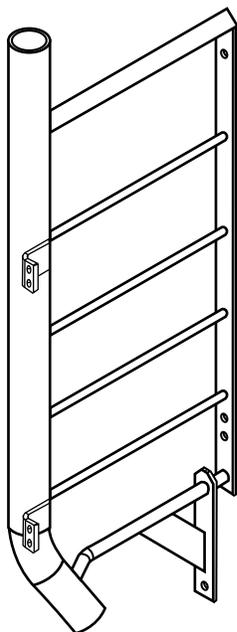


This type of gating matches up well with the stanchion dividers for a smooth installation transition.

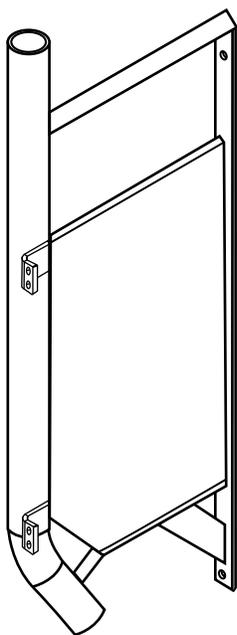


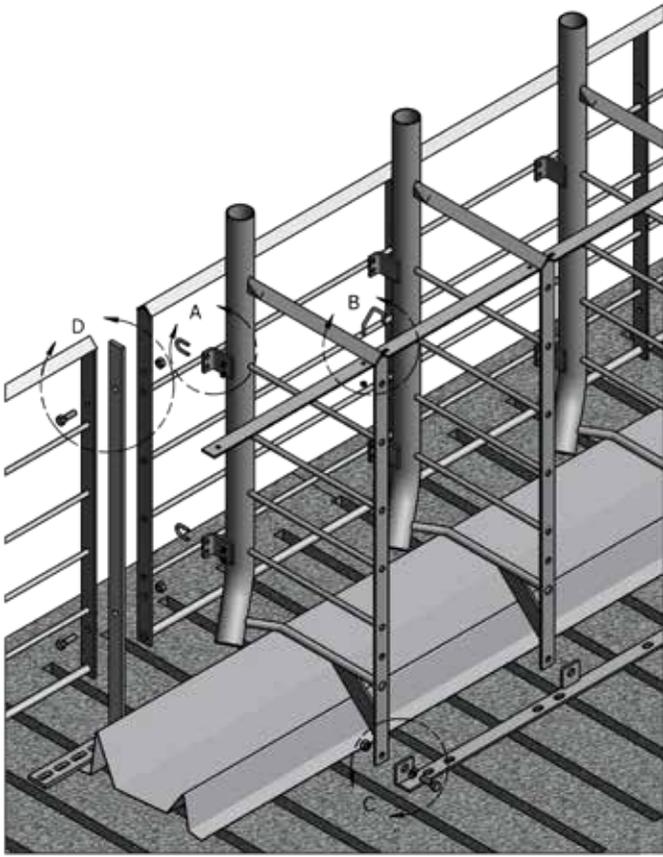
Many layouts have walk thru posts to increase operator access to the pens. 3" pipes are spaced with an opening to allow farm staff to walk from pen to pen. A solid free-swinging door is situated above the opening to discourage sows from attempting to jump through the opening.

## Stanchion Equipment



An 18" long stanchion divider protects a sow's head and shoulders from aggressive animals while eating. The dividers can be constructed with open rods or solid side of sheet metal or PVC. The open rodded style of divider is less expensive, lasts longer and does not impede air flow. No effect on sow behavior or productivity has been recorded or observed between open or closed partitions.





Hog Slat stanchions are bolted together with pre-punched floor and top spacers. First, hot-dipped galvanized floor spaces are bolted to the slats or floor. The stanchion panels are bolted in place, and the matching top spacers are installed. This results in dividers being equally spaced and completely square from top to bottom. Bolt together type installation is faster and more accurate than a welded-in-place, field fabrication.



Top Strap



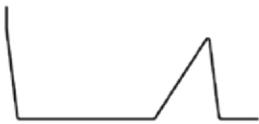
Front Rods



Floor Strap

# Feed Troughs

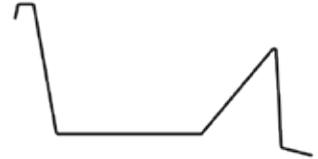
Single (Wall)



Low Profile



Single (Bolts 1 Side)



Single (Bolts 2 Sides)



Single w/ Lip



Double



Hog Slat fabricates a wide selection of **Stainless Steel Troughs** to integrate with stanchion installations. Manufactured in 10' lengths S.S. troughs are welded end to end on the job site. Troughs are preferred for remodeling because they are lightweight and easy to set in place. Stainless steel troughs last longer than concrete or composite plastic troughs.

Using troughs results in less feed wastage than floor feeding or concrete pads. Concrete pads will eventually suffer damage from feed acids and salts and require resurfacing.



## Feed System

Many retro fit projects will be able to utilize the existing feed systems and adapt them to the new stanchion layout.

A volumetric feed drop such as the **Grower Select Sow Drop** is positioned above each stanchion. The herdsman adjusts each **Sow Drop** in the pen to drop the same amount. The amount of feed can vary by pen but not by individual drops in the pen. Grouping sows by weight and condition allows animals to be fed as a group.



The first stanchion systems were installed with a **trickle feed system**, designed to deliver feed slowly over an extended period. This would, in theory, keep an aggressive sow in place while waiting on feed rather than stealing another sow's rations. In reality, trickle systems had very little influence on sow behavior and were not worth the additional cost and maintenance.



For new installations a continuous loop chain disk system, such as the **Grower Select Grow-Disk**, may offer some advantages over the standard flexible auger systems. The number of motors is reduced, the cost savings for electrical wiring is realized and group management becomes more flexible as it is not necessary to have animals in the last pen. A sensor, located in the feed tube instead of the last sow drop, detects when the system is full or empty.

Although it is true many different types of group housing can be successfully managed, Hog Slat believes stanchion systems offer the most practical solution currently available. With its similarities to existing stall systems, farm staffs will quickly adapt to managing stanchion style housing. Stanchion systems feature moderate cost for stall conversions and new construction.



# The Stanchion Handbook

Hog Slat is the industry leader in group housing with over 300,000 stanchion conversions or new projects completed. To find out more about open pen stanchion housing for your farm, contact us at 800-949-4647.



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