



SHEEP AUTO DRAFTER

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Sheep Auto Drafter User Manual
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Contents of Accessories Bag

All items listed below are included in the accessories bag.

Accessories	Quantity
☐ CARRY BAG - GALLAGHER 35.5 X 20.5	1
☐ SHEEP AUTO-DRAFTER USER MANUAL	1
☐ WARRANTY LEAFLET 1 YR INT	1
☐ QUICK START GUIDE SHEEP AUTO DRAFTER	1
☐ INDICATOR MOUNT PLATE AUTODRAFTER	1
☐ REMOTE CONTROL SHEEP AUTO DRAFTER	1
☐ WIRESET 2M RD/BK 2QC-XLR 3PIN	1
☐ P&C 3P 3C 1.0 1.8M NZ H05VV-F IEC	1
☐ CLIP BATTERY 25A (QC)RED	1
☐ CLIP BATTERY 25A (QC) BLK	1
☐ ADAPTER DB9 NULL F-F MINI	1
☐ HOSE CLIP 8-16MM SS304	1
☐ SPEED COUPLER ARO 210 1/4IN BSP	1
☐ BRASS TAIL 10MM HOSE ¼ BSPT	1
☐ REMOTE HOLDER AUTODRAFTER	1
☐ MACH/SCREW PAN HEAD M5 * 30	4
☐ WASHER M5X10MM OD FLAT ZP	4
☐ NUT M5 HEX ZP	4
☐ SCREW 6G x 5/8 CSK POZI SELF TAP SS	2
☐ SMPS 13.8V 3A PANEL READER PSU	1

INTRODUCTION

Thank you for buying a Gallagher Sheep Auto Drafter.

Welcome to the user manual. In this manual, there are instructions on using the Sheep Auto Drafter and drafting unit, as well as hints and tips to help resolve any problems that may be encountered.

In designing the Sheep Auto Drafter, Gallagher have continued their tradition of creating products which are functional, practical, easy to use, innovative, and in tune with the needs of the rural market. The use of a ruggedized composite as the main construction material is a breakthrough innovation in stock handling equipment design, which comes with a wide range of benefits.

What is the Sheep Auto Drafter?

The Sheep Auto Drafter is a sheep handling unit containing an integrated weighing platform which will connect with a variety of brands of electronic scales. Pneumatically operated gates at either end of the auto drafter allow stock in and out. These can either be controlled automatically, by setting up some conditions on an attached scale, or manually by the operator, using the supplied remote control.

Each side panel contains an antenna to allow reading of Electronic ID (EID).

The sorting unit links with the Sheep Auto Drafter to automatically draft stock. The conditions for drafting are set up in the scale indicator attached to the Sheep Auto Drafter. Drafting can also be controlled manually by the operator. An extra sorting unit can be linked end to end to enable up to 5 way drafting.

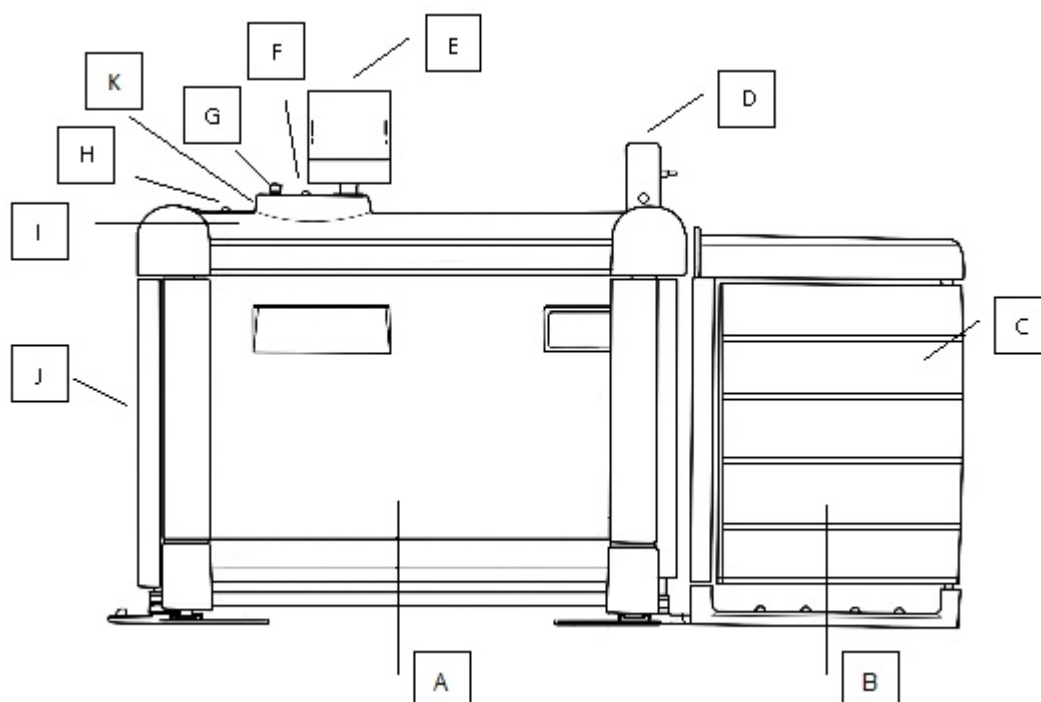
The Sheep Auto Drafter and sorting unit have both been constructed from composite materials. They are lightweight, making them easy to transport and set up, extremely durable, and because of the forgiving nature of composite they are safe for the operator and stock.

When the Sheep Auto Drafter is combined with the sorting unit, a range of activities can be carried out, including automatic Electronic ID (EID) reading, weighing and drafting.

The Sheep Auto Drafter can be operated from a distance using a remote control.



The different parts of the Sheep Auto Drafter are shown in the diagram below:



- | | | | |
|---|--------------------|---|-------------------|
| A | Sheep Auto Drafter | G | E-stop button |
| B | Sorting unit | H | Entry gate button |
| C | Drafting gate | I | Control bridge |
| D | Pressure gauge | J | Entry gate |
| E | Scale indicator | K | Status lights |
| F | Power button | | |

Figure 1. The different components of the Sheep Auto Drafter.

Figure 2 shows how data is transferred between the different equipment attached to the Sheep Auto Drafter.

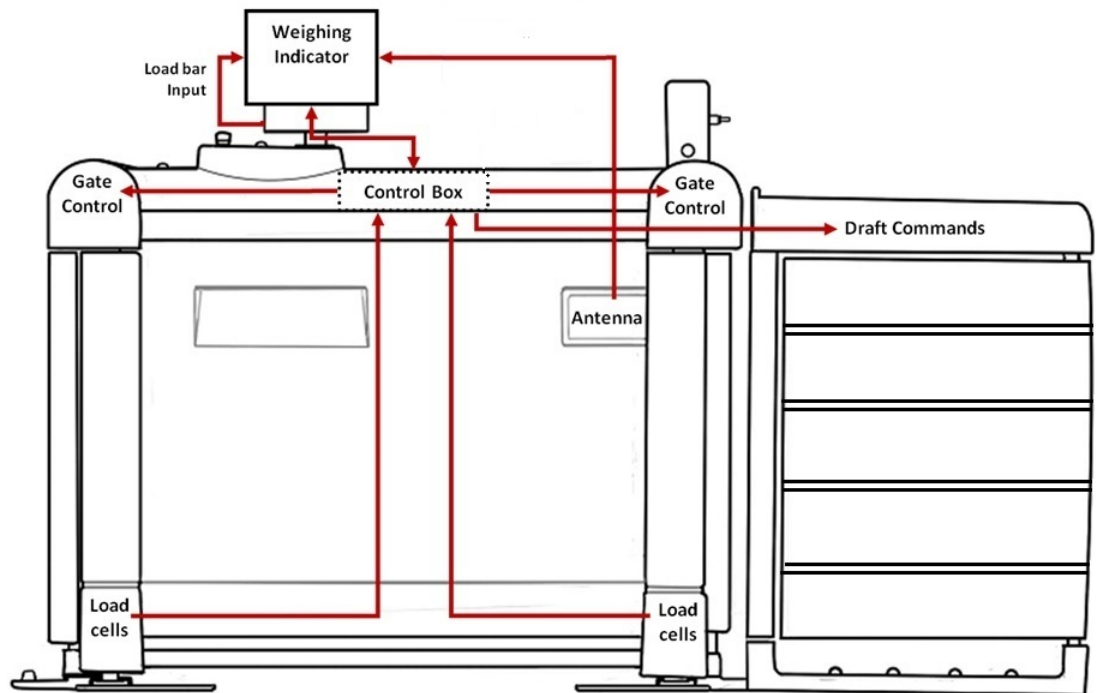


Figure 2. The transfer of information between the different components connected to the Sheep Auto Drafter.

Benefits of using the Sheep Auto Drafter

The benefits of using the Sheep Auto Drafter include the following:

- **Save time and labour**

One person can operate the Sheep Auto Drafter by using both Auto and Manual modes. Also, with the addition of the remote control, the user can control its operation while at a distance.

Because of the pneumatic operation of the gates and drafter gates, the physical demands of operation, particularly drafting gates, is removed.

- **Improve work efficiency**

Increase the speed of a variety of stock management tasks and drafting throughput as the process can be automated. This automation means stock (and people) spend less time in the yards.

- **Decrease the incidence of injuries for stock and handlers**

The Sheep Auto Drafter is made from composite materials. The chances of injury from collisions or general usage are significantly lower as composite is far more forgiving and there are no sharp or protruding edges.

Additionally, the flooring has been designed to provide safe footing so slipping does not occur. All the moving parts (e.g. rams), are protected by guards ensuring there are no trapping points. The components of the Sheep Auto Drafter are substantially lighter than traditional systems, making them much easier to move from one site to another.

- **Quiet operation**

The innovative composite construction of the Sheep Auto Drafter and the pneumatic gate operation mean that it is exceptionally quiet when working. This reduces the stress on the operator and stock. Stock will flow better and will enter the unit more readily as a result.

- **Carry out several stock management tasks at the same time**

The Sheep Auto Drafter can automatically read EIDs, weigh and then draft without the operator having to control it. All these actions can be pre-programmed into a scale indicator which will communicate with the Sheep Auto Drafter. This gives the operator the freedom to move away from the weighing and drafting area, to organise stock at the same time as these actions are occurring.

- **Easy allocation and drafting of stock into different management groups**
The Sheep Auto Drafter can allocate animals into groups so that they can be managed differently. This could include such things as: dividing animals based on weight groups or drafting ewes based upon multiple traits, e.g. pregnancies. This will require the correct indicator, e.g. TWR-5.
- **Improve stock flow through the weighing and drafting system**
As there is less human involvement in the weighing and drafting process stock feel less threatened and more inclined to move freely through the system.
- **Decrease drafting and weighing operator errors and hit the correct target market weight when drafting**
As the weighing and drafting processes are automated there is less chance of error. Also, accurate weighing and drafting ensures all stock fall into the right groups to ensure they achieve premium prices at sale.

Scenarios for use

The flexible nature of the Sheep Auto Drafter allows the operator to carry out many activities simply and easily. These include:

Automatically

- Weighing animals with no EIDs and releasing them or drafting them using the weight groupings set up in the scale, e.g. draft by weight not by EID.
- Reading EIDs and weighing animals, then drafting using the weight groupings set up in the scale, e.g. draft by weight with EID.
- Reading EIDs and then drafting using a set of conditions (traits) previously set up in the scale, e.g. draft by list with EID. Note, the range of options will be dependent on the model of the attached weighing indicator.

Manually

- Controlling the movements of animals out of the Sheep Auto Drafter by the operator.
- Overriding an automatic setting to retain an animal in the Sheep Auto Drafter so it can be examined for any reason, or drafted in a different direction from the automatic setting.
- Temporarily pause an automatic operation so that the operator can resolve issues. For example, if two animals become caught in the Sheep Auto Drafter at the same time.

SETTING UP FOR SUCCESS

Positioning the Sheep Auto Drafter

It is necessary that the Sheep Auto Drafter is mounted and secured on a hard, level, flat surface. A concrete pad of approximately 900cm (wide) by 2600cm (length) should be laid to fit the Sheep Auto Drafter and a single sorting unit (longer if 5-way drafting is needed).

Power and compressed air requirements

Both power and compressed air are necessary to operate the Sheep Auto Drafter and sorting unit. An air supply is needed to operate the unit's entry and exit gates, and drafting gates. The air supply must be free of any moisture and the compressor's air tank should be drained of water. Gallagher recommends daily, or when practical.

The air supply must be free of dust. It is recommended the air supply compressors have air intake filters to filter out fine dust particles, especially in dry and dusty environments.

Important: Under no circumstances should more than 12 bar pressure be supplied to the Sheep Auto Drafter. Bottle supplied air must have a high pressure regulator to reduce pressure to not more than 10 bar.

Power requirements

The Sheep Auto Drafter is powered by an external 230V to 12V DC adaptor. This comes as part of the package with the Sheep Auto Drafter and can be connected to the AC power supply (input range 100 - 240V AC).

NOTE:

The AC power supply is not waterproof, and therefore must be used undercover in a dry environment, and when in use must be located at least 1 meter away from the side panels of the Sheep Auto Drafter if using RFID.

If the Sheep Auto Drafter is to be operated in the open, and may be subjected to the elements i.e. rain, dust or where no 230 V AC power is available, a 12V DC battery (e.g. a car battery) can be used.

Compressed air requirements

Once the compressor is connected and running the operator will be able to see what the pressure is at the unit by looking at the pressure gauge attached to the Control Bridge (see *Figure 3*). It should read approximately between 4-6bar/60-90psi (in the green zone). Ensure it does not enter the red zone (>6bar). A reading above 6 bar indicates a regulator issue, which will need investigation. Readings below 4 bar are likely to be caused by an air supply (compressor) problem. A typical compressor would be a 2HP, 24 litre tank single phase machine.

Important: Under no circumstances should more than 12 bar pressure be supplied to the Sheep Auto Drafter.



Figure 3. Pressure gauge (on the Control Bridge).

Actions to avoid

The Sheep Auto Drafter will withstand most of the conditions, and chemicals, typically encountered in the farming environment. However, avoid the following:

- Using the Control Bridge to lift the unit, (e.g. by inserting fork lift prongs under the Control Bridge)
- Resting objects on top of the Control Bridge
- High pressure water/driven rain under the Control Bridge
- Using other brand indicators without the appropriate adaptor. Refer to *Scales and RFID reader requirements* (p 12).
- Air supply pressure **must not** exceed 12 bar.

Weigh Scale Indicator Requirements

The Sheep Auto Drafter has been specifically designed to operate with the TWR-5 and TWR-1. Other Gallagher weigh scales may be used with reduced functionality - please contact your Gallagher representative for further guidance and assistance.

**Warning!**

**Using other brands of weighing indicators without the appropriate adaptor cables can cause damage to your Sheep Auto Drafter.
(Contact Gallagher for advice.)**

For example, the Loadbar adaptor cable for TruTest XR3000 is Part number 2A99509



RFID (Radio Frequency Identification) antennae are installed in each of the unit side panels. The antennae will recognise EID which are either HDX (half duplex) or FDX (full duplex), and those which are inserted as ear tags, implants or boluses.

A TWR-x unit is needed to communicate with the antenna.

Recommendations for the construction and use of surrounding yards and races

(Adapted from "Behavioral Principles of Livestock Handling" by Temple Grandin)

Race construction leading up to the Sheep Auto Drafter

Sides

Sheep have a wide visual field. The width is affected by the amount of wool they have on their head and ranges from 191 to 306 degrees. Any handling races, including the race leading up to the Sheep Auto Drafter, should have solid side walls to prevent animals from seeing distractions outside the race. Any moving objects, (e.g. people, flapping objects or a coat hung on a race fence) seen through the sides of a race can cause balking or frighten the sheep. Solid side walls are especially important if animals are unaccustomed to the facility.

Layout

Curved single file races are recommended for moving sheep up to the Sheep Auto Drafter. A curved race is more efficient for two reasons. Firstly, it prevents the animal from seeing what is at the other end of the race until it is almost there. Secondly, it takes advantage of the natural tendency of sheep to circle around a handler moving along the inner radius of the race.

Width

Ideally the race will be designed in a way that organises sheep into single file by the time they reach the junction with the Sheep Auto Drafter. This helps to ensure that only one sheep enters the Sheep Auto Drafter at a time and makes stock flow smoother. As sheep can be of varying sizes, (e.g. adult sheep and lambs), it is useful to have a race with adjustable sides in the final lead up (the last 180cm). However, if the race width is fixed, approximately 50 cm is the recommended width. This is the same dimension as the internal edge of the Sheep Auto Drafter entry gate surround.

Materials

The materials the surrounding races are made of have the potential to affect the reliability of the RFID reader. Metal components are best avoided if possible, particularly if they rub together, as this can cause interference in the signal between the reader and the EID.

Vision and lighting

Where the Sheep Auto Drafter is positioned illumination should be uniform and diffuse, much like a bright cloudy day. Shadows and bright spots should be minimised.

Sheep tend to move from dim areas to brighter areas, provided the light is not glaring in their eyes. Situate the Sheep Auto Drafter to take advantage of natural light. Skylights, combined with other natural lighting, can even out light

levels so consider installing translucent polycarbonate roofing and or walls if the area is dark.

Noise

In facilities where livestock are handled, loud or different noises should be avoided because they distress livestock. The sound of metal clashing together can cause balking and agitation. As the Sheep Auto Drafter is constructed of composite materials its operation is very quiet but the noise level in the surrounding yards should be considered. The compressor providing air for the Sheep Auto Drafter is best located at a distance to reduce noise levels. Rubber stops on gates in the yards around the Sheep Auto Drafter will help reduce noise.

The effects of pain or fright

Research indicates that sheep can remember a painful or frightening experience for many months. Sheep which had been inverted in a sheep handling machine were more difficult to move through the machine the following *year*¹. The fact that the Sheep Auto Drafter has been designed with the comfort and safety of stock in mind will help to ensure experience of it, is positive. This will aid in the smooth entry and flow of stock through the system on future occasions.

It is also worthwhile keeping in mind that livestock which have had gentle handling in the past will be less stressed when they are handled in the future. Think about how your actions will affect your future interactions with stock and the efficiency of the operations you wish to carry out.

Moving the Sheep Auto Drafter

As the Sheep Auto Drafter is very light (approximately 100 kg) due to its construction from composite materials, it can be lifted manually by two people using transport poles. The drafting pod must be disconnected and moved separately to prevent damage to both the pod and the Sheep Auto Drafter.

Note: Make sure the side panels are attached when shifting the Sheep Auto Drafter and that they are on the inside slot. Also, close the gates at either end.

Transport poles can be purchased from your local Gallagher distributor which can be inserted into slots provided in the gate surrounds (see *Figure 4*). Once the poles have been inserted the Sheep Auto Drafter can be lifted and repositioned (see *Figure 5*).

¹ Hutson, G.D. (1980). The effect of previous experience on sheep movement through yards. *Applied Animal Ethology* 6 :233.

Warning: The drafter should be lifted when moved, not dragged. Dragging the Sheep Auto Drafter will risk damage to the load cells housed within each foot.

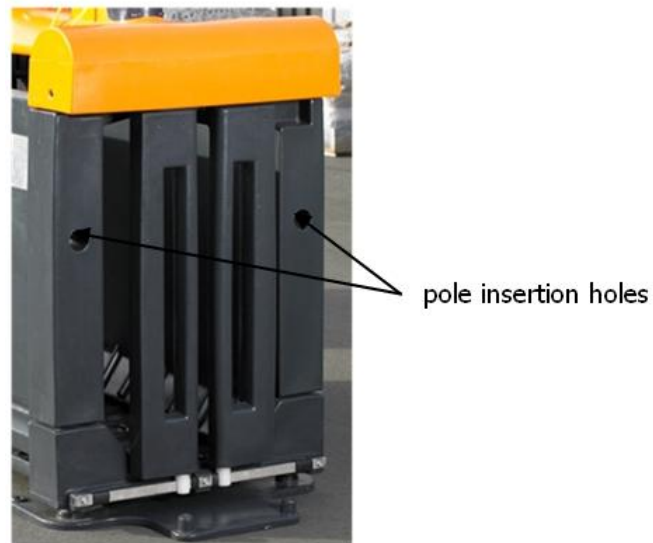


Figure 4. Holes for insertion of transport poles.



Figure 5. Lifting using the transport poles.

Alternatively, the Sheep Auto Drafter can be lifted mechanically, (e.g. by forklift), by inserting forks or strops under the floor, or by attaching strops to the four corners of the transport poles (nearest the end supports) and then lifting from overhead with a forklift or loader.

Note: It is VERY IMPORTANT not to lift the Sheep Auto Drafter by the Control Bridge as this action may damage it!

ASSEMBLING THE SHEEP AUTO DRAFTER AND SORTING UNIT

Assembling the Sheep Auto Drafter

The Sheep Auto Drafter comes mostly pre-assembled. It just needs to be bolted to the concrete pad, with the mounting plates for the scale to be attached. Refer to E in figure 6 below.

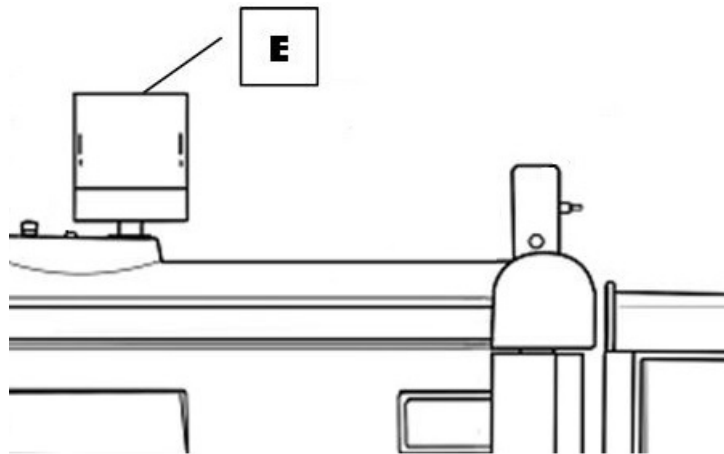


Figure 6. Scales and EID reader brackets

Only the following items need to be attached after all assembly is completed and ready to be tested:

- scale indicator (if using, connect mounting adaptor to mounting plate)
- sorting unit(s) (if using)
- power supply (90-240V AC to DC supply included)
- air supply not exceeding 12 bar / 145psi.

Bolting down the Sheep Auto Drafter

When at the prepared location, the Sheep Auto Drafter should be bolted to the concrete pad using the mounting holes on the Sheep Auto Drafter 'foot' (see Figure 7). Allow space for the Auto Drafter Sorting unit(s).

It is recommended that 4 M10 x 125mm masonry anchors with 10mm x 25mm flat washers and a masonry drill (bit size of 10mm) are used to attach the Sheep Auto Drafter and sorting unit. A permanent mounting also allows for the optimisation of surrounding yards and races to efficiently feed stock into the weighing and drafting set up.



Figure 7. Fixing to pad.

Adjusting the Sheep Auto Drafter width

Both Sheep Auto Drafter side panels can be adjusted to a variety of positions by using the four slots provided on either side. Adjusting them at the bottom of the panel will allow the operator to resize the unit for different sized animals (so that they are restricted from turning around). Adjusting them at the top will allow more room for handler access to stock. These slots will allow resizing of the unit from 300mm to 525mm wide.

To adjust the Sheep Auto Drafter width

1. Lift the side panel of the unit upwards and drop it into the appropriate slot. One side (the one which is most accessible to the operator) has locking levers. These levers are designed to allow the top to be extended further out for greater operator access. They can be dropped outwards or inwards, into the neighbouring slot, to ensure the panel is locked into position.



Figure 8. Slots and locking lever to allow Sheep Auto Drafter width adjustment.

Assembling the sorting unit

The sorting unit needs some assembly. The following instructions explain how to do this.

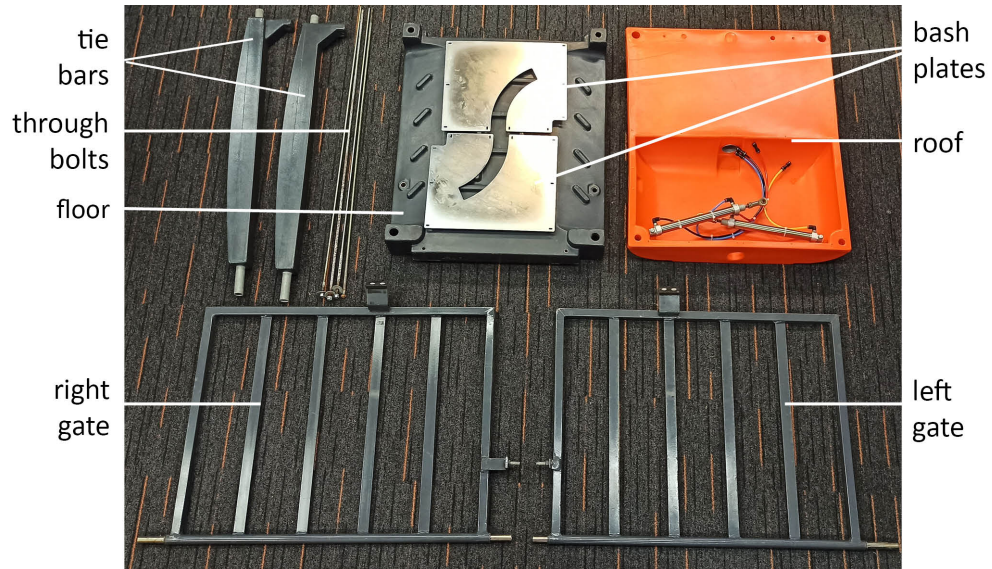


Figure 9. Drafting unit components

Note: Sheep Autodrafters made after October 2021 will use Bash plates instead of the Jump proof plate in the sorting unit's roof. Refer to further instructions for *Fixing the Bash plates* (p 24).

Tools required

- 10mm (3/8") socket
- 13 mm (1/2") socket
- 17mm combination spanner
- 2 x Clamps
- Cordless screwdriver, with #2 Pozidriv bit

Method

1. The sorting unit will be assembled upside down, so place the roof upside down on the ground.

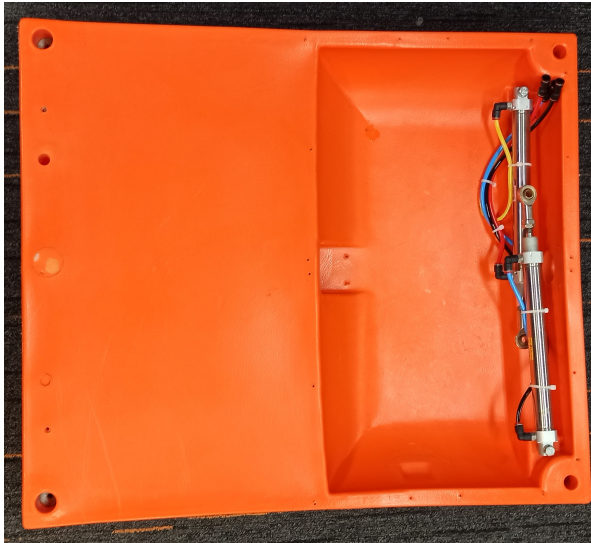


Figure 10. Roof assembly

2. Attach the two tie bars to the rear of the roof and screw them on with two Tek screws (14 gauge x 50mm). There is a left- and right-hand side, the inside edge will be stepped in (see photo below).

Tool required: 10mm (3/8") socket.

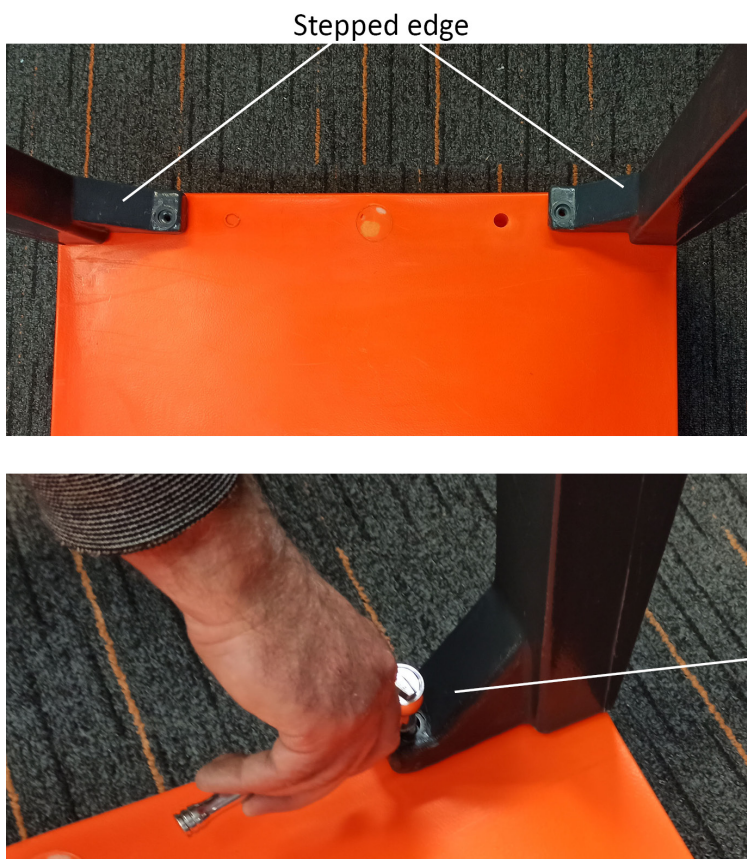


Figure 11. Roof tie bar assembly

3. Attach the gates by inserting the 19mm pivot tubes in the gates. The end of the tube with the white plastic bolt guide in it must be at the *roof-end* of the gate. The same end of the pivot tube then gets pushed into the 19mm hole in the roof.



Figure 12 Door assembly

4. Attach the floor by inserting the gates pivot tubes and tie bars into the holes in the floor (the back and front tubes are different sizes - those at the drafting gate end are smaller, so make sure the floor is around the right way). Keeping the floor level will make the job easier. Tap lightly with a soft mallet if the parts cannot be pushed together by hand.

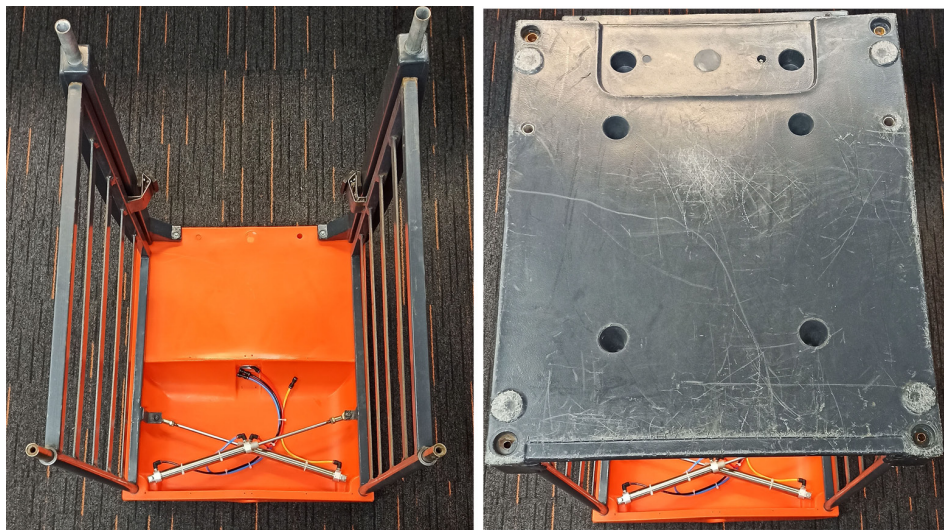


Figure 13. Floor assembly

5. Insert the 4 through bolts into each corner of the floor and tighten. **Be careful not to over tighten .**

Tool required: 13mm ($\frac{1}{2}$ ")socket.

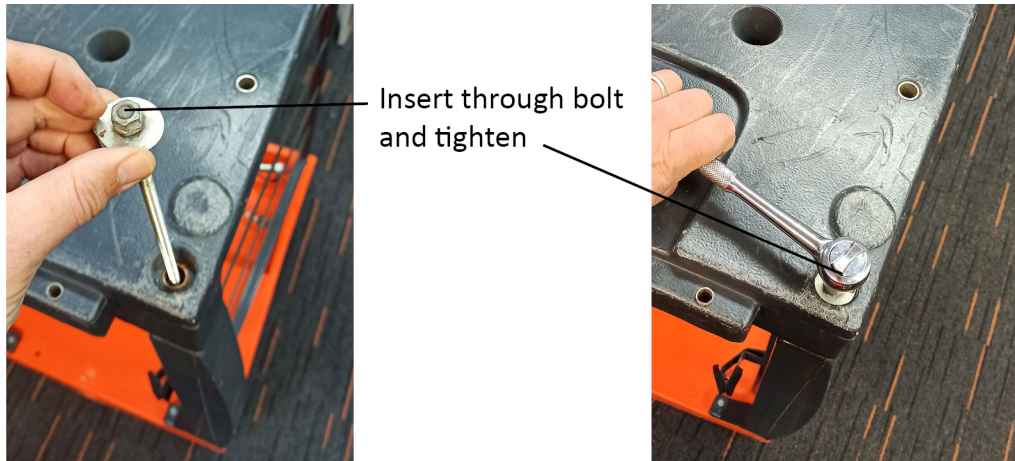


Figure 14. Floor assembly

6. Fasten the two air cylinders to the gates using lock nuts and washers (M10 nut, 10mm flat washer) to the end of each one.

Tool required: 17mm combination spanner.



Figure 15. Cylinder linkage assembly

Adding an extra sorting unit

It is possible to carry out 5-way or 7-way drafting. This will require the addition of 1 or 2 sorting units as well as an internal solenoid block and hosing.

Please contact your local Gallagher representative for further information.

Connecting the sorting unit to the Sheep Auto Drafter

1. Sit the sorting unit about 150mm away from the Sheep Auto Drafter and insert the air lines through the conduit at the top of the sorting unit.



Figure 16. Inserting air lines.

2. Slot the sorting unit onto the spigots protruding upwards from the Sheep Auto Drafter foot. Screw them together with Tek screws (14 gauge 75mm).

Tool required: 10mm (3/8") socket.



Figure 17. Attaching to Sheep Auto Drafter.

3. Attach the female connections on the ends of the air lines to their same-coloured mates inside the roof of the sorting unit. Check the air lines are not sagging as they may get caught when the doors operate.



Figure 18. Attaching air lines.

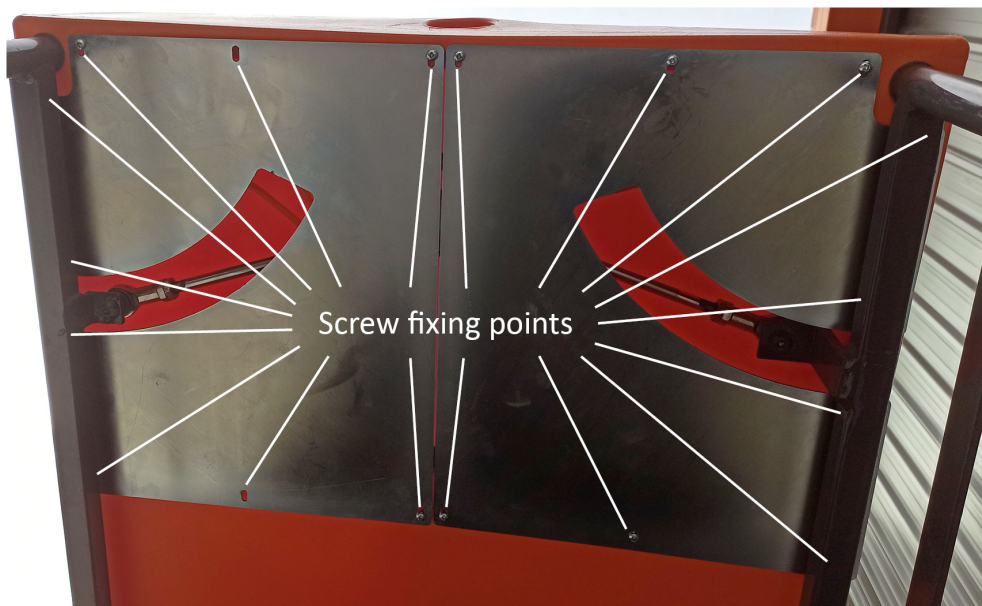
Note: It is very important that there is nothing touching the Sheep Auto Drafter when it is weighing animals as this may affect its accuracy. This includes the sorting unit, so make sure it is attached correctly.

Fixing the Bash Plates

1. With the pod unit sitting upright, carefully hold the bash plate up to the roof with the screw holes lined up.
2. Clamp the plate in position. Take care to prevent the plate falling and causing injury before it is secured.



3. Use a cordless screwdriver with a low torque setting and a #2 Pozidriv bit to fasten both bash plates to the roof using the 18 screws provided. To make assembly easier, do not fully tighten the screws until all screws have been fitted.



4. Remove the clamps when its properly fastened.
5. Swing each gate by hand to the fully open and closed positions to make sure nothing binds or collides.

TURNING THE SHEEP AUTO DRAFTER ON

How to turn the Sheep Auto Drafter on

Before starting the Sheep Auto Drafter, ensure the following are correctly attached:

- power
- compressed air
- scale (if weighing animals/reading EID tags)

To attach and connect the Weigh Scale indicator:

- Attach the weigh scale indicator to the scale mounting bracket on the top of the Control Bridge (the required parts are supplied with scale).
- Connect the black RS232 cable (comms cable) into the socket on the indicator.

The supplied null modem adaptor must be connected between the TWR weigh scale indicator's socket and the RS232 cable for correct communication.

This cable transmits the drafting decision data from the weigh scale indicator to the Auto Drafter so that the drafting gates can be set up for automatic mode.

- Connect the yellow antenna cable (male plug - has pins in) into the fitting socket on the weigh scale indicator.
- Connect the yellow loop back cable (female plug - has holes in) into the fitting socket on the weigh scale indicator.





Figure 19. The 3 cables connected to the Weigh Scale indicator.

If not using a weigh scale indicator (only manual operation is possible):

- Connect the yellow loop back cable (female plug - has holes in) into the socket on the metal scale mount (see Figure 19a).



Warning!

Do not connect or disconnect the loop back cable while either the Sheep Auto Drafter or weigh scale indicator is powered on as this will damage the product!

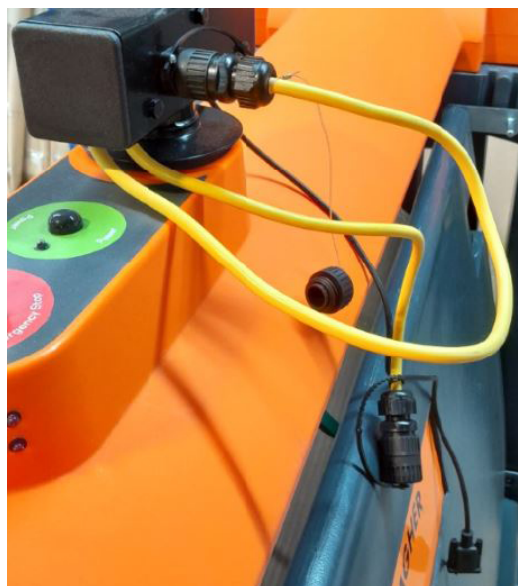


Figure 19a. The loop back cable.

Important:

If weighing animals is not needed while using the scale, attach the loop back cable into the socket on the metal scale mount instead of the scale indicator so the Sheep Auto Drafter can still operate.

Notes:

- Always put the protective caps onto unused plugs and sockets to prevent dirt and moisture from getting into them.
- When turning the scale to point in the direction you want, do it by gripping the metal mounting bracket! Turning it by gripping the scale could damage its plastic mount.

Purpose and function of Control Bridge Lamps (LEDs) and Buttons

Lamps

The Control Bridge houses several different lamps, both on top and around the front (above the entry gate) (see *Figure 20*). These are intended to give an indication of the Sheep Auto Drafter's operational status, (i.e. if it is ready to operate, operating normally or has a fault).

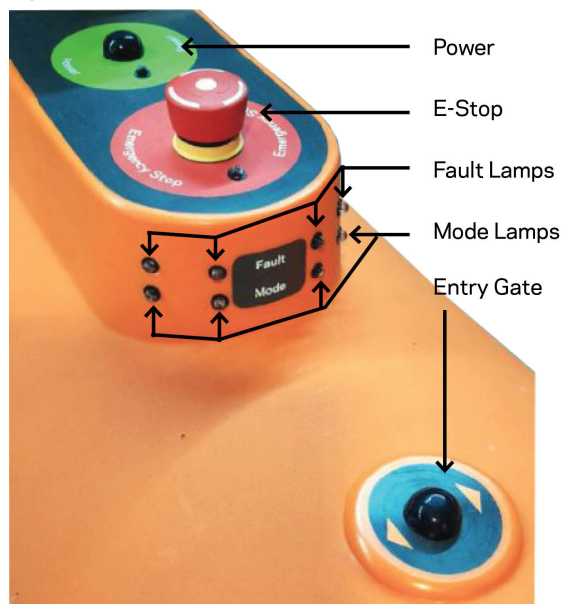


Figure 20. Position of Sheep Auto Drafter Control Bridge lamps and buttons

Table 2 describes the purpose of each lamp. Refer to the *Troubleshooting* (p 44) section for the specifics of how LEDs indicate fault modes.

LED colour	LED position	LED state		
		Off	Flashing	On
Green (power)	Beside power button on Control Bridge	- Sheep Auto Drafter switched off - No power supply - Too much power	Power supply low	Sheep Auto Drafter switched on
White (mode)	Wrapped around front of Control Bridge	- Sheep Auto Drafter switched off - E-Stop button engaged	Single flash Sheep Auto Drafter in stand by and ready for operation, waiting for communication from the remote or Entry Gate button on the Control Bridge. Double flash Sheep Auto Drafter has been overridden by the Entry Gate button on the Control Bridge, waiting for communication from this button only.	Sheep Auto Drafter is in Automatic Release Mode
Red (fault)	Wrapped around front of Control Bridge	- Sheep Auto Drafter switched off - Sheep Auto Drafter operating normally	Sheep Auto Drafter in a fault state - see <i>Troubleshooting</i> (p 44)	
Red (E-Stop)	Beside E-Stop button on Control Bridge	- Sheep Auto Drafter switched off - Sheep Auto Drafter operating normally	E-Stop button engaged	

Table 2. Function of LED lamps

Buttons

The Entry Gate button on the Control Bridge of the Sheep Auto Drafter has more functionality than the same button on the remote control. If the Entry Gate button on the Control Bridge is used to override the entry gate, then **only** the Entry Gate button on the Control Bridge can resume normal operation.

The table below shows the abilities of the Entry Gate button when pressed on the Control Bridge.

Button	Button name	Action	Reasons for use
	Entry Gate	Open and close the entry gate.	To stop the unit operation and open the entry gate, (e.g. removal of a sheep when two have got into the unit, or to let out a sheep which is jammed in the gate). To shut the unit entry gate. To enter stop mode (i.e. entry closed, exit open)
		Start the Sheep Auto Drafter in Automatic Release Mode.	The unit has been powered on and the remote is not available. The Entry Gate button on the Control Bridge, remote control or STOP button was used to override the entry gate. A fault condition has been corrected.

Table 3. Function of Entry Gate button on Control Bridge

Turning on the Sheep Auto Drafter

The Sheep Auto Drafter can be started in Automatic mode either with or without the remote.

The following instructions are used if the E-Stop button **is not engaged**.

1. Press the **Power** button, which is situated on the Control Bridge (see *Figure 21*).

The green power light should come on (if it doesn't, refer to *Troubleshooting* (p 44) for ideas on how to resolve the problem). The white LED mode lamp will start flashing to indicate that the unit is ready to communicate with the remote control.

Note: If the E-Stop button **is engaged**, the red E-Stop LED will start flashing. Release the E-Stop button before to continue with the start up. Once it is released the E-Stop lamp will switch off. Release the E-stop button by giving it a slight clockwise twist.

2. Start the Sheep Auto Drafter by either;

Using the Remote

Press the green **Start** button  on the remote control to pair it with the Sheep Auto Drafter. The unit will start to operate in Automatic Release Mode.

Or

From the Control Bridge

Press the **Entry Gate** button on the Control Bridge for 2 seconds or more. The unit will start to operate in Automatic Release Mode.

For more about Automatic Release Mode and how to use the Auto Drafter refer to *Using the Sheep Auto Drafter* (p 34).

Note: If the Entry Gate button is pressed for less than 2 seconds it will remain in standby mode, awaiting pairing with the remote control or further instruction from the Control Bridge.



Figure 21. The Sheep Auto Drafter Power button.

USING THE REMOTE CONTROL

The Sheep Auto Drafter comes with a remote control.

The remote control can be operated from within an approximately 15m radius of the unit, which allows the operator to carry out tasks at a distance while still maintaining control of the unit operations.

Remote Button functions

The unit can operate in two modes: Automatic Release Mode and Manual Release Mode. The seven buttons on the remote are used to operate the Sheep Auto Drafter and sorting unit in these two modes (see *Figure 22*).

The bottom two green and red buttons are used to operate the unit in Automatic Release Mode. In this mode the unit will automatically release animals, without user intervention, by using conditions set up in the scale indicator prior to the

session. Additionally the Entry Gate button  can be used in Automatic Release Mode to control the gate if sheep need to be cleared from the unit. (This button /function is also available on the Sheep Auto Drafter Control Bridge, see *Figure 20* (p 27).)

The top five orange buttons are used to operate the unit in Manual Release Mode. In this mode, the operator can control how an animal exits the unit or interrupt the unit operation, (e.g. to remove an animal if two have accidentally entered the unit).

Additional/spare remote controls

In the situation where there are two or more remote controls, one will need to be "paired up" with the unit. The remote control that is used first during a session will be paired with the unit. This means any other remote controls will not operate.

To find out how a remote control is paired see *Turning on the Sheep Auto Drafter* (p 30).



Figure 22. Remote control button layout.

Automatic Release Mode (no user interaction)			
Button	Button name	Action	Reasons for use
 green	Start	Start Sheep Auto Drafter operation	At the start of a session. After stopping the unit by using the Stop button, the Gate button or the E-Stop button. To switch to Automatic Release Mode from Manual Release Mode.
 red	Stop	Stop the Sheep Auto Drafter operations	To pause unit operation, to go and briefly do something else, (e.g. answer the phone, move sheep).
Manual Release Mode (user controls animal exit)			
orange   	Draft: Left Straight ahead Right	Select drafting direction	When an animal is in the unit, to set the drafting direction and then open the exit gate to release the animal.
 orange	Retain/Release	Hold an animal in the unit or release an animal from the unit.	To override an automatic release decision and keep an animal in the unit. To release an animal which has been retained.
 orange	Entry Gate	Open and close the entry gate.	To stop the unit operation and open the entry gate, (e.g. to remove a sheep when two have got into the unit, or to let out a sheep which is jammed in the gate). To shut the unit entry gate.

Table 1. Remote control button function.

For scenarios which include more about using the remote control refer to *Using the Sheep Auto Drafter*(p 34).

The remote control requires 2 alkaline AAA batteries to run (do not use rechargeable batteries).

Note: If the batteries in the remote drain flat the following will result:

- **Automatic Release Mode** - if operating in this mode the unit will continue operating until it runs out of sheep, or the E-Stop button is pressed.
- **Manual Release Mode** - if operating in this mode, the last action requested will be completed before drafting stops.

For more about Automatic and Manual Release Mode see *Using the Sheep Auto Drafter* (p 34).

USING THE SHEEP AUTO DRAFTER

The Sheep Auto Drafter can be run in two different modes: Automatic Release Mode or Manual Release Mode.

- If there are no animals in the unit, the Sheep Auto Drafter will automatically allow animals in.
- In Manual Release Mode, the operator will be in control of when the animals are released and the direction the sorting unit will release them.
- In Automatic Release Mode, the settings entered into the weigh scale indicator will determine how the drafter and sorting unit will operate.

Automatic Release Mode

It is likely that this will be the most frequently used mode, in conjunction with a weigh scale indicator. When the Sheep Auto Drafter is operating in Automatic Release Mode, the white mode LED lamps around the front will be on.

The following are some ways the Sheep Auto Drafter and sorting unit in Automatic Release Mode can be used:

- Weighing animals and releasing.
- Weighing animals and drafting using weight conditions specified in the weigh scale indicator (draft by weight).
- Reading EIDs.
- Reading EIDs and drafting using conditions (traits) specified in the weigh scale indicator (draft by list).
- Reading EIDs, weighing and drafting using conditions (traits) specified in the weigh scale indicator (draft by weight or list).

Follow the instructions below to carry out each of the scenarios mentioned above.

Note: For instructions on how to set up and use the weigh scale indicator, please refer to the appropriate user manual.

To weigh animals

1. Set up the weigh scale indicator so it is ready to weigh animals automatically.
2. Press the green **Start** button  on the remote control or press the **Entry Gate** button on the Control Bridge for 2 seconds or more.

- The white LED mode lamps will now be on to indicate that Automatic Release Mode has been selected.
- The entry gate will open. Once a sheep has entered, the entry gate will close to capture it. When the sheep has been successfully weighed, the weigh scale indicator will beep, the exit gate will open and the sheep will be released.

To weigh and draft animals (draft by weight)

1. Set up the weigh scale indicator so it is ready to weigh animals automatically and specify the weight limits for each group as per indicator user manual.
2. Press the green **Start** button  on the remote control or press the **Entry Gate** button on the Control Bridge for 2 seconds or more.
 - The white LED mode lamps will now be on to indicate that Automatic Release Mode has been selected.
 - The entry gate will open. When a sheep has entered, the entry gate will close to capture it. Once the sheep has been successfully weighed, the weigh scale indicator will beep. The weigh scale indicator will display both the animal's weight and the direction it will be drafted in. The exit gate will open and the sheep will be drafted according to the conditions set up in the weigh scale indicator.

Note: A sorting unit will be needed for this operation.

To read EIDs only

1. Connect the loop back cable into the socket on the Control Bridge, instead of the weigh scale indicator, so that the load cells are not connected. To find out how to do this, refer to *Using without weighing (No scale used) Figure 19*.
2. Set up the weigh scale indicator to read EIDs.
3. Press the green **Start** button  on the remote control or press the **Entry Gate** button on the Control Bridge for 2 seconds or more.
 - The white LED mode lamps will now be on to indicate that Automatic Release Mode has been selected.
 - The entry gate will open. Once a sheep has entered the entry gate will close to capture it. When the EID has been successfully read, the exit gate will open and the sheep will be released.

To read EIDs and draft by list (not weighing)

1. Connect the loop back cable into the socket on the Control Bridge, instead of the weigh scale indicator, so that the load cells are not connected.
To find out how to do this refer to *Using without weighing (No scale used) Figure 19*.
2. Set up the weigh scale indicator to read EIDs and select a draft list.
3. Press the green **Start** button  on the remote control or press the **Entry Gate** button on the Control Bridge for 2 seconds or more.
 - The white LED mode lamps will now be on to indicate that Automatic Release Mode has been selected.
 - The entry gate will open. Once a sheep has entered, the entry gate will close to capture it. When the EID has been successfully read, the exit gate will open and the sheep will be drafted according to the conditions set up in the weigh scale indicator.

Note: A sorting unit will be needed for this operation.

To read EIDs, weigh and draft by weight

1. Set up the weigh scale indicator so it is ready to weigh animals automatically and specify the weight limits for each group.
2. Press the green **Start** button  on the remote control or press the **Entry Gate** button on the Control Bridge for 2 seconds or more.
 - The white LED mode lamps will now be on to indicate that Automatic Release Mode has been selected.
 - The entry gate will open. Once a sheep has entered the entry gate will close to capture it. When the EID has been read and the sheep has been successfully weighed, the weigh scale indicator will beep. The weigh scale indicator will display both the animal's weight and the direction it will be drafted in. The exit gate will open and the sheep will be drafted according to the weight limits set up in the weigh scale indicator.

Note: A sorting unit will be needed for this operation.

To read EIDs, weigh and draft by list

1. Set up the weigh scale indicator so it is ready to weigh animals automatically and to read EIDs. Select a draft list.
2. Press the green **Start** button  on the remote control or press the **Entry Gate** button on the Control Bridge for 2 seconds or more.
 - The white LED mode lamps will now be on to indicate that Automatic Release Mode has been selected.
 - The entry gate will open. Once a sheep has entered the entry gate will close to capture it. When the EID has been read and the sheep has been successfully weighed the weigh scale indicator will beep. The weigh scale indicator will display both the animal's weight and the direction it will be drafted in. The exit gate will open and the sheep will be drafted according to the conditions set up in the weigh scale indicator.

Note: A sorting unit will be needed for this operation.

Manual Release Mode

This mode is used when the operator wants to manually control the Sheep Auto Drafter. The entry gate will still open and shut automatically to let animals in and hold them in the unit. The remote manually controls when the animals are released and the direction they are released in.

Note: This can only be done with 3-way drafting.

To hold an animal in the Sheep Auto Drafter

The remote control can allow the operator to hold an animal in the unit. This is useful for examining an animal for some reason, (e.g. an animal health issue or for tagging an animal).

1. Wait for the unit to open the entry gate and capture the animal, then press the **Retain/Release** button  on the remote control.
 - This will prevent the exit gate from opening.
 - The white LED mode lamp will begin to flash.
2. Once the animal has been dealt with, press the **Retain/Release** button again.
 - The exit gate will open and the animal will be released.
 - Then the entry gate will open and the next animal will be captured.

To manually set the drafting direction

The remote control can be used to override an automatic drafting decision, or if the unit is in the Manual Release Mode and the operator is making each drafting decision.

1. Wait for the unit to open the entry gate and capture the animal, then press

the **Retain/Release** button  on the remote control.

- This will prevent the exit gate from opening.
- The white LED mode lamp will begin to flash.

2. Press the appropriate arrow on the remote control to set up the drafting direction.



- Once the drafting gate has shifted into position, the exit gate will open and the animal will be released.
- Once the animal has been released, the entry gate will open and the next animal will be captured.

3. To continue in manual mode, press the **Retain/Release** button to hold the next animal in the unit until the drafting gates have been set.

To clear multiple animals from the Sheep Auto Drafter

Occasionally, multiple animals may enter the unit at the same time. In this scenario, the extra animal(s) will need to be removed.

1. Press the **Entry Gate** button on the remote control  or press the **Entry Gate** button on the Control Bridge. This applies to both Automatic and Manual modes.

- This will open the entry gate.
- The white LED mode lamp will begin to flash.

2. Remove the extra animal(s).

3. Press the **Start**  or **Retain/Release**  button on the remote control to close the gate and restart the unit operation or press the **Entry Gate** button on the Control Bridge.

- Pressing Start on the remote or the Entry Gate button on the Control Bridge will put the unit into Automatic Release Mode.
- Pressing Retain/Release will put it into Manual Release Mode.

USING THE SORTING UNIT

The sorting of animals can be carried out:

- Automatically
 - draft by weight
 - reading EIDs and using traits
- Manually
 - using the remote (3-way drafting only)

By default, 3-way sorting is configured, however additional sorters can be added to give 5-way or 7-way drafting functionality. Contact your local Territory Manager for further information.

Like the Sheep Auto Drafter, the sorting unit is constructed primarily from composite materials and has pneumatically operated gates, which means it is light, safe to use and very quiet.

Using the sorting unit(s)

Automatic use

In automatic mode, the sorting is controlled by the weigh scale indicator, which sends signals through the Sheep Auto Drafter electronics to the sorting unit. To enable this function, weight limits or a drafting list (using EIDs) will need to be set up in the weigh scale indicator to control the sorting of animals. To find out how to do this, refer to the weigh scale indicator user manual.

Manual use

If the sorting unit is under manual control, the commands from the remote are transmitted through the Sheep Auto Drafter electronics to the sorting unit. The remote is used to make each drafting decision manually.

For more detailed scenarios covering particular uses of the sorting unit in combination with the Sheep Auto Drafter see *Using the Sheep Auto Drafter* (p 34).

Using the Remote Control

The buttons to manually control the sorting unit are situated at the top of the remote control (see *Figure 23*). They will allow the operator to direct animals to the left, straight ahead or right through the first sorting unit attached to the Sheep Auto Drafter. For more about using the remote control see *Using the Remote Control* (p 31).



Figure 23. The sorting unit remote control buttons.

Using an extra sorting unit

It is possible to attach extra sorting units to the Sheep Auto Drafter, to allow up to 5 or 7 different sorting directions (see *Figure 24*). To control the sorting direction the operator must set up appropriate weight limits or a sorting list in the weigh scale indicator as the remote can't be used with 5-way or 7-way drafting.

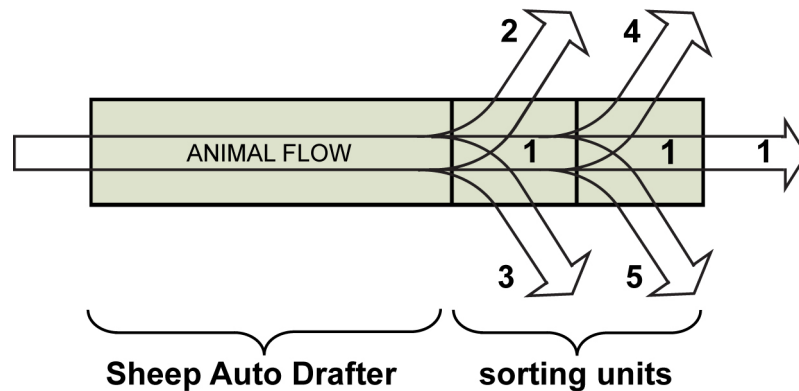


Figure 24. Using an extra sorting unit.

Using the Stop button to pause Sheep Auto Drafter operation

Occasionally, the operator may want to briefly stop the Sheep Auto Drafter for some reason, (e.g. answer a phone call or shift some sheep which are out of range of the Sheep Auto Drafter).

To stop the Sheep Auto Drafter

1. Press the red **Stop** button  on the remote control.
 - The entry gate will close and the exit gate will open.
 - The white LED mode lamp will begin to flash.

Note: If operating in Automatic Release Mode, any operation the unit was carrying out will be completed before an animal is released, (e.g. if the unit was weighing an animal the weight will be locked into the scale indicator before the exit gate is opened).

2. To start operations again, press either the **Retain/Release** button  , the **Start** button  on the remote control or press the **Entry Gate** button on the Control Bridge.
 - Pressing Start on the remote or pressing the Entry Gate button on the Control Bridge will put the unit into Automatic Release Mode.
 - Pressing Retain/Release will put it into Manual Release Mode.

Using the E-Stop button to halt Sheep Auto Drafter operation

It is likely the E-Stop button will be used very rarely as it is intended for use in emergency situations only. It is the large red button situated at the front of the Control Bridge (see *Figure 25*).



Figure 25. E-Stop button position.

To use the E-Stop button

1. In an emergency, hit the **E-Stop** button (situated on the Control Bridge).
 - The red E-Stop LED will start to flash.
 - The air pressure will be removed - this will allow the entry and exit gates to be manually opened if needed.
2. Resolve the issue that has occurred.
3. Release the E-Stop button by turning the button clockwise until it pops back up.
 - The white mode LED will start to flash.
4. Press either the **Retain/Release**  or the **Start** button  on the remote control, or the **Entry Gate** button on the Control Bridge only.
 - Pressing Start on the remote or pressing the Entry Gate button on the Control Bridge will put the unit into Automatic Release Mode.
 - Pressing Retain/Release will put it into Manual Release Mode.
 - The unit will continue operations from the point it was halted, (e.g. if animals were being weighed and an animal had just been captured, then after restarting it would weigh the animal and release it).

To turn off the Sheep Auto Drafter

1. Press and hold the **Power** button (situated on the Control Bridge - see *Figure 21* (p 30)) down for a couple of seconds.
 - The exit gate will open, the entry gate will shut, and the sorting unit gates will move to the straight through position (if not there already).
Note: If the E-Stop button is pressed, then the gates will stay in their current positions.
 - If Automatic Release Mode is selected, the Sheep Auto Drafter will attempt to process any sheep in the unit before it switches off, (e.g. if it is a weighing session and there is a sheep in the unit, it will be weighed and released). This process however, will be affected by where in the process the unit is when the power button was pressed, (e.g. if it was pressed before the weigh scale indicator has had a chance to make a drafting decision, then the animal will be released out the centre of the sorting unit).
 - Finally, the air supply to the gates will be switched off and the LED lamps will turn off.

Notes:

- To completely stop all power use, for example to prevent power drain from a battery power supply, disconnect the power cable or turn off the power source.
- Always put protective caps on unused plugs and sockets to keep out dirt and moisture, including on the two side panels that contain the antennas for EID detection.

TROUBLESHOOTING

There are several steps that can be taken when the Sheep Auto Drafter is not operating correctly, in order to identify and resolve the issue.

1. General LED check.

The first thing to do when an issue is encountered is to check the LED lamps on the Control Bridge. They may give an indication of where the issue is. *Table 2* lists the LEDs and what their different states indicate.

2. Check all cables are attached firmly and working.

- Check the power and air cables are attached and working.

The green power LED should be on. The pressure gauge should register air pressure in the green zone.

- Check the cables between the unit, the scales and the RFID reader are all attached correctly.

3. Activate flash fault sequence.

If the unit has identified it has a fault, the multiple red LED lamps on the front of the Control Bridge will start to flash. For some faults, the flash sequence will help to identify which area the issue is in. Find out how to activate the fault flash sequence below.

4. Go through issue checklist.

The issue checklist (below) may have some ideas on how to resolve the fault.

To use the LED fault flash sequence

1. If a fault is not immediately obvious activate the LED fault flash sequence by briefly pressing the **Power** button down for around 1 second (it is situated on the Control Bridge - see *Figure 14*).

- Don't press it for 2 seconds or more as this will turn the Sheep Auto Drafter off.

2. The red LED fault lamps will turn on solidly and after 3 seconds, the white mode LEDs will flash the fault code, after which the red LED fault lamps will remain solidly on for a further 3 seconds before resuming their 1 second flash rate.

3. Once the issue has been determined and fixed, press the **Start**  or

Retain/Release  button on the remote control to continue or press the **Entry Gate** button on the Control Bridge.

- If the fault hasn't been fixed, the fault LED will continue flashing.
- If fault has been fixed, the fault LED will turn off and the Sheep Auto Drafter will begin operating again.

- If the Start button on the remote control or the Entry Gate button on the Control Bridge is pressed, then the unit will continue in Automatic Release Mode. If the Retain/Release button is pressed, the unit will continue in Manual Release Mode.

Note: The Sheep Auto Drafter can be switched off using the Power button on the Control Bridge when it has a fault. However, the issue will need to be resolved before restarting, in order for it to operate correctly, (i.e. if the fault lamps are flashing when the unit was switched off, they will resume flashing the same when the unit is restarted).

Issue checklist and possible solutions

If the red fault LED is on:

1 flash

Sheep (or other object) jammed in the Sheep Auto Drafter gates.

- When something becomes jammed in the gates the gates will continue attempting to close several times. If they fail, then the Sheep Auto Drafter will go into this fault state. Clear the gate and then either press the **Start**



button or **Retain/Release**



button on the remote control or **Entry Gate** button on the Control Bridge before the unit will resume operation again.

Note: Jammed animals can be released prior to the Sheep Auto Drafter

going into a fault state by pressing the **Gate** button  while the gate is still trying to close. This will open the gate so the animal is released or can be pushed out.

The Sheep Auto Drafter or sorting unit gates won't operate.

- Check the compressed air supply:
 - Does the air pressure gauge have a reading in the green zone (4-6bar)?
 - Is the compressor on and working?
 - Are the air lines undamaged and connected correctly?
- Faulty solenoid, sensor or ram
 - If one of these is faulty it will need replacing.

2 flashes

No power to load cells.

- Check the weigh scale indicator is attached and switched on, or
- Make sure the loopback cable is correctly connected.

3 flashes

Fault in the loopback cable connection.

- Check that the loopback cable is correctly attached.

4 flashes

Weigh scale indicator not operating (not communicating).

- Check the weigh scale indicator is switched on.
- Check the RS232 cable is securely attached (between the Sheep Auto Drafter and the weigh scale indicator).
- Check the weigh scale indicator communication settings are correct. Check the correct port is set up in the weigh scale indicator for the connection between the weigh scale indicator and Sheep Auto Drafter (refer to the appropriate user manual).

5 flashes

Remote control not working due to PCB issue.

- Replace the PCB (a rare fault). Contact your Gallagher representative for advice on how to repair this issue.

6 flashes

Solenoid short on the 12V rail. Contact your Gallagher representative for advice on how to repair this issue.

7 flashes

Short on the 5V loopback rail. Check for dirt or water in the indicator cable or loopback connector. If they are clean and dry and the fault persists, contact your Gallagher representative for advice on how to repair this issue.

10 flashes

Sheep Auto Drafter is unable to identify the cause of the fault. Contact your Gallagher representative for advice on how to repair this issue.

Potential issues not identified by fault flash sequences:

Sheep Auto Drafter not operating

- Is the green power LED on?
If no, then check there is a functional power supply connected.
- Is the white mode LED flashing?
(see cause below)
- Is the red E-Stop LED flashing?
(see cause below)
- Is the air connected and at sufficiently high pressure?
Check the pressure gauge to see if there is enough pressure (pressure should be in the green zone on the pressure gauge).

- Are the red fault LEDs flashing?
If yes, then there is an issue that needs to be resolved before the unit will begin to work again. To find out how to activate the fault flash sequence see the instructions above.

Green power LED flashing

The power supply is low.

Although the Sheep Auto Drafter can continue to operate it may be worthwhile checking the power supply.

White mode LED flashing

Single flash

The Sheep Auto Drafter is in standby and ready to operate.

Press the **Start**  or **Retain/Release**  button on the remote control to continue, or press the **Entry Gate** button on the Control Bridge for 2 seconds or more.

Double flash

The Sheep Auto Drafter has been stopped using the Entry Gate button on the Control Bridge.

Press the **Entry Gate** button on the Control Bridge to resume operation.

Red E-Stop LED flashing

The E-Stop button is engaged.

Release it and then press either the **Start**  or **Retain/Release**  button on the remote control to continue or press the **Entry Gate** button on the Control Bridge for 2 seconds or more.

Remote control won't work, or the auto sorting unit is not responding to the remote control

- Are the batteries flat?
Try changing them.
- Is the remote control damaged or has it been wet?
- Was the Entry Gate button on the Control Bridge pressed to release an animal? This button must be pressed again to resume operation.

There is a short in a solenoid or the cabling

The unit will not operate. Contact your Gallagher representative for advice on how to repair this issue.

No drafting decision made

- Has the weigh scale indicator been set up correctly for drafting?
- Have either "drafting by weight" or "drafting by list" instructions been set up in the weigh scale indicator?
- Is the RS232 cable securely attached between the weigh scale indicator and the Sheep Auto Drafter?
- Is the RS232 cable attached to the correct port on the weigh scale indicator?

Multiple sheep in Sheep Auto Drafter

See *To clear multiple animals from the unit* (p 38) for instructions on how to deal with this.

EID failure to read

If it is...	then...
a one-off failure	Does the animal have a tag?
an occasional failure	• Are there a lot of metal objects, (e.g. yard fences or gates), close to the Sheep Auto Drafter? Metal, particularly if it is rubbing other metal objects, can set up an electrical interference which impedes the antennae's ability to identify EIDs. • Is it just animals with a tag in a particular ear, (i.e. right or left) that are not being read? If this is the case one of the antennae may not be working. • The DC power supply for the drafter is creating interference. Remove power supply as far as practicable from the antenna.
a continuous failure	Is the weigh scale indicator (TWR-x only) attached to the Sheep Auto Drafter antenna?

CARE AND MAINTENANCE

The Sheep Auto Drafter is of robust design so that it can withstand typical farming conditions, so as a result it is resilient in most situations. However, following the instructions below will help to get the best results from the unit and avoid damage to it.

Preventive Maintenance

The air supply must be free of any moisture, and the air tank should be drained of water daily or when practicable, and before a weighing session.

The air supply must be free of dust, and the air compressor must have an intake filter which is cleaned and maintained. The air supply pressure must not exceed 12 bar to ensure reliable performance.

Check doors and gates of the Sheep Auto Drafter and sorter, with power and air disconnected to ensure that they open and close smoothly and that there is no binding.

With air connected, check that the air pressure is within the operating range (green area on the pressure gauge, or 60 – 90psi/ 6-8bar).

Air Regulator Filter Bowl Removal and Refitting

The clear plastic filter bowl attached to the bottom of the air regulator collects excessive moisture from the incoming air. It has a self-draining function that is controlled by a float valve.

Note: In rare occurrences the float valve can get stuck in the open position due to small debris entering the air supply and blocking the valve opening. To fix this, remove and clean the filter bowl.

Procedure

The power and compressed air supply must be disconnected before commencing any work on the Sheep Auto Drafter and Sorting Unit!

Ensure the power and air supply have been disconnected. The filter bowl can be accessed by opening the flap below the air inlet connector. Unscrew the filter bowl and remove it. Remove any debris from the filter bowl. The plastic float should move freely up and down.

Important: The float valve mechanism is fragile so handle it with care when clearing out debris.

When refitting the filter bowl:

- Be careful to not cross-thread it.
- Start screwing the bowl on gently. **Do not use force.**
- Avoid over-tightening the bowl as the seal is created against an O-ring and does not require excessive pressure.

Note: Usually, the O-ring stays in the air regulator's housing when you remove the filter bowl. However, it may fall out. If you notice an air leak after reassembly, the O-ring has most likely fallen out. In that case, find the O-ring and put it back in place.



Figure 27. Air regulator filter bowl

Cleaning instructions

It is most likely that dirt and other material will collect through the unit during routine use. It is best to clear the build-up of these materials from some key areas regularly so that the unit will operate effectively:

- Around the gate area. Material gathering here may hamper gate movement.
- A build up here may touch the floor and affect the unit's weighing accuracy.

To clean the unit

- Remove the side panels.
- Sweep or wash the floor.
 - A build-up of material may touch the floor and affect the unit's weighing accuracy.
- Between the Sheep Auto Drafter and the sorting unit.
 - Scrape out any build up of material from around the gates, under the floor and between the Sheep Auto Drafter and sorting unit.

Notes:

- It is acceptable to clean the unit down with a water blaster but do **NOT** spray up under the bridge area or around the weigh scale indicator mounting brackets with a high pressure blast that could drive water into the bridge.
- Take care that water is not driven into the loadcell assemblies by directing a high pressure jet on this area.
- When towing on a trailer there **MUST** be a cover over the sheep auto drafter to prevent rain driving into the bridge area where the main circuit board is.

Storage

In dusty dry environments, dust can get into the lubricated moving parts, which will cause binding and seizing. For trouble-free operation in dusty environments, the Sheep Auto Drafter and the sorting unit must be prepared for storage when not in use:

- Clean off dust being careful not to blow dust into the bridge area.
- Disconnect power supply and store in the Gallagher Accessories bag.
- Face all electrical connectors and plugs downward and fit the supplied caps.
- Manually open the "Entry" and "Exit" gates. This action retracts the air rams.
- Cover the Sheep Auto Drafter and sorting unit with a dust cover, such as wrapping with Tarp and rope, or a BBQ cover.
- Take necessary precautions to ensure there is no animal infestation while in storage.

SPECIFICATIONS

General

AC Input Voltage	100 - 240V
DC Input Voltage	11.5 - 15V
Environmental Protection Rating	IP55
Operating Temperature	-15° to 60° C
Air Supply	7-12 bar, dry, oil free

Dimensions

Packaged Footprint

Length	1850 mm	2480mm
Width	820 mm	790mm
Height	1550 mm	
Weight:		
Crate Assembly	125kg	
Draft module	44kg	

Footprint

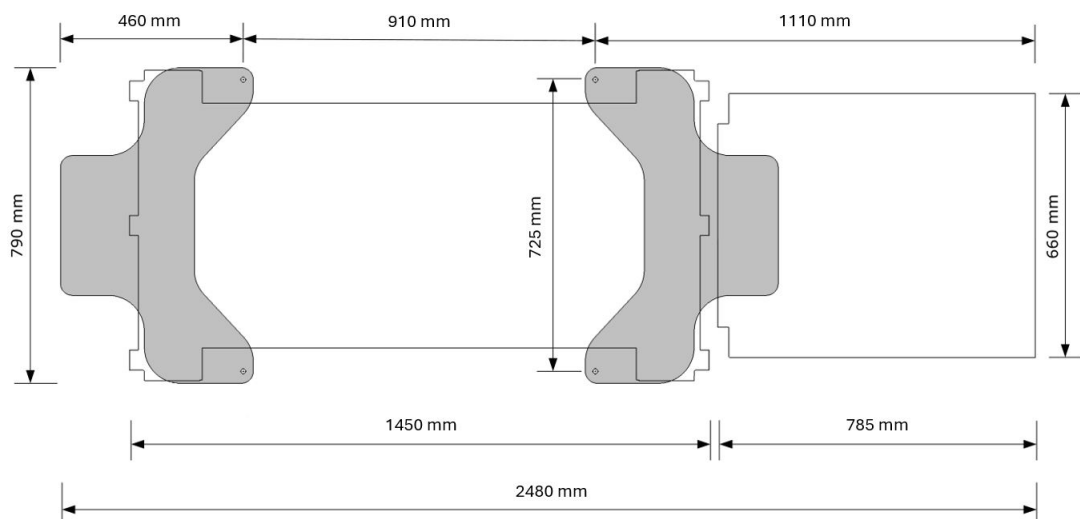


Figure 26. Sheep Auto Drafter and sorting unit dimensions.

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