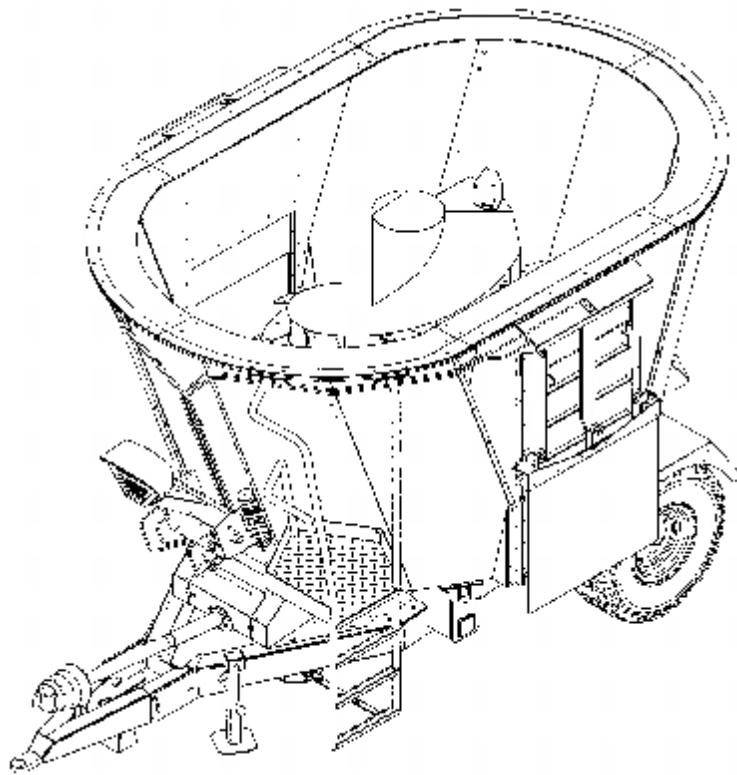


# powermix

## ALL MODELS OPERATORS MANUAL



**Shelbourne Reynolds Engineering Ltd**  
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Bury St Edmunds  
Suffolk IP31 2AR  
England

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INVESTOR IN PEOPLE



# EC DECLARATION OF CONFORMITY

MANUFACTURERS ADDRESS :

SHELBOURNE REYNOLDS ENGINEERING LTD.  
SHEPHERDS GROVE INDUSTRIAL ESTATE,  
STANTON,  
BURY ST. EDMUNDS,  
SUFFOLK.  
IP31 2AR  
ENGLAND.

MACHINE SPECIFICATION :

MAKE :

**Powermix**

MODEL :

SERIAL NO.:

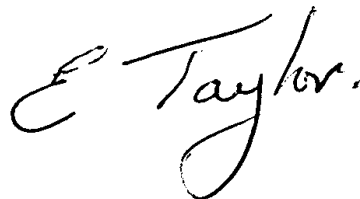
DIRECTIVES COMPLIED WITH :

MACHINERY DIRECTIVE 98/37/EC

APPLIED HARMONISED STANDARDS :

BS EN 292 PART1 & 2 : 1991  
BS EN 294 : 1992  
BS EN 349 : 1993

SHELBOURNE REYNOLDS SIGNATORY :



ERIC TAYLOR  
OPERATIONS DIRECTOR

PLACE :

**Stanton, England.**

DATE :



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Please read and observe these instructions very carefully before you proceed to operate the Powermix. In this way you will avoid accidents, reduce repair costs and downtimes and increase the reliability and service life of your Powermix. Pay particular attention to the safety instructions! Shelbourne Reynolds Engineering Ltd cannot assume any liability for damage or malfunctions caused by failure to observe the instructions contained in this operating manual.

The purpose of this operating manual is to enable you to familiarise yourself with the working of your Powermix. The manual will first of all explain the Powermix in general and then proceed to describe the special features.

The terms "right", "left", "front" and "back" when used in this manual to refer when sitting in the tractor seat looking forward.

This operating manual must be read and used by all persons who are required to carry out work either on or with the Powermix, e.g.,

- Operation (including preparatory work, troubleshooting during operation, care)
- Maintenance (servicing, inspection)
- Transporting.

Enclosed with this operating manual is a registration card. Your dealer will instruct you on the operation and care of your Powermix. After this has been done, return the registration card to your dealer. This will confirm your acquisition of the Powermix.

We reserve the right to make changes to the illustrations and data on specifications and weights contained in this operating manual if we make any improvements to the Powermix.





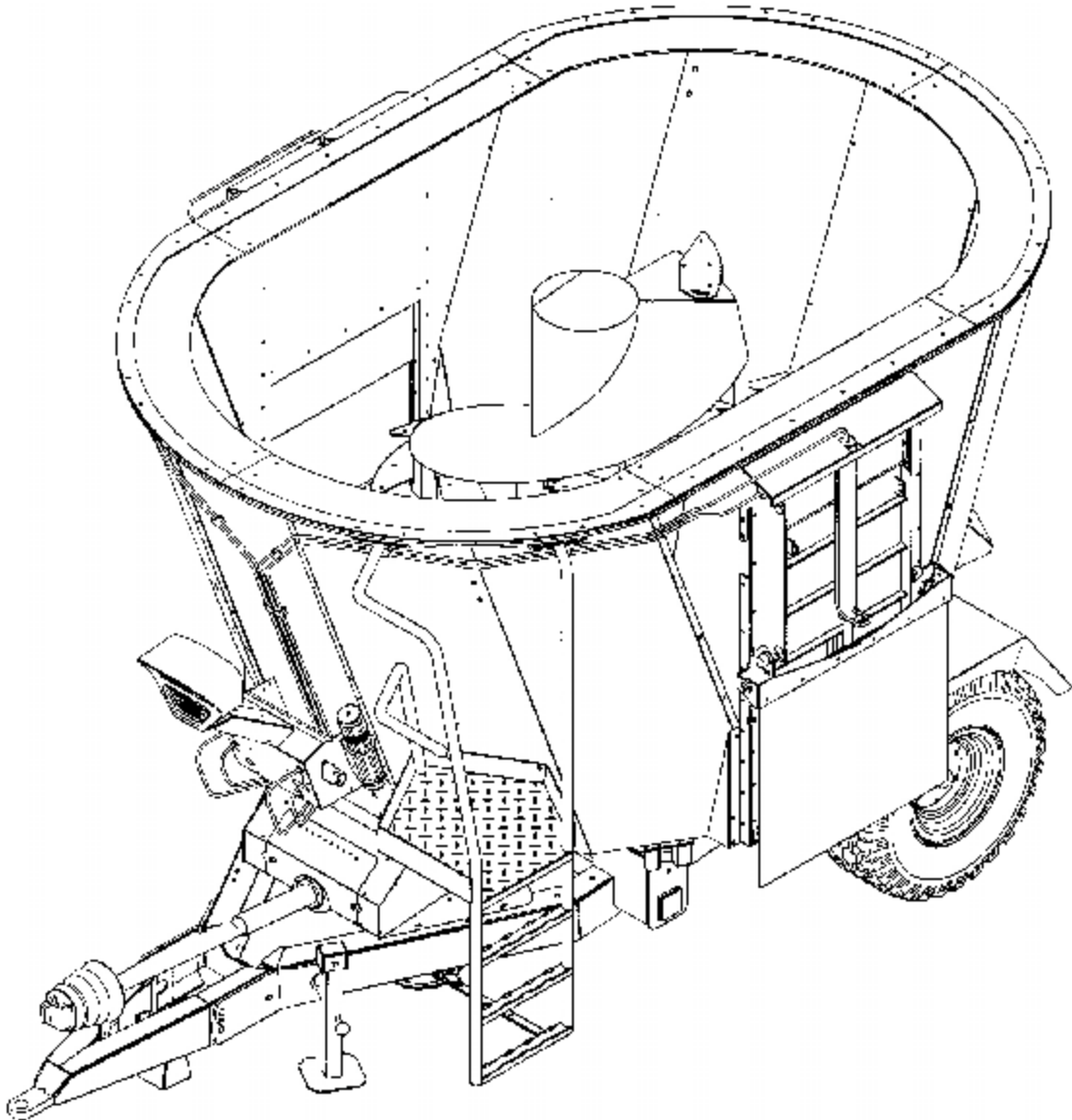
## SECTION 1:

## INTRODUCTION

### 1.1

#### FOREWORD

This manual will assist the operator in using the Shelbourne POWERMIX machines and realise their full potential whilst indicating safe procedures. This manual should be used in conjunction with the manual of the tractor or prime mover.



#### PATENTS

Extensive patents protect the SHELBOURNE POWERMIX machines

## 1.2

### IMPROVEMENTS AND CHANGES

Shelbourne Reynolds Engineering are continually improving their products to meet the farmers needs and therefore reserve the right to make improvements and changes when practical to do so, without incurring any obligation to make changes and additions to equipment which has been sold previously.

## 1.3

### SERVICE PARTS

Use guaranteed and genuine Shelbourne Reynolds Engineering service parts on Shelbourne Reynolds machinery to ensure maximum life and best performance. These are available through your Shelbourne Reynolds Engineering dealer.

## 1.4

### MACHINE IDENTIFICATION

The serial and machine numbers are stamped on a plate (Fig. 1), attached to the parking station, located on the front of the tub.

Fig. 1

**Shelbourne**  
REYNOLDS

**CE**

FOR SPARES QUOTE BOTH

MACHINE No	<input type="text"/>	SERIAL No	<input type="text"/>
MAX GROSS WEIGHT	<input type="text"/> KG	UNLADEN WEIGHT	<input type="text"/> KG
MAX LOAD ON DRAWBAR PIN	<input type="text"/> KG		

**SHELBOURNE REYNOLDS ENGINEERING LTD**  
**STANTON, SUFFOLK, IP31 2AR, ENGLAND**

## 1.5

### **SHELBOURNE REYNOLDS ENGINEERING LTD - WARRANTY TERMS AND CONDITIONS TO THE PURCHASER**

#### **GENERAL**

This warranty will become available to you when you have paid for the equipment and returned (duly completed) the delivery and warranty registration forms. It will expire on the anniversary of the purchase from the dealer. After that date Shelbourne Reynolds will have no further liability under this warranty to you except in respect of claims already notified. This warranty is not transferable and is available only to the original purchaser from our dealer. In the case of purchasers having leasing or similar arrangements the first user shall be deemed to be the original purchaser and you shall be deemed to have paid for the equipment.

#### **USE AND MAINTENANCE**

To maintain the benefit of the warranty throughout the twelve-month period you must have the machine serviced in accordance with our recommendations and use the machine properly. If on inspection the machine appears to have been either misused, overloaded, improperly operated, neglected, not properly maintained, altered or repaired without our consent this will invalidate the warranty. We shall have no further liability under it to you at all. (If you require any guidance as to the use you should contact the dealer.)

Our liability under this warranty is dependent upon you making the equipment and facilities available, for inspection and testing.

In this warranty, the expression, "defective product" means any of the equipment you have purchased which shows evidence of a defect in the materials, design (due regard being given to the state of the art at the time we designed it) or Shelbourne Reynolds workmanship. Wearing parts such as belting are excluded. Parts not manufactured by Shelbourne Reynolds, for example tyres and alternators, are also excluded.

#### **OUR OBLIGATIONS**

If you discover a defective product you should contact the dealer from whom your machine was purchased. The dealer will notify us of your claim. Our obligation will then be to either replace, or if we consider it appropriate, repair the defective product. Alternatively, we may arrange for our dealer to carry out this work.

**YOU MUST NOTIFY THE DEALER OF A DEFECT WITHIN SEVEN DAYS OF THE DAY ON WHICH IT IS DISCOVERED AND YOU MUST NOT USE THE EQUIPMENT AFTER THE DISCOVERY. FAILURE TO OBSERVE EITHER OF THESE OBLIGATIONS WILL INVALIDATE THE WARRANTY AS IS APPLIED TO THAT DEFECT. Any defective products replaced must be returned to S.R.E. for inspection.**

#### **NO ADMISSION**

On occasions we may, to preserve goodwill, replace parts even though they are not in our opinion defective. Accordingly, our agreeing to repair or replace a part cannot in any circumstances be deemed an admission that it was defective.

## **LIMITATIONS**

This warranty shall not apply to products made up in accordance with customer originated designs.

No warranty, condition or other term implied by statute or common law as to the merchantability or fitness for a particular purpose, is intended or given by this warranty. All such warranties, which may apply between Shelbourne Reynolds and yourself, are excluded to the fullest extent permitted by law.

In any case, except in respect of death or personal injury caused by our negligence. We shall not be liable to you by reason of any representation or implied warranty, condition or other term, or any duty at, law or under the express terms of any contract, for the consequential loss or damage. (whether for loss or profit or otherwise and include delay in harvesting, loss of crops, expense incurred for labour, additional or substitute material, rental whatsoever and whether caused by our negligence or our employees or agents or otherwise) which arises out of or in connection with the use of the goods by you.

Time of repair is not of the essence.

No person or persons are authorised to alter, modify or enlarge this warranty on behalf of Shelbourne Reynolds.

Shelbourne Reynolds shall not be liable for any failure to comply with any part of the warranty where such failure is due to circumstances beyond their reasonable control, including difficulty in obtaining materials or replacement parts.

## **CALL OUT CHARGES**

Shelbourne Reynolds and all dealers reserve the right to make a reasonable charge for call outs made at your request, which do not turn out to relate to defective products.

## **YOUR STATUTORY RIGHTS ARE UNAFFECTED.**

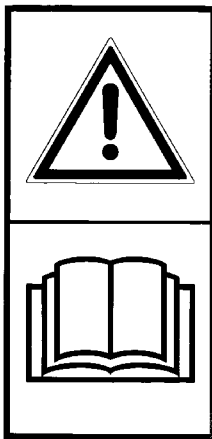
**SECTION 2:**

**SAFETY PROCEDURES**

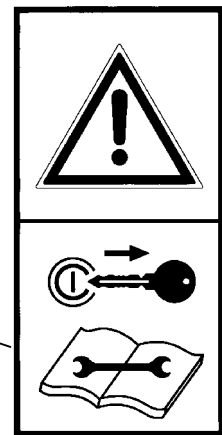
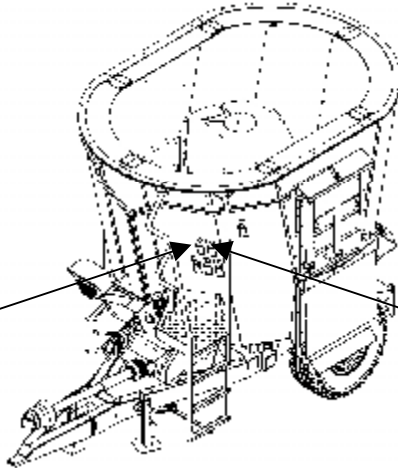
The following safety instructions are applicable for all chapters of this manual.

**DANGER SYMBOLS**

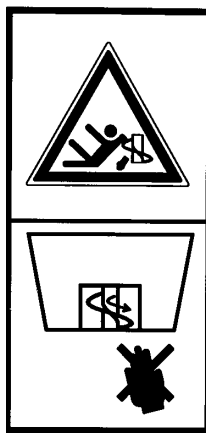
On the machine - the following symbols appear on the machine and are for your safety and the safety of other people. Ensure that you identify each symbol and understand it's warning



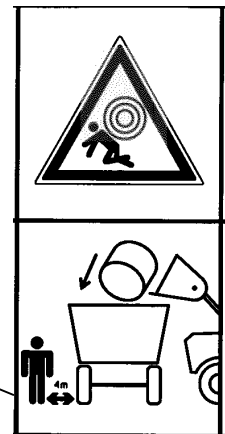
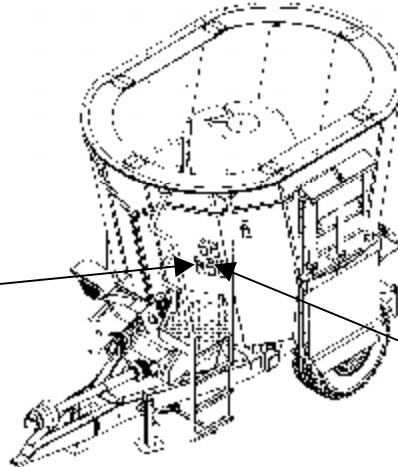
Carefully read the operating manual before handling the machine.



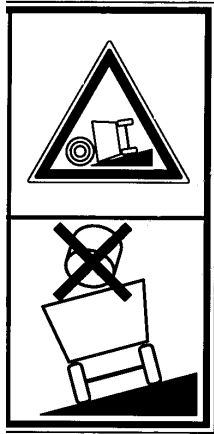
Stop the engine and remove the key from the tractor before carrying-out any work on the machine.



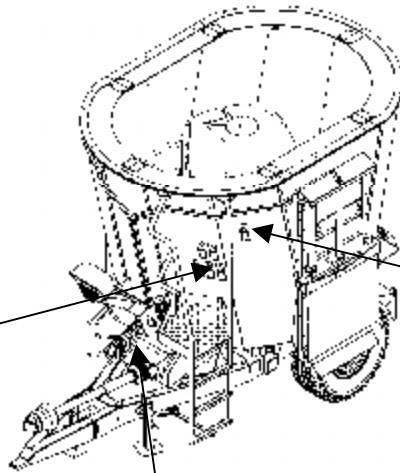
Beware of sharp blades on auger. Serious injury may result from falling into door opening with auger stationary or rotating.



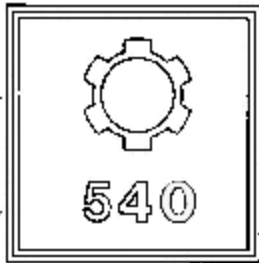
Ensure that there are no persons standing in the vicinity of the machine when loading. Serious injury may result from a falling bale.



Beware when using on side slopes  
The machine may be unstable when a  
Whole bale is first loaded and the  
Machine may topple over.



Do not attempt to climb into the  
machine using the platform  
positioned on the front or rear  
of the machine. Serious injury  
may result from falling into the  
tub.



The rotational speed of the PTO  
shaft must not be greater than  
540 revolutions per minute.

## 2.1

### PRECAUTIONS

Accident programmes can only prevent accidents with the co-operation of the persons responsible for the operation of the equipment.

For the safety of others, operate equipment with care and do not take unnecessary risks, which could cause an accident.

The tractor manufacturers operator manual safety precautions should be adhered to along with the following additional safety precautions listed when using a Shelbourne Reynolds Mixer Feeder.

### CAUTION



In addition to the following list, this symbol will appear throughout this manual whenever your safety, the safety of others or the machinery, is involved.

Please read all safety instructions contained in this operating manual with the utmost care and also observe all warning signs attached to the Powermix. These warning signs must be kept in a legible condition and must be replaced if missing or damaged. This is especially the case when whole sections are replaced when making repairs. Warning signs are available from your dealer or importer.

Follow these instructions to prevent accidents. These instructions must also be made available to all other users. You are advised to refrain from any working methods, which may be hazardous.

## **PROPER USE**

Shelbourne Reynolds Powermixes are based on state-of-the-art technology and are manufactured in accordance with recognised safety requirements. Nevertheless the use of the Powermix does not preclude the risk of injury to the user or third parties and/or the risk of damage to the Powermix itself or to other materials or items of equipment.

Always make sure that the Powermix is in a technically perfect condition and that it is used properly and for its intended purpose and entirely in accordance with the instructions given in this manual. Any malfunctions or defects, which might affect the safe operation of the Powermix, must be immediately eliminated.

The Powermix must be used, maintained and repaired only by persons who are familiar with it's working and have been made fully conversant with the risks involved.

OEM replacement parts and accessories from Shelbourne Reynolds have been specially designed for use with the Shelbourne Reynolds Powermix. Any replacement parts and accessories not supplied by Shelbourne Reynolds have not been tested and approved by us. The installation and/or the use of non-Shelbourne Reynolds products may under certain circumstances have a negative influence on the given design features of your Powermix and may therefore adversely affect it's safe and reliable operation and your safety. Shelbourne Reynolds cannot therefore be held liable for damage or injury caused by the use of non-OEM replacement parts or accessories.

The Shelbourne Reynolds Powermix is intended for use on typical farms and to be employed in cutting and/or mixing and discharging materials suitable for feeding to livestock. Any uses other than those for which the Powermix is intended, such as transportation, will automatically exempt Shelbourne Reynolds or the supplier from it's/his liability in respect of ensuing damage. Such cases of improper use will therefore be entirely at the user's own risk.

All relevant accident prevention regulations, as well as other generally acknowledged health and safety regulations and road traffic regulations must be strictly observed.

Improper use also comprises failure to observe the instructions given in this operating manual and the manufacturer's maintenance and servicing requirements.

## **OPERATIONAL SAFETY**

The Powermix must not be put into operation until the user has been given proper initial instructions either by the dealer or by one of Shelbourne Reynolds' representatives or employees.

The Powermix may be used only if all safety devices, e.g. detachable guards, are fitted and in proper working order.

Nuts and bolts should be checked at regular intervals and tightened if necessary.

Tyre pressures must also be checked regularly.

In the event of a malfunction, immediately cease operation and secure the Powermix in its stationary position. Malfunctions must be eliminated immediately.

### **No liability for consequential damage**

Even though your Shelbourne Reynolds Powermix has been manufactured with the utmost care and you are using it properly, fluctuations and interruptions in feed rate may still occur.

It is the duty of the operator/user to ensure that foreign objects, e.g. stones, metal objects etc. are not allowed to enter the machine and are not allowed to be mixed-in with the feed. Failure to observe this may result in damage to the Powermix and/or injury to the operator/user and/or injury to the livestock.

Any claims for damages not directly incurred by the Powermix cannot be accepted. By the same token, Shelbourne Reynolds cannot be held liable for any consequential damage resulting from incorrect use of the Powermix.

## **ROAD SAFETY**

Road traffic regulations must be observed when towing the Powermix on roads, paths and other public places. The Powermix must be in a road-worthy condition. Observe the maximum permissible width for road transport and fit all necessary rear lights, warning signs and guards. Disconnect the electrical supply when fitting.

Close all doors fully and secure all rubber flaps, guards and covers so that they cannot cause injury or damage to other users of the public place. When the conveyor is fitted always place it in the transport position with the safety chain attached before towing the Powermix on public roads.

Disconnect all hydraulic connections and the PTO driveshaft from the Powermix so that it cannot be inadvertently operated.

Ensure that all braking systems and lighting systems are in full working order and that they can be fully and correctly operated by the vehicle towing the Powermix.

Observe the maximum permissible axle loads, the load bearing capacity of the tyres and the maximum total weights in order to ensure adequate steering and braking. The behaviour of the tractor is also influenced by attached implements. Take the width and the towing hitch weight into consideration, especially on sharp bends.

No person may be allowed to ride on the Powermix.



## **ACCIDENT PREVENTION**

Careful heed must be paid not only to the safety instructions contained in this operating manual but also to the accident prevention regulations governing the operation of agricultural machinery.

You could injure yourself on the blades, which are located on the auger, inside the tub. These blades need to be kept sharp for the Powermix to work effectively.

### **When coupling the Powermix to the tractor**

The work of coupling and uncoupling the Powermix involves a high risk of injury. The following instructions must therefore be carefully observed. The Powermix can be supplied to fit four types of tractor hitch:

- UK style pick-up hitch
- European style hitch - low position
- European style hitch - high position
- USA style drawbar

Ensure that the Powermix has the correct type of hitch for your tractor.

The following instructions must therefore be carefully observed:

- Secure the Powermix in such a way that it is on level ground and cannot roll forwards or backwards.
- Slowly reverse the tractor towards the Powermix - always ensure that there are no other persons in the vicinity of the Powermix or the tractor.
- Connect the Powermix to the tractor hitch using only the method recommended in the tractor's operator's manual.

### **When using the PTO shaft**

Use only the universal joint shaft, which is supplied with the Powermix and is intended for use with the Powermix. Ensure that it is fitted with the prescribed protective equipment (protective tube and funnel-shaped PTO shaft guard must be fitted). Make sure that the tractor engine and the PTO shaft are switched off before proceeding to fit the universal joint shaft.

Make sure that the tubes overlap by the prescribed distance in both straight-ahead and in turning positions and are secured in such a way that they cannot rotate with the shaft.

Be absolutely sure that there is nobody standing in dangerous proximity to the Powermix when you switch on the PTO shaft.

The PTO shaft speed of the tractor must correspond with the maximum permissible rotational speed of the Powermix. The angle of attachment will depend on the type of PTO shaft and on the type of tractor hitch. Always switch off the PTO shaft if the angle of divergence is excessive or whenever the PTO shaft is not required.

## **When using the hydraulic system**

Do not connect the hydraulic hoses to the tractor's hydraulic system until you have made sure that the system is at zero pressure on both the tractor and the equipment. The hydraulic system generates extremely high pressures. All piping, hoses and connections must therefore be checked regularly for leakage and visible external damage. Use proper and thorough means of searching for leakage and repair all damage immediately. Spurting hydraulic oil can cause injuries and fires. Call a doctor immediately in the event of injury.

In order to exclude the possibility of incorrect connection, all mating plugs and sockets belonging to the hydraulic connections between the tractor and the Powermix should be marked with matching colours.

### **2.2**

#### **BEFORE STARTING THE MACHINE**

Read the manual thoroughly.

Check that all guards are properly secured.

Ensure that no person is working on or inside the machine.

Always perform an internal inspection before loading or starting.

Check that all observers are clear of the machine.

Check there are no foreign objects inside the machine.

Check the machine is on level and firm ground before starting up.

### **2.3**

#### **THE MACHINE IN THE FIELD**

Do not climb inside the machine whilst the PTO shaft is connected to the tractor.

Remove the ignition key from the tractor.

Do not observe the operation of the machine from a high makeshift gallery or unfenced platform.

Do not traverse slopes whilst the machine is loaded and the drive is engaged.

Do not reach into the machine whilst it is running.

Keep children away from the machine at all times.

## **2.4**

### **LEAVING THE MACHINE**

Do not leave the machine adjacent to a building, hay stack or the like, where persons could climb and fall onto the knives.

Use the parking brake particularly on sloping ground.

## **2.5**

### **SERVICING THE MACHINE**

Always disconnect the PTO shaft from the tractor before entering the machine.

Stop the tractor and remove the ignition key before servicing, adjusting or otherwise working on the machine.

Use proprietary ladders and affix to the hopper.

Replace all guards after servicing.

## 2.6

### DESCRIPTION

The machine consists of a tapered hopper (a) with a central rotor (b) with horizontal knives (c). At the side, front or rear of the hopper is a door (d). The powermix may be fitted with a side, front or rear conveyor (e). At the very front is the adjustable towing end (f), which may be fitted with a foot (g). The hopper contains brackets internally to facilitate the fixing of an anti-rotation plate (h) and bolted to the bottom of the hopper is a gearbox (i) and chain and sprocket drive (j). The hopper is bolted to the chassis (k) via three-load cells or dummy cells if the machine has no weigh system (l), These load cells are wired into a visual read out (m).

See Fig 2

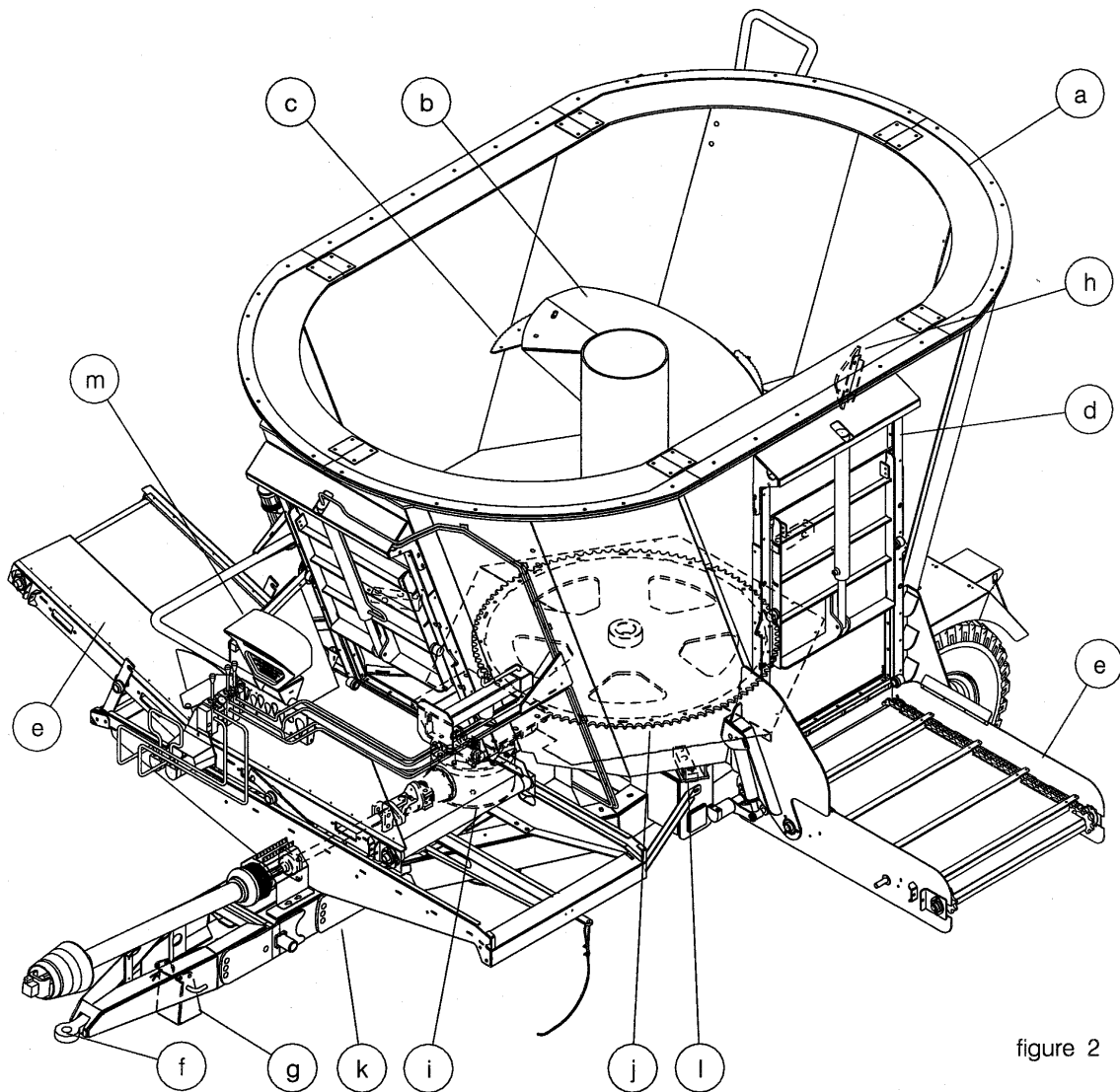


figure 2

## 2.7

### **INTENDED USE**

The machine is intended to be used on typical farms employed in cutting and/or mixing and discharging materials suitable for feeding to livestock.

A high proportion of these materials may be in powder, liquid or granular form. The machine is at its best when a portion of the material is fibrous and may or may not require further cutting. A typical mixing operation would take 4-5 minutes whilst further cutting may take up to 20 minutes.

An additional feature is that this machine will accept fibrous material in a baled form i.e. round or square bales of grass silage, hay or straw from cereals, rice and other crops. Root crops may also be added.

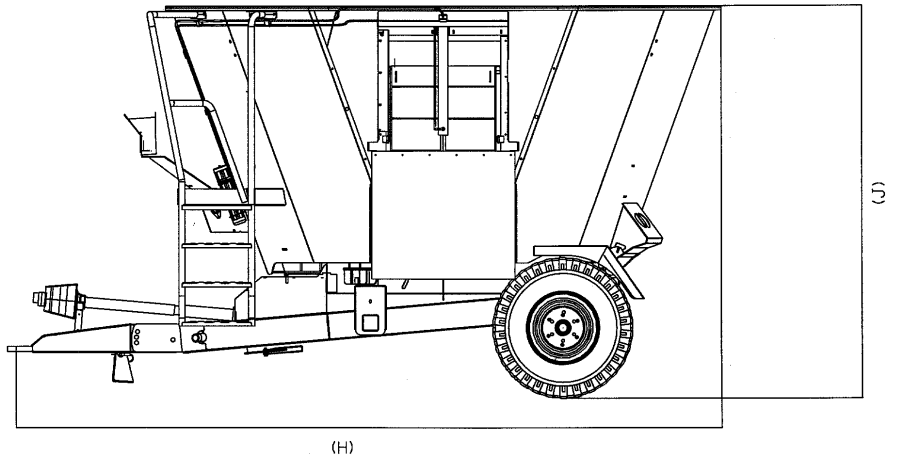
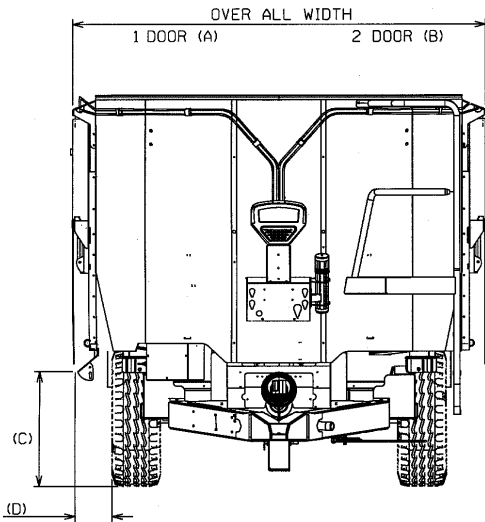
## 2.8 SPECIFICATIONS

POWERMIX MODELS	Unladen Weight	Gross Weight	Max Drawbar Weight	Max Axle Weight	Capacity (Volume)	Capacity (Weight)	H.P Required	Road Speed Max (km/h)	Hydraulics 2500(psi max) (170 bar)	Load Cells
4.5m <sup>3</sup> Popular	2041 kg 4500 Lbs	5041 kg 11115 Lbs	660 kg 1455 Lbs	4380 kg 9658 Lbs	4.5 m <sup>3</sup> 159ft <sup>3</sup>	3000 Kg 6615 Lb	60	25	30 Ltrs/min	12v DC
6m <sup>3</sup> Popular	2190 kg 4829 Lbs	5190 kg 11444 Lbs	672 kg 1482 Lbs	4518 kg 9962 Lbs	6 m <sup>3</sup> 212 ft <sup>3</sup>	3000 Kg 6615 Lbs	60	25	30 Ltrs/min	12v DC
8m <sup>3</sup> Popular	3000 kg 6615 Lbs	7400 kg 16317 Lbs	1672 kg 3687 Lbs	5728 kg 12630 Lbs	8 m <sup>3</sup> 282 ft <sup>3</sup>	4400 kg 9702 Lbs	75	25	30 Ltrs/min	12v DC
10m <sup>3</sup> Popular	3200 kg 7056 Lbs	7600 kg 16758 Lbs	1715 kg 3782 Lbs	5885 kg 12976 Lbs	10 m <sup>3</sup> 353 ft <sup>3</sup>	4400 kg 9702 Lbs	80	25	30 Ltrs/min	12v DC
12m <sup>3</sup> Popular	3400 kg 7497 Lbs	7800 kg 17199 Lbs	1758 kg 3876 Lbs	6042 kg 13323 Lbs	12 m <sup>3</sup> 424 ft <sup>3</sup>	4400 kg 9702 Lbs	80	25	30 Ltrs/min	12v DC
14m <sup>3</sup> Popular TWIN AUGER	6200kg 13671lbs	16000kg 35280lbs	2443kg 5387lbs	13557kg 29893lbs	14 m <sup>3</sup> 494 ft <sup>3</sup>	9800kg 21609lbs	110+	25	30 Ltrs/min	12v DC
16m <sup>3</sup> Popular TWIN AUGER	6400kg 14112lbs	16200kg 35721lbs	2472kg 5450lbs	13728kg 30270lbs	16 m <sup>3</sup> 565 ft <sup>3</sup>	9800kg 21609lbs	110+	25	30 Ltrs/min	12v DC
18m <sup>3</sup> Popular TWIN AUGER	6600kg 14553lbs	16400kg 36162lbs	2500kg 5513lbs	13900kg 30650lbs	18 m <sup>3</sup> 636 ft <sup>3</sup>	9800kg 21609lbs	110+	25	30 Ltrs/min	12v DC
20m <sup>3</sup> Popular TWIN AUGER	6800kg 14994lbs	16600kg 36606lbs	2529kg 5576lbs	14071kg 31027lbs	20 m <sup>3</sup> 706 ft <sup>3</sup>	9800kg 21609lbs	110+	25	30 Ltrs/min	12v DC
6m <sup>3</sup> Express	2430 kg 5358 Lbs	4930 kg 10871 Lbs	581 kg 1281 Lbs	4349 kg 9590 Lbs	6 m <sup>3</sup> 212 ft <sup>3</sup>	2500 kg 5513 Lbs	60	25	30 Ltrs/min	12v DC
8m <sup>3</sup> Express	3250 kg 7166 Lbs	7650 kg 16868 Lbs	1685 kg 3715 Lbs	5965 kg 13153 Lbs	8 m <sup>3</sup> 282 ft <sup>3</sup>	4400 kg 9702 Lbs	75	25	30 Ltrs/min	12v DC
10m <sup>3</sup> Express	3450 kg 7607 Lbs	7850 kg 17309 Lbs	1723 kg 3799 Lbs	6127 kg 13510 Lbs	10 m <sup>3</sup> 353 ft <sup>3</sup>	4400 kg 9702 Lbs	80	25	30 Ltrs/min	12v DC
12m <sup>3</sup> Express	3650 kg 8048 Lbs	8050 kg 17750 Lbs	1760 kg 3881 Lbs	6290 kg 13869 Lbs	12 m <sup>3</sup> 424 ft <sup>3</sup>	4400 kg 9702 Lbs	80	25	30 Ltrs/min	12v DC
14m <sup>3</sup> Express TWIN AUGER	6460kg 14244lbs	16260kg 35853lbs	2612kg 5759kg	13648kg 30094lbs	14 m <sup>3</sup> 494 ft <sup>3</sup>	9800kg 21609lbs	110+	25	30 Ltrs/min	12v DC
16m <sup>3</sup> Express TWIN AUGER	6660kg 14685lbs	16460kg 36294lbs	2641kg 5823lbs	13819kg 30471lbs	16 m <sup>3</sup> 565 ft <sup>3</sup>	9800kg 21609lbs	110+	25	30 Ltrs/min	12v DC
18m <sup>3</sup> Express TWIN AUGER	6860kg 15126lbs	16660kg 36735lbs	2669kg 5885lbs	13991kg 30850lbs	18 m <sup>3</sup> 636 ft <sup>3</sup>	9800kg 21609lbs	110+	25	30 Ltrs/min	12v DC
20m <sup>3</sup> Express TWIN AUGER	7060kg 15567lbs	16860kg 37176lbs	2698kg 5949lbs	14162kg 31227lbs	20 m <sup>3</sup> 706 ft <sup>3</sup>	9800kg 21609lbs	110+	25	30 Ltrs/min	12v DC
6m <sup>3</sup> Low loader	2490 kg 5490 kg	5490 kg 12105 Lbs	1585 kg 3495 Lbs	3905 kg 8611 Lbs	6 m <sup>3</sup> 212 ft <sup>3</sup>	3000 Kg 6615 Lbs	60	25	30 Ltrs/min	12v DC
8m <sup>3</sup> low loader	3120 kg 6880 Lbs	7520 kg 16582 Lbs	2152 kg 4745 lbs	5368 kg 11836 Lbs	8 m <sup>3</sup> 282 ft <sup>3</sup>	4400 kg 9702 Lbs	75	25	30 Ltrs/min	12v DC
10m <sup>3</sup> low loader	3320 kg 7321 Lbs	7720 kg 17023 Lbs	2206 kg 4864 lbs	5514 kg 12158 Lbs	10 m <sup>3</sup> 353 ft <sup>3</sup>	4400 kg 9702 Lbs	80	25	30 Ltrs/min	12v DC
12m <sup>3</sup> low loader	3520 kg 7762 Lbs	7920 kg 17464 Lbs	2261 kg 4986 Lbs	5659 kg 12478 Lbs	12 m <sup>3</sup> 424 ft <sup>3</sup>	4400 kg 9702 Lbs	80	25	30 Ltrs/min	12v DC

Note: All weights and other data are approximate

# powermix

## Popular specification

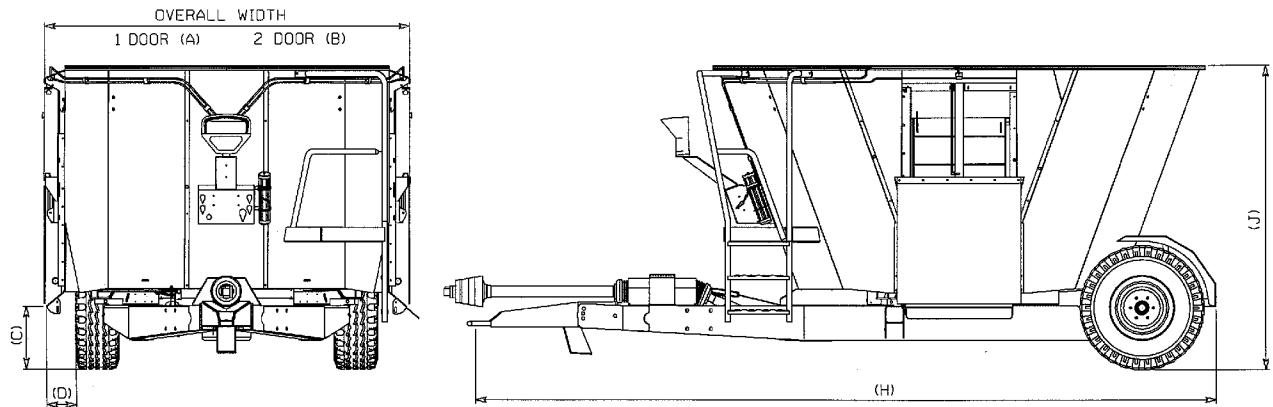


	A	B	C	D	H	J
<b>4.5m<sup>3</sup></b>	2170mm 7' 2"	2315mm 7' 7"	725mm 2' 5"	185mm 7"	3950mm 12' 11"	2275mm 7' 6"
<b>6m<sup>3</sup></b>	2170mm 7' 2"	2315mm 7' 7"	725mm 2' 5"	185mm 7"	3880mm 12' 9"	2562mm 8' 5"
<b>8m<sup>3</sup></b>	2465mm 8' 1"	2610mm 8' 7"	725mm 2' 5"	230mm 9"	4570mm 15' 0"	2420mm 7' 11"
<b>10m<sup>3</sup></b>	2465mm 8' 1"	2610mm 8' 7"	725mm 2' 5"	230mm 9"	4675mm 15' 4"	2720mm 8' 11"
<b>12m<sup>3</sup></b>	2465mm 8' 1"	2610mm 8' 7"	725mm 2' 5"	230mm 9"	4675mm 15' 4"	3020mm 9' 11"

Note: All dimensions are approximate

# powermix

## Low loader specification



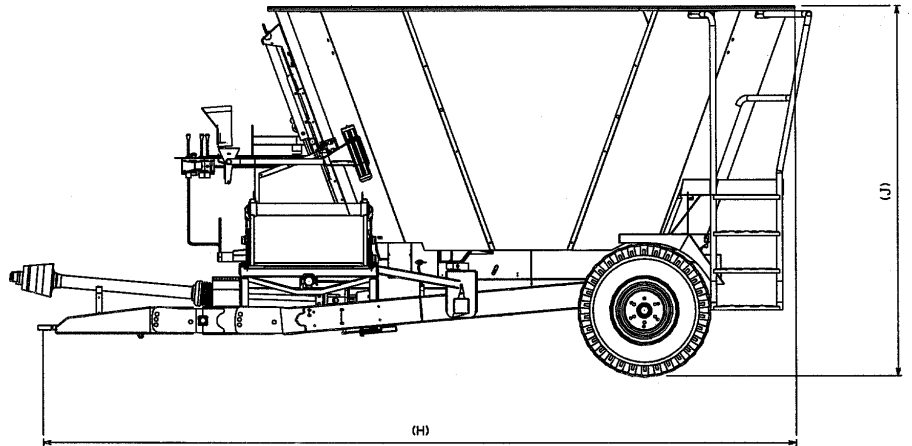
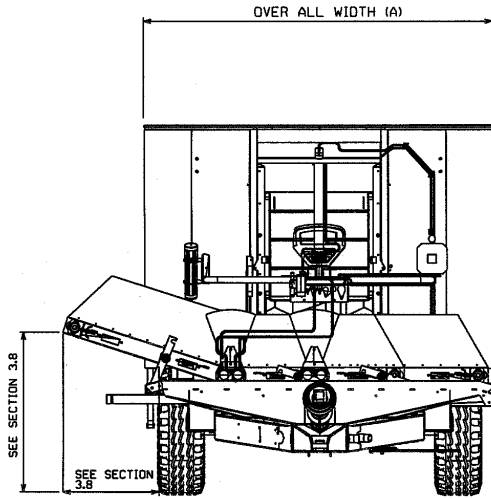
	A	B	C	D	H	J
<b>6m<sup>3</sup></b>	2170mm 7' 2"	2315mm 7'7"	430mm 1'2"	190mm 7"	4860mm 16'	2250mm 7'5"
<b>8m<sup>3</sup></b>	2465mm 8'1"	2610mm 8'7"	430mm 1'2"	235mm 9"	5270mm 17'4"	2135mm 7'
<b>10m<sup>3</sup></b>	2465mm 8'1"	2610mm 8'7"	430mm 1'2"	235mm 9"	5270mm 17'4"	2435mm 8'
<b>12m<sup>3</sup></b>	2465mm 8'1"	2610mm 8'7"	430mm 1'2"	235mm 9"	5270mm 17'4"	2735mm 9'

Note: All dimensions are approximate



# powermix

Express specification

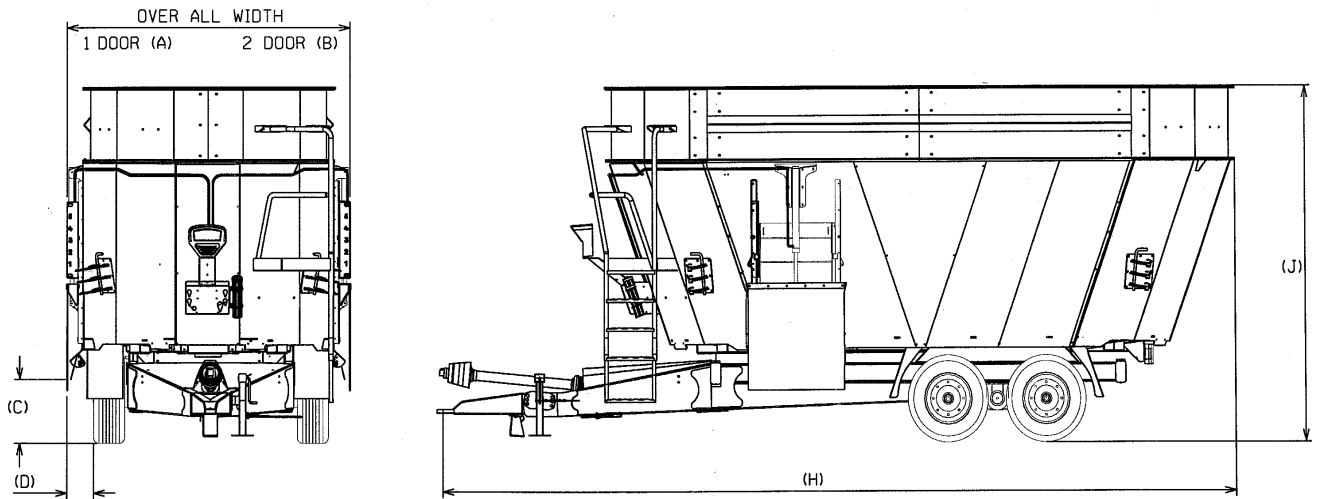


	A	H	J
6m <sup>3</sup>	2014mm 6' 7"	4720mm 15'6"	2562mm 8'5"
8m <sup>3</sup>	2315mm 7'7"	5130mm 16'10"	2420mm 7'11"
10m <sup>3</sup>	2315mm 7'7"	5230mm 17'2"	2720mm 8'11"
12m <sup>3</sup>	2315mm 7'7"	5230mm 17'2"	3020mm 9'11"

Note: All dimensions are approximate

# powermix

## Twinauger Popular specification

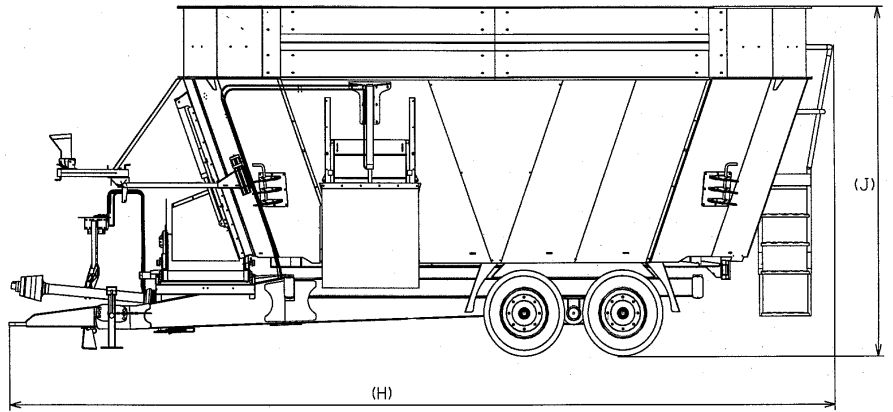
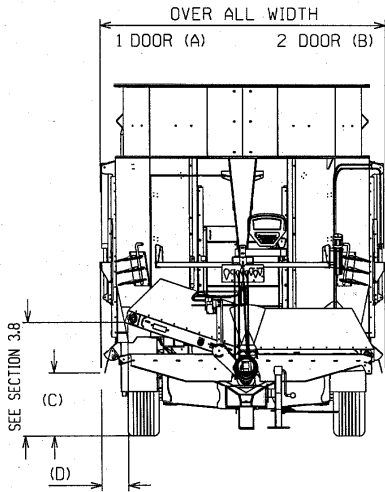


	A	B	C	D	H	J
<b>14m<sup>3</sup></b>	2465mm 8' 1"	2610mm 8'7"	538mm 1'9"	210mm 8"	7252mm 23'10"	2396mm 7'10"
<b>16m<sup>3</sup></b>	2465mm 8'1"	2610mm 8'7"	538mm 1'9"	210mm 8"	7252mm 23'10"	2596mm 8'6"
<b>18m<sup>3</sup></b>	2465mm 8'1"	2610mm 8'7"	538mm 1'9"	210mm 8"	7252mm 23'10"	2796mm 9'2"
<b>20m<sup>3</sup></b>	2465mm 8'1"	2610mm 8'7"	538mm 1'9"	210mm 8"	7252mm 23'10"	2996mm 9'9"

Note: All dimensions are approximate

# powermix

## Twin auger Express specification



	A	B	C	D	H	J
<b>14m<sup>3</sup></b>	2465mm 8' 1"	2610mm 8'7"	538mm 1'9"	210mm 8"	7415mm 24'4"	2396mm 7'10"
<b>16m<sup>3</sup></b>	2465mm 8'1"	2610mm 8'7"	538mm 1'9"	210mm 8"	7415mm 24'4"	2596mm 8'6"
<b>18m<sup>3</sup></b>	2465mm 8'1"	2610mm 8'7"	538mm 1'9"	210mm 8"	7415mm 24'4"	2796mm 9'2"
<b>20m<sup>3</sup></b>	2465mm 8'1"	2610mm 8'7"	538mm 1'9"	210mm 8"	7415mm 24'4"	2996mm 9'9"

Note: All dimensions are approximate

## 2.9

### TRANSPORTATION

This machine must not be towed on the public roads at a speed greater than 25km/h (15.5 mile/h.). The gross weight of the machine must not exceed the value stamped on the plate when towed on the public roads.

Standard lighting and hydraulic brake coupling or optional pneumatic brake coupling connections are provided.

The machine can be lifted using a crane type-lifting device by attaching slings to the special lifting eyes inside the hopper.



A visual check of the load cell mounts would be advisable on older machines, as the chassis will be suspended on the hopper by these mountings.

## SECTION 3:

## OPERATION

### 3.1

#### PREPARATION FOR USE

All assembly work and pre delivery checks should have been undertaken by your dealer. As a precaution, before using check: -

1. There are no foreign objects inside the hopper.
2. The PTO shaft is fitted and revolves freely.
3. There are suitable auxiliary hydraulic outlets on your tractor.

### 3.2

#### ATTACHMENT TO THE TRACTOR

The machine is provided with a ring type hitch fixed to the front of the chassis. This is designed to fit the hook and pick up hitch type arrangement commonly found on agricultural tractors. When using this type of hitch ensure the machine cannot rise off the top of the hook when it is in its normal position. (The tractor hitch should incorporate a plate to prevent this.)

Alternatively a clevis type hitch may be employed preferably set to its shortest position. If this type of hitch is used more care must be taken to ensure clearance with the PTO shaft on undulating terrain and that the PTO shaft is long enough to have at least 250mm of overlap (inner to outer shaft).

The height of the drawbar is adjustable. First, jack up the machine and make secure. Then by removing the front two bolts and slackening the rear two, the drawbar will pivot up and down giving heights from 250mm-400mm.. The height adjustment for machines with continental drawbars is by repositioning the front two bolts only. Ensure that the machine is level when hitched onto the tractor, or the mixing and feeding functions may be adversely affected.

When the machine is hitched to the tractor release the parking brake and connect the PTO shaft.



Ensure there is sufficient clearance with the draw bar when turning on undulating ground.



Ensure the lift links do not foul on the machine or PTO shaft when turning.



Ensure the inner and outer PTO shafts are overlapped by at least 250mm when the tractor and machine are straight. Check that the PTO shaft will not run out of slide travel before the tractor reaches its full articulation with the machine. Damage to the shaft and Injury may result.



Keeping PTO guards in place and in good order is a requirement of the law as well as safe practice.



Do not lower the machine on the hitch before disconnecting the PTO shaft or damage will certainly result with potential injury.

Having connected the PTO shaft ensure the anti-rotation chains are clipped to the chassis or tractor at both ends. The PTO shaft should turn clockwise ONLY.

Next connect the hydraulic brake pipe and the auxiliary hydraulic pipes to the tractor via the 1/2 BSP male Quick release couplings provided.



If a feed out roller or discharge conveyor, containing a hydraulic motor was supplied with your machine, the RETURN line must connect to a free flow / 3<sup>rd</sup> line return, and NOT through the spool valve. (See your dealer for details). Excessive pressure will damage components and in a way that may cause injury.



Oil is an irritant to the skin. At high pressures it can penetrate the skin and be a considerable health risk.

Next plug in the lights having ensured the tractor lighting is 12v D.C. This should provide power for the weigh cell unit when the sidelights are on. Some continental machines are supplied with a self-contained battery to power the weigh cell unit. In this case it is not necessary to connect the lighting plug. The battery can be recharged using a conventional 12 Volt battery charger - refer to the battery charger instructions before recharging the battery. The battery can be accessed by turning the isolator switch to "off" and opening the cover. Do not connect the tractor lighting circuit to the weigh cell when a battery power supply is fitted to the Powermix.

A second plug can be fitted to provide power to the weigh cell system and will require 12v D.C. fused at 5 amps. Remove the two-core cable from the light socket and ensure that the connection is made with negative (earth) to the blue wire.

### 3.3

#### **CONFIGURATION AND FIXING OF THE BLADES**



See Section 2.5: -Servicing the machine, before entering the machine

Within 8, 10 & 12m<sup>3</sup> machines the blades are attached to the auger with 2 or 3 bolts, depending on the size of the blade. There should be 3 large blades fitted in positions 1, 2 and 3 from the base, and 3 smaller blades attached to the other blade carriers. NOTE: In heavy wet mixes there may be a need to remove the 3 larger blades and replace with the smaller ones to reduce horsepower requirements.

Within 4.5m<sup>3</sup> & 6m<sup>3</sup> machines there are no large blades, instead there are 6 smaller horizontal blades which can swing fore and aft to adjust the rake angle. Simply slackening the 2 bolts, which hold the knife to the auger, does this. Fore will give a quicker cutting action but may require more regular sharpening of the knife.

### 3.4

#### **SHEARBOLT REPLACEMENT**

In the event of overload the shear bolt in the PTO shaft will break and drive will cease. Should this occur stop the tractor and clear the blockage. Remove the PTO shaft from the tractor and replace the bolt with the appropriate size and grade (see parts). The shear bolt is located in the machine end of the PTO shaft. You will find spare bolts in the magazine on the front of the transmission guard. Fit the new shear bolt, replace the PTO shaft and resume operation as gently as is possible.

### 3.5

#### **CHOPPING**

Removal of the anti-rotation plate will give the best results in all cases except when the materials are very dry and light.



Keep the machine level whilst loading and mixing

The machine is designed to chop fibrous materials for example grass silage, straws or hay. With straws and hay the speed of chopping and capacity of the machine will be affected by the density of the material or combined density of added materials. For the best operation it is desirable to add liquid or materials of a higher density to light dry materials to hold it down whilst the machine chops it up.

Grass silage is normally dense enough to chop well without additional material. In all cases the volume of the material will be reduced as the chopping action approaches completion. This is the best time to add the remaining ingredients to the mix that do not require chopping and would otherwise impair the chopping action.

Inadequate chopping through lack of time, or blunt or incorrect configuration of knives will impair the machine's ability to feed the material evenly later. As a guide the chopping action should be adequate 10-20 minutes after loading. Generally the more time given the shorter the chop length and the better the feeding and animal intake.

As a general rule, add the heavier ingredients after the lighter materials to assist their chopping.

Hay, straw and root crops will require heavier materials such as silage on top of them to chop efficiently.



See section 2.5: - Servicing the machine, before entering the machine to remove or add anti-rotation plate.



Always load the bales whilst the machine is level as the machine is particularly top heavy when bales are first loaded into the machine. This may combine with unfavourable dynamic forces!



Beware of falling objects. Stand clear of the machine whilst chopping of bales is taking place.

## 3.6

### MIXING

It is important to keep the machine level during the mixing process to achieve a quick and consistent mix.

It makes little difference to the mix, which way round the pre-chopped ingredients are added. It is often more practical to weigh in the small quantities initially with the machine inoperative to gain readability of the weighing scale. However, if some ingredients require chopping it is often more practical to chop these firsts, possibly with the small quantities weighed in first to provide a little ballast to assist chopping. Be advised that too much of pre-chopped or other ingredients will hamper the chopping action. It is best to find the optimum by experimentation.

The operation of the weigh cells and read out are dealt with in **SECTION 4**.

## 3.7

### FEEDING



Avoid shock loads to the machine whilst moving. It may result in damage to the load cells.



Traverse sloping ground with extreme caution, the dynamic effects of mixing may reduce stability.

1. When the chopping and mixing is complete move the machine to the feed area. Adjust the conveyor if necessary.
2. Start the machine running.
2. Now open the door slowly and wait for the feeding out to settle before further adjusting.
3. Move forward at the lowest gear possible at first until an optimum speed and door opening is found.

The feed door is operated hydraulically and is either controlled directly by the tractor auxiliary lever, by a lever on the spool valve or by a switch on the electrically operated hand set, depending on the hydraulic control system supplied.

Slow feeding out will result from insufficient chopping time, or by having blunt or incorrect configuration of knives fitted.



In narrow feed passages with barrier type feeds be careful not to trap the heads of animals between the machine and the barriers on both sides of the feed passage.



## 3.8

### CONVEYOR AND OTHER FEED OUT OPTIONS

#### Front conveyor

##### Adjustment of the conveyor



Beware of rotating and moving parts. Stand clear whilst operating



Beware of rotating and moving parts, injury may occur if there is contact between the conveyor and your animals.

The sideways movement of the conveyor is possible with the operation of the conveyor side shift cylinder, situated underneath the conveyor and operated via the tractor hydraulics.

The control of this cylinder is by the central lever of the valve block, or by a switch on the control hand set, depending on the hydraulic control system supplied.

Adjusting the flow control on the valve block can alter the speed of the conveyor.

The lever next to the flow control on the valve block can alter the direction of rotation of the conveyors.

As the conveyor moves sideways it is possible to predetermine the movement and height of the conveyor in three different ways:

##### Description for 4.5, 6, 8, 10, & 12m<sup>3</sup> machines

1. The removal of the jacks (fig 4a) results in a sideways traverse of up to 600mm(2ft) feeding at a height of 800mm (2ft 8") from the ground
2. The positioning of the jacks (fig 4a) in notch (c) results in a 470mm (1ft 6") sideways traverse before the conveyor lifts to the medium height of anything between 800 (2ft 8") and 1350mm (4ft 5") from the ground.
3. The positioning of the jacks (fig 4a) in notch (b) results in a 380mm (1ft 3") sideways traverse before the conveyor lifts to the max height of anything between 800 (2ft 8") and 1600mm (5ft 3") from the ground.

##### Description for 4.5, 6m<sup>3</sup> machines

- 1 The removal of the jacks (fig 4a) results in a sideways traverse of up to 450mm(18") feeding at a height of 800mm (2ft 8") from the ground
- 2 The positioning of the jacks (fig 4a) in notch (c) results in a 320mm (12") sideways traverse before the conveyor lifts to the medium height of anything between 800 (2ft 8") and 1050mm (3ft 5") from the ground.
- 3 The positioning of the jacks (fig 4a) in notch (b) results in a 230mm (9") sideways traverse before the conveyor lifts to the max height of anything between 800 (2ft 8") and 1300mm (4ft 3") from the ground.

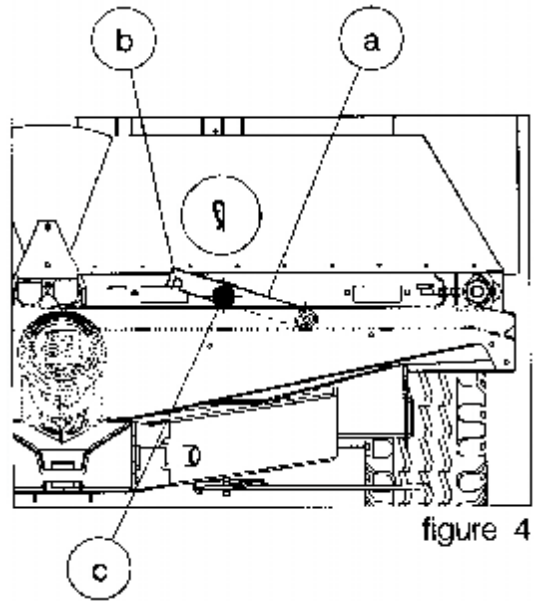


figure 4

The jacks are positioned by R clips (a), and a locking plate (c). When the conveyor is centrally positioned the removal of the R clips (a) and rotation of the plates (c) permit the adjustment or removal of the jacks (b).

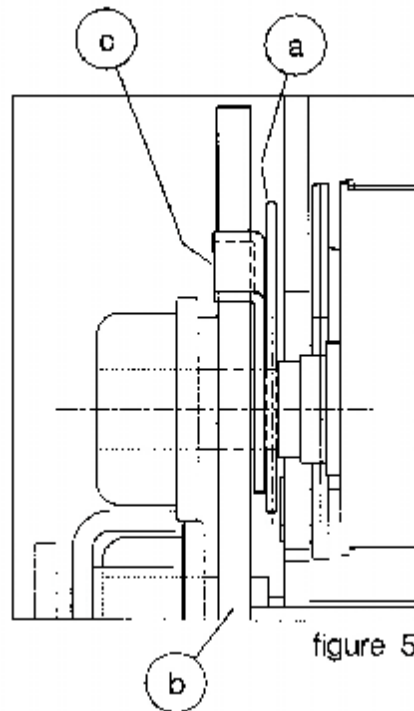


figure 5

## Side conveyor

### Adjustment of the conveyor



Beware of rotating and moving parts. Stand clear whilst operating



Beware of rotating and moving parts, injury may occur if there is contact between the conveyor and your animals.

The height of the conveyor is adjusted by operating the lift cylinder, situated on the side of the conveyor, and operated via the tractor hydraulics.

The control of this cylinder is by the central lever of the valve block, or by a switch on the control hand set depending on the hydraulic control system supplied.

Adjusting the flow control on the valve block can alter the speed of the conveyor.

The lever next to the flow control on the valve block can alter the direction of rotation of the conveyor.

The feed heights, which can be achieved, are:

760 (2ft 6") – 1300mm (4ft 3") from ground on 1m conveyor

760 (2ft 6")– 2200mm (7ft 3") from ground on 2m conveyor

760 (2ft 6")– 2800mm (9ft 2") from ground on 3m conveyor



Once the desired feeding height is obtained attach the safety chains to prevent the conveyor from falling further, in case hydraulic failure occurs. Safety chains must always be attached and taut when the conveyor is in the transport position

## Feed Out Roller

### Adjustment of the Feed out roller



Beware of rotating and moving parts. Stand clear whilst operating



Beware of rotating and moving parts, injury may occur if there is contact between the roller and your animals.

The feed out roller is operated via the tractor hydraulics. Depending on the hydraulic control system supplied the rotational speed of the roller can be adjusted by turning a flow control knob on a spool valve or on a separate block situated on the front of the machine. The rotational speed of the roller will determine the distance the material is thrown. The lever next to the flow control on the valve block or if a separate flow control block was supplied, the tractors auxiliary lever, can alter the direction of rotation of the roller.

### **Side delivery option**



Beware of rotating and moving parts. Stand clear whilst operating



Beware of rotating and moving parts, injury may occur if there is contact between the roller and your animals.

If the machine has no conveyor a rubber flap is fitted over the feed gate on side delivery machines to prevent direct access to the revolving auger and blades for safety reasons and to deflect the feed downwards into a neat row.

### **Rear discharge chute option**



Beware of rotating and moving parts. Stand clear whilst operating

The chute can be used to split the material expelled from the rear door into two near equal rows. The chute is able to slide along the rear chassis member, or an intermediate beam by removing the fixing bolts and forcing the chute sideways, this will enable different amounts of feed to be deposited to each side of the machine.

**SECTION 4: DIET CONTROLLER**

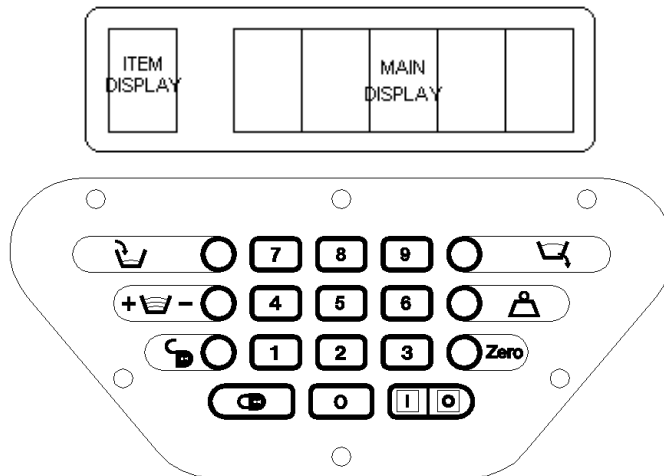
**4.1**

**INTRODUCTION**

System description

The Complete Diet Controller is a weighing system for diet mixers. Up to 16 diets each containing up to nine ingredients can be recorded and stored in the system's memory. Described below are the three modes of operation of the system that can be used for creating a mix. The mode used by the system can be changed by the user (see the "Customer Calibration" section) but it is usual not to change the mode once it has been used unless diet practices are changed.

1. Fixed mode is the normal diet mode satisfies 80% of mixing requirements.
2. Total mode allows the total weight of the mix to be changed but the proportions of the ingredients to be kept constant. The ingredient weights are scaled up automatically.
3. Animal mode allows ingredients to be entered per animal and then scaled accordingly System diagram



Symbol	Short Name	Description
<b>Zero</b>	ZERO	Used to zero the mixer
	UNLOCK	Unlocks the numeric keys for data entry
	LOCK	Locks the numeric keys, storing entered values
	SCALE	Selects Scale mode
	FILL	Selects Fill mode then cycles through diets
	EMPTY	Selects Empty mode then cycles through diets
	STEP	Cycles through diet ingredients or empty batches

## 4.2.

### **CHANGING UNITS OF MEASURE**

The two units of measurement (kilograms and pounds) can be accommodated by cutting a link on the main PCB within the system.

Switch the unit off and disconnect power.

Remove the twelve set screws holding the back plate to the main housing.

The link is located in the middle of the board with a white arrow and "UNITS" beside it.

Uncut = Metric (default)

Cut = Imperial

Replace the back plate, fitting a new seal, connect power, switch on.

The display will now show the weight in the new units, although the existing weights will not have changed and will be giving values in the previous units.

## 4.3

### **SWITCHING ON**

Press the **ON** key to switch the system on. The display flashes briefly and then enters Scale mode, displaying the weight currently in the mixer.

All of the recorded information in the memory is kept while the unit is switched off, even if it is disconnected from the power supply.

If the unit was switched off while filling or emptying the system resumes where it left off. After switching on the item display shows the ingredient/batch number that was reached and the main display shows the continue animation. Filling or emptying will resume after several seconds.

## 4.4

### **SCALE MODE**

When the system is in Scale mode an "L" is displayed in the item display and the weight in the mixer is displayed on the main display. Scale mode is selected by pressing the SCALE key at any time. It is used for general weighing and acts like a normal set of scales.

## 4.5

### ZEROING THE MIXER

When in Scale mode the dead weight of the scale can be removed, allowing mixes to be weighed so that the scale only shows the weight of the mix.

To zero the weigher follow this procedure:

- 1.Ensure that the system is in Scale mode (Press the SCALE key, “L” in item display).
- 2.Press the ZERO key. The display flashes “- - - -“.
- 3.Press the ZERO key again within four seconds (Otherwise the display shows the current weight again).

The ZERO key must be pressed twice to avoid accidentally zeroing the mixer.

## 4.6

### FILL MODE

Fill mode can be selected by pressing the FILL key at any time when not entering data. Fill mode is used to enter information about diets such as the proportions of the ingredients and the number of animals (depending on which diet mode is selected). After setting up a diet filling can commence. During filling the display shows how much of the current ingredient is still required to be added to the mixer to help reduce errors.

When the system enters Fill mode a short filling animation is shown and then the item display shows “F”/”t”/”A” depending on the diet mode (Fixed/Total/Animal, see "Introduction"). The main display oscillates between the diet number on the left and the total weight of that diet (or number of animals if in Animal mode) on the right. The procedure to set up a diet is given below:

- 1.Ensure that the system is in Fill mode (See above).
- 2.Cycle through the various diets using repeated presses of the FILL key until the desired diet is reached (it is sensible to start with diet number one).
- 3.Press the STEP key. The display changes and displays the ingredient number on the item display and the weight of that ingredient on the main display (ingredients with non-zero weights are shown first).
- 4.Cycle through the various ingredients using repeated presses of the STEP key until the desired ingredient is reached (again, starting with ingredient number one is best). Skip steps 5 - 7 if the diet has already been set up.
- 5.Press the UNLOCK key to unlock the numeric keys (the ingredient number begins flashing).

6. Enter the required ingredient weight using the numeric keys (if a mistake is made, **UNLOCK** restores the old value and entry can begin again).

7. Press the **LOCK** key to store the value and lock the numeric keys again. (the ingredient number stops flashing)

If the display is left showing ingredient weight for several seconds a mixing animation will show briefly. The system is now ready for filling, starting with the displayed ingredient. As weight is added to the mixer the display decreases from the ingredient weight towards zero, with the item display flashing increasingly as zero is approached. When the current ingredient is completed the item display ceases flashing and there is a pause before the next ingredient is begun. Scale mode is entered if there are no more ingredients to fill. To cancel a fill press the **LOCK** key.

To return to the overall diet display press the **FILL** key. When viewing the total diet weight / number of animals the following procedure can be used to scale the diet when in Total or Animal mode:

Press the **UNLOCK** key to unlock the numeric keys (the display stops oscillating on the right and displays the total only).

Enter the required total weight or number of animals using the numeric keys (if a mistake is made, **UNLOCK** restores the old value and entry can begin again).

Press the **LOCK** key to store the value and lock the numeric keys again.

Once the diet information has been entered it need not be re-entered each time that mix is required. Simply use steps 1 - 4 in the above procedure to select the required diet/ingredient and wait for filling to begin.

## 4.7

### EMPTY MODE

Empty mode can be selected by pressing the **EMPTY** key at any time when not entering data. Empty mode is used to set up emptying jobs for unloading from the mixer. Each job consists of up to nine batches. After setting up an empty batch, emptying can commence. During emptying the display shows how much of the current batch is still required to be unloaded from the mixer to help reduce errors.

When the system enters Empty mode a short emptying animation is shown and then the item display shows "**F**" / "**t**" / "**A**" depending on the diet mode (Fixed/Total/Animal, see "Introduction"). Although the item display still indicates the current diet mode in this way, it has no effect on the empty procedure. Emptying is done purely by weight per batch and so no scaling can be performed. The main display oscillates between the empty job number on the left and the total weight of all the batches in that empty job on the right. The procedure to set up an empty is given below:



- 1.Ensure that the system is in Empty mode (See above).
- 2.Cycle through the various empty jobs using repeated presses of the **EMPTY** key until the desired empty job is reached (it is sensible to start with job number one).
- 3.Press the **STEP** key. The display changes and displays the batch number on the item display and the weight of that batch on the main display (batches with non-zero weights are shown first).
- 4.Cycle through the various batches using repeated presses of the **STEP** key until the desired batch is reached (again, starting with batch number one is best). Skip steps 5 - 7 if the empty job has already been set up.
- 5.Press the **UNLOCK** key to unlock the numeric keys (the batch number begins flashing).
- 6.Enter the required batch weight using the numeric keys (if a mistake is made, **UNLOCK** restores the old value and entry can begin again).
- 7.Press the **LOCK** key to store the value and lock the numeric keys again. (the batch number stops flashing)

If the display is left showing batch weight for several seconds a mixing animation will show briefly. The system is now ready for emptying, starting with the displayed batch. As weight is removed from the mixer the display decreases from the batch weight towards zero, with the item display flashing increasingly as zero is approached. When the current batch is completed the item display ceases flashing and there is a pause before the next batch is begun. Scale mode is entered if there are no more batches to empty. To cancel an empty press the **LOCK** key. To return to the overall empty job display press the **EMPTY** key.

Once the batch information has been entered it need not be re-entered each time that empty job is required. Simply use steps 1 - 4 in the above procedure to select the required job/batch and wait for emptying to begin.

## 4.8

### CUSTOMER CALIBRATION

#### Entering calibration mode

From Scale mode, press the UNLOCK key once to unlock the keypad.

The item display will flash a “C” and the main display will show “ Pin”.

If no key is pressed the unit will return to Scale mode in 5 seconds.

Key in the customer PIN number (defaults to 1234). A dash “-“ will show for each key pressed.

Press LOCK when PIN has been entered.

If PIN was incorrect the display will return to Scale mode.

If PIN was correct the main display now shows “SEL “.

#### Viewing calibration details

At “SEL “ prompt press UNLOCK to unlock the keypad.

Enter the calibration number from the table below and press LOCK.

The main display will now alternate between the calibration number on the left and the current calibration value on the right. The display returns to Scale mode if left for 8 seconds.

#### Modifying calibration details

Whilst viewing calibration details press UNLOCK

The display will stop alternating and show the current value.

Type in new calibration value.

Press LOCK to store new value, or UNLOCK to restore old value.

Leave for 8 seconds to return to Scale mode.

You can also exit from calibration mode by pressing a different mode key.

CALIBRATION NUMBER	DESCRIPTION	FACTORY DEFAULTS	RANGE	COMMENTS
0	Number of Diets	6	1 – 16	
1	Number of Ingredients	9	1 – 9	
2	Diet Mode	Fixed	Fixed, Total, Animal	The mode used for filling and emptying. Use any numerical key to change.
3	Incrementation	2	0 – 99999	Incrementation in weight units
4	Zero tracking	1	0 –100	Increments to track out from zero
5	Overall Weight Calibration	18000	0 – 99999	Capacity of total system in weight units
6	Loadcell Rating	2.000	0 – 99999	Loadcell rated output
7	Overrange Limit	8000	0 – 99999	Maximum weight on scales before error
8	Damping Level	1	0 – 30	0 = low Damping 30 = High Damping
9	Change customer PIN	1234	0000-9999	Must be four digits

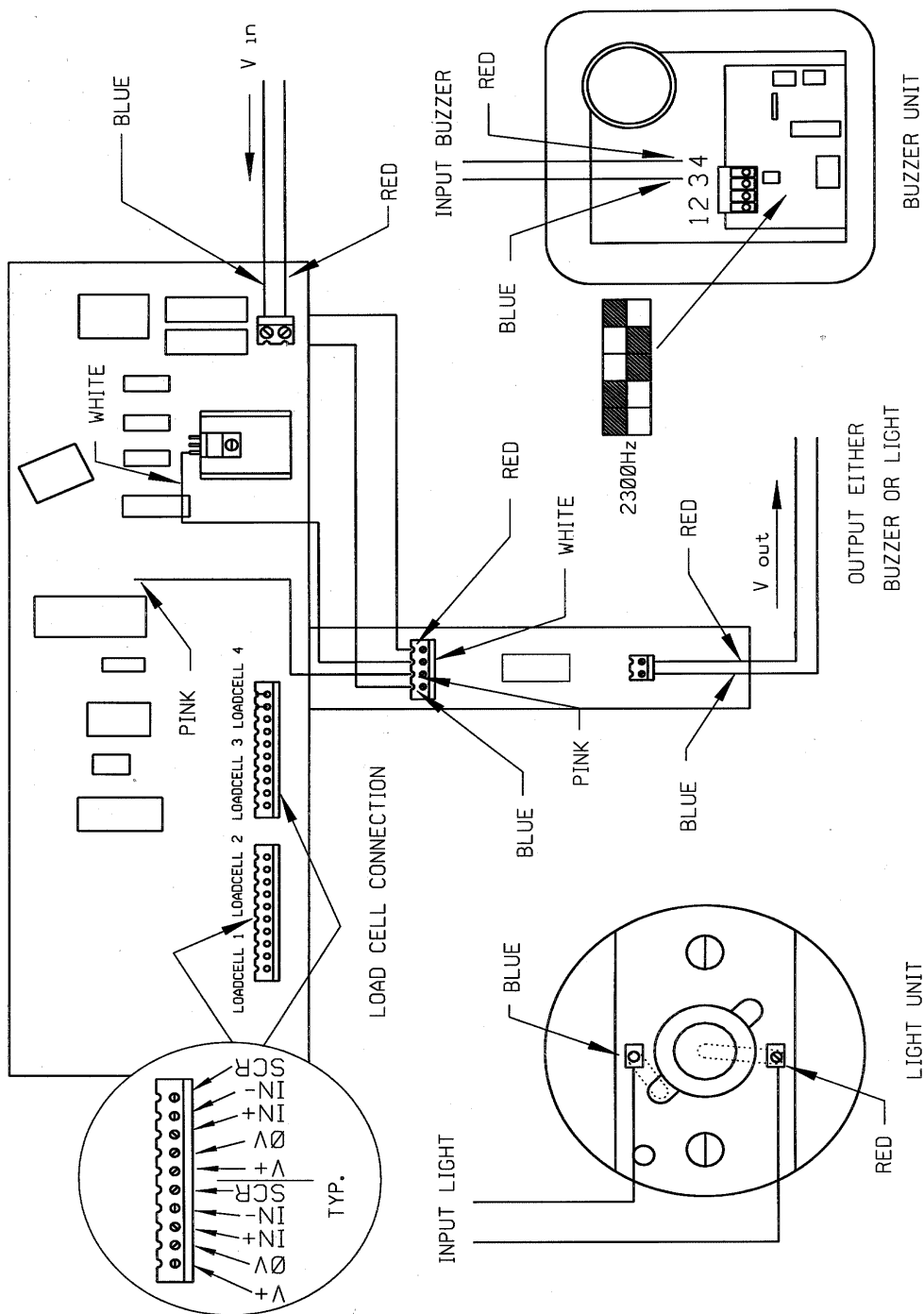
## 4.9

### INSTALLATION

#### POWER SUPPLY RATING

The unit will operate from a 10 – 15V DC, unregulated source, supplying 1A. If the supply drops below 9.5v, the display will indicate a low battery warning. It is not recommended to power the unit above the maximum voltage as this may cause damage to the electronics.

#### Loadcell connection



The system is optimised for use with Griffith Elder rationalised loadcells rated at 2 mV/V (6 tonne loadcells are supplied with the Diet Controller).

Loadcell connection is made using the rising clamp terminal blocks, internal to the system. Each connection is labelled as to its function as follows:

Label	Meaning	6 tonne loadcell colours (type one)	6 tonne loadcell colours (type two)
V+	Excitation +	Red	Red
0V	Excitation –	White	Blue
IN+	Signal in +	Black (Thin)	Green
IN-	Signal in –	Green	Yellow
SCR	Cable Screen	Black (Thick)	Black

Any loadcell can occupy any loadcell terminal on the PCB. However, the function of each wire corresponds to the labelling on the board.

Care must be taken to ensure all wires are fully inserted into the terminal blocks and no stray wires are present

## 4.10

### MAINTENANCE AND REPAIR

No regular maintenance is necessary on the Diet Controller, however a few simple precautions will ensure that the equipment maintains maximum accuracy:

Only connect the power cable direct to a 12V DC source.

**NEVER WELD ON THE MACHINE.** Disconnect and remove electronics and load cells before welding takes place (Welding blows-up electronics!).

Wipe down the system with a soft damp cloth only. Do not use solvents on the plastic keypad or display.

Ensure that cables cannot get trapped or chafed by the trailer body or chassis.

Check bolts on load cells for tightness every six months.

**DO NOT JUMP START OR BOOST CHARGE.** If it is necessary to jump start the tractor or to put the battery onto a boost charger, disconnect the power lead from the console first.

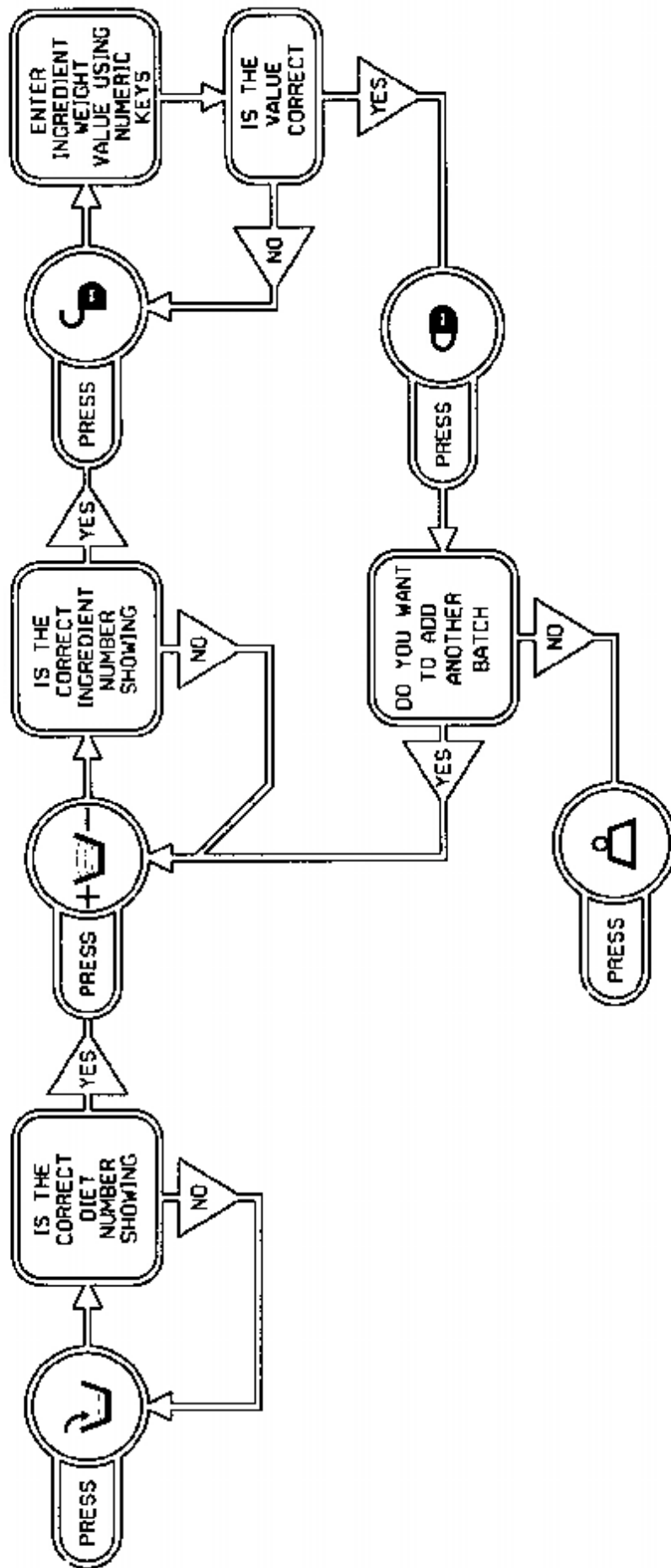
## 4.11

### FAULT FINDING CHART

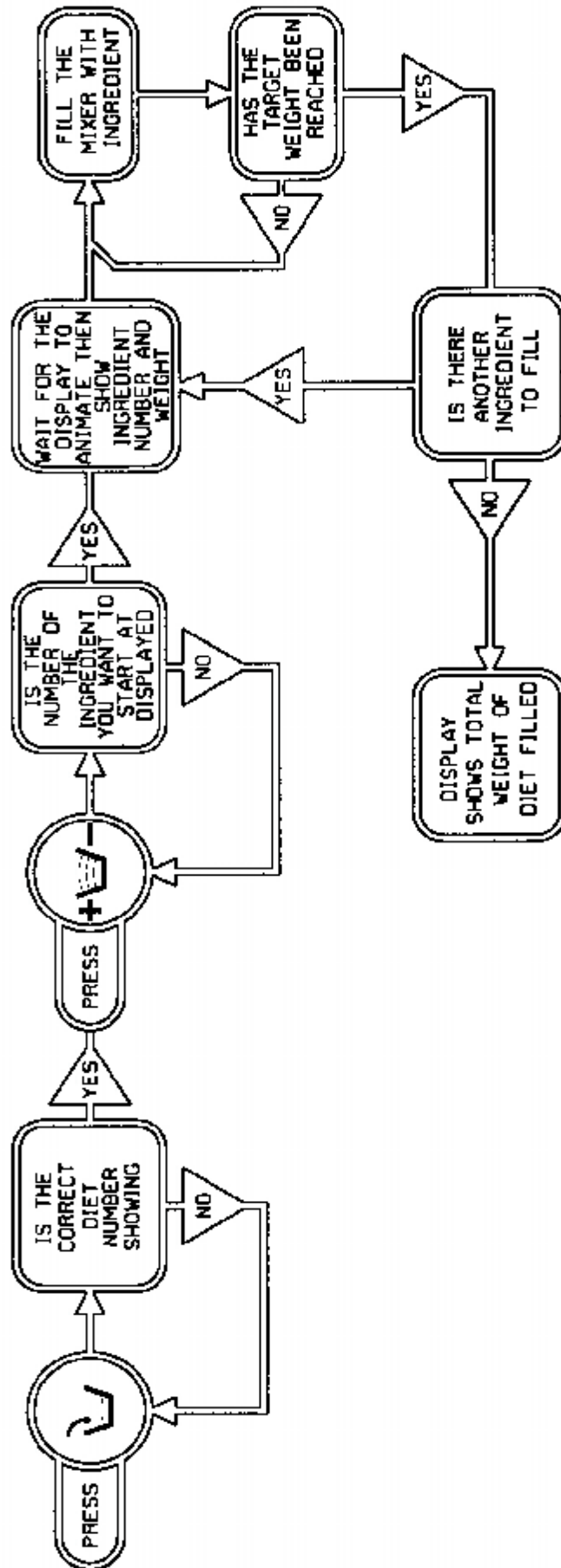
<b>FAULT</b>	<b>ACTION</b>
Does not switch on	Check cable and connections to power supply. Check with a Volt meter for 12 Volts DC at power supply connections (red - blue) in junction box. Check with Volt meter for 12 Volts DC at display connections within the unit. If all above are OK, then suspect a fault with the display. Remove the display and return it for repair.
Display shows an "E" in item display and no weight in main display.	Over-range weight (i.e. greater than 8,000 kg). Remove weight from scales and re-zero. Low Battery Warning. Replace or recharge battery / check power supply.
Weight does not return to zero when empty	Check loadcell mounting and re-tighten loadcell bolts. Check for dirt or stones caught between top and bottom chassis of scales. Remove drive shaft and check again. Note: On steep slopes a weight discrepancy will occur.
Weight drifts up and Down when scale is stationary	Possible caused by interference from electronic equipment on tractor or CB radio. Try switching these off. Check cables and connections to loadcells.
Weight does not move off zero when loading	If the first weight is loaded very slowly then the weight of this load can be "tracked" out by the Zero Tracking function. If this occurs then change the Zero Tracking level to zero using the procedure described above.
Weights fluctuate too much when loading	The amount of fluctuation in the weight when loading is controlled by the Damping Level. If the weight fluctuates too much then the damping level can be increased. This will, however, also reduce the response rate of the system when filling.



FLOW CHART TO ENTER AN 'DIET' INTO THE MEMORY



FLOW CHART TO LOAD A 'DIET' INTO THE MIXER





## **SECTION 5:**

## **MAINTENANCE AND STORAGE**

### **5.1**

#### **SHARPENING THE KNIVES**



There is a high risk of severe injury from falling onto the knives. Refer to section 2.5 in this manual and affix proprietary ladders before entering the machine. Remember that the floor of the machine will be very slippery, particularly if wet and or polished with use. Approach the task with caution.

After a period of operation or after corrosion has taken place, it will be necessary to sharpen the knives. This period will depend upon the materials that make up the load. Stones or tines etc. will seriously shorten this period. A small angle grinder is probably the most practical tool to use. Sharpen the blades on the side that is already ground flat, with the wheel running towards the blade, move lightly along the blade, being careful to maintain the edge angle without discolouring the blade material. When changing the blades, always grease the fixing screws to ease future maintenance.

### **5.2**

#### **TRANSMISSION MAINTENANCE**

##### **WEEKLY**

1. Grease the power shaft.
2. Grease the door cam plates, rollers and seals.
3. Oil the drive chain through the holes in the rear of the chain guard. Use a proprietary chain oil or heavy transmission oil, e.g.:- SAE EP90

##### **MONTHLY**

1. Remove the guard plate and inspect the chain tension to ensure that it has not worn or stretched beyond the travel of the tensioner.
2. Remove the level plug from the gearbox and check the level of oil. Replenish with Mobilube S.H.C Synthetic lubricant.

##### **ANNUALLY**

1. Replace the oil in the gearbox with Mobilube SHC synthetic oil. Use only genuine Shelbourne Reynolds parts to ensure longevity and performance.

### **5.3**

#### **TYRE PRESSURES**

Ensure tyre pressures are 75 psi (4.9 bar)

## 5.4

### DOOR SEAL MAINTENANCE

If it is required that the door seal be liquid tight then periodic adjustment of the door seal may be necessary.

Firstly, slacken all the seal clamping coach bolts around the door. Grease the face of the seals and close the door. Tighten the bolts.

Simple adjustment of these bolts will cause the seal to swell and seal the door where necessary.

Grease the door cam plates and rollers regularly to prevent premature wear.

## 5.5

### CONVEYOR AND FEED OUT OPTIONS MAINTENANCE

#### Front conveyor

1. Periodically adjust the belts to ensure adequate tension and even running. Slacken the two bolts that affix the bearings. Use the half – lock nuts on the adjustment screws to adjust the tension plates up evenly. Measure from the tension plates to the conveyor side plates to ensure that the rollers are square to the frame and parallel to each other. Run the belts in both directions whilst adjusting to ensure even adjustment.
2. Adjust the roller scrapers to ensure constant contact with the rollers. Simply slacken the two bolts and slide the scrapers towards the roller until they touch, tighten the bolts to secure the scraper.
3. Clean out the channels under the belts as material build up will prevent further cleaning of the underside of the belts and lead to contamination of the drive rollers.

#### Side conveyor

1. Periodically adjust the chains to ensure adequate tension and even running. Slacken the two bolts that affix the bearings. Use the half – lock nuts on the adjustment screws to adjust the tension plates up evenly. Measure from the tension plates to the conveyor side plates to ensure that the idle shaft is square to the frame and parallel with the drive shaft. Run the chains in both directions whilst adjusting to ensure even adjustment.
2. After use clean the chain & slats to prevent contamination

#### Feed out roller

- 1 After use ,drop the drip tray by removing the lynch pins and clean thoroughly to prevent contamination.

## 5.6

### STORAGE

1. Clean the machine thoroughly.
2. Apply rust inhibitor or oil, to all the wearing surfaces.
3. Remove the drive chain, clean and soak in oil.