KEENAN
an Alltech company

Operator's Manual
MechFiber300

KEENAN MechFiber300
Operator's Manual

Effective from model 30L100

Revision F01 06th March 2020

SECTION		CONTENTS	PAGE
		PART I (Service and Maintenance)	
1		**Introduction**	**4**
2		**Warning Notes**	**5**
3		**Warning Signs**	**6**
4		**Operating Principles**	**7**
	4.1	Weighing	7
	4.2	Chopping/Mixing	7
	4.3	Feeding out	8
	4.4	Maintenance	8
	4.5	Safety precautions	9
5		**Safety**	**9**
6		**Weighing System**	**13**
7		**Operation**	**14**
	7.1	Set-Up	14
	7.2	Hitch height adjustment	16
	7.3	Diet feeder capacity	17
	7.4	Loading and mixing	18
	7.5	Operating the KEENAN MechFiber Diet feeder	19
	7.6	Operating the KEENAN Bale handler	20
	7.7	Specific instructions for Bale handler models	21
	7.8	Washing and shopping root crops	22
	7.9	Feeding out	22
8		**Maintenance**	**23**
	8.1	Chains	23
	8.2	Chain tensioning	25
	8.3	Greasing	26
	8.4	Blade sharpening and replacement	29
	8.5	Maintenance of Bale handler models	29
	8.6	Shear bolts	30
	8.7	Nuts and bolts	31
	8.8	Tyres	31
	8.9	Wheels	32
	8.10	Rear Feed-Out Elevator (where fitted)	32
	8.11	Side Feed-Out Elevator (where fitted)	33
9		**Maintenance Checklist**	**34**
10		**Specifications**	**35**
		PART II (Spare Parts)	
11		**Parts List**	**36**
	11.1	Hydraulic System parts	37
	11.2	Chassis parts	38
	11.3	Front Cover parts	39
	11.4	Standard Feed-Out Tray parts	41
	11.5	Fold-Down Tray parts	43
	11.6	Rear parts	46
	11.7	Weighing System parts	48
	11.8	VFC-Door parts	49
	11.9	VFC-Door Indicator parts	50
	11.10	Rotor and Paddle parts	51
	11.11	Auger parts	52
	11.12	Body sealing parts	53
	11.13	Body Blade parts	54
	11.14	Drive System parts	55
	11.15	Bale handler parts	62
	11.16	Axle parts	67
	11.17	Ancillary parts	69
12		**Troubleshooting**	**70**
	12.1	General troubleshooting	70
	12.2	Weighing troubleshooting	73
13		**Warranty**	**74**
14		**E.C. Declaration of Conformity/CE Certification**	**75**
15		**Contact Details**	**76**

PART I

(Service and Maintenance)

1 Introduction

KEENAN MechFiber Diet feeder and KEENAN MechFiber Bale handler

Thank you for purchasing a KEENAN product. The KEENAN MechFiber Diet feeder is a TMR feeder with a difference. The original KEENAN Diet feeder became a market leader due to its reliability and durability, founded on simplicity; fast, efficient mixing and feed-out and low horsepower requirements. The KEENAN MechFiber Diet feeder has built on these capabilities by adding the ability to chop and present in a consistent fashion, time and time again. This ability is the cornerstone of the KEENAN MechFiber System, delivering improved efficiency and profitability on the farm. More recently, the Bale handler models have introduced the ability to handle bales of all sizes and types.

The minimum moving parts ensure a robust machine with high mechanical efficiency. Simple routine maintenance and correct operation will deliver many years of service. However in the event of unforeseen problems, KEENAN's world class service means you can be assured of a prompt solution.

This manual has been designed to present the information you need to operate and maintain your machine. Most sections of the manual apply to both the KEENAN MechFiber Diet feeder and the KEENAN MechFiber Bale handler machines. Sections which do not apply to both machines will be clearly stated in the heading and the text. Recent revision updates are indicated by a line in the right hand column as shown to the right.

If you require further assistance or information, please contact your Physical Nutritionist. Telephone numbers are listed on the back cover of this manual.

The KEENAN MechFiber Diet feeder is the cornerstone of the KEENAN MechFiber System delivering improved efficiency and profitability on the farm.

2 Warning Notes

Please read this manual carefully before operating your new machine, paying particular attention to the warning notes, explained here.

There are 3 different types of notes, as follows:

> **WARNING:**
> Texts with this symbol contain safety information.
> They warn you of serious dangers, possibly involving accident or injury.

> **CAUTION:**
> Texts with this symbol draw your attention to a possible risk of damage to your KEENAN MechFiber Diet feeder. Failure to observe the information contained in a caution may invalidate your warranty.

> **Note:**
> Texts with this heading give general information which improves the operation efficiency of your KEENAN MechFiber Diet feeder.

The KEENAN MechFiber Diet feeder and the KEENAN MechFiber Bale handler machines are subject to International patents including the following:

Europe:	E0, 833,558	USA:	5,967,433
Japan:	Pending	Canada:	Pending
Australia:	691418	New Zealand:	305943
South Africa:	96/3148		

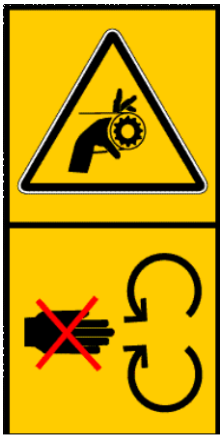
> **WARNING:**
> Read the Safety section (Section 5) before attempting to operate the machine.

3 Warning Signs

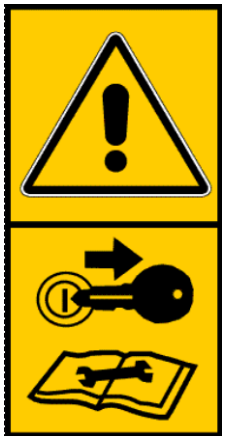
Read the operators manual before using the machine.

Danger of flying objects.
Keep a safe distance from the machine.

Stay clear of sharp blades.



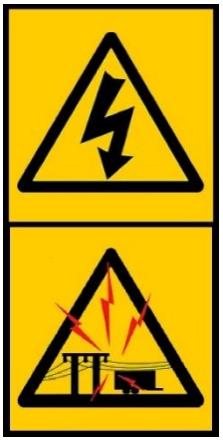
Do not open or remove safety guards while the machine is connected to the tractor.



Shut off the engine and remove the key before performing maintenance or repair work on the machine.

Never reach into the rotating auger. Danger of entrapment.

Do not ride on the platform or ladder.



Look out for overhead power lines.

Apply the handbrake when parked.

Do not stand between the tractor and Diet feeder while it is in operation.

4. Operating Principles

The KEENAN MechFiber Diet feeder's main operating functions are weighing, chopping/mixing and feeding out.

4.1 Weighing

The KEENAN MechFiber Diet feeder's electronic weighing system allows the exact quantity of individual materials to be loaded into the mixing chamber for accurate rationing. Individual loads can be weighed, or successive loads accumulated to give total weight of feed. See Section 6 (Weighing System) and the Readout Manual for more detailed information.

4.2 Chopping/Mixing

Load ingredients in sequence recommended by your KEENAN Physical Nutritionist, or as suggested in Section 7 (Operation).
For non-Bale handler models, ensure bales are broken up prior to loading. For Bale handlers, wait until the bale has been taken in completely before adding further bales. As a general rule, material should be tumbling freely when mixing. If not, then the machine is overloaded and will not achieve the desired mix quality. Mixing is carried out by a centrally mounted rotor fitted with 6 angled paddles revolving at 5–6 rpm. Each paddle imparts a shearing action, sweeping the feed ingredients onto the strategically placed knives to produce a consistent and thorough mix with all types of materials, including baled silage, hay or straw, roots and liquids.

The angled paddles help mixing by sweeping the material from end to end. The placement of the blades ensures the materials reach optimum size/length, without grinding it down and destroying the all-important 'scratch factor' of the forages producing a MechFiber mix.

Mixing time will be determined by the required chop length. Follow procedures contained in this manual or consult your KEENAN Physical Nutritionist for further information.

> **CAUTION:**
> For Bale handler models, do not load a complete 6x4 round bale, or more than one 5x4 or 4x4 round bale onto the machine at any one time. Overloading the machine may seriously affect the safe operation and life of the machine and will invalidate the warranty.

For Bale handler models, do not load a complete 6x4 round bale onto the machine as it may potentially be unstable, possibly falling off and causing injury. 6x4 round bales should be first broken up and then loaded onto the machine in sections. Alternatively, the bale may be held in place by the loader until sufficiently chopped down (to a third or half of its size) to allow it safely complete chopping on the top of the machine. If in doubt, consult your local KEENAN representative for the recommended safe operation of the machine to suit your particular application.

4.3 Feeding out

During mixing, the mixing chamber is separated from the feed out chamber by a Variable Feed Control (VFC) or guillotine door, thus ensuring complete mixing. The feed out chamber contains an auger which runs the entire length of the machine.

When chopping/mixing is complete, the feed out tray should be set to the required position, and the VFC-Door dropped, allowing the material to be swept up by the paddles and pushed onto the auger — see Figure 2. The VFC-Door should be partially opened at first, quarter way, and when feed is seen discharging then 15–20 seconds should be allowed before opening the VFC-Door fully. Door position and ground speed should be set/used to allow for an even feed-out rate.

> **CAUTION:**
> The VFC-Door should only be opened or closed when the PTO is engaged (paddles turning) when material is in the machine.

4.4 Maintenance

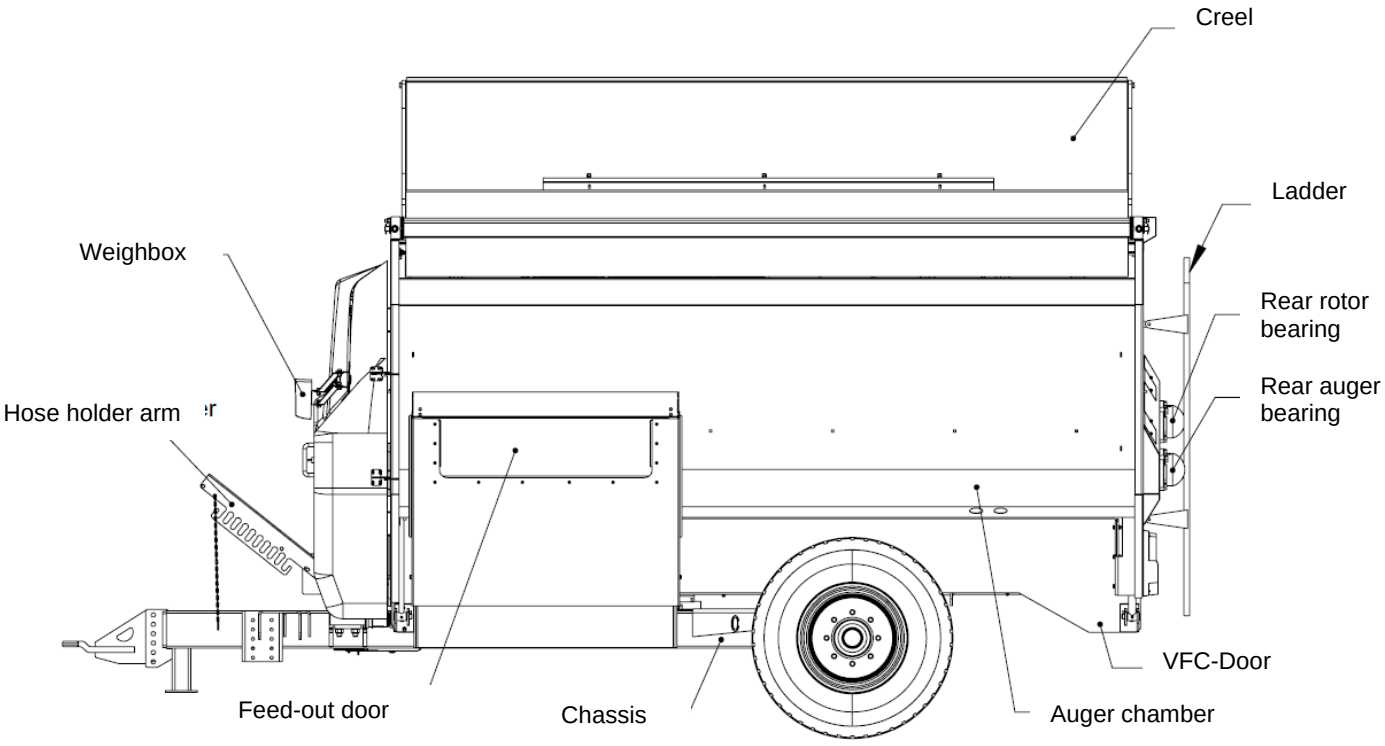


Figure 1: KEENAN MechFiber300 Diet feeder (Bale handler Option Shown)

A properly operated and maintained KEENAN Diet feeder will give years of trouble-free operation. **Regular maintenance of the machine is essential both for long machine life and also to meet the warranty requirements**. Refer to instructions in the Maintenance section of this manual. Weekly cleaning of the machine is recommended to prevent corrosion to the mixer body from old feed. **The level of cleaning required will depend on the material being mixed, but any material which sits or lodges on the machine may both adversely affect the operation of the machine and affect the quality of the mix, if it subsequently falls into the feeder during mixing. It is therefore essential that routine cleaning and washing down of the feeder is completed.**

4.5 Safety precautions

KEENAN Diet feeders have been designed to reduce risk to a minimum. However, as with any machine, careful observation of safety procedures is necessary to prevent accidents.
See inside for further details on each section. If you have any further questions please contact your local KEENAN centre for advice.

> **WARNING:**
> Read the following Safety section (Section 5) before attempting to operate the machine.

> **WARNING:**
> The operator is responsible for the safe operation of the machine at all times. This machine should only be operated by one person at all times. The machine should never be left unattended during operation.

> **WARNING:**
> The Breakaway Safety Brake Device should be attached to the tractor at all times.

5 Safety

The KEENAN MechFiber Diet feeder has many safety features built into its design but ultimately, safe operation requires the vigilance of the operator and an understanding of potential safety hazards. The machine is designed to be used as a mixer/chopper wagon for mixing animal feeds. It should not be used for any other purpose which will affect its performance or safety.

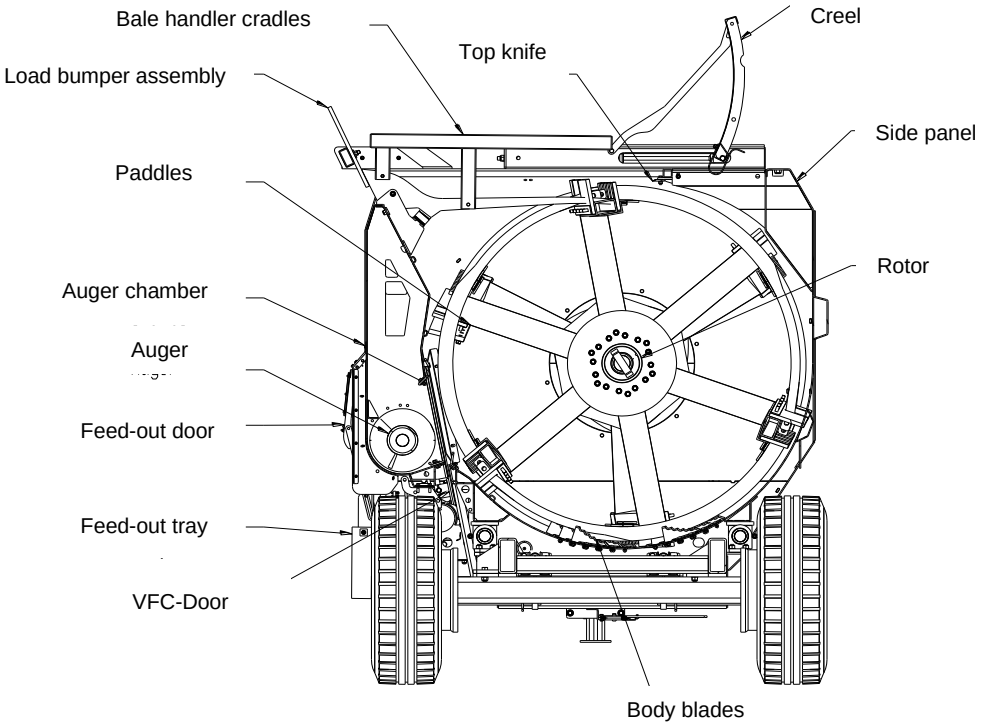


Figure 2: KEENAN MechFiber Rear View

The following safety points are general guidelines. Given the wide variety of possible operating conditions other safety risks may exist which are not captured in the list over.

a) Always park the Diet feeder on level ground and apply the handbrake when not in use.

b) Do not exceed 15 km/h (10 mph) when in use/transit. Local road traffic laws will apply when the machine is in transit on public road, on which the maximum permissible speed is 25 km/h. Exceeding this will compromise the life and safety of major components such as the hitch, axle, wheels and chassis.

c) Ensure the VFC-Door is closed and all Feed-Out Trays/Elevators are in the closed and transport position prior to use on the public road.

d) Exercise extreme caution for possible overtaking traffic at either side when turning.

e) Do not stand on the ladder while the feeder is in transit. The Diet feeder should never be used for the transport of people, animals or objects.

f) Do not stand between the tractor and Diet feeder while it is in use.

g) Use only a PTO shaft with a properly fitted safety guard and correct shear bolt.

h) Always connect the PTO shaft with the shear bolt end to the machine. The operating speed of the PTO is 540 rpm and the direction of rotation is marked on the front cover. Always use a well maintained PTO shaft and keep the safety covers in good condition.

i) Ensure all trailing leads, hoses, etc. are well clear of the PTO.

j) Never operate the PTO in “ground speed mode” or drive the PTO in reverse.

k) Make sure all covers/guards are fitted and closed correctly. Never remove guards when the Diet feeder is connected to the tractor.

l) Ensure the Diet feeder and the immediate area surrounding it is clear of people, especially children, before commencing operation. Ensure that there is sufficient visibility for the operator to observe all danger zones and that the tractor is equipped with mirrors to enable the operator to see both sides of the machine while it is in operation.

m) When connecting the tractor to the Diet feeder only connect using the ring hitch/hitch on the Diet feeder to ensure safe coupling. Ensure that the hitch is connected properly to the tractor and that all pins and clips are properly installed. Then connect the PTO shaft in the correct fashion. Connect the hydraulic hoses ensuring that the functions match the indicated valve on the tractor.

n) When disconnecting always ensure that a stand or jack is used to secure the Diet feeder in the park position and ensure that the handbrake is properly applied. Before driving the tractor away from the Diet feeder ensure that all hoses and cables are disconnected.

o) Load only from the side indicated – see Figure 7 (auger chamber side), using suitable equipment.

p) Standing level with or above the machine in order to load manually is not permitted. Loading should only be carried out with suitable equipment.

q) Regularly inspect all chains (at least weekly), sprockets and moving parts for wear and check all nuts and bolts for tightness.

r) The ladder on the rear of the Diet feeder is to be used as a viewing point for the mixing chamber. It should not be used as a means of access to the mixing chamber nor onto the body of the machine. It is strictly forbidden to climb on the upper rim of the machine body. The height of the machine presents a potential fall hazard during entry and exit.

s) The noise emission level of the MechFiber300 has been recorded at 89.4dB. Noise emission levels above 90dB would require the wearing of suitable ear protection.

t) The Breakaway Safety Brake device should be attached to the tractor at all times. Cable ties fix the wire rope along the handbrake handle in place. Cable tie the wire rope to the drawbar (see Figure 4). Fix the other end of the wire rope to a solid location on the back of the tractor e.g.: using the top link pin. In the event that the Breakaway Safety Brake device has been activated or damaged, it is recommended that KEENAN is contacted for directions to reset.

u) Routine cleaning may be carried out using a power washer. Isolate any power sources before beginning. If washing the inside the Mixing Chamber, open the drain bung underneath the body to allow water escape. Always disconnect PTO shaft from the tractor and stand on suitably safe ladder or platform. Do not to climb on top of machine or into the Mixing Chamber.

v) It is recommended that only KEENAN-trained and qualified maintenance personnel enter the mixing chamber.

In the case of an untrained person entering the mixing chamber, at the very minimum, the following precautionary safety guidelines should be strictly adhered at all times.

1. Ensure the PTO and hydraulic hoses are disconnected.
2. Apply the Diet feeder handbrake and disconnect the tractor from the machine on level ground.
3. Use suitable PPE such as protective footwear, eye wear and gloves.
4. Personnel should make themselves familiar with the location of all potential hazards before entering the machine, in particular the location of the top knife and body blades.
5. Be aware that sharp components may be hidden in or under material within the mixing chamber.
6. The top knife should always be fitted with the supplied guard (Figure 3b) before entering the machine. Begin by fitting the first 500mm of guard from the rear of the machine. Then as you enter continue to fit the guard along the full length of the Top Knife.
   Note: *the machine is supplied with a top knife guard which can be found inside the driveline covers of the Diet feeder*
7. Use a suitable and secure ladder for access to and from the Diet feeder.
   Note: *The ladder at the rear of the machine is provided as a means of viewing the ration only and should not be used as a means of access the mixing chamber.*
8. Always maintain three points of contact while entering, exiting and moving within the mixing chamber of the machine.

9. When entering the base of the body, it is recommended to cover the body blades in the vicinity of where work is to be carried out.
10. When removing trapped objects, be aware that some machine components may move unexpectedly when cleared.
11. Take extreme care when moving around inside the body as surfaces may be slippery.

SODAGRAIN: Additional safety instructions and warnings are available and covered in a soda grain leaflet which should be read carefully before soda treating grain. When finished treating grain, clean out any remaining material in the mixing and/or auger chamber by loading in 200–300 kg of silage or 50 kg of straw and allow the machine to mix before unloading in the normal manner. ***Note:*** *When mixing soda grain, the maximum gross load that can be mixed in the KEENAN MechFiber300 is 3,800 kg.*
The soda grain process can be completed using a KEENAN mixer but before treatment on your farm make sure you are adhering to local animal feed legislation and health and safety guidelines involving the treatment of grain.

Figure 3a: Body blade and blade cover

Figure 4: Breakaway Safety Brake

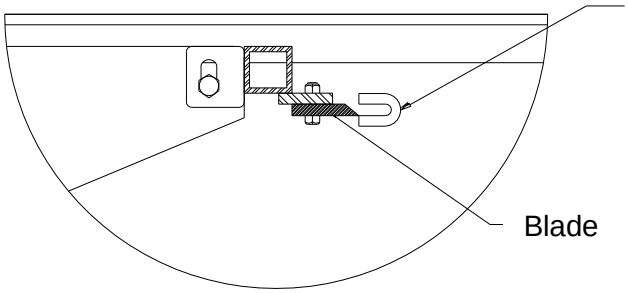


Figure 3b: top knife protection

WARNING:
Failure to follow the safety guidelines above may lead to accident or injury.

6 Weighing System

The weighing system is designed to be simple to operate, accurate and robust. It consists of four load cells connected to a weigh box unit (readout box) at the front of the machine. The system uses 12-volt DC power from the tractor, or battery if fitted. The weigh box unit can be rotated for visibility during loading and from the tractor cab but should be folded out of the line of the tractor wheel for road work. Loads are displayed in kilograms or lbs with scale increments of 5 kg/10 lbs. The unit is capable of measuring up to 18,140 kg (39,999 lbs.) with the appropriate weight bars. The system is maintenance-free, being fully electronic with no moving parts. All components are sealed against moisture and dust and are resistant to frost and corrosion. The unit should, however, not be directly exposed to a high-pressure water jet. The weigh box unit may vary from model to model and region to region. A separate manual is supplied for your weigh box unit, which you should refer to for specific operating instructions.

INSTRUCTIONS FOR ELECTRONIC READOUT BOX ARE CONTAINED IN A SEPARATE MANUAL

7 Operation

The simplicity of the KEENAN MechFiber Diet feeder design is reflected in its low power requirement. The power required varies, depending on the mix used, the dry matter, and the amount of chopping required.

If a tractor is at its limit during mixing, this will translate into extra strain on moving parts as there will be surges in power as the engine recovers during certain periods of the mix.

A tractor that has sufficient power will provide a much smoother drive to the Diet feeder during all stages of operation.

7.1 Set-up

1. Ensure the machine is level when hitched up. If the machine is un-level, this can be corrected by adjusting the hitch height. The hitch height on the KEENAN MechFiber Diet feeder provides a certain level of adjustment from the manufactured height.

2. The PTO shaft should be attached with the shear bolt end coupled to the machine. Make sure that the PTO guard is in good condition and well secured.

CAUTION:
Do not operate the PTO in “ground speed” mode. Reversing the drive on your machine will cause serious damage.

3. Connect the hydraulic hoses (see table 1) from the machine to double and single acting spool valves on the tractor, as appropriate.

4. Examine the mixing chamber to ensure that:
- All blade covers have been removed.
- All spare parts and foreign objects have been removed.
- No damage has occurred during transport.

5. Check the weigh box and ensure the power lead from the weighing system is either connected to the tractor battery via a direct fused line, 7-pin plug or to a 12-volt battery located in the side box of the feeder. To zero the weigh box press and hold the ‘zero’ and ‘minus’ keys together and hold until ‘end’ appears on the screen then release the buttons. If the power is supplied through a 7-pin lights connection, the tractor lights will need to be switched on to provide power to the weigh box. If you stand on the ladder, at rear of the machine, you can check the reading on the weigh box against your known weight, this may require assistance.

6. With the tractor running, check that the VFC-Door opens fully and closes completely. Similarly, check the movement of the feed out tray. Engage the PTO and check the turning of the paddles. The initial turning of the paddle rubbers against the side of the KEENAN MechFiber Diet feeder will generate noise but this will decrease as the paddle rubbers become more pliable.

Hydraulic and brake hoses	
Operation	**Colour**
Guillotine door	Red and yellow
Feed out tray	Blue
Bale handler creel	Green
Brakes	White
Beetgrid	Black

Table 1: Hydraulic and brake hoses

Note:

A: The design life of hydraulic hoses is subject to the level of wear and tear/usage and also factors like harsh climate. It is recommended that they are reviewed periodically (i.e., yearly) and typically replaced after ten years of operation if necessary.

B: The maximum oil pressure of the hydraulic system is 3,000 psi.

C: If there is a **valve chest** fit to the MechFiber machine, it is essential to connect the valve chest hydraulic feed and return pipes correctly. The return pipe is not designed to take the hydraulic pressure normally seen in the valve chest feed pipe, and so seals and/or the valve chest itself may be damaged if oil flows in the wrong direction through the chest. Typically, the hydraulic return pipe on the valve chest is fitted with a one-way flow valve to prevent oil from being fed to the valve chest in the wrong direction. This is identifiable as a steel connection on the end of the pipe with an arrow stamped on its side to indicate the direction of oil flow through it. Oil flows into the valve chest through holes marked P (Pressure) and out through holes marked T (Tank), see Figure 5 below.

(The valve chest is set up for open-centre hydraulics. If the tractor has an alternative hydraulic system [other than open-centre], then contact should be made with the tractor agent. To alter to closed-centre hydraulics, there is a plug that can be fitted to the spool valve block and is available from KEENAN on request.)

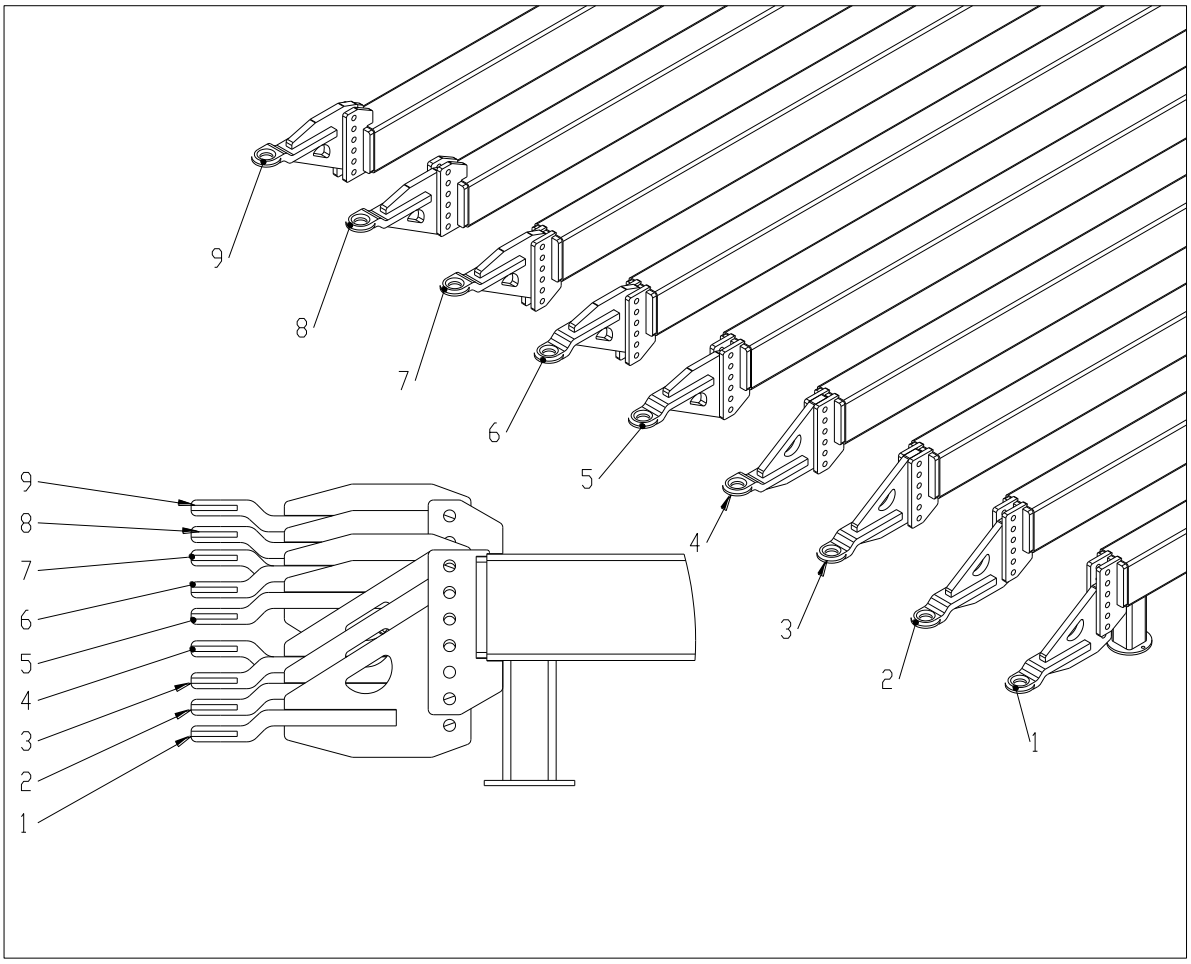
Figure 5: Valve Chest

7.2. Hitch height adjustment

The MechFiber300 hitch has been designed to allow for a number of various hitch height options with the same components used. The hitch height is normally selected for the application and set at the factory per the options below.

The main hitch assembly is a bolt-on assembly and once the main setting is completed at the factory, it may also be adjusted on-farm by moving the assembly up or down within the bolt holes, or turning the complete hitch over, as it is suitable to operate facing either way up.

The complete range of options is shown below:



Note: Care must be taken when adjusting the hitch height, so that there is adequate PTO clearance and that there is enough ground clearance below the stand.

7.3 Diet feeder capacity

Due to the diversity of the materials available for feeding and the KEENAN MechFiber's ability to incorporate a wide range of feed types into the ration the capacity of the machine will vary. Ensure that overloading is avoided at all times as mix quality will be seriously affected and potential machine damage may result.

Overloading must be avoided because:

• The mix will not be homogenous (evenly mixed), preventing the maximum benefit being gained from the machine.
• Mechanical failure will result. Due to the nature of the loading this may occur at load levels below that necessary to break the shear bolt.

CAUTION:
The machine can be overloaded, before the shear bolt breaks. Therefore not breaking a shear bolt is not an indication that the machine is not being overloaded.

The overall amount of material that can be chopped/mixed in one load depends on the following:

• Machine size.
• Overall dry matter of the TMR.
• The chop length and quality of the material added.
• The loading procedure and loading order of the materials used (this has a major effect on machine capacity, e.g. the addition of straw first or last).
• Tractor H.P. rating.

Figure 6: Photograph illustrates a well-mixed ration showing consistent fibre length and integration of forages and grains.

7.4 Loading and mixing

Note: The unique tumbling action of the machine is what carries out the mixing. If the machine is overloaded or loaded in an incorrect order, or insufficient time is allowed for proper chopping, this tumbling action will not take place correctly. In addition to reducing mix quality, it increases the horsepower requirements and reduces the life of the machine.

> **CAUTION:**
> Overloading will seriously affect machine performance and life, and will invalidate your warranty.

The effectiveness and speed of chop is determined by:

- The number of effective (sharp and intact) blades.
- The dry matter of the material to be added.
- The amount of pre-chopping of material.
- The loading sequence.
- The total amount of material to be chopped.
- The density of the bale.

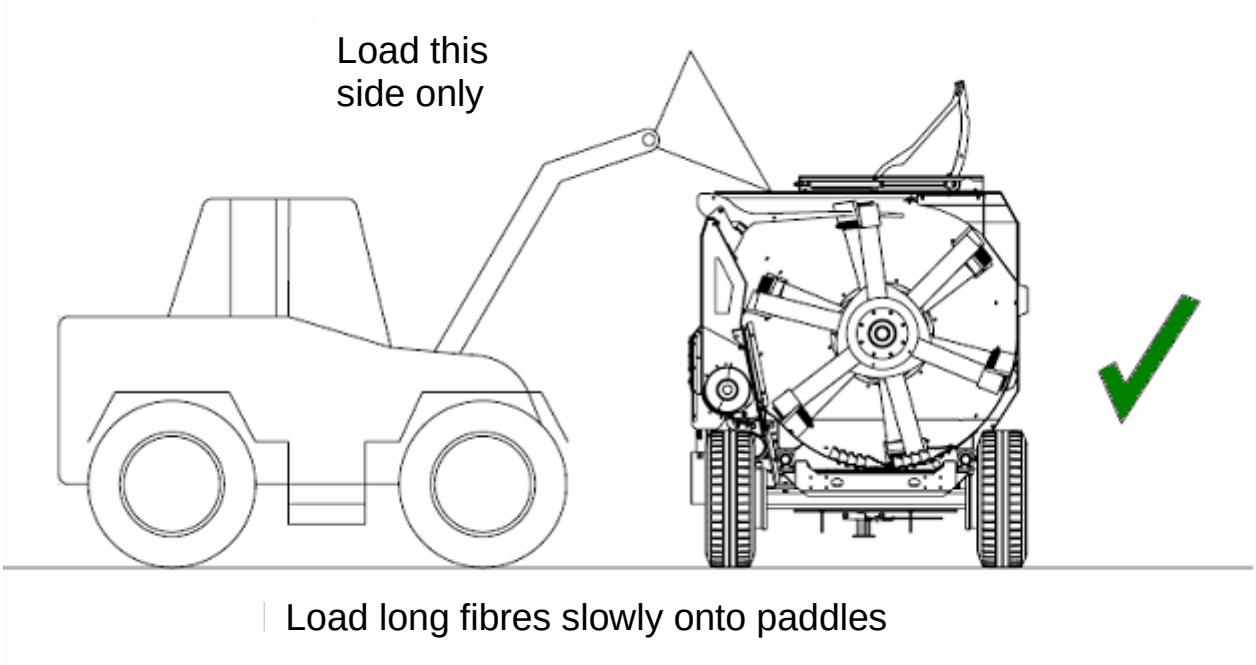


Figure 7: Loading the KEENAN MechFiber Diet feeder

7.5 Operating the KEENAN MechFiber Diet feeder

LOADING THE KEENAN MECHFIBER DIET FEEDER

GENERAL

- Park on level ground.
- Ensure variable feed control door (VFC) is closed.
- **Do not start PTO when VFC-Door is open.**

LOADING AND MIXING SEQUENCE

- Load feed as close as possible to the loading side of the unit.
- Load concentrate feeds along the length of the machine.
- Load forages to the front, back and centre of the unit in alternate grabs during mixing.
- Remove all twine, wrap or polythene from bales.
- Round or square bales should be split or broken into four pieces **minimum.** Use front grab or forks as required.
- Stop PTO before moving to the feed-out area.
- Mixing time will depend on chop length required.

Below is a guide to the correct loading order. Consult your local InTouch office / nutritionist for best loading order for your ingredients.

Order	Feed Ingredients	Paddle RPM	Tractor Engine Speed
1st	Straw, Hay	All at 6–8 rpm	1,400–1,600 rpm
2nd	Water, Liquid feeds		
3rd	Minerals, Concentrates, Protein meals, Pulps, Cereal grains		
4th	Grass silage		
5th	Maize silage		

Table 2: Loading the KEENAN MechFiber Diet feeder

7.6 Operating the KEENAN MechFiber Bale handler

LOADING THE KEENAN BALE HANDLER

GENERAL

• Park on level ground.
• Ensure variable feed control door (VFC) is closed.
• **Do not start PTO when VFC-Door is open.**

LOADING AND MIXING SEQUENCE

• Set paddles running at 6–8 rpm for **all** bale types. ***Note:*** *When chopping straw, higher revs can be used.*
• Load round bales to the centre of the unit with the flat end towards the top knife.
• Allow minimum of two minutes for previous bale to chop down before adding another.

CAUTION: Do not load more than one bale at a time.

• Stop PTO before moving to the feed-out area.
• Mixing time will depend on chop length required.
Below is a guide to the correct loading order. Consult your local InTouch office/nutritionist for best loading order for your ingredients.

Order	Feed Ingredients	Paddle RPM	Tractor Engine Speed
1st	Straw, Hay	All at 6–8 rpm	1,400–1,600 rpm
2nd	Water, Liquid feeds		
3rd	Minerals, Concentrates, Protein meals, Pulps, Cereal grains		
4th	Grass silage		
5th	Maize silage		

Table 3: Loading the KEENAN Bale handler

7.7 Specific instructions for Bale handler models

1. The creel should be raised before loading bales.

2. The bale (round bales) should always be loaded in the centre of the machine so that it gets the maximum agitation from the six paddles.

3. The bale should be gently lowered in the centre of the machine onto the tines. The Bale handler will then begin its cutting action, with the tines working in conjunction with the top knife, body blades and six paddles to evenly chop the bale material in a timely manner. The bale should be chopped evenly throughout this process which will avoid large lumps of the bale entering the mixer at any time. This will result in a better mix quality and more even chopping action.

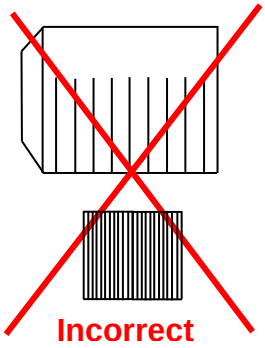
4. After the bale has been fully chopped and entered into the machine the next bale can be added to the mix in the same manner as above.

5. The standard chopping times for different materials of round 4x4 (120 cm) bales are as follows:

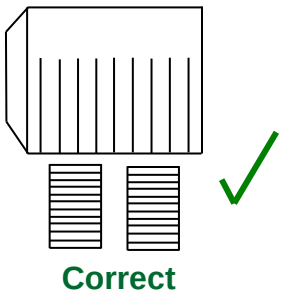
Bale:	**Time:**
Straw	6–8 minutes (140 kg)
Hay	4–6 minutes (300 kg)
Wet silage (up to 20% DM)	2–4 minutes (700 kg)
Dry silage (20%–30% DM)	4–5 minutes (500 kg)
Very dry silage (over 35%)	4–6 minutes (400 kg)

Note: Heavy bales must be loaded gently on to the Bale handler, not dropped from a height, or damage may occur.

6. These times are achievable if the bale is loaded in the correct position and the loading method, as described above, is followed. These times may vary slightly depending on the tightness of the bale and the behaviour of the bale when it is being chopped.



7. When loading large square bales, the method is to load the bale so that the sections lie across the tines so as to prevent the sections falling through the gap in the tines (see diagram to the right: sections of large square bale loaded perpendicular to the tines. The easiest way to do this is to load the bale in two halves on the loader (one half in each side of the bucket, if wide enough) and flick the sections out onto the tines. In this way the sections will remain up on the tines for longer and get a better chop against the top knife. If loaded the opposite way the sections will tend to fall through the tines, not get chopped and cause additional stress on the chopping mechanism.



8. The key to the successful operation of the Bale handler is that the bale remains on top of the tines long enough to allow the pre-chopping to take place against the serrated top knife. This ensures that the amount of further chopping within the mixing chamber is reduced, and though it may take longer for the bale to be taken in, during this time the material that has already been cut from the bale is being processed within the chamber.

7.8 Washing and chopping root crops

With the machine stopped add the root material to be washed and chopped. Ensure that there are no stones or foreign objects hidden in the roots.

1. Add water at approximately 300 kg (660 lbs.) per tonne of material to be chopped. Rotate the machine for 1–2 minutes at 6 rpm.
2. Park the machine on an incline, open the wash gate and allow the water to drain off.
3. It may be necessary to repeat this if materials being chopped are particularly dirty.
4. Chop the materials by running the machine at 8+ revs.

For low usage, best results are achieved by chopping sufficient material for two days.

7.9 Feeding out

1. Ensure that the VFC-Door is still closed.
2. Re-engage the tractor PTO at idle, increasing engine revs to between 1,400 and 1,600 rpm to achieve a paddle running speed of 6–8 rpm. Allow the TMR to loosen and tumble for 15–20 seconds.
3. Slowly open the VFC-Door to maximum halfway then allow at least one minute before opening the door fully.
4. Select a ground speed to feed out at an even rate along the feed area.
5. When feed out is complete, close the VFC-Door, run the machine for 10–20 seconds to empty auger chamber, then disengage the PTO before turning out of shed.

CAUTION:
Never open VFC-Door before engaging PTO - serious damage may be caused as a result of sudden load being put on the auger. Disengage the PTO before turning corners.

8 Maintenance

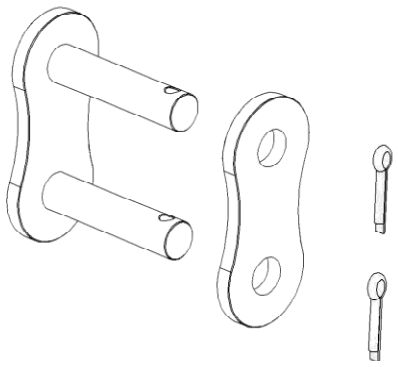
The KEENAN MechFiber Diet feeder has been designed for optimum performance with a minimum of maintenance. Chains, bearings and grease points have been kept to a minimum without compromising function. All components are of high quality and provide excellent durability. Regular routine maintenance will ensure your KEENAN MechFiber Diet feeder gives you the best results with a minimum of problems.

> **WARNING:**
> **Prior to carrying out any maintenance on the machine, always ensure tractor engine is stopped and disconnect the PTO and hydraulic hoses from the tractor. Observe safety precautions at all times when working on the machine, read Section 5 on Safety before attempting to work on machine.**

The recommended operating pressure in the hydraulic circuit is 170 bar and a flow rate of 40 litres per min. Replacement hoses should comply with DIN EN 853. When replacing hydraulic hoses, always wear suitable protective equipment.

8.1 Chains

1. Each week check the condition of the chain tension arms and adjust as required. There are two chains used on the KEENAN MechFiber model. The primary drive chain (ASA100) drives the idler shaft and the auger shaft from the input shaft (see Figure 9), and the secondary chain (ASA140HS) drives the rotor. Both chains are tensioned by spring assemblies on the slack side of the chain.



Note: ASA100 chain uses split pins in the joiner link as shown while the ASA140HS chain uses roll pins due to the high loads involved.

Figure 8: Chain Joiner Link

2. Each day, check the level of oil in the automatic oiler reservoir (where fitted). If the oil level is low, top it up with light oil, grade SAE 10 or similar. The capacity of the reservoir is 1.89 litres.

   Note:
   A: Do not use heavy/high viscosity oil, as the back pressure in the pipes may cause them to be blown out.

   B: Do not use grease on the chains, as it is unsuitable for the application and will not allow lubrication of the vital internal parts of the chain.

C: The automatic chain oiler attachment gives a squirt of oil (approx. 15ml) every time the guillotine door ram cycles. In this way, the machine is oiled in direct proportion to the number of cycles and adequate lubrication is assured. There is an adjustment screw on the base of the automatic oiler, turning clockwise applies less oil, and anticlockwise more.

3. After each season, remove all chains by loosening the tensioners and removing the joiner links - see Figure 8.

4. Wash off all dirt using paraffin. Dry the chains before soaking overnight in oil and then refit.

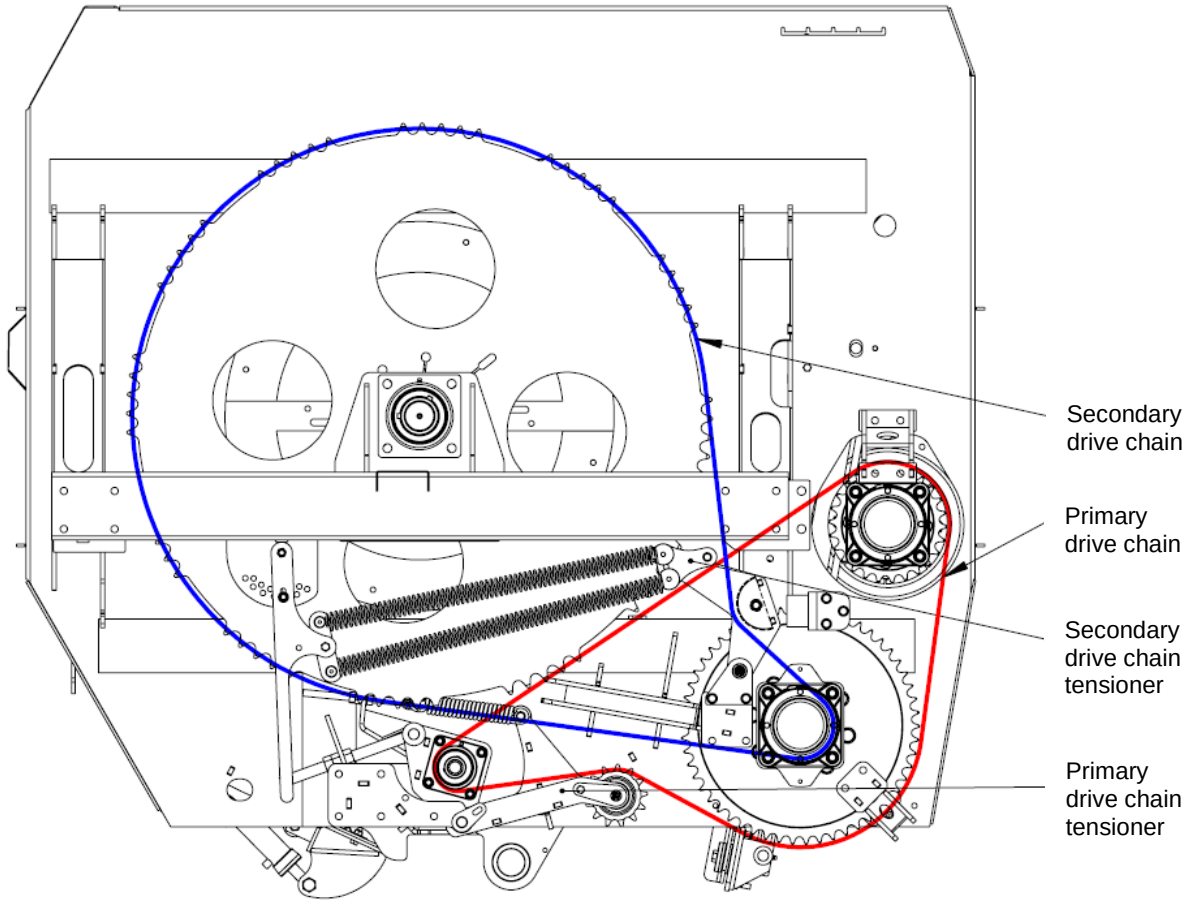


Figure 9: Front panel of KEENAN MechFiber Diet feeder

CAUTION:
Failure to maintain oil on the chains may reduce the working life by 90%. Chain damage is not covered by factory warranty. See Warranty section for more details.

It is also essential to monitor and maintain the required chain tension. Chain tension is adjustable for both the primary and secondary chains. (See next section)

CAUTION:
For the first month of ownership (i.e., during the chain bedding-in period), it is recommended to check chain tension daily. (See next section)

8.2 Chain tensioning

1. Setting tension on Primary Chain

a) With the ASA100 chain in place, tighten the threaded adjuster on the spring until there is approximately 70mm of thread seen between the ring holding the spring and the adjuster mounting plate. This setting will provide the required wrap around the idler sprocket (See Figure 9.1). Tighten locknut against shoulder plate as shown.

b) Tighten the gearbox retainer/adjuster bolt, using nut “B” until the slack is fully taken up and continue to tighten until the spring reaches 30–40 mm extension, **195–205mm** coil length (See Figure 9.1).

c) Run machine to confirm the spring maintains its tension during one complete revolution of the primary drive. *(The acceptable alignment in the auger will cause some movement of the spring in operation and is normal)*

d) Once tension is set, tighten nut on retainer/adjuster bolt in sequence below:

1. Adjust Nut "B" against the outer face of the shoulder plate to achieve correct tension setting on the primary chain.
2. Tighten Nut "C" against the inner face of the shoulder plate.
3. Hold nut "C" with spanner and torque nut "B" to 320 Nm.
4. Tighten Nut "D" against Nut "C" and torque to 320 Nm.
5. Tighten Nut "A" against Nut "B" and torque to 320 Nm.

e) When running, the tensioner should maintain a load on the chain under all conditions and loads. **It is recommended to check the tension weekly in the first few weeks of operation, as the chain, sprockets and tensioner “beds in” and may need adjustment.**

2. Setting tension on Secondary Chain (Rotor Chain)

a) The spring assembly on the secondary chain tensioner should be set such that there is approximately **750 mm** extension on the spring, measured on the viewable coiled section (See Figure 9.1).

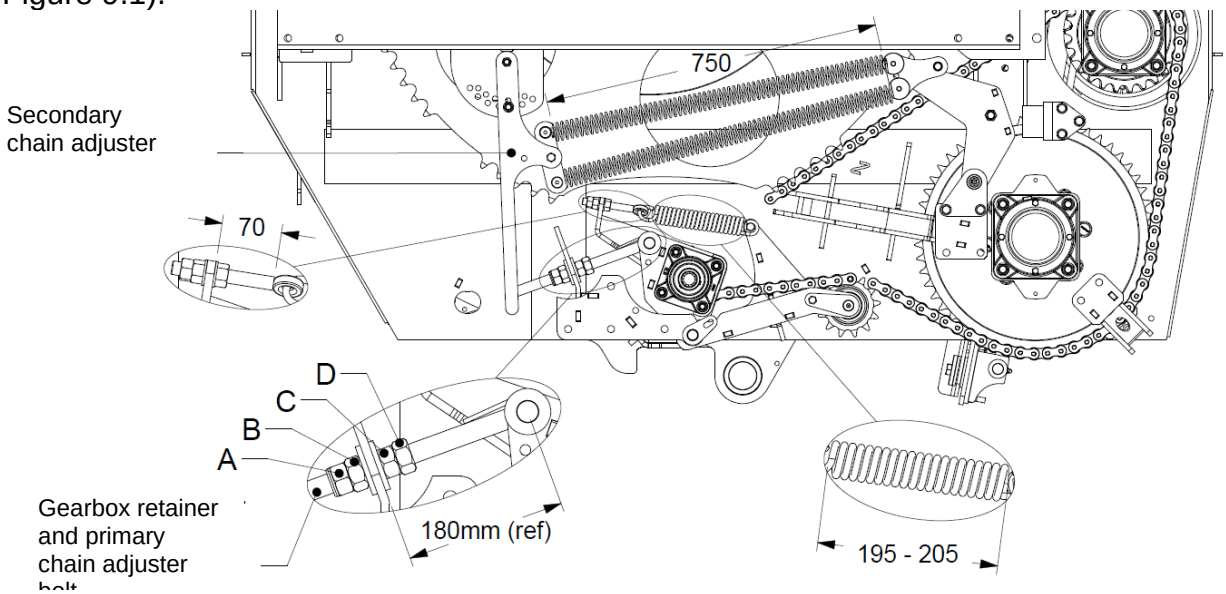


Figure 9.1: Chain tension details

Model	MechFiber300
Primary Drive Chain	**ASA 100**
Links	104 (inc. joiner)
Pitch (mm)	31.75
Pitch (inches)	1.25
Chain length (mm)	3,302
Chain length (inches)	130
Rotor Drive Chain	**ASA 140HS**
Links	114 (inc. joiner)
Pitch (mm)	44.45
Pitch (inches)	1.75
Chain length (mm)	5,067.3
Chain length (inches)	199.5

Table 4: KEENAN MechFiber300 drive chains

8.3 Greasing

1. **Bearings**: Each week, apply grease to the eight bearings with grease fittings. The bearings are as follows:

a. The main rotor bearing at the front of the KEENAN MechFiber (A, Figure 10a).
b. Two main bearings on the front and rear of the input drive shaft (B1 and B2, Figure 10a).
c. The auger bearing and idler shaft bearing at the front of the KEENAN MechFiber (D1 and D2, Figure 10a).
d. The bearing on the rear of the idler shaft (F, Figure 10a).
e. Two main bearings at the rear of the KEENAN MechFiber (G and H, Figure 10b).

2. **Grease Fittings**: Each week apply grease to the following points with grease fittings (there are up to 26). The points are as follows:

a. Two pins and two bushes on the guillotine door lifting rams (I, J, K and L, Figure 11)
b. 18 grease fittings on the tandem axle assembly (where fitted):
   Two on each brake rod, one on each pivot (eight in total)
   One on each brake arm (four in total)
   One on each front spring pin (four in total)
   One on each centre spring assembly pivot (two in total)
c. Three grease fittings on the tension arms:
   One on the secondary chain tension arm (E, Figure 10a)
   Two on the primary chain tension arm (C1 and C2, Figure 10a)
   (also: see Figure 12)
d. See Section 8.4 for Bale handler maintenance details.
e. Grease fitting in pivot bush on gearbox pin.

3. **VFC-Door**: Check the VFC-Door is able to move freely each day and grease as appropriate.

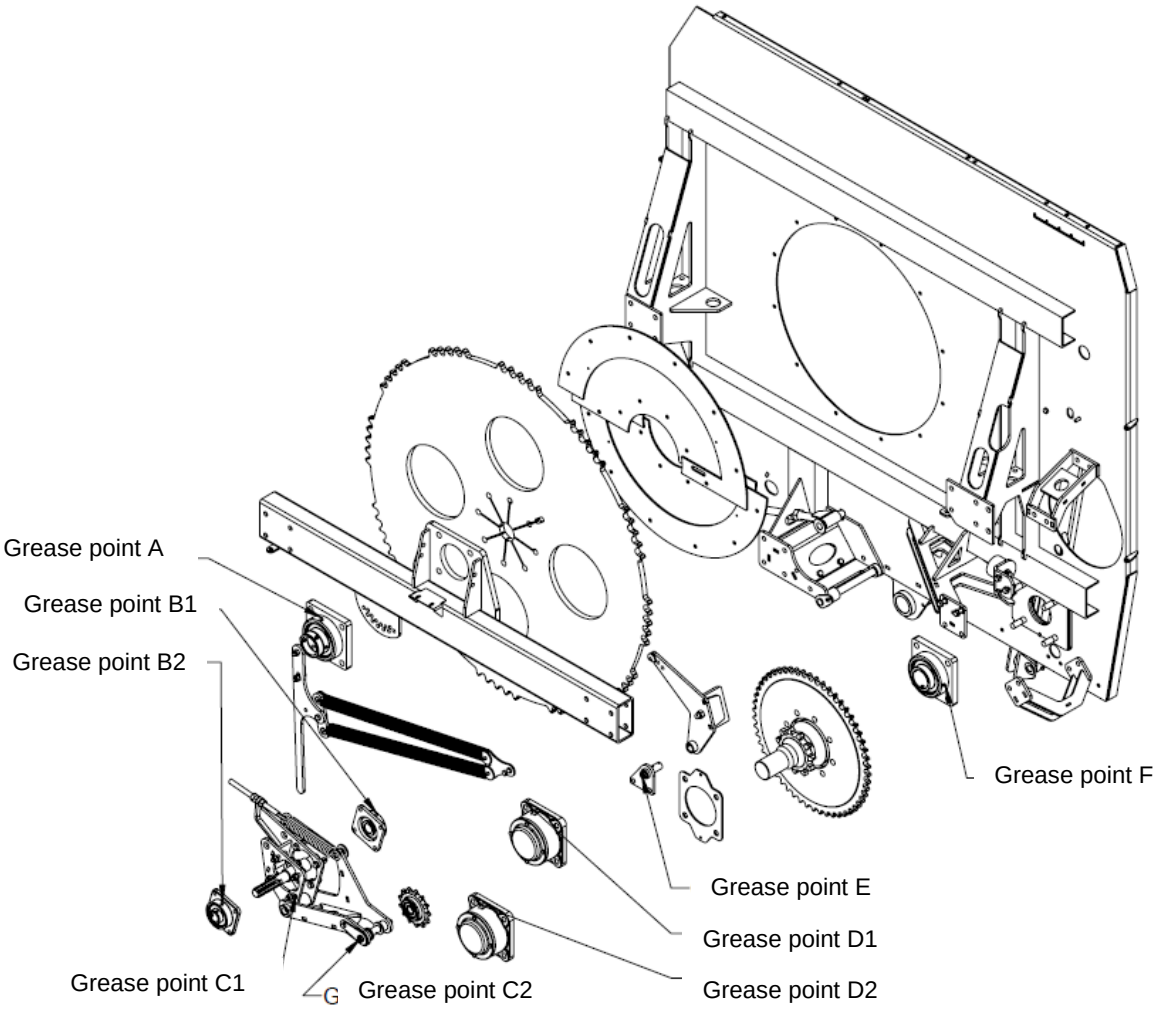


Figure 10a: Front grease points

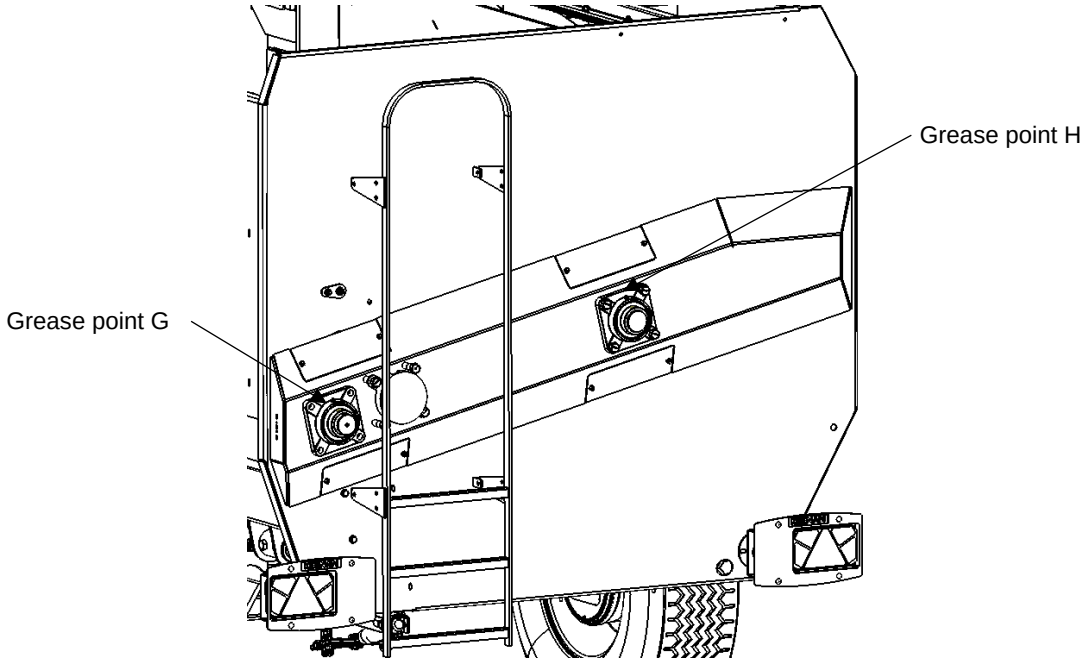


Figure 10b: Rear grease points

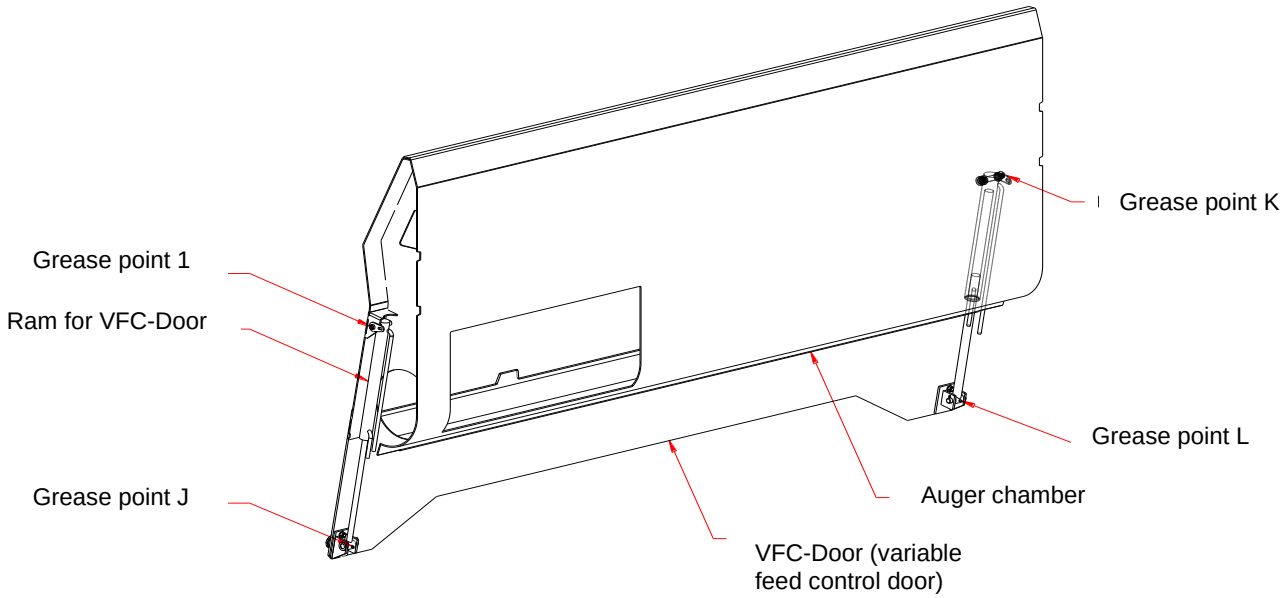


Figure 11: VFC-Door grease points

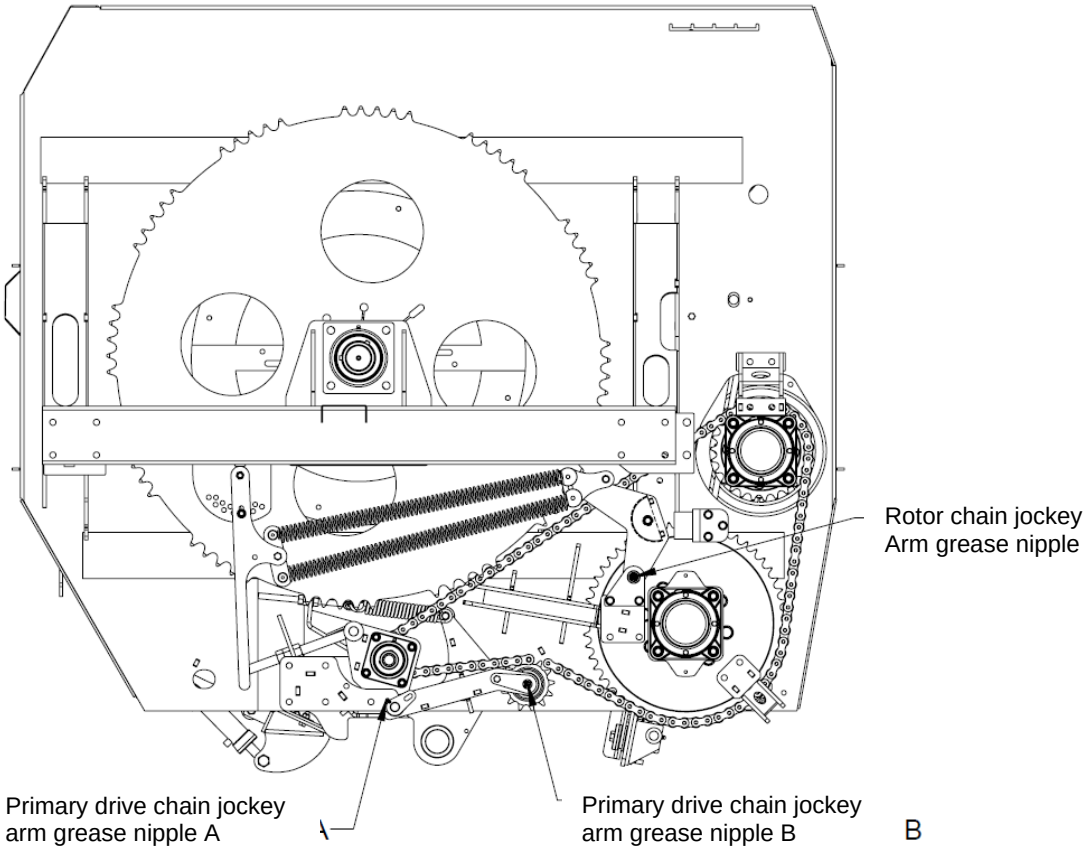


Figure 12: Tension arm grease points

8.4 Maintenance blades

Blade sharpening and/or replacement: It is recommended that only KEENAN-trained and/or qualified maintenance personnel should perform this task.

Blades need to be kept sharp. Blunt blades will increase power requirements. Sharpening must be done without taking the temper from the blades (without overheating). Blades can be sharpened many times but when they reach the point where this is no longer practical, they must be replaced.

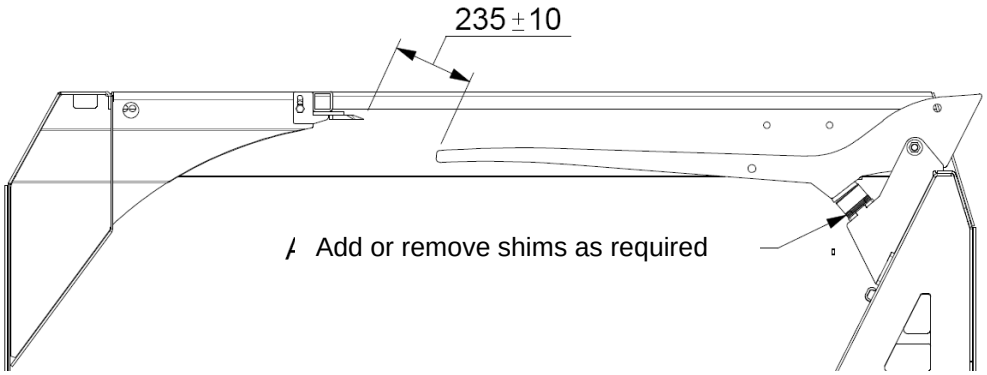
8.5 Maintenance Bale handler models

There is a grease nipple fitted at the pivot point of each Bale handler tine on the auger chamber side of the machine, the grease nipple is fitted to the head of each M24 tine bolt. The following maintenance points should be checked on a monthly basis:

1. Apply grease to each of the Tine Bolt grease points individually.

2. The M24 tine bolt locknuts should be checked for tightness; they should be tight enough to prevent the tine from having any side movement but allow it fall under its own weight when let drop.

3. The rubber buffer should also be checked for wear or signs of damage which may affect its shock absorption. Optimum tine-to-top-knife gap is **235 mm ± 10 mm** (see Figure 13), but may vary depending on application and the design of tine fitted. Please consult your local Service Centre for settings.



1. Figure 13: Bale handler tine-to-top-knife setting

4. Check that the operation of the creel both up and down, is smooth and unobstructed.

5. Check the creel rubber is in place, undamaged and lowering and raising with the creel.

Note: *The creel rubber is fitted to prevent material sitting on the top knife of the machine, preventing a build-up of material getting under the creel and damaging it as it is lowered. To prevent damage to this rubber do not drop material on it from a height when loading material onto Bale handler arms.*

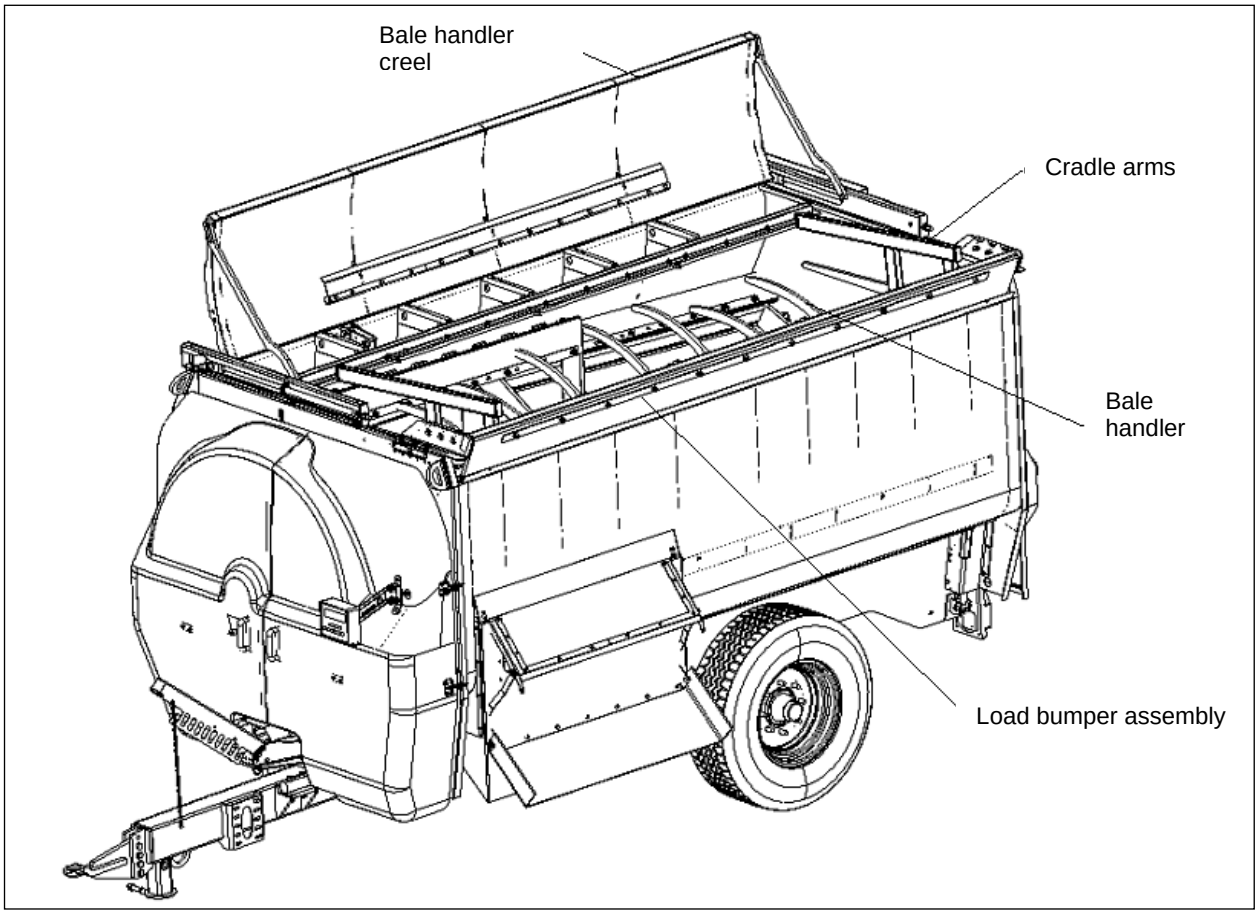


Figure 14: MechFiber machine with Bale handler attachment

8.6 Shear bolts

The following is the recommended grade shear bolt to be used with the KEENAN MechFiber300:

Machine type	Shaft	Shear Bolt
MechFiber300	T60	M10 x 60 x 6.8

Table 5: Shear bolt

CAUTION:
Failure to use the correct grade of shear bolt can result in overload failure of the machine and will invalidate your warranty.

8.7 Nuts and bolts

1. After the first day, and regularly thereafter, inspect wheel nuts and tandem axle U-bolts (where fitted).
2. After the first week, and each week thereafter, check all nuts and bolts, including bearing nuts, for tightness.

General Torque

Stud/Bolt type	FT/LB	N.M
M22	335	450
M20	260	350
M18	200	270

Table 6.1: General torque for wheel studs

U-Bolt Diameter (mm)	Tightening Torque (Nm)
18	230
22	450
24	500
27	600

Table 6.2: Recommended torque for U-bolts for tandem axles (where fitted)

8.8 Tyres

1. Each week, check the tyres for wear and damage.
2. Each week, check the tyre pressures. Optimum tyre pressures are shown in Table 7.

This information is given as guidance. If in doubt, please contact KEENAN.

> **WARNING:**
> When refitting and re-inflating tyre/wheel assemblies, a safety cage should be used to prevent possible injury. Incorrectly fitted tyres are dangerous. Please make sure tyre repairs are carried out by experienced tyre fitters.

Type	Bar	PSI
305 / 55 R 22.5	7.0	110
285 / 70 R 19.5	8.5	125
400 / 60 R 15.5	4.6	68
385 / 65 R 22.5 (8 stud)	5.5	81
385 / 65 R 22.5 (10 stud)	9.0	132

Table 7: Tyre pressure

8.9 Wheels

1. Each year lever off the hub cap, remove the split pin and castle nut and remove the hub.
2. Check seals, bearings, brake shoes, springs, studs, and all other internal parts.
3. Replace worn parts, re-grease and refit.

Note:
1. When refitting the wheels, tighten the castle nut until resistance is felt (do not over tighten). Release the castle nut 1/6 of a revolution, check for movement in the hub, and if none, refit the split pin.

2. At the end of the feeding season wash the machine down thoroughly preferably using a power washer. Grease or oil all lubrication points and open the drain bung on the bottom of the machine.

Changing a wheel

- Park the Diet feeder on level ground and apply the handbrake.
- Fit chocks to opposite wheels to prevent machine movement during the operation. Loosen the wheel nuts with a wrench but do not remove the nuts at this stage.
- Jack up the Diet feeder underneath the axle until the bottom of the wheel is off the ground. Remove the nuts completely and slide off the wheel.
- Refit the wheel ensuring that the centre of the wheel is properly located on the hub and hand tighten wheel nuts.
- Lower the machine and tighten the nuts to the recommended torque using suitable equipment.
- Check the wheel nuts for tightness after one hour of use, repeating on a weekly basis.

8.10 Rear feed-out elevator (where fitted)

An elevator system requires regular maintenance in order to achieve optimum performance. Every week the elevator needs to be checked to make sure that the belt is running straight and not wearing unevenly on one side. If the belt is not running straight then adjust the tension by adjusting the tensioner nut on the side and run again to check.

The elevator surface needs to be kept clean at all times in order to avoid feed building up and falling into the rollers during operation. Do not allow old feed to build up on the sides of the belt.

Each week ensure that the bearings are greased as per Figure 15 below. Ensure that the elevator is free moving in each direction, and there is no feed caught in the slideways. Replace belts and side rubbers when they become worn otherwise elevator will not function properly. Refer to the Rear Feed-Out Operator Manual Supplement for spare parts, maintenance and operation

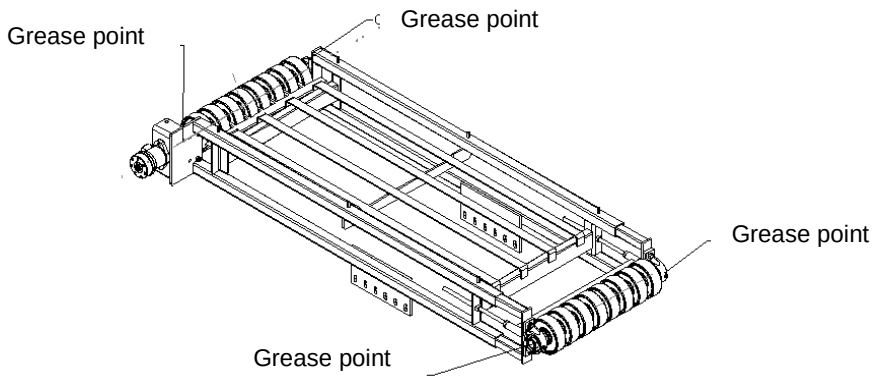


Figure 15: Rear feed out elevator grease point

8.11 Side and stub feed-out elevator (where fitted)

An elevator system requires regular maintenance in order to achieve optimum performance. Every week the elevator needs to be checked to make sure that the belt is running straight and not wearing unevenly on one side. If the belt is not running straight, then adjust the tension by adjusting the tensioner nut on the side, and run again to check.

The elevator surface needs to be kept clean at all times in order to avoid feed building up and falling into the rollers during operation. Do not allow old feed to build up on the sides of the belt.

Each week, ensure that the bearings are greased (see Figures 16 and 17). Ensure that the elevator is free moving in each direction and there is no feed caught in the slideways.

Replace belts and side rubbers when they become worn otherwise elevator will not function properly.

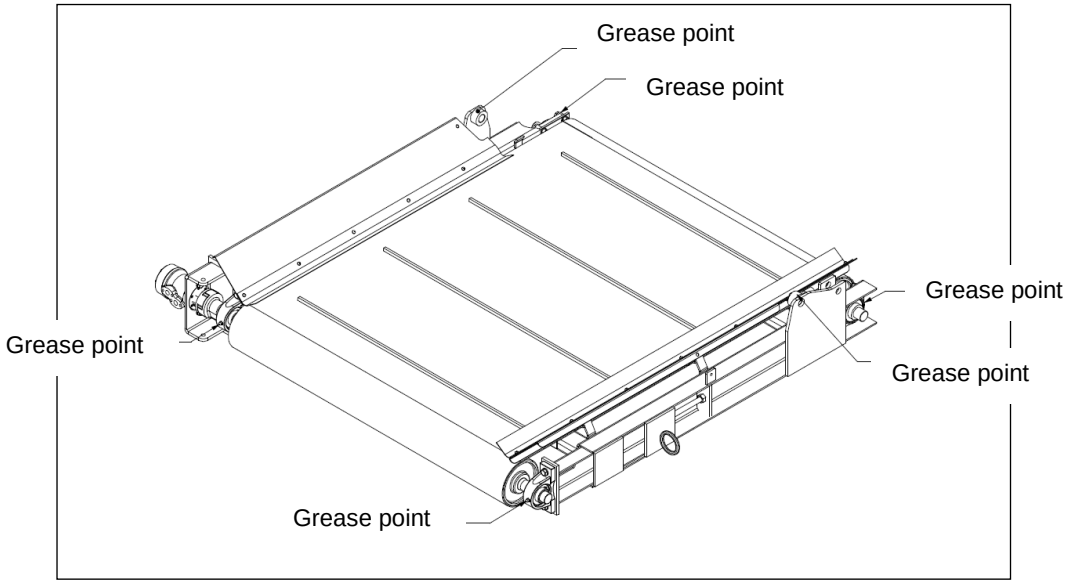


Figure 16: Side elevator greasing points

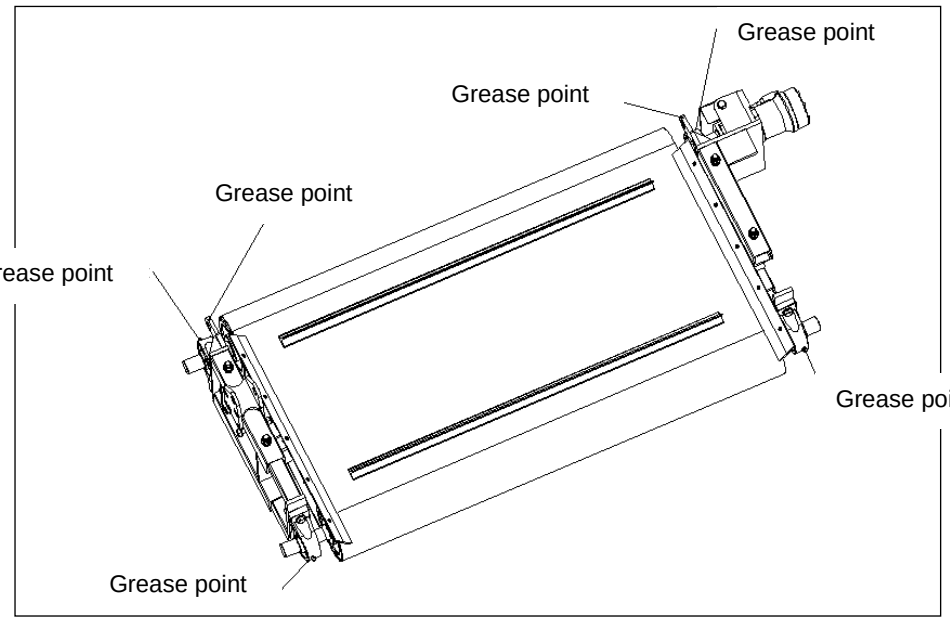


Figure 17: Stub elevator greasing points

9. Maintenance Checklist

Daily

Cleaning:	Clean all old feed from around the body to prevent corrosion and damage to paint.
VFC-Door:	Before using the machine, check that the door opens and shuts fully and operates smoothly.
Wheel nuts:	Check torque settings**.**
Oiler:	Check the oil level and replenish with SAE 10 oil as required.

Weekly (40 hrs)

PTO input shaft:	Grease the universal joints (two nipples) and the sliding half shafts (smear grease on surfaces). For further information, please refer to the PTO Maintenance Booklet supplied with the PTO.
Drive (gear) box:	Grease the drive input-shaft bearings (two nipples) and pivot bush nipple.
Rotor bearings:	Grease the front and rear rotor bearings (two nipples).
Feed discharge auger:	Grease the front and rear auger bearings (two nipples).
Idler shaft:	Grease the front and rear idler shaft bearings (two nipples).
Single axle:	Grease all six pivot points listed below: Two on each brake rod (four in total) One on each brake arm (two in total)
Tandem axle (where fitted):	Tandem suspension assembly is fitted with 18 grease fittings: Two on each brake rod, one on each pivot (eight altogether) One on each brake arm (four altogether) One on each front spring pin (four altogether) One on each centre spring assembly pivot (two altogether)
Guillotine door (VFC):	Grease the door's hydraulic cylinders (four nipples) and the slide plates (smear food-grade grease on surfaces). The recommended grease is "Ceran FG" supplied by TOTAL Lubricants, or similar food- and feed-industry-grade grease.
Drive chains:	Keep the automatic oiler reservoir (where fitted) full of SAE 10 oil. Check the condition of the two jockey arms.
Tyres:	Check that tyres are inflated to the recommended pressures and make sure the wheel nuts are tight.
Chain tensions:	Grease the pivot points on the primary and secondary chain tensioner mechanisms.
Axle U-bolts:	Check axle U-bolt mounting torques (tandem only).
Oiler pipes:	Check hoses for damage or leaks.

Monthly

Bale handler:	Grease each tine pivot and check the tines for looseness.
Tine Buffer:	Check for cracks, splits or degradation.

Yearly (end of season)

Drive chains: Remove both chains; wash off all dirt and old oil using paraffin, then dry. Soak both chains in oil overnight, or longer, if possible.

Idler and auger shaft front bearing: Remove and pack with grease.

Machine: Before storage, wash the complete machine, then grease or oil all weekly lubrication points as above. Open the drain cock in the mixing hopper. Check tyre pressures. Store the machine under cover or under a tarpaulin, if possible.

Electronic weigh box: If the machine is to be stored, remove the weigh box unit from the machine and keep in a dry place. Lightly grease the load cell cable connector end and place it into a plastic bag.

Wheels: Remove and inspect wheel hub. Replace worn parts, redress and refit.

Blades: Blades need to be kept sharpened. This will have to be done without taking the temper (over-heating) from the blades. If the machine is operated with blunt blades it will cause major stress on the drive system. Blades may have to be replaced when it is not practical to sharpen them.

WARNING:
Due to hazards involved in entering the mixing chamber it is recommended that all blade replacement is carried out by a KEENAN authorized service agent who is specially trained to do this. Contact your local agent (see back cover for details).

10 Specifications

10.1 Weight

Model Weight		MechFiber300	
			+ Bale handler
Unladen	kgs	6,000	6,250
	lbs	13,227	13,778
Payload	kgs	4,200	
	lbs	9,256	
Gross	kgs	10,200	10,450
	lbs	22,480	23,031

Table 8: Machine weights

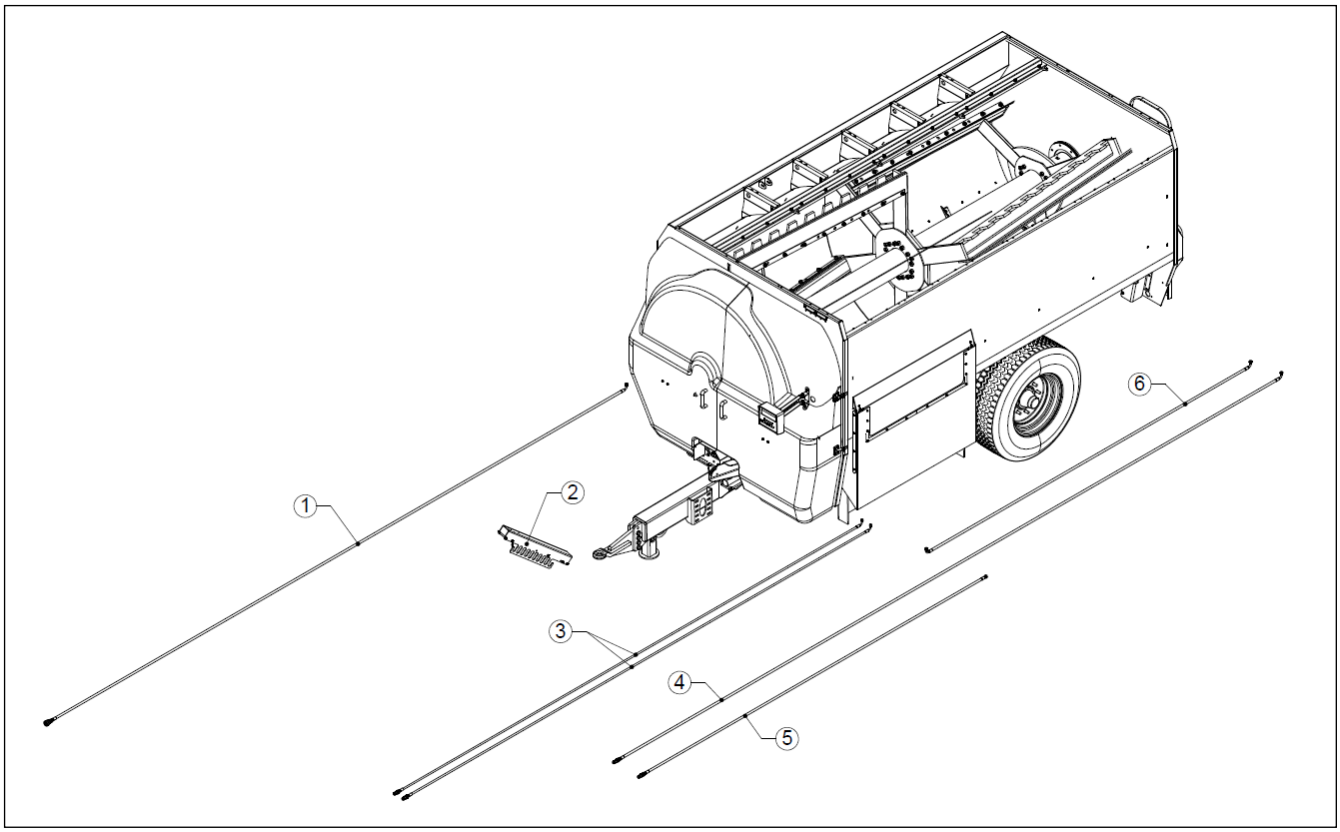
Note:
1: MechFiber300 weight based on single axle. For a twin axle, add approximately 500 kgs (1,102 lbs.).
2: Weights may vary depending on exact specifications.

PART II

(Spare Parts)

11 Parts List

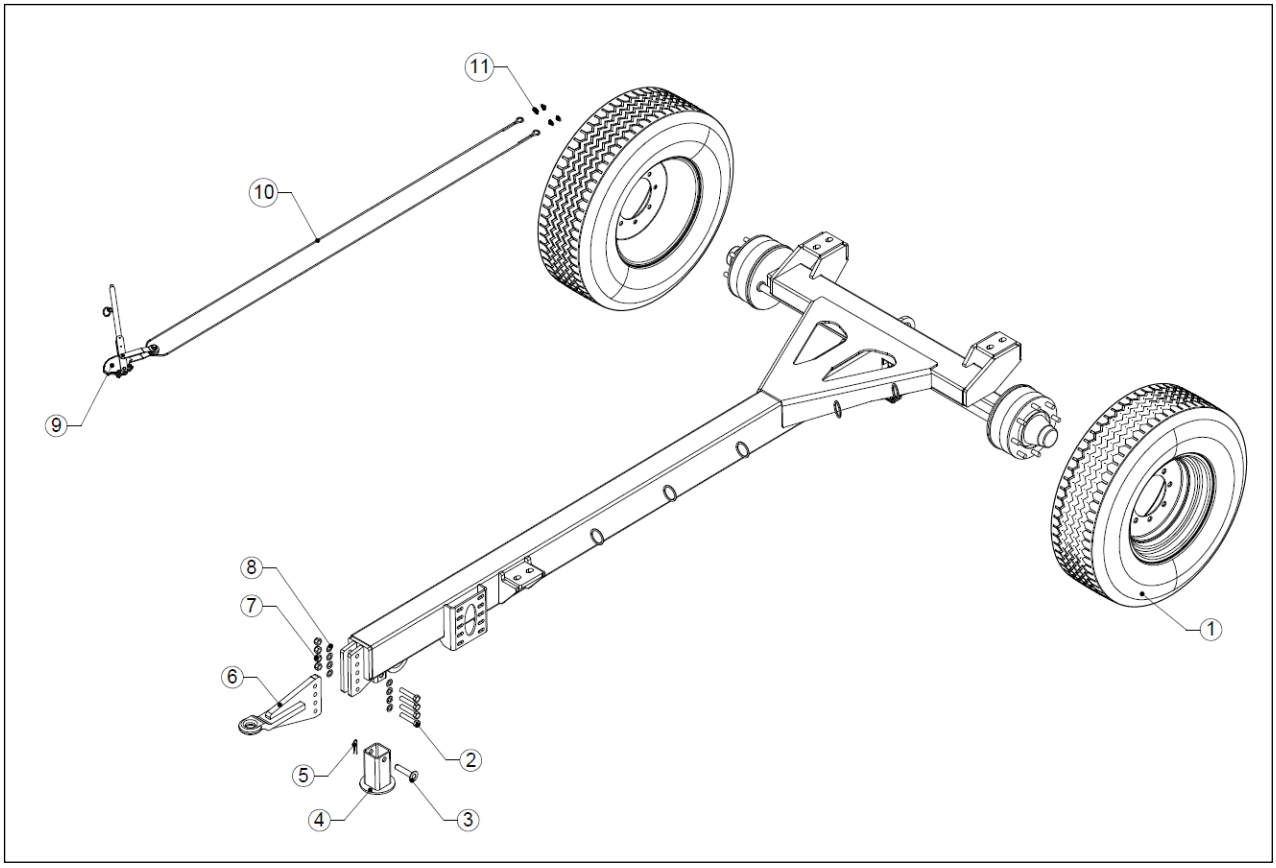
11.1 Hydraulic System parts



Item:	P/N:	Qty:	Description:
1	702105	1	Hydraulic Brake Hose assembly — 6,850 mm — white tag
2	FP160-001-0095	1	Hydraulic Hose Arm assembly
3	702106	2	Hydraulic Feed-Out Tray Hose assembly — 5,252 mm
4	701512	1	Hydraulic Hose — tractor to rear VFC-Door Ram
5	701511	1	Hydraulic Hose — tractor to front VFC-Door Ram
6	701510	1	Hydraulic Hose — front VFC-Door Ram to rear VFC-Door Ram

Table 9: Hydraulic system

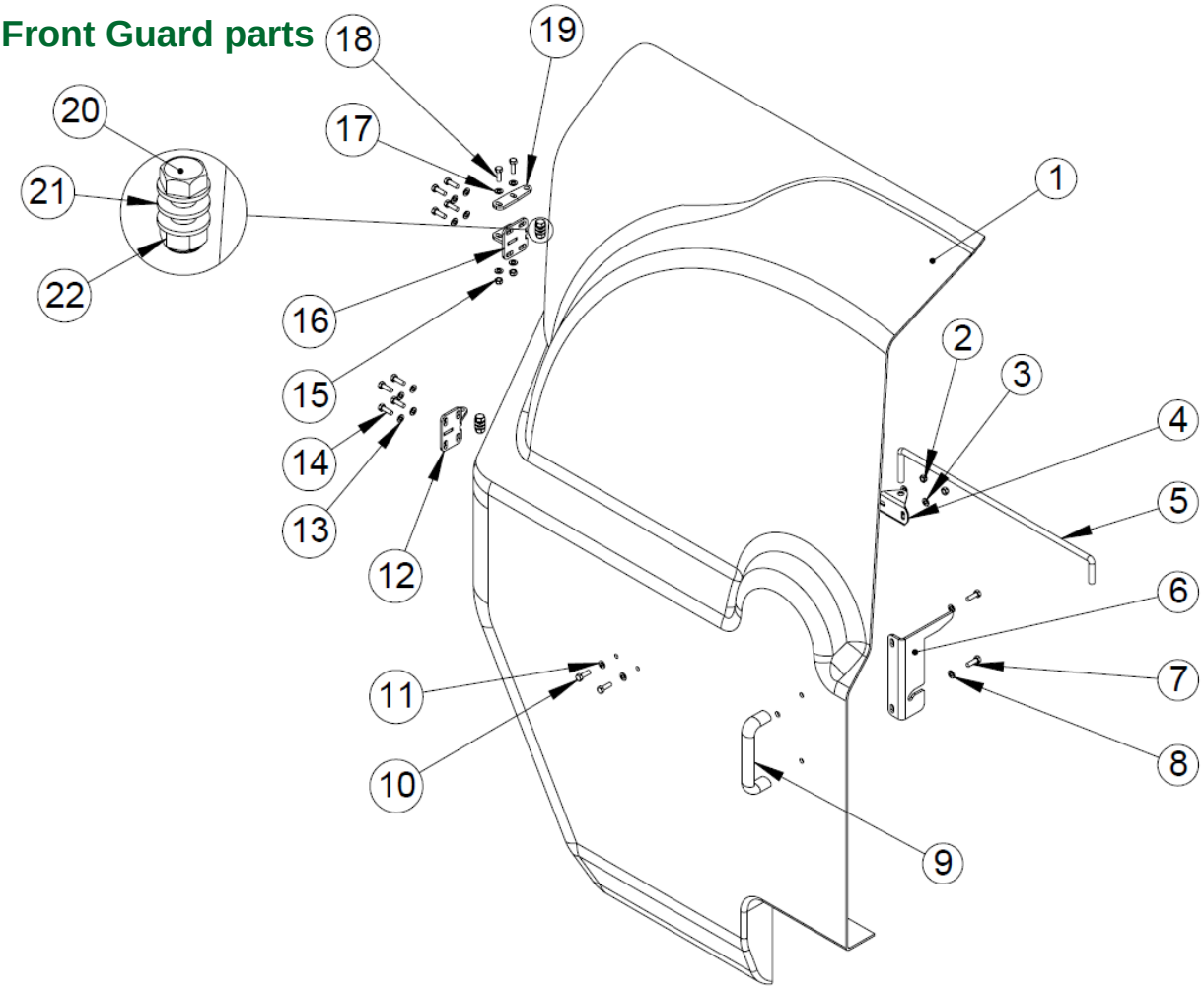
11.2 Chassis parts



Item:	P/N:	Qty:	Description:
1	700474	2	385/65 R22.5 wheel and tyre (standard)
	703651	2	305/55 R22.5 wheel and tyre (optional)
	700466	2	285/70 R19.5 wheel and tyre (optional)
	700439	2	30 x 11.5 R14.5 wheel and tyre (optional)
2	700290	4	M20 X 100 mm 8.8 grade bolt
3	701881	1	Removable Stand retaining pin assembly
4	FP140-001-0048	1	Removable Drawbar Stand assembly
5	701162	1	R-Clip
6	FP300-001-0133	1	Cranked hitch assembly
7	700305	4	M20 nyloc nut
8	700733	4	M20 flat washer
9	FP300-0001-0089	1	Handbrake ratchet assembly 2
10	702502	1	6 mm diameter handbrake cable
11	701161	4	U-Bolt clamp 6 mm
Optional Parts: Jacks			
-	704897	1	Hydraulic jack, single acting
-	704288	1	Hydraulic jack, double acting
-	702043	1	Bulldog jack, 7,000 lbs.
Optional Parts: Bushes			
-	704154	1	Towing eye bush, 32.5 mm ID
-	702324	1	Towing eye bush, 30 mm ID

Table 10: Chassis assembly

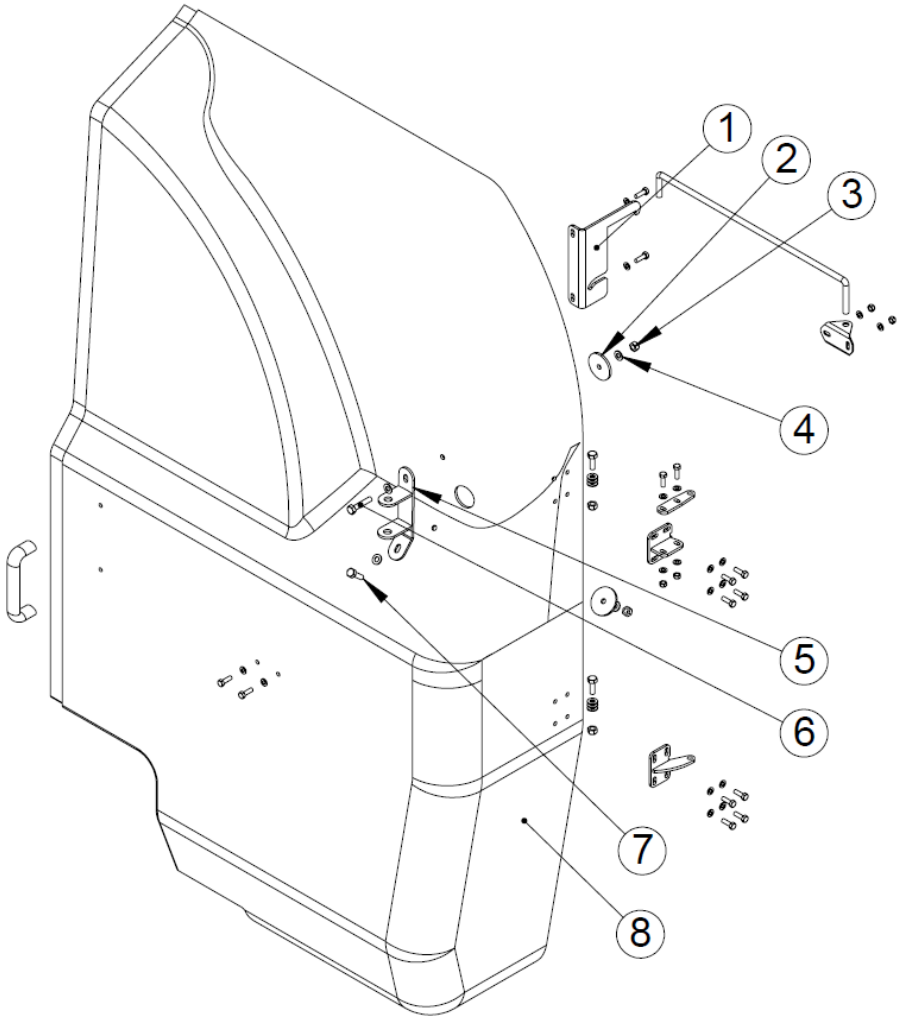
11.3 Front Guard parts



Item:	P/N:	Qty:	Description:
1	FP300-037-0002	1	Fibreglass Front Guard (RHS)
2	700223	2	M8 locknut
3	700736	2	M8 washer
4	FP300-037-0025	1	Front Guard stay bar to Door bracket
5	EF1037-21	1	Door strap, for inside of Front Guard
6	FP300-037-0024	1	Right-side Front Guard Handle backing plate
7	700210	2	M8 x 25 bolt
8	700736	2	M8 washer
9	701363	1	Handles, u-shape, 160 mm hole centres, for Front Guards
10	700210	2	M8 x 25 bolt
11	700736	2	M8 washer
12	FP300-037-0018	1	Front Guard Lower Hinge assembly
13	700736	16	M8 washer
14	700210	8	M8 x 25 bolt
15	700223	2	M8 locknut
16	FP300-037-0019	1	Adjustable Top Hinge base bracket assembly
17	700736	4	M8 washer
18	700210	2	M8 x 25 bolt
19	FP300-037-0033	1	Front Guard Upper Adjustable Hinge plate
20	702111	2	M10 x 30 bolt
21	700729	6	M10 washer
22	700241	2	M10 locknut

Table 11: Front Guards (right side)

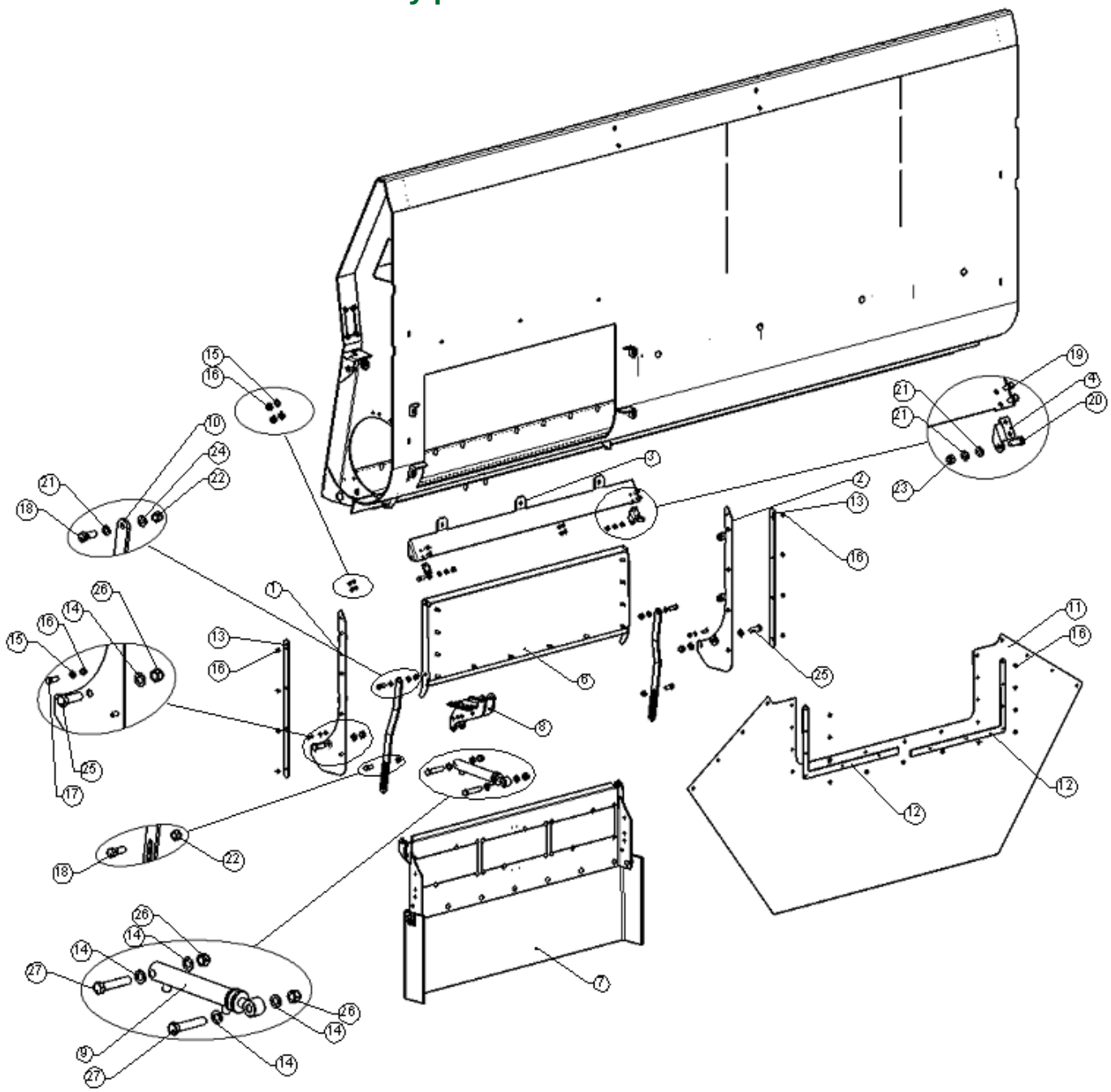
Note: Front Guards can be adjusted forwards and backwards by adjusting the bolt positioning in the slots on the Top Hinge assembly (item no. 16 above) giving approximately 5 mm adjustment either way.

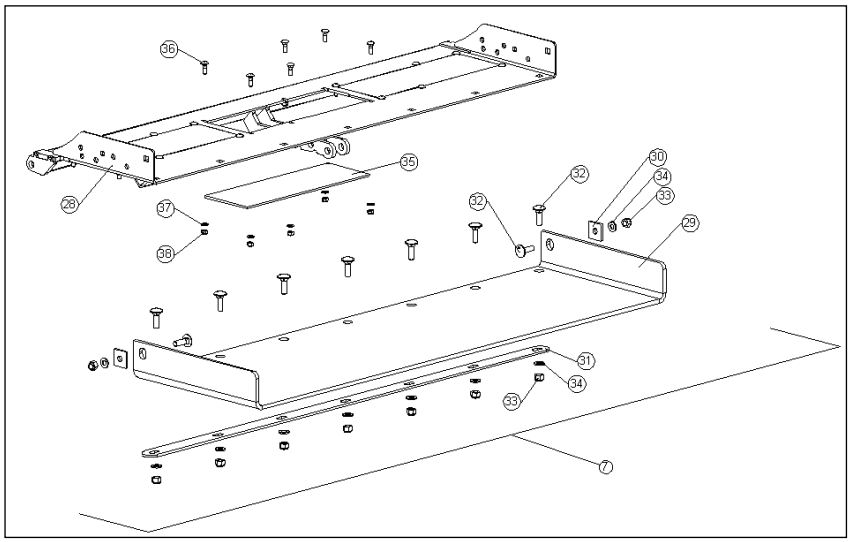


Item:	P/N:	Qty:	Description:
1	FP300-037-0021	1	Left-side Front Guard kook plate
2	FP300-037-0037	2	Weigh Box Arm mounting bracket washer
3	700241	2	M10 locknut
4	700729	4	M10 washer
5	FP300-037-0020	1	Weigh Box Arm mounting bracket assembly
6	700231	1	M10 x 50 bolt
7	700228	1	M10 x 35 bolt
8	FP300-037-0001	1	Fibreglass Front Guard (LHS)

Table 12: Front Guards (left side)

11.4 Standard Feed-Out Tray parts





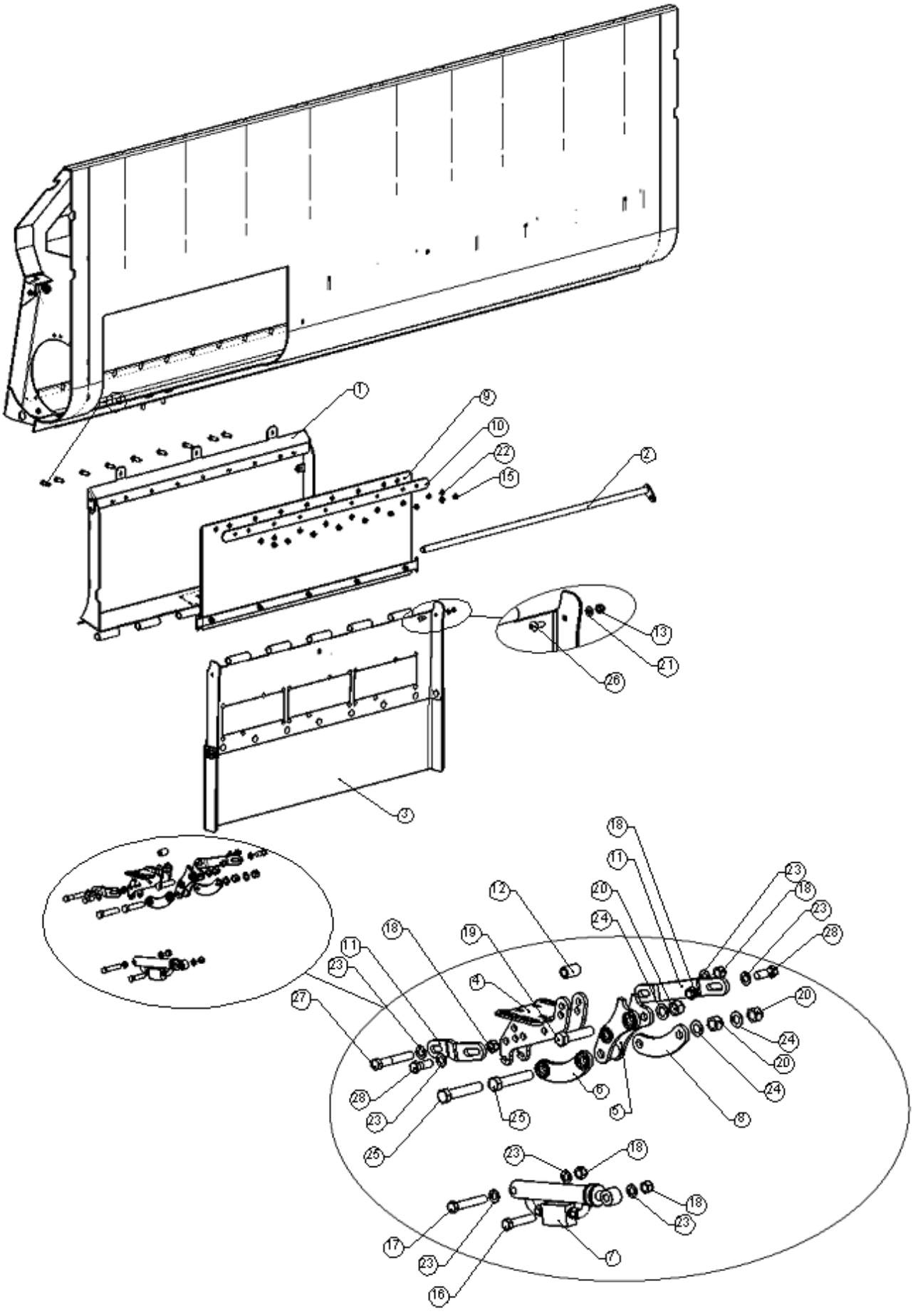
Item:	P/N:	Qty:	Description:
1	FP160-006-0429	1	Feed-Out Shroud front side plate assembly
2	FP160-006-0430	1	Feed-Out Shroud rear side plate assembly
3	FP160-006-0432	1	Feed-Out Shroud top plate
4	FP160-006-0088	1	Hinge bracket, Feed-Out Door RHS
5	FP160-006-0087	1	Hinge bracket, Feed-Out Door LHS
6	FP160-006-0090	1	Feed-Out Door assembly
7	FP160-006-0123	1	Std Tray assembly with rubber extension (P/N 701403)
8	FP160-006-0044	1	Feed-Out Tray Ram mounting plate assembly
9	703591	1	6” Stroke Hydraulic Ram (KEEN-63)
10	FP080-006-0012	2	Feed-Out Door Link Arm
11	FP160-006-0072	1	Feed-Out Rubber Shroud, rubber curtin
12	FP300-006-0095	2	Feed-Out Door Shroud retainer
13	FP300-006-0096	2	Feed-Out Door Shroud side retainer
14	700732	7	M16 flat washer
15	700736	6	M8 flat washer
16	700223	26	M8 nyloc nut
17	700210	2	M8 x 25 set screw (HT)
18	700249	4	M12 x 35 set screw
19	700208	4	M8 x 20 set screw
20	702111	2	M10 x 30 set screw
21	700729	6	M10 flat washer
22	700266	4	M12 locknut
23	700241	2	M10 locknut
24	700730	2	M12 flat washer
25	700275	2	M16 x 50 bolt
26	700283	4	M16 locknut
27	700281	2	M16 x 90 bolt
28	FP160-006-0124	1	Std Feed-Out Tray assembly
29	701403	1	Feed-Out rubber extension (std)
30	EF106-79	2	Feed-Out Tray side rubber retainer
31	FP160-006-0224	1	Rubber retainer
32	705405	9	M12 x 40 cup head bolt
33	700266	9	M12 locknut
34	700730	9	M12 flat washer
35	FP160-006-0270	3	Tray Magnet Hole blanking plate (std)
35a	701366	3	Magnet plate (OE)
36	702256	18	M8 x 25 cup head bolt
37	700736	18	M8 flat washer
38	700223	18	M8 nyloc nut

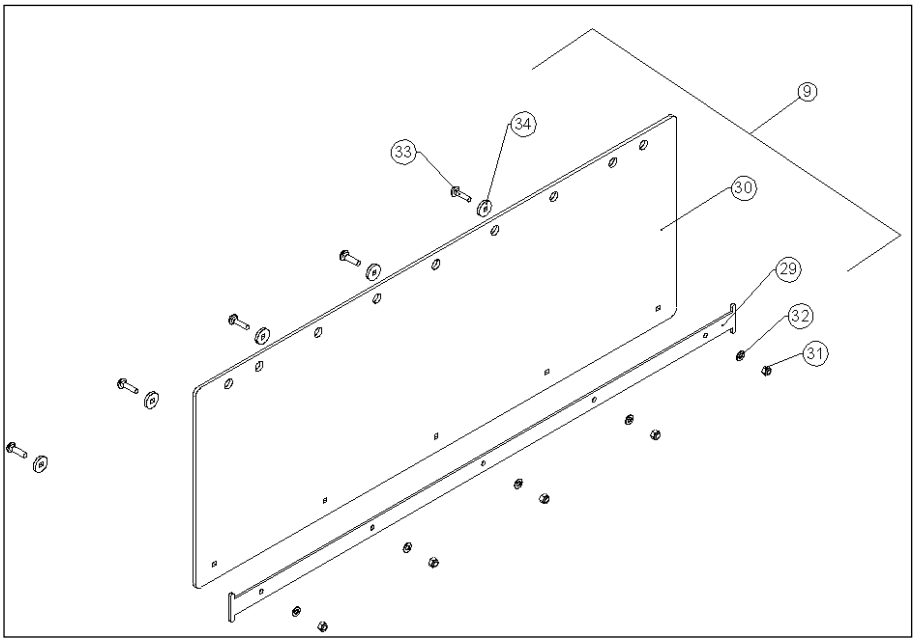
Table 13: Feed-Out Tray

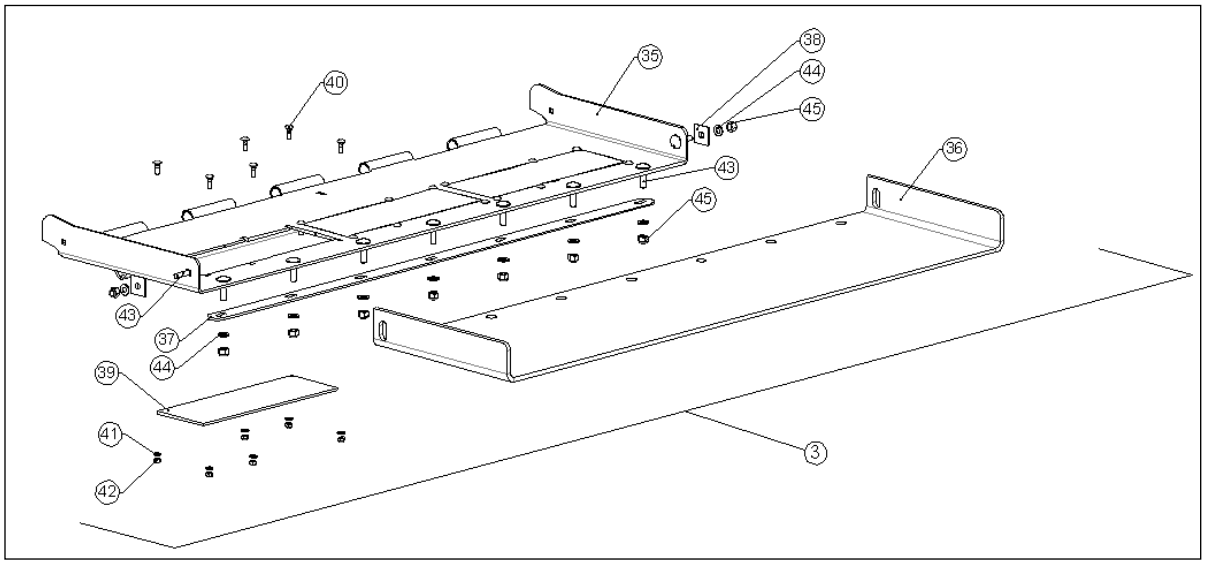
Note:
Complete standard Feed-Out kit P/N FP160-006-0428

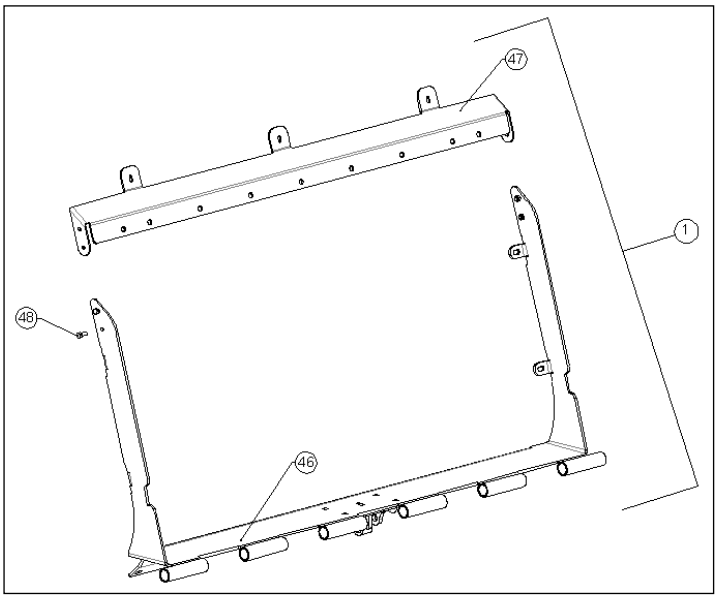
Feed-Out Tray can be supplied with the Magnet assembly P/N FP160-006-0071

11.5 Fold-Down Tray parts




9
34
33
30
29
32
31


40
35
38
44
45
36
43
45
43
37
44
39
41
42
3

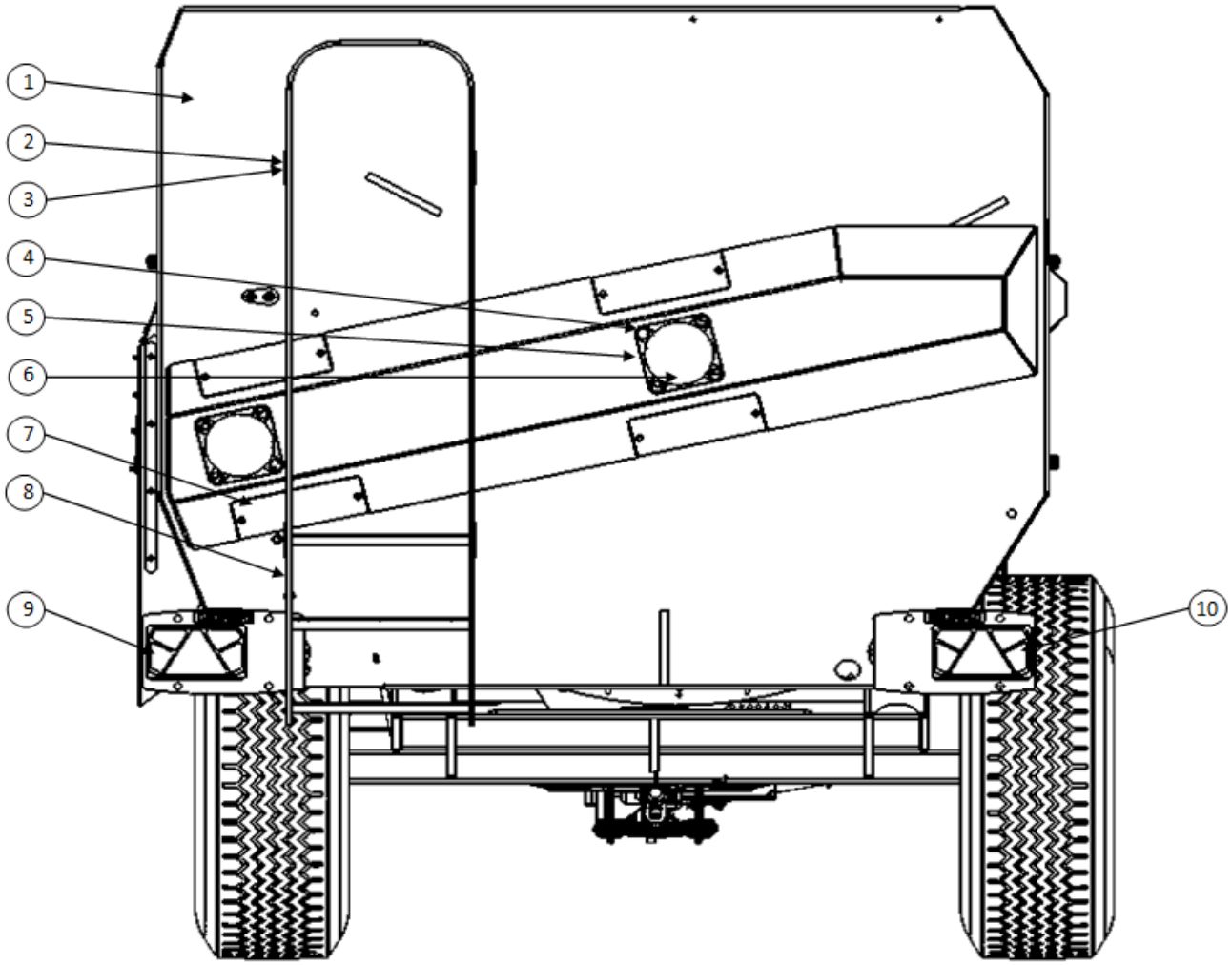

47
1
48
46

Item:	P/N:	Qty:	Description:
1	FP160-006-0417	1	Fold-Down Tray Shelf assembly
2	FP170-006-0182	1	Fold-Down Tray Hinge Bar assembly
3	FP170-006-0191	1	Fold-Down Tray assembly and rubber
4	FP160-006-0044	1	Fold-Down Tray Mounting Plate assembly
5	FP170-006-0162	1	Fold-Down Tray Inner Link Arm assembly
6	FP200-006-0340	1	Fold-Down Tray Outer Link Arm assembly
7	705268	1	6” Ram assembly with check valve (KEEN-63SP)
8	FP200-006-0332	1	Fold-Down Tray Outer Link Arm — 127 mm centres
9	FP160-006-0427	1	Feed-Out Shroud Rubber assembly
10	FP160-006-0061	1	Rubber retainer 1,400 mm wide
11	FP160-006-0420	2	Fold-Down Tray Shelf to Auger Chamber tie plate
12	FP170-006-0156	1	Feed-Out Tray Ram bracket spacer bush
13	700241	1	M10 locknut
14	700250	9	M12 x 40 set screw
15	700266	9	M12 locknut
16	700280	1	M16 x 80 bolt
17	700268	1	M16 x 100 bolt
18	700283	5	M16 locknut
19	700302	1	M20 x 90 bolt HT
20	700305	3	M20 nyloc nut
21	700729	1	M12 locknut
22	700730	18	M12 flat washer
23	700732	7	M16 flat washer
24	700733	3	M20 flat washer
25	701488	2	M20 x 110 bolt HT
26	700226	1	M10 x 30 cup head bolt
27	700269	1	M16 x 110 bolt
28	700274	2	M16 x 45 bolt
29	FP170-006-0187	1	Feed-Out Shroud Rubber lower retainer plate
30	FP160-006-0422	1	Feed-Out Shroud Rubber
31	700241	5	M10 locknut
32	700729	5	M10 flat washer
33	700251	5	M10 x 40 cup head bolt
34	FP170-006-0188	5	Retainer Plate washer
35	FP170-006-0178	1	Fold-Down Tray assembly
36	FP170-006-0186	1	Fold-Down Tray Rubber extension
37	FP160-006-0224	1	Rubber retainer
38	EF106-79	2	Side Rubber retainer plate
39	FP160-006-0272	3	Tray Magnet Hole blanking plate (std)
39a	701366	3	Magnet plate (OE)
40	700212	18	M8 x 30 bolt
41	700736	18	M8 flat washer
42	700223	18	M8 nyloc nut
43	702500	9	M12 x 45 cup head bolt
44	700730	9	M12 flat washer
45	700266	9	M12 locknut
46	FP160-006-0418	1	Fold-Down Tray Shelf assembly
47	FP160-006-0421	1	Fold-Down Tray Shelf top plate
48	700208	4	M8 x 20 set screw
49	700223	4	M8 nyloc nut

Table 14: Fold-Down Tray

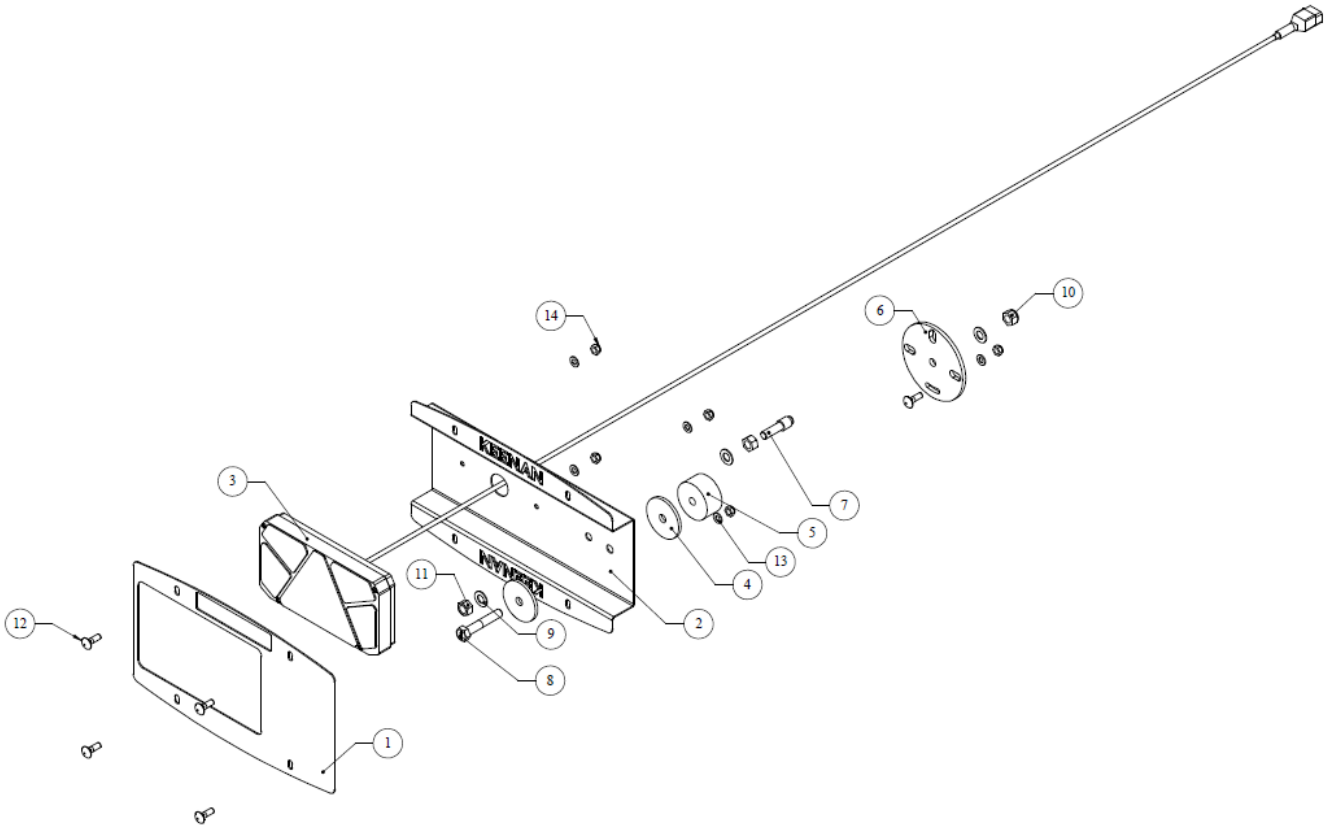
Note:
Complete Fold-Down Tray kit (standard) P/N FP160-006-0416
Complete Fold-Down Tray kit (OE-100) P/N FP160-006-0423
Fold-Down Tray can be supplied with the Magnet assembly P/N FP170-006-0177

11.6 Rear parts



Item:	P/N:	Qty:	Description:
1	FP300-047-0001	1	Main Body Shell assembly
2	700247	4	M12 x 30 bolt
3	700266	4	M12 nut
4	700297	8	M20 x 65 bolt
5	700842	2	70 mm flange bearing, UCF 214, cast housing
6	701273	2	Rear Bearing cover
7	FP160-003-0015	4	Rear Access Slot cover plate
8	FP140-013-0002	1	Ladder assembly
9	FP280-003-0276	1	Adjustable Light assembly — left-hand side
10	FP280-003-0277	1	Adjustable Light assembly — right-hand side

Table 15: Rear parts

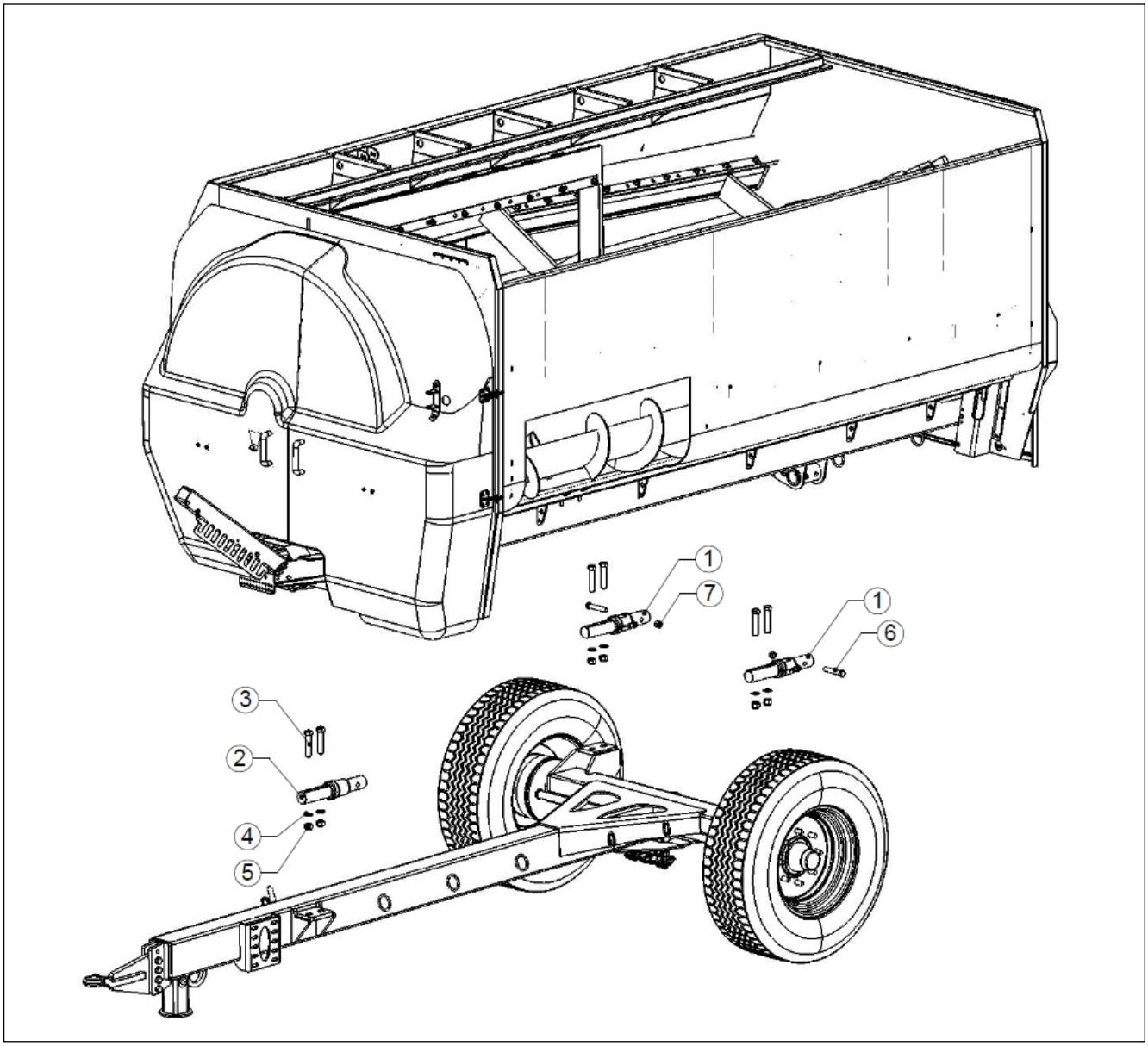


Item:	P/N:	Qty:	Description:
1	FP280-003-0274	1	Light Pod cover
2	FP280-003-0273	1	LED Light Pod holder
3	706005	1	Rear LED Light (left-hand)
	706006	1	Rear LED Light (right-hand)
4	706412	2	LED Light flat washer
5	706413	1	LED Light rubber buffer
6	FP280-003-0272	1	Stainless steel wear plate
7	FP280-003-0275	1	Light Pod locator pin
8	702869	1	M12 x 70 bolt
9	700731	3	M12 flat washer
10	700266	1	M12 locknut
11	700265	2	M12 hex nut
12	702256	5	M8 x 25 mm cup head bolt
13	700736	5	M8 flat washer
14	700223	5	M8 locknut

Table 15a: Adjustable Light assembly

Note: All parts are interchangeable between left and right sides, *except* for the light unit.

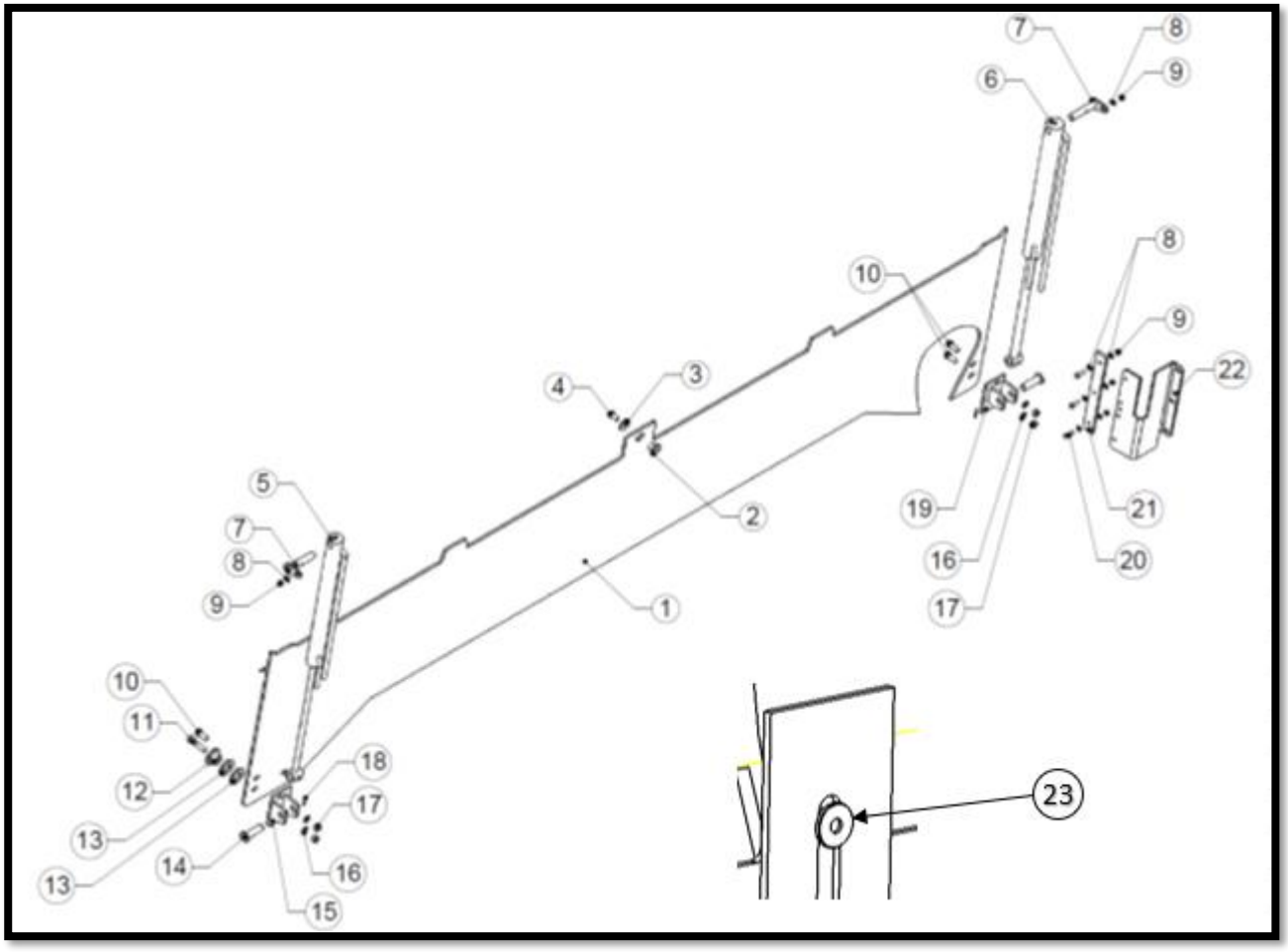
11.7 Weighing System parts



Item:	P/N:	Qty:	Description:
1	704412	2	DG Weigh Bar 969-0155 2.5" dia (10.7 m cable)
2	704442	1	DG Weigh Bar 969-0157 2.5" dia (5.2 m cable)
3	704869	6	M24 x 120 mm bolt, 10.9 grade, 2 mm thread pitch
4	700316	6	M24 flat washer
5	702580	6	M24 nyloc nut
6	701496	2	M20 x 120 mm bolt, 8.8 grade
7	700305	2	M20 nyloc nut

Table 16: Weighing system

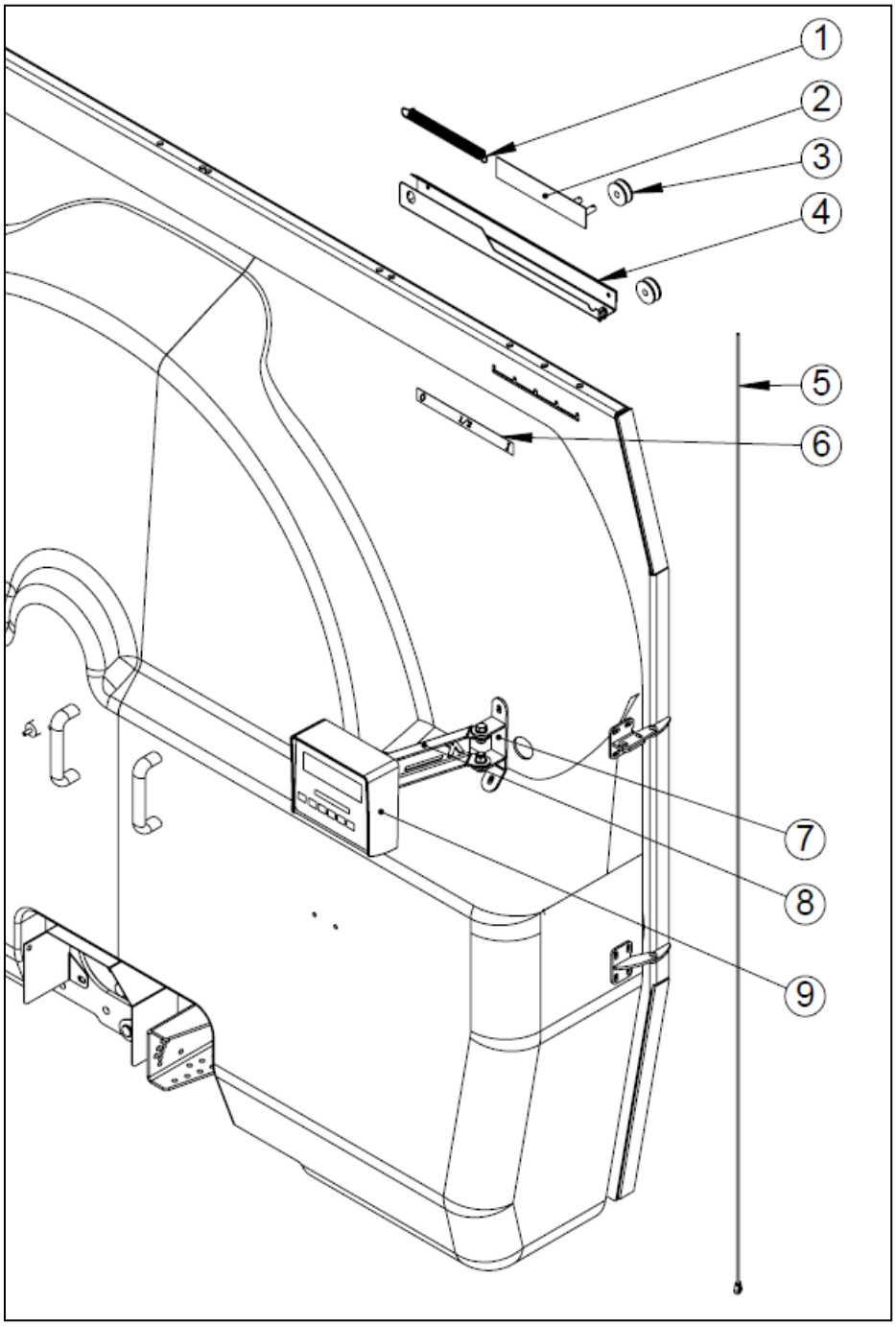
11.8 VFC-Door parts



Item:	P/N:	Qty:	Description:
1	FP160-010-0001	1	VFC-Door Plate
2	701504	1	VFC-Door Centre stepped collar
3	702453	1	Flat washer (17 mm x 50 mm x 4 mm)
4	701519	1	M16 x 30 mm set screw
5	704955	1	Front VFC-Door Ram (Keen 52)
6	704954	1	Rear VFC-Door Ram (Keen 52)
7	701905	2	VFC-Door Ram Top Pivot Pin assembly
8	700729	2	M10 flat washer
9	700241	2	M10 locknut
10	703148	4	M16 x 40 mm set screw
11	700279	1	M16 x 75 mm bolt
12	FP160-010-0014	1	VFC-Door Front End guide collar
13	FP160-010-0015	2	VFC-Door Front End guide collar wear washer
14	701591	2	VFC-Door Ram Lower Pivot Pin assembly
15	FP160-010-0005	1	Lower Front VFC-Door Ram bracket
16	700732	4	M16 flat washer
17	700283	4	M16 locknut
18	701111	2	Split pin 1 1/2 X 3/16"
19	FP160-010-0007	1	Lower Rear VFC-Door Ram bracket
20	700228	3	M10 x 35 mm set screw
21	FP300-010-0008	1	Rear VFC-Door Ram slide
22	FP300-010-0006	1	Rear VFC-Door Ram cover plate
23	701504	1	Stepped collar for Guillotine Door Centre

Table 17: VFC-Door

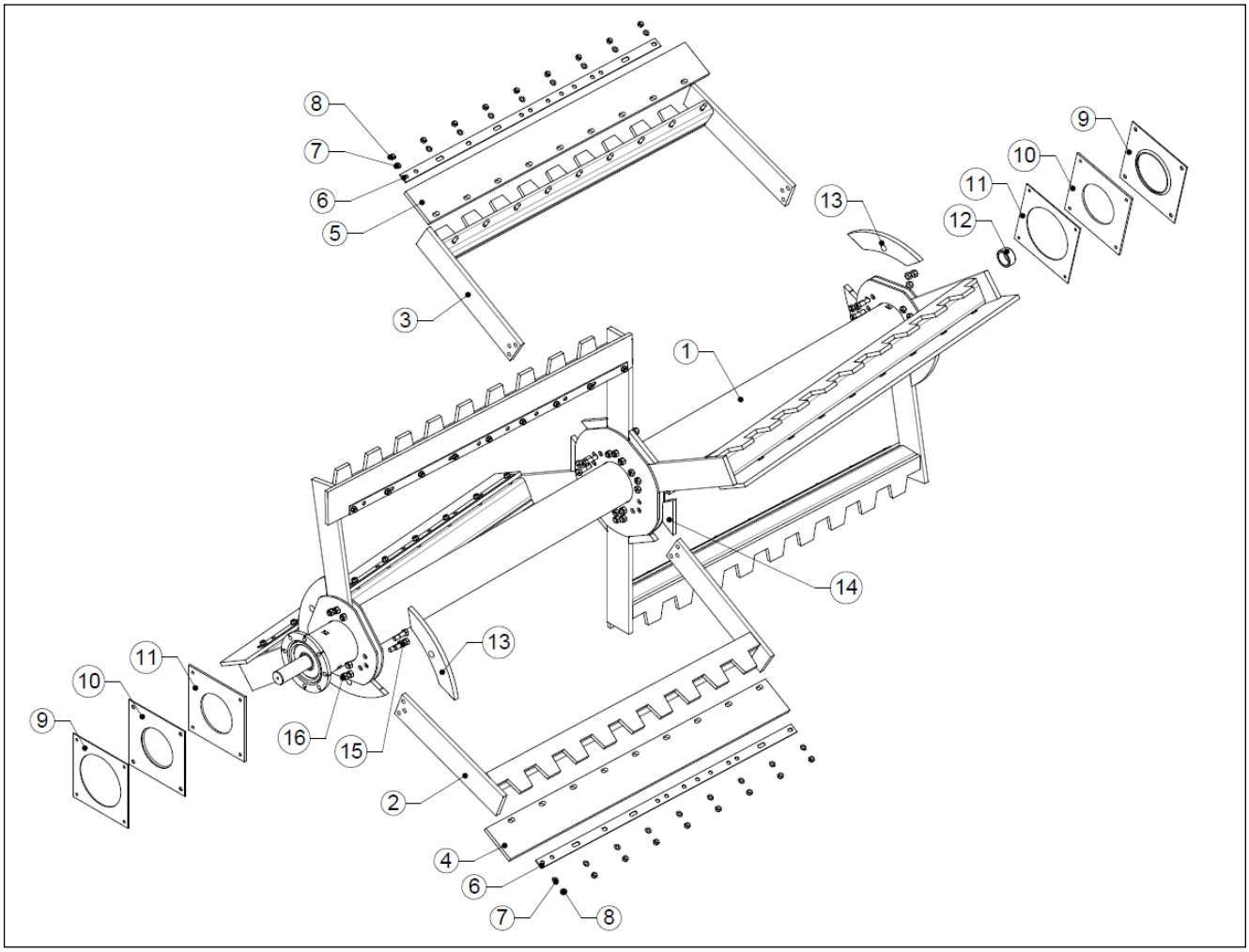
11.9 VFC-Door Indicator parts



Item:	P/N:	Qty:	Description:
1	703625	1	Spring, 8" expansion, 22 mm OD, 2 mm thick
2	RD8010-61	1	Guillotine Door Indicator Slider assembly
3	701559	2	Pulley Wheel, 50 mm OD, 20 mm thick, for Indicator
4	FP300-010-0012	1	Guillotine Door Indicator kit
5	704135	1	Wire Rope assembly, 2,340 mm
6	FP300-010-0014	1	Guillotine Door Indicator decal
7	FP300-037-0020	1	Weigh Box Arm Mounting Bracket assembly
8	EF102-117	1	Weigh Box Holder front turning bracket
9	703353	1	Weigh Box, Dinamica Generale, Stad 04, c/w bracket

Table 18: VFC-Door Indicator

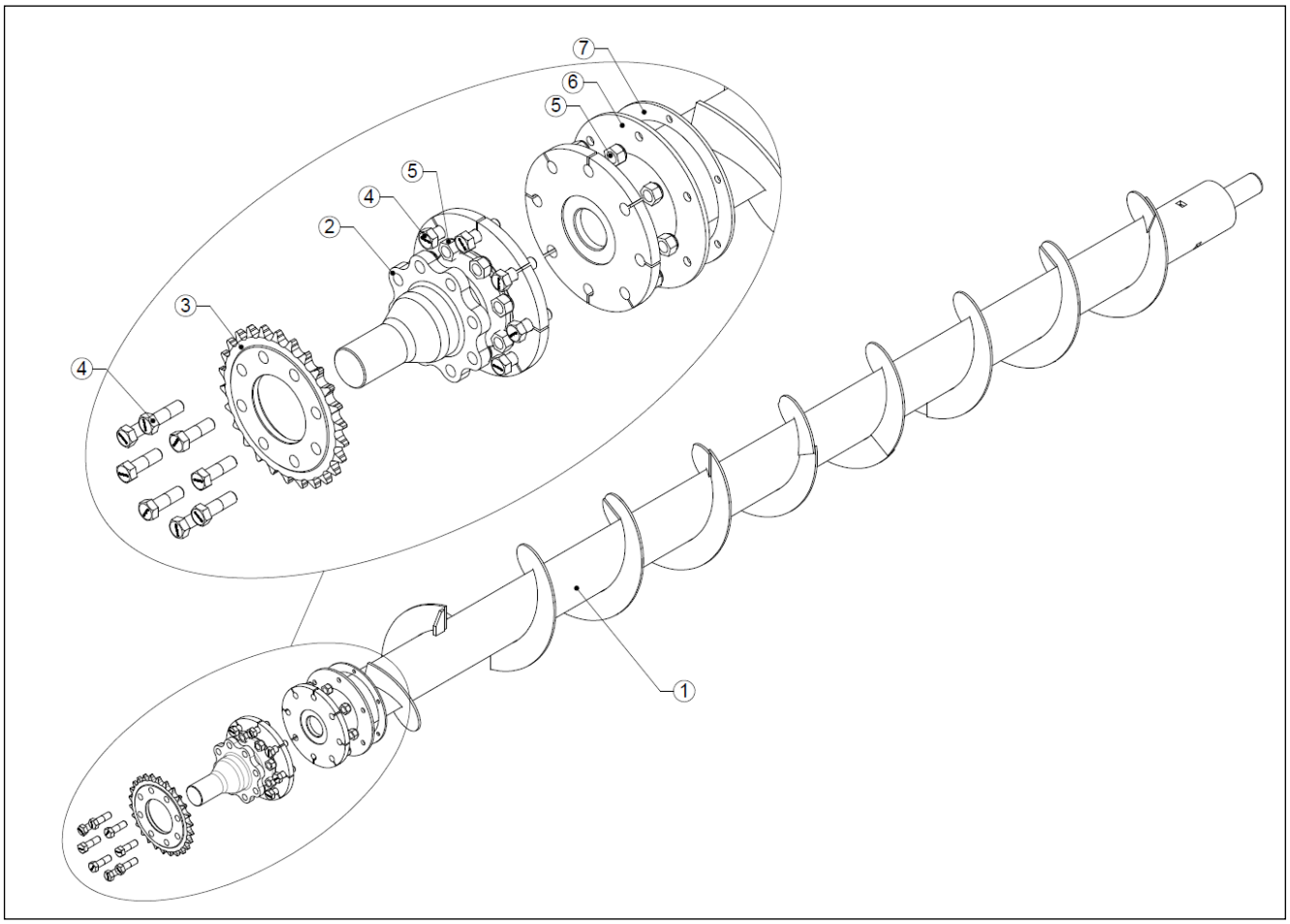
11.10 Rotor and paddle parts



Item:	P/N:	Qty:	Description:
1	FP300-007-0011	1	MechFiber300 Rotor assembly
2	CPFP148-32	3	Front Paddle assembly
3	CPFP148-31	3	Rear Paddle assembly
4	702288	3	Paddle Rubber 2,000 mm x 200 mm x 20 mm (Front)
5	702287	3	Paddle Rubber 2,000 mm x 200 mm x 20 mm (Rear)
6	FP140-008-0009	6	Paddle Rubber retainer
7	700732	56	M16 flat washer
8	700283	56	M16 nyloc nut
9	701822	2	Rotor Lip Seal, rubber
10	FP140-007-0017	2	Braided Rotor Seal, rubber
11	FP140-007-0018	2	Rotor Seal retainer
12	701598	1	Rotor Spacer (70.5 mm ID x 90 mm OD x 40 mm long)
13	RDTP147-3	6	End Paddle block
14	RDTP147-4	6	Centre Paddle block
15	700298	36	M20 x 70 bolts
16	700305	36	M20 locknuts

Table 19: Rotor and Paddles

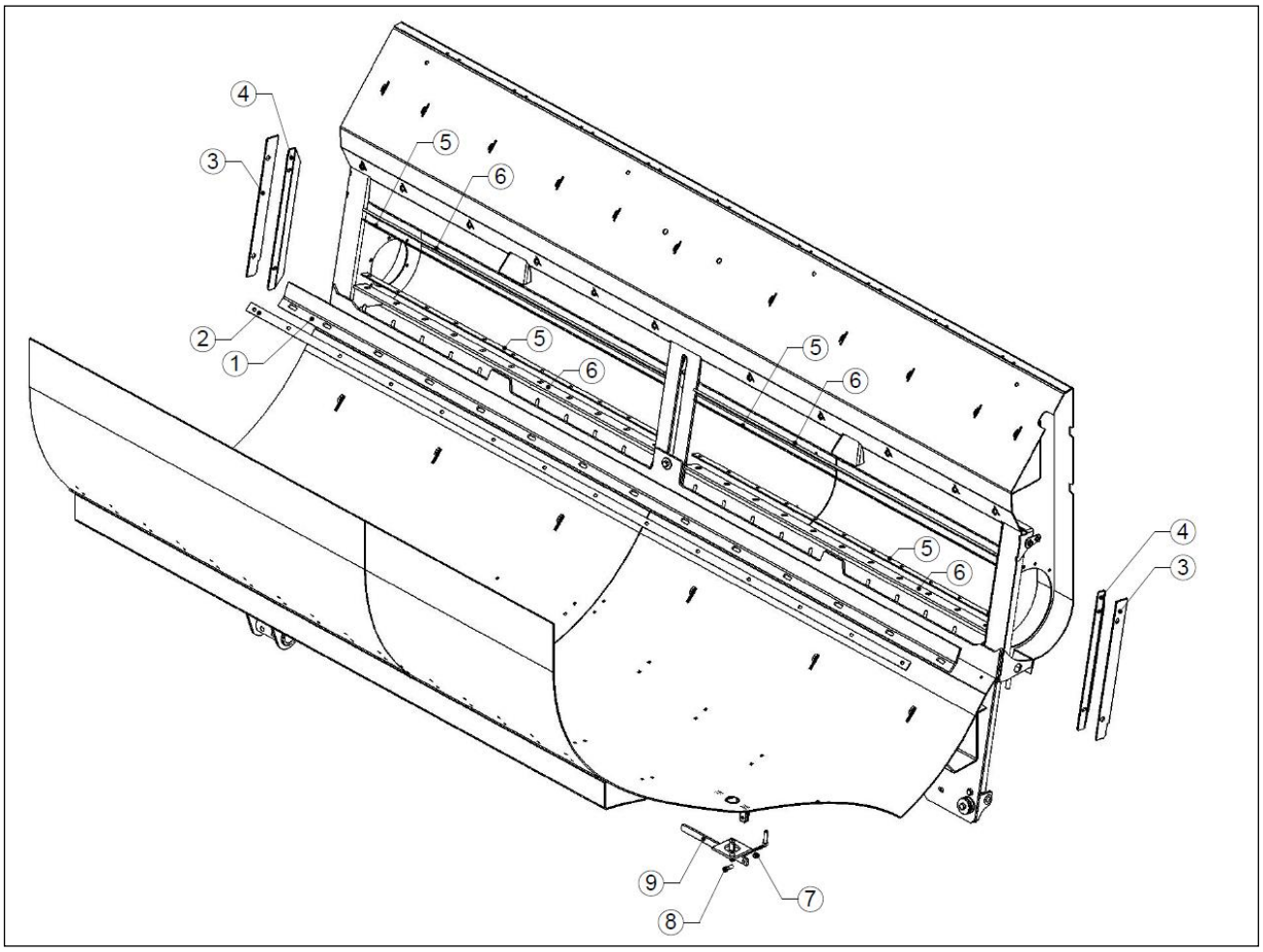
11.11 Auger parts



Item:	P/N:	Qty:	Description:
1	FP300-009-0002	1	Auger assembly
2	FP160-009-0024	1	Auger Stub Shaft assembly
3	FP300-009-0012	1	26-tooth ASA100 sprocket
4	700297	16	M20 x 65 mm bolt
5	700305	16	M20 nyloc nut
6	FP280-009-0070	1	Auger Rubber Seal
7	FP280-002-055	1	Auger Rubber Seal retainer

Table 20: Auger Assembly

11.12 Body sealing parts



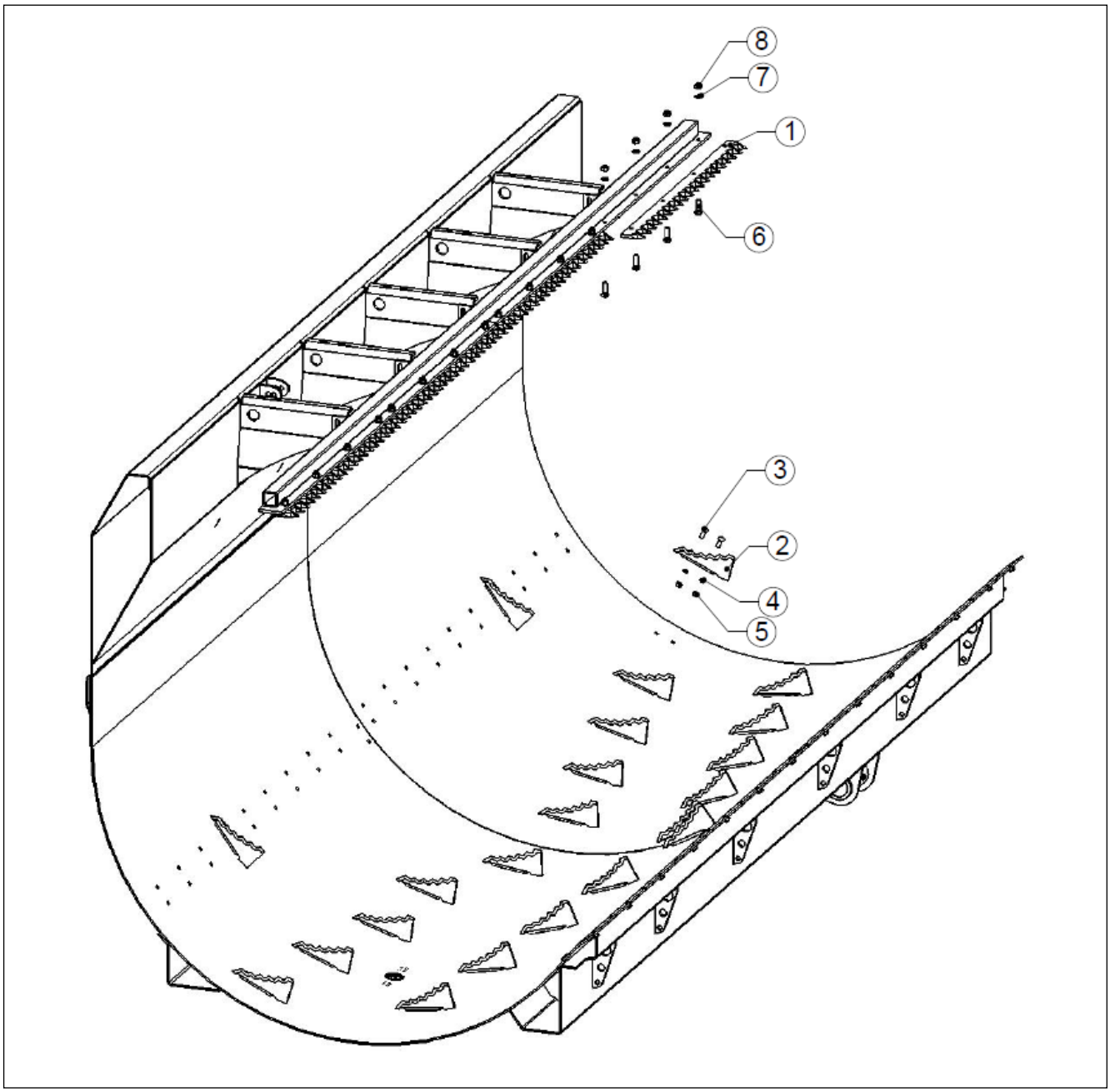
Item:	P/N:	Qty:	Description:
1	701290	1	Inner VFC-Door Seal rubber
2	FP140-004-0003	1	Inner VFC-Door Seal retainer
3	704876	2	End Rubber Seal 65 mm x 6 mm x 650 mm
4	FP280-010-009	2	Guillotine Door front and rear end retainer
5	FP140-006-0022	4	VFC-Door Outer Seal retainer — top and bottom
6	701195	4	VFC-Door Outer Seal
7	700266	1	M12 nyloc nut
8	700252	1	M12 x 40 mm bolt
9	EF104-12	1	Drain Bung Handle assembly

Table 21: Body seals

Item:	P/N:	Qty:	Description:
-	FP300-004-0023	1	Hardened Body Liner — front
-	FP300-004-0024	1	Hardened Body Liner — rear
-	FP300-004-0031	1	Hardened Body Liner — front (extra blades)
-	FP300-004-0032	1	Hardened Body Liner — rear (extra blades)

Table 22: Body liner plates (Not illustrated)

11.13 Body Blade parts

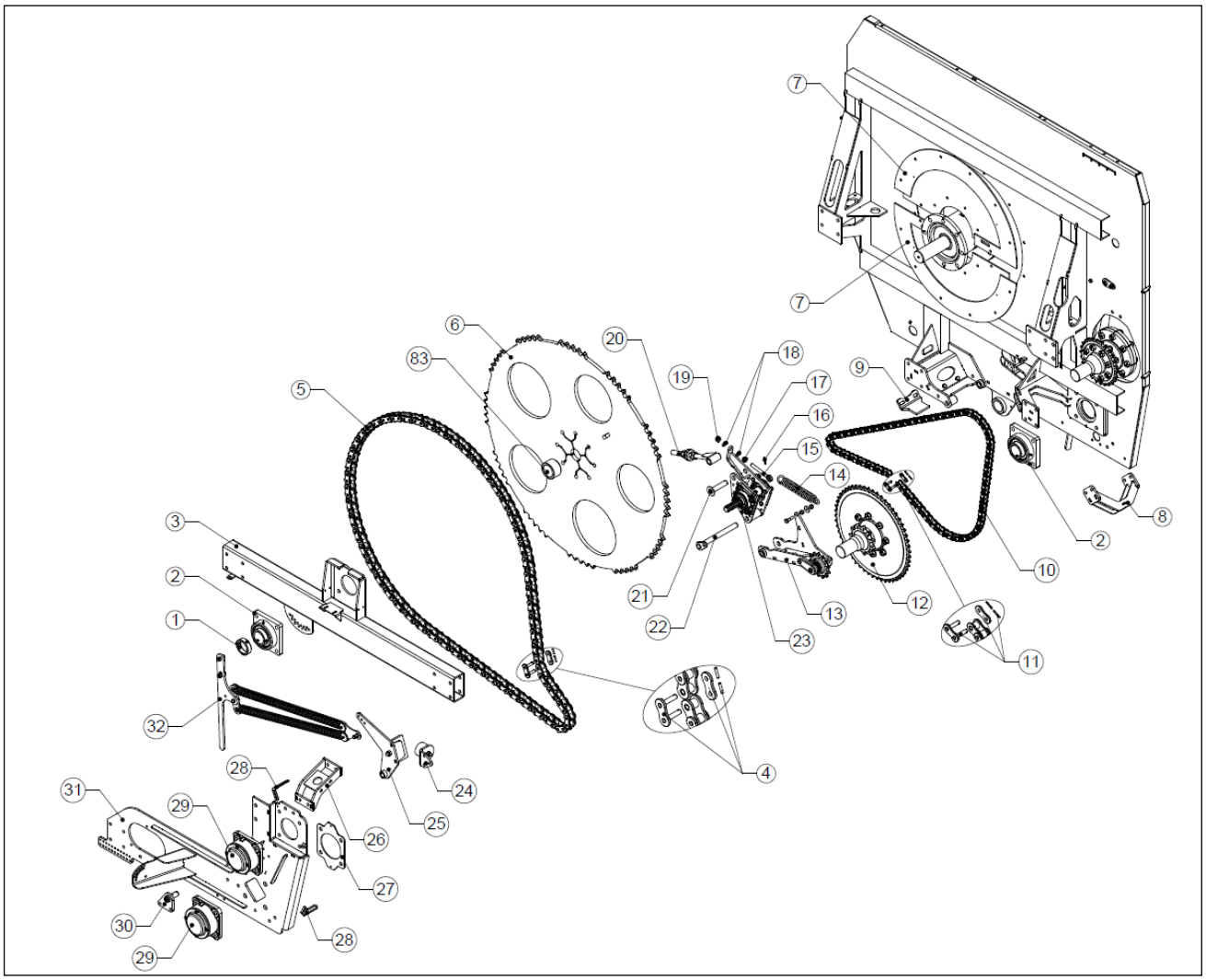


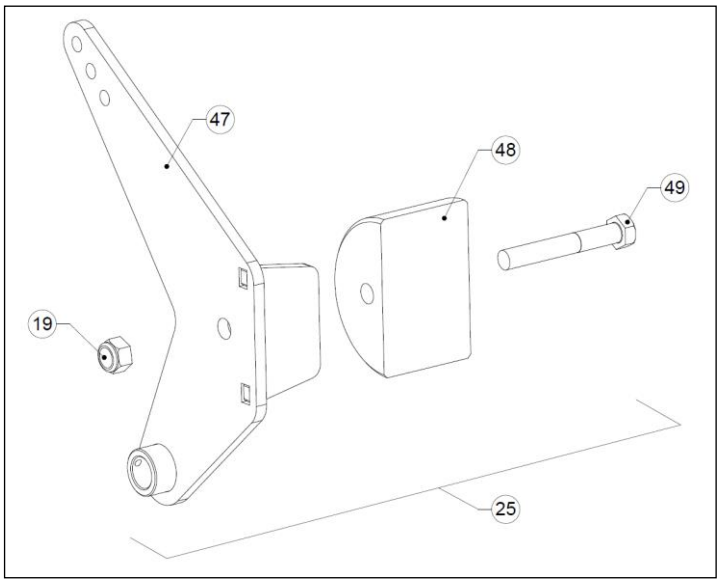
Item:	P/N:	Qty:	Description:
1	701518	4	Top Knife Blade, 990 mm-long, deep serrations
2	703955	22*	Body Blade
3	700226	24	M10 x 30 cup head bolt, BZP, Gr: 8.8
4	700241	24	M10 spring washer
5	700737	24	M10 nut
6	700250	16	M12 x 40 mm bolt
7	700731	16	M12 flat washer
8	700266	16	M12 nyloc nut

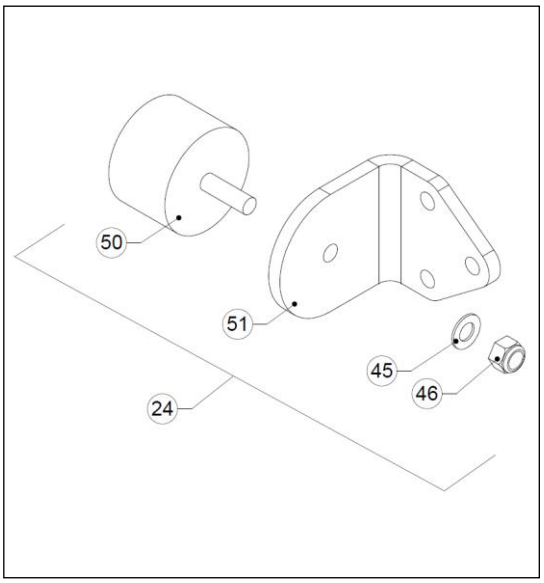
Table 23: Blades

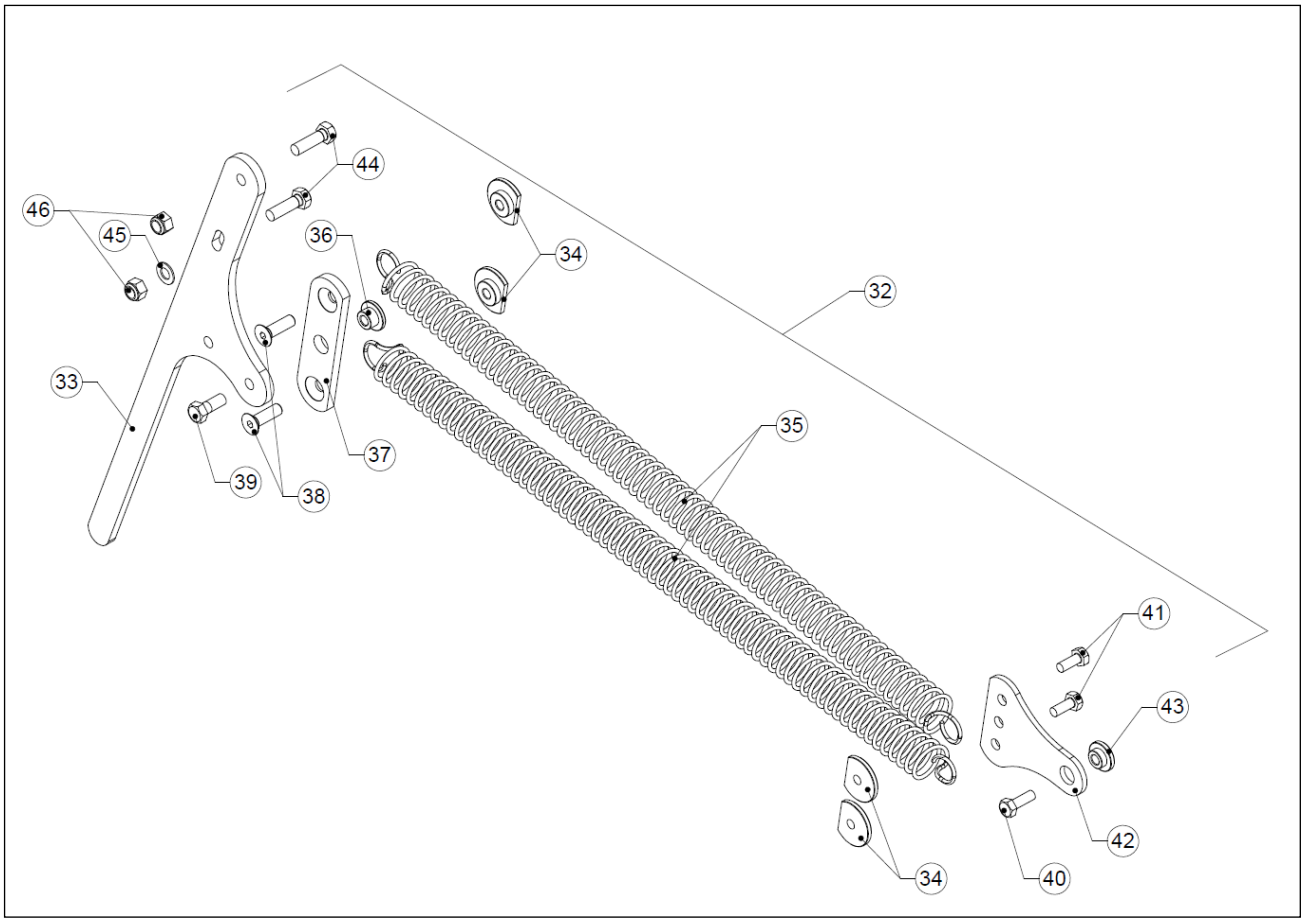
*Option available to fit 18 extra blades, if required (40 in total).

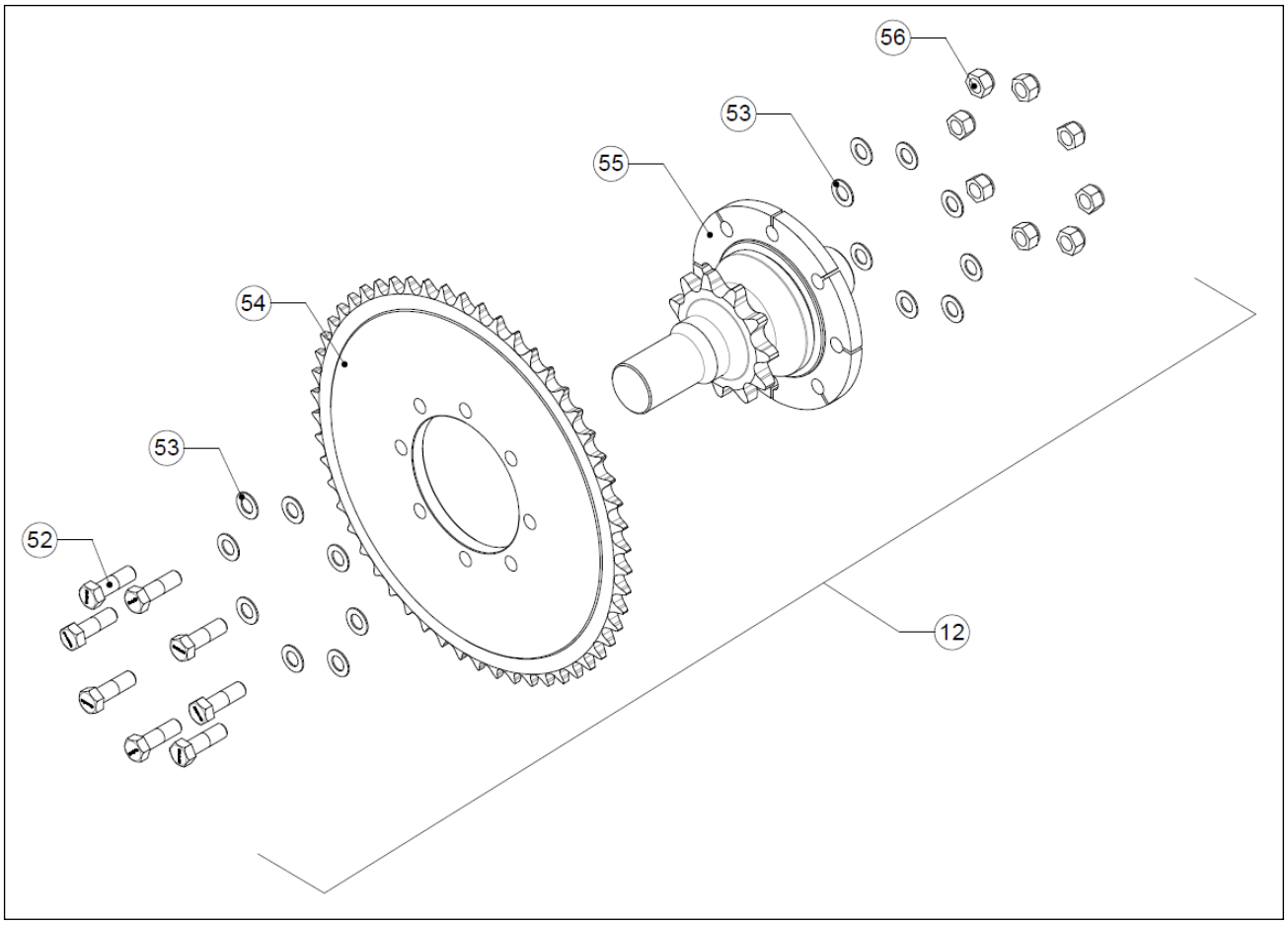
11.14 Drive System parts

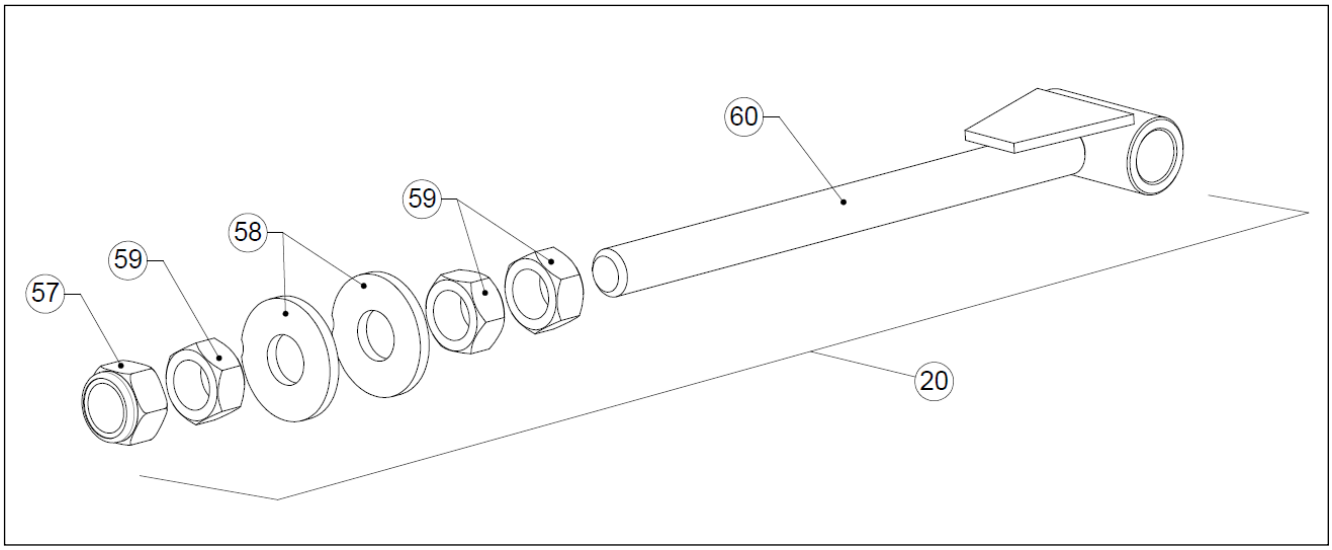


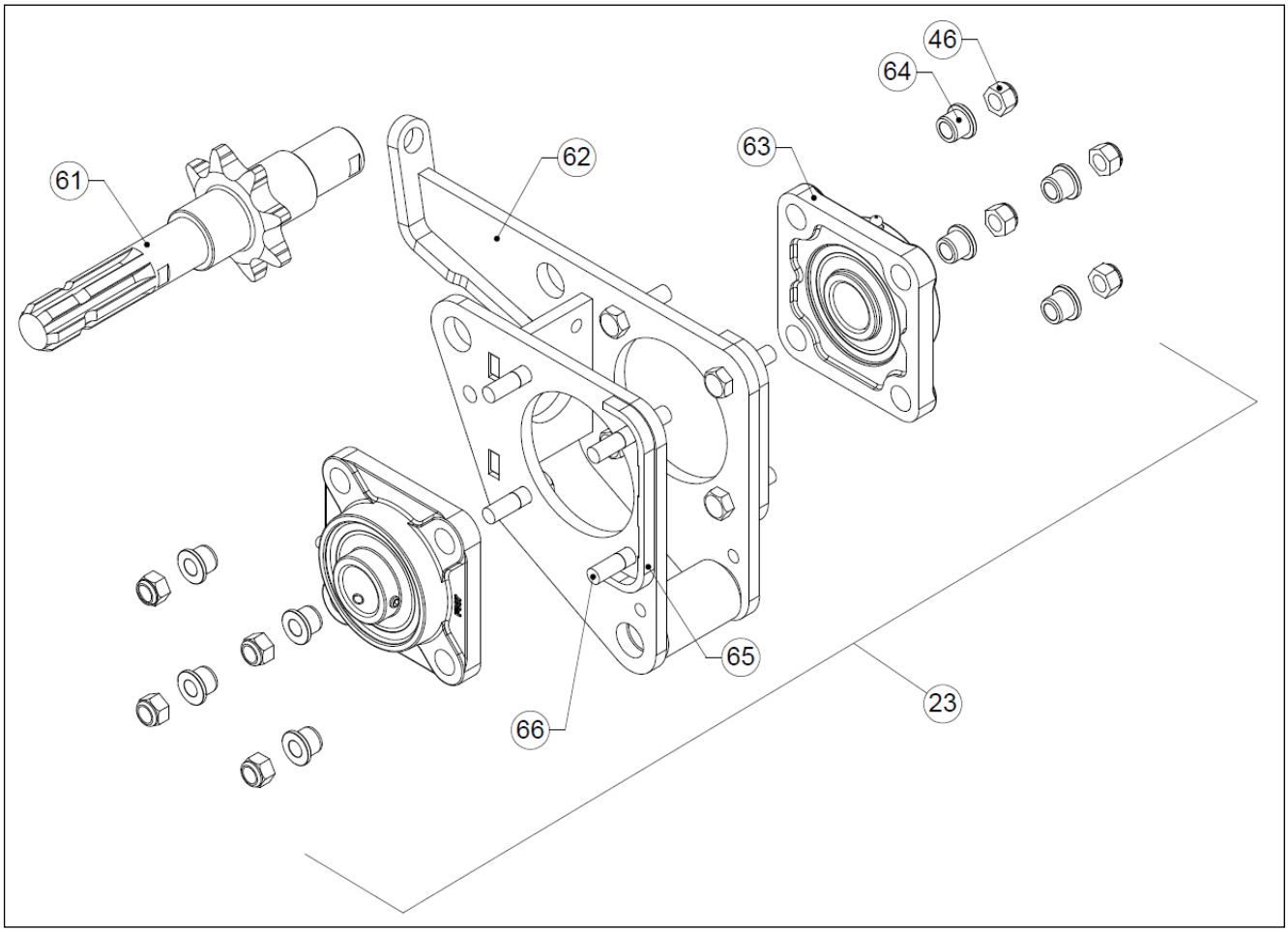


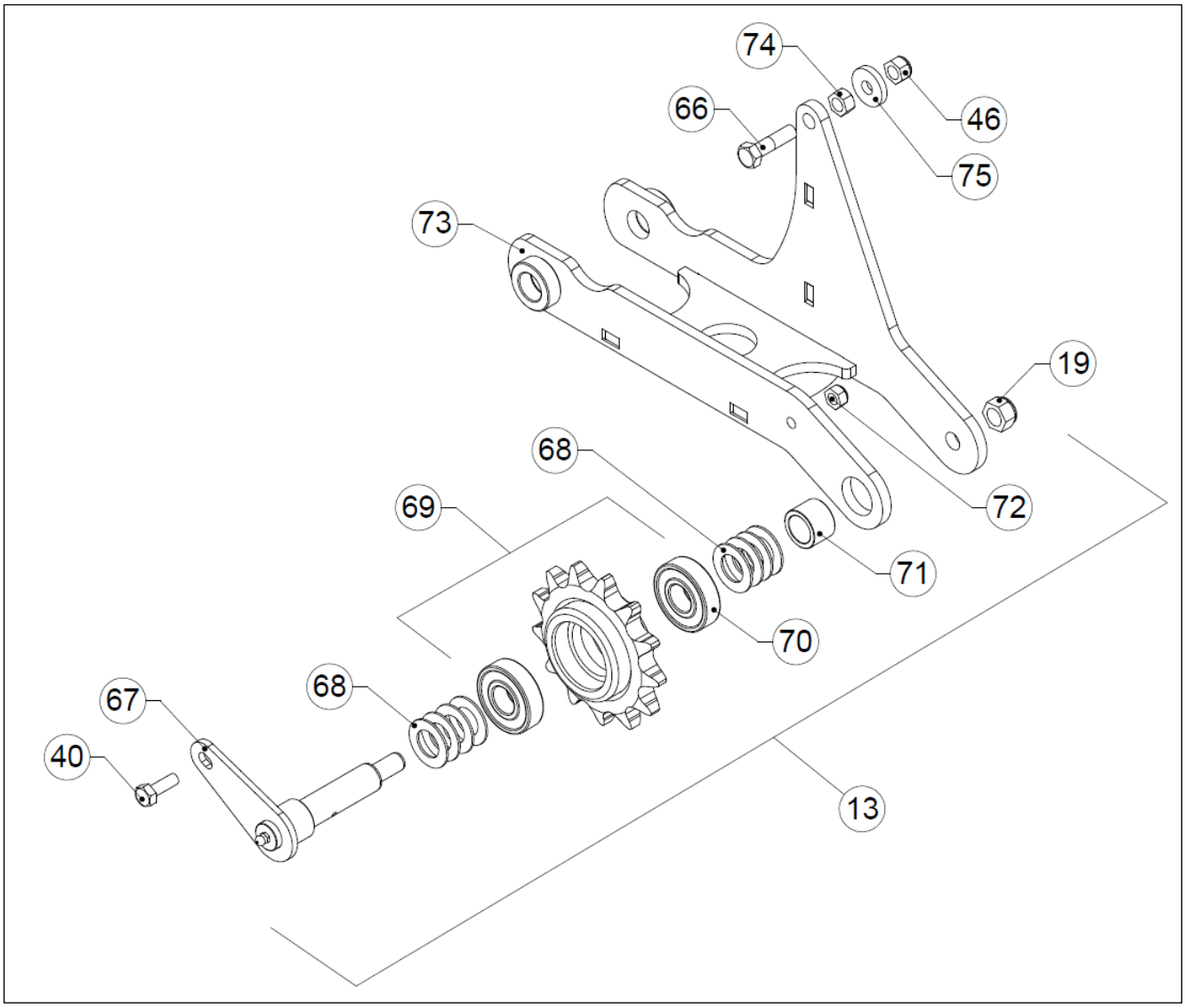


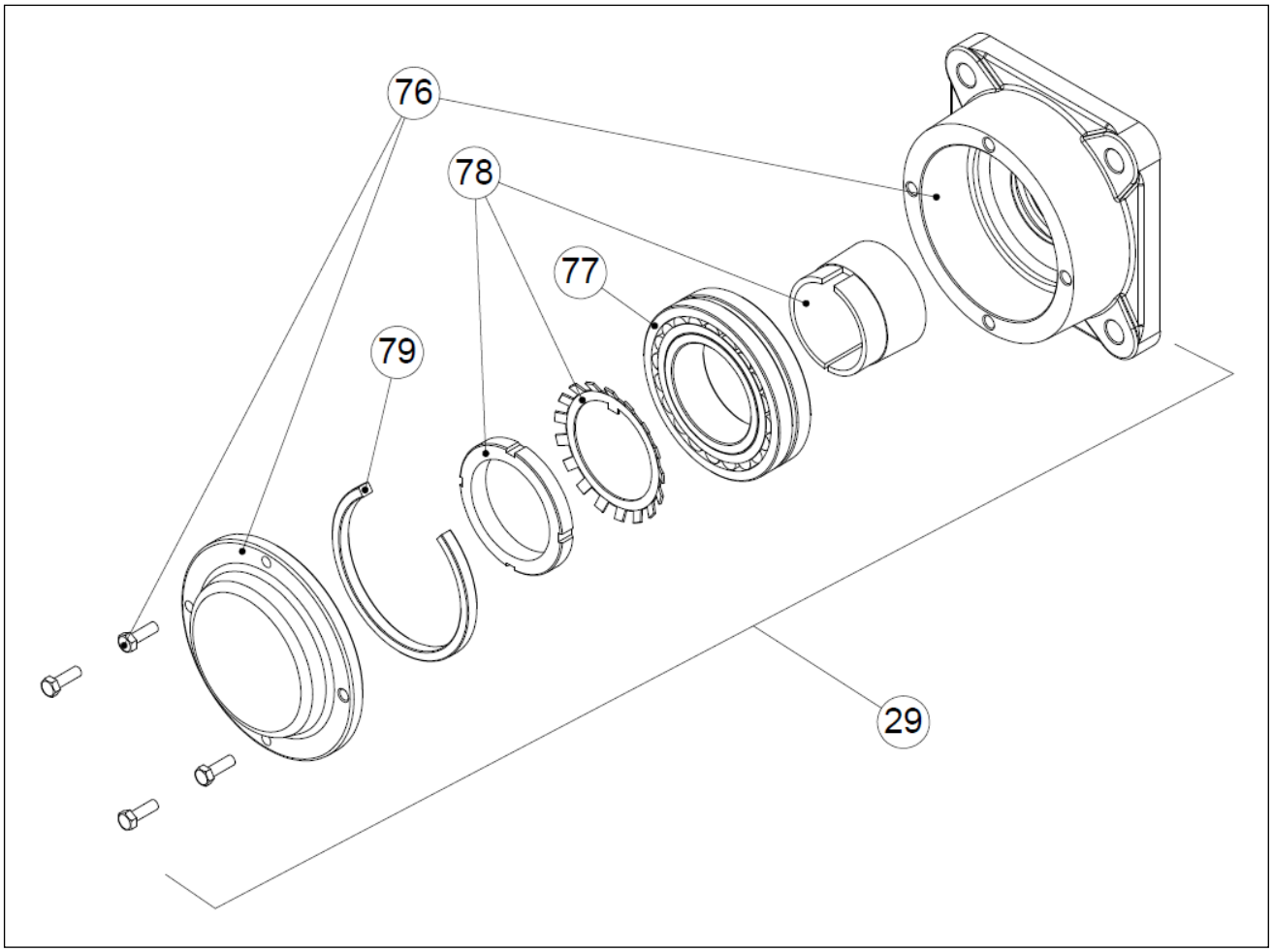

44
46
45
36
34
32
33
35
37
39
38
41
43
42
34
40

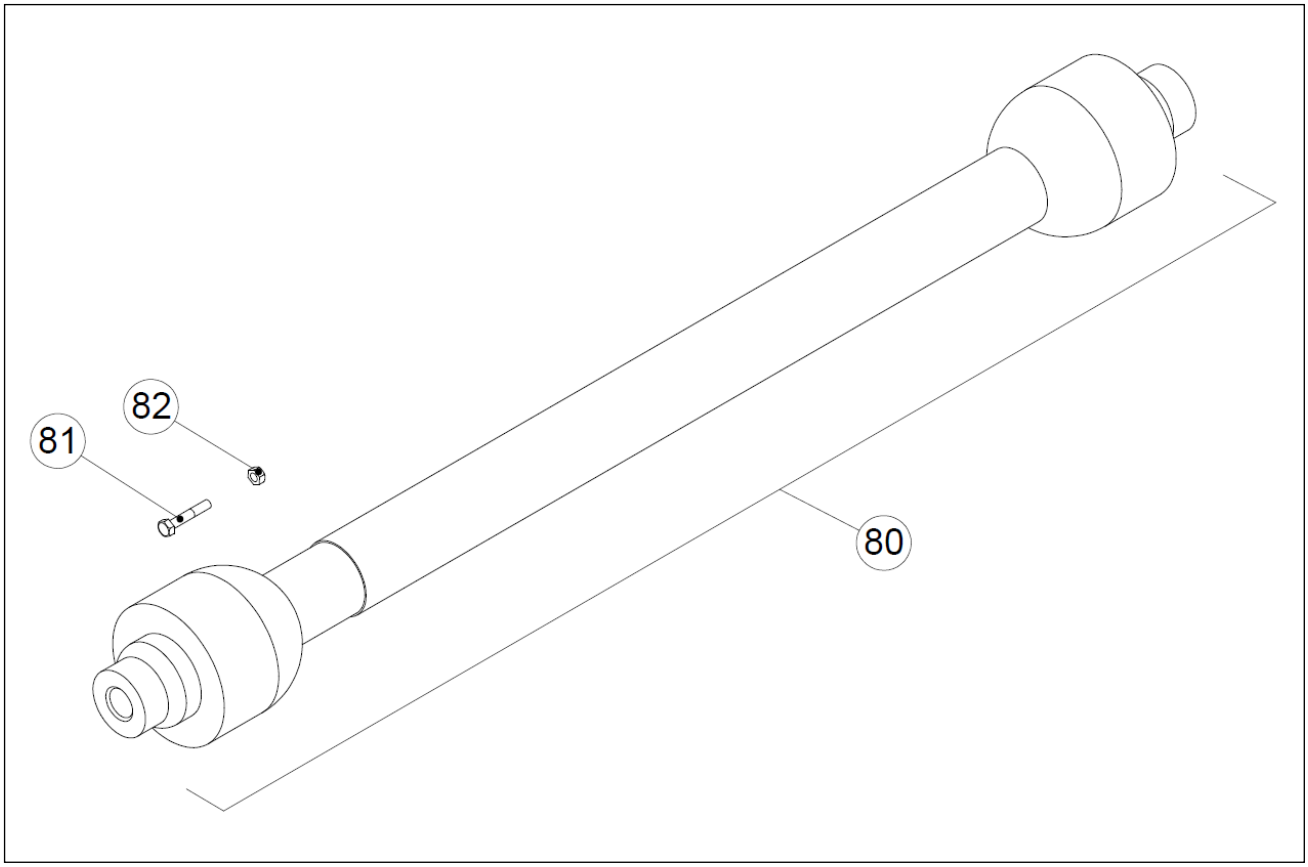

56
53
55
54
53
52
12


60
59
58
59
57
20


46
64
61
62
63
65
66
23


74
66
46
75
73
19
68
72
69
71
70
68
67
40
13


76
78
77
79
29


82
81
80

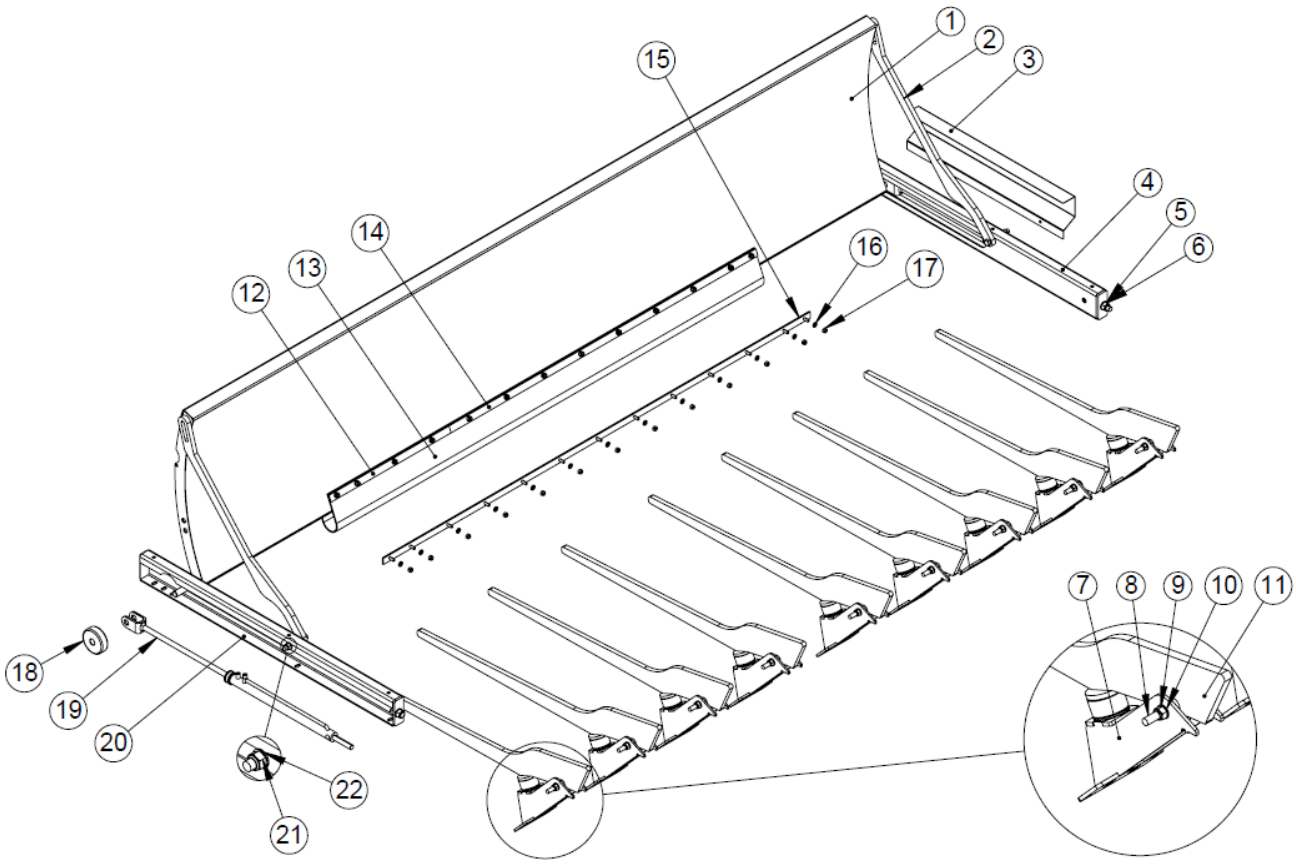
Item:	P/N:	Qty:	Description:
1	FP140-007-0008	1	Front Rotor Stub Shaft Thrust Collar assembly
2	701520	2	UCF X14 bearing and steel housing assembly
3	FP300-017-0001	1	MF300 Front Rotor Bearing mounting box
4	705028	1	ASA140 std series drive chain slip fit joiner link (Sapphire)
	704033		ASA140 std series drive chain press fit joiner link (Diamond)
	704098		ASA140 std series drive chain slip fit joiner link (Diamond)
5	705013	1	ASA140 std series Rotor drive chain, 114 pitches (incl. joiner) (Sapphire)
	704023		ASA140 std series Rotor drive chain, 114 pitches (incl. joiner) (Diamond)
6	EF147-34	1	96-tooth ASA140 Rotor sprocket
7	FP160-002-0104	2	Rotor Window assembly (square seal)
8	FP300-048-0020	1	Gearbox Support assembly
9	FP300-048-0105	1	Gearbox Alignment Adjuster plate
10	705012	1	ASA100 std series Primary drive chain, 104 pitches (incl. joiner) (Sapphire)
	704888		ASA100 std series Primary drive chain, 104 pitches (incl. joiner) (Diamond)
11	705025	1	ASA100 std series drive chain slip fit joiner link (Sapphire)
	704031		ASA100 std series drive chain press fit joiner link (Diamond)
	704096		ASA100 std series drive chain slip fit joiner link (Diamond)
12	FP300-048-0006	1	MF300 Idler Shaft assembly 2
13	FP300-048-0134	1	MF300 Primary Drive Chain Tensioner Arm assembly 2
14	704367	1	Tension spring — 8.84 mm wire, 45 mm OD, 220 mm-long
15	FP300-048-0074	1	Tension Adjuster Bolt
16	701111	1	Split pin 3/16” x 1.5"
17	700282	1	M16 hex nut
18	700732	2	M16 flat washer
19	700283	2	M16 nyloc nut
20	FP160-048-0110	1	Chain Tensioner/Gearbox Adjuster Bolt assembly 2
21	701588	1	Gearbox Adjuster Pivot Pin assembly
22	FP300-048-0072	1	Gearbox Pivot Pin assembly
23	FP300-048-0115	1	Input Shaft and Casing assembly (FYH bearings)
24	FP300-048-0043	1	Rotor Chain Tensioner Buffer Stop assembly
25	FP300-048-0027	1	MF300 Rotor Drive Chain Tensioner Arm assembly 2
26	FP300-048-0045	1	Gearbox Support assembly
27	FP300-048-0010	1	Front Idler Bearing Bolt positioning ring
28	FP300-048-0138	2	Bracket — oiler brushes (MF300)
29	FP160-009-0025	2	70 mm, 516 taper lock bearing and flange mount housing assembly
30	FP300-048-0030	1	MF300 Rotor Chain Tensioner Arm Pivot Pin assembly
31	FP300-048-0008	1	MF300 Drive System Front Plate assembly
32	FP300-048-0067	1	MF300 Rotor Drive Chain Tensioner Spring Adjuster assembly
33	FP160-048-0065	1	Rotor drive chain tensioner spring adjuster arm
34	FP280-048-0068	4	Chain tensioner spring mounting bush
35	701278	2	12" tension spring, 4.0 mm wire, 40 mm OD
36	FP280-048-0083	1	Chain tensioner dual spring pivot bar bush
37	FP280-048-0073	1	Rotor drive chain tensioner dual spring balance bar
38	700253	2	M12 x 40 mm socket countersunk
39	700247	1	M12 x 30 mm bolt
40	702111	1	M10 x 30 mm bolt
41	701517	2	M10 x 25 set screw
42	FP300-048-0068	1	Rotor chain tensioner link arm
43	FP280-048-0072	1	Chain tensioner link arm pivot bush
44	700250	2	M12 x 40 mm bolt
45	700731	2	M12 flat washer
46	700266	2/8/1	M12 nyloc nut
47	FP300-048-0028	1	MF300 Rotor Drive Chain Tensioner Arm assembly 1
48	701970	1	Chain tensioner wear block (85 mm)
49	700269	1	M16 x 110 mm bolt
50	700795	1	75 mm OD rubber damper - "D" type

51	FP300-048-0044	1	Rotor chain tensioner buffer mounting plate
52	700298	8	M20 x 70 mm bolt
53	700733	16	M20 flat washer
54	FP300-048-0001	1	54-tooth ASA100 sprocket – 190 mm Bore
55	FP300-048-0069	1	MF300 Idler Shaft assembly 1
56	700305	8	M20 nyloc nut
57	705119	1	M24 x 3.0 mm pitch thread nyloc nut
58	FP160-048-0186	2	Gearbox Adjuster shoulder washer (M24)
59	705120	3	M24 x 3 mm pitch thread hex nut
60	EF1018-15	1	Gearbox Adjuster Bolt welded assembly
61	700627	1	Shaft, 6 spline with 8 tooth ASA100 sprocket
62	FP300-048-0116	1	Input Shaft Casing assembly (FYH bearings)
63	705144	2	FYH UCF307 35 mm bearing with cast 4-bolt flange housing
64	FP160-048-0194	8	Bearing Bolt Hole reducer and collar (FYH bearing)
65	FP140-048-0017	2	Input Shaft bearing stop plate (full length)
66	700255	8	M12 x 45 mm bolt
67	FP300-048-0100	1	Chain tensioner sprocket axle assembly 2
68	700746	8	1” flat washer
69	FP300-048-0095	1	Chain tensioner sprocket assembly 2
70	704227	2	6305.2RS C3 deep groove ball bearing
71	FP300-048-0099	1	ASA120 chain tensioner axle spacer
72	700241	1	M10 nyloc nut
73	FP300-048-0135	1	MF300 Primary Drive Chain Tensioner Arm assembly 1
74	700265	1	M12 hex nut
75	FP280-048-0099	1	Chain tensioner rubber buffer retaining washer
76	703753	1	F516A bearing housing and cover
77	700847	1	22216K bearing insert
78	701457	1	H316 bearing taper lock sleeve (70 mm ID)
79	704122	1	Bearing spacer ring, SR140 x 10
80	700616	1	PTO, T60 shaft, 1-3/8” Z6 x 1-3/8” Z6. M10 x 6.8 shear bolt
81	700234	1	M10 x 60 mm bolt (6.8 grade)
82	700239	1	M10 hex nut
83	701874	1	Rotor stub shaft spacer tube (70 mm ID, 95 mm OD and 59.5 mm long)

Table 24: Drive System

11.15 Bale handler parts

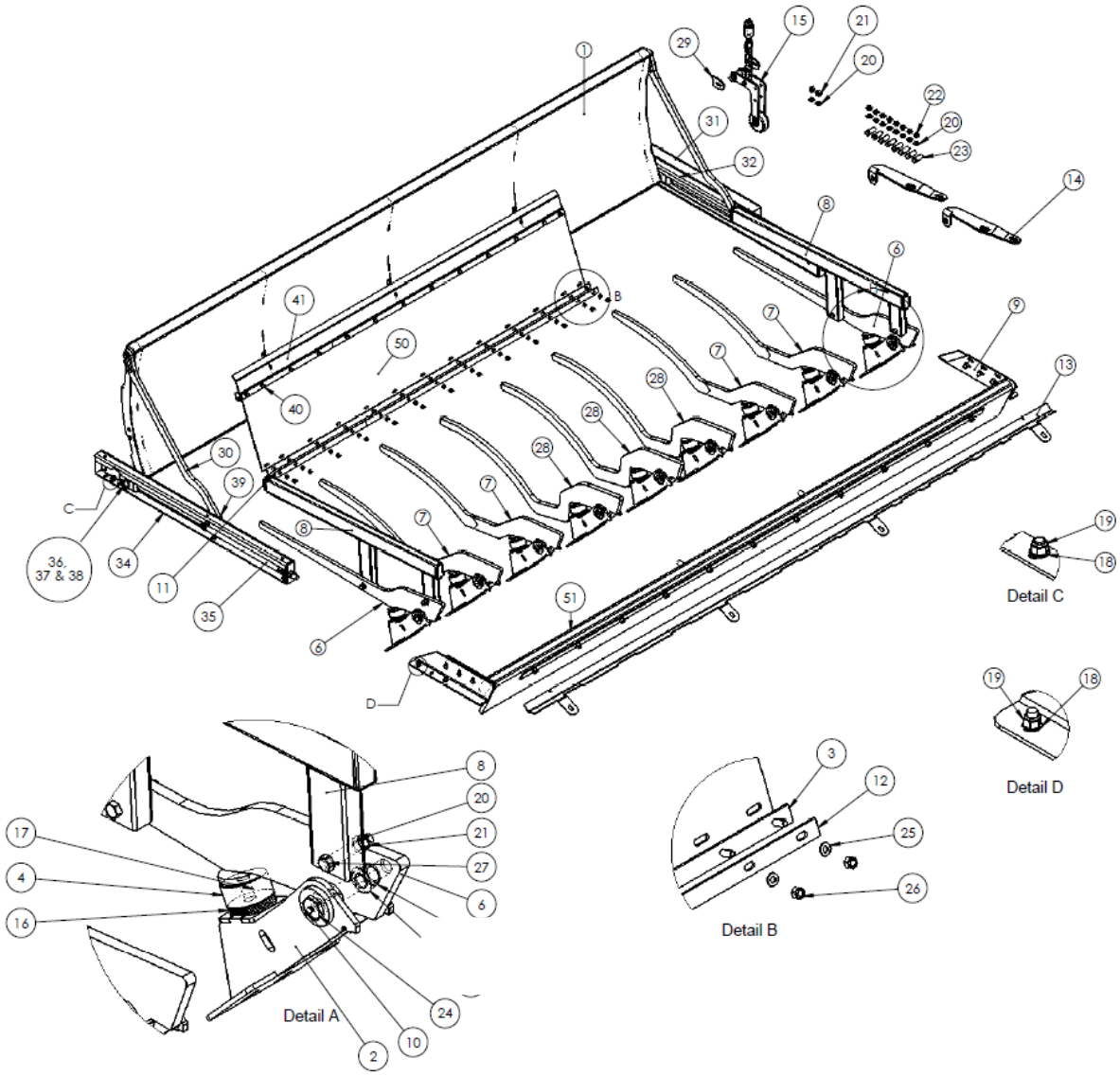
Series I Bale handler



Item:	P/N:	Qty:	Description:
1	FP160-045-0083	1	Bale Handler Creel Curved Plate assembly
2	FP280-045-017	2	Bale Handler Creel Guide Arm
3	FP160-045-0088	1	Creel End Cover Plate
4	FP160-045-0003	1	Bale Handler End Creel assembly (rear)
5	700733	2	M20 washer
6	700305	2	M20 locknut
7	FP140-045-0096	9	Bale Handler Tine Bracket
8	FP140-045-0111	9	M24 x 150mm bolt with grease nipple (701127) fitted
9	700318	9	M24 locknut
10	700316	9	M24 washer
11	FP140-045-0113	9	Tine Arm assembly
12	FP140-045-0004	1	Retainer Strip, 5 mm, for rubber apron, 675 mm long
13	FP140-045-0003	1	Rubber Apron
14	FP200-045-0004	1	Retainer Strip, 5 mm, for rubber apron, 1,725 mm long
15	FP140-045-0005	1	Apron Rail and Stud assembly
16	700729	13	M10 washer
17	700241	13	M10 locknut
18	FP280-045-010	2	Bale Handler nylon guide wheel
19	704040	2	End Creel Ram assembly
20	FP160-045-0002	1	Bale Handler End Creel assembly (front)
21	700283	2	M16 locknut
22	700732	2	M16 washer

Table 25: Series I Bale handler

Series III Bale handler

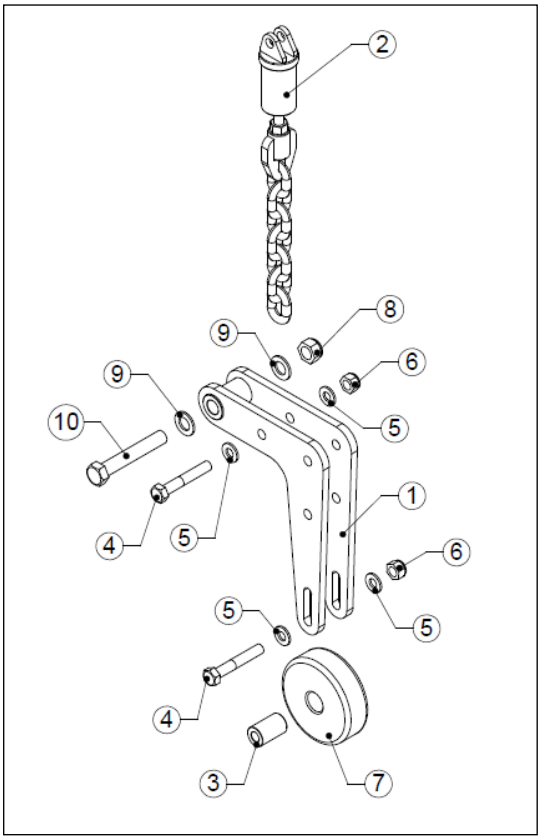


Item:	P/N:	Qty:	Description:
1	FP160-045-0083	1	Curved Creel Panel assembly (complete)
2	FP140-045-0096	9	Tine Bracket assembly (*weld on*)
3	FP140-045-0005	1	Apron Rail and Stud assembly
4	703943	9	Rubber buffer, 75 mm OD. M12 x 13 mm deep thread
5	703990	1	Bale Handler Hydraulic Hose kit (complete)
6	FP140-045-0098	2	Bale Handler Curved Arm assembly (cradle) M24 bolt
7	FP140-045-0118	4	Bale Handler Tine assembly (dropped) M24 bolt
8	EF1045-65	2	Bale Handler Arm Cradle assembly
9	FP300-050-0001	1	Load Bumper assembly 2 inc. rubber
10	701129	9	Grease nipple 1/8 bsp
11	FP140-045-0004	2	Apron Retainer Strip
12	FP200-045-0004	1	Retainer Strip, 5 mm, for rubber apron, 1,725 mm long
13	FP300-006-0092	1	Load Bumper rubber seat plate
14	FP300-006-0093	2	MF300 Load Bumper brace plate
15	FP160-045-0118	1	Bale Handler kicker assembly – complete kit

Item:	P/N:	Qty:	Description:
16	FP140-045-0019	36	Spacer plate, 3 mm, for Bale Handler Bracket
17	700247	20	M12 x 30 mm set screw
18	700730	11	M12 flat washer
19	700266	11	M12 locknut
20	700732	23	M16 flat washer
21	700283	15	M16 locknut
22	700739	8	M16 spring washer
23	700275	8	M16 x 50 mm bolt
24	FP140-045-0111	9	M24 x 150 mm bolt with grease nipple (701127) Fitted
25	700729	13	M10 flat washer
26	700241	13	M10 locknut
27	700281	4	M16 x 90 mm bolt
28	FP140-045-0115	3	Bale Handler Tine assembly (extra drop) M24 bolt
29	FP160-045-0094	2	Bale Handler Kicker Arm mounting bracket *(weld on)*
30	FP280-045-017	2	Bale Handler Creel Guide Arm
31	FP160-045-0088	1	Creel End cover plate
32	FP160-045-0003	1	Bale Handler End Creel assembly (rear)
33	700733	2	M20 washer
34	FP160-045-0002	1	Bale Handler End Creel assembly (front)
35	704040	2	End Creel Ram assembly
36	701112	2	R clip
37	700746	2	M25 flat washer
38	FP280-045-010	2	Bale Handler nylon guide wheel
39	700269	2	M16 x 110 mm bolt
40	700228	13	M10 x 35 mm bolt
41	FP160-045-0075	1	Kicker assembly, Rubber Mount assembly
42	700247	6	M12 x 30 mm bolt
43	700266	6	M12 locknut
44	700730	6	M12 washer
45	700732	2	M16 washer
46	700283	2	M16 locknut
47	700732	9	M16 washer
48	700283	9	M16 locknut
50	FP140-045-0003	1	Rubber Apron
51	FP160-050-0003	1	Load Bumper Rubber

Table 26: Series III Bale handler

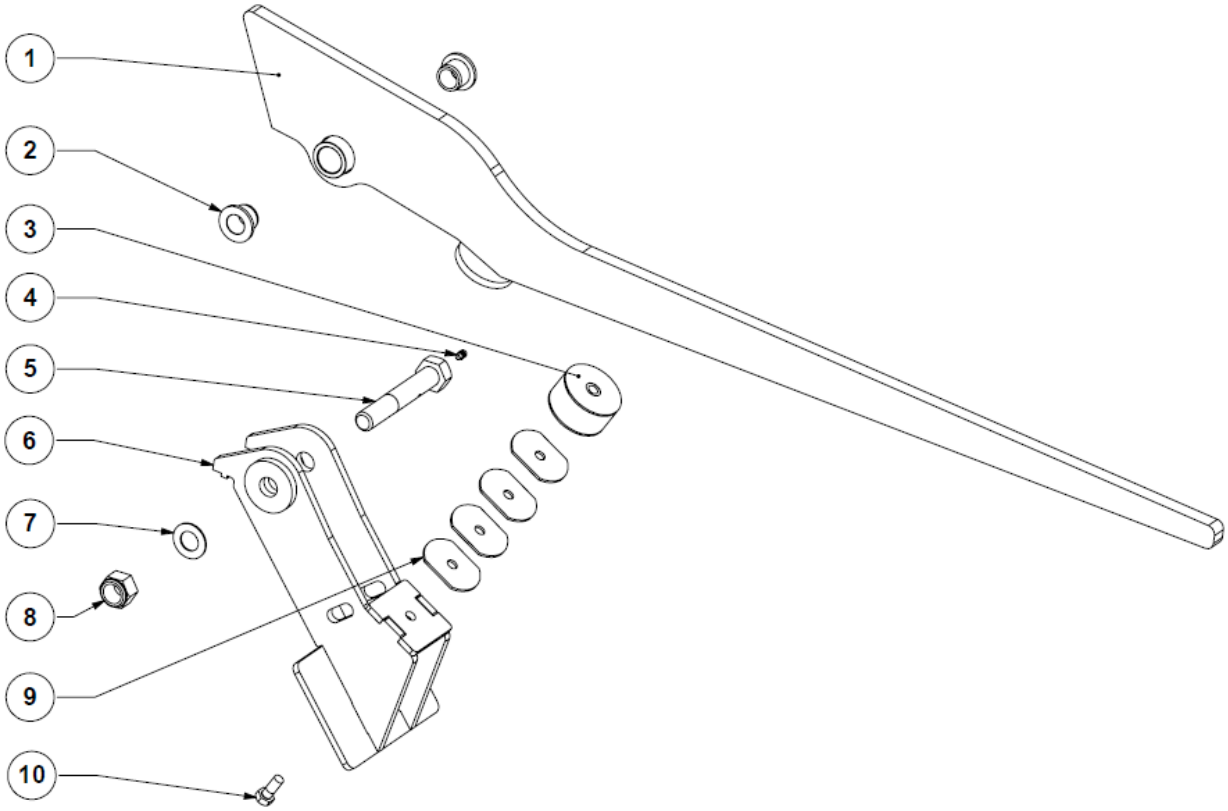
Series III Bale handler creel kicker



Item:	P/N:	Qty:	Description:
1	FP160-045-0071	1	Bale Handler Creel Kicker Arm assembly 1
2	FP160-045-0136	1	Bale Handler Creel Kicker Spring kit
3	FP100-006-0021	1	Feed-Out Tray mechanical adjuster roller pivot bush
4	700262	2	M12 x 75 bolt
5	700730	4	M12 washer
6	700266	2	M12 locknut
7	FP280-045-010	1	Nylon guide wheel
8	700283	1	M16 locknut
9	700732	2	M16 washer
10	700268	1	M16 x 100 mm bolt

Table 27: Kicker Arm assembly

Tine Bracket and Tine Arm assemblies



Item:	P/N:	Qty:	Description:
1	See Bale Handler Parts List for specific tine reference	9	Bale Handler Tine assembly
2	705947	18	Delrin bush
3	703943	9	Rubber buffer 75 mm O.D.
4	701129	9	1/8 bsp grease nipple
5	FP140-045-0111	9	M24 x 150 mm modified bolt
6	FP140-045-0096	9	Bale Handler Tine bracket
7	700316	9	M24 flat washer
8	700318	9	M24 locknut
9	FP140-045-0019	9	Spacer plate 3 mm
10*	700247	9	M12 x 30 mm bolt

Table 28: Bale Handler Tine and Bracket assembly

* Longer M12 bolt may be required if additional spacers (item no. 9) are used.

11.16 Axle
11.16.1 Axle options

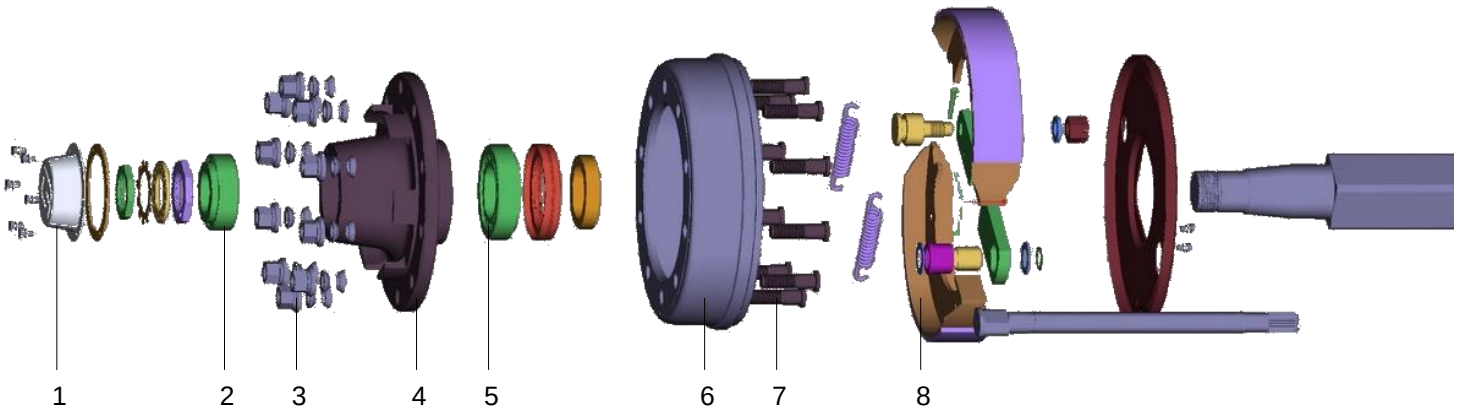


Figure 18: Typical Axle (exploded view)

Axle Types				
Axle application	**MechFiber300**			
No. studs	8	8	10	10
Axle type	Straight	Cranked	Straight/Cranked	D/Cranked
Axle width (mm)	1,760, 1,830, 1,930	2,130	1,950	2,130
Brake type/dimensions (type/dia. x width, mm)	309E, 300 x 90	309E, 300 x 90	Unbraked	Unbraked
Nut size	M20 x 1.5	M20 x 1.5		M22 x 1.5

Table 29: Axle types

Axle Spare Parts	
Item No:	**Description:**
1	Hubcap
2	Outer bearing
3	Nut (with washer)
4	Hub
5	Inner bearing
6	Brake drum
7	Stud
8	Brake shoe

Table 30: Axle spare parts

11.16.2 Axle maintenance

Tightening and retightening wheel nuts

The following points should be followed for tightening and retightening of wheel nuts:

1. Impact wrenches should not be used as the impact torque may be excessive.
2. Wheel nuts should be tightened diagonally every time in conjunction with a torque wrench.
3. In the case that power tools are only available, they must be set to the correct torque (check heading 8.7), as it may cause damage or breakage to occur due to over tightening.

The following periodical intervals should be taken to ensure nuts are correctly tightened after:

1. The first time of use.
2. The first laden journey.
3. The first 1,000 km.
4. Every six months thereafter or every 25,000 km, respectively.
5. Repeat every time a wheel is changed or removed (check how to safely remove a wheel, heading 8.9).

11.16.3 Hubcap maintenance

Hubcaps that are missing or damaged must be replaced immediately to avoid dirt penetrating the hub, which can cause damage to the bearings.

Check hubcaps are always in place, and that they are in a good condition.

If the hubcaps are a press fit, check visually that they are fully home.
If the hubcaps are attached using screws, fit a new gasket if needed once the hubcap is removed.
Retighten the screws regularly every six months.

11.16.4 Bearing play

The bearing play should be checked after:

1. First 1,000 km.
2. Before intensive use every six months or 25,000 km.

Wheel bearings are subject to wear. Conditions that determine this are:

1. Operating conditions.
2. The load.
3. The speed.
4. Adjustment and lubrication.

Wheel bearings should be checked by:

1. Lifting the wheel off the ground and turning it slowly to check for any rough points or friction.
2. Turning it at a high speed to check for unusual noises such as grating or knocking.

If it is seen that there is damage or signs that the bearings are worn, both the bearings and the seals should all be replaced.

11.17 Ancillary parts

Planetary Gearbox		
P/N:	**Qty:**	**Description:**
FP300-031-0005	1	Planetary Gearbox complete kit
FP300-031-0008	1	Planetary Gearbox complete kit (high hitch)
Grease Fittings		
	Qty:	**Description:**
704913	1	Grease Tube Swivel Connector - 90 degree bend - M6 thread
704914	1	Grease Tube Connector - straight - M6 thread
704941	1	Grease Tube Connector - straight – 6 mm thread
704942	1	Grease Tube Connector - straight – 8 mm thread
704943	1	Grease Tube Connector - straight - 1/8" BSP thread
704944	1	Grease Tube Connector - 90 degree bend - 1/8" BSP thread
704945	1	Grease Tube Connector - 90 degree bend - M6 thread
704946	1	Grease Tube Swivel Connector - 90 degree bend - 1/8" BSP thread
704947	1	Grease Nipple Connector - straight - 1/8" BSP to M6
Auto Oiler Parts		
P/N:	**Qty:**	**Description:**
703624	1	Automatic Oiler kit (3 chains)
703624-1	1	2 quart (1.89 litre) reservoir
703724	1	Brush assembly
704351	1	Brass manifold - mounts to top of Lubeminder Pump
703765	1	In-Line Check Valve, to be used before brushes
703725	4	5/32" (4 mm) Ferrule kits - used to replace ferrules in 704351 (4 pk)
703726	4	Sleeve nut (4 pk)
704517	1	Repair kit - Seal, Piston, and O-Rings
Spool Valve Parts		
P/N:	**Qty:**	**Description:**
701215	1	2 bank with detent
701216	1	2 bank without detent
701218	1	3 bank with detent
701219	1	3 bank without detent
702269	1	4 bank with detent
701208	1	4 bank without detent
702450	1	5 bank with detent
704447*	1	Electro-Hydraulic Spool Valve kit, 4 bank (contains 704445 and 704446)
704525	1	Electro-Hydraulic Spool Valve kit, 5 bank
Diverter Valve Parts (used on French machines)		
P/N:	**Qty:**	**Description:**
704139	1	Diverter Valve kit (contains 703535 and 704394)
703894	1	Electro-Hydraulic Diverter Valve kit (6 port)
Rear Feed-Out Parts (where fitted)		
		Refer to the Rear Feed-Out Operator Manual Supplement
Heavy Duty Top Knife (standard on all Bale Handlers)		
704229	4	Top Knife Blade, 990 mm long, deep serrations
Heavy Duty Body Blades (where fitted)		
703957	22*	Heavy Duty Body Blades

Table 31: Ancillary parts

*4 bank can be reduced to 3 bank, if required, using the same part number.

12. Troubleshooting

12.1 General troubleshooting

PROBLEM:	SOLUTION:
1. Weighing display won't work properly	Check Section 12.2 on weighing.
2. VFC-Door does not move	Check hydraulic hoses and that valves are open. Check tractor hydraulic oil level. Check ram condition and pins are secure.
3. VFC-Door drops during mixing	Insufficient hydraulic pressure – check spool valve on tractor or fit non return valve in line. Check ram for signs of leakage.
4. VFC-Door closes unevenly/sticks	Rams operating out of sequence – operate door to fully open position and hold level to allow oil by-pass the ram when fully open and level door – Repeat on fully closed, until door is even.
5. Excessive shear bolt breakage	Machine overloaded. Driving chain too loose – check condition and adjust idler springs. Feed-out too fast – open feed-out door slowly at first then open fully. Turn paddle a few turns before opening the feed out door to avoid huge load on machine, especially after feed has settled in body of machine. Run machine slower. For non-Bale handler models never load bales directly down on paddle in one go – always chop up into at least 4 pieces.
6. Noisy operation	Oil chains liberally – adjust tension on chains. Grease all nipples. Check chain alignment.
7. Feed is not mixed properly	Insufficient mixing time. Loading materials in wrong order. Not enough time given for chopping. Overloading of machine.
8. Feed out is too slow	Check condition of paddle rubbers. Slow down tractor ground speed. Reduce engine revs to give paddle more time to push material into auger. Ensure material is fully chopped before unloading.

9. Horsepower requirement is too high	Check body blades and top knife sharpness. Machine overloaded. Bale handler tines may be set too low.
10. Machine is not chopping	Blades blunt. Not enough material in body – not heavy enough – try adding more material or in case of hay/straw add water or a fork of silage to weigh it down. Machine overloaded.
11: Machine breaks ASA140 link	Check chain alignment of large sprocket, Tolerance +/- 2 mm. Check chamfer on edge. Check roll pins used in joiner link. Check idler tension.
12: Bale goes in too quickly	If the bale goes into the machine too quickly, it may place unnecessary load on the tractor and drive line, as well as slowing overall mixing time as the body blades aren't as efficient at chopping long fibrous material as the top knife. Check tine buffers and tine to top knife gap.
13: Excessive hitch wear	If excess hitch wear is noted check: -Speed of use, hitch rated for 25 km/h maximum. -Hitch is level on tractor. -Fit of hitch and lubrication. -Wear on tractor hitch. -Check brake operation matches tractor brakes. -Excessive movement – not tight on pin/hitch.
14: Leaking valve chest (where fitted)	Check oil is only flowing from pressure "P" side to tank "T" side. Reverse pressuring the valve check will damage the seals. The addition of a one way valve on the return pipe will prevent this.
15: Leaking oiler	If oiler leaks or loses oil, check the one way valves in oiler housing. Fit restrictor fitting to pressure line which will smoothen out any power surges in the line and protect servo.
16: Excess oil on chains	Adjust oiler – the volume of oil sent to the chains when the guillotine door is operated may be adjusted by turning the set screw on the base of the oiler. The oiler operates on the closing stroke of the guillotine door, therefore the drive line should be left running for a period after the guillotine door is closed to allow the oil cover the full chain.

17: Blockage at top knife	On non-Bale handler models, load smaller sections of material into machine On Bale handler models check tine height settings Ensure all feed materials are free from foreign objects before loading into machine In the unlikely event of a large blockage occurring which prevents the machine from restarting using the tractor, it may be necessary to enter the mixing chamber to manually clear the blockage. Please refer to Section 5 – Safety, in particular point “u”
18: Blockage at auger	Use VFC-Door to meter material intake into auger Refer to Section 7.9 – Feeding Out for correct operation of VFC-Door In the unlikely event of a large blockage occurring which prevents the machine from restarting using the tractor, it may be necessary to enter the mixing chamber to manually clear the blockage. Please refer to Section 5 – Safety, in particular points “u”
19: Blockage at Rear Feed-out conveyor	Use VFC-Door to meter material intake into auger Refer to Section 7.9 – Feeding Out for correct operation of VFC-Door Ensure the conveyor belt rotates as VFC is opened Check setting of priority flow valve (if fitted) In the unlikely event of a large blockage occurring which prevents the machine from restarting using the tractor, it may be necessary to enter the mixing chamber or gain access to the discharge auger chamber to manually clear the blockage. Please refer to Section 5 – Safety, in particular point “u”

12.2 Weighing troubleshooting

KEENAN troubleshooting tips on weighing

If you experience problems in the operation of the Weighing System, read through this Troubleshooting section first before contacting a KEENAN Service representative.

Reading drifting

If the reading on the weigh box is drifting or does not stay steady, the most likely cause of the problem is dampness/moisture in or around the weigh box or cables. Please follow these steps to locate and correct the problem:

- Disconnect the cables on the weigh box. Ensure they are labelled correctly for reconnection. Check both the plug on the cable and the connector on the weigh box for dampness and/or corrosion of the terminals. If any dampness is found dry it off thoroughly with a hair drier. If corrosion is found on the terminals, clean thoroughly with electrical cleaner and dry. Then, reconnect cable and test.

- Check for loose wiring or dampness. Some machines are fitted with a junction box. The procedure as detailed above applies.

- Check weigh cell plugs for dampness and also check weigh cell cables for any breaks and/or dampness.

If the above measures do not rectify the problem, then contact a KEENAN service representative for further assistance.

System weighing inaccurately

If the machine is new or the weigh box has been replaced it is possible that the weigh box may have the incorrect calibration code for the model. Contact a KEENAN service representative who can go through the procedure to check (or alter) the code.

If you suspect that the system is weighing inaccurately, check all four weigh cells to make sure that they are mounted correctly. If the bolt through the weigh cell has come loose or broken, the weigh cell can rotate resulting in that weigh cell giving an inaccurate reading. To check that the system is weighing correctly, get some known weight (e.g. a bag of fertilizer) and place it on each corner of the machine in turn. You should get the same reading for each corner. If one corner returns a significantly different reading from the other three then this points to a faulty weigh cell on that corner. Also, if receiving a negative reading, it would indicate that the weigh cell is upside down — rotate it 180° and repeat the test.

Weigh box will not switch ON

Check the power cable thoroughly and make certain that you are getting power from the tractor to the display. Unscrew the power cable from the weigh box and ensure there is a good 10–13-volt supply across the internal pins of the cable. If the negative (-) and positive (+) are wired the wrong way around, the weigh box will not switch on [Dinamica Generale weigh boxes power cable — white (+) and black (-)].

13 Warranty

13.1 KEENAN warranty policy

Alltech Farming Solutions Limited, trading as “KEENAN”, (the “Company”) shall undertake to correct by repair or replacement only at the Company‘s option, any defect of material or workmanship, which occurs in any of its products as listed herein within the following warranty period. This Warranty is for the benefit of the initial owner as notified to the Company. This Warranty shall also apply to new and unused Goods being resold by authorised dealers and or distributors of the Supplier. The Warranty period from date of commissioning is twelve (12) Months for new equipment and such shorter periods as may be agreed from time to time in writing for other products. This Warranty shall cease to apply on any resale or alteration or incorrect usage of the equipment by the initial owner.

The Warranty shall not apply to:
A) Any machine used by a third party, who has not had instruction in the correct use of the machine by an official representative of KEENAN.
B) Any machine which has sustained damage through general wear and tear or neglect or use for which the machines were not intended to be used by the Company.
C) Bearings, sprockets, chains and other wearing parts unless clear evidence of immediate working failure which is directly attributable to such parts can be furnished. Wearing parts include paddle rubbers, chains, jockeys, wheels and tyres.
D)Any consumable or perishable parts such as knives, blades, rubbers seals, hydraulic components, shear-bolts, brake liners, electric components and running gear, unless clear evidence of immediate working failure which is directly attributable to such parts can be furnished.
E) Any machine on which the identification marks have been removed or altered.
F) Any machine that has not received effective routine maintenance using recommended KEENAN products as laid down in the operator’s manual.
G) Any machine that has received repairs or modifications by a person unauthorised by KEENAN.
H) Any machine fitted with spurious or non-genuine spare parts and attachments, or spare parts or attachments not approved by the Company.
I) Any machine damaged in transit whilst being loaded or unloaded on premises other than those owned by the Company.
J) Parts which may be defective, or which may have failed, and which are not retained on site pending further investigation by the Company. Such parts may need to be inspected in situ by a Company representative.
K) Any machine damaged or any damage incurred prior to the machine being commissioned by an authorised representative of the Company.
L) Any machine not used in accordance with the instructions for use of the machine.
M) Any machine which has been altered or tampered with in a manner not approved by the Company.

The sole and exclusive claim against the Company made by the person specified above shall be for the repair or replacement of defective parts without prejudice to any rights pursuant to the Liability for Defective Products Act, 1991. No other claim, including, but not limited to, for incidental, direct or indirect or consequential damages or for lost profits, lost sales, lost business, lost savings, loss of goodwill or loss of reputation or any other loss of whatever nature however sustained shall be available. This Warranty constitutes the only warranty made by the Company and supersedes and overrides all oral and written statements or representations made by any Company representative or dealer or any other agreement, arrangement,

practice, custom or understanding between the parties. Any claim under the Warranty must be promptly notified to the Company in writing at the address on the invoice.

This Warranty shall be construed in accordance with Irish law and shall be subject to the exclusive jurisdiction of the Irish Courts.

13.2 Product changes and improvements

Due to our policy of continuous improvement, Alltech Farming Solutions Ltd reserve the right to make changes in design, to add improvements or to otherwise modify any of its products without incurring any obligation on products previously supplied.

14 EC Declaration of Conformity

EC Declaration of Conformity.
In accordance with Directive 2006/42/EC.

Manufacturer:
Alltech Farming Solutions Ltd.
Borris
Co. Carlow
R95 K223
Ireland

Certifies that the KEENAN MechFiber300 complies with the essential safety requirements of the Directive 2006/42/EC.

To conform to these essential health and safety requirements, the provisions of the following harmonized standards were particularly considered.

BS EN ISO 12100, I.S. EN ISO 13857, I.S. EN ISO 5674, EN349, EN703, I.S. EN ISO 4254-1, ISO 11684, ISO 12140

Date: 01 Nov 2016

Signed: _____

Robert Walker, CEO

15 Contact Details

Head Office
Alltech Farming Solutions Limited (KEENAN)
Borris, Co. Carlow, R95 K223 Ireland.

Tel:	+353 (0) 59 9771200
Fax:	+353 (0) 59 9771227
Website:	alltech.com/keenan
Email:	keenaninfo@alltech.com

Alltech's Global Headquarters
3031 Catnip Hill Road, Nicholasville, KY 40356, United States of America

Tel:	859-885-9613
Website:	alltech.com/keenan
Email:	keenaninfo@alltech.com

Alltech Farming Solutions (UK) Limited KEENAN
Ryhall Road, Stamford, Lincolnshire, United Kingdom, PE9 1TZ

Tel. Administration:	0800 587 3296
24 hr Service:	0800 587 3296
Fax:	0844 358 3880
Website:	alltech.com/keenan
Email:	keenaninfo@alltech.com

KEENAN Australia
53 Pratts Part Road, Bendigo, East Bendigo Vic 3550, Australia

Sales, Service and Parts: 1800 KEENAN (1800 533 626)

Website:	alltech.com/keenan
Email:	keenaninfo@alltech.com

KEENAN New Zealand
A division of JK Engineering
50a Kereone Road, Morrinsville 3371, Waikato, New Zealand

Sales, Service and Parts: 1800 KEENAN (1800 533 626)

Website:	alltech.com/keenan
Email:	admin@Keenannz.co.nz

KEENAN Canada Inc.
20 Cutten Place, Guelph, Ontario N1G 4Z7, Canada

Tel: 519 763 3331
Fax: 519 763 5682

Website:	alltech.com/keenan
Email:	keenaninfo@alltech.com


KEENAN
an Altech company
keenansystem.com
@KEENANGlobal
@KEENANsystem