

Keenan Mech-Fiber 380



Operator's Manual

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PART I

(Service & Maintenance)

1. Introduction

Keenan Mech-Fiber Mixer Wagon and Keenan Mech-Fiber Bale Processor

Thank you for purchasing a Keenan product. The Keenan Mech-Fiber Mixer Wagon is a TMR feeder with a difference. The original Keenan mixer wagon 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 Mech-Fiber Mixer Wagon 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 Mech-Fiber System, delivering improved efficiency and profitability on the farm. More recently, the Bale Processor 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 Mech-Fiber Mixer Wagon and the Keenan Mech-Fiber Bale Processor 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 Nutritionist. Telephone numbers are listed on the back cover of this manual.

The Keenan Mech-Fiber Mixer Wagon is the cornerstone of the Keenan Mech-Fiber System delivering improved efficiency and profitability on the farm.

2. WARNING NOTES

Thank you for purchasing a Keenan product. Please read this manual carefully before operating your new machine, paying particular attention to the warning notes, explained here. Most sections of the manual apply to both the Keenan Mech-Fiber Mixer Wagon and the Keenan Mech-Fiber Bale Processor 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.

There are 3 different types of notes.



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 Mech-Fiber Mixer Wagon. 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 Mech-Fiber Mixer Wagon.

The Keenan Mech-Fiber 380 and the Keenan Mech-Fiber 380 Bale Processor machines are subject to International patents including the following:

European:	E0,833,558	USA:	5,967,433
Japan:	3840260	Canada:	2,218,472
Australia:	691418	New Zealand:	305943
South Africa:	96/3148		



WARNING:

Read the safety section (section 3) 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 mixer wagon while it is in operation.

Warning signs

4. OPERATING PRINCIPLES

The Mech-Fiber Mixer Wagon's main operating functions are weighing, chopping/mixing and feeding out.

4.1 WEIGHING

The 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. In addition the new PACE Control System adds further control to the mixing process in order to ensure controlled delivery of Mech-Fiber. See Section 4 (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 5 (Operation).

For non Bale Processor models, ensure bales are broken up prior to loading. For Bale Processors, 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 - 6rpm. 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 Mech-Fiber 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 Processor 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 Processor 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 on to the machine in sections, alternatively the bale may be held in place by the loader until sufficiently chopped down, 1/3 to 1/2 way, 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

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 door/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 opened partially at first. As soon as 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 to allow 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

Maintenance

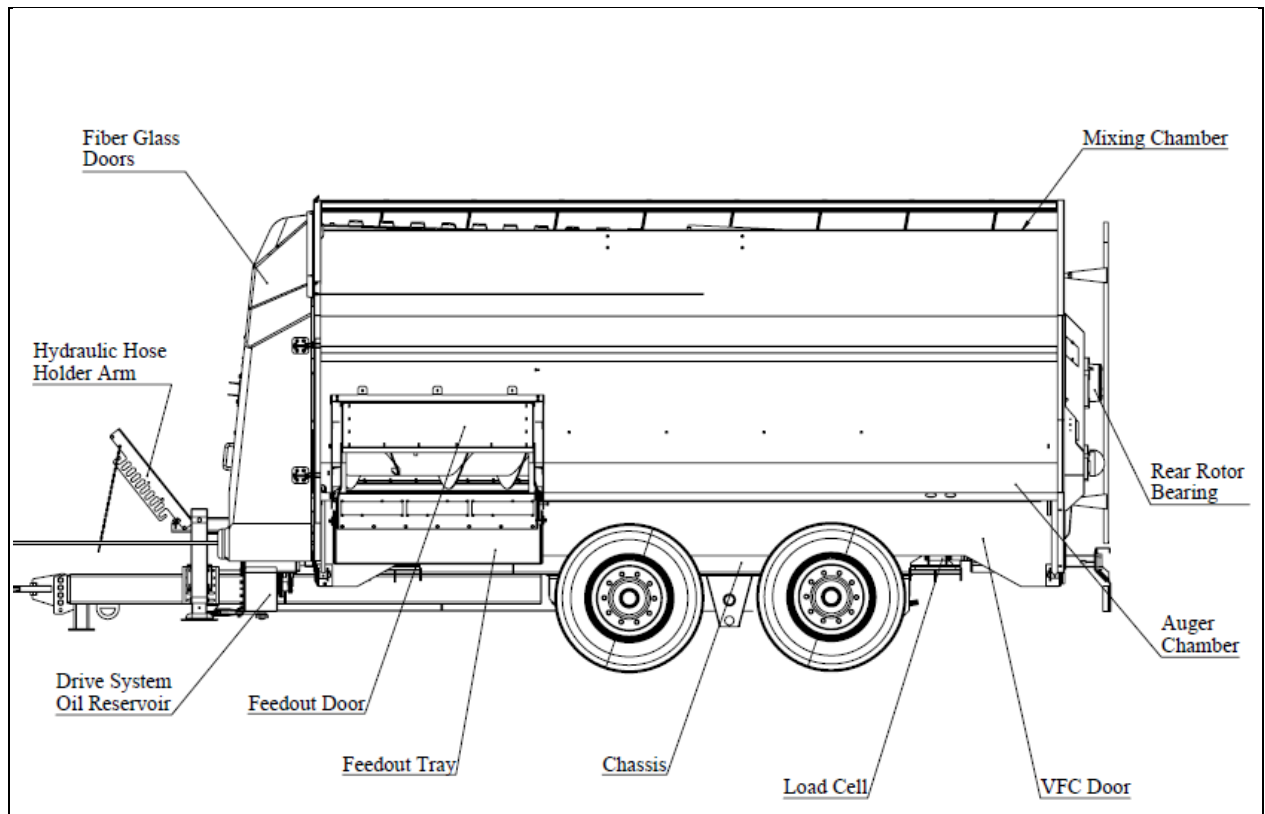


Figure 1: Keenan Mech-Fiber 380

A properly operated and maintained Keenan Mech-Fiber Mixer Wagon 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 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 effect 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 Mech-Fiber Mixer Wagons 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 safety section (section 3) 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 Mech-Fiber Mixer Wagon 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 Keenan Mech-Fiber Mixer Wagon 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.

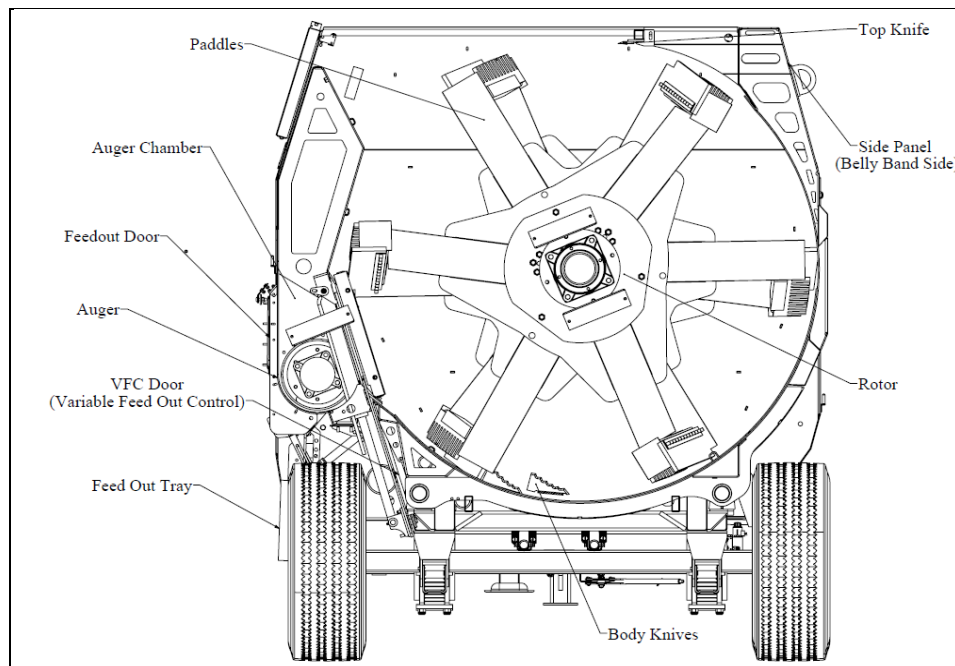


Figure 2: Keenan Mech-Fiber 380 Rear Profile View

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.

Safety

- a) Always park the mixer wagon on level ground and apply the handbrake when not in use.
- b) Do not exceed 15km/h (10mph) when in use/transit. Local road traffic laws will apply when 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) Exercise extreme caution for possible overtaking traffic at either side when turning.
- d) Do not stand on the ladder whilst the mixer wagon is in transit. The mixer wagon should never be used for the transport of people, animals or objects.
- e) Do not stand between the tractor and mixer wagon while it is in use.
- f) Use only a PTO shaft with a properly fitted safety guard and correct shear bolt. (See figure 3b)
- g) Always connect the PTO shaft with the shear bolt end to the machine. The standard operating range of the PTO is 540rpm however an optional operating range of 1000rpm may be available if the machine has been built to this specification. This will be clearly marked on the front of the machine & on the operation procedure decal. The direction of rotation is marked on the front cover (clockwise when viewing from rear of machine). Always use a well maintained PTO shaft and keep the safety covers in good condition.
- h) Ensure all trailing leads, hoses etc. are well clear of the PTO.
- i) **Do not operate the PTO in “ground speed mode”.**
- j) Make sure all covers/guards are fitted and closed correctly. Never remove guards when the mixer wagon is connected to the tractor. Ensure that the engine of the tractor is stopped and PTO shaft disconnected before carrying out service or maintenance work and especially if removing trapped objects from the machine.
- k) Ensure the mixer wagon 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. When connecting the tractor to the mixer wagon only connect using the ring hitch on the mixer wagon 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. When disconnecting always ensure that a stand or jack is used to secure the machine in the park position and ensure that the handbrake is properly applied. Before driving the tractor away from the feeder ensure that all hoses and cables are disconnected.
- l) Load only from the side indicated – see figure 6 (auger chamber side) using suitable equipment.
- m) **Standing level with or above the machine in order to load manually is not permitted.** Loading should be carried out with suitable equipment.

Safety

- n) Regularly inspect all chains (at least weekly), sprockets and moving parts for wear and check all nuts and bolts for tightness.
- o) The ladder on the rear of the mixer wagon 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 mixer wagon. It is strictly forbidden to climb on the upper brim of the machine body.
- p) Routine cleaning should be carried out using a power hose, with the drain bung open eliminating any reason to climb into the mixing chamber.
- q) **Only suitably trained and qualified maintenance people should enter the mixing chamber.** There are a number of specific hazards which apply including: The blades are extremely sharp and loss of footing inside the machine could result in a severe injury. The height of the machine presents a potential fall hazard during entry and exit.
- r) The top knife should always be fitted with the supplied guard (figure 3a) before routine cleaning or maintenance is carried out. *Note: the machine is supplied with a top knife guard which can be found inside the driveline covers of the mixer wagon.*
- s) **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 removed.
 2. Apply the mixer wagon handbrake and disconnect the tractor on level ground.
 3. Use a suitable ladder for access to and from the mixer wagon. **Note:** *The viewing ladder is only used for viewing and not for access to the mixing chamber.*
 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.
- t) If the person intending to enter and work within the machine is not confident about doing so safely, then they should contact a Keenan Service Person to complete the work.
- u) 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 3c). 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 Service is contacted for directions to reset.

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 that when mixing soda grain, the maximum gross load that can be mixed in the Keenan Mech-Fiber 380 is 7500kg.*

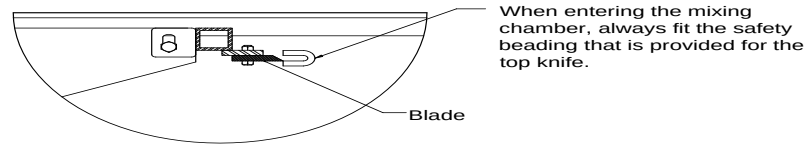


Figure 3a: Top Knife

Safety



Figure 3c: Breakaway Safety Brake



Figure 3b: PTO

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

6. WEIGHING SYSTEM

Weighing system

The weighing system is designed to be simple to operate, accurate and robust. It consists of four load cells connected to an indicator unit (readout box) at the front of the machine. The system uses 12 volt DC power from the tractor, or battery if fitted. The indicator 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 5kg/10lb. 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 indicator unit may vary from model to model and region to region. A separate manual is supplied for your indicator unit, which you should refer to for specific operating instructions. Calibration of the weighbox is important as false readings may occur if not calibrated properly. Check Page 44 Troubleshooting for step by step procedure if required.

INSTRUCTIONS FOR ELECTRONIC READOUT BOX ARE CONTAINED IN A SEPARATE MANUAL

7. OPERATION

Set-up

The simplicity of the Keenan Mech-Fiber 380 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 mixer wagon during all stages of operation.

7.1 SET-UP

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. As per figure 3b make sure shear bolt and safety cover are all with PTO Assembly. Before operation, depending on the model of tractor being used Keenan supply a nominal length PTO shaft, where alterations to the length of the PTO maybe required so suit different models of machinery. Comparison of length of PTO and also length required should be noted and the PTO subsequently shortened to suit.

CAUTION:

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

Set-up

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

Hydraulic and brake hoses	
Operation	Colour
Guillotine door	Red & yellow
Feed out tray	Blue
Bale Processor creel	Green
Brakes	White

Table 1: Hydraulic and brake hoses

Examine the mixing chamber to ensure that:

1. All blade covers have been removed
2. All spare parts and foreign objects have been removed
3. No damage has occurred during transport.
4. 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 12v battery located in the side box of the feeder. Test by switching on the weigh box, then press and hold the “+ / -” key, followed by “Zero” key, to zero the scales. If the power is supplied through a 7 pin lights connection, the lights will need to be turned on, on the tractor 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.

Set-up

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 machine will generate a lot of noise but this will decrease as the paddle rubbers become more pliable.

As a general rule engine speed during loading should be as low as possible without the risk of stalling the tractor. See guidelines on loading and mixing procedures.

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 be reviewed periodically (yearly) and typically replaced after ten years of operation if necessary.

B: The maximum oil pressure of the hydraulic system is 3000 psi.

C: If there is a **valve chest** fit to the Mech-Fiber machine, it is very important 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 fit with a one-way flow valve to prevent oil 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 4 below.

(The valve chest is set up for open centre hydraulics To alter to closed centre hydraulics, there is a plug that can be fitted to the spool valve block and is available from Keenan Service on request.)

Set-up



Figure 4: Valve Chest

7.2 MIXER WAGON CAPACITY

Due to the diversity of the materials available for feeding and the Keenan Mech-Fiber'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 5: Photograph illustrates a well mixed ration showing consistent fibre length and integration of forages and grains.

7.3 LOADING & 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.

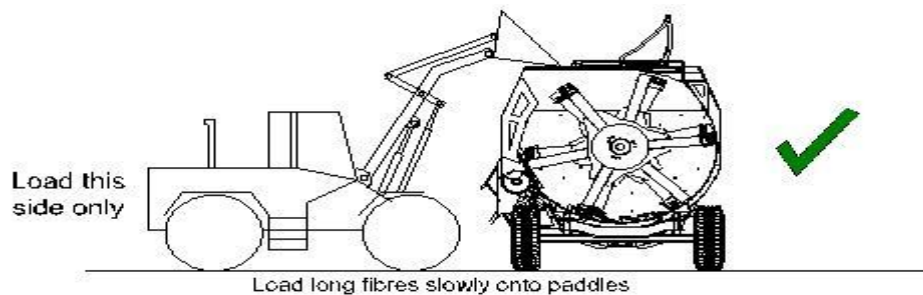


Figure 6: Loading the Keenan Mech-Fiber 380 mixer wagon

7.4 OPERATING THE KEENAN MECH-FIBER MIXER WAGON

LOADING THE KEENAN MECH-FIBER MIXER WAGON

GENERAL

- Park on level ground.
- Ensure the variable feed control door (VFC) (guillotine door) is closed.
- **Do not start PTO when VFC door is open.**
- Optimum PTO speed: 430RPM (in 540 range)

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 the mixing process.
- Remove all twine, wrap or polythene from bales.
- Round or square bales should be split or broken into 4 pieces minimum.
Use front grab or forks as required.
- Load in the order shown below.

Load Order	Feed Ingredients	Paddle RPM	Tractor Engine Speed RPM
1st	Water, liquid feeds	All at 5-6 RPM	1400-1600 RPM
2nd	Straw		
3rd	Minerals, Protein meals, Pulps, Cereal grains		
4th	Grass silage		
5th	Maize silage, cereal Silage.		

- Mixing time will depend on chop length required.
- Stop PTO before moving to feed out area.

Table 2: Loading the Keenan Mech-Fiber MF380

7.5 OPERATING THE KEENAN MECH-FIBER BALE PROCESSOR

Loading the Mech-Fiber 380

LOADING THE KEENAN BALE PROCESSOR

GENERAL

- Park on level ground.
- Ensure variable feed control door (VFC) is closed.
- **Do not start PTO when VFC door is open.**
- Optimum PTO speed: 430rpm (in 540 range)

LOADING AND MIXING SEQUENCE

- Set paddles running at **5-6 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. **Note:** When loading light bales e.g. straw or hay hold the bale in place until the bale remains stationary on the Bale Processor.
- Allow sufficient time for previous bale to clear before adding more.
- Add ingredients in order shown below:



CAUTION:

Do not load more than one bale at a time.

Load Order	Feed Ingredients	Paddle RPM	Tractor Engine speed RPM
1st	Water, liquid feeds	All at 5-6 RPM	1400-1600 RPM
2nd	Straw		
3rd	Minerals, Protein meals, Pulps, Cereal grains		
4th	Grass silage		
5th	Maize silage, cereal Silage		

- Mixing time will depend on chop length required.
- Stop PTO before moving to feed out area.

Table 3: Loading the Keenan Mech-Fiber 380 Bale Processor

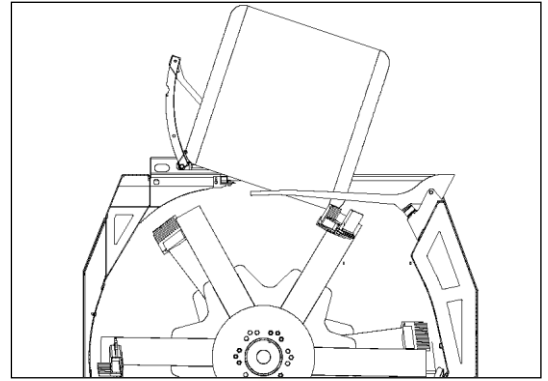
7.6 SPECIFIC INSTRUCTIONS FOR BALE PROCESSOR MODELS

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 6 paddles.
3. The bale should be loaded at a slight backward angle and the front edge of the bale positioned above the knife, against the creel, so that the rotating paddle grabs hold of the rear base of the bale and cuts it against the serrated top knife. Refer to the diagram to the right.
4. The bale should be held in this position, until the first couple of paddles pass, chopping the rear corner of the bale, and then gently dropped to rest on the tines so that as the bale is being loaded, the paddles are hitting it and cutting some sections off the bale. The theory is that the bottom of the bale is cut off so that the bale sits flat on the tines and prevents the light density bales from rolling to either end of machine and also decreases intake time.
5. After 15-20 seconds the bale can be released and the loader moved away taking care not to pull the bale away from the knife.
6. After the paddle has sliced away some of the bottom of the bale, the bale itself will be turned over by the paddles and the process of loosening the bale will begin. If the bale is tightly wound then this part of the process will take longer than if the bale is loose.
7. As the bale loosens up, the paddle will start to take in sections of material by cutting it against the top knife. Once the bale has turned over and started to fall apart, the loader can be removed and the next bale fetched and the wrapping removed.
8. If the bale shows signs of being hard to break up or is not getting enough agitation by the paddles, do not press the bale down with the loader. A gentle lift of the bale and reposition is all that is required.
9. The **standard chopping times** for different materials of round 4' x 4' (120 cm) bales are as follows:

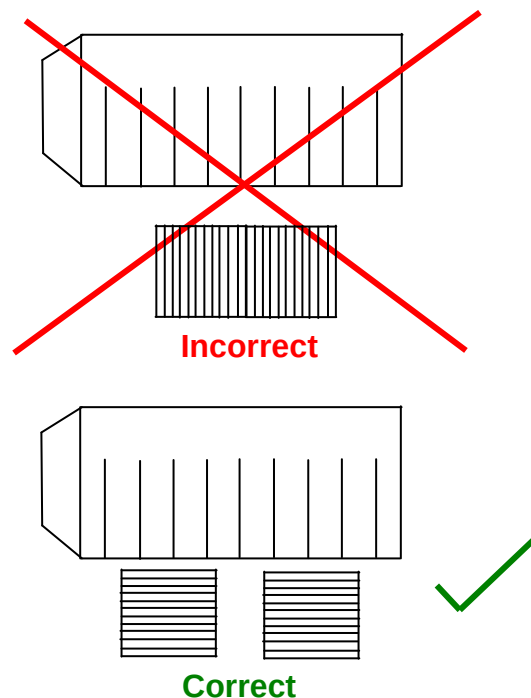
Straw	6-8 minutes (140 kg)
Hay	4-6 minutes (300 kg)
Wet silage (up to 20% DM)	2 minutes (700 kg)
Dry silage (20-30% DM)	2-4 minutes (500 kg)
Very dry silage (over 35%)	4-6 minutes (400 kg)

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

10. 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.



11. 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. 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.
12. The key to the successful operation is that the bale remains on top of the tines for long enough for all 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 all this time, the material that has already been cut from the bale is being processed within the chamber.



7.7 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 300kg (650 pounds) per tonne of material to be chopped. Rotate the machine for 1-2 minutes at 5-6 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 6+ revs.

If small quantities of material are to be washed and chopped best results are obtained by washing and chopping sufficient material to supply two days feed. It is recommended to do a rinse after the wash to remove any remaining dirt.

7.8 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 paddles running speed of 5-6 rpm. Allow the TMR to loosen and tumble for 15-20 seconds.
3. Open the VFC door partially. Once the TMR is seen on the feed out tray, allow 15-20 seconds before opening 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 guillotine door and always disengage the PTO before attempting to make tight turns away from the 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 Mech-Fiber 380 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 gives you the best results with a minimum of problems.



WARNING:

Prior to carrying out any maintenance on the machine, always disconnect the P.T.O. and hydraulic hoses from the tractor and ensure tractor engine is stopped. Observe safety precautions at all times when working on machine. Read Section 3 on safety before attempting to work on machine.

The maximum allowable pressure in the hydraulic circuit is 3000psi bar and flow rates of 15 litres/min are used. Replacement hoses should comply with DIN EN 853. When replacing hydraulic hoses, wear suitable protective equipment.

8.1 CHAINS

Primary Drive Chain	ASA100 Duplex	ASA100 Duplex
	540 RPM Driveline	1,000RPM Driveline
Links	110 Including Joiner	140 Including Joiner
Pitch (mm)	31.75	31.75
Pitch (inches)	1.25	1.25
Chain length (mm)	3,492.5	4,445.0
Chain length (inches)	137.5	175
Rotor Drive Chain	ASA200	Same as 540RPM
Links	108 Including joiner	
Pitch (mm)	63.50	
Pitch (inches)	2.5	
Chain length (mm)	6858	
Chain length (inches)	270	
Auger Drive Chain	ASA120	Same as 540 RPM
Links	62 Including Joiner	
Pitch (mm)	38.1	
Pitch (inches)	1.5	
Chain length (mm)	2362.5	
Chain length (inches)	93	

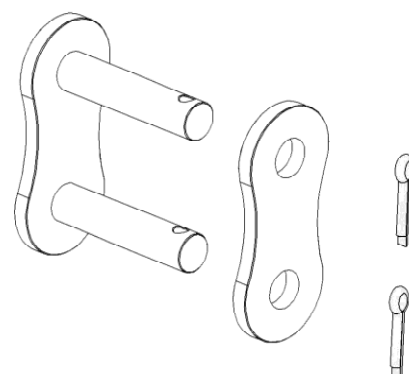


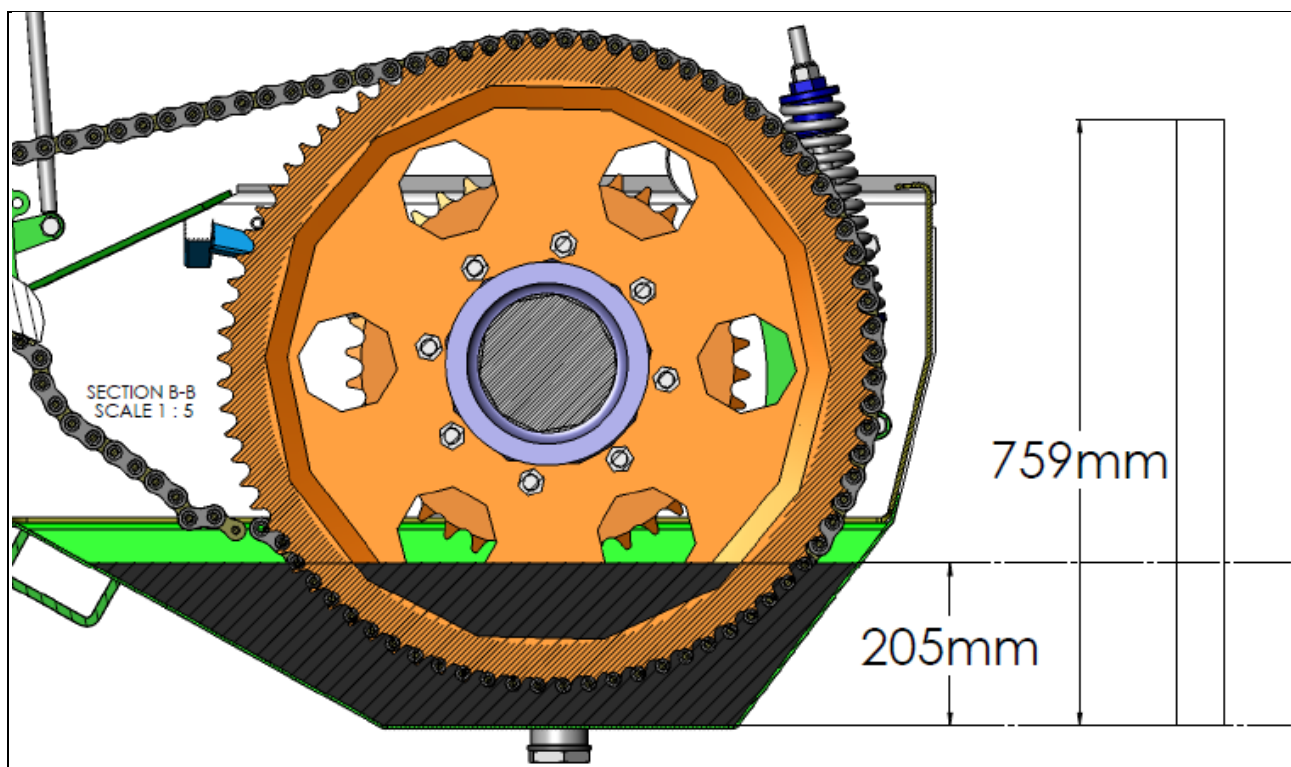
Figure 7: Chain joiner link



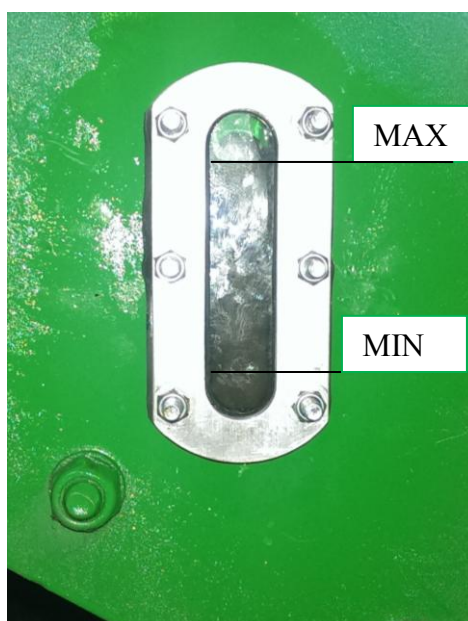
CAUTION:

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.

During commissioning of the MF380, it is recommended that the driveline oil bath is filled to a **maximum of 30 Litres** of oil only.



To check the oil level where oil window is not available, a measurement of 205mm can be taken by dipping a piece of material approx 759mm long down the front, marking 205mm on the piece. 205mm is the desired height to keep the oil level filled to for maximum 30 liters. Where window is available the level of oil can be seen through the window. Below image shows the Max (30 litres) and Min (20 litres). Exceeding the limit of 30 litres may cause oil leakage when in operation.



8.2 CHAIN TENSIONING:

- **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)

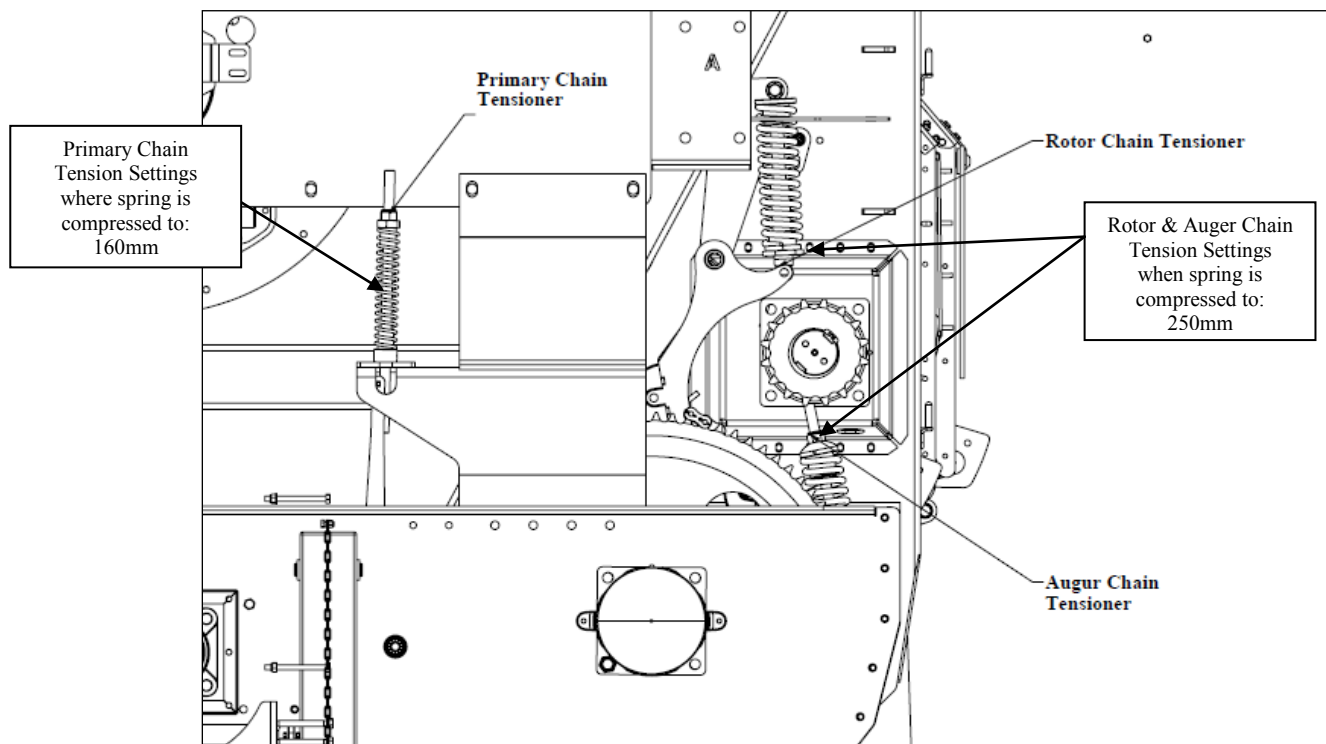


Figure 8: MF380 Chain 540RPM Tensioner Locations

Over the lifetime of the machine, the drive chains will extend slightly over time. To combat this issue as per the image above all Keenan Machines are fitted with Chain tensioners on the slack side of the chain.

- **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.

8.3 CHAIN TENSIONING:

- **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)

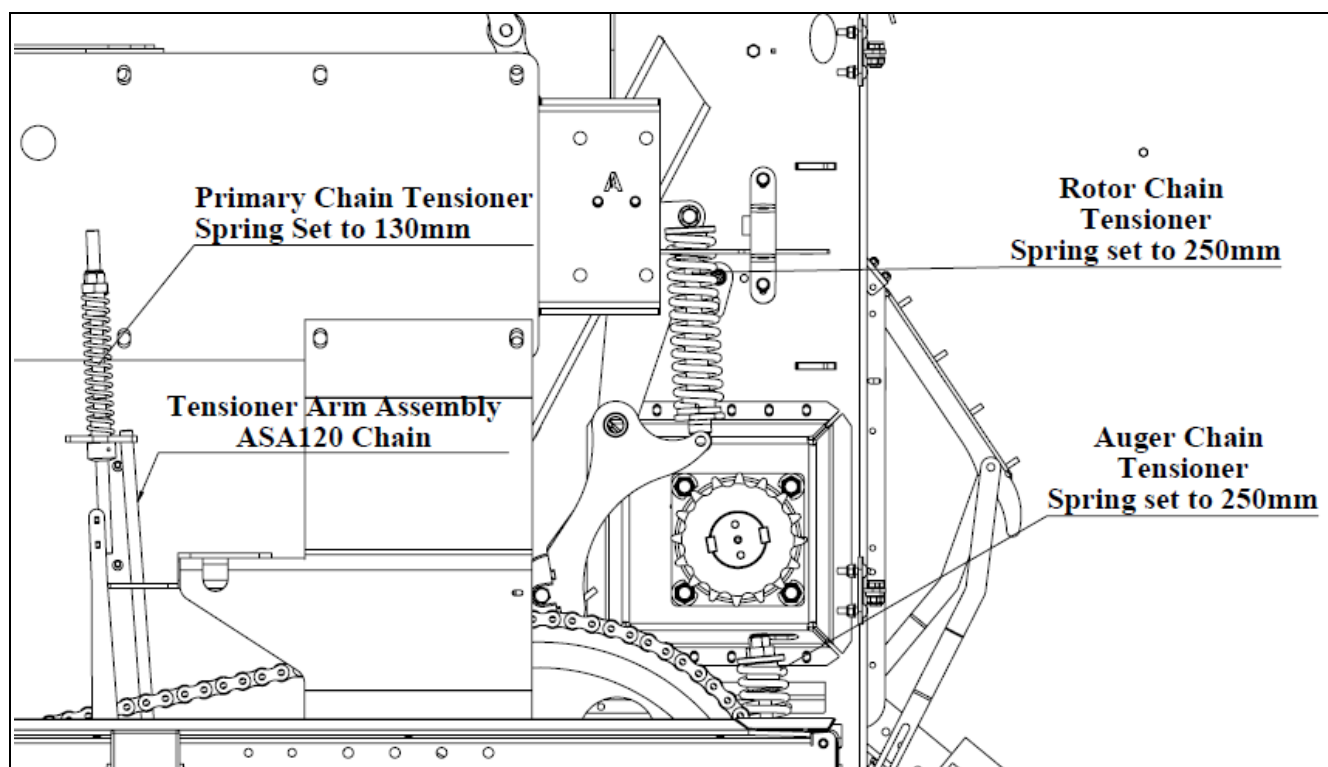


Figure 9: MF380 Chain 1000RPM Tensioner Locations

Over the lifetime of the machine, the drive chains will extend slightly over time. To combat this issue as per the image above all Keenan Machines are fitted with Chain tensioner on the slack side of the chain.

- **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.

8.4 GREASING

The Following Table below dictates the points where greasing should be practiced at regular intervals and where particular grease points are located.

1. **Bearings**

Grease Point	2
Grease Point	3
Grease Point	5
Grease Point	4
Grease Point	6
Grease Point	7
Grease Point	8
Grease Point	12

2. **Pivot pins**

Pivot Point	11
Pivot Point	10
Pivot Point	9
Pivot Point	1

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

Pivot Point	16
-------------	----

Greasing

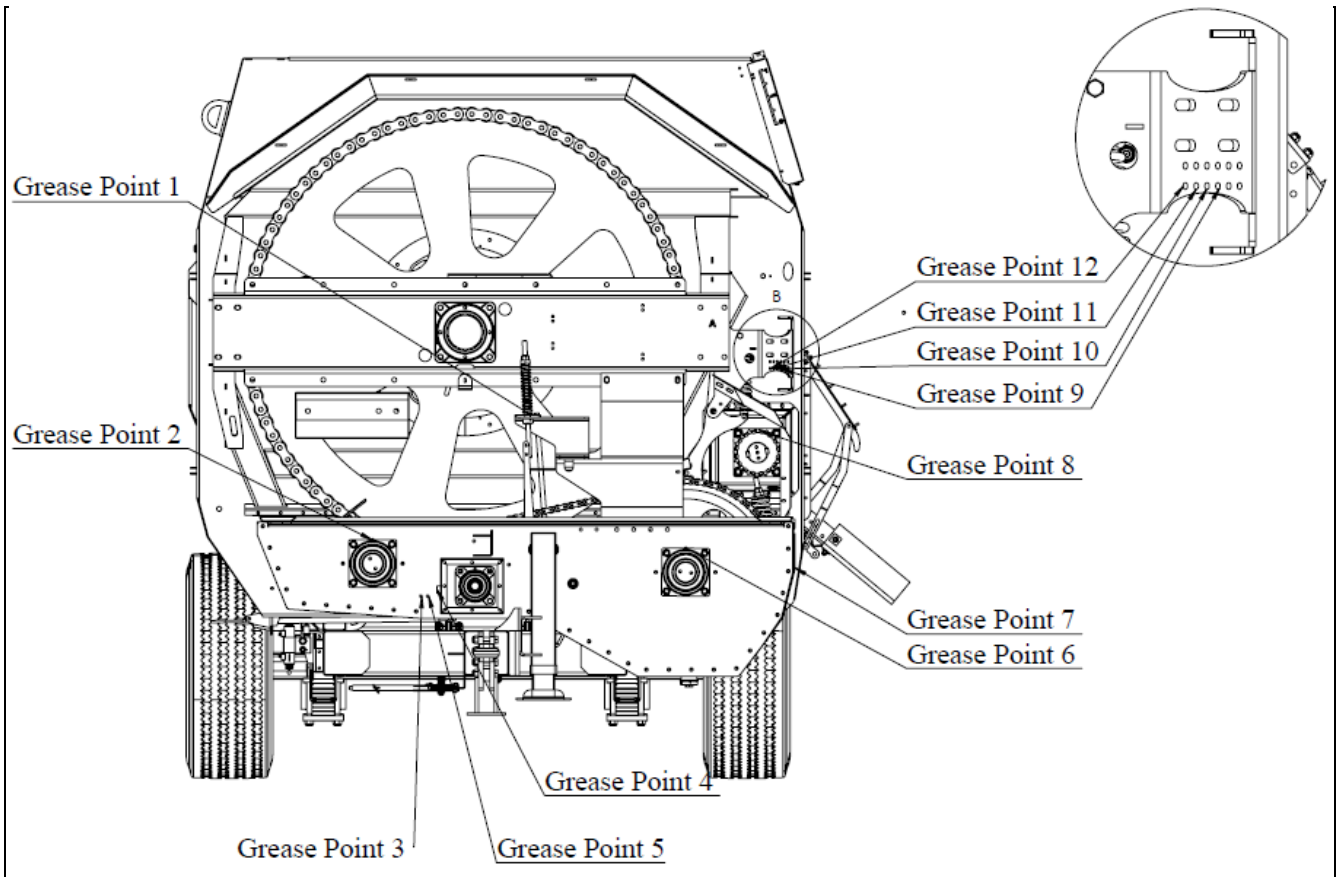


Figure 9: Front greasing points 1000 RPM

Greasing

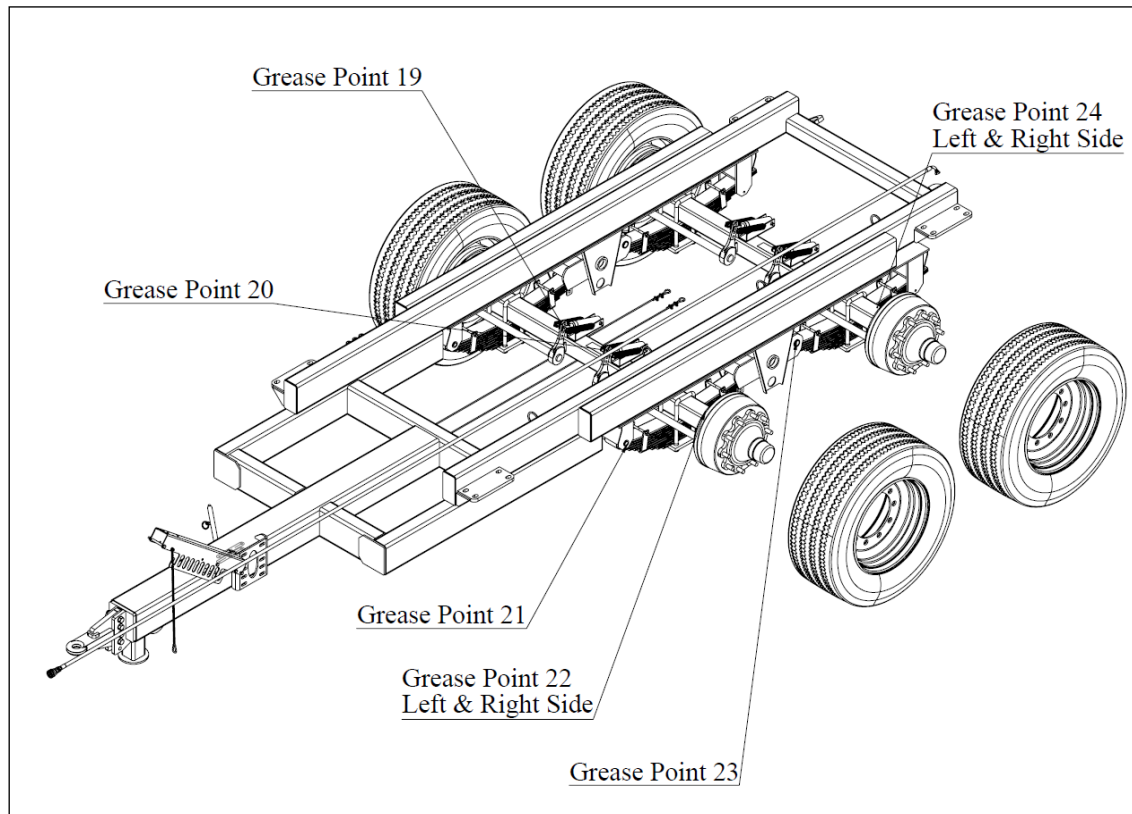


Figure 10: MF380 Chassis

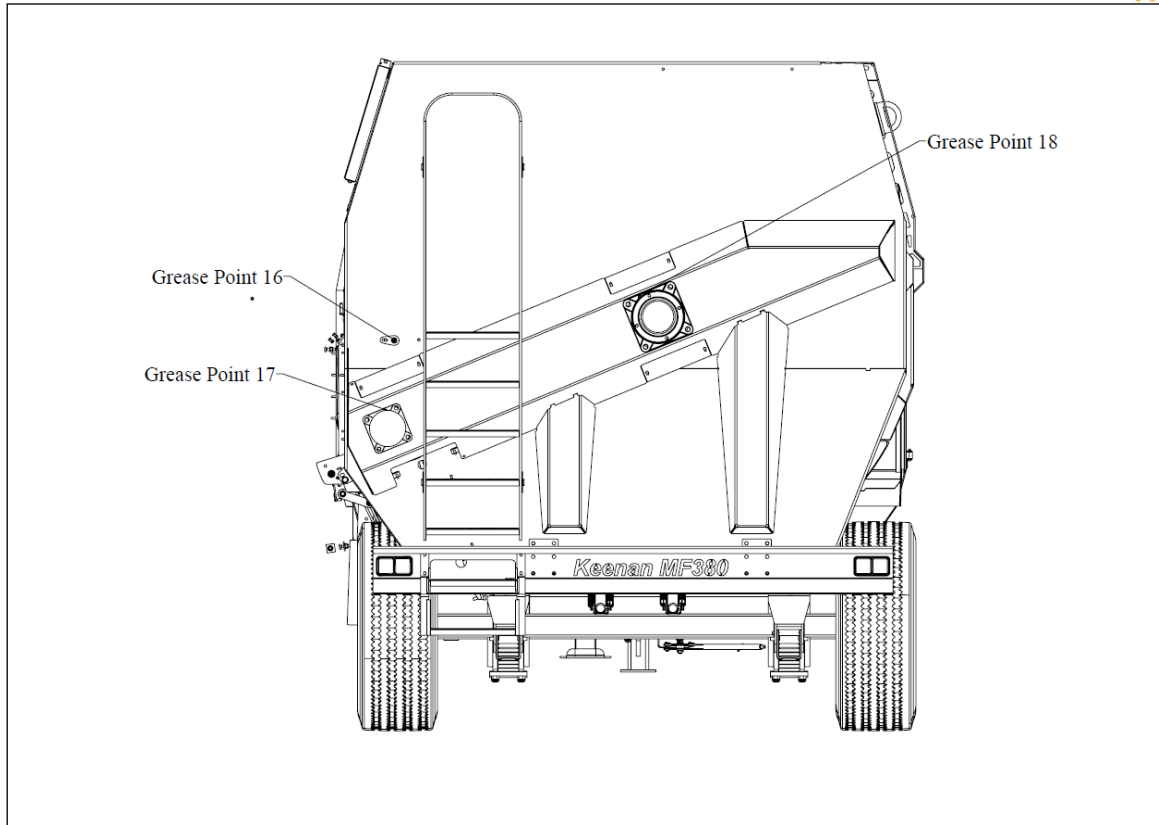


Figure 12: MF380 Rear

8.5 MAINTENANCE FOR BALE PROCESSOR MODELS

There are no grease points fitted to the Bale Processor creel bolt-on attachment. The simplicity of design and the use of self lubricating bushes negate the need for weekly greasing. However, the following should be checked on a monthly basis:

- 1: The M16 tine bolt lock nuts 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.
- 2: 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 $235\text{mm} \pm 10\text{mm}$ (see Figure 13), but may vary depending on application and the design of tine fitted. Please consult your local Service Centre for settings.

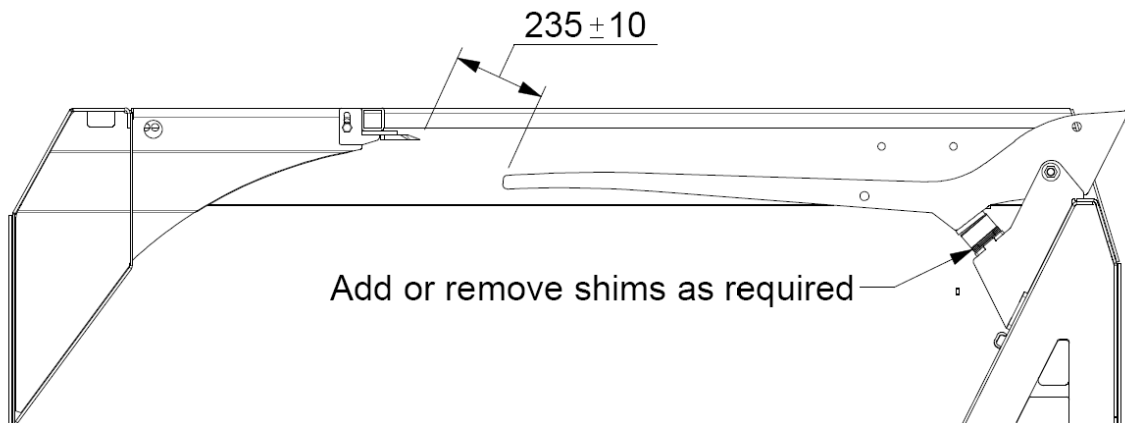


Figure 13: Bale Processor tine to top knife setting

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

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

Note: The creel rubber is fitted to prevent material hanging over 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 Processor arms.

8.6 SHEAR BOLT

The following are the recommended shear bolts to be used with the Mech-Fiber 380

PTO speed range	Shaft	Shear Bolt	Part No.
540rpm	T80 & V80	M12 x 75 x 4.6	702869
1000rpm	T60 & V60	M10 x 60 x 4.6	700235

Table 5: Shear bolt specification



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.
2. After the first week, and each week thereafter, check all nuts and bolts, including bearing nuts, for tightness.

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

Table 6: General torque for wheel studs

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

Table 7: Recommended torque for U-bolts for tandem axles

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 8.

This information is given as guidance. If in doubt please contact Keenan service.

Type	Bar	PSI
385/65 R22.5 (15 R22.5)	9	130
445/45 R19.5	9	130
385/55 R22.5	9	130

Table 8: Tyre pressure



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.

8.9 WHEELS

1. Each year bolt 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: When re-fitting the wheels, tighten the castle nut until resistance is felt (do not over tighten). Release the castled nut 1/6 of a revolution, check for movement in the hub, and if none, re-fit the split pin.

Note: 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 feeder.

Changing a wheel

1. Park the mixer wagon on level ground and apply the handbrake.
1. 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.
2. Jack up the mixer wagon underneath the axle until the bottom of the wheel is off the ground. Remove the nuts completely and slide off the wheel.
3. Refit the wheel ensuring that the centre of the wheel is properly located on the hub and hand tighten wheel nuts.
4. Lower the machine and tighten the nuts to the recommended torque using suitable equipment.
5. Check the wheel nuts for tightness after 1 hour of use, repeating on a weekly basis.

8.10 REAR FEEDOUT 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 18 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.

Elevator

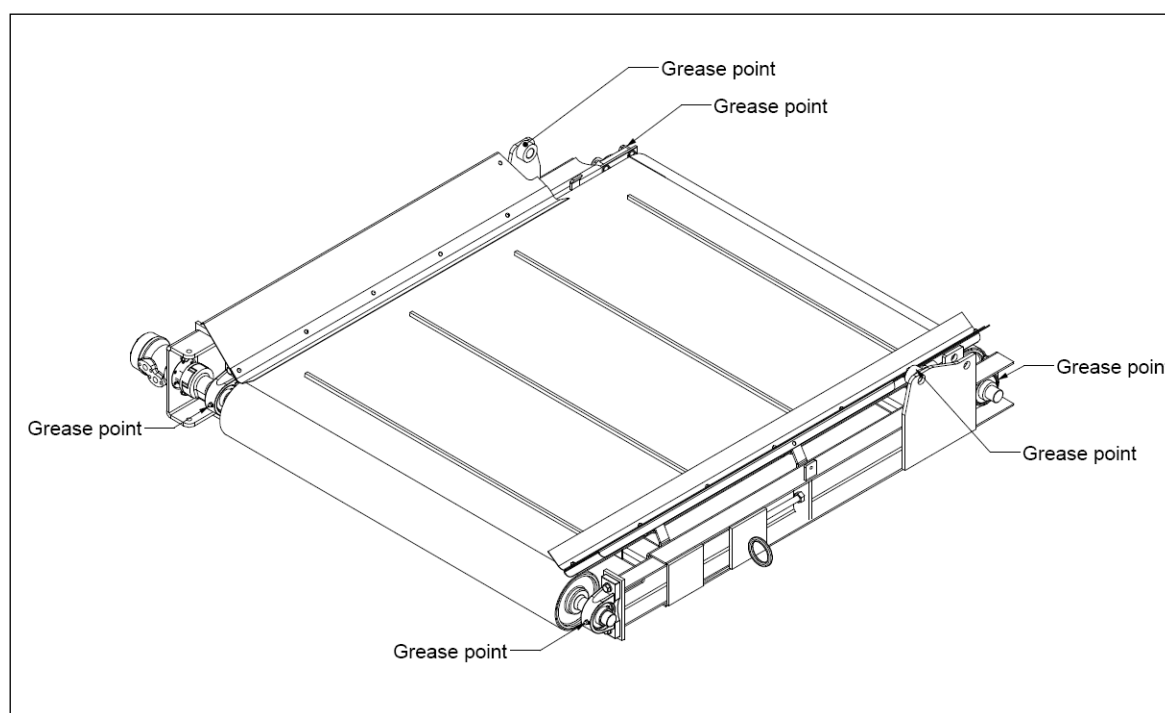


Figure 18: Side elevator greasing points

9. MAINTENANCE CHECKLIST

Daily

- Cleaning:** Clean all old feed from around body to prevent damage to paint and corrosion.
- VFC door:** Before using the machine, check that the door opens and shuts fully and operates smoothly.

Weekly (40 hrs)

- PTO input shaft:** Grease the universal joints (2 nipples) and the sliding half shafts (smear grease on surfaces). For further information, please refer to the PTO Maintenance Booklet supplied with the PTO.
- Input shaft bearings:** Grease the drive input-shaft bearings (x 2)
- Primary idler shaft:** Grease the front and rear idler shaft bearings (x 2)
- Secondary idler shaft:** Grease the front and rear idler shaft bearings (x 2) – 1000RPM Driveline
- Rotor Bearings:** Grease the front and rear rotor bearings (x 2)
- Feed discharge auger:** Grease the front and rear auger bearings (x 2)
- Chain tensioner arms:** Grease the pivot points on each of all 4 tensioner arms.
- Rotor chain tensioner spring seat:** Grease the pivot points of the spring seats & the centre shaft (x 6)
- Chain tensioner sprockets:** Grease the primary & secondary chain tensioner sprocket bearings (x 2)
- Tandem Suspension:** each brake rod (x 8)
each brake arm (x 4)
each spring front pin (x 4)
each spring centre pivot assembly (x 2)
- Guillotine door (VFC):** Grease the door's hydraulic cylinders (x 4) and the slide plates (smear grease on surfaces)
- Drive chains:** Check condition of all 3 drive chains and their tensioners. Keep oil bath reservoir at recommended level with Total/Finol Chainac MP
- Tyres:** Check that tyres are inflated to the recommended pressures and make sure the wheel nuts are tight.

Monthly (160 hrs)

- Bale Processor arm buffer:** Check for cracks, splits or degradation. Replace if necessary

Yearly (or 450 hrs)

- Drive chains:** Open oil bath drain bung and drain off existing oil. Wash off all dirt and old oil, using paraffin, then dry. Refill bath with new oil to required level (see section 6.1) and run machine for 5-10 minutes to ensure all chains have been lubricated.

Machine:	Before storage, wash the complete machine, then grease or oil all weekly lubrication points as above. Open the drain bung in the mixing chamber. 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 into a plastic bag.
Wheels:	Remove and inspect wheel hub. Replace worn parts, redress and re-fit.
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. SPECIFICATION

10.1 WEIGHT

Model Weight		MF380	MF380 & B/P
Unladen	kgs	12500	13500
	lbs	27550	29754
Payload	kgs	9000	9000
	lbs	19836	19836
Gross	kgs	21500	22500
	lbs	47386	49590

Table 9: Machine weights

Note:

Weights may vary depending on exact specifications.

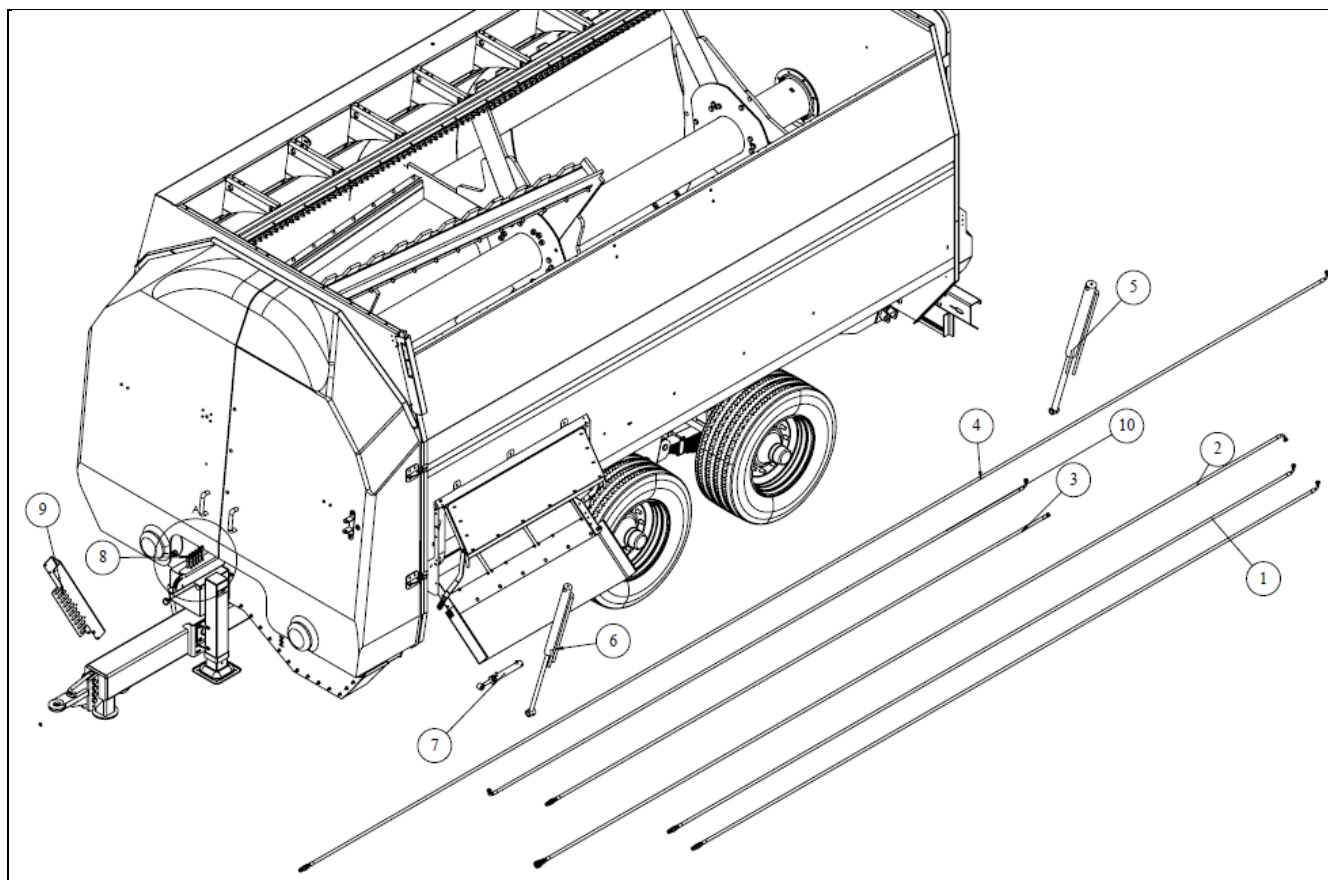
* The pre-mix or caustic soda capacity is 7500 kgs/17600 lbs, due to its nature in weight and density. Further advisements can be found in sections 5.3: Mixer Wagon Capacity & 5.4: Loading and Mixing.

PART II

(Spare Parts)

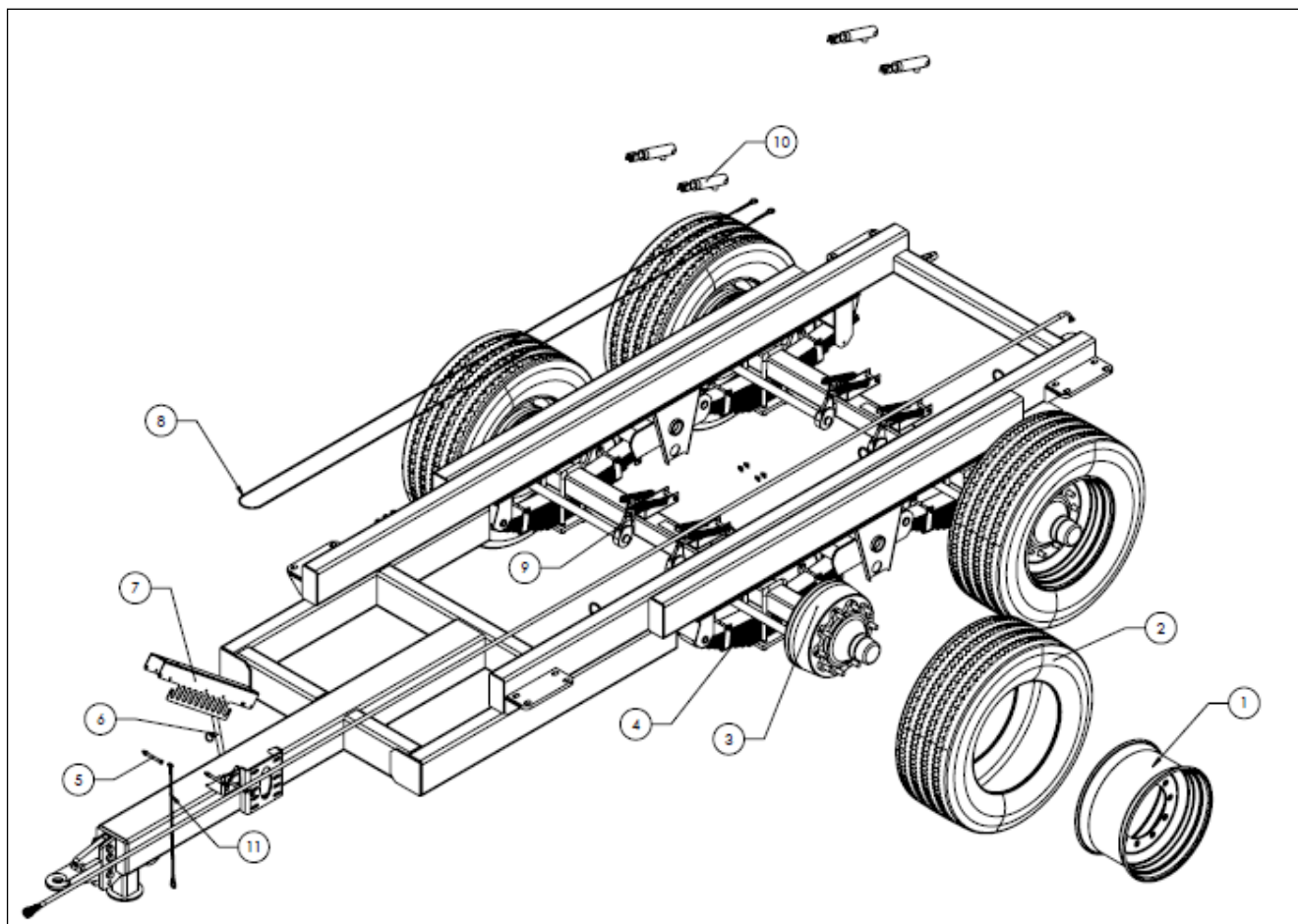
11. PARTS LIST

11.1 Hydraulic System Parts



Item	P/N	Qty	Description
1	703145	2	1/2" Male-3/8" Female 90 Degree X 5700mm Hydraulic Hose
2	704622	1	Hyd. Hose Assembly, 6,850mm Long,
3	701514	1	VFC Door Hose Assembly - 4560MM – Tractor To Front Ram
4	701515	1	VFC Door Hose Assembly - 9450MM - Tractor To Rear Ram
5	701975	1	Rear V.F.C guillotine door ram (keen 45)
6	703857	1	Guillotine Door Ram - Front (KEEN 64)
7	703591	1	6" Stroke Feed-Out Tray Ram Assembly
8	702869	10	M12 x 70 (4.6 grade) shear bolt
9	FP160-001-0094	1	Hydraulic Hose Arm
10	701513	1	VFC Door Hydraulic Hose Assembly - 4930mm - Front Ram to Rear Ram

11.2 Chassis Parts



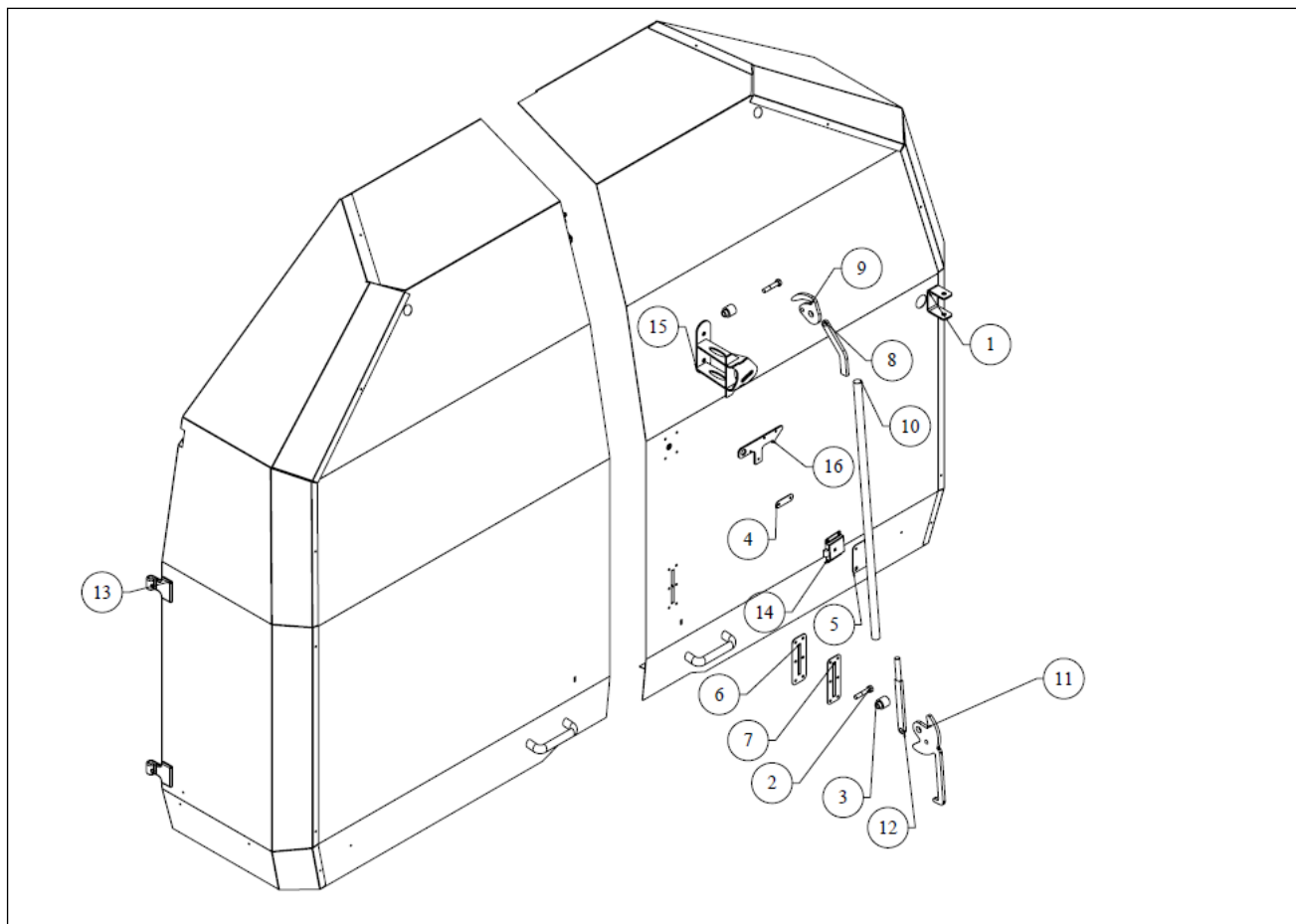
Parts list

Item No.	Qty.	P/N	Description
1	4	702309	Wheel rim 11.75" x 22.5", 10 Stud
2	4	702774	385/55R 22.5 remould tyre
3	2	704719	110mm section x 2,300mm wide 10 stud straight axle
	1	703682	Steering option - 110mm section x 2,400mm wide 10 stud straight axle
	1	704777	Steering option - 110mm section x 2,400mm wide 10 stud steering axle
4	4	703681	Suspension assembly
5, 7 & 11	1	FP160-001-0095	Hose holder assembly arm
6	1	FP300-001-0089	Handbrake assembly
8	1	702038	Handbrake cable.
9	4	N/A	Brake arm, part of axle.
10	4	700832	Brake ram.

11.3 Front Covers

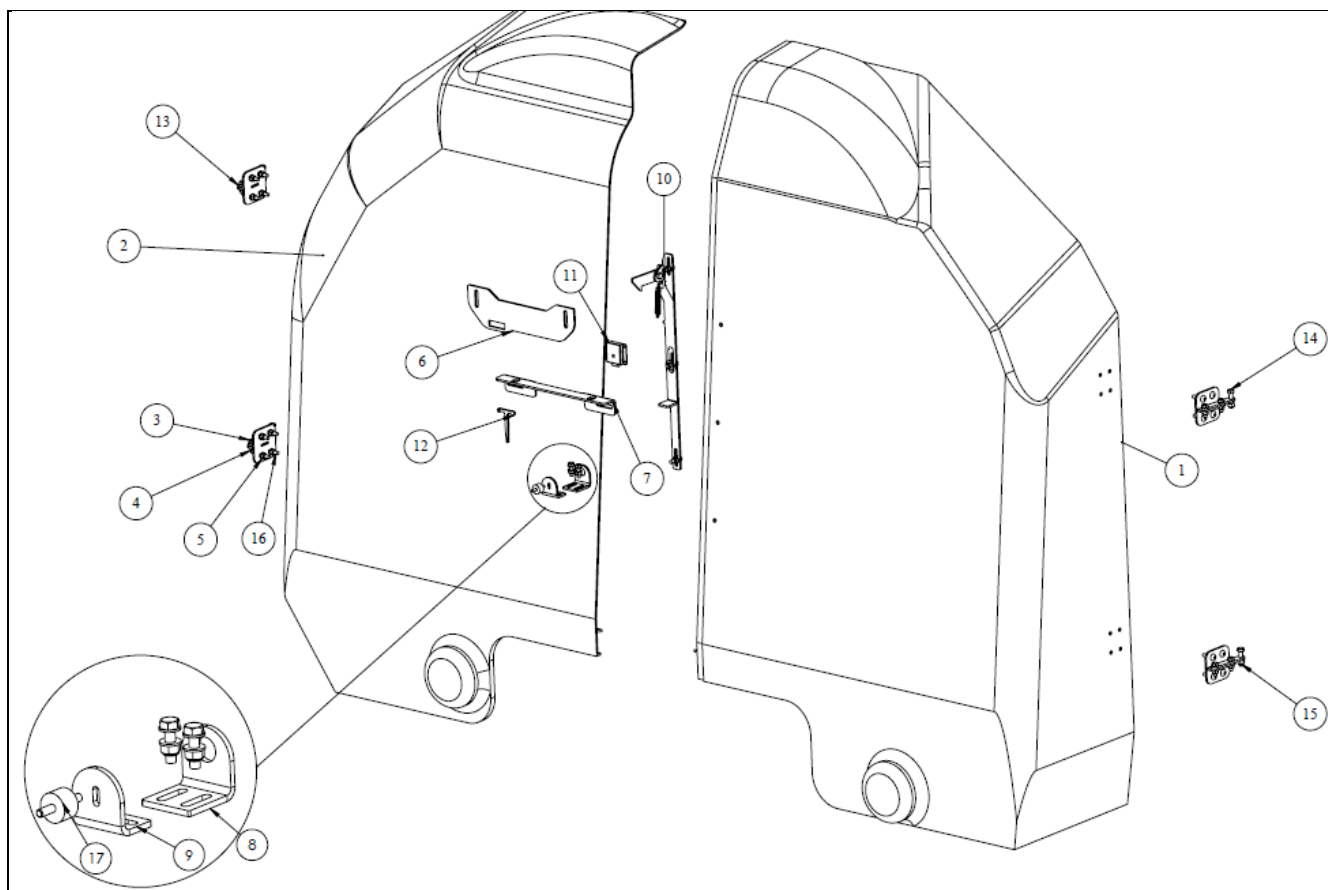
Steel version

Parts list



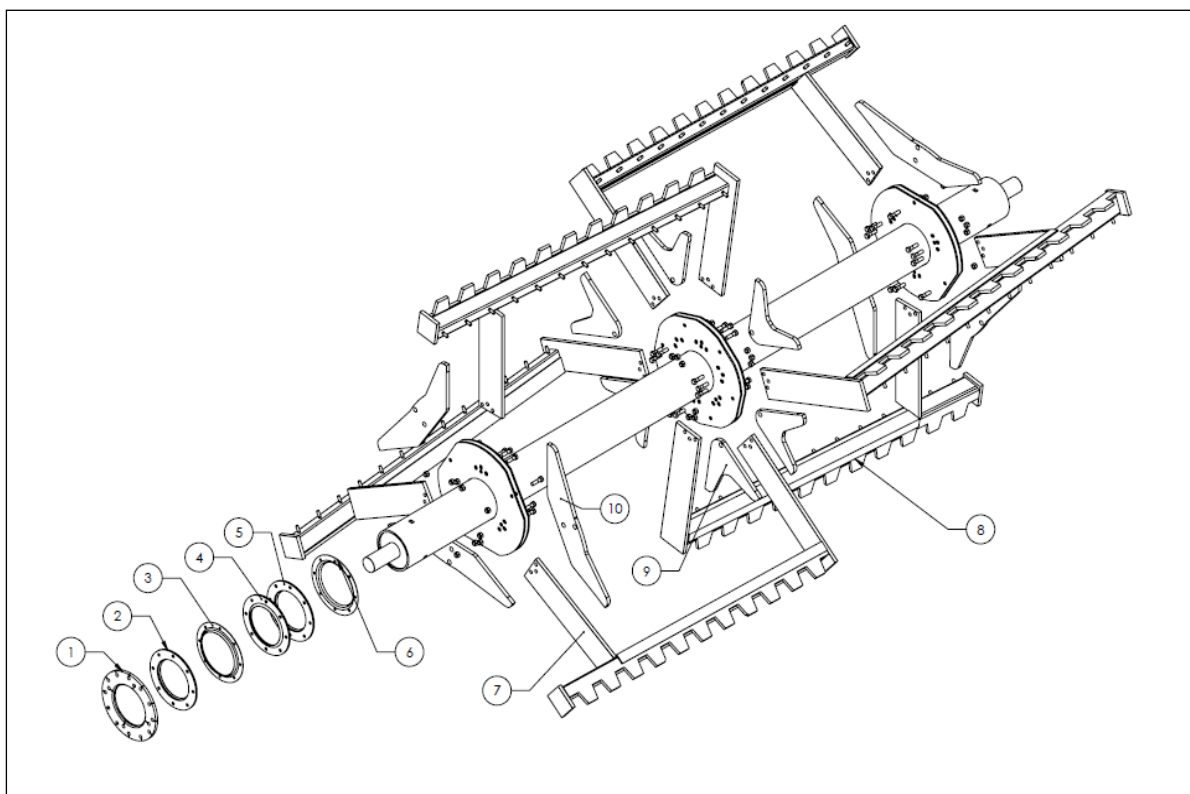
Item No.	Qty.	P/N	Description
1	1	FP380-037-0003	Front Cover Assembly, Left Hand Side
2	2	700259	M12 x 60 bolts
3	2	FP380-038-0016	Bush, 32mm OD, 13mm ID, 40mm Long
4	1	FP380-037-0044	Retainer, 2mm Plate for Front Door Seal
5	1	FP380-037-0045	Rubber Cover, 2mm Rubber
6	1	FP380-037-0046	Rubber Cover, 2mm Rubber
7	1	FP380-037-0047	Retainer, 2mm Plate for Front Door Seal
8	1	FP380-037-0042	Rod End, Cranked, 10mm Plate
9	1	FP380-037-0031	Hook, for Front Guard
10	1	FP380-037-0028	Tie Rod, Thread for Adjustment
11	1	FP380-037-0036	Profiled Handle.
12	1	FP380-037-0029	Rod Assembly, Threaded Adjustment
13	1	FP380-038-0003	Front Cover Assembly. Right Hand Side
14	1	EF1038-16	Spring lock
15	1	FP380-038-0014	Bracket Assembly, for Front Door
16	1	FP380-037-0026	Hook, for Front Guards, Adjustable.

11.4 Fiber Glass Version



Item No.	Qty.	P/N	Description
1	1	FP380-037-0001	Front Cover, Fibreglass, Left Hand Side
2	1	FP380-038-0002	Front Cover, Fibreglass, Right Hand side
3	10	700228	Bolt M10 x 35mm
4	26	700241	Nut, M10 Locknut
5	35	700729	Washer, M10 Flat
6	1	FP380-037-0056	Locking Plate, for Fibreglass Doors
7	1	FP380-037-0058	Locking Plate Bracket, for Fibreglass Doors
8	1	FP380-037-0060	Retainer Bracket, Folded
9	1	FP380-037-0061	Retainer Bracket, Folded.
10	1	FP380-037-0075	Door Catch Assembly, for Fiberglass Doors
11	1	702339	Spring loaded door lock
12	1	FP300-037-0044	Safety Lock Key
13	4	FP380-037-0057	Hinge Adjustment Plate
14	4	700257	Bolt, M12 x 50mm
15	4	700266	Nut, M12 Locknut
16	16	700251	Bolt, M10 x 40mm
17	1	704438	Rubber Vibration Mount

11.5 Rotor Parts



Parts list

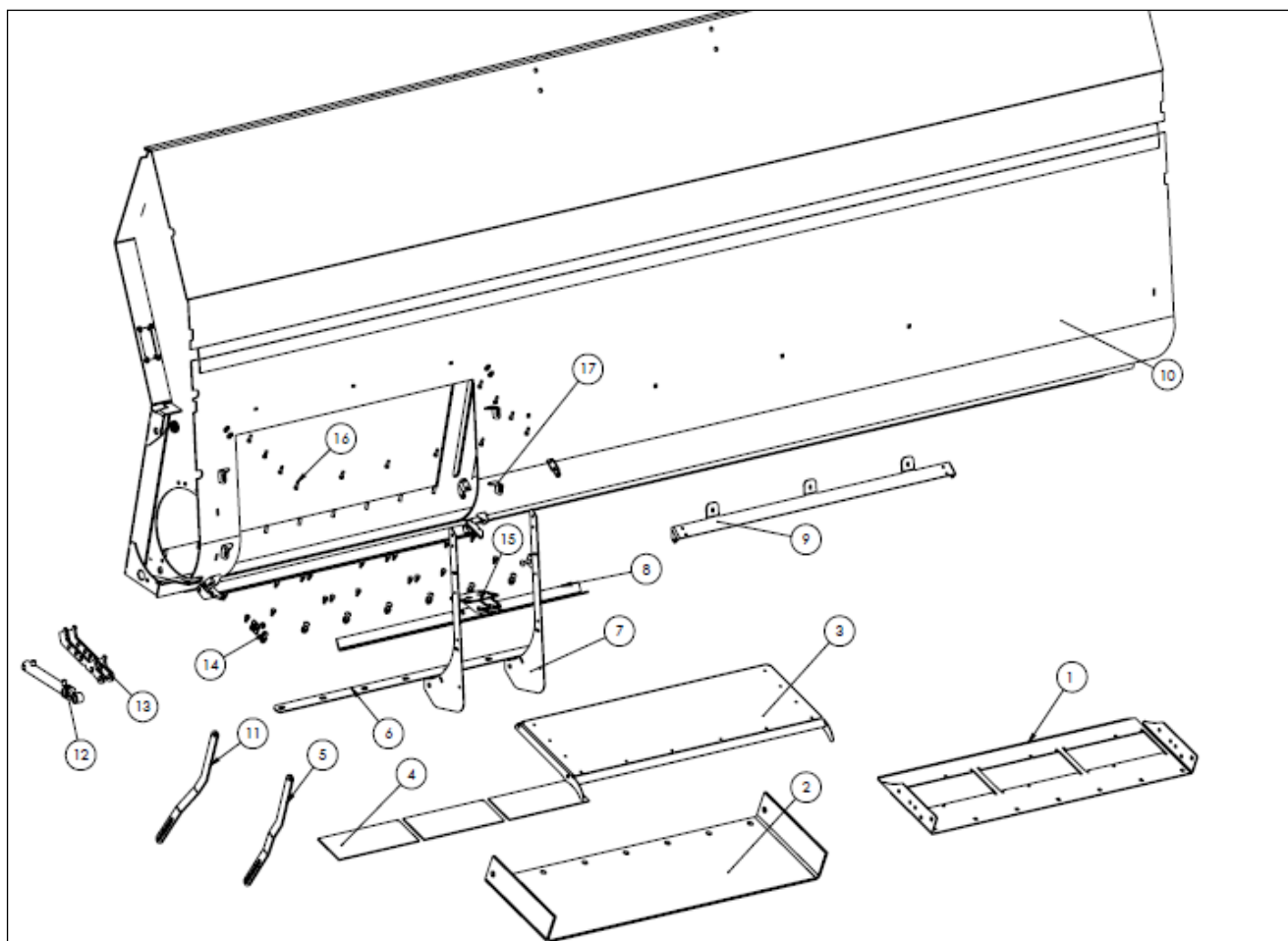
Item No.	Qty.	P/N	Description
1	1	703653	Rotor flange
2	1	703655	Rubber seal, for rotor, 400mm OD x 10mm
3	1	FP280-007-063	Seal Retainer
4	1	703655	Rubber seal, for rotor, 400mm OD x 10mm
5	1	703655	Rubber seal, for rotor, 400mm OD x 10mm
6	1	FP280-007-063	Seal retainer plate
7	1	FP380-008-0001	Paddle assembly, front
8	1	FP380-008-0004	Paddle assembly, rear
9	1	FP280-007-0090	Paddle Block
10	1	FP280-007-0091	Paddle Block

Paddle Rubbers

11	3	702289	Paddle Rubber 20MM, 2500 X 200 (Front)
12	3	702290	Paddle Rubber 20MM, 2500 X 200 (Rear)

11.6 Feed out Parts

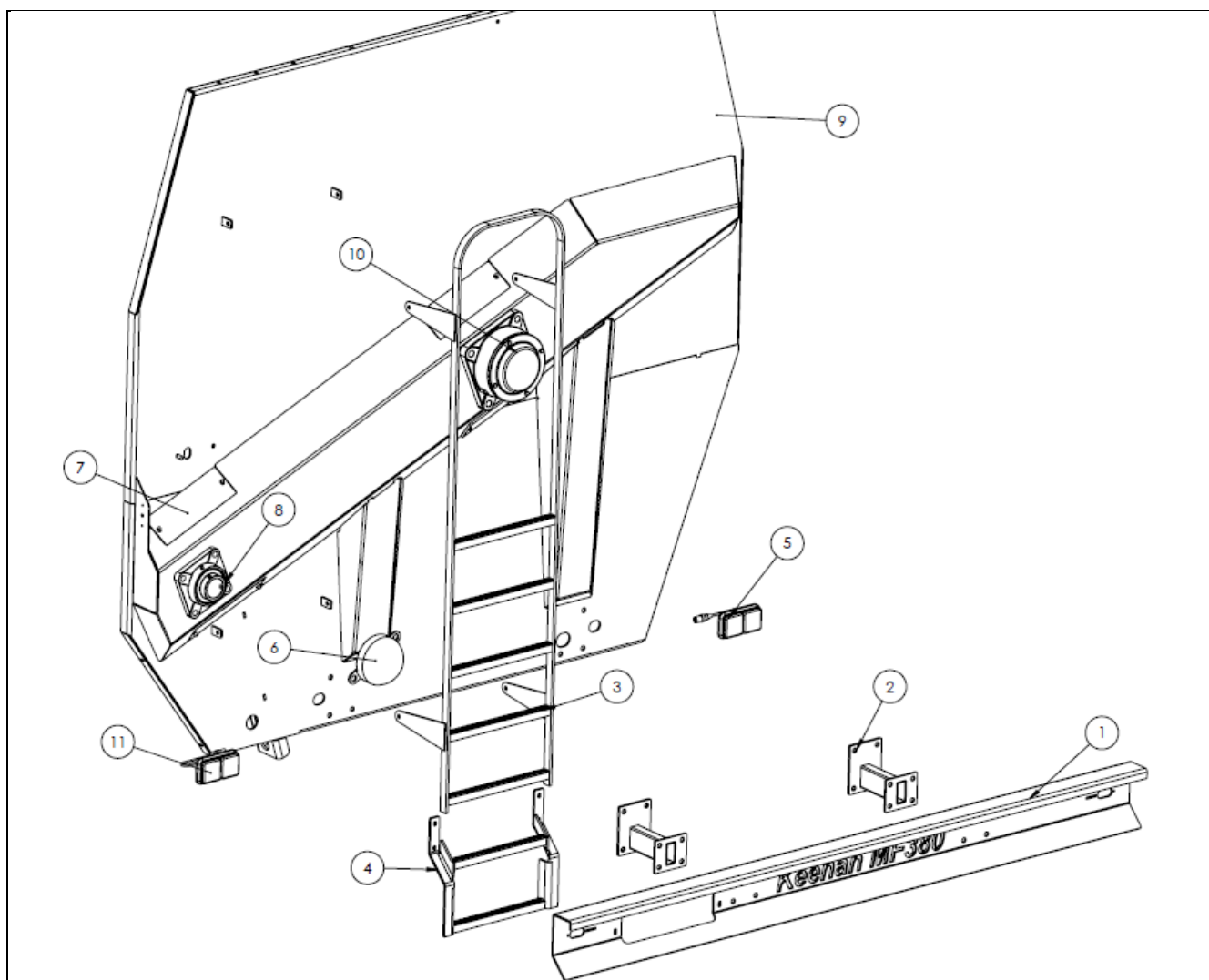
Parts list



Item No.	Qty.	P/N.	Description
1	1	fp160-006-0194	Feed out tray, for standard feed out.
2	1	701403	Rubber for feed out tray (1625mm x 406mm x 10mm rubber)
3	1	FP160-006-0126	Panel assembly, for feed out door.
4	3	fp160-006-0270	Tray magnet blank
5	1	FP380-006-0033	Tray arm, 8mm profiled & folded
6	1	FP160-006-0224	Retainer plate
7	1	FP380-006-0031	Side Plate, for feed Out.
8	1		Part of tray, item 1
9	1	FP380-006-0032	Top Plate, for Feed Out, 4mm Plate
10	1	-	Auger Chamber
11	2	FP380-006-0034	Tray arm, 8mm profiled & folded
12	1	703591	Tray ram
13	1	-	Part of tray, item 1
14	7	700251	Bolt, M10 x 40mm
15	1	fp300-006-0011	Ram bracket
16	12	700210	Bolt, M8 25mm
17	1	-	Hinge, part of auger chamber

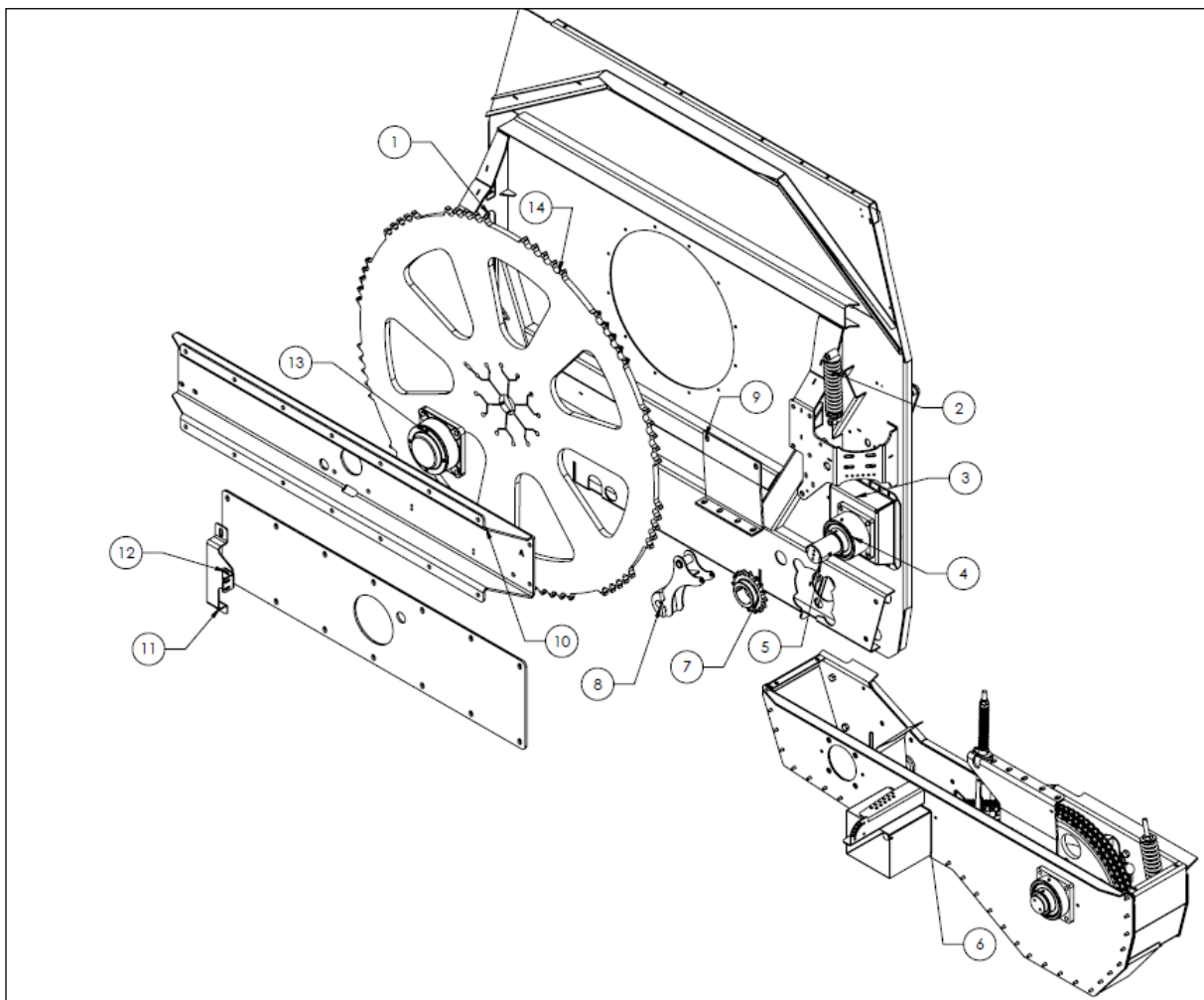
11.7 Rear Panel Parts

Parts list



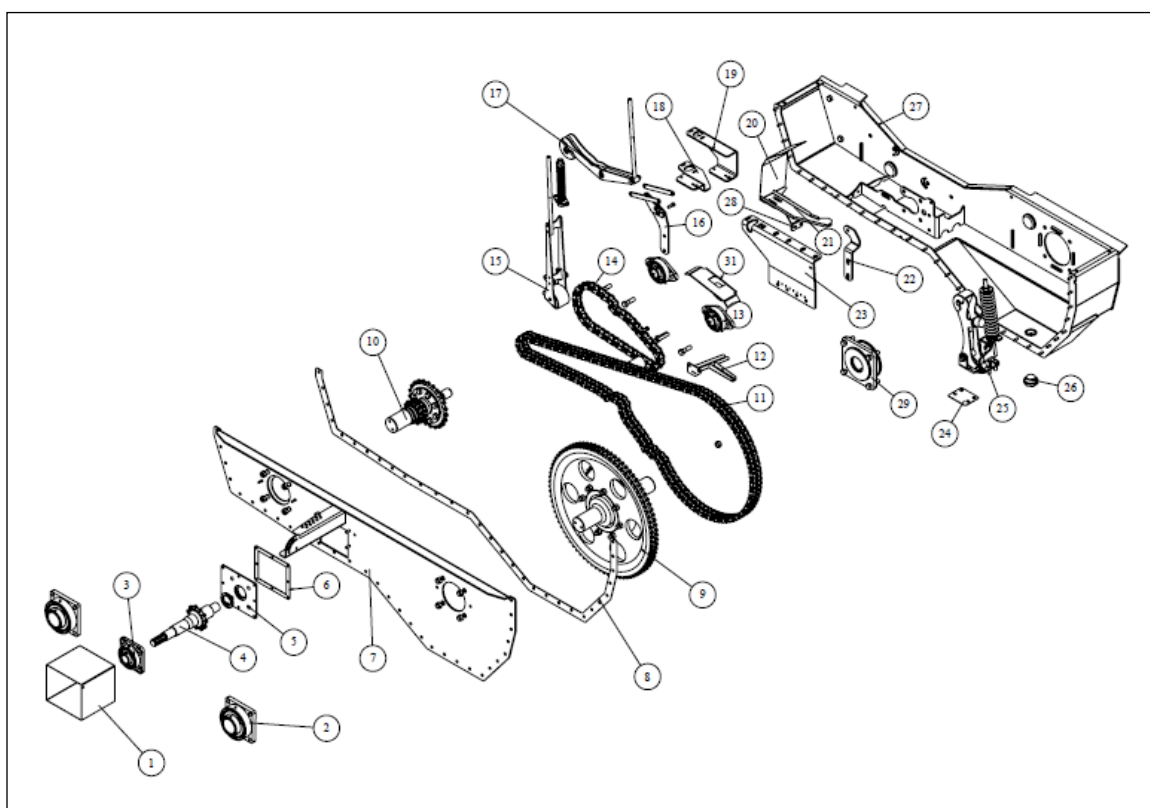
Item No.	Qty.	P/N	Description
1	1	FP380-001-0020	Bumper, folded 6mm plate
2	2	FP380-003-0015	Bracket, for mounting bumper bar
3	1	FP280-013-100	Rear inspection ladder (top section)
4	1	FP280-013-007	Rear inspection ladder (lower section)
5	2	705820	Right Hand Side Break Indicator Lights
6	1	701273	Bearing cover.
7	4	FP160-003-0015	Access panel.
8	1	700842	UCF X14, 70mm bearing, cast housing
9	1	-	Machine body
10	1	FP280-007-0085	Rotor bearing assembly
11	1	705819	Rear Indicator and Break Lights Left Hand Side

11.8 Front Panel Parts



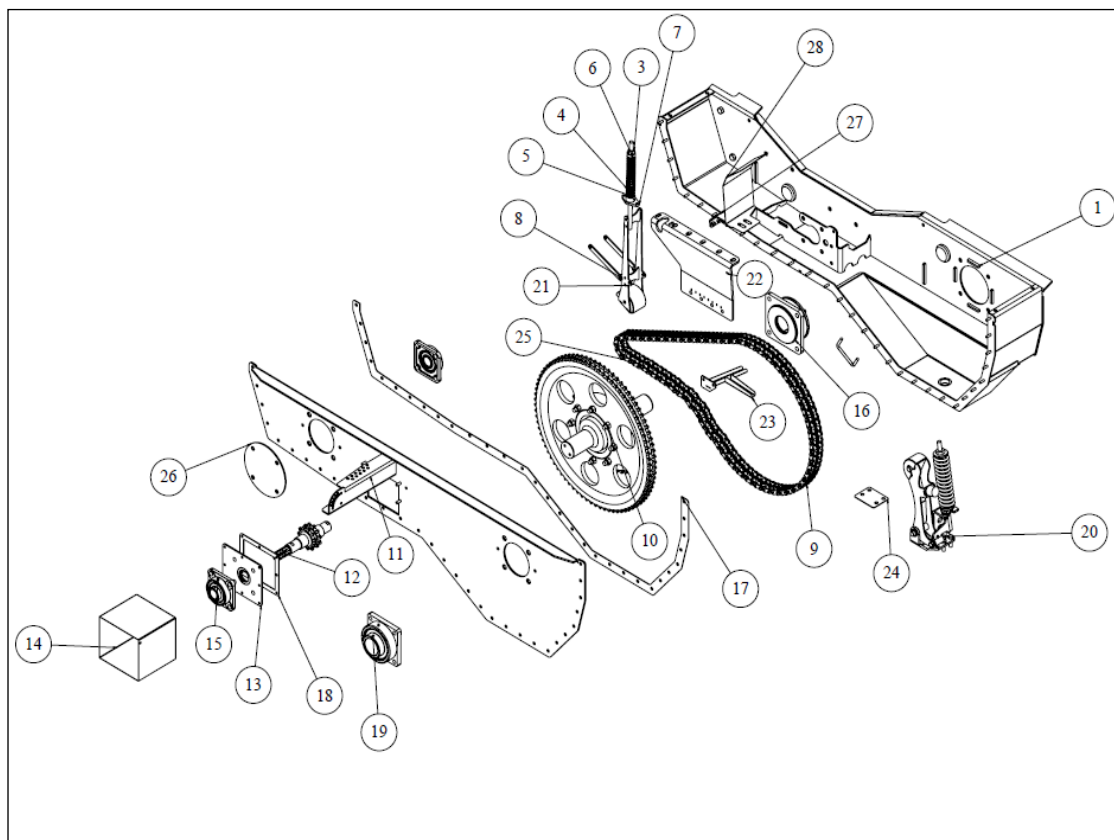
Item No.	Qty.	P/N.	Description
1	1	-	Machine body
2	1	FP200-048-0070	Tensioner assembly.
3	1	FP200-002-0055	Auger Support Plate, Folded, 6mm Plate
5	2	FP200-009-0020	Key, for auger shaft
6	1	FP380-048-0008	Drive Line Assembly, MF380
7	1	FP200-048-0046	Sprocket, 16 Tooth, ASA120, 90mm Double Keyed Bore
8	1	FP380-048-0046	Tensioner Assembly
9	1	FP380-048-0037	Support Plate, for Drive Line
10	1	FP380-017-0001	Front Channel, Front Bearing Support
11	1	FP280-017-0003	Bracket, for Latching Steel Front Doors
12	1	FP380-017-0002	Plate, for Front Channel Support, 10mm
13	1	FP280-007-0085	Bearing assembly, rotor
14	1	FP280-007-0099	96-Tooth ASA200 sprocket

11.9 1000 RPM Driveline



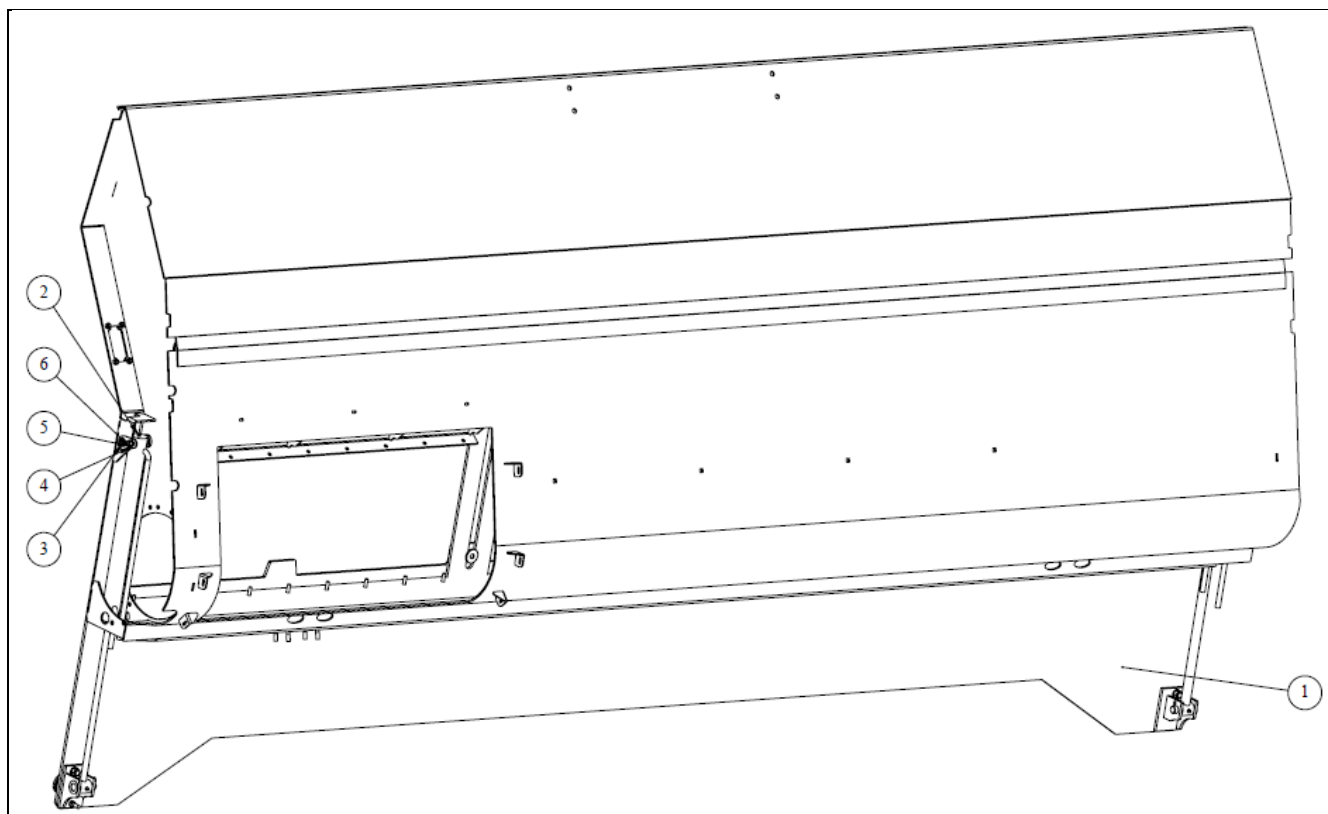
Item No.	Qty.	Part No.	Description
1	1	FP280-037-0135	PTO shroud.
2	2	702294	UCF X18, 90mm bearing assembly, 4 bolt flange mount
3	1	704410	UCF310, 50mm 4 bolt flange mount bearing
4	1	FP380-048-0080	Spline Shaft, 11 Tooth ASA120, 1-3/4" Z6 Spline
5	1	FP280-048-0604	Bearing mounting plate & seal assembly
6	1	FP280-037-0156	Gasket, for mounting plate
7	1	FP380-048-0005	Drive line, front plate weld assembly
8	1	FP380-048-0030	Gasket, rubber, for drive line
9	1	FP380-048-0007	Idler shaft assembly, MF380
10	1	FP380-048-0083	Lay Shaft Weld Assembly, 13 Tooth ASA100D Sprocket
11	1	704787	Chain assembly, ASA100 Duplex, 140 Pitches (139 + Joiner)
12	1	FP380-048-0051	Oil channel weld assembly
13	2	704786	UCFL 310, 50mm 2 bolt flange mount bearing
14	1	704788	Chain assembly, ASA120, 42 Pitches (41 + Joiner)
15	1	FP380-048-0039	Tensioner assembly, for primary chain
16	1	FP380-048-0105	Tensioner support weld assembly
17	1	FP380-048-0091	Tensioner arm assembly, MF380, for ASA120 chain
18	1	FP380-048-0086	Bracket, for 1000RPM tensioner
19	1	FP380-048-0085	Bracket, for 1000RPM tensioner
20	1	FP380-048-0103	Cover Plate, for Chain Drive
21	1	FP380-048-0098	Oil drain channel, 2mm plate
22	1	FP380-048-0093	Tensioner bracket
23	1	FP380-048-0038	Support plate, for drive line
24	1	FP380-048-0052	Gasket, rubber, for MF380 drive line
25	1	FP380-048-0060	Tensioner assembly, for auger chain
26	1	FP280-037-0200	Drain plug, for oil bath
27	1	FP380-048-0078	Base assembly, MF380 drive line
28	1	FP380-048-0107	Bracket weld assembly, for oil channel
29	1	FP280-048-0723	90mm taper lock bearing assembly
30	1	FP380-048-0102	Bearing cover plate

11.10 540RPM Driveline



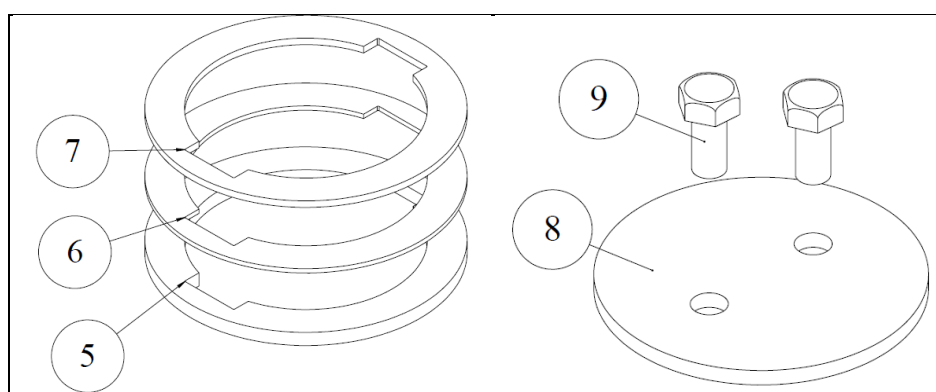
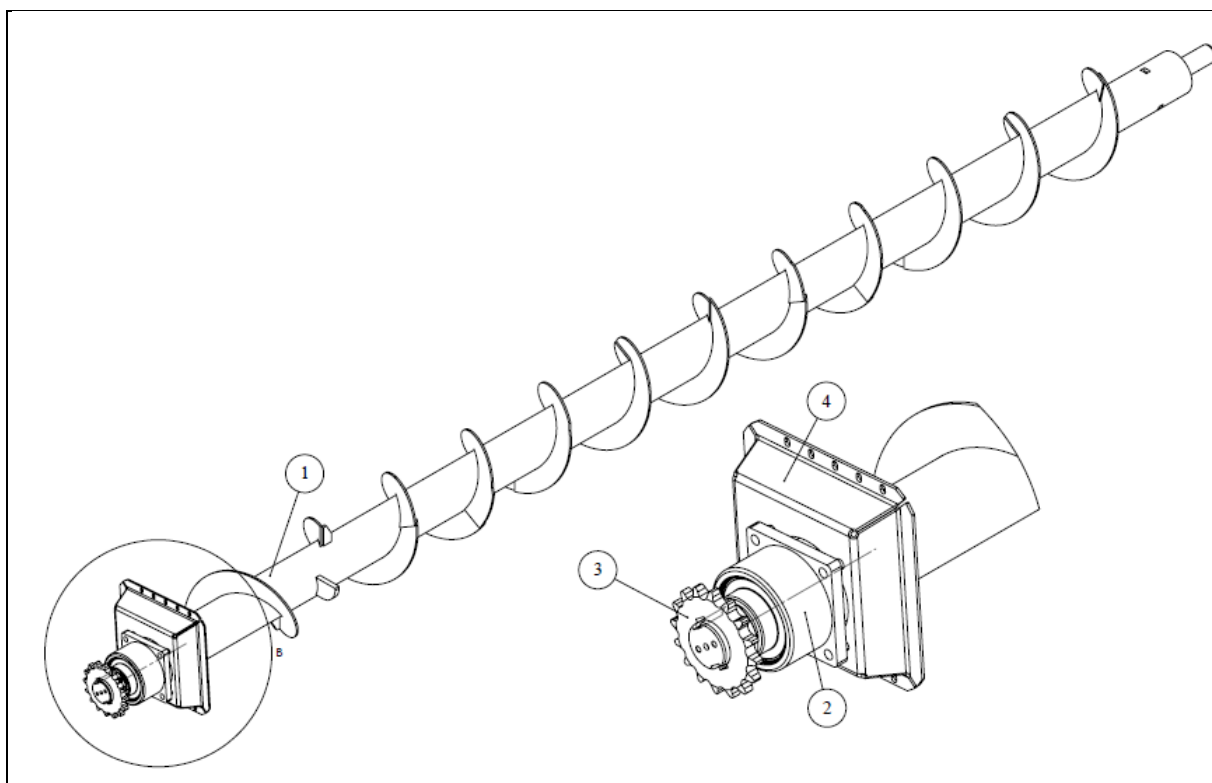
Item No.	Qty.	P/N	Description
1	1	FP380-048-0078	Base assembly, MF380 drive line
2	4	700298	Bolt, M20 x 70mm
3	2	700305	Locknut, M20
4	1	FP200-048-0081	Spring Seat
5	1	705042	Compression Spring, 32mm ID, 240mm long free length.
6	1	FP280-048-0695	Spring seat
7	1	FP200-048-0082	Spring seat plate
8	2	FP380-048-0025	Link arm, 225mm between centres
9	1	704780	Chain, ASA100 Duplex, 110 Pitches (109 + Joiner)
10	1	FP380-048-0007	Idler Shaft Assembly, MF380
11	1	FP380-048-0005	Front Body Plane Weld Assembly
12	1	FP280-048-0411	Spline Shaft, 1-3/4" Z6 Spline with 11 tooth ASA100 duplex sprocket
13	1	FP280-048-0604	Bearing mounting plate & seal assembly
14	1	FP280-037-0135	PTO shroud.
15	2	704410	UCF310, 50mm 4 bolt flange mount bearing
16	1	FP280-048-0723	90mm taper lock bearing assembly
17	1	FP380-048-0030	Gasket, rubber, for drive line
18	1	FP280-037-0156	Gasket, for mounting plate
19	1	702294	UCF X18, 90mm bearing assembly, 4 bolt flange mount
20	1	FP380-048-0060	Tensioner assembly, for auger chain
21	1	FP380-048-0039	Tensioner assembly, for primary chain
22	1	FP380-048-0038	Support plate, for drive line
23	1	FP380-048-0051	Oil channel
24	1	FP380-048-0052	Gasket, rubber, for drive line
25	1	700265	Locknut, M12
26	1	FP380-048-0100	Cover plate
27	1	FP380-048-0107	Bracket, for oil channel
28	1	FP380-048-0103	Splash plate, for chain drive

11.11 Guillotine Door



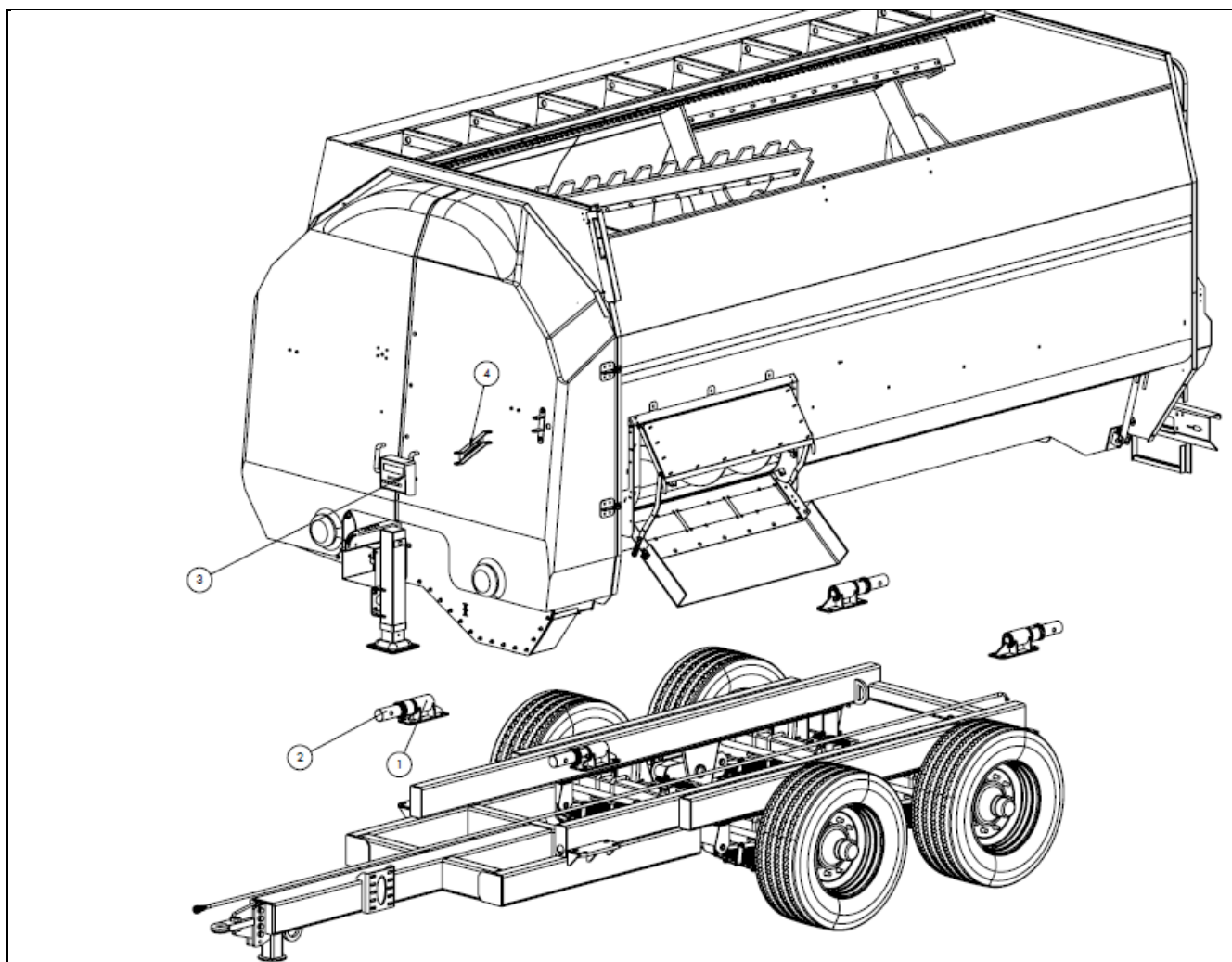
Item No.	Qty.	P/N	Description
1	1	FP380-047-0001	MF380 Body - Weld Assembly 1 - Main Jig
2	1	fp200-010-0101	K200 - Guillotine Door Assembly
3	1	704954	Guillotine Door Hyd. Ram, 60mm Bore, 32mm Rod
4	1	704955	Guillotine Door Hyd. Ram, 50.8mm Bore, 20mm Rod
5	2	701905	Guillotine Door Ram Top Pivot Pin
6	2	700730	Washers M12 Flat
7	2	700266	Nut, M12 Locknut

11.12 Auger



Item No.	Qty.	P/N.	Description
1	1	FP380-009-0001	Auger Weld Assembly, MF380
2	1	FP380-002-0043	90mm Bearing Assy, Flange Mount, UCF X18.
3	1	FP200-048-0046	Sprocket, 16 Tooth, ASA120, 90mm Double Keyed Bore
4	1	FP200-002-0055	Auger Support Plate, Folded, 6mm Plate
5	UAR	FP380-048-0075	Auger Drive Sprocket Thrust Shim (6mm)
6	UAR	FP380-048-0074	Auger Drive Sprocket Thrust Shim (3mm)
7	UAR	FP380-048-0073	Auger Drive Sprocket Thrust Shim (2mm)
*Use as required – (UAR)			
8	1	FP380-009-0001	Auger Weld Assembly, MF380
9	1	FP380-002-0043	90mm Bearing Assy, Flange Mount, UCF X18.

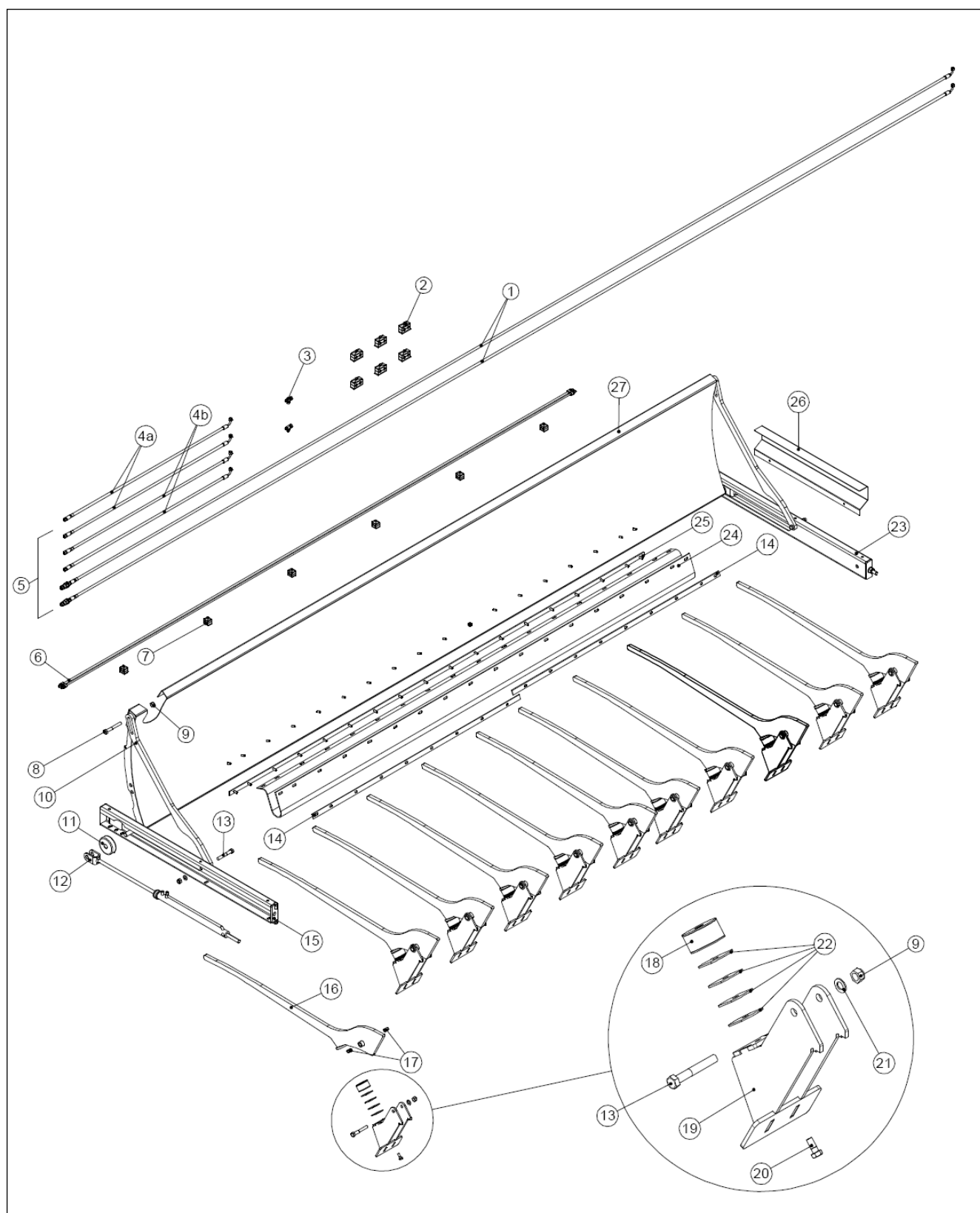
11.13 Weighing System Parts



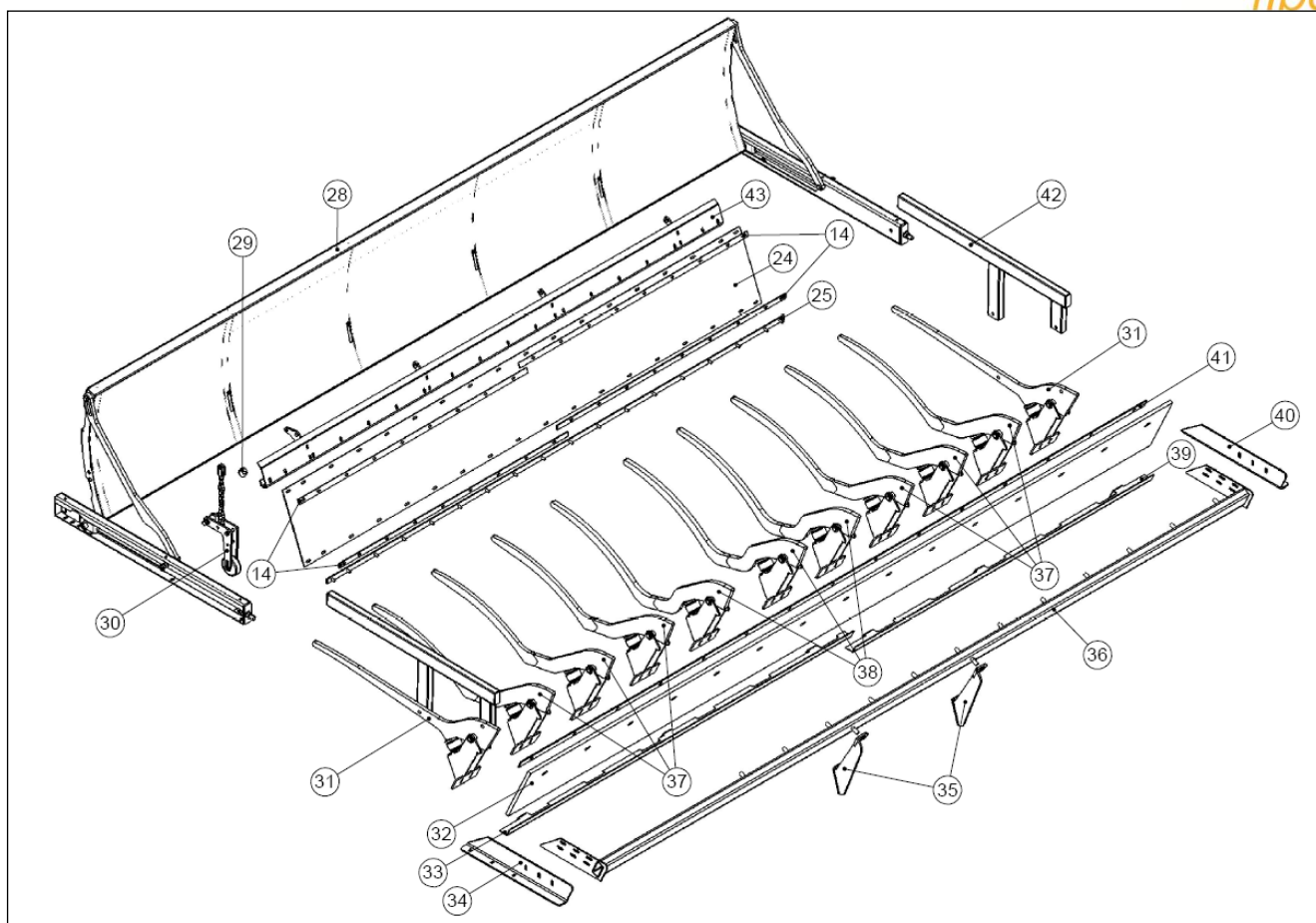
Item No.	Qty.	P/N	Description
1	4	703671	Dimanica Generale weighbar 2.875" dia 9350mm cable (DG 969-0127)
2	4	FP380-001-0014	Weighbar Bracket Weld Assembly, MF380
3	1	EF102-117	Weighbox Holder Front Turning Bracket
4	1	703353	Weighbox, Dinamica Generale, Stad 04, c/w bracket

11.14 BALE PROCESSOR PARTS

Parts list



Series I - Bale Processor Option



Series III - Bale Processor Option

Item:	P/N:	Qty:	Description:
1	FP280-045-0047	2	Tractor to T-piece hydraulic hose (Green tag)
2	704119	6	Hose clamp (15mm)
3	703778	2	1/4" BSP T-Piece (M/F/M)
4a	704240	2	T-piece to creel ram hydraulic hose (Yellow tag)
4b	704146	2	T-piece to creel ram hydraulic hose (Red tag)
5	704925	1	Bale handler hydraulic hose kit
6	704127	2	Bale handler creel steel pipe assembly
7	704236	6	10L pipe clamp
8	700270	2	M16 x 120mm bolt
9	700283	17	M16 Locknut
10	FP280-045-017	2	Bale Processor Creel Guide Arm
11	FP280-045-010	2	Bale Processor Nylon Guide Wheel
12	704040	2	End Creel Ram Assembly
13	700269	13	M16 x 110mm Bolt
14	FP200-045-0004	2/0	Rubber apron retainer plate (1725mm long)
15	FP160-045-0002	1	Bale Processor End creel Assembly (Front)
16	FP280-045-0028	11	Bale processor tine assembly
17	703307	22	16mm x 18mm x 25mm self lubricating bush - BK2
18	703943	11	75mm OD rubber buffer (M12 thread)
19	FP200-045-0012	11	Bale handler tine bracket welded assembly
20*	700247	11	M12 x 30mm setscrew
21	700732	17	M16 flat washer
22	FP140-045-0019	As Req'd	3mm shim
23	FP160-045-0003	1	Bale Processor End creel Assembly (Rear)
24	FP200-045-0003	1	Rubber apron

Item:	P/N:	Qty:	Description:
25	FP200-045-0005	1	Apron rail and stud assembly
26	FP160-045-0088	1	Creel end cover plate
27	FP280-045-0033	1	Bale processor creel curved plate assembly
28	FP280-045-0056	1	Curved creel assembly (Kicker)
29	704416	3	Creel kicker buffer
30	FP160-045-0072	1	Kicker assembly 2
31	FP200-045-0032	2	Tine Assembly For Cradle Arm
32	FP200-050-0008	1	Load bumper rubber
33	FP200-006-0144	1	Load bumper rubber seat plate (front)
34	FP280-050-0001	1	Load bumper mounting bracket (front)
35	FP160-006-0139	2	Load Bumper Brace Plate
36	FP200-050-006	1	Load bumper assembly 1
37	FP160-045-0102	6	Bale handler tine assembly (dropped)
38	FP160-045-0123	3	Bale handler tine assembly (extra drop)
39	FP200-006-0145	1	Load bumper rubber seat plate (rear)
40	FP280-050-0002	1	Load bumper mounting bracket (front)
41	FP200-050-005	1	Load bumper rubber retainer
42	EF1745-65	2	Cradle Arm Assembly
43	FP200-045-0103	1	Creel kicker assembly

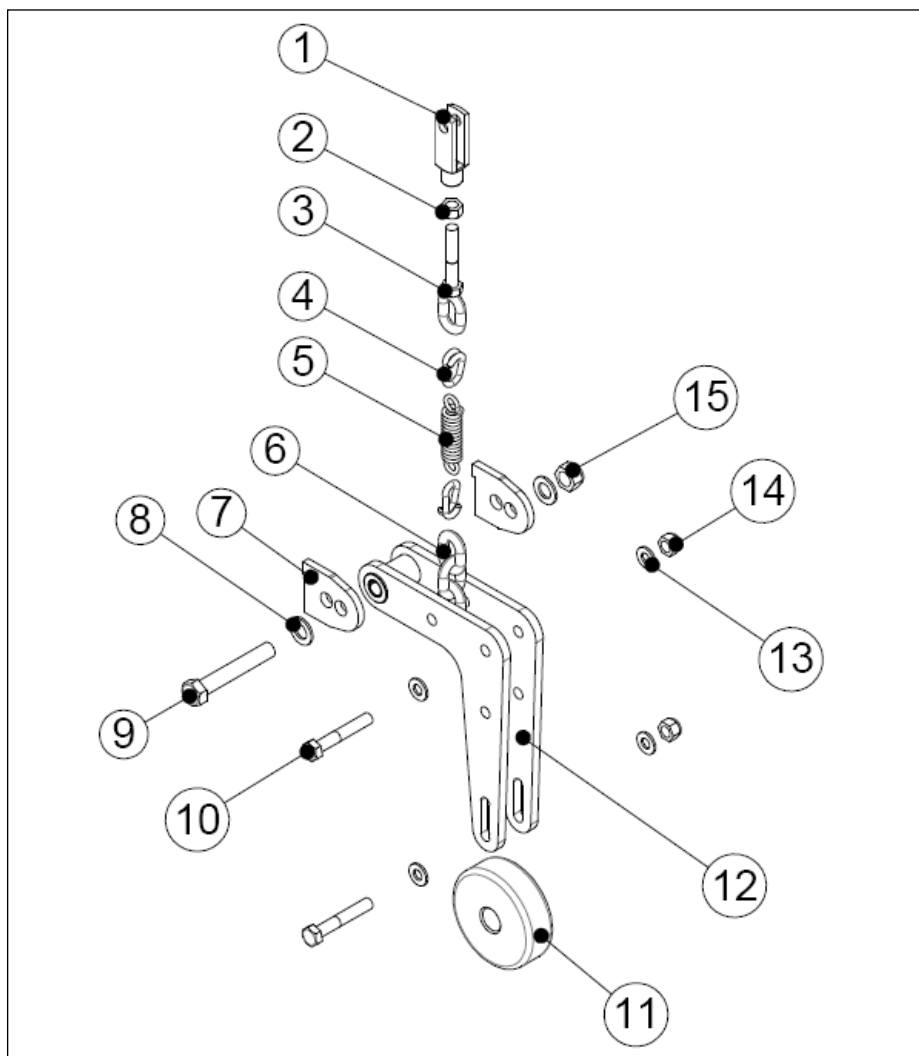
Table 28: Bale Processor Kit parts

Note:

* Longer M12 Bolt may be required, if additional shims (item no. 22) are used.

Series III Bale Processor Creel Kicker

Parts list



Item:	P/N:	Qty:	Description:
1	FP140-045-0055	1	M12 Clevis
2	700265	1	M12 Hex Nut
3	FP140-045-0054	1	Chain & Bolt Weld Assembly
4	704415	2	Chain Joiner Link
5	704414	1	Extension Spring, 87.2mm Long, 20mm OD, 4mm Wire
6	FP140-045-0052	1	Chain, 10mm x 49.5mm, Black Mild Steel, (3 Link)
7	FP160-045-0073	1	Arm Mount Bracket
8	700732	2	M16 Washer
9	700268	1	M16 x 100 Bolt
10	700262	2	M12 x 75 Bolt
11	FP280-045-010	1	Nylon Guide Wheel
12	FP160-045-0071	1	Kicker assembly 1
13	700730	4	M12 Washer
14	700266	2	M12 Locknut
15	700283	1	M16 Locknut

Table 29: Kicker Arm Assembly (Exploded View)

11.15 AXLE OPTIONS

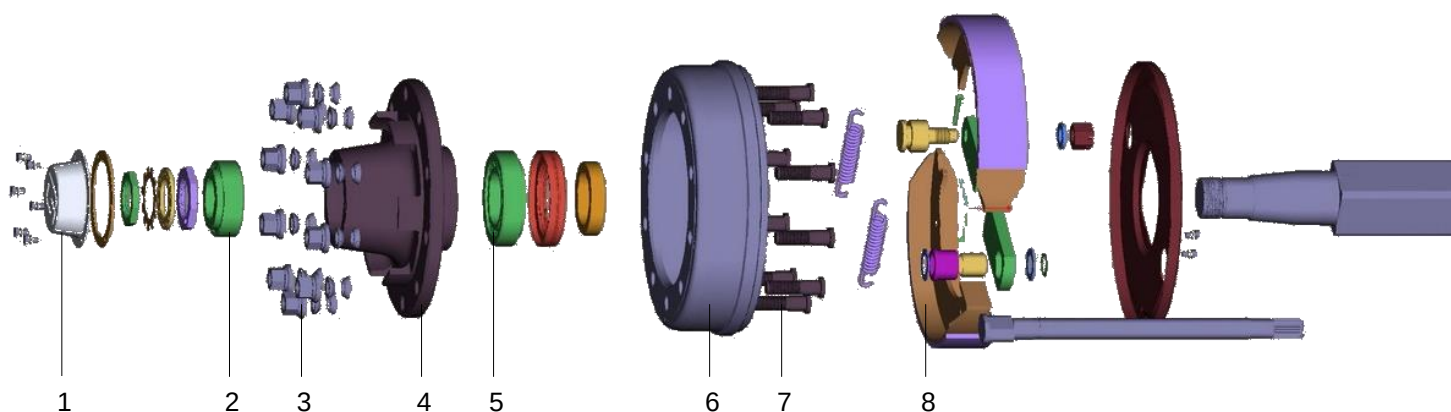


Figure 19: Typical Axle (Exploded View)

<u>Axle Types</u>		
Axle Application	Mech-Fiber 380	
Axle Type	Non-Steering	Steering
Axle Width (mm)	2300	2400
Axle Spec.	EUR1110	
Brake Type/Dimensions (Type/Dia. x Width, mm)	412E, 406 x 120	
No. Studs	10	
Nut Size	M22 x 1.5	

Table 30: Axle Types

<u>Axle Spare Parts</u>	
Item No:	Description:
1	Hub Cap
2	Outer Bearing
3	Nut (with washer)
4	Hub
5	Inner Bearing
6	Brake Drum
7	Stud
8	Brake Shoe

Table 31: Axle Spare Parts (Mech-Fiber 380 Axle)

11.14 ANCILLARY PARTS

PTO Shaft		
P/N:	Qty:	Description:
704355	1	PTO, T80 Shaft, 1-3/8" Z6 x 1-3/4" Z6. M12 x 4.6 Shear Bolt
704356	1	PTO, V80 Wide Angle Shaft, 1-3/8" Z6 x 1-3/4" Z6. M12 x 4.6 Shear Bolt
Grease Fittings		
P/N:	Qty:	Description:
704913	1	Grease Tube Swivel Connector - 90 Degree Bend - M6 Thread
704914	1	Grease Tube Connector - Straight - M6 Thread
704915	1	Grease Nipple Connector - Straight - 1/8" BSP to M6
704941	1	Grease Tube Connector - Straight - 6mm Thread
704942	1	Grease Tube Connector - Straight - 8mm 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
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 & 704446)
704525	1	Electro-Hydraulic Spool Valve Kit, 5 Bank
Diverter Valve Parts (Option)		
P/N:	Qty:	Description:
704139	1	Diverter Valve Kit (contains 703535 & 704394 – Valve, Switch & Wiring)
703535	1	Electro-Hydraulic Diverter Valve Kit (6 port – Valve only)
Stub Elevator (where fitted)		
FP280-051-0009	1	Stub Elevator Assembly (1200mm wide)
700561	1	Conveyor Belt 1630 x 1200
Heavy Duty Top Knife (standard on all Bale Processors)		
704229	5	Top knife blade, 990mm long, deep serrations
Mechanical Adjuster		
FP280-006-0180	1	Mechanical Adjuster Complete Assembly

Table 32: 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 10.2 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.
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.
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 chopping blades and top knife for sharpness.
Machine overloaded.
Bale Processor 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 ASA200 Link

Check chain alignment of large sprocket,
Tolerance +/- 2 mm.
Check chamfer on edge.
Check roll pins used in joiner link.

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 & 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.

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 Keenan Service.

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 then clean thoroughly with electrical cleaner & dry. 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 Keenan Service for further assistance.

System Weighing Inaccurately

If the machine is new or the weighbox has been replaced it is possible that the weighbox may have the incorrect calibration code for the model. Contact Keenan service 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 weighcell 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 weighbox and ensure there is a good 10 to 13 volt supply across the internal pins of the cable. If the negative (-) and positive (+) are wired the wrong way around, the weighbox will not switch on [Dinamica Generale weighboxes power cable - white (+) & black (-)].

System Weighing Process

1. Turn on the weighbox.
2. When 5 dashes (- - - - -) appear on the screen, press and hold Zero & Total until PS appears and then release the 2 buttons
3. P 0 will appear, using minus and plus keys go to P 12 (calibration menu). Press Zero & Total to confirm
4. 'CAL' will then be displayed on the screen followed by the calibration number.
For models **380** this should read '**7680**' for kgs (or '16 940' for lbs)
5. If these numbers are not displayed then use the minus and plus keys to alter.
6. Press Zero & Total to confirm
7. Press Zero & Total to confirm again to return to normal weighing.

Note : It may be necessary to alter the weight limit prior to changing the calibration code or it may not accept the calibration code. To do this, follow steps above steps but in step 3 enter 99 (instead of 12) and step 4 raise the limit from 15000

13. WARRANTY

13.1 TERMS & CONDITIONS

Richard Keenan & Co. Ltd. ("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. Standard Warranty period from date of commissioning is 12 months unless otherwise agreed in writing between the company and the owner. This Warranty shall cease to apply on any resale of the equipment by the initial owner.

The Warranty shall not apply to:

- A** Any machine used by a third party, who will not have had instruction in the correct use of the machine by an official representative of the Company.
- 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.
- D** Any consumable or perishable parts such as knives, blades, rubber 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 persons unauthorized by the Company.
- 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 authorized representative of 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 at the address on the invoice.

In the event of the machine being loaned to or hired by a third party warranty cover is not transferable unless given in writing and signed by a Director of Richard Keenan & Co. 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, Richard Keenan & Co. 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:

Richard Keenan & Co. Ltd.,
Borris,
Co. Carlow,
Ireland.

Certifies that the Keenan Mech-Fiber 380 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 12100-1, BS EN ISO 12100-2, I.S. EN ISO 13857, I.S. EN ISO 5674, EN349, EN703, I.S. EN ISO 4254-1, ISO 11684, ISO 12140

Date: 25 July 2013



Signed: _____

James Greene, Managing Director

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