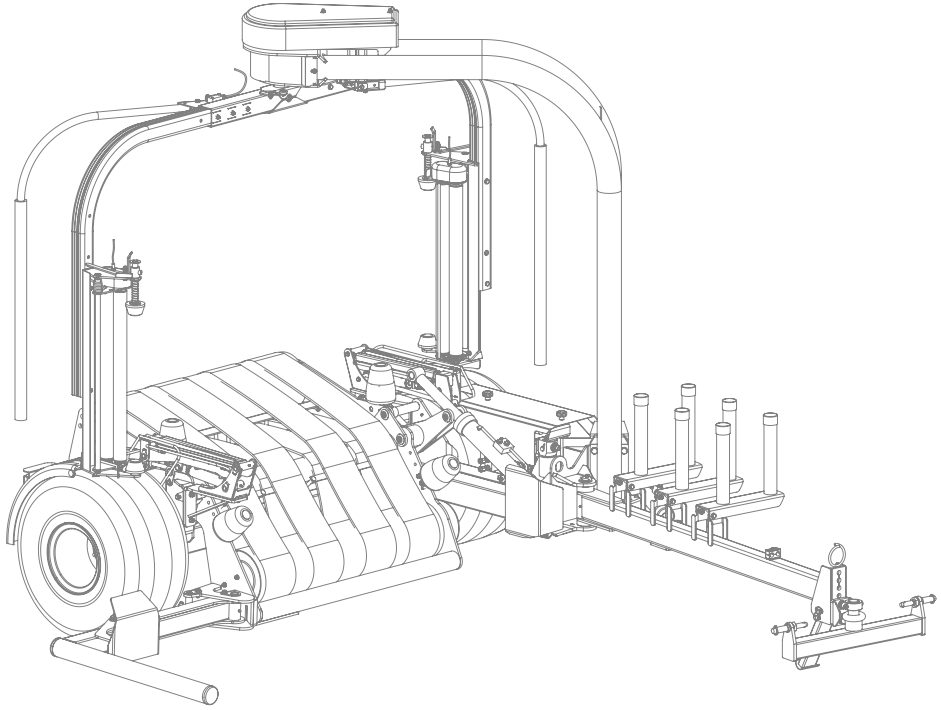
1400 Autowrap

Innovation in Agricultural Machinery



OPERATOR'S handbook

1400/V.02-10-ENG

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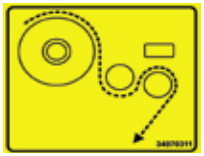
Read Operators Manual
Prior to using machine

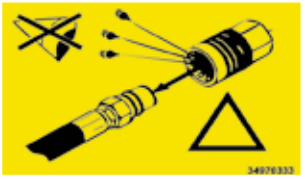
Danger from rotating
Prestretcher



Application of Film
to Prestretcher

70% Prestretch on gears

Don not open or remove
Safety Guards while the machine
is connected to the tractor



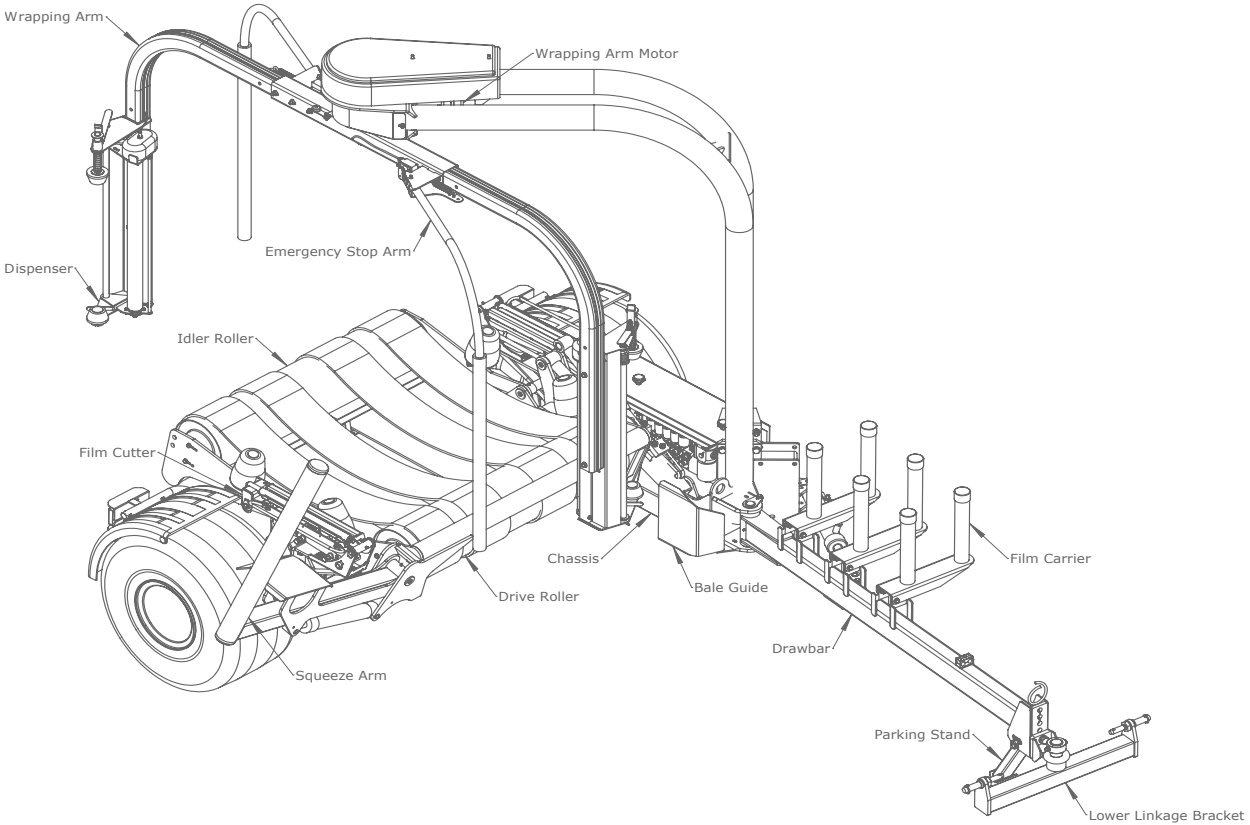
Danger from oil splashes

Danger keep hands
clear of sharp blades

Danger stay at a safe distance
whilst machine is in operation

Ensure all nuts & bolts have
been tightened prior to
operating the machine

Ensure machine do not exceed
30 R.P.M.


Wrapping Arm
Wrapping Arm Motor
Emergency Stop Arm
Dispenser
Idler Roller
Film Cutter
Chassis
Film Carrier
Drive Roller
Bale Guide
Drawbar
Squeeze Arm
Parking Stand
Lower Linkage Bracket

Tanco Autowrap Ltd congratulates you on your choice of the TANCO AUTOWRAP 1400 bale wrapping machine. We are certain you will be satisfied with the machine, and that you will have the pleasure of your investment for many years.

The TANCO AUTOWRAP 1400 is an efficient, high capacity bale wrapping machine. Its low centre of gravity and unique split table design ensures that power consumption is kept to a minimum without compromising output; this is a patented system.

This machine is hydraulically driven by the tractor's hydraulic system and is controlled from the tractor cab by an automatic control unit. The machine is trailed directly behind the tractor for transport and offset to the right for working in the field. It loads the bale on the wrapping table in the same direction as it is discharged from the baler. The wrapped bale can be either dropped conventionally to the ground or with the fitting of an optional 'End Tip Ramp' the bale can be dropped on its end.

TANCO AUTOWRAP 1400 is designed to wrap bales of grass, hay or straw, with nominal diameter of 1.1 - 1.5m, and weights up to (1400kg). The machine was developed and has been improved since it's beginning in 2008, and is now a very reliable and safe machine with high security built in.

This manual is meant to explain how TANCO AUTOWRAP 1400 is setup, attached to tractor, used and how it works, and shall together with the spare part's list be a reference for maintenance and troubleshooting. So take good care of this book; it is a part of the machine.

Read carefully through this manual, and especially the safety instructions, before starting the machine. Follow the instructions thoroughly, if problems should occur, check the troubleshooting guide to try to establish the problem. Ask your dealer for advice before you attempt anything that may make the problem worse.

Technical Specifications	1400 Autowrap
Height	2710mm
Width	2660mm
Length (min.)	3940mm
Weight	1250 kg
Wrapping Arm Speed (Recommended)	30 R.P.M
Wrapping Arm Speed (max)	35 R.P.M.
Maximum Bale Diameter	1500mm
Maximum Bale Weight	1400 kg
Pre-Stretchers	750mm
Hydraulic Connection	1pcs Single Working + Free Return
Oil Pressure	180 bar
Oil Amount (Max / Min)	60 lts/min / 30 lts/min)
Maximum Counter Pressure	10 bar
Electrical Connection	12 V DC

NB: Tanco Autowrap Ltd. reserves the right to modify the construction and/or technical specifications without warning and without rights to changes on already delivered products

Tanco Autowrap Ltd does not take responsibility for damages that may occur to machine, persons or other equipment, because of the machine NOT being used as described in this manual, or because of the safety precautions NOT being followed.

Emergency Stop
The Tanco Autowrap 1400 is equipped with a so-called emergency stop on the wrapping arm. This device stops all functions momentarily, but is per definition not an emergency stop, because it does not shut down the inputs. But it has the same function, so we have decided to call it an emergency stop in this manual.

Safety Equipment
Before using the machine, make sure that all guards and covers are securely fitted. The machine must not be operated if a function does not work as described later in this manual.

Become Familiar with the Operations of the Machine
If you are unsure how to operate the machine properly, either use of or maintenance to your Tanco Autowrap, please contact your Tanco Autowrap dealer.

Adjustments / Maintenance
Turn off the tractor and discharge the oil pressure before performing any adjustment or maintenance on the machine. Remember that a well maintained machine is a safe machine.

IMPORTANT!
Always make sure nobody is in the hazard area of the wrapping arm when the machine is in-use.

The machine must not be operated by persons who do not know enough about how to safely operate the machine, or by persons under the age of 16 years.

Dangerous Areas
Tanco Autowrap Ltd. has given the safety to the operator the highest priority, but it is still impossible to secure oneself of every danger area on the machine. Therefore we have highlighted below some of the dangers that can occur when using the 1400 Tanco Autowrap Bale Wrapper.

Impact of the Wrapping Arm
During the wrapping process the arm rotates with a speed of 30-35 revolutions per minute around the bale. On the arm is mounted a Film dispenser unit with a plastic roll. The speed on this can give a person serious injuries if one enters the working area of the wrapping arm. To reduce this danger we have mounted an emergency stop device on the wrapping arm; this stops all movement when something comes in the way of it. It is very important that this protection always works and that it should not under any circumstances be disconnected.

Squeeze Danger Between the Main Frame & Wrapping Arm
As explained earlier, we have a wrapping arm with a Dispenser and a plastic roll. During every revolution the wrapping arm passes the main frame. Here there may occur a squeeze danger if a person stands to close to the main frame when the wrapping arm passes. The distance between the main frame and the wrapping arm is not large enough to give place for a person. Between the pre-stretcher and the bottom frame there can also be a squeeze danger.

Squeeze Danger Between the Stationary Arm & Wrapping Arm
During the main wrapping process the wrapping arm moves around a stationary arm. Every time the wrapping arm passes the stationary arm there is a squeeze danger that can be dangerous for the fingers. The distance between the stationary and the wrapping arm is between 25-40 mm. (See Fig. 2).

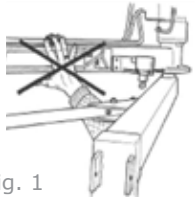


Fig. 1

Impact of Bale Squeeze Arm
During the bale loading process the bale squeeze arm moves both vertically and horizontally, beware of the danger and keep clear of this area whilst the machine is running.

Impact Danger when Machine is being changed from Transport to Working Position at the Drawbar
When the machine is being changed from transport to the working position it rotates out to the right and when it is being put back into transport it rotates back to the left, beware of the danger and keep clear of this area whilst the machine is running; especially if the squeeze arm is in the open position.

Squeeze Danger Caused by Plastic Automation
At the end of the wrapping process the plastic is cut and held tight until the start of the next wrapping process. When the cutter arm moves down to lock the plastic, there can occur a squeeze danger between the cutter arm and the cutter holder. The cutter blade that cuts the plastic is very sharp; ensure to keep hands away from the cutter. (See Fig.2).

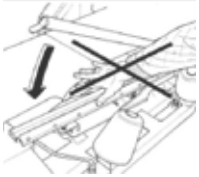


Fig. 2

Connecting heavy working implements often has an overall negative effect on the tractor's driving and braking capacity.

Transporting
When transporting on a public road there are certain safety measures that must be taken:

1. Ensure the machine is in the transport position.

2. Ensure the squeeze arm is fully closed.

3. Ensure that the wrapping arm is not parked overhanging the sides of the machine.

4. Ensure that the lights are connected and functioning correctly

5. It is recommended that the film rolls be taken off the dispensers for road transport and put on the film carriers on the drawbar. This reduces stress on the machine and reduces the danger of the rolls being accidently falling off on the public road.

6. The machine is wide (2660mm) even in transport position, be aware of this especially on narrow roads.

Bale Wrapping Principles
The advantages of round bale silage are many, and include fewer feed units, a flexible harvesting system, large capacity and the possibility of selling feed units.

In principle, the same fermentation processes occur whether the fodder is placed in a silo or pressed into bales and packed in plastic, i.e. lactic acid fermentation in anaerobic conditions. The oxygen in the bale must be exhausted before fermentation begins.

The grass should be dried to approximately 30-40% solid content. The solid content can be determined by twisting the grass by hand. If drops of liquid are forced out of the grass, the solid content is less than 25%. Low solid content (wet grass) can lead to increased butyric acid fermentation if preservatives are not added to the grass. If the solid content is too high, (over 50%), normal fermentation will not take place and there will be enough oxygen in the bale to produce mould fungus.

The Baler
It is vital that the baler produces compact, well-formed bales, as misshapen bales can be difficult to wrap. Wrapping will also often take longer, thereby increasing the amount of plastic used.

Difficult Bales
When a misshapen bale is wrapped, it will have a tendency to move outwards or inwards on the roller. If the bale begins to move outwards, the machine must be lifted slightly at the rear edge to get the bale to rest against the support roller on the main frame. It can therefore be useful to use a hydraulic top link to make this adjustment easier. (See Chapter 5; 'Hitch Height').

If the bale to be wrapped is conical you must ensure that the sharp end is pointed at the tractor. It will then be easier to get the bale to lie correctly during packing. It is easy for such a bale to "turn" forward in the direction in which it is pointing, and therefore lie against the support rollers. If the bale is lying on a slope it must be picked up from the lower side. A hydraulic top link will again be advantageous.

Types of Plastic
A good type of plastic with good adhesive properties, and which is recommended for bale wrapping, must be used. The thickness of the plastic foil should be at least 25 µ. (25/1,000 mm). In order that the plastic tightens sufficiently around the bale, it is stretched before being wrapped, so it is somewhat thinner when it is put on the bale. With short-term storage (up to eight weeks) it is recommended that bales have a minimum of four layers of plastic at the thinnest points, with at least 52-53% overlap.

For long-term storage, or when the grass is wet when it is wrapped, the bale should have 90-100 µ plastic (six layers) and the same amount of overlap. If thinner plastic is used, more layers should be applied. If it is very hot the plastic will be stretched further, and more layers should be applied. It is better to have slightly too much than too little plastic on the bale.

From experience, light colored plastic produces slightly lower temperatures within the bale, and tends to improve feed quality.

Storage Location
Care should be taken in finding a suitable location for the storage of bales. The storage location should preferably be prepared before the bales are laid out. An elevation close to well-drained roads is recommended. If the wrapped bales are simply placed on stubble there is a danger of the plastic being pierced. A tarpaulin or a thin layer of sand should therefore be laid where the bales are to be stored over the winter.

Bales should be stored in the shade as far as possible. This reduces the danger of air leakage in the bales. A bale which is stored in sunlight and which therefore undergoes greater swings in temperature "pumps in" a great deal of air in comparison to a bale stored in the shade. According to "Teknik for Lantbruket" [Technology for Agriculture] in Sweden, a bale stored in the shade has only 40% of the air leakage of a bale which is stored in sunlight.

Stacking / Protection
If bales are hard and well formed, they can be stacked vertically, but loose and misshapen bales with low solid content should not be stacked higher than one layer, as this could easily cause deformity and the danger of runoff will be increased.

Bales can also be stored on their sides. The layer of plastic is thicker here, providing greater protection against piercing.

Bales should be covered with a tarpaulin or a fine-mesh net to protect against birds and small rodents. If the plastic is pierced, it must be sealed with weatherproof, hard-wearing tape, preferably under the outermost layer of plastic. Ensure that the hole is adequately sealed.

For Best Wrapping Results...

1. Harvest the grass early.

2. Ensure the grass is dried out to 30-40% solid content. If there is a danger of rain, bale and wrap the grass anyway.

3. Take care not to mix any earth in with the grass.

4. Use a baler that produces even, firm bales. Bales 1.2mtrs in width and with a diameter of 1.2-1.5mtrs are preferred sizes.

5. Wrap the bales as soon after baling as possible; never more than two hours afterwards.

6. Use a good plastic type, applying six layers of plastic. This removes the need to use preservatives.

7. Store bales in the shade to reduce the danger of air leakage.

Mounting of the Machine

Be careful! There is a danger of being crushed when working implements are fitted and connected. Carry out the fitting procedures slowly and carefully, and use separate and approved lifting equipment to make the work easier. Note the section on safety precautions and pay attention to the various safety decals displayed on different parts of the bale wrapper.

Attaching to the Tractor

The 1400 can be either connected to the tractor lower links using Linkage Attachment or by removing this it can be attached to the tractor hitch using the Hitch Eye.
If the lower link bracket is used the Hitch Eye should be attached in the lowest position; this will allow greater movement.

If attached to the tractor hitch it is recommended that the machine is attached to the Clevis Hitch rather than the Pick-Up Hitch. This gives more clearance between the Drawbar and the tractor's back wheels. The Drawbar does not run directly behind the tractor. In transport the Drawbar runs nearer the left wheel so the minimum turning circle to the left is reduced. In the working position this is the case for turning to the right. When the machine is attached to the tractor the Drawbar Leg must be folded up to the Drawbar by removing the Drawbar Pin; swing the Drawbar Leg upwards and fit the Drawbar Leg Pin to Position B. (See Fig. 3 Overleaf).

When attached to the tractor the machine should sit level, at this the squeeze arm will have 10cm approximate clearance with the ground when in the fully lowered position. Set linkage height to achieve this.

Adjust the linkage stabilizers to limit the lateral movement.

If attached to the hitch change the hitch eye mounting position to set the correct height.

Ensure the Hitch Eye Fixing Bolts are securely tightened.

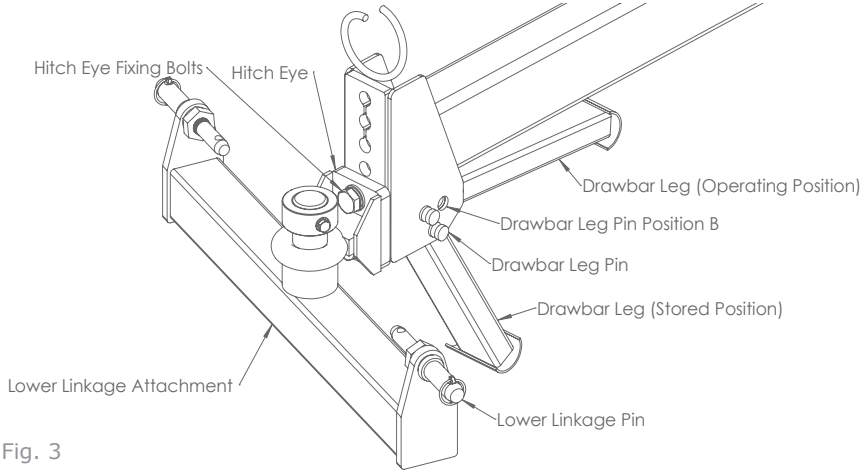


Fig. 3

1400 Control Box

The control unit consists of the emergency stop button, a control cable, a fuse and a battery cable. The control unit should be attached to a suitable place in the tractor cab using the suction pad provided.

The Remote Control Unit is not Shock Proof, make sure that is fastened to a soft pad that secures a non-vibratting foundation.

Electrical Connection
The electric supply for the machine's remote control and electro-hydraulic components must come directly from the tractors' 12 volt battery.

The electric wires from the battery must have an area measurement of min. 2,5 mm2. Connection to other contacts on the tractor can cause risk of malfunction and is not recommended.

Note:
Brown leader goes to the Battery's Possitive Pole
Blue leader goes to the Battery's Negative Pole

Hydraulic Connection
The hydraulic hoses between machine and tractor are equipped with 1/2" ISO Male Quick-Couplers. Ensure the oil pressure has been discharged before you connect the oil hoses using the tractor's hydraulic lever.

To make sure that the bale wrapper works properly, the tractors' oil pressure has to be at least 180 bar. The oil flow should be 15 - 25 liters per minute. The return pressure on the return must be as low as possible, and not exceed 10 bar. This should be measured with a gauge. It is recommended to use one single-working hydraulic outlet and arrange a free return circuit to the oil tank.

If you are unsure of what oil pressure the tractor gives, or what oil pressure the bale wrapper receives, please contact your machinery dealer. Generally all tractors have got some counter-pressure in their hydraulic return systems. Some tractors have more than others.

Note:
The Hose with the Red Cap shall be connected to pressure 'P' and Hose with Blue Cap to the return 'T'.

Open & Closed Center Hydraulics
The 1400 hydraulic system can be set up for tractors with Open or Closed Center Hydraulics.

Open Centre Hydraulics
Most tractors have a hydraulic system that gives a continuous output which flows through the valve on the machine and back to tank when no function is operating (Open center).

Note:
The TANCO AUTOWRAP 1400 is set-up for open centre on leaving the factory.

Close Centre Hydraulics
Some tractors (John Deere) have a hydraulic system that require the valve on the machine to allow no flow when no function is operating (Closed Center).
The hydraulic valve can easily be configured to operate in this way.

Simply push and twist the Manual Override on the Master Valve. (See Fig. 4)

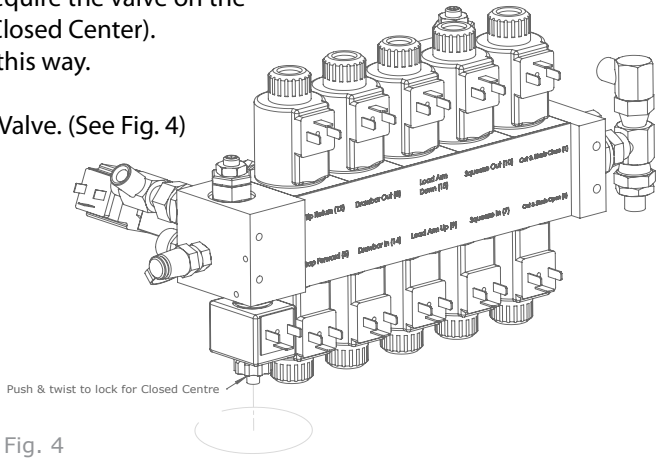


Fig. 4

LS Hydraulics
Many modern tractors have a "Load Sensing" (LS) Hydraulic System. This is most efficient as the pump remains on standby, pumping no oil until it gets a signal from the machine. It is possible to run this machine on a load sensing tractor with the standard valve.

Configure the valve for open centers and if possible adjust the flow from the tractor to give ~30 lts/ min. This however means that the tractor is constantly pumping and you do not get the benefit of the efficiency of your load-sensing pump.

Tanco Autowrap strongly recommend that if you are running the machine on tractor with LS Hydraulics you fit the optional Load-Sensing Block (see Hydraulic Circuit). With this block fitted a Load sensing signal is transmitted in the form of hydraulic pressure via a hose for the LS Port on the LS Entry Block to the LS Connection on the tractor.

Note:
The LS Entry Block can be configured also to run on any other hydraulic system, open or closed center.

Check List:
Before using the machine it is recommended to follow this check list:

1. Make it a habit to discharge the oil-pressure before connection or disconnection of the hydraulic hoses. (By operating the hydraulic control lever inside the tractor). (Use the tractors hydraulic control lever).

2. Return-oil should be led directly to tank. Beware that if the counter pressure is too high, the security valve on the main block will release some oil. (See Chapter 9).

3. Hose with BLUE CAP = RETURN OIL.

4. Hose with RED CAP = PRESSURE.

5. Tie up loose hoses and Connection Cables so that no squeeze damages occur.

6. Remove the locking bolt that holds the wrapping arm to the frame during transport.

7. Start the tractor and try out the functions. A bale is not required for this test.

8. Check all connections, hoses and couplings. If there is any oil-leakage, it should be rectified immediately.

If any problems should occur, it is most likely that the failure is in the quick-couplers on the tractors pressure and return-connections.

Make sure that both the male and female-couplers opens properly for the oil flow, check these carefully. The best thing to do is to exchange the quick-coupling on the return side and arrange a "free return".

Your Tanco Autowrap Bale Wrapper has been tested in practical operation in approximately 2 hours at the factory.

Emergency Stop (See Fig. 5)
This machine is equipped with a safety guards on the Wrapping Arms, and its operation must be tested before work itself is started.

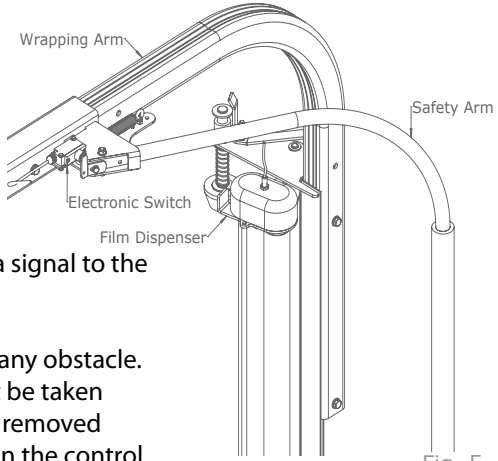


Fig. 5

The Emergency Stop is to prevent the Wrapping Arm from damaging people and objects, when the machine is started and during the wrapping process.

When the Safety Arm that activates a small electric switch, which gives a signal to the Control Box to start the Emergency Stop.

When testing this function, start the Wrapping Arm, hold out an arm or any obstacle. The wrapping arm shall now stop before it hits the arm. Great care must be taken when testing this function. To restart the machine the obstacle must be removed and the arm must be returned to its original position. The Auto Switch on the control box must be activated again. The wrapping may start again.

IMPORTANT!
GIVEN THE VELOCITY AND MOMENTUM OF THE ARM IT IS IMPOSSIBLE TO STOP THE WRAP ARM IMMEDIATELY. THE EMERGENCY STOP ARM IS PROVIDED TO HELP REDUCE THE RISK OF SERIOUS INJURY AND GREAT CARE MUST BE TAKEN WHEN OPERATING THIS MACHINE.

Mounting of Plastic Film (See Fig. 6 & 7)
When loading a plastic roll, first ensure the Top Cone is pushed up to the latched position, then push back the Dispenser Insert until held in position by the Bottom Latch.

Place the Roll on the Bottom Cone and release the Top Latch.
BEWARE OF FINGERS!

Pull the film between the rollers on the Dispenser Insert in the direction of the arrow, as shown below. (See also the sticker on the dispenser).

Release the Bottom Latch and allow the rollers to lie against the roll of film.
Pull the film from the roll and tie it to the bale.

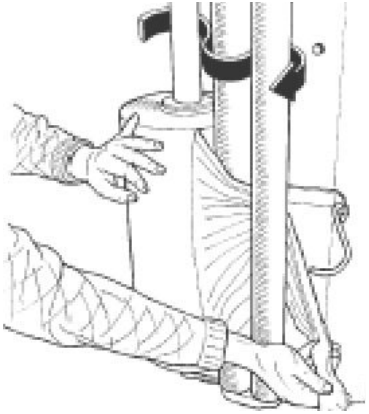


Fig. 7

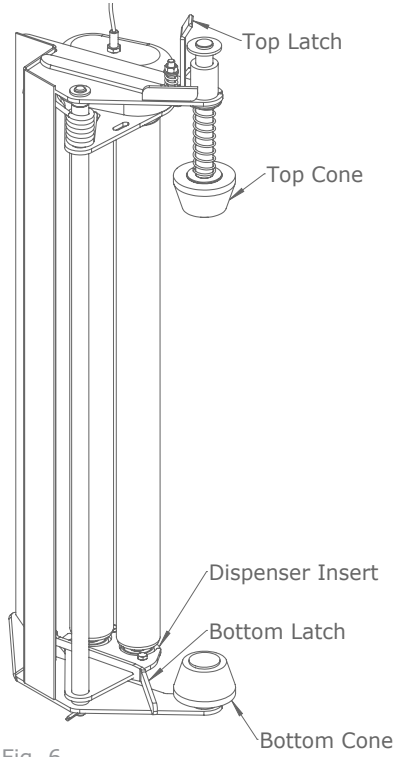


Fig. 6

Adjusting the Height of the Dispenser
The standard film dispenser is designed for 750mm film.

The plastic film should hit at the middle of the bale wrapped (Fig. 8), and therefore it can be necessary to adjust the height of the pre-stretcher (See Fig. 9).

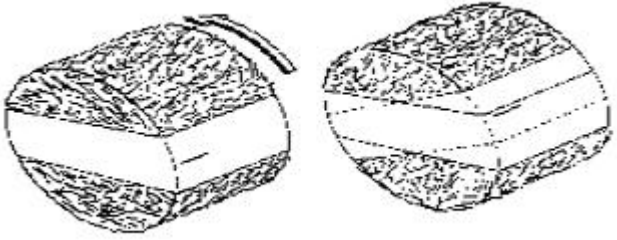


Fig. 8

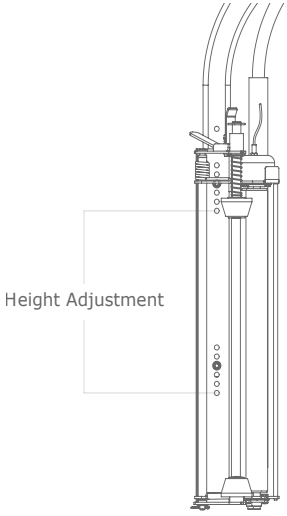


Fig. 9

Tanco Dual Stretch Dispenser

All Tanco Autowrap machines are supplied with a patented dual stretch gear system. This system enables a quick change of stretch levels on the Film Dispenser.

If the Gear Bolt is fitted in Position 1 (See Fig. 10), the top set of gears provide the stretch @ 70%. By removing the Gear Bolt from Position 1 and fitting it in Position 2, the bottom set of gears become the stretch gears giving 32% (for prestretched film) or optionally 55% (for use in hotter climates or with square bales).

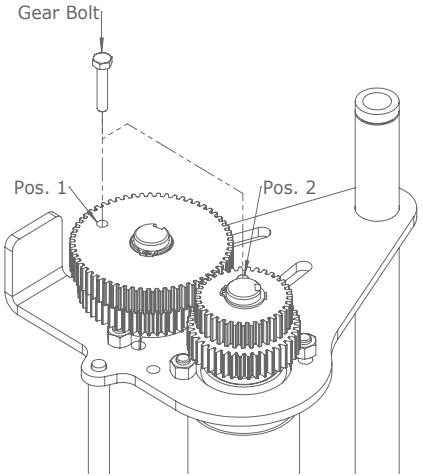


Fig. 10

Tanco Dispenser Gear Combinations

Inner Gear	Outer Gear	% Stretch
60 Tooth	35 Tooth	70%
58 Tooth	37 Tooth	55%
54 Tooth	41 Tooth	32%

Introduction

The Tanco Autowrap Bale Wrap Controller enables the operator to monitor and control the operation of the bale wrapper at any stage of the wrapping cycle. The controller is designed for models: 1400 and 1814 table type wrappers.

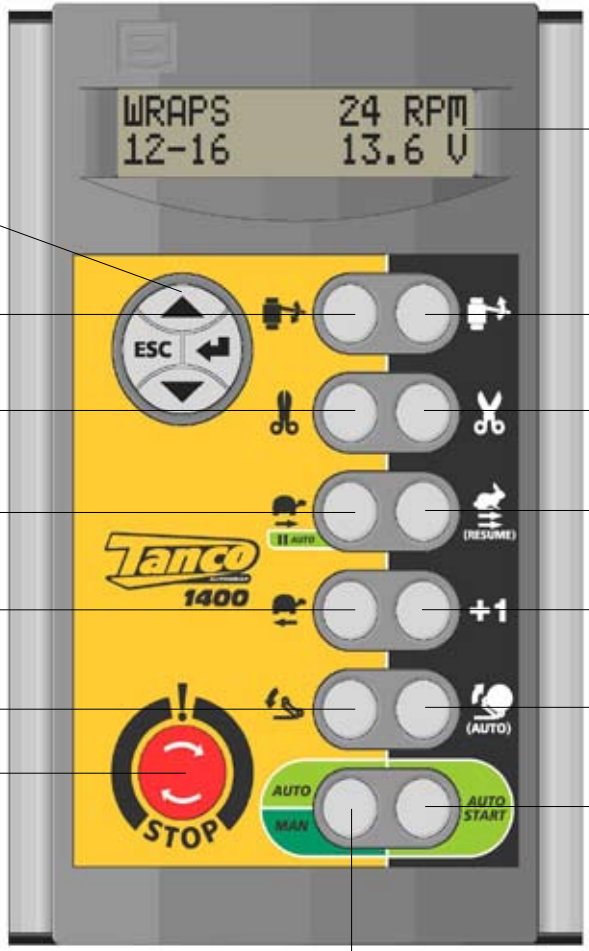
There are 2 operating modes – Automatic and Manual. The Automatic Mode permits 'one-touch wrapping' to ease the workload on the operator. The controller is fully programmable to optimise wrapping performance. Bale counts are automatically logged in any one of 10 selectable memory stores, in addition to a grand total memory store.

IMPORTANT SAFETY INFORMATION!
Please read and understand the instructions for using this controller before operating the machine.

This controller is fitted with a push-button type On/Off Emergency Stop switch. Always ensure the controller is switched OFF via this switch before attempting any adjustment or maintenance to the machine.
Please follow ALL other safety instructions given in the manufacturers' Operator's Manual for this machine.

Controller Main Operating Functions & Display

The principal instrument features and operating functions of the Controller are shown in Fig. 11 overleaf.



Display; Shows in normal working mode:
- Current No. of Wraps
- Target No. of Wraps
- Wrapping Speed (R.P.M)
- Bale Total (10 Separate Stores)
- Grand Total No. of Bales
- Mode: M (Manual) / A (Automatic)

4-Way Menu Switch:
- Set No. of Wraps
- Change / Reset Bale Sub-Total
- Access Operator Setup Menu
- Access Technician Setup Menu

L1 - Move Drawbar to Transport Position

R1 - Move Drawbar to Working Position

L2 - Cut & Grip Film

R2 - Release Film Grip

L3 - Slow Forward to Park Position / Controlled Stop during Wrapping

R3 - Fast Wrap / Resume Wrap (After Manually Pausing)

L4 - Reverse Wrap Arm

R4 - Adds 1 Wrap to Current or Next Bale

L5 - Bale Loading
In 'M' (mode): Returns rear roller to working position
In 'A' (mode): Starts Auto Load - Squeezes Bale, Loads Bale & returns rear roller to working position

R5 - Bale Off-load
In 'M' (mode): Tips Bale
In 'A' (mode): Starts Auto Off-load - Off-loads Bale, lowers front to load position & returns rear roller to working position

Power On/Off / Emergency Stop

R6 - Start Automatic Wrapping Cycle; press STOP switch to stop cycle

L6 - Select Operating Mode: 'M' or 'A'

Fig. 11

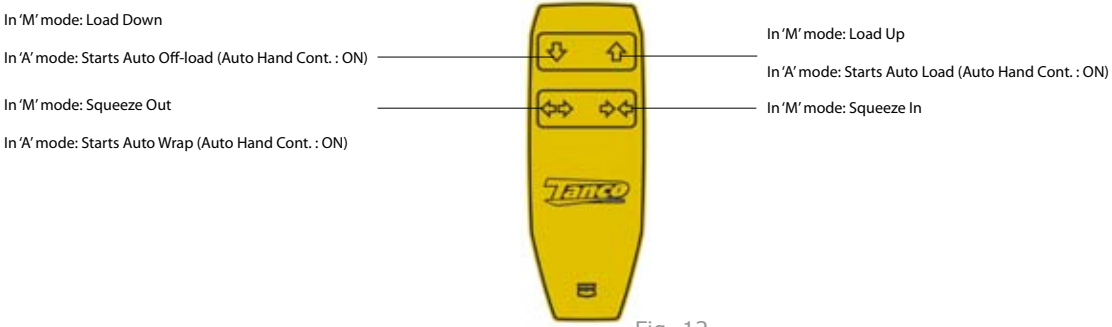


Fig. 12

Operation

Operation in Automatic mode

The automatic sequence is made up of three sections: Loading, Wrapping and Off-loading.
The controller comes initially set so one press of a button automatically loads the bale, a second press runs the complete wrapping cycle and a third press automatically off-loads the bale.
It is possible to set the controller so one button press runs the complete cycle, see 'Changing Default Automatic Sequence'.
As initially set three buttons on the controller are used to start each section of the sequence, see points, 3, 5, and 7 below.

Operation

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It is possible to set the controller so one button press runs the complete cycle, see 'Changing Default Automatic Sequence'.
As initially set three buttons on the controller are used to start each section of the sequence, see points, 3, 5, and 7 below.

1. 'A' on the display indicates that the controller is set in Automatic mode. If not press (L6) to select.

2. The automatic starts with the wrap arm in the park position, that is with the wrap arm magnet parked under the sensor, the load arm down and squeeze arm in the fully open position.

3. Press (L5) to start the Auto Load sequence as follows:
- The squeeze arm comes in for a set time, bringing it in under the bale.
- The load arm raises for a set time, lifting the bale on to the table.
- The squeeze arm opens fully to a sensor.

4. If the wrapping arm is not parked in the Park Position then the controller will give an error message 'DISPENSER POSN' and it will not start loading. Correct the arm position and repeat.

5. Press (R6) to commence the Automatic Wrapping Cycle as follows:
- The wrap arm will start in slow speed and ramp up to full speed.
- The Cut and Starts open twice to release the plastic.
- On the last turn the wrap arm ramps down to slow speed.
- The Cut and Starts open.
- The wrap arm stops.
- The Cut and Start closes.
- The wrap arm reverses to the park position.

6. The squeeze arm must be in the fully out position for auto wrapping to start, if it is not the controller will give an error message 'SQUEEZE OUT' and not start wrapping. Correct the squeeze arm position and repeat.

7. Press (R5) to start the Auto Off-Load

8. If the wrapping arm is not stopped in the park position then the controller will give an error message 'DISPENSER POSN' and IT will not start Auto Off-load. Correct the arm position and repeat.

Changing Default Automatic Sequence
In the default automatic sequence the controller waits for a start signal before wrapping and again before off-loading. It is possible to change this:
In the Operator Setup if Autostart Wrap setting is changed from Off to On, then wrapping will automatically start when the load sequence has finished. Likewise if Auto Off-Load is change to On then the bale will automatically be off-loaded when the wrapping sequence has finished. Great care should be taken when auto off-loading especially in hilly conditions. In the interest of safety if the above settings are set to On, the controller will prompt you to confirm the On setting if the controller is switched off and on again.

Manually Interrupting an Automatic Wrapping Cycle
Press (L3) to bring the wrapper to a controlled stop. Pressing (R3) will resume the auto-wrap cycle from where it stopped.

For safety reasons; if it is necessary to work on the machine (e.g. in the event of a film break or the film running out), then it is strongly recommended that you then switch the controller off via the red stop button and disengage the machine power source. Pressing the (R3) switch after switching the controller back on will resume the auto-wrap cycle from where it stopped.
Unless it is an emergency situation, do not bring the machine to a stop by pressing the red stop button as this will impose unnecessary strain on the machine.

Manual Options in Automatic Mode
With the controller in Automatic Mode, the following manual functions are possible;

- Slow Wrap (not during the wrapping sequence)
If (L3) is held down the arm will stop when it comes to the park position, releasing and pressing again will move the arm to the next park position.

Press (R3) to resume the normal fast wrap.

- Reverse Wrap Arm (only enabled outside of the wrapping sequence)
Press (L4) to shift the wrap arm backwards to the desired position. As with the slow wrap if this button is held down the arm will stop at the park position.

- Load Arm Up (on Hand Held Controller)
Pressing the Upwards arrow on the Hand Held Controller raises the Load Arm.

- Load Arm Down (on Hand Held Controller)
Pressing the Downwards button on the Hand Held Controller lowers the Load Arm.

- Squeeze Arm In (on Hand Held Controller)
Pressing the button with both arrows facing one another closes the Load Arm in.

- Squeeze Arm Out (on Hand Held Controller)
Pressing the button with both arrows facing away from one another opens the Load Arm.

- Add 1 Wrap
Each time you press (R4) an additional wrap will be put on the current bale if the wrapping sequence is in progress, or onto the next bale if the automatic cycle has not yet been started. You can add as many wraps as required.

Operation in Manual Mode
'M' on the display indicates that the controller is set in manual mode. If not, press (L6) to select.

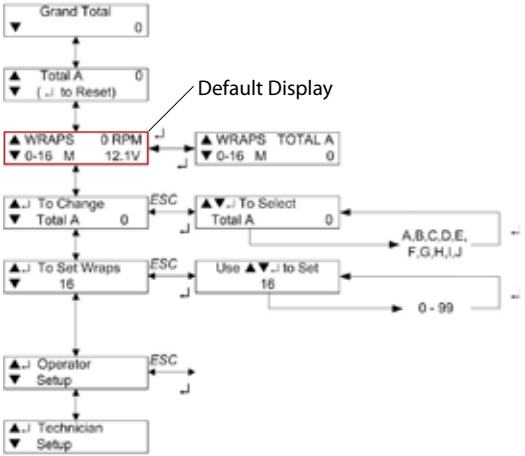
In Manual Mode you have total control of every stage of the wrapping cycle. The software logic determines which manual functions can be activated at any point in the wrapping cycle. Should the operator incorrectly select a function at a certain stage during the wrapping cycle, then that operation will not be performed.

The Display Menu

The Display menu is divided into 3 sections. At the top level are the settings used during the daily work with the machine – i.e. Store totals and No. of Wraps.
The Operator Setup section enables the operator to perform adjustments to the machine operation – e.g. time duration and time delay settings during the automatic cycle.

The 'Technician Setup' menu is not normally accessible to the operator without a PIN access code. 'Technician Setup' is not covered by this manual.

Use the 4-way switch to navigate the menu. Each menu screen indicates which keys to press to make the settings. The instrument will default back to the main operating display after 30 seconds if no other key is pressed.

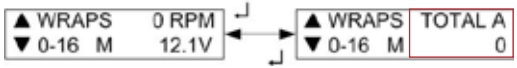


(Note: See Programming Factors on 36 & 37)

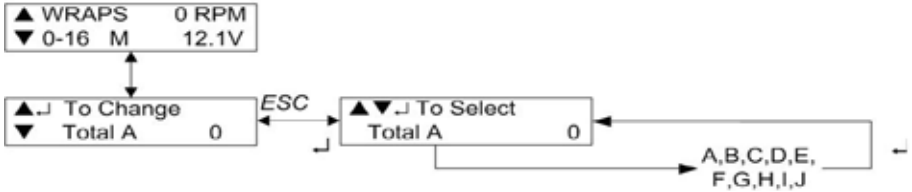
NOTE: There are additional sequences selectable in the Operator Setup menu but not shown in the table. These sequences are for wrapper models to which this manual does not apply.
Please refer to the Operator Setup Menu for further explanation of the Operator Setup functions given in the table above.

Selecting a Store Total
There are 10 individual memory registers labeled 'Store A' to 'Store J' for bale totals. Each time a bale cycle is completed, the currently selected store total and the grand total increments by 1.

The currently selected store is displayed on one of the two screens selectable in the normal operating mode.



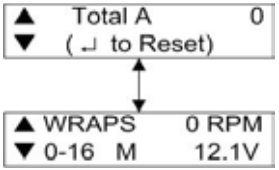
The default setting is Store A. To select a particular store, navigate the display menu using the 4-way switch.



Press the Up/Down arrow keys to select the store, then press the ENTER key to confirm the selection.

Resetting a Store Total to Zero

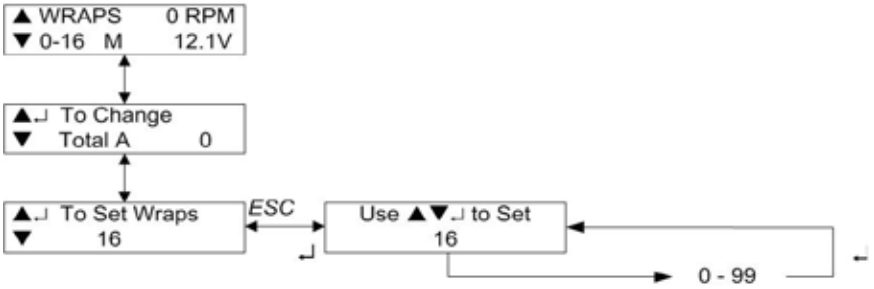
Stores A to J can be individually reset to zero at any time. The Grand Total store cannot be reset. First select the store to be zeroed, and then navigate the display menu as shown below.



Press the ENTER key to reset.

Setting the Number of Wraps

The default number of wraps is 16. You can set the target number from 0 to 99 by navigating the display menu as shown below.



1400 Programmable Factors - Operator Level

Menu No.	Operator Level	Default	Units	Notes
N/A	Target No. of Wraps	16		
4.01	Contrast	6		
4.02	Film Break	OFF		Switches On or Off - Film Break Sensor
4.41	Remote Type	IR		Optional Extra Remote Control
4.4	Auto Hand Cont.	Off		Always Set to Off
4.47	Autostart Wrap	Off		Switches On or Off Automatic Wrapping Start.
4.03	Auto Off -Load	Off		Switches On or Off Automatic Off-loading.
4.07	Squeeze In	3.0	Seconds	Squeeze Arm in Time
4.08	Load Up	4.0	Seconds	Load Up Time
4.09	Squeeze Out	2.0		Squeeze Arm Out Time
4.45	Pause to Release	1.0	Seconds	Pause at when Load Up before Squeeze Release
4.46	Tip to Load Down	1.0	Seconds	Time from Tip to Front Down
4.23	Wraps to Release	*3	Pulses	No. of Wraps to First Film Release.
4.24	Release 2	*8	Pulses	No of Wraps to Second Film Release
4.25	Release Delay	0.0	Seconds	Delay from Passing Sensor to Cutter Opening
4.44	Del. to C&S Open	*0.2	Seconds	Time from Slow to Cutter Open
4.26	Delay To Slow	*0.3	Seconds	Time from Passing Sensor to Going Slow
4.27	Delay To Stop	0.2	Seconds	Time Past Sensor
4.49	Arm adjust	0.5	Seconds	Time Load Arm Raises for Ground Clearance
4.5	In line	Off		Switches On or Off In line Sensor Operation
4.35	Language	English		

1400 Programmable Factors - Technician Level (Pin 1,2,3,4)

Menu No.	Technician Level	Default	Units	Notes
5.01	Sequence	1400		
5.39	Slow Arm PWM	*33	%PWM	Sets Wrapping Slow Speed
5.4	Fast Arm PWM	*49	%PWM	Sets Wrapping Max. Speed
5.41	Rev Arm PWM	*30	%PWM	Sets Reverse Speed
5.51	1-D Fast Speed	*49	%PWM	Sets Speed with 1 Plastic
5.15	Slow Start Time	*2	Seconds	Slow Time Duration at Start
5.16	C&S Open Time	0.3	Seconds	Cutter Opening Time
5.17	C&S Close time 1	0.3	Seconds	Cutter Closing Time During Wrapping
5.18	C&S Close time 2	2.0	Seconds	Cutter Closing Time at End of Wrapping
5.53	1-D Rolls Stop	1.0	Seconds	Table Rollers Intermittent Stop Time for 1 Film Wrapping
5.58	1-D Rolls Rot.	1.3	Seconds	Table Rollers Intermittent Rotation Time for 1 Film Wrapping
5.48	Tip Return Delay	*0	Seconds	Delay from Tip to Tip Return
5.5	Load Arm Down	3.0	Seconds	Load Arm Down Time
5.49	Tip Return Time	*2	Seconds	Tip Return Time
5.57	Door Open	5.0	Seconds	Minimum Time Accepted for Bailer Door Opening.
5.25	RPM Alarm	*35	Seconds	Maximum Wrapping Arm Speed
5.28	Set Default			Sets Controller Back to its' Default Settings

Operator Setup Menu

The default settings for the machine are developed by Tanco for optimal operation of the machine. However, the operator can change certain parameters in the 'Operator Setup' menu to take account of operational conditions.

Transport & Working Positions
Working in the field the 1400 is off-set to the right had side of the tractor, for road transport the draw bar is moved in so the machine runs directly behind the tractor.

Changing from Working to Transport Position (See Fig. 13)
- Swing Drawbar in fully.
- Raise the Load Frame Fully Up.
- Rotate Wrap Arm in slow speed too so it is running in line with the centre of the machine, it is recommended for safety that the rolls of film be removed from the dispensers and placed on the carriers on the drawbar.
- Rotate the Squeeze Arm to its' inner position taking care that the not strike the parked wrap arm.

To move from transport to working position carry out the above in reverse order.

Note: If Wrap Arm Reverse button (L4) is held down the wrap arm will reverse to the park position and stop automatically in the correct position.

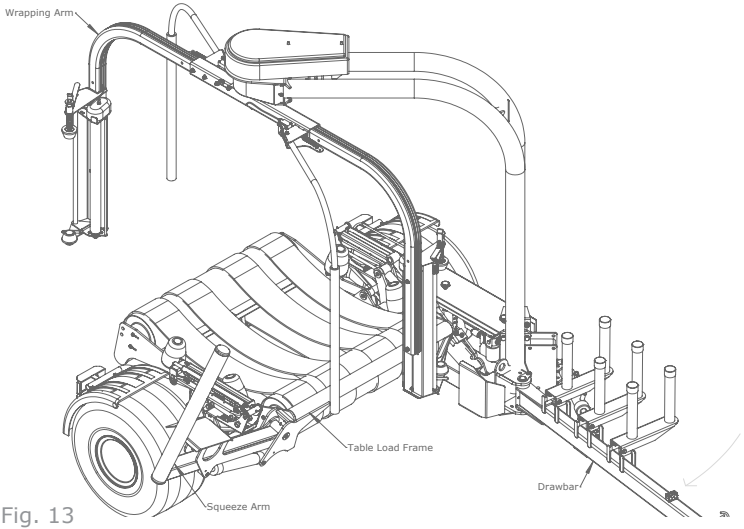


Fig. 13

Setting the Speed of the Wrapping Arm
The wrapping arm speed is controlled by a proportional hydraulic valve. When running in automatic mode the arm starts at slow speed, then ramps to full speed and on the last revolution ramps down to slow and stop. The machine is set as standard to run at approximately 30 RPM.

Adjustment of arm speed is done in the Technician Level of the controller and it is therefore recommended that it be altered by an experienced technician. Menu No.5.4 Fast Arm PWM, sets the maximum arm speed. Note the setting valve here is not the actual RPM but the proportion the valve is open. A setting of 50 equates to 30 RPM approximately. Note setting changes should only be made in increments of 1 as the maximum allowable speed is 32 RPM.
Slow speed and ramping up and down settings are also done in the technician Level of the controller.

NOTE: Max. allowed wrapping arm speed is 32 revolutions per minute.

REMEMBER!
Increased speed of tractor engine does not increase the wrapping speed, it only increases the oil flow into the system, this may increase the temperature in the hydraulic system.

3 Operational Principles
The controller allows for varying degrees of operator intervention in the control of the machine. It is possible to set the controller so one press of a button will run a full automatic sequence from loading to wrapping and unloading. When operating in less than ideal conditions for example when wrapping badly shaped bales or if wrapping in hilly areas it is advisable to break the sequence into the three sections;

Loading
Wrapping
Unloading

See below the correct way to preform these tasks;

- Loading
Set the machine into the loading position: (See Fig. 14)
• Move the Drawbar to the full out position.
• Lower the Load Frame to the ground.
• Open the Squeeze Arm fully.
• Ensure the Wrapping Arm is in the park position; ie the Wrap Arm Magnet is positioned under the Sensor, (See Fig. 16)

Note: The controller will not allow loading if the wrap arm is not in this position.
• Drive up to bale, keeping the Bale Guide close to the end of the bale, commence loading when Load Frame cross tube is in contact with the bale (See Fig. 15).

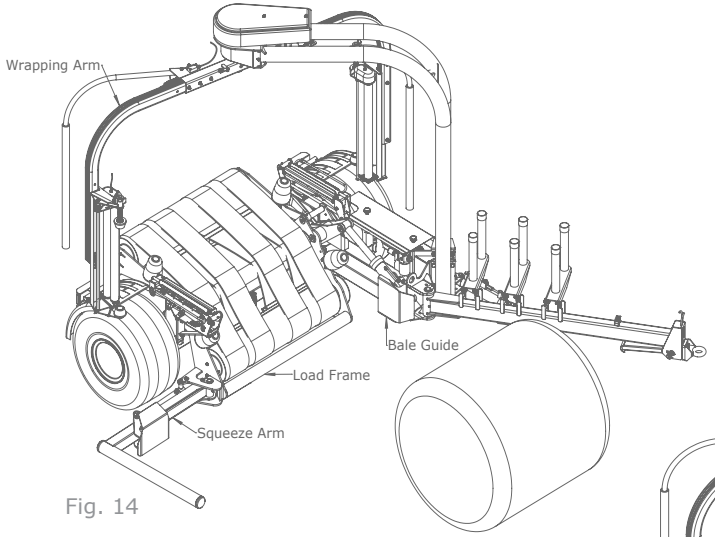


Fig. 14

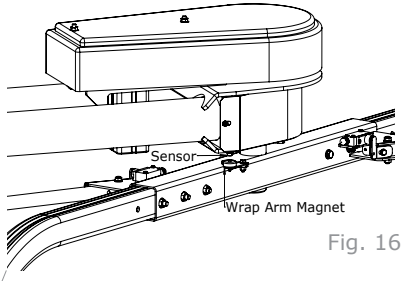


Fig. 16

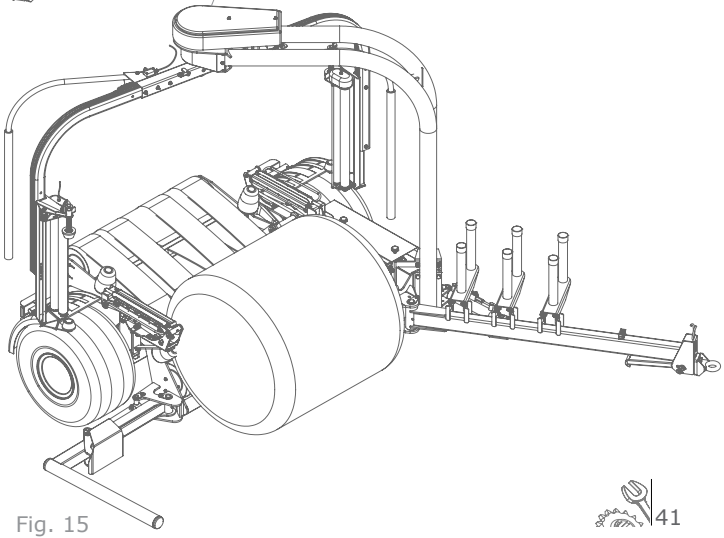


Fig. 15

- Wrapping

The Squeeze Arm must be in the full out position for wrapping to commence. Make sure that the bale is sitting correctly on the table before starting wrapping. Pressing (R6) starts the automatic wrapping cycle.

Adjusting the Overlap

The 1400 is fitted as standard with the 2 x 2 x 50% film overlap system when using 2 rolls of 750 film. This is achieved by means of the gear ratio of the drive, ensure that the correct number of film layers are applied to the bale after a specific number of revolutions of the wrap arm. The number of turns required to wrap a bale depends on bale size .

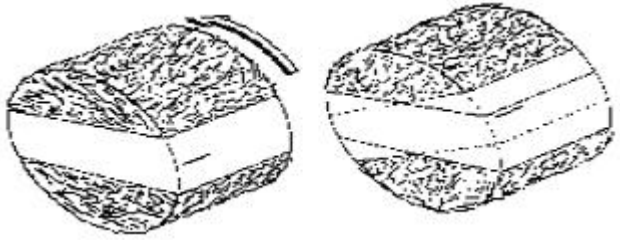
To calculate the number of turns required:

Count the number of turns to just cover the bale, add 1 to this. This applies two layers, multiply by 2 for 4 layers, 3 for 6 layers and so on.

The table below give an indication of the number of wraps to achieve the desired number of layers on different size bales.

Best practice suggests a minimum of 6 layers and more on high dry matter and stemmy material.

Bale Diameter	4 Layers	6 Layers
120cm	16 wraps	24 wraps
150cm	20 wraps	30 wraps



- Unloading

In 'A' (Auto Mode) the machine will run through a full automatic wrapping sequence. One round before the required number of revolutions is obtained; the speed of the wrapping arm is reduced and the cutter opens. The wrapping arm passes the open cutter and stops. The cutter closes and the wrapping arm reverses to the park position. (See Section 7 for making alterations to controller settings).

The Bale is now ready to be Unloaded this can be done in one of two ways; Standard Off-loading or End Tipping

Standard Off-loading

The rear roller drops down to off-load the bale. Beware of the danger of the bales rolling when working in hilly conditions, always off load the bale across the hill. The controller allows a number of methods of triggering off-loading:

If Auto Off-Load is set to ON (Operator Setup) then the bale will be automatically off-loaded at the end of wrapping. If Auto Off-Load is set to OFF, then press (R5) must be pressed to start off-loading.

End Tipping

The 1400 can be fitted with an optional bale End Tipping attachment (See Fig. 17) which turns the bale on to its end as it is being off-loaded (see Fig. 18 & 19). It is attached to the Table Tip Frame with bolts and rubber buffers and can be adjusted to ensure that wheel is clear of the ground during transport.

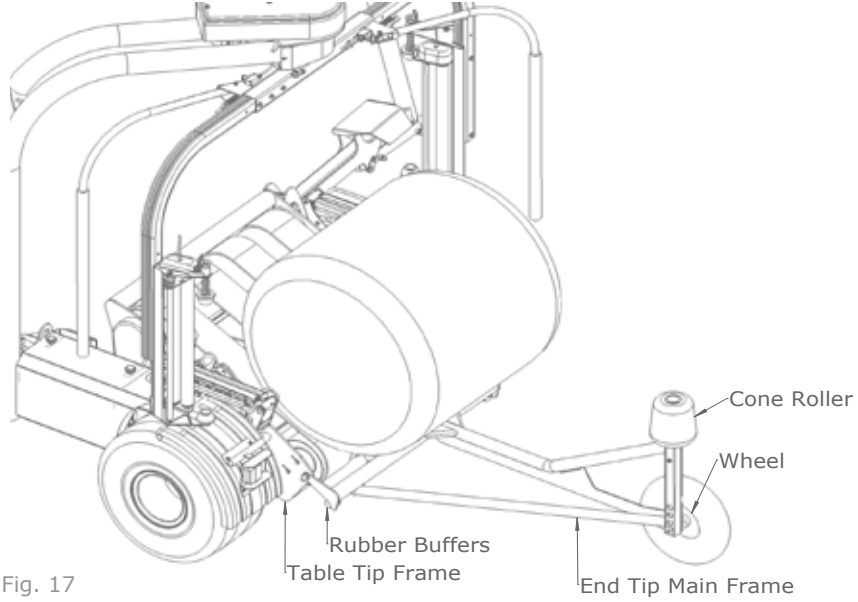


Fig. 17

To avoid damage to the bale the 1400 should be stationary when End Tipping.

The operation of the end tip attachment is heavily dependant upon the terrain and the bale shape. The mounting height of the wheel is adjustable to improve operation with different bale sizes and operating conditions.

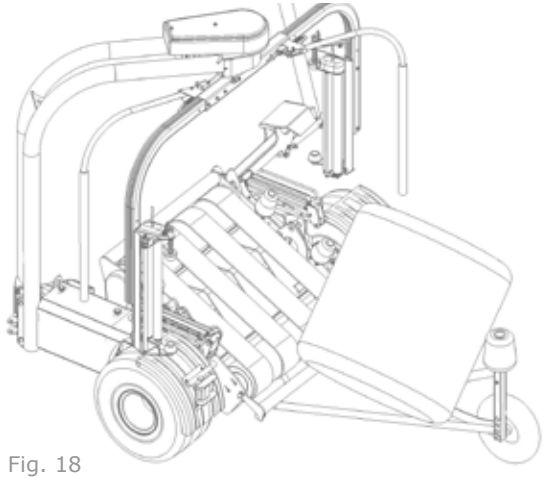


Fig. 18

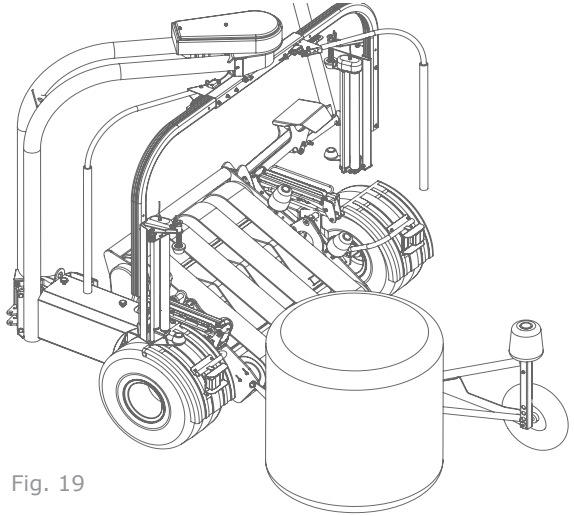
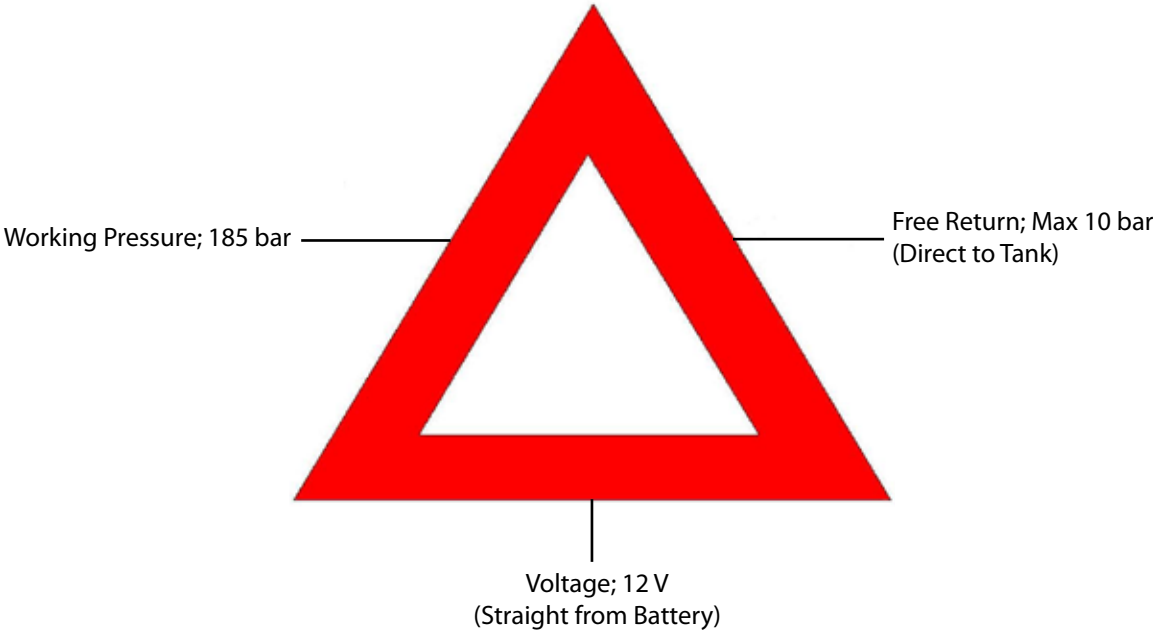


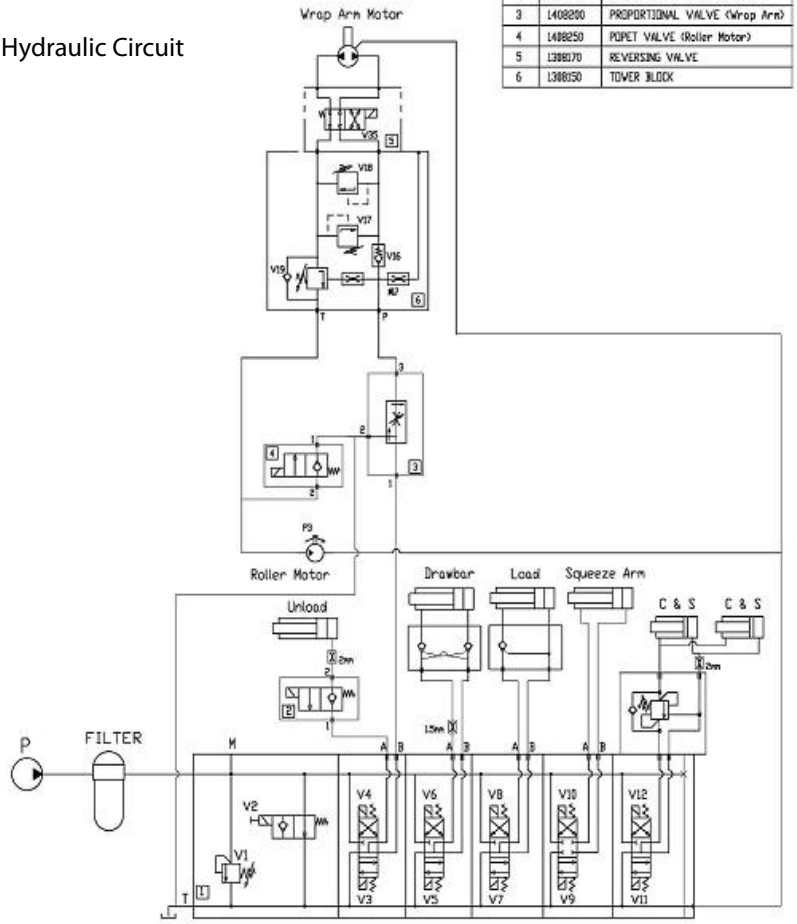
Fig. 19

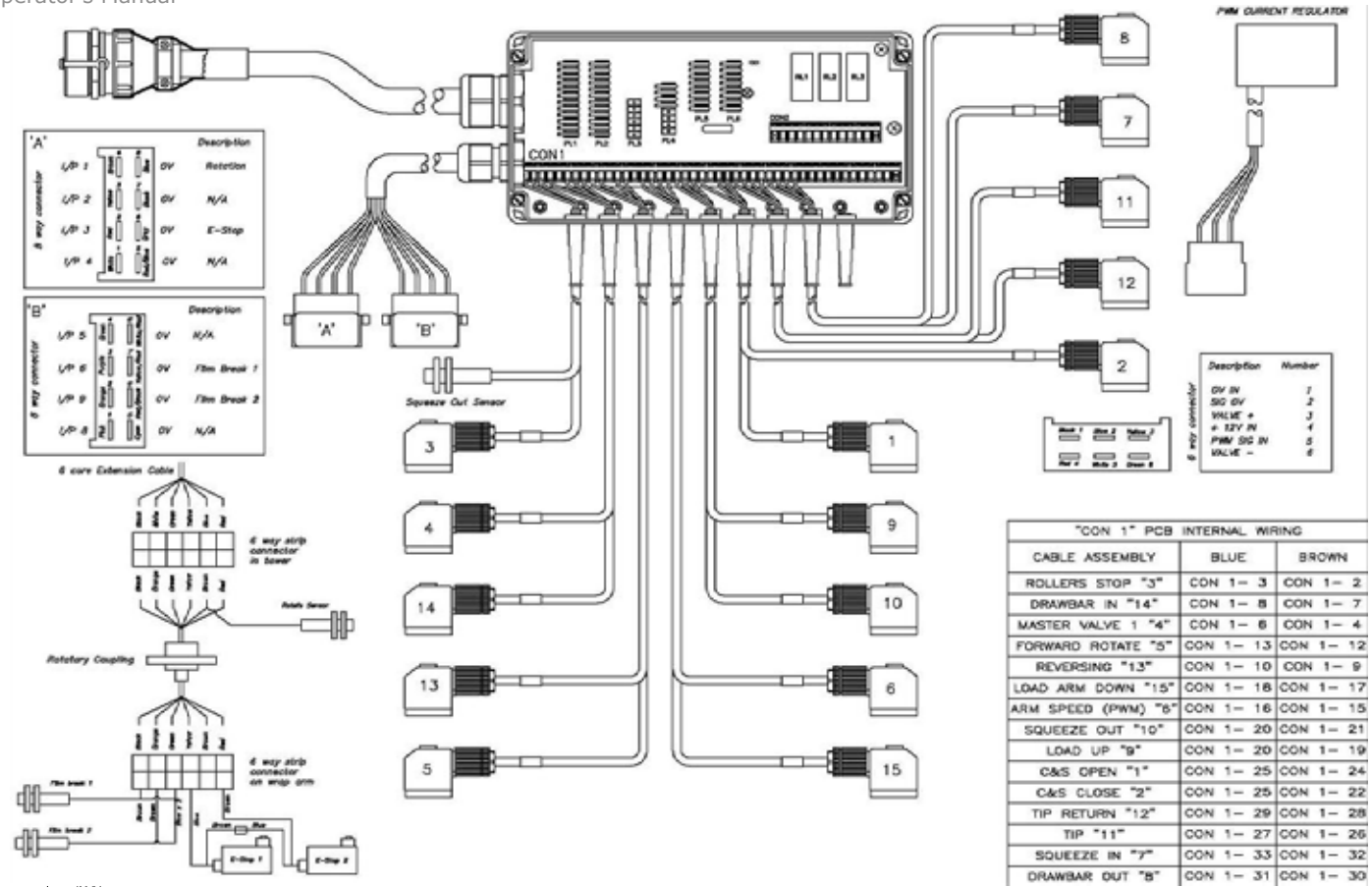
Electro-Hydraulics
Note: There are 3 basics, which must ALWAYS be followed if the machine is to function correctly



1400 Hydraulic Circuit

Pos.	Part No.	Description
1	1408100	ENTRY AND CONTROL BLOCK
2	1408250	POPET VALVE (TABLE UNLOAD)
3	1408200	PROPORTIONAL VALVE (Wrap Arm)
4	1408250	POPET VALVE (Roller Motor)
5	1308170	REVERSING VALVE
6	1308150	TOWER BLOCK





"CON 1" PCB INTERNAL WIRING		
CABLE ASSEMBLY	BLUE	BROWN
ROLLERS STOP "3"	CON 1– 3	CON 1– 2
DRAWBAR IN "14"	CON 1– 8	CON 1– 7
MASTER VALVE 1 "4"	CON 1– 6	CON 1– 4
FORWARD ROTATE "5"	CON 1– 13	CON 1– 12
REVERSING "13"	CON 1– 10	CON 1– 9
LOAD ARM DOWN "15"	CON 1– 18	CON 1– 17
ARM SPEED (PWM) "6"	CON 1– 16	CON 1– 15
SQUEEZE OUT "10"	CON 1– 20	CON 1– 21
LOAD UP "9"	CON 1– 20	CON 1– 19
C&S OPEN "1"	CON 1– 25	CON 1– 24
C&S CLOSE "2"	CON 1– 25	CON 1– 22
TIP RETURN "12"	CON 1– 29	CON 1– 28
TIP "11"	CON 1– 27	CON 1– 26
SQUEEZE IN "7"	CON 1– 33	CON 1– 32
DRAWBAR OUT "8"	CON 1– 31	CON 1– 30

1400 Junction Box Wiring

Solenoid	Generic Function	Cable Number	AMP Pin	1400 Function
1	OP6	18	24	C&S Open
2	OP7	15	6	C&S Close
3	OP1	14	7	Roller Speed
4	OP2	3	14	Master Valve
5	OP4	31	16	Forward Rotate
6	OP3	6	18	Arm Speed (Prop.)
7	OP13	30	10	Squeeze In
8	OP14	11	15	Drawbar Out
9	OP8	24	22	Load Arm Up
10	OP9	27	2	Squeeze Out
11	OP16	1	19	Tip Off
12	OP15	5	12	Tip Return
13	OP11	16	11	Reversing
14	OP10	26	3	Drawbar In
15	OP5	4	13	Load Arm Down
16	OP12	25	4	12 volts

1400 Junction Box Wiring (contd.)

Solenoid	Generic Function	Cable Number	AMP Pin	1400 Function
N/A	IP1	12	9	Rotate Sensor
N/A	IP2	2	20	Not Used
N/A	IP3	20	31	Emergency Stop
N/A	IP4	19	30	Not Used
N/A	IP5	22	33	Squeeze Out
N/A	IP6	13	8	Film Break 1
N/A	IP8	29	5	Not Used
N/A	IP9	28	1	Film Break 2
N/A	AnIP5	8	26	Not Used
N/A	AnIP6	7	25	Not Used
N/A	0v	35	35	
N/A	0v	34	34	
N/A	0v	33	23	
N/A	0v	9	27	
N/A	An0v	21	32	
	5v Supply	23	28	

Description of Hydraulics

The Control Valve (See Fig. 20) uses a 'Master Valve system; so to operate any function the master valve plus the service valve for that function is powered. For troubleshooting purposes it is useful to note on the control valve that, energizing a solenoid on top of the valve gives pressure out the bottom port of that section on valve and vice versa.

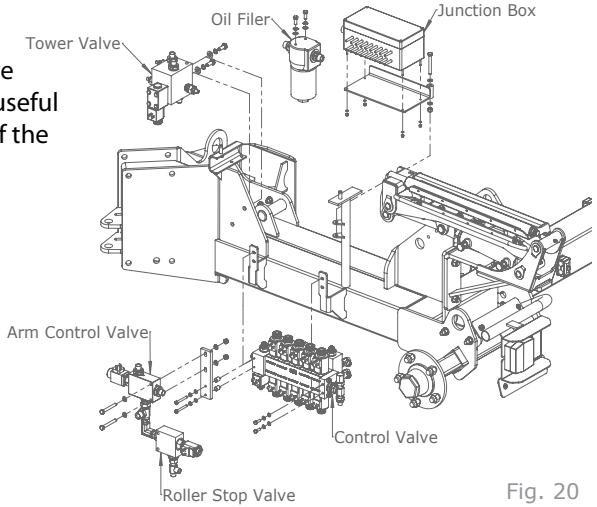


Fig. 20

Open & Closed Center Hydraulics
The 1400 hydraulic system can be set up for tractors with Open or Closed Center Hydraulics.

Open Centre Hydraulics
Most tractors have a hydraulic system that gives a continuous output which flows through the valve on the machine and back to tank when no function is operating (Open center).

Note:
The TANCO AUTOWRAP 1400 is set-up for open centre on leaving the factory.

Close Centre Hydraulics
Some tractors (John Deere) have a hydraulic system that require the valve on the machine to allow no flow when no function is operating (Closed Center). The hydraulic valve can easily be configured to operate in this way.

Valve Functions

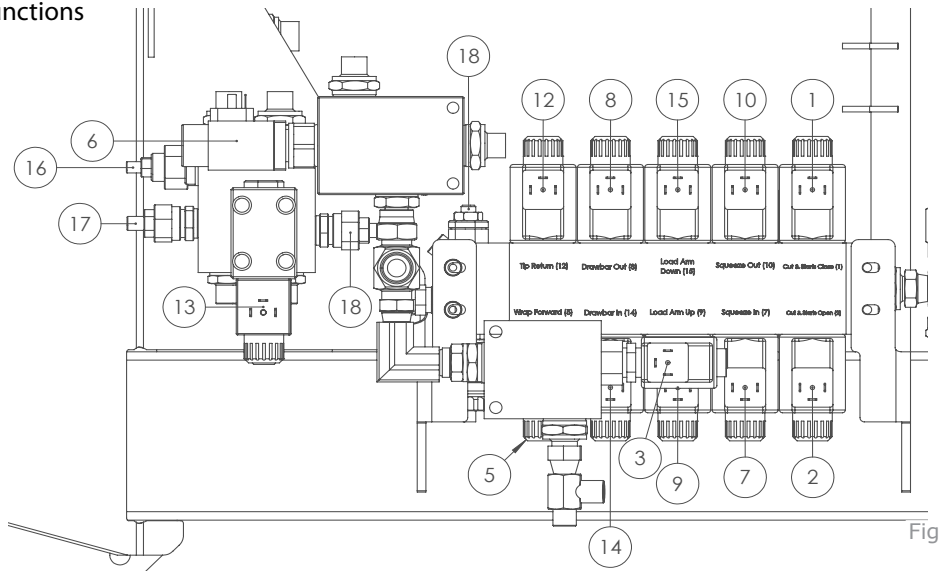


Fig. 21

Valves 1 to 15 (See Fig. 21) are 12 V Electrical Solenoid Valves, their functions are as follows;

Valve 1 (Cutter Open) & Valve 2 (Cutter Close)
These valves open and close the film cutter. To prevent the Cutter creeping open, there is a load holding valve on top of the cutter section of the control valve. There is a 2mm speed control orifice in the bottom port of the cutter section.

Valve 3 - Roller Stop
This valve is normally closed; it is pulsed open and closed to give half speed on the table rollers when the film break sensor detects that one film has broken.

Valve 4 - Master Valve
This valve is powered for every function.

Valve 5 - Arm Rotate
This valve powers the wrap arm and table rollers. Valve 6 is always operated with this valve.

Valve 6 - Wrap Arm Speed
This valve controls the speed of the wrap arm, it gets a varying PWM (Pulse Wave Modulation) signal from the controller to vary the speed. Its' settings are adjustable in the Technician Setup in the controller.

Valve 7 - Squeeze In
This valve powers squeeze arm in.

Valve 8 - Drawbar Out
This valve moves the drawbar out to the working position.

Valve 9 - Load Up
This valve raises the load arm.

Valve 10 - Squeeze Out
This valve opens the squeeze arm.

Valve 11- Tip Down
This poppet valve mounted on the tip port of the Control Valve lowers the rear roller frame for tipping off bale.

Valve 12 - Tip Return
This valve raises rear roller frame after tipping.

Valve 13 - Reversing Valve
This vale mounted on the Tower Valve to reverse the direction of the wrap arm. It is always operated with valves 5 and 6.

Valve 14 - Drawbar In
This moves the drawbar in to the transport position.

Valve 15- Load Arm Down
This valve lowers the load arm.

Valves 16,17,18 are on the Tower Block, their functions are as follows;

Valve 16 (VBS) Brake Valve.
This is a pilot operated (8:! Ratio) Load Holding Valve, it regulates the oil flow on the outlet side of the wrap arm motor. It makes the arm run smoother and holds it in place when parked.

Valve 17 - (VMP) Cross Line Relief Valve Forward
This valve limits the max. torque of the wrapping arm. If the inlet pressure exceeds the set value, it relieves the oil across to the outlet side of the motor. It is adjusted so that the pull force on the far end of the arm is approximately 35 KG. If it is set too high acceleration at the beginning of wrapping will be very sharp.

Valve 18 - (VMT) Cross Line Relief Valve Reverse
This valve ensures a gradual stop for the wrap arm by limiting the pressure on the outlet side of the motor. If the pressure exceeds the set value, it relieves the oil across to the inlet side of the motor.

Valve 19 - Main Relief Valve
The hydraulic system is equipped with a safety relief valve, which is preset to 185 bar. If this pressure is exceeded it opens and allow the oil from the pressure port to the tank port of control valve

IMPORTANT:
Valves 16 to 19 have been carefully set in the factory. Incorrect adjustment of these may cause damage to the machine. Always ensure that trained personnel only adjust the settings of these valves.

Pressure Test Point
There is a pressure test point on the inlet end of the Control Block.

Check Points Prior to Troubleshooting
There are some general check points that have to be examined first if something is wrong with the machine. There are three basic assumptions that have to be fulfilled for the machine to function properly;

1. The oil pressure from tractor should be 180 bar.
2. The return flow of oil has to be as free as possible, max. 10 bar counter pressure.
3. Enough electric power to all functions.

Oil Pressure
To check the oil pressure into the machine is high enough, a gauge may be placed in line on the feed hose or there is a standard test point on the end of the Control Valve.

Oil Flow
The amount of oil that the tractor delivers should be minimum 20 liters/minute for satisfactory operation of the machine, but it is recommended that it is 30 liters/minute.

Note: (Max. allowed oil amount is 60 liters/minute). Ensure that oil level in tractor's hydraulic system is correct and tractor's oil filter is changed regularly.

Return Pressure
The return pressure can be too high. With high return pressure the machine's functions will get less power. High return pressure means also that you need more power to operate the valves.

Max. allowed pressure is 10 bar, we recommend "free return" directly to the tank.

Electric Power
It is important to check that all functions receive enough electric power. If not, some, or all functions may fail. The controller displays a voltage reading.

Battery Voltage
If the voltage falls below 10 V the valves will not be able to open.

Electrical Connection
The electric supply for the machine's remote control and electro-hydraulic components must come directly from the tractors' 12 volt battery.

The electric wires from the battery must have an area measurement of min. 2,5 mm2. Connection to other contacts on the tractor can cause risk of malfunction and is not recommended.

Note:
Brown leader goes to the Battery's Positive Pole
Blue leader goes to the Battery's Negative Pole

- Check that the connection between battery cable and control is ok.
- Check that the connection between controller unit and machine is ok.
- Check that fuse on the battery Cable is ok.

Procedure of Troubleshooting
If the machine fails to operate correctly it must be determined if the problem is Hydraulic, Mechanical or Electrical.

Solenoid Valves
When checking if the Solenoid valves are receiving electric power, you do this in the following way:

1. Unscrew the nut that holds the solenoid.
2. The solenoid is easy to move without electric power.
3. Push the current function on the remote control. If the solenoid gets power, it will be difficult to move, it "sticks". This is the best and easiest way to check if the solenoid valve is receiving electric power. Another way is to hold a screwdriver up to the magnet. If it "sticks", the solenoid is receiving electric power.

The power supply to the valve can also be measured with a voltmeter, but then the contact must be connected to the solenoid, so it is using power. To have reliable functions, the voltage should not be lower than 11,5 volts, even if the solenoid valve usually works with a little lower voltage.

If the electric supply is in order and one of the functions fails, the reason can be dirt that tightens or prevents the sliding shaft (spool) from moving.
Try to manoeuvre the function manually, by pressing the point of a screwdriver into the end of the valve housing. At the same time the corresponding switch on the control unit has to be operated to get electric power to the master valve. If the function is working again after this, the dirt may have been pushed out in the oil system and the machine can be operated normally again.


Take care so that the machines moving parts, do not cause damage to persons or objects.

The Machine Does not Function
- Even if the gauge shows enough pressure and there is no reaction in the machine. The reason could be that one, (or both), of the quick-couplers does not open for the oil, in this situation you should change the quick-couplers.

- The counter pressure may be too high.
Max. allowed counter pressure is 10 bar.

Make sure that the open / closed valve is correctly positioned.

Note: Disturbances of this type, a, b or c, are most likely in the first days that the machine is in use.

The Cutter will not Hold the Film
Is the cutter closing fully, if not increase the Cutter Close Duration 2.
If the cutter is creeping open, there may be dirt in the load holding, open and close the cutter a number of times to try to clear this. If the problem develops over time then it may be due to seal wear in the cutter arms.

The Wrapping Arm will not Rotate
- Check error messages on the controller,' SQUEEZE OUT', squeeze arm must be in the fully out position for wrapping to start. 'SAFETY' if the safety arm has tripped.

- Check by hand if wrapping when parked that the wrap arm is held firmly in place; if it can be easily moved, check chain drive, drive keys and drive motor.

- Check if the arm is attempting to drive but is under pressure, unscrew adjustment on Valve 16 - Brake Valve on Tower Block. If this does not solve problem return valve to original position.

-Check if the hydraulics are under pressure and the arm is not moving then there may be a problem with the electrical supply to the control valve, this is best dealt with by an experienced technician.

The Hand Controller will not Operate the Lift Arm
In the Operator Setup, the Remote Type (Menu no.4.41) may be set to RF, if so, change to IR.

Please contact your dealer if you are in any doubt regarding the above.

Periodic Maintenance

Bearings
All ball-bearings are packed with grease, and do not need any more maintenance.

Pre-Stretchers
If the machine is in daily use, the Gears under the plastic cover on the dispenser should be greased when needed.

Cutters / Film Holders
The cutter / film holder is pre-adjusted from the factory and does not need further adjustments. When replacing spare parts, it is necessary to adjust it. The springs for the U-shaped slot shall be adjusted so that they are almost completely squeezed together when the cutter-arm is all down.

Cleaning

The machine should be cleaned and oiled regularly and at the end of the wrapping season.
When using high pressure washing apparatus, care must be taken with the electrical installation.
Also make sure that water is not sprayed directly into the bearings, etc. Keep the control box protected from rain and water. If necessary use compressed air to dry electrical components.

Hydraulic Cylinders
Make sure that all hydraulic cylinders are closed when storing the machine.

Quick Couplers
Ensure that the quick couplers are kept clean and apply the dust caps after use.

Storage
The machine should be parked on a dry place during the closed season.

Oil Filter
The oil filter must be changed once a year.

Lubrication (See Fig. 22)
The table below outlines the recommended lubrication requirements for components on the 1400;

No.	Component	Type	Intervals
1	Drawbar Ram	Grease	50hrs
2	Table Up Ram	Grease	10hrs
3	Table Tip Ram	Grease	10hrs
4	Squeeze Arm	Grease	10hrs
5	Cut & Tie Ram	Grease	10hrs
6	Wrap Arm Drive*	Oil	50hrs
7	Table Roller Drive*	Oil	50hrs
8	Dispenser Gears	Oil	50hrs

* Chain & Sprockets

Note: We recommend that you change the oil in the Tower & Table motors every 500hrs.

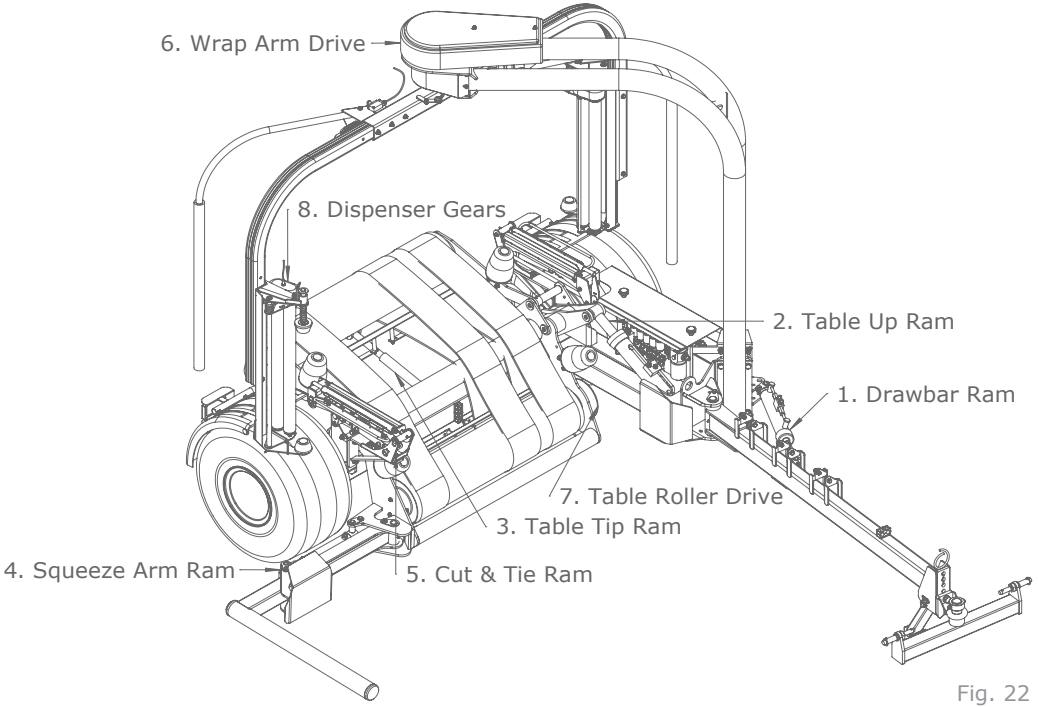

6. Wrap Arm Drive
8. Dispenser Gears
2. Table Up Ram
1. Drawbar Ram
7. Table Roller Drive
3. Table Tip Ram
4. Squeeze Arm Ram
5. Cut & Tie Ram

Fig. 22

GUARANTEE

Subject to hereunder provided, the sellers undertake to correct either by repair or at their election by replacement any defect of material or workmanship which occurs in any of its goods within twelve months after delivery of such goods to first user, with the exception of contractors or commercial users when warranty period is six months.
In respect of Autowraps the warranty period is for 12 months or 8000 bales, whichever occurs first.

The term goods when used in this document means the article or articles described in invoices as sold by the sellers but dose not include equipment or proprietary parts or accessories not manufactured by the sellers. The sellers, however, undertake to pass on so far as they legally can to the first user the benefit of any warranty given to the sellers by the suppliers of such equipment, parts or accessories.
This understanding shall not apply to:-

(a) Any goods that have been sold by the first user.
(b) Any goods which have been injured by unfair wear and tear, neglect or improper use.
(c) Any goods the identification marks of which have been altered or removed.
(d) Any goods that have not received the basic normal maintenance such as tightening of bolts, nuts, tines, hose connections and fittings and normal lubrication with the recommended lubricant.
(e) The use of any product on tractors exceeding the recommended horsepower.
(f) Any goods that have been altered or repaired other that on instruction or with the written approval of the seller or to which any part not manufactured or having written approval by the sellers have been fixed.
(g) Any second-hand goods or parts thereof.

Any allegedly defective part or parts returned to the seller must be sent carriage paid. No claim for repair or replacement will be entertained unless upon discovery of the alleged defect written notification is sent to the Sellers giving, at the same time, the name of the Buyer from whom the goods were purchased and the date of purchase, together with the full details of the alleged defect and the circumstances involved, also the serial number of the machine etc.

The sellers shall be under no liability to their Buyers and first or subsequent users of their goods or to any other person or persons for loss or damage howsoever arising in respect of either personal injuries or for arising out of, or in any other way connected with or arising from the manufactures sale, handling, repair, maintenance, replacement or use of its goods or the failure or malfunction of any of its goods. Representation and/or warranties made by any persons (including Buyers and employees and other representatives of the Seller) which are inconsistent or conflicting with these conditions are not binding upon the sellers unless given in writing and signed by a director of sales.

CLAIMS

If you wish to make a claim under the guarantee:

1: Immediately, stop using the machine.

2: Consult with your Tanco dealer (supplier). He/She can download a warranty claim form on-line. This should be filled out and e-mailed to distributor and forwarded to relevant contact person in Tanco. Please ensure all relevant information is included on this form

3: Consult with your Tanco dealer (supplier) and have them forward your claim and the damaged item to Tanco.

EC DECLARATION OF CONFORMITY

ACCORDING TO DIRECTIVES 8 9/392/336 /EEC AS AMENDED

CE

Manufacturer:
Tanco Autowrap Ltd
Bagenalstown
Co. Carlow
IRELAND

CERTIFIES THAT THE FOLLOWING PRODUCT:
TANCO AUTOWRAP
MODEL: 1400EH
SERIAL NO:

To which this declaration relates, corresponds to the essential requirements of the Directive 89/392/336/EEC as amended.

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

EN 292-1,2, EN 294, EN 1152, prEN 703, prEN 811, prENl553, prEN 982.

DATE 14.02.09

Signed: _____

Con Hourihane, Technical Manager

1400 Spare Parts List

We recommend that when you require spare parts you use only original parts.

When ordering spare parts please follow the following steps;

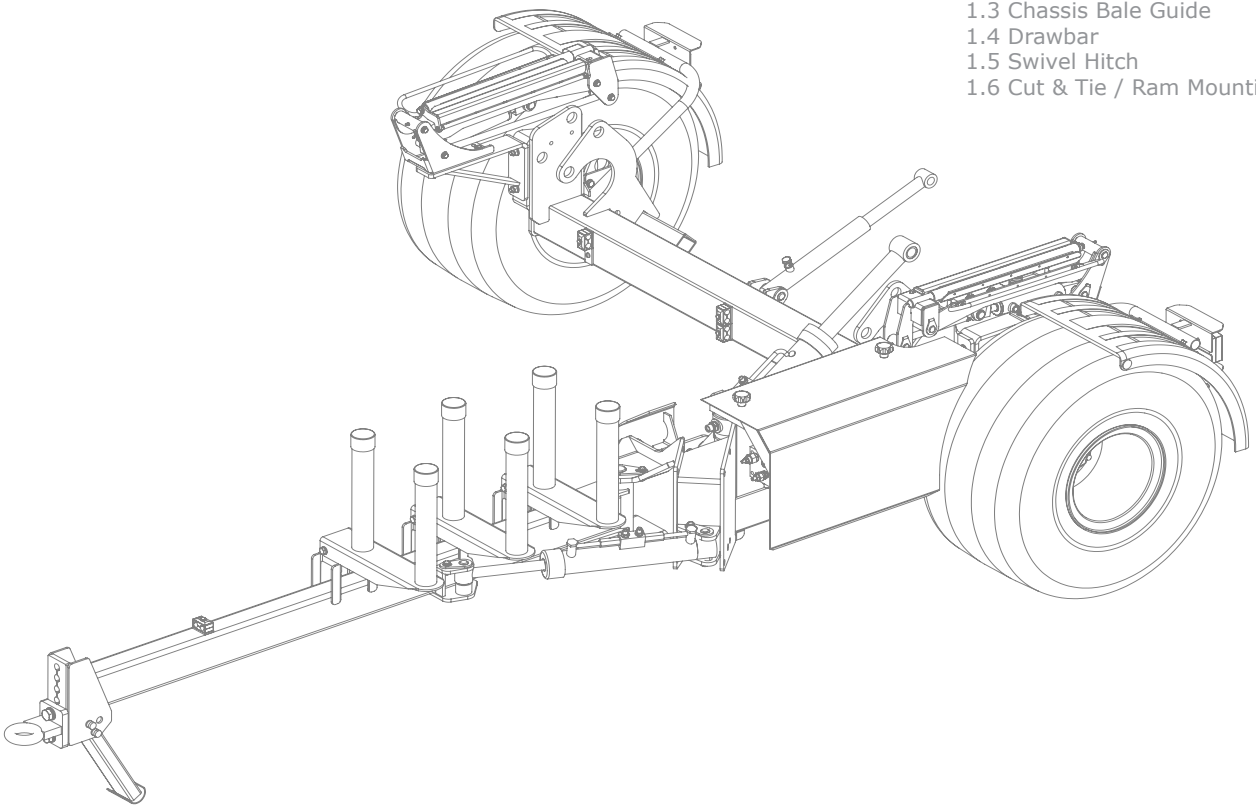
1. Identify the part you require using the detailed drawings.

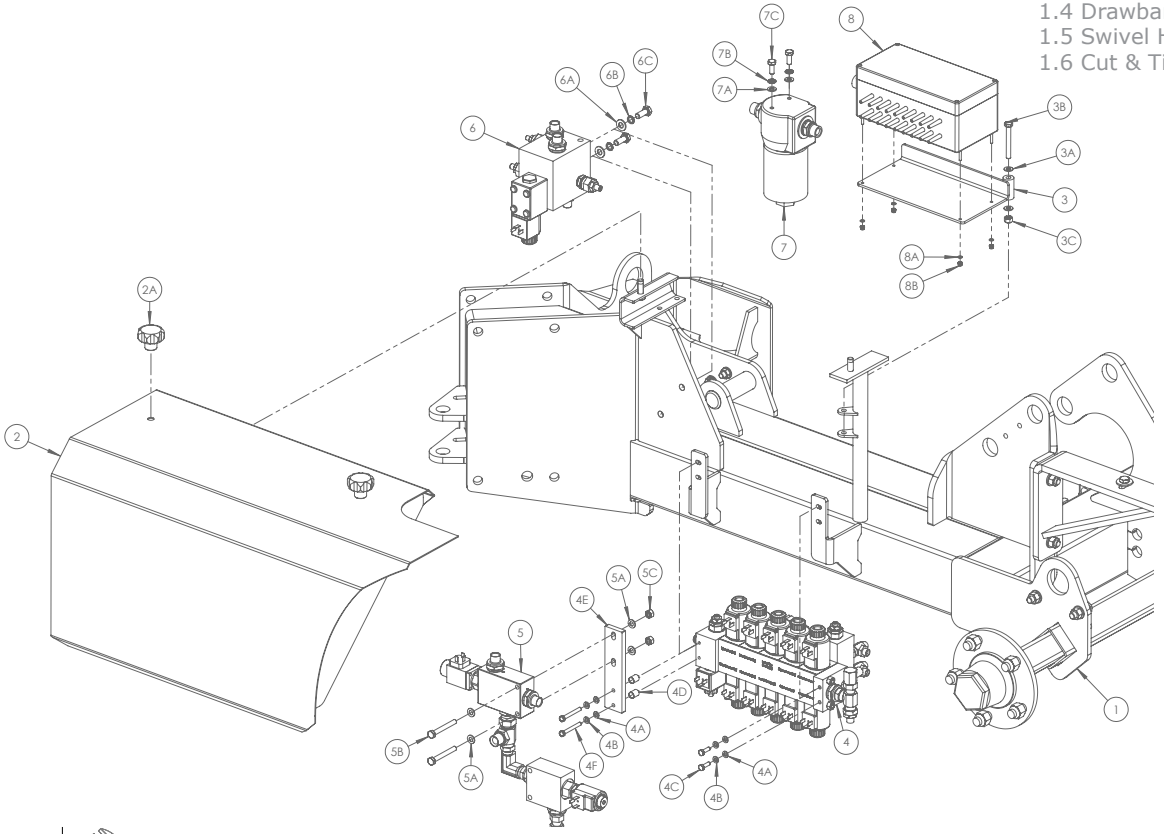
2. Once you have identified the part you require reference the item numbder relating to the part on the item list where you will find the part number and description of the part you require. You will be require to give the complete part no and decription when ordering your part(s).

3. When ordering you must give the Serial Number and Model Number of the machine.

4. All orders must go through your local Tanco Dealer, and must be either faxed or e-mailed to Tanco Autowrap.

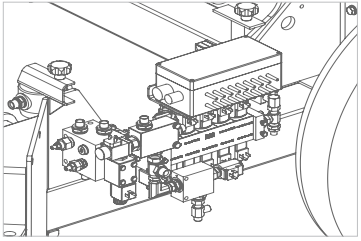
Table of Contents
- Section 2: Spare Parts Manual -

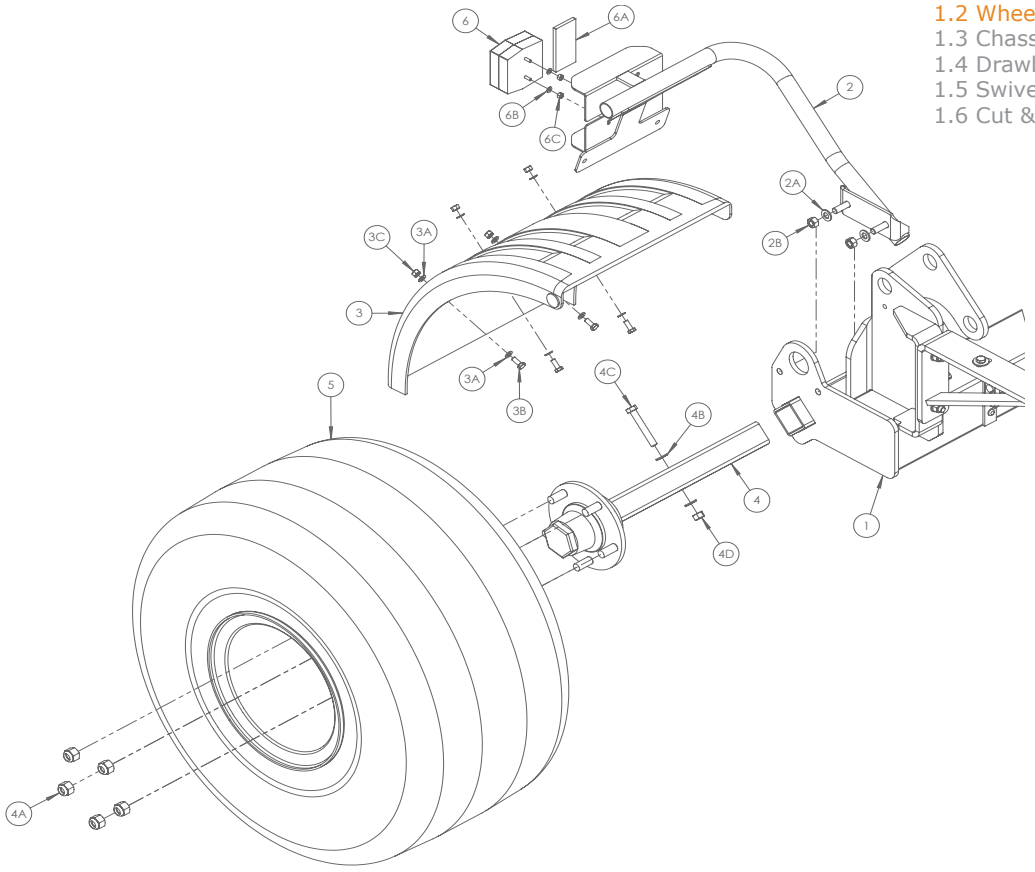




Item No.	Part No.	Description	Qty
1	1401100	Chassis	1
2	1401060	Valve Cover	1
2A	34251456	Handwheel (50 x 10)	2
3	1401050	Junction Box Mounting Bracket	1
3A	Z10-02-08	8mm Flat Washer	2
3B	Z26-048B	M8 x 65mm Hex Bolt	1
3C	Z23-08	8mm Locknut	1
4	1408100	Control Valve	1
4A	Z10-02-06	6mm Flat Washer	4
4B	Z12-02-06	6mm Spring Washer	4
4C	Z26-020S	M6 x 20mm Hex Set	2
4D	1403044	Valve Spacer	2
4E	1401066	Valve Mounting Bracket	1
4F	Z26-026B	M6 x 50mm Hex Bolt	2
5	1408210	Proportional Valve	1
5A	Z10-02-08	8mm Flat Washer	4
5B	Z26-048B	M8 x 65mm Hex Bolt	2
5C	Z23-08	8mm Locknut	2

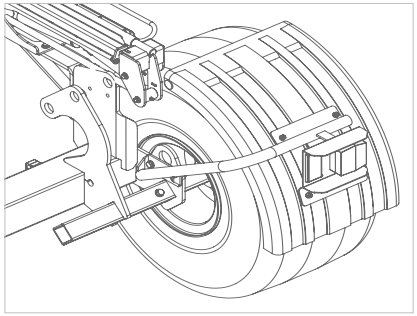
Item No.	Part No.	Description	Qty
6	1308180	Tower Block	1
6A	Z10-02-10	10mm Flat Washer	2
6B	Z12-02-10	10mm Spring Washer	2
6C	Z26-0611S	M10 x 25mm Hex Set	2
7	1308070	Oil Pressure Filter	1
7A	Z10-02-08	8mm Flat Washer	2
7B	Z12-02-08	8mm Spring Washer	2
7C	Z26-039S	M8 x 20mm Hex Set	2
8	1409100	RDS Control Kit (Junction Box)	1
8A	Z10-02-04	4mm Flat Washer	2
8B	Z23-04	4mm Locknut	2

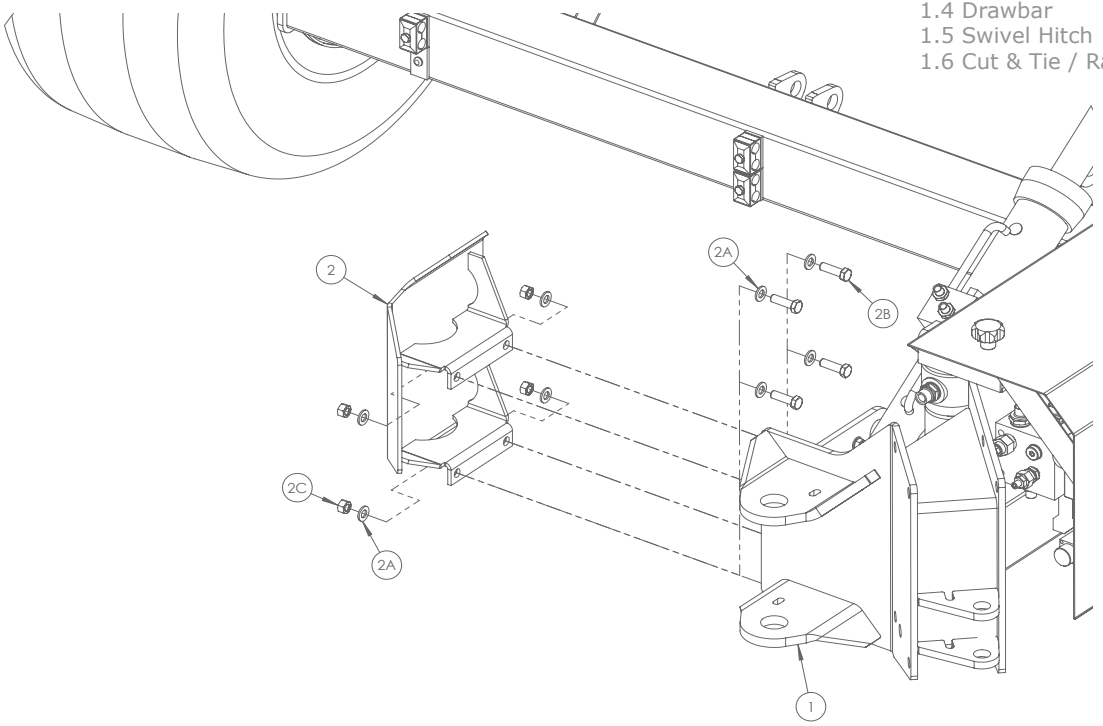




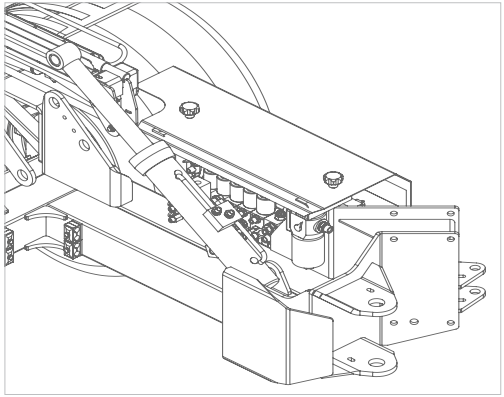
Item No	Part No	Description	Qty
1	1401100	Chassis	1
2	1402100	Mud Guard Mounting Bracket (Right)	1
2A	Z10-02-12	12mm Flat Washer	4
2B	Z26-084S	M12 x 40mm Hex Set	2
2C	Z23-12	12mm Locknut	2
3	1401250	Plastic Mudguard	1
3A	Z10-02-08	8mm Flat Washer	8
3B	Z23-08	8mm Locknut	4
4	Z04-032	Stub Axle	1
4A	M22AWNA	M16 Wheel Nut	5
4B	Z10-02-12	12mm Flat Washer	2
4C	Z26-0901B	M12 x 80mm Hex Bolt	1
4D	Z23-12	12mm Locknut	1
5	Z04-04-1070	5 Stud Road Wheel	1

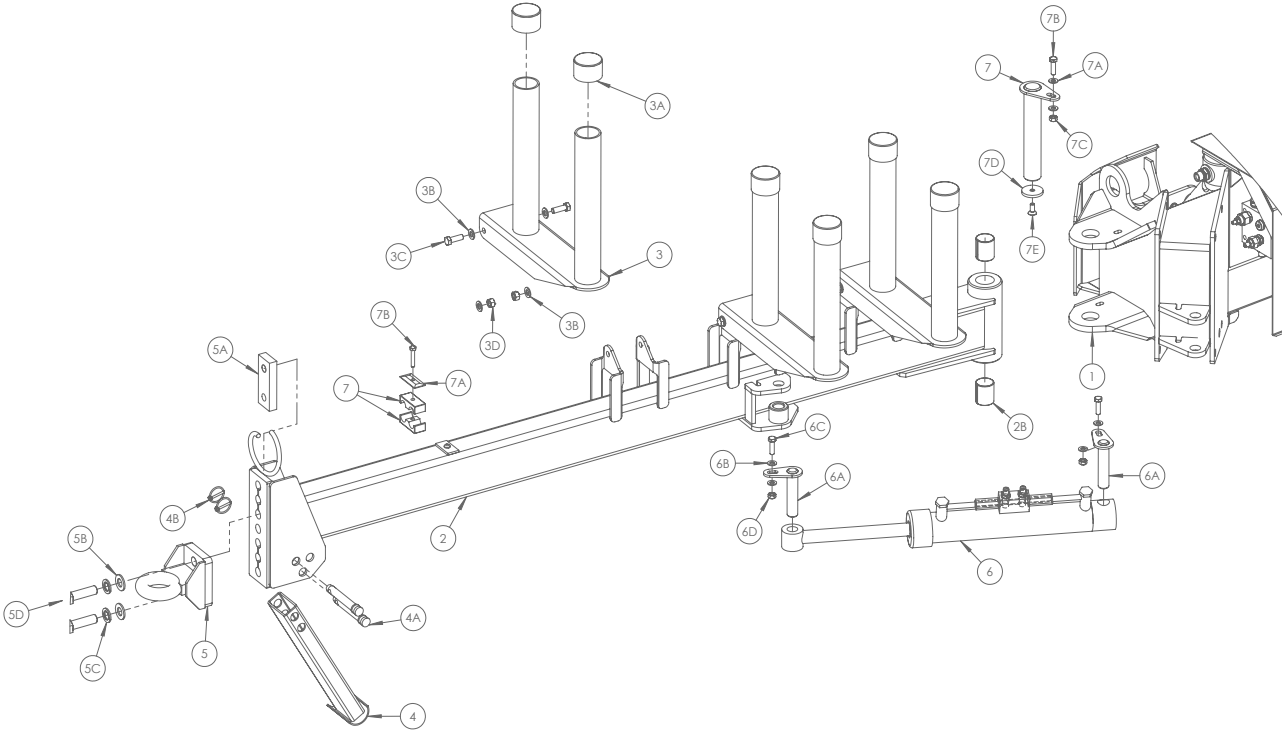
Item No	Part No	Description	Qty
6	Z05-32	Lighting Set	1
6A	Z04-621	100 x 45 Reflector	1
6B	Z10-02-05	5mm Flat Washer	2
6C	Z23-05	5mm Locknut	2





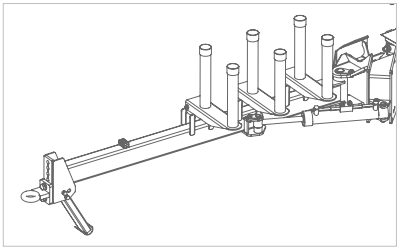
Item No	Part No	Description	Qty
1	1401100	Chassis	1
2	1401070	Bale Guide	1
2A	Z10-02-10	12mm Flat Washer	8
2B	Z26-084S	M12 x 40mm Hex Set	4
2C	Z23-12	12mm Hex Set	4

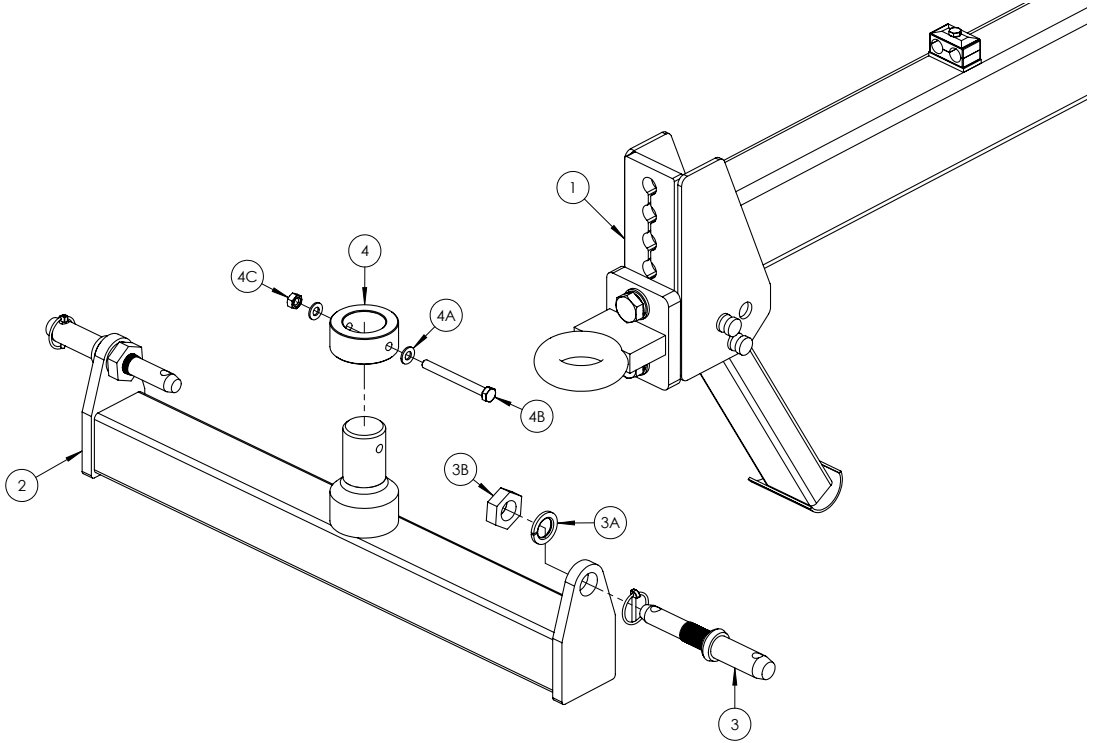




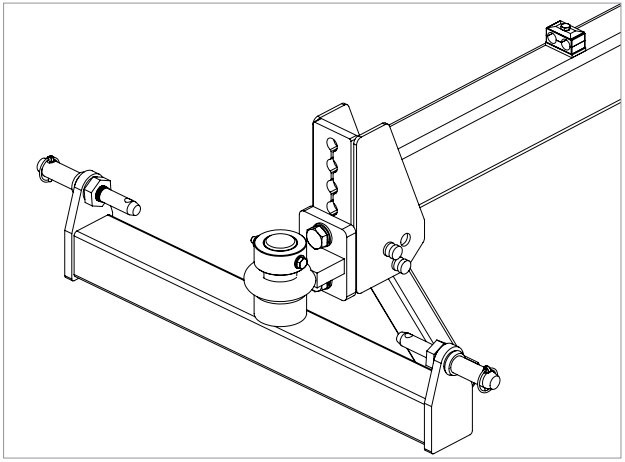
Item No	Part No	Description	Qty
1	1401100	Chassis	1
2	1401500	Drawbar	1
2A	34060800	M8 x 1.25 Grease Nipple	1
2B	1404056	DX Bush (40mm Bore x 50mm)	2
3	1408015	Film Roll Holder	3
3A	Z32-085	External Tube Cap	6
3B	Z10-02-12	M12 Flat Washer	12
3C	Z26-038B	M12 x 35mm Hex Bolt	6
3D	Z23-12	M12 Locknut	6
4	1401075	Drawbar Leg	1
4A	Z03-04-74	Link Pin	2
4B	Z03-22-03	1/4" Linch Pin	2
5	1401600	Hitch Eye	1
5A	1403005	Bolt Plate	1
5B	Z10-02-20	M20 Flat Washer	2
5C	Z12-02-20	M20 Spring Washer	2
5D	Z26-165B	M20 x 70mmHex Bolt	2

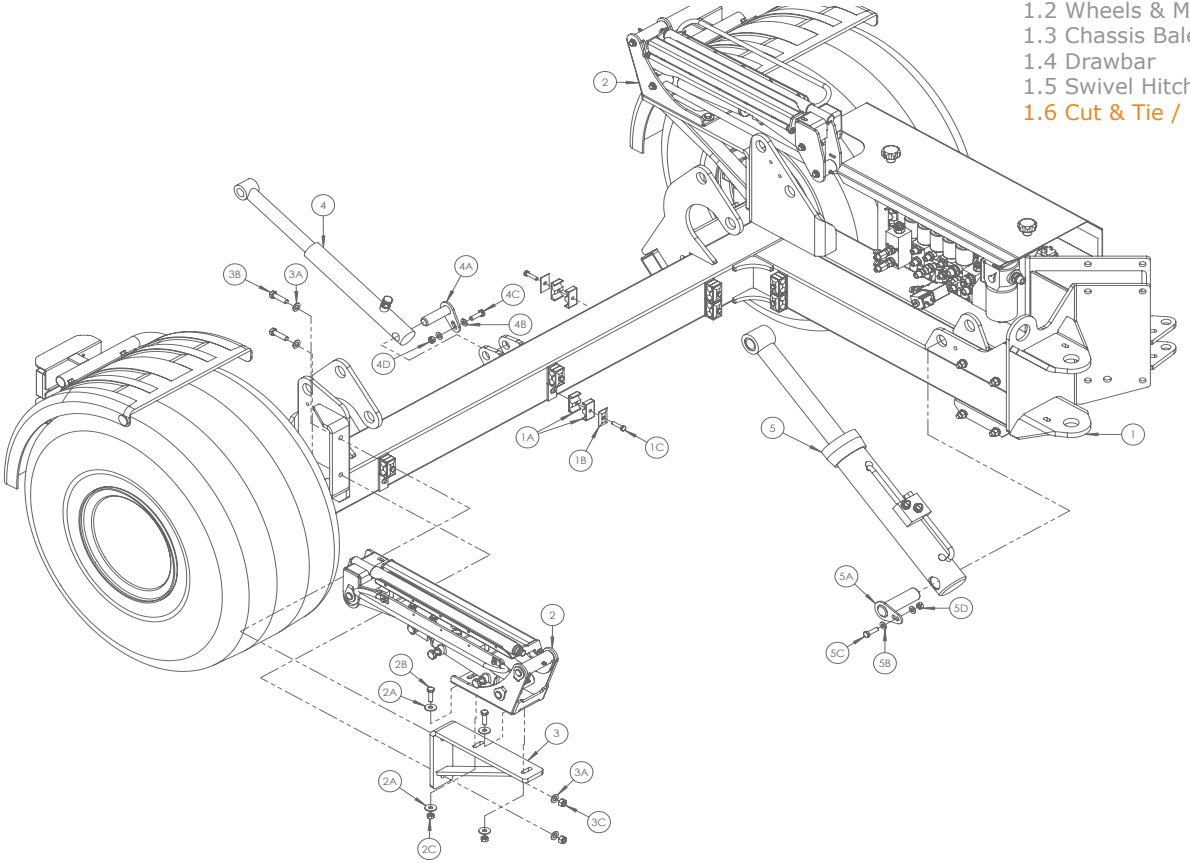
Item No	Part No	Description	Qty
6	1408166	Drawbar Ram	1
6A	1401716	Ram Mounting Pin	2
6B	Z10-02-10	M10 Flat Washer	4
6C	Z26-063S	M10 x 35mm Hex Set	2
6D	Z23-10	M10 Locknut	2
7	34260117M	22mm Pipe Clamp (Pair)	1
7A	34260117	Pipe Clamp Top Plate	1
7B	Z26-042B	M8 x 45mm Hex Bolt	1
8	1401713	Drawbar Pivot Pin	1
8A	Z26-063S	M10 x 35mm Hex Set	1
8B	Z10-02-10	M10 Flat Washer	2
8C	Z23-10	M10 Locknut	1
8D	1403033	Countersunk Pin Cap	1
8E	Z13-5-10X25	M10 x 25mm CSK Allen Set	1





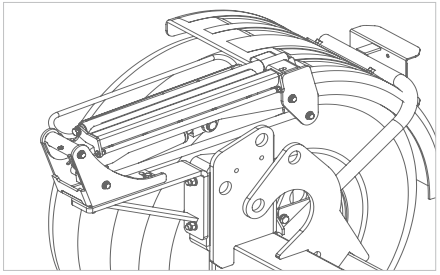
Item No	Part No	Description	Qty
1	1401500	Drawbar	1
2	1401100	Swivel Hitch	1
2A	Z03-22-06	7/16" Dia Linch Pin	2
3	34105716	3pt Pont Linkage Pin	2
3A	Z12-02-25	25mm Flat Washer	2
3B	1401109	3pt Pont Linkage Nut	2
4	1401074	Swivel Collar	1
4A	Z10-02-10	M10 Flat Washer	2

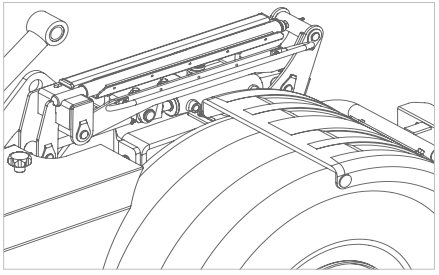


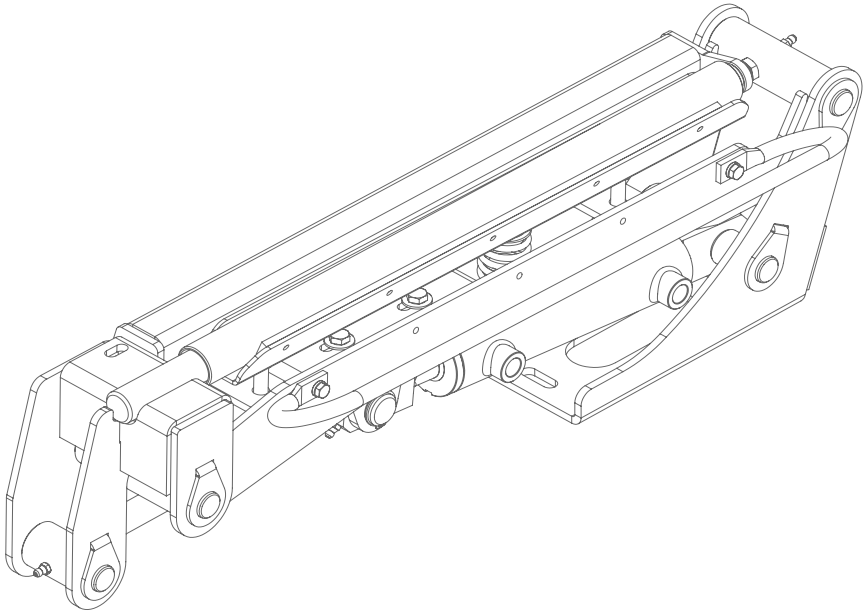


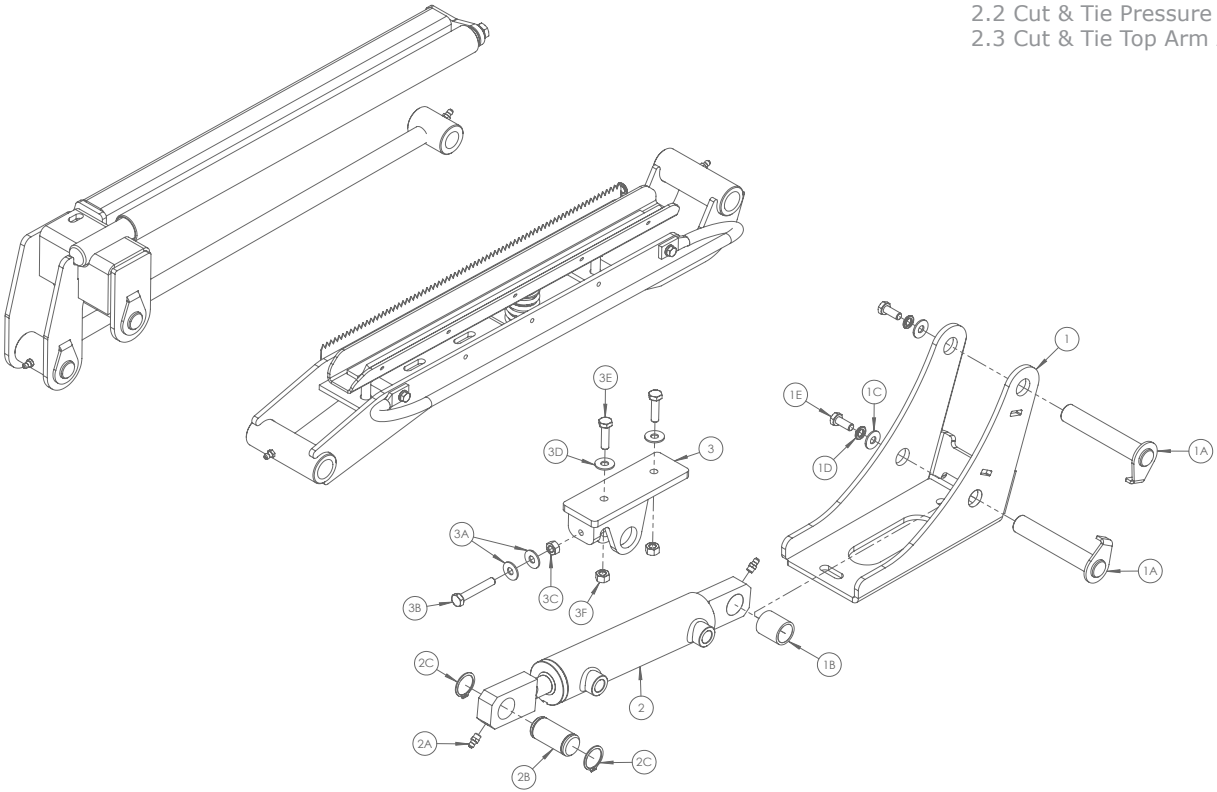
Item No	Part No	Description	Qty
1	1401100	Chassis	1
1A	Z01-24-2618	18mm Pipe Clamp (Pair)	7
1B	Z01-24-27	Pipe Clamp Top Plate	7
1C	Z26-042B	M8 x 35mm Hex Bolt	7
2	1406100	Professional Cut & Tie	2
2A	Z11-02-101	8mm Mudwasher	8
2B	Z26-063S	M10x 35mm Hex Set	4
2C	Z23-10	10mm Locknut	4
3	1401086	Cut & Tie Mounting Bracket	2
3A	Z10-02-12	12mm Flat Washer	8
3B	Z26-085S	M12 x 45mm Hex Set	4
3C	Z23-12	12mm Locknut	4
4	1408169	Unloading Damper Ram	1
4A	1401720	Ram Mounting Pin	1
4B	Z10-02-10	10mm Flat Washer	1
4C	Z26-063S	M10 x 35mm Hex Set	1
4D	Z23-08	10mm Locknut	1

Item No	Part No	Description	Qty
5	1408167	Table Loading Ram	1
5A	1401710	Ram Mounting Pin	1
5B	Z10-02-10	10mm Flat Washer	1
5C	Z26-063S	M10 x 35mm Hex Set	1
5D	Z23-08	10mm Locknut	1

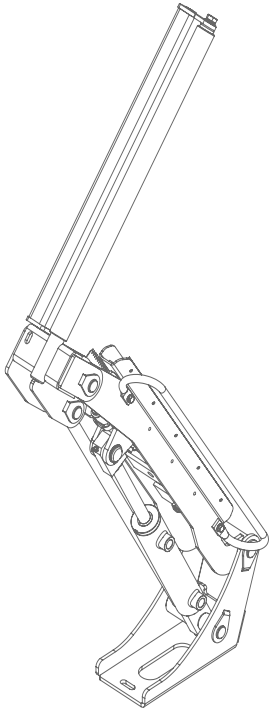


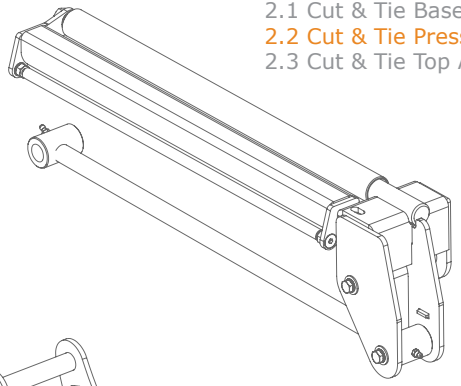


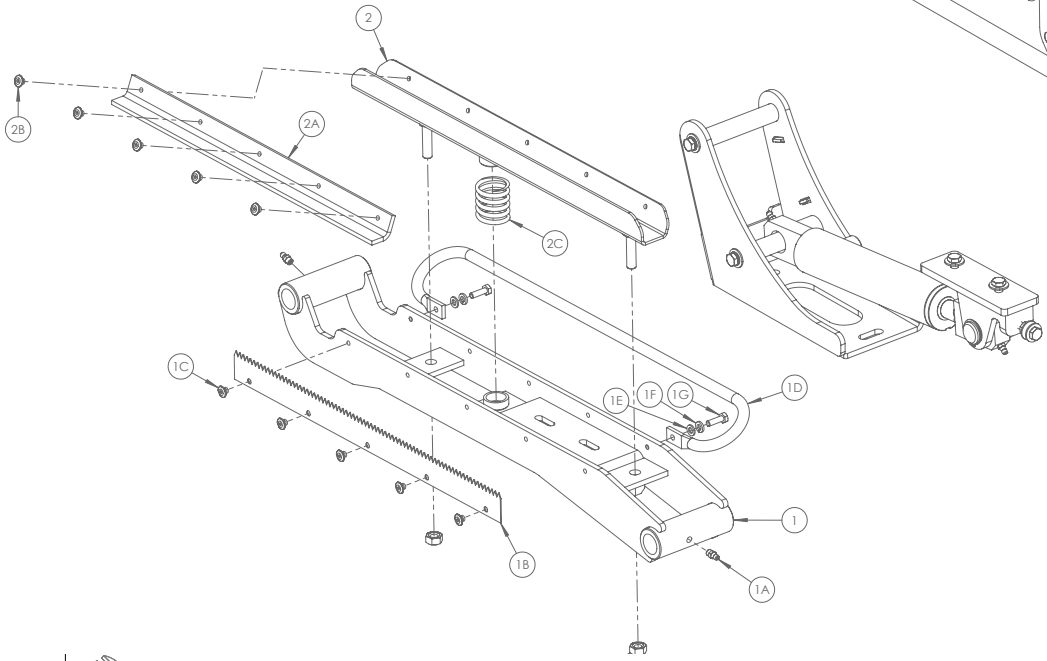




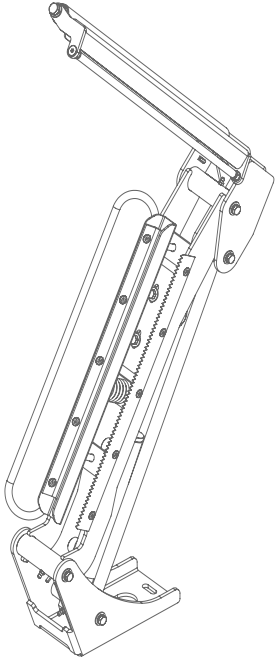
Item No	Part No	Description	Qty
1	1406060	Cut & Tie Base	1
1A	1406080	Cut & Tie Pin (Long)	2
1B	1406035	Ram Spacer	1
1C	Z11-02-081	8mm Mud Washer	2
1D	Z12-02-08	8mm Spring Washer	2
1E	Z26-039S	M8 x 20mm Hex Set	2
2	1308151	Cut & Tie Ram	1
2A	34060800	M8 x 1.25 Grease Nipple	2
2B	34105631	Ram Mounting Pin	1
2C	Z28-525	M25 External Circlip	2
3	34920525	Cut & Tie Casting	1
3A	Z11-02-081	8mm Mud Washer	2
3B	Z26-045S	M8 x 50mm Hex Set	1
3C	Z18-08	8mm Plain Hex Nut	1
3D	Z11-02-081	8mm Mud Washer	2
3E	Z26-041S	M8 x 30mm Hex Set	2
3F	Z23-08	8mm Hex Nut	2

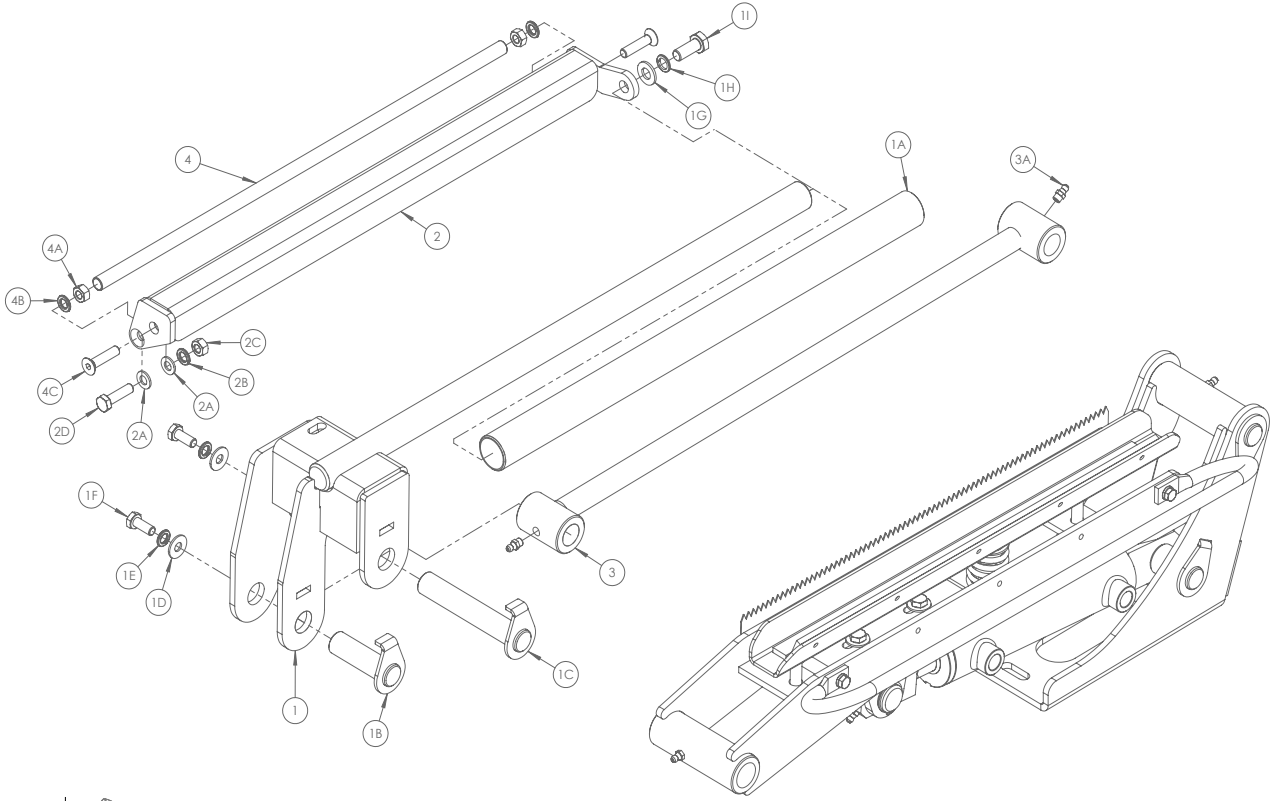






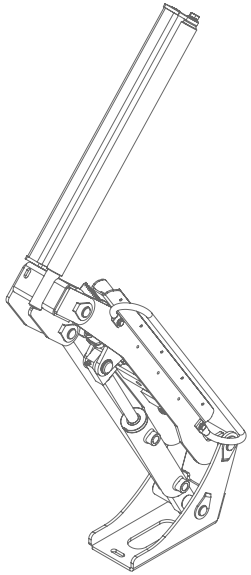
Item No	Part No	Description	Qty
1	1406112	Cut & Tie Lift Arm	1
1A	34060800	M8 x 1.25 Grease Nipple	2
1B	1406074	Cut & Tie Balde	1
1C	Z03-25-05	Pop Rivet	5
1D	1406075	Film Gathering Bar	1
1E	Z10-02-06	6mm Flat Washer	2
1F	Z12-02-06	6mm Spring Washer	2
1G	Z26-020S	M6 x 20mm Hex Set	2
2	1406101	Pressure Plate	1
2A	1406706	Rubber Strip	1
2B	Z03-25-05	Pop Rivet	5
2C	1406078	Pressure Spring	1
2D	Z23-10	10mm Locknut	2

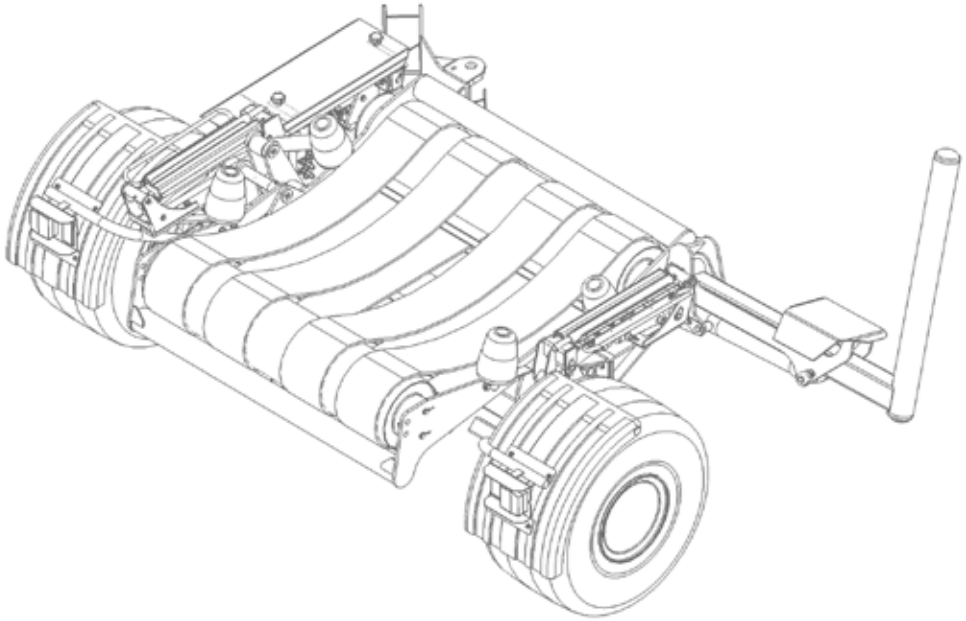


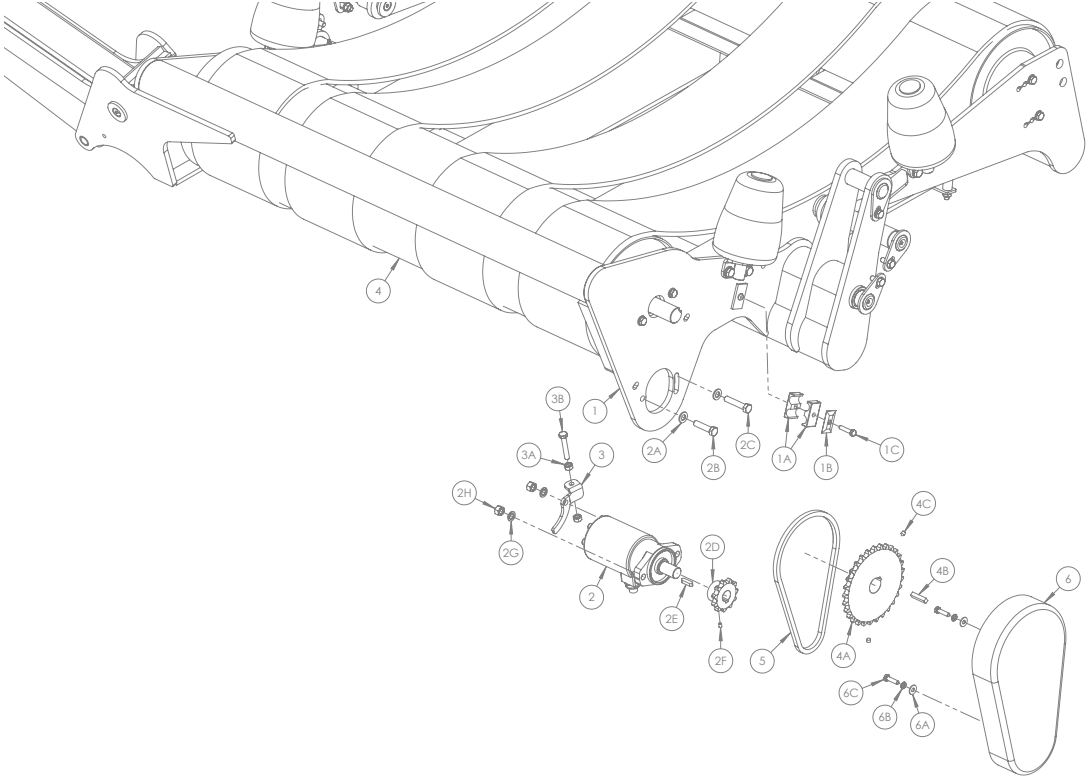


Item No	Part No	Description	Qty
1	1406113	Pull Down Arm	1
1A	1406077	Knurled Roller	1
1B	1406085	Cut & Tie Pin (Short)	1
1C	1406080	Cut & Tie Pin (Long)	1
1D	Z11-02-081	8mm Mud Washer	2
1E	Z12-02-08	8mm Spring Washer	2
1F	Z26-039S	M8 x 20mm Hex Set	2
1G	Z10-02-10	10mm Flat Washer	1
1H	Z12-02-10	10mm Spring Washer	1
1I	Z26-0611S	M10 x 25mm Hex Set	1
2	1406065	Top Arm	1
2A	Z10-02-08	8mm Flat Washer	2
2B	Z12-02-08	8mm Spring Washer	2
2C	Z18-08	8mm Plain Hex Nut	1
2D	Z26-041S	M8 x 30mm Hex Set	1
3	1406102	Connecting Arm	1
3A	34060800	M8 x 1.25 Grease Nipple	2

Item No	Part No	Description	Qty
4	1406068	Film Roller	1
4A	Z18-08	8mm Plain Hex Nut	2
4B	Z12-02-08	8mm Spring Washer	2
4C	Z13-5-08X35	M8 x 35mm CSK AH Set	2

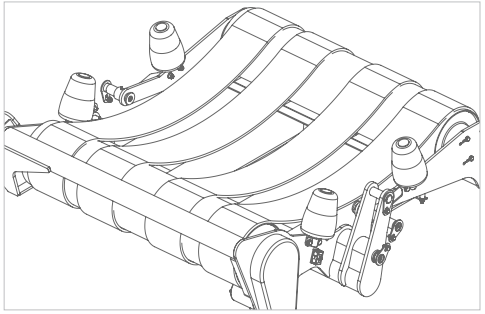


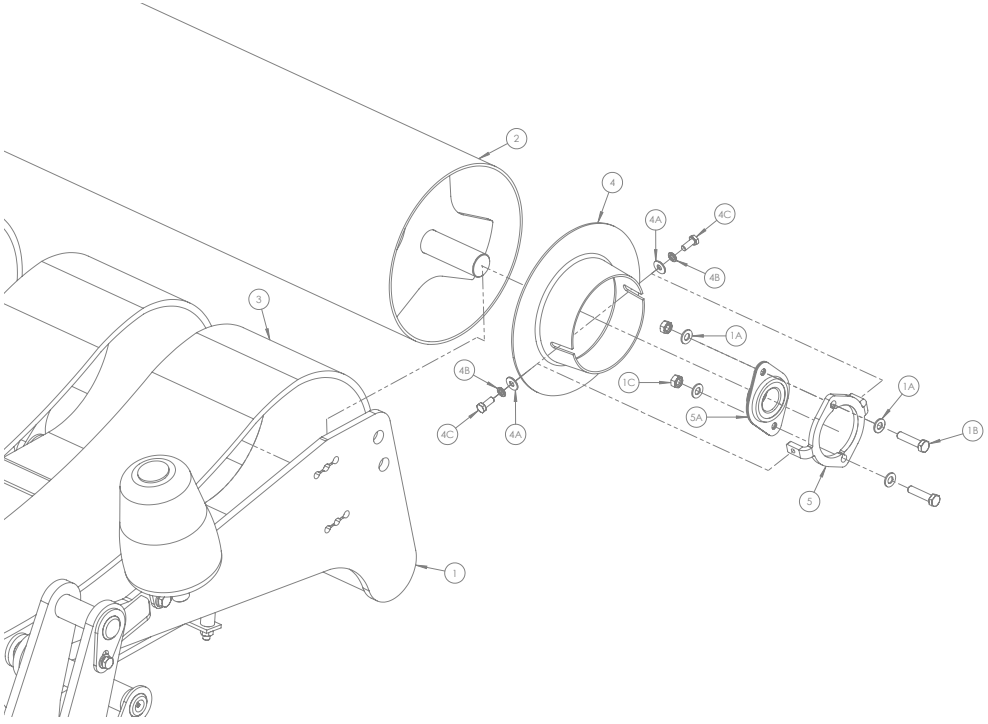




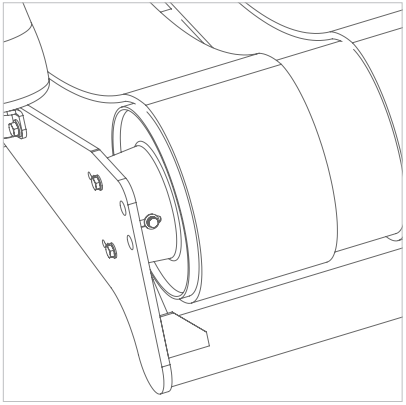
Item No	Part No	Description	Qty
1	1403300	Table - Load Frame	1
1A	Z01-24-2618	18mm Pipe Clamp (Pair)	1
1B	Z01-24-27	Pipe Clamp Top Plate	1
1C	Z26-042B	M8 x 35mm Hex Bolt	1
2	1508800	Roller Drive Motor (BRS400 NC25)	1
2A	Z10-02-12	M12 Flat Washer	2
2B	Z26-084S	M12 x 40mm Hex Set	1
2C	Z26-088S	M12 x 40mm Hex Set	1
2D	1502098	11 Tooth 3/4" Sprocket	1
2E	34270111	8mm x 7mm x 30mm Key Steel	1
2F	Z28-008	M8 x 10mm Grub Screw	1
2G	Z12-02-12	M12 Spring Washer	2
2H	Z23-12	M12 Locknut	2
3	1403056	Chain Tensioning Bracket	1
3A	Z26-067S	M10 x 60mm Hex Set	1
3B	Z18-10	10mm Plain Hex Nut	2

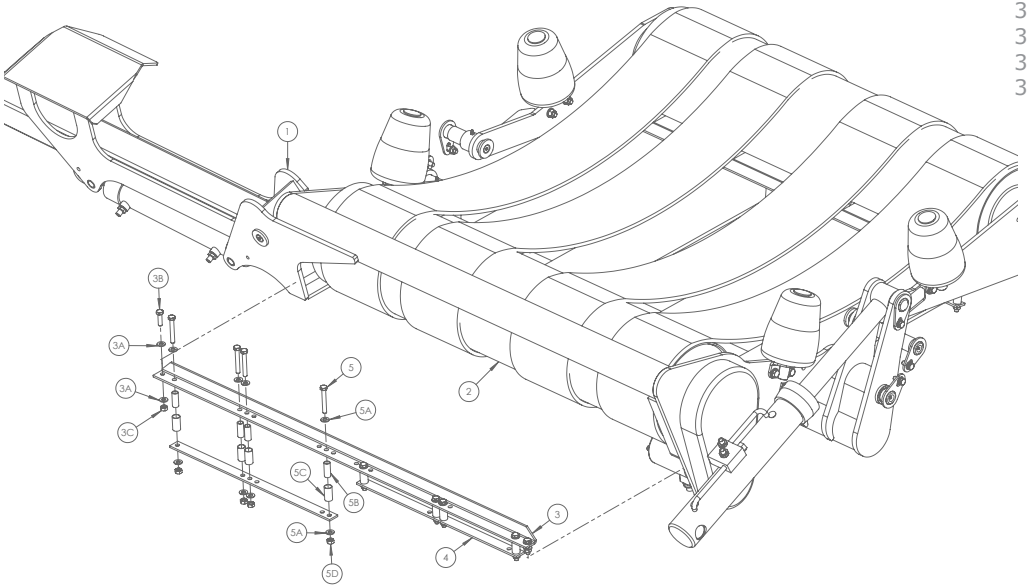
Item No	Part No	Description	Qty
4	1403100	Drive Roller	1
4A	1403041	29 Tooth 3/4" Sprocket	1
4B	1403045	10mm x 8mm x 40mm Key Steel	1
4C	Z28-008	M8 x 10mm Grub Screw	2
5	34810834	3/4" Chain (33 3/4" Long)	1
6	1403350	Sprocket & Chain Guard	1
6A	Z11-02-081	8mm Mud Washer	2
6B	Z12-02-08	8mm Spring Washer	2
6C	Z26-041S	M8 x 30mm Hex Set	2



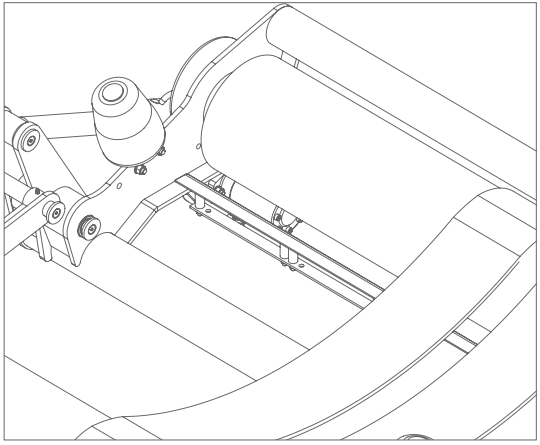


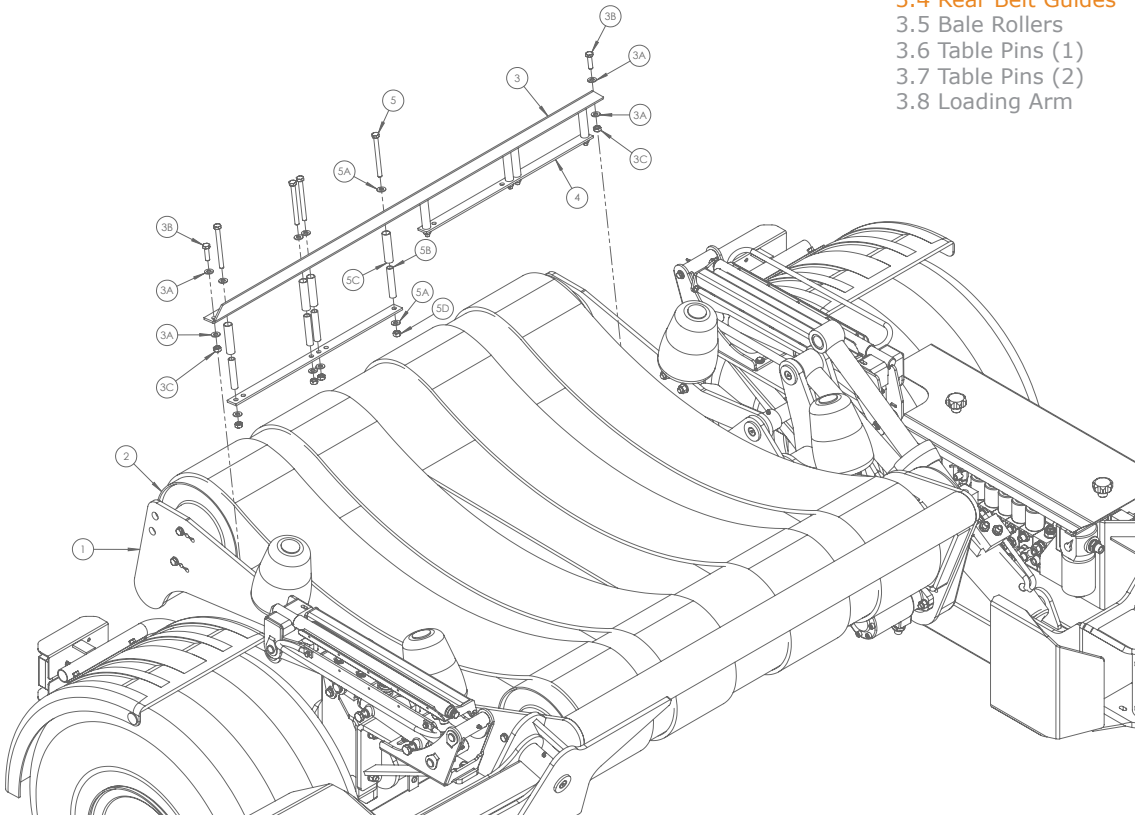
Item No	Part No	Description	Qty
1	1403450	Table - Unload Frame	1
1A	Z10-02-10	M10 Flat Washer	4
1B	Z26-065S	M10 x 45mm Hex Set	2
1C	Z23-10	M10 Locknut	2
2	1403108	Idler Roller	1
3	Z05-02-ILS	3265 X 200 (VEB) Strip Belt	4
4	1403125	Roller / Bearing Guard	1
4A	Z11-02-081	M8 Mudwasher	2
4B	M12-02-08	M8 Spring Washer	2
4C	Z26-039S	M8 X 20mm Hex Set	2
5	1403013	Bearing Cover Mounting Bracket	1
5A	1804101	Bearing - SA207 (w/ Cam Lock & Housing)	1



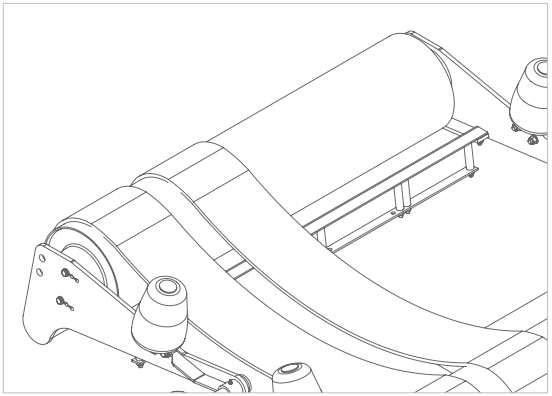


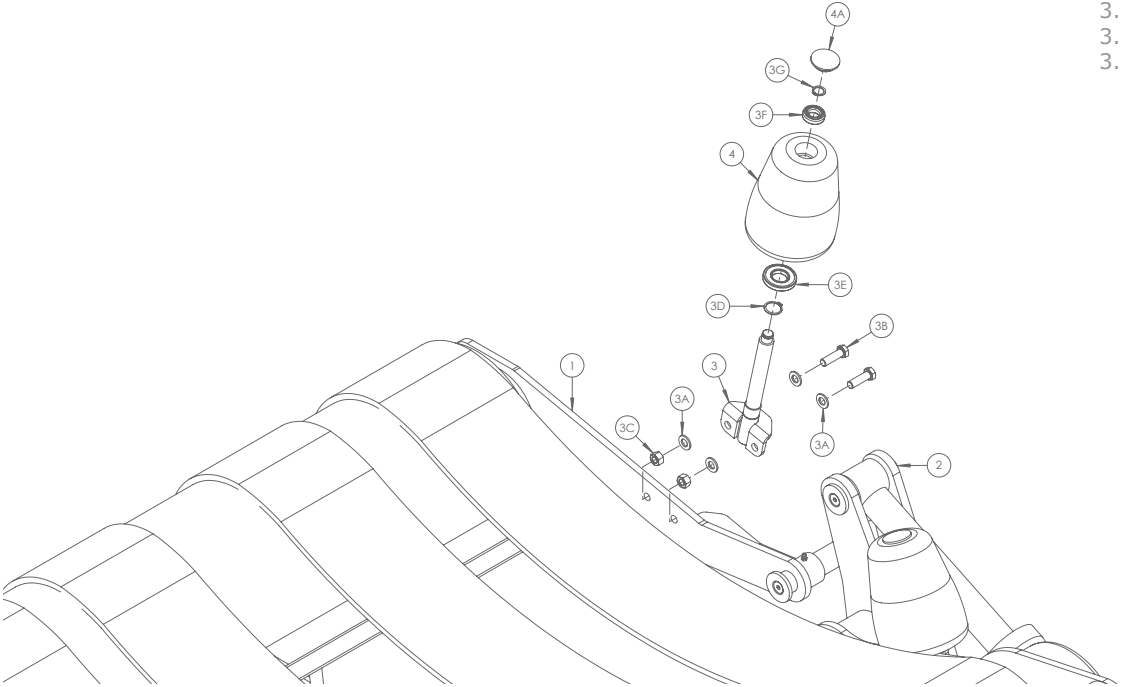
Item No	Part No	Description	Qty
1	1403300	Table - Load Frame	1
2	1403100	Drive Roller	1
3	1403561	Belt Guide Top Profile	1
3A	Z10-02-10	M10 Flat Washer	4
3B	Z26-063S	M10 x 35mm Hex Set	2
3C	Z23-10	M10 Locknut	2
4	1403562	Belt Guide Bottom Profile	2
5	Z26-068B	M10 x 70mm Hex Bolt	8
5A	Z10-02-10	M10 Flat Washer	16
5B	1403565	Belt Guide Inner Roller (Short)	8
5C	1403566	Belt Guide Outer Roller (Short)	8
5D	Z23-10	M10 Locknut	8



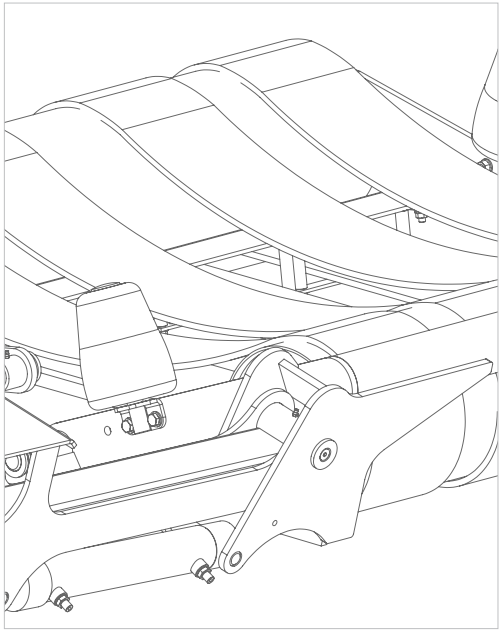


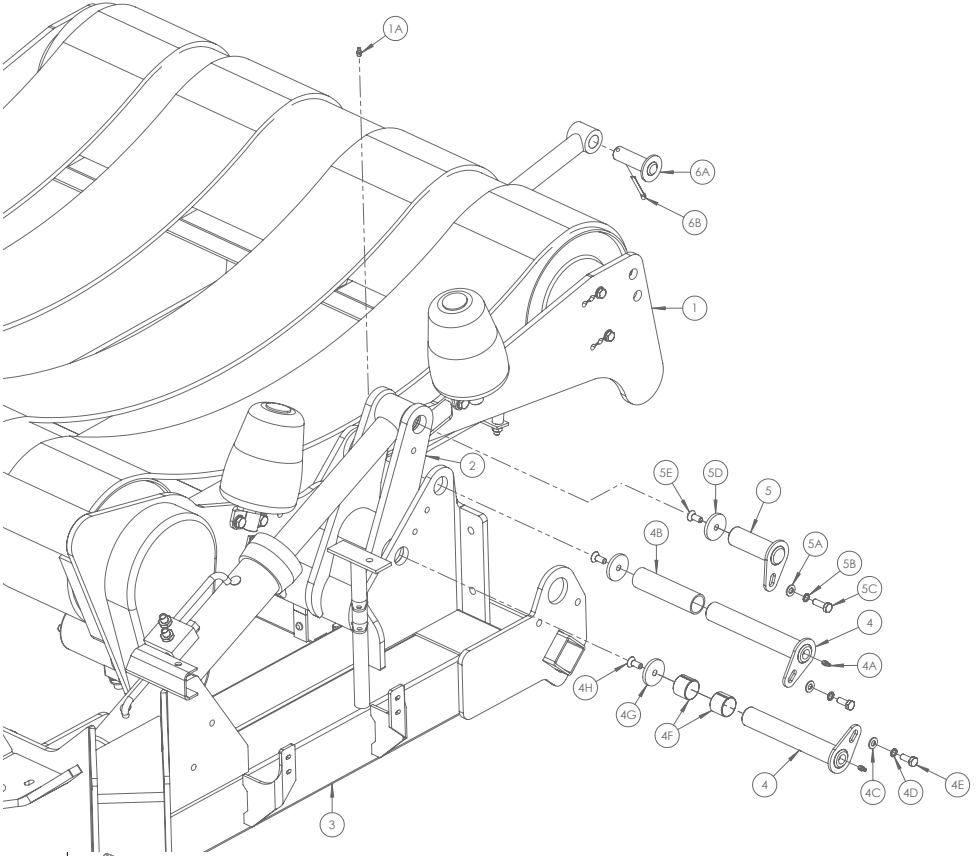
Item No	Part No	Description	Qty
1	1403450	Table - Unload Frame	1
2	1403108	Idler Roller	1
3	1403561	Belt Guide Top Profile	1
3A	Z10-02-10	M10 Flat Washer	4
3B	Z26-063S	M10 x 35mm Hex Set	2
3C	Z23-10	M10 Locknut	2
4	1403562	Belt Guide Bottom Profile	2
5	Z26-072B	M10 x 110mm Hex Bolt	8
5A	Z10-02-10	M10 Flat Washer	16
5B	1403563	Belt Guide Inner Roller (Long)	8
5C	1403564	Belt Guide Outer Roller (Long)	8
5D	Z23-10	M10 Locknut	8





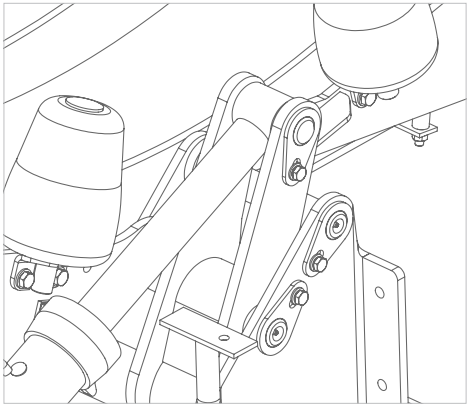
Item No	Part No	Description	Qty
1	1403450	Table Unload Frame	1
2	1403300	Table - Load Frame	1
3	1403055	Bale Roller Shaft Assembly	1
3A	Z10-02-12	M12 Flat Washer	4
3B	Z26-084S	M12 x 40mm Hex Set	2
3C	Z23-12	M12 Locknut	2
3D	Z28-525	25mm External Circlip	1
3E	Z06-AWRB	Ball Bearing (6205-ZZ LDK)	1
3F	34320515	Ball Bearing (6003 2RS)	1
3G	34240713	17mm External Cir Clip	1
4	34340106	Bale Roller	1
4A	Z32-15F	1 1/4" Plastic Cap	1

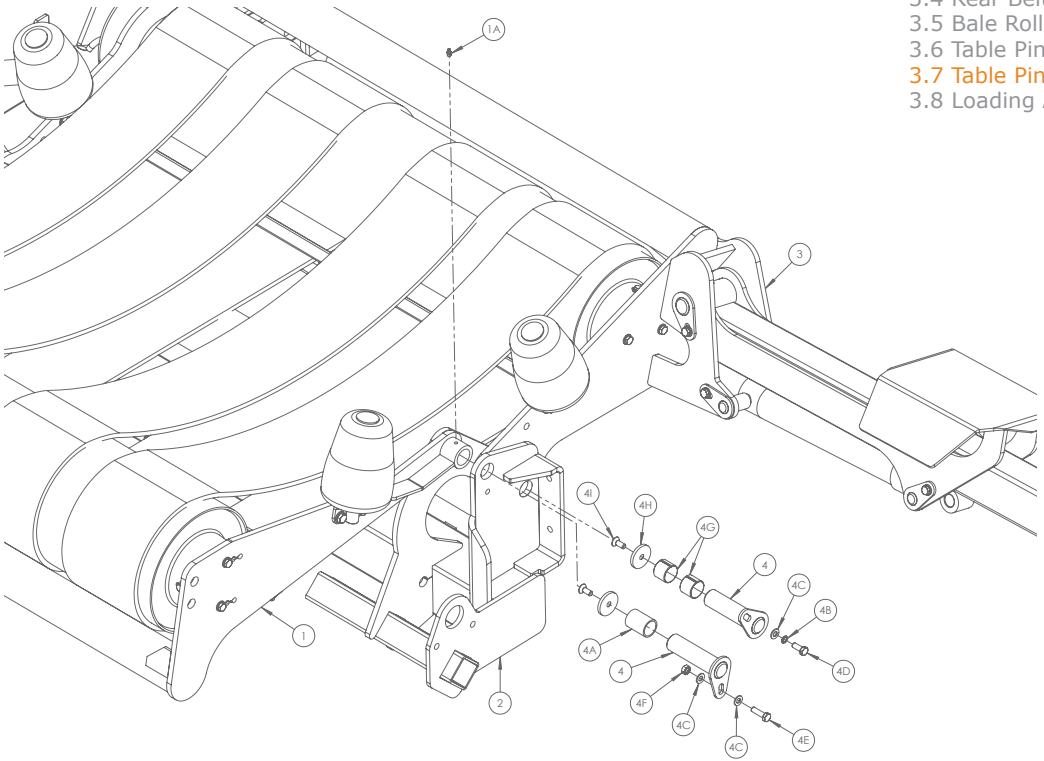




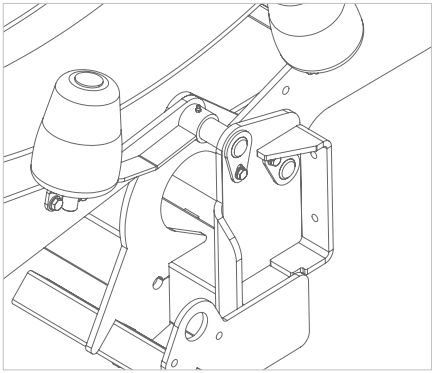
Item No	Part No	Description	Qty
1	1403450	Table - Unload Frame	1
1A	34060800	M8 x 1.25 Grease Nipple	1
2	1403300	Table - Load Frame	1
3	1401100	Chassis	1
4	1401700	Table Pivot Pin	2
4A	1403052	Pin / Ram Spacer	1
4B	34060800	M8 x 1.25 Grease Nipple	2
4C	Z10-02-10	M10 Flat Washer	2
4D	Z12-02-10	M10 Spring Washer	2
4E	Z26-0611S	M10 x 25mm Hex Set	2
4F	1404055	DX Bush (35mm Bore x 30mm)	2
4G	1403033	Counter Sunk Pin Cap	2
4H	Z13-5-10X25	M10 x 25mm C.S.K Set Allen	2
5	1401706	Ram Mounting Pin	1
5A	Z10-02-10	M10 Flat Washer	1
5B	Z12-02-10	M10 Spring Washer	1
5C	Z26-062S	M10 x 30mm Hex Set	1
5D	1403033	Counter Sunk Pin Cap	1
5E	Z13-5-10X25	M10 x 25mm C.S.K Set Allen	1

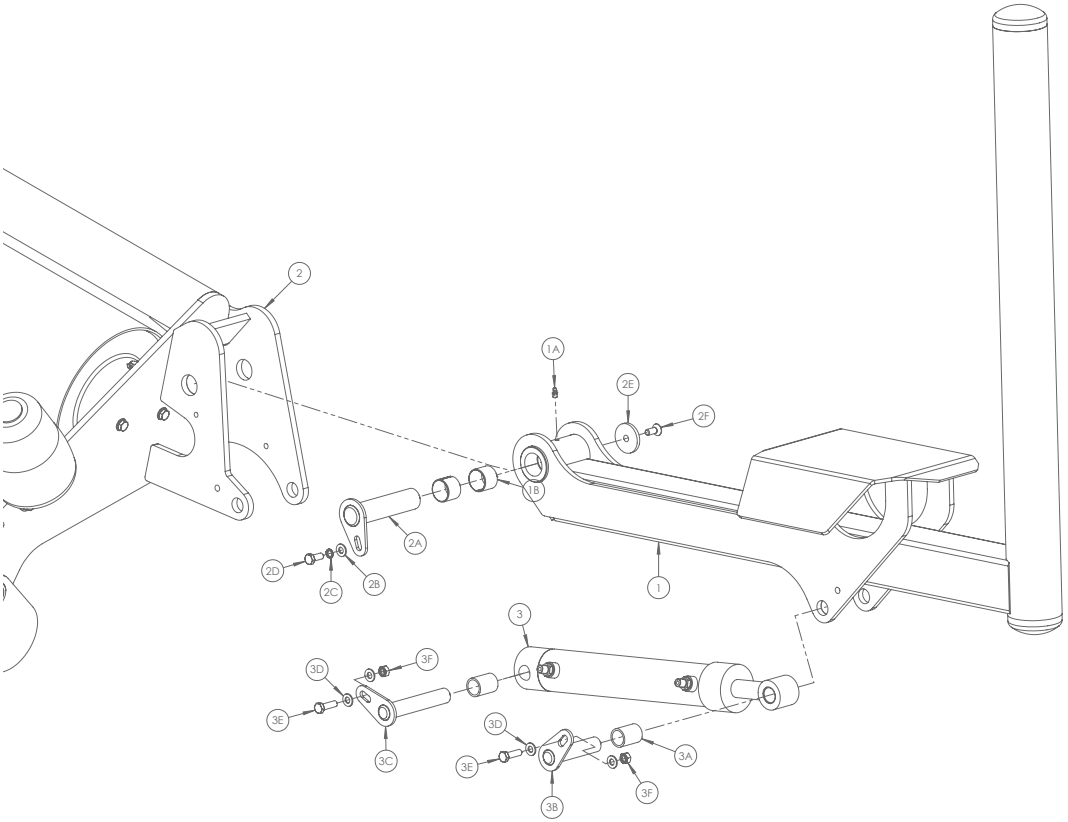
Item No	Part No	Description	Qty
6	1408165	Unloading Damper Ram	1
6A	1401722	Ram Mounting Pin	1
6B	Z03-21-29	1/4" Linch Pin	1



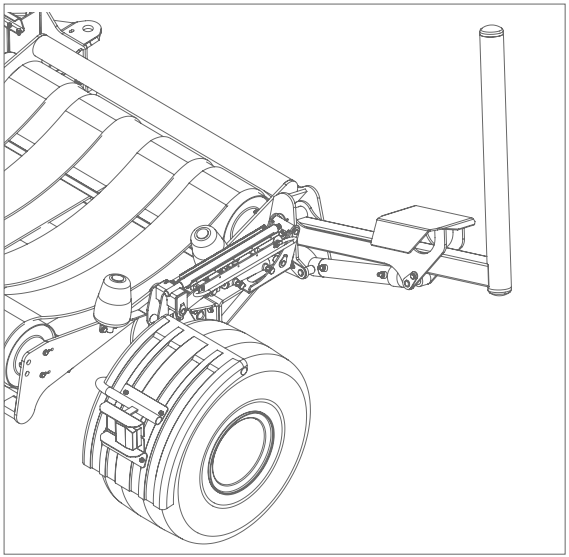


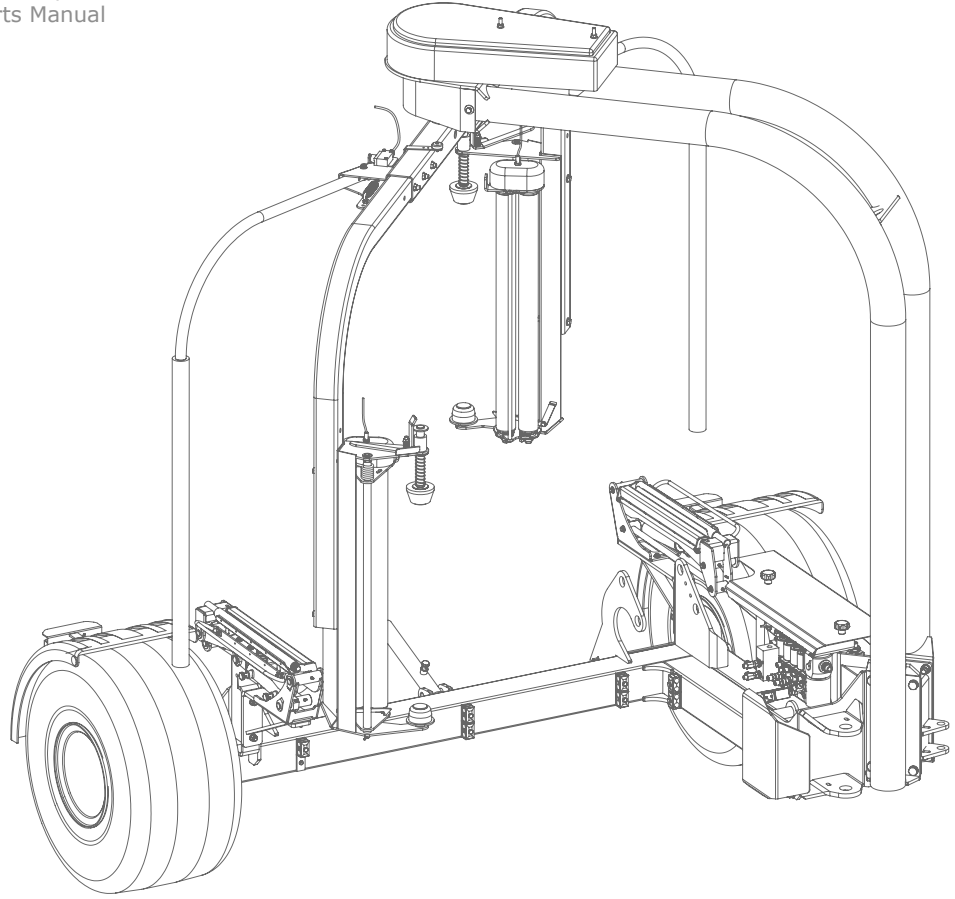
Item No	Part No	Description	Qty
1	1403450	Table - Unload Frame	1
1A	34060800	M8 x 1.25 Grease Nipple	1
2	1403300	Table - Load Frame	1
2A	34060800	M8 x 1.25 Grease Nipple	1
3	1401100	Chassis	1
4	1401704	Table Pivot Pin	2
4A	1403051	Pin / Ram Spacer	1
4B	Z10-02-10	M10 Flat Washer	3
4C	Z12-02-10	M10 Spring Washer	1
4D	Z26-0611S	M10 x 25mm Hex Set	1
4E	Z26-063S	M10 x 35mm Hex Set	1
4F	Z23-10	M10 Locknut	1
4G	1404055	DX Bush (35mm Bore x 30mm)	2
4H	1403033	Counter Sunk Pin Cap	1
4I	Z13-5-10X25	M10 x 25mm C.S.K Set Allen	1

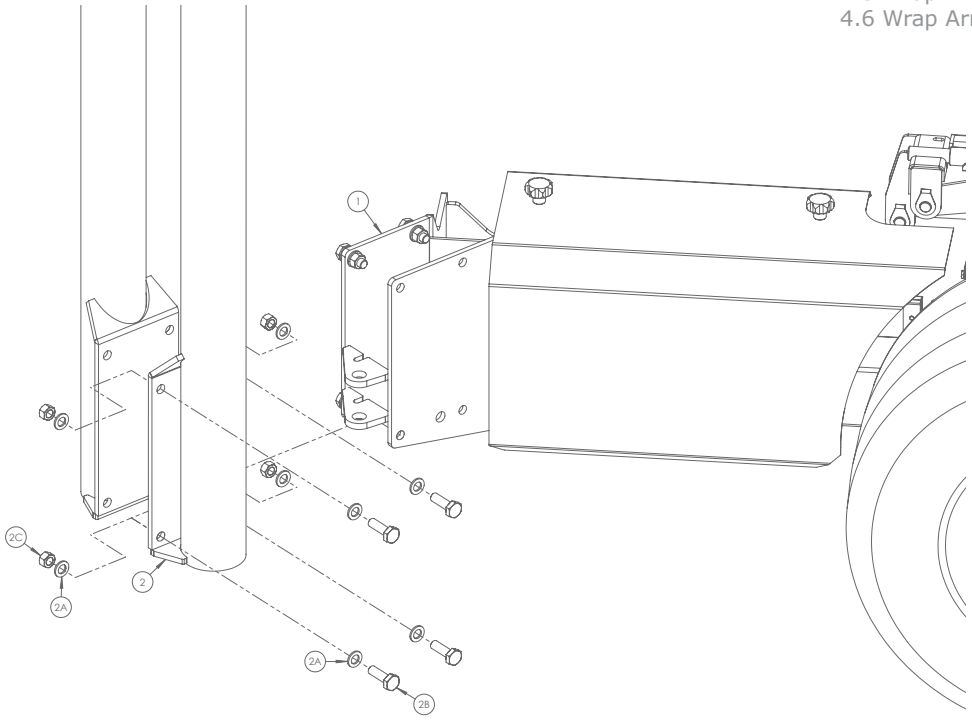




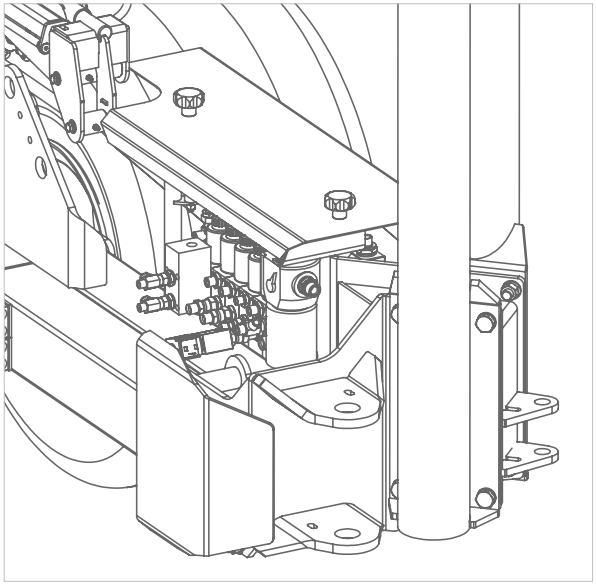
Item No	Part No	Description	Qty
1	1402110	Loading Arm	1
1A	34060800	M8 x 1.25 Grease Nipple	1
1B	1404055	DX Bush (35mm Bore x 30mm)	2
2	1403300	Table Load Frame	1
2A	1401708	Loading Arm Pivot Pin	1
2B	Z10-02-10	M10 Flat Washer	2
2C	Z12-02-10	M10 Spring Washer	2
2D	Z26-0611S	M10 x 25 Hex Set	2
2E	1403033	Counter Sunk Pin Cap	2
2F	Z13-5-10X25	M10 x 25 C.S.K Set Allen	2
3	1408168	Loading Arm Ram	1
3A	1403053	Pin / Ram Spacer	2
3B	1401716	Ram Pin A	1
3C	1401718	Ram Pin B	1
3D	Z10-02-10	M10 Flat Washer	4
3E	Z26-063S	M10 x 35 Hex Set	2
3F	Z23-10	M10 Locknut	2

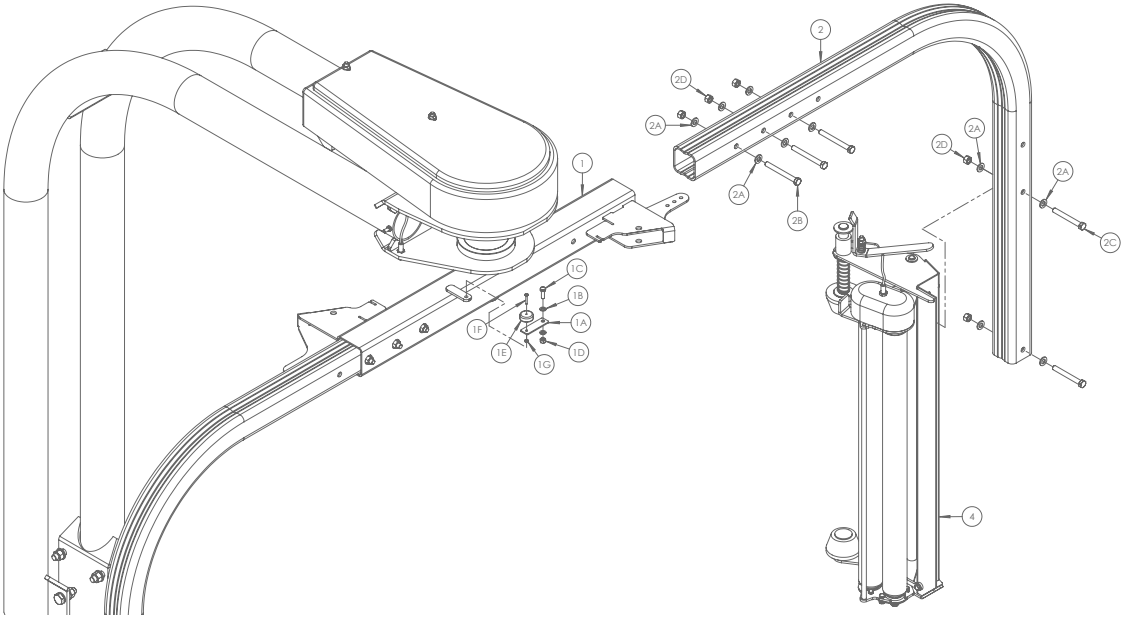




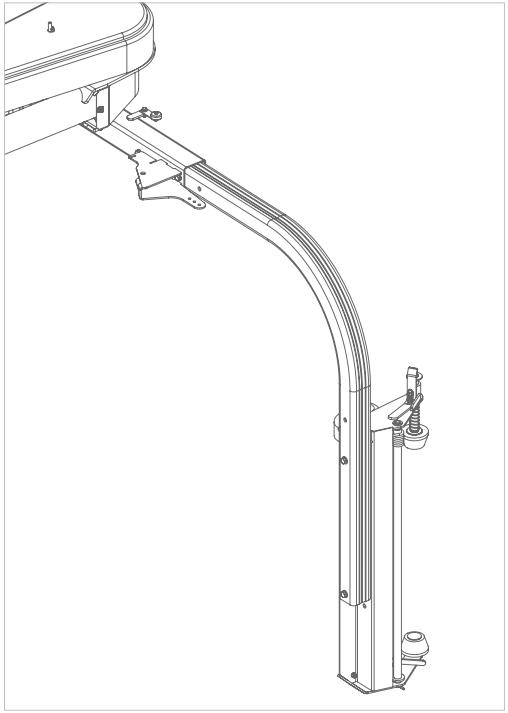


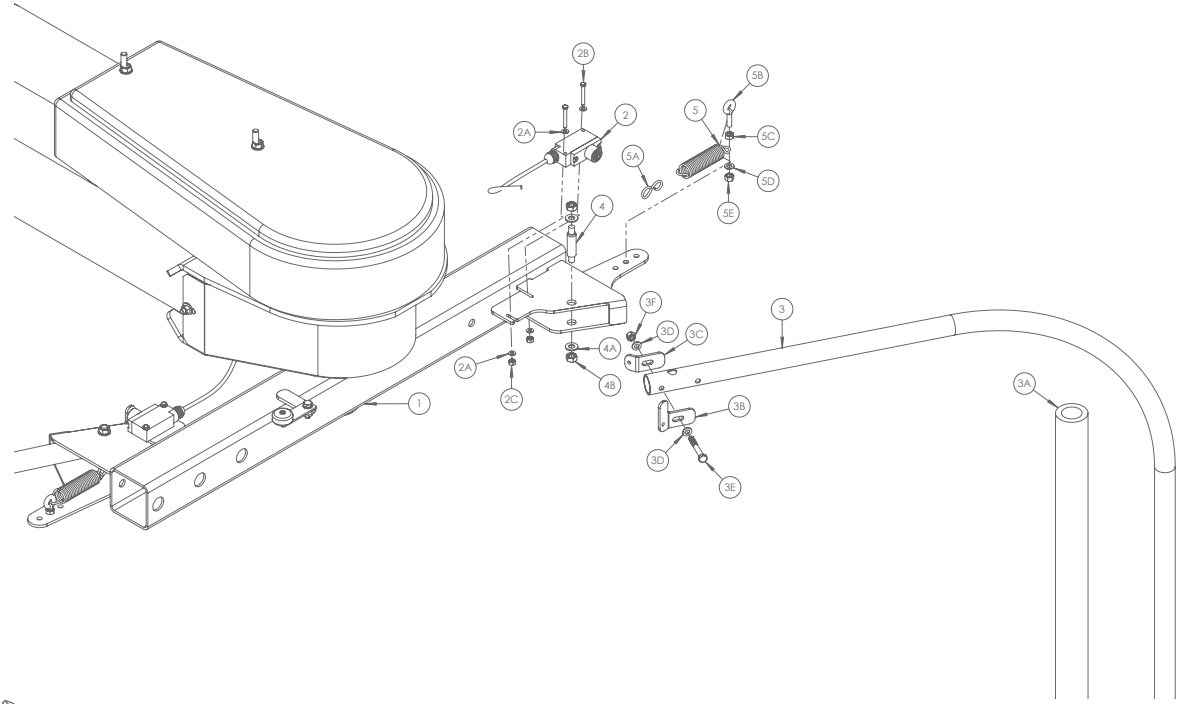
Item No	Part No	Description	Qty
1	1401100	Chassis	1
2	1404400	Tower	1
2A	Z10-02-16	16mm Flat Washer	8
2B	Z13B-064	5/8" x 2" UNF Hex Set	4





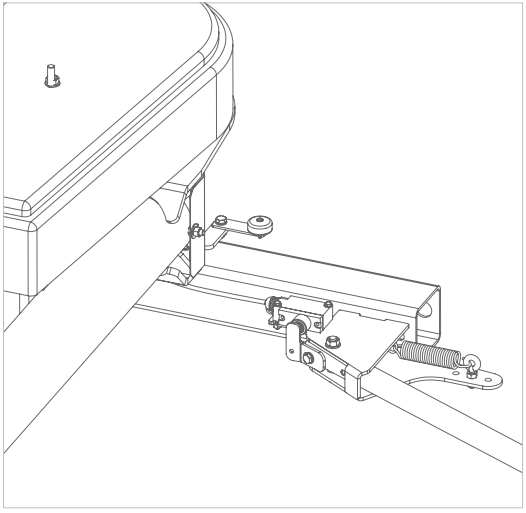
Item No	Part No	Description	Qty
1	1404220	Wrapping Arm	1
1A	1304003	Magnet Mounting Bracket	1
1B	Z10-02-08	8mm Flat Washer	2
1C	Z26-040B	M8 x 25mm Hex Bolt	1
1D	Z23-08	8mm Locknut	1
1E	1309201	Sensor Magnet	1
1F	Z13-5-04x30	M4 x 30mm CSK AH Set	1
1G	Z23-04	4mm Locknut	1
2	1404009	Dispenser Mounting Arm	1
2A	Z10-02-12	12mm Flat Washer	10
2B	Z23-093B	M12 x 110mm Hex Bolt	3
2C	Z26-092S	M12 x 100mm Hex Set	2
2D	Z23-12	12mm Locknut	5
3	1405150	Dispenser Assembly	1

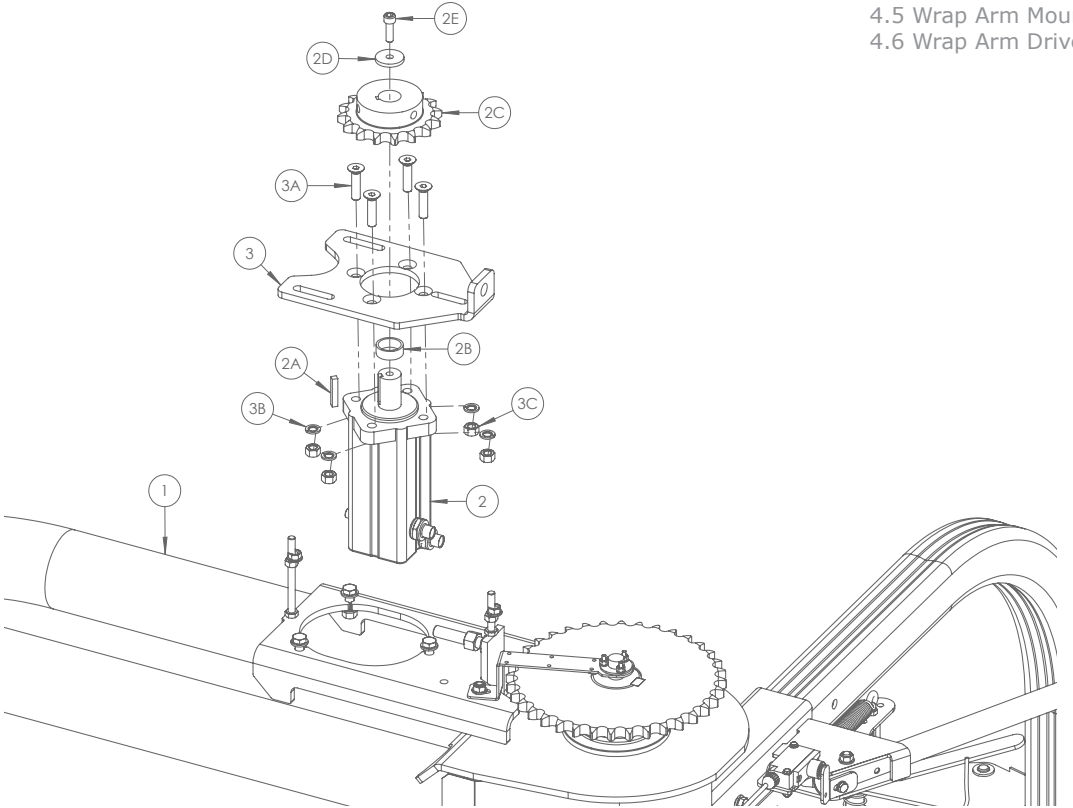




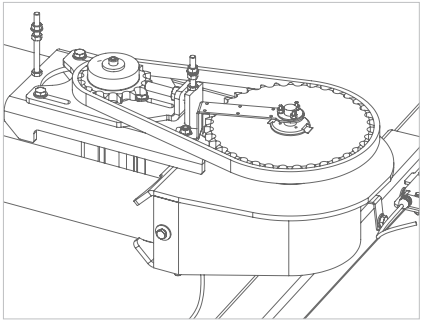
Item No	Part No	Description	Qty
1	1404220	Rotating Arm	1
2	34950179	Safey Switch	1
2A	Z10-02-05	5mm Flat Washer	4
2B	Z26-0137S	M5 X 40 Set	2
2C	Z23-05	5mm Locknut	2
3	34611357	Emergency Stop Arm	1
3A	34480020	Emergency Stop Arm Cover	1
3B	1404013	Switch Activator	1
3C	34670152	Emergency Stop Arm Bracket	1
3D	Z10-02-08	8mm Flat Washer	2
3E	Z26-047B	M8 x 60mm Hex Bolt	1
3F	Z23-08	8mm Locknut	1
4	34105651	Emergency Stop Arm Pivot Bolt	1
4A	Z10-02-10	10mm Flat Washer	2
4B	Z23-10	10mm Locknut	2

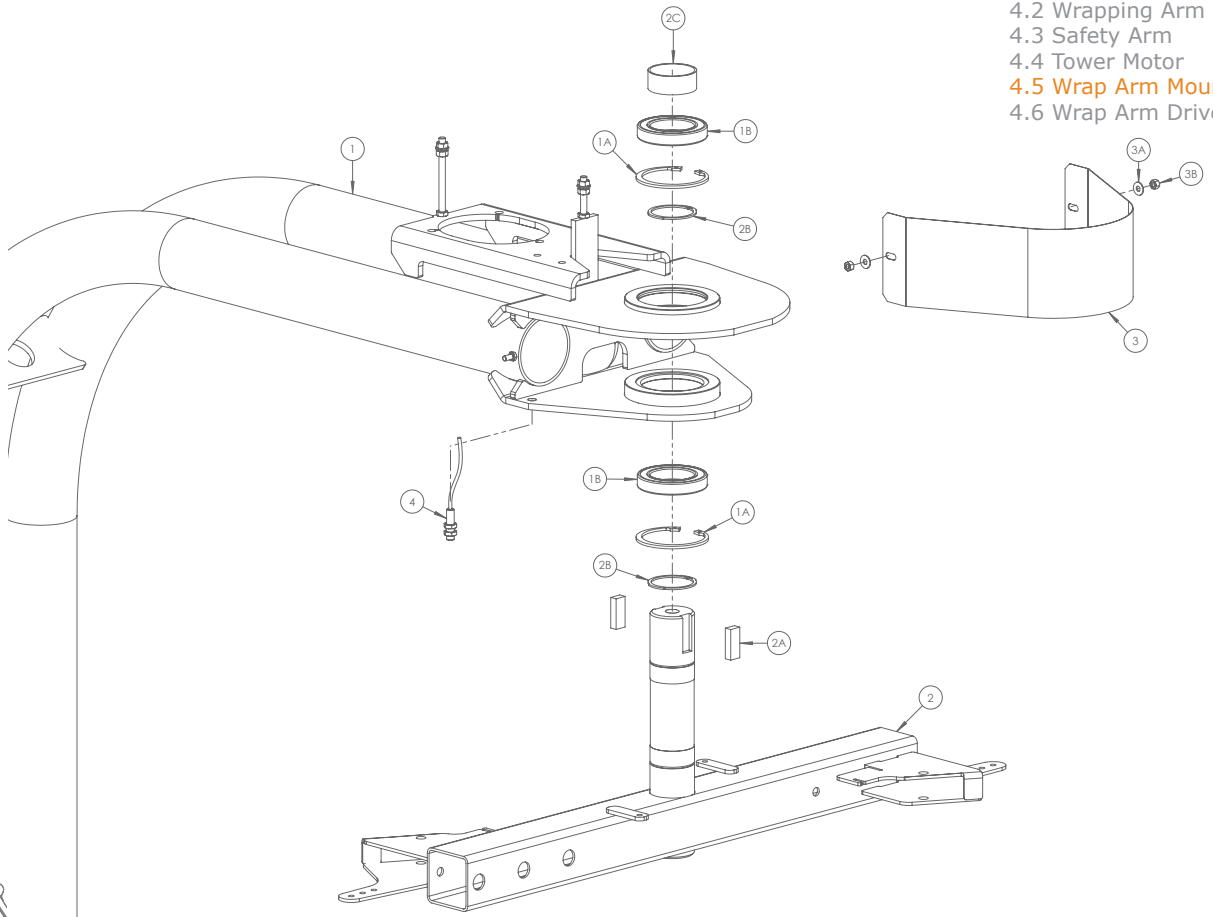
Item No	Part No	Description	Qty
5	34430300	Emergency Stop Arm Spring	1
5A	34660111	Emergency Stop Arm S Hook	1
5B	34119043	Eye Bolt (M8 x 25mm)	1
5C	Z18-08	8mm Plain Hex Nut	1
5D	Z10-02-08	8mm Flat Washer	1
5E	Z23-08	8mm Locknut	1



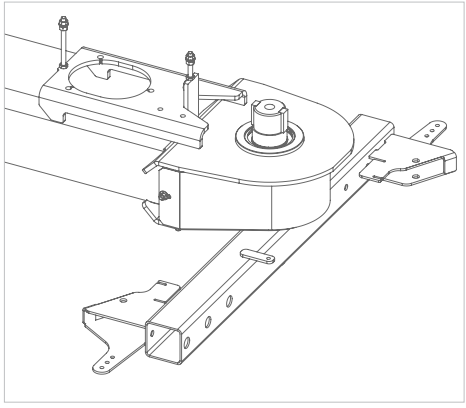


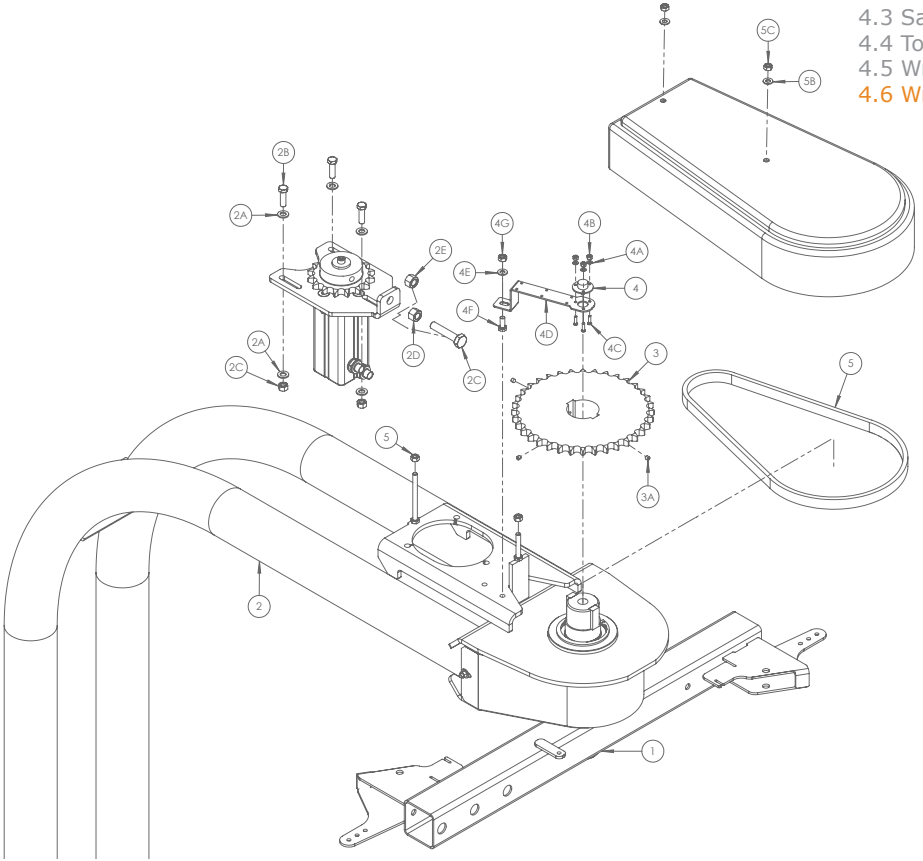
Item No	Part No	Description	Qty
1	1404400	Tower	1
2	Z01-02-RF200	Tower Motor	1
2A	1503172	Motor Spacer	1
2B	1404015	16 Tooth 1" Sprocket	1
2C	WD623-071	1 1/2" Collar	1
2D	Z13-4-32	1 1/4" x 3/8"UNC Socket Cap SC	1
3	1503247	Motor Mounting Plate	1
3A	Z13-5-12X50	M12 x 50 C.S.K. Allen Set	4
3B	Z12-02-12	12mm Spring Washer	4
3C	Z23-12	12mm Locknut	4





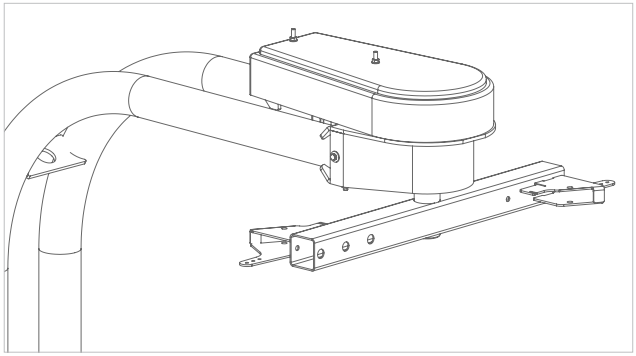
Item No	Part No	Description	Qty
1	1404400	Tower	1
1A	1404051	Internal Circlip (Dia 110mm)	2
1B	1404052	Shaft Bearing (6014 2RS)	2
2	1404220	Rotating Arm	1
2A	1404024	Key Steel 20 X 12 X 50	2
2B	1404053	External Circlip (Dia 67mm)	2
2C	1403075	Drive Shaft / Sprocket Spacer	1
3	1404076	Front Guard	1
3A	Z11-02-081	8mm Mud Washer	2
3B	Z12-10	10mm Locknut	2
4	1309201	Sensor Magnet	1

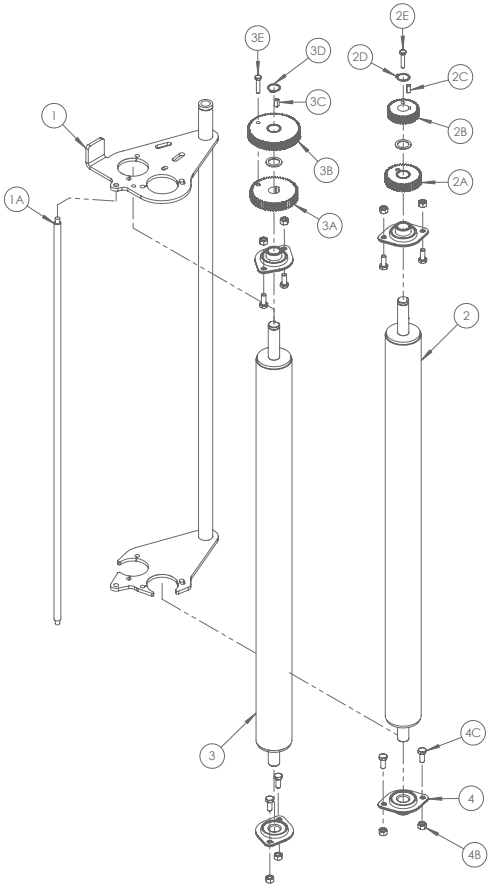




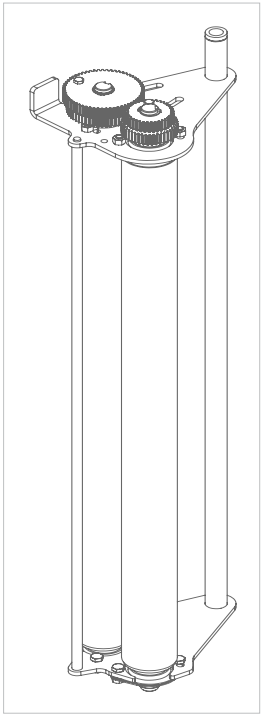
Item No	Part No	Description	Qty
1	1404220	Rotating Arm	1
2	1404400	Tower	1
2A	Z10-02-12	12mm Flat Washer	6
2B	Z26-084S	M12 x 40mm Hex Set	3
2C	Z23-12	12mm Locknut	3
2D	Z26-1291S	M16 x 80mm Hex Set	1
2E	Z18-16	16mm Plain Hex Nut	1
2F	Z23-16	16mm Locknut	1
3	1404010	36 Tooth 1" BS Sprocket	1
3A	Z28-008	M8 x 10mm Grub Screw	3
4	1809010	6 Way Slip Ring	1
4A	Z10-02-05	5mm Flat Washer	3
4B	Z13-022	M5 x 20mm CSK AH Set	3
4C	Z23-05	5mm Locknut	3
4D	1403119	Slip Ring Bracket	1
4E	Z10-02-10	10mm Flat Washer	1
4F	Z26-0611S	M10 x 25mm Hex Set	1
4G	Z23-10	10mm Locknut	1

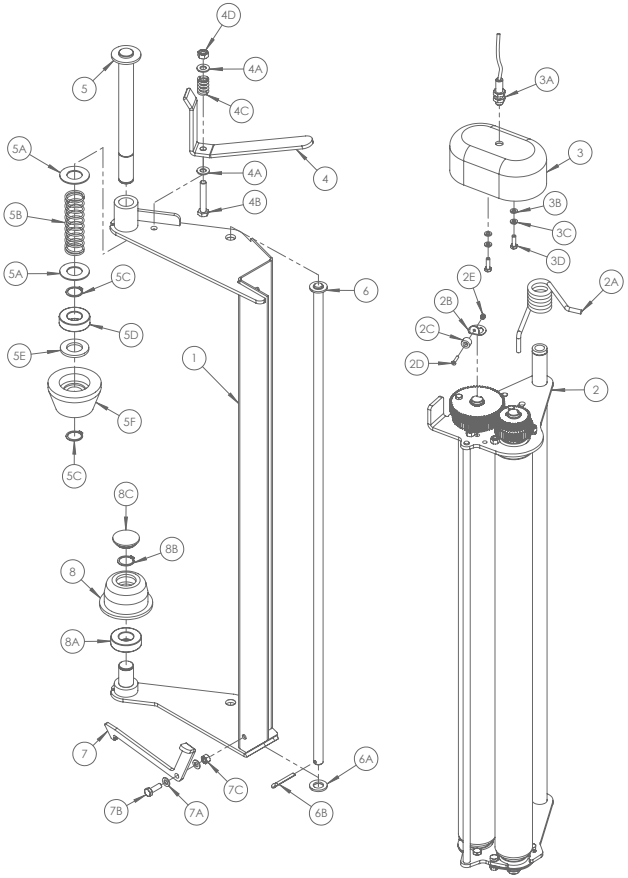
Item No	Part No	Description	Qty
5	Z09-AW9	1" BS Chain	1
5A	1404450	Tower Chain Guard	1
5B	Z10-02-10	10mm Flat Washer	2
5C	Z23-10	10mm Locknut	2
5D	Z18-10	10mm Plain Hex Nut	2





Item No	Part No	Description	Qty
1	1505001	Roller Mounting Frame	1
1A	1305035	Film Seperating Roller	1
2	1305120	Inner Roller	1
2A	1305104	37 Tooth Gear	1
2B	1305102	35 Tooth Gear	1
2C	1305123	6mm Square Key Steel (15mm Long)	1
2D	Z28-520	20mm External Cir-Clip	1
2E	Z26-022S	M6 x 30mm Hex Set	1
3	1305121	Outer Roller	1
3A	1305101	60 Tooth Gear	1
3B	1305103	58 Tooth Gear	1
3C	1305123	6mm Square Key Steel (15mm Long)	1
3D	Z28-520	20mm External Cir-Clip	1
3E	Z26-022S	M6 x 30mm Hex Set	1
4	1305122	Roller Bearing (SLFL20A)	4
4A	Z26-039S	M8 x 20mm Hex Set	8
4B	Z23-08	8mm Locknut	8




4D
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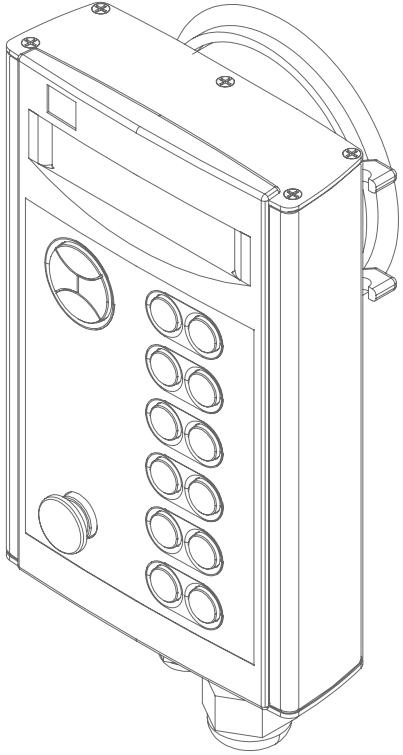
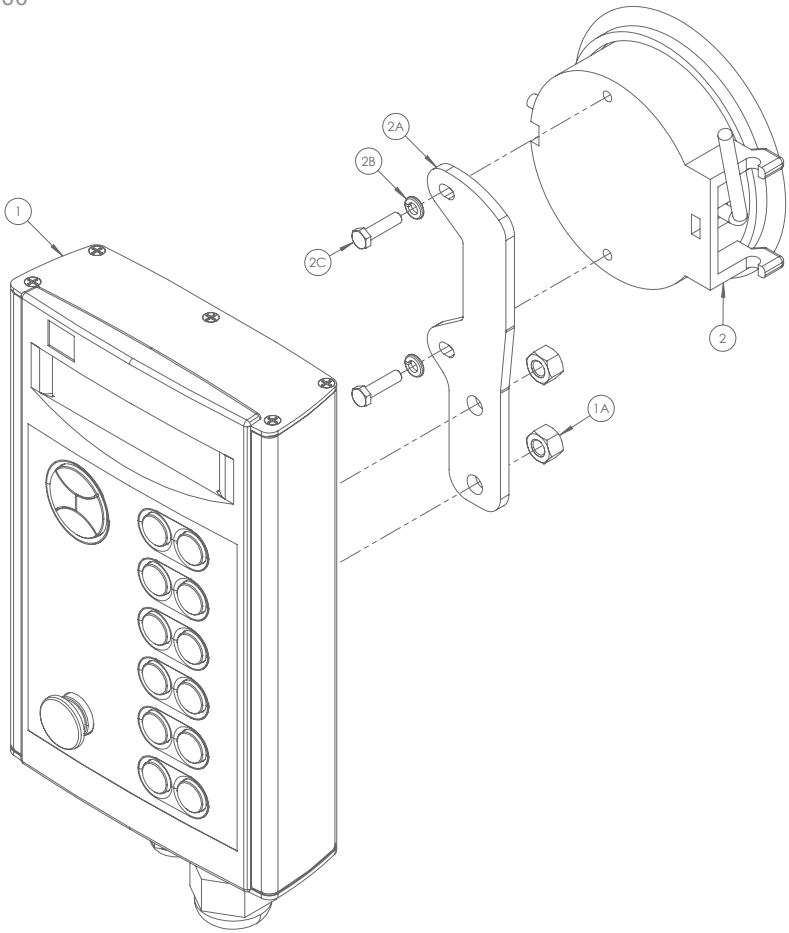
2

Item No	Part No	Description	Qty
1	1405100	Dispenser Frame	1
2	1305100B	Dispenser Insert (70/55%)	1
2A	1305034	Torsion Spring	1
2B	WD404-052	Magnet Mounting Bracket	1
2C	D606C-M	Sensot Magnet	1
2D	Z13-5-04X20	M4 x 20mm CSK Set	1
2E	Z23-04	4mm Locknut	1
3	1305125	Dispenser Gearbox Cover	1
3A	1309203	RDS Sensor (4m Cable)	1
3B	Z10-02-06	6mm Flat Washer	2
3C	Z12-02-06	6mm Spring Washer	2
3D	Z26-020S	M6 x 20mm Hex Set	2
4	1305026	Dispenser Top Latch	1
4A	Z10-02-10	10mm Flat Washer	2
4B	Z26-067B	M10 x 60mm Hex Bolt	1
4C	1305027	Top Latch Compression Spring	1
4D	Z23-10	10mm Locknut	1

Item No	Part No	Description	Qty
5	1305022	Dispenser Top Shaft	1
5A	Z11-02-25	25mm Flat Washer (Light Duty)	2
5B	1305021	Compression Spring	1
5C	Z28-525	25mm External Circlip	2
5D	Z06-AWRB	Ball Bearing (6205-ZZ LDK)	1
5E	Z10-02-25	25mm Flat Washer (Heavy Duty)	1
5F	1305019	Top Nylon Cone	1
6	1405007	Insert Mounting Pin	1
6A	Z10-02-16	16mm Flat Washer	1
6B	Z03-21-14	3/16" Split Pin (1 1/2" Long)	1
7	1405151	Dispenser Bottom Latch	1
7A	Z10-02-08	8mm Flat Washer	2
7B	Z26-040B	M8 x 25mm Hex Bolt	1
7C	Z23-08	8mm Locknut	1
8	1405006	Bottom Nylon Cone	1
8A	Z06-AWRB	Ball Bearing (6205-ZZ LDK)	1
8B	Z28-525	25mm External Circlip	1
8C	Z32-15F	1 1/4" NB Tube Insert (37mm)	1




1
2A
2B
2C
2
1A

Item No	Part No	Description	Qty
1	1409150	1400 Expert Control Unit	1
1A	Z23-08	8mm Locknut	2
2	1309012	Controller Suction Cup	1
2A	1309011	Sucntion Cup Mounting Bracket	1
2B	Z12-02-05	5mm Spring Washer	2
2C	Z26-017S	M5 x 20mm Hex Set	2