

# AUTOBALER

## OPERATION MANUAL

**Ti100/200 B & BC Models (2016)**

**In this Manual**

- Baler Operation
- Baler Combo Unit
- Baler Service
- Baler Finger Brake System



**Trethewey Industries**

14 Carl Baer Circuit  
New England Highway  
Deepwater NSW 2371  
Australia





## **Owners Manual**

Thank you for choosing Autobaler TI100/TI200. It is our wish that you remain very happy with the performance and service given by your baler and our service backup staff.

For operating this baler properly, please take time to read this manual thoroughly before start to operate your baler.

Keep this manual handy for future reference.

The information contained in this manual is basic information. If you require information over and above what is supplied in this manual, please contact the Autobaler service hotline on 1800 888 403.

### ***Models covered by this manual***

TI100/TI200 B&BC Autobaler

#### **Note**

Training is required to operate Autobalers.

Training is required to service Autobalers.

Autobalers are protected by International Patents and Patent Applications.

# **OPERATION AND MAINTENANCE MANUAL**

## **USER MANUAL**

## **SPECIFICATION MANUAL**

**MACHINE - AUTOBALER and CYBERSMART CONTROLLER**

**MODEL - TI100/TI200 B&BC**

**AUTOBALER SERIAL NUMBER - \_\_\_\_\_**

**CONTROLLER SERIAL NUMBER - \_\_\_\_\_**

### **Name and Address of Manufacturer**

Trethewey Industries  
14 Carl Baer Circuit  
Deepwater NSW 2371  
Australia

***Please Read This Document BEFORE Operating the Machinery***

## **WARRANTY**

To maintain warranty the baler must be serviced in accordance with the manufacturers recommendations outlined in chapter 9 and the service booklet.

The firm guarantees the machine hereby described has been designed in compliance with all regulations in force, in particular safety and health regulations. The machine has undergone successful testing. (See test certificate enclosed.)

The warranty covers a period of 12 months. It does not cover electrical motors and tools. Extended warranty to 5 years is available

The purchaser is entitled to the replacement of faulty parts. Shipping and packing costs are at the purchaser's expense.

The warranty does not cover damage caused by: Falls or careless handling of the machine, incorrect operation, and non-compliance with the maintenance rules. **Any tampering with the machine, especially with its safety devices, automatically voids warranty.** The manufacturer will be freed from any responsibility.

No claim for damages shall be accepted in cases where the machine has been laying idle for a long period of time.

The serial number on the machine is a main reference for the warranty, instructions manual and after sales service and identifies the machine in case of need.

Serial Number must be quoted in all correspondence.

## **NOTES**

The machines are manufactured in compliance with the accident prevention rules in force.

The machines strictly comply with the instructions contained in the manual to obtain the best performance from the machines. Strict compliance with the rules contained will ensure optimum results and avoid any inconvenience caused by the non-compliance of operation and maintenance instructions.

To avoid contacting the manufacturer for problems which can be easily solved, closely follow the instructions given below.

If the help of our technical assistance service is still required after having strictly complied with the instructions given, the buyer must supply all the technical indications necessary to effectively determine the problem. This will enable our technical assistance service to intervene quickly and efficiently on the machine. Copies of the instructions manual may be requested upon indication of the machine serial number.

## **IMPORTANT**

Upon delivery of the machine, the consumer must make sure that all the devices indicated in the paragraph on the safety manual are present and working correctly. Furthermore, those devices which are not mounted at the time of delivery to facilitate transport must be mounted in conformity with the instructions indicated.

When ordering spare parts it is necessary to state:

- Machine Model
- Serial Number and Year of Manufacture
- Item Reference Number

***Without the Serial Number, no spare parts will be delivered!***

## **DEFINITIONS**

**User:** The person, body or company who has bought or rented the machine and intends to employ the users trained and inducted in its safe use & operation.

**Operator:** The physical person authorised by either the user or a representative of Trethewey Industries to operate the machine after having been suitably trained on the use and specific risks of the machine.

**Authorised Person:** The physical skilled person authorised by the user to carry out maintenance or installation/initialisation on the machine.

**Dangerous Zone:** Any dangerous zone as marked on the baler either entirely or partially.

## **PURPOSE OF MACHINE**

This machine has been designed to be mainly used in recycling stations or similar applications. This machine has been designed for the compaction of cardboard, paper and similar fibrous materials. Use differing from the above is to be considered inappropriate and prohibited. The machine operator must be trained and informed of risks and must have the instruction manual at their disposal. The operator must not work with any guards or safety devices inoperative or missing. The baler must not be operated in any non-safety-compliant condition.

## **RISKS**

During the pressing phase, the operator must never put hands or use tools in the compaction area.

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## **SCOPE**

### **Background**

Autobalers are a unique compacting machine featuring an open top system to facilitate loading of the baler with materials. Autobalers offer considerable time savings when compared with most other baler types. The time to compact is reduced on account of no doors to open and close each time materials are deposited. The Autobaler can be loaded during any part of its cycle path.

Autobalers are a safe machine reducing many of the common injuries associated with conventional balers such as strain injuries from pushing and forcing of materials into fixed sized areas. Many injuries also occur due to material breakdown with knives and other injury creating devices. AUTOBALER REQUIRES NO MATERIAL BREAKDOWN.

Autobalers are an extremely versatile machine being able to compact a large range of materials i.e.: paper, cardboard, plastics, rubber tyres, wool and most otherwise compactable materials. Autobalers come in a ten model capacity range from 80 to 500+ kg to best suit particular customer requirements. Autobalers are a quality machine offering unparalleled safety, amazing efficiency and huge labour savings.


Trethewey Industries have vast experience in the manufacture of quality baling machines, having produced in excess of 5000 agricultural baling machines. Twelve years ago Trethewey's developed the Autobaler for commercial use, in particular to be used in Supermarkets and Recyclers. Trethewey Industries are situated on the New England Hwy at Deepwater NSW. Trethewey Industries location is ideal for servicing our national markets. Trethewey Industries focus is to develop machines which totally satisfy customer requirements in performance, quality, service, economy and safety.

Autobalers were developed to give the maximum efficiency and safety possible. Autobalers are designed for loose materials and are not recommended for solid materials (i.e. hard wooden or metallic objects) as these may cause machine damage. The manufacturers are happy to assess your needs and make recommendations and give assurances on the type of baler which will best suit your requirements.

Autobalers are built to comply with the highest national and international standards.

***Autobalers are protected by International Patents and Patent Applications.***

### **Manufacturing Plate:**

<b>TRETHEWEY INDUSTRIES Pty Ltd</b>	
A.B.N. 84 072 739 827	
<i>Innovative Design &amp; Manufacturing</i>	
	New England Highway DEEPWATER NSW 2371
Tel: 02 6734 5403 Fax: 02 6734 5433	
EMAIL: trethewey@northnet.com.au	
WEBSITE: www.autobaler.com	
+ PATENT No's +	
AU99 PCT 000 48	AUPR 8089
AUPR 8445	AUPR 3941
AUPR 4116	AUPR 8930
MODEL:	
S/N:	
BATCH No:	
RATED VOLTAGE:	
NUMBER OF PHASES:	
FREQUENCY:	
FULL LOAD CURRENT: AMPS-	
Date of Manufacture:	

# DECLARATION OF CONFORMITY

98/37/EC Machinery Directive  
73/23/EEC Low Voltage Directive  
89/336/EEC EMC Directive

**Name of manufacturer or supplier**

Trethewey Industries Pty Ltd

**Full postal address including country of origin**

14 Carl Baer Circuit, Deepwater, NSW 2371, Australia

**Description of product**

Paper & Cardboard Baling Machine

**Name, type or model, batch or serial number**

Type - Autobaler

Make - Trethewey Industries Pty Ltd

Model – TI100/TI200 B&BC

Location – 14 Carl Baer Circuit, Deepwater, NSW 2371 Australia

Supply - 415V ac 3 -

Serial No: \_\_\_\_\_

Mass Weight - \_\_\_\_\_

**Standards used, including number, title, issue date and other relative documents**

See attached sheets

**Place of issue**

Address of Authorised representative in Europe

**Name of authorised representative:** \_\_\_\_\_

**Position of authorised representative:** \_\_\_\_\_

**Full postal address if different from manufacturers**

Address of Authorised Representative in Europe

**Declaration**

I declare that as the authorised representative, the above information in relation to the supply / manufacture of this product is in conformity with the stated standards and other related documents following the provisions of the above Directives and their amendments.

Signature of authorised representative \_\_\_\_\_ Date \_\_\_\_\_



# Trethewey Industries

## Autobaler

# **Trethewey Industries Pty Ltd**

**14 Carl Baer Circuit  
Deepwater  
NSW. 2371**

**14 November 2003**

## **ASSESSMENT REPORT AUTOBALER FOR COMPLIANCE WITH MACHINERY DIRECTIVE 98/37/EC**

**THIS REPORT IS PREPARED BY RISKPLANT CONSULTANTS PTY LTD FOR RISK  
MANAGEMENT PURPOSES, AND ITS CONTENTS ARE PROVIDED EXPRESSLY FOR THE  
NAMED CLIENT FOR ITS OWN USE**

**NO RESPONSIBILITY IS ACCEPTED FOR THE USE OF, OR RELIANCE UPON THIS  
REPORT, IN WHOLE OR IN PART, BY ANY THIRD PARTY.**

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Fax: (03) 9877 4569**

**NATA Accredited (No. 14155)  
Machinery Safety  
Inspection Services**

# **Baler Test Report**

## Comprehensive Autobaler Test Report

Date:	<input type="text"/>
Serial No:	<input type="text"/>
Testing Officer:	<input type="text"/>
Electrical Test Performed By:	<input type="text"/>
Noise Emission Test:	<input type="text"/>
Hydraulic Test:	<input type="text"/>

## **Autobaler Quality and Reliability Test - Full Mechanical Test**

Test Report No:	<input type="text"/>
Testing Officer:	<input type="text"/>
Operational Test Report No:	<input type="text"/>
Testing Officer:	<input type="text"/>
Lubrication Test Report No:	<input type="text"/>
Testing Officer:	<input type="text"/>
Testing Officer:	<input type="text"/>
Signature:	<input type="text"/>

## **Hydraulic Pressure and Performance Test**

“Report on Safety and Hydraulic Performance”

This report is suitable for pressure systems below 2500 psi.

System Pressure Required:	<input type="text"/>
System Pressure on Test:	<input type="text"/>
System Pressure Spikes:	<input type="text"/>
Pressure Switch Firing Range:	<input type="text"/>
Pressure Switch Firing Test:	<input type="text"/>
Hydraulic Delivery Hose Rating:	<input type="text"/>
Fluid Type and Grade:	<input type="text" value="Hydraulic 32 Grade"/>
Cylinder Brand and Type:	<input type="text"/>
Duration of Cycle Test:	<input type="text"/>
Date:	<input type="text"/>
Inspector:	<input type="text"/>
Signature:	<input type="text"/>

## **Noise Emission Test Report**

Baler Noise Emission report - the test done from five positions:-

- a. From each side at a distance of 1m from the machine
- b. At a distance of 1m above the machine

Decibel monitor type and number:

Tenma 72.6604

Test one metre from front:

70 Db

Test one metre from left side:

70 Db

Test one metre from right side:

70 Db

Test one metre from back:

70 Db

Test one metre above machine:

70 Db

Injury precautions required:

Ear Protection Must be worn if  
noise exceed 85 DB

Date of Inspection:

Inspection No:

Inspector:

Signed:

# Earth Bonding and Electrical Test

## Report on Safety Inspection and Testing of Electrical Equipment

This report is suitable for class 1 protectively earthed 3 phase 415V equipment. The test has been carried out in accordance with AS/NZS 3760, with the following electrical and visual inspections:

### 500V Insulation Resistance Tests

- |                      |                               |                               |
|----------------------|-------------------------------|-------------------------------|
| • Active 1 to earth: | Pass <input type="checkbox"/> | Fail <input type="checkbox"/> |
| • Active 2 to earth: | Pass <input type="checkbox"/> | Fail <input type="checkbox"/> |
| • Active 3 to earth: | Pass <input type="checkbox"/> | Fail <input type="checkbox"/> |
| Earthing continuity: | Pass <input type="checkbox"/> | Fail <input type="checkbox"/> |

### Flexible supply cord:-

- |   |                               |                               |
|---|-------------------------------|-------------------------------|
| • External visual inspection of plug connection:      | Pass <input type="checkbox"/> | Fail <input type="checkbox"/> |
| • Visual inspection of cord termination to equipment: | Pass <input type="checkbox"/> | Fail <input type="checkbox"/> |

Visual inspection of wire termination in electric motor terminal housing:

Pass ☐ Fail ☐

Date:

Inspection number:

Inspector:

Inspector registration number:

Signed:.....

# Trethewey Industries

## New Machinery Hazard Identification assessment and Control

Description: Autobaler

Model: TI100/TI200

Brand:

Developed in Co-operation Between AWISA and Australia Chamber of Manufactures.  
This program is based upon the Australian Worksafe Standard for Plant NOHSC:1010-1994

Item No.	Hazard Identification	Hazard Assessment	Risk control Strategies
<b>A</b>	Entanglement	Very Low	Do not reach into baler. Operator Training
<b>C</b>	Cutting, stabbing, puncturing	Very Low	Use only safety knife for bale tie off.
<b>D</b>	Shearing	Nil	
<b>E</b>	High Temperature	Nil	
<b>F</b>	Striking	Moderate	Upper or lower door rebound. Operator Training
<b>G</b>	Crushing	Low	Bale ejection. Operator Training
<b>H</b>	Electrical	Low	Operator Training
<b>O</b>	Other hazards, noise dust.	Moderate noise	Noise if operated with insufficient materials in hopper. Operator training

## Installation Instructions for the Overhead Safety Canopy

### FITTING OF THE OVERHEAD FRAME

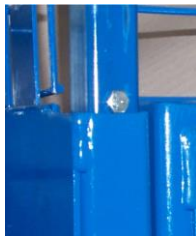
- From within the baler lift frame – the rear support legs will telescope out
- When the holes in the telescoping rear legs appear, slide in retaining bolts to hold the frame in position. This operation may require two people or the use of a fork lift or mechanical lifting device.
- Firm up the grub screws on these legs
- Fit the mesh sections supplied – these will only fit one way.
- Tighten up the grub screws in the saddles to secure the mesh tabs to the baler
- The mesh frames should be now securely attached to the baler frame
- Firm up grub screws on baler saddles locking overhead frame into position. Note: mesh hopper must be on the inside of the legs (see illustration 2)
- Frame should now be as the picture below,

If you require further information on the fitting procedure, please contact the manufacturers on:-  
1800 888 403 or 02 67 345403

### FITTING OF THE SAFETY CANOPY:



Fitted Overhead Safety Canopy.



Rear Canopy legs position



Mesh mounting lugs



## Warnings

- Failure to observe Safety Precautions could lead to severe injury.

1. Safety glasses
2. Safety shoes
3. Safety gloves

## **"AUTOBALER SAFETY INSTRUCTIONS"**

**READ INSTALLATION MANUAL BEFORE USE**

1. **ALWAYS** locate the Autobaler away from elevated area's to prevent unsafe access to the baler chamber. (ie loading docks etc)
2. **EE** polarity change is required, always call on electrician.
3. **CHILDREN** must be kept away from the Autobaler at all times.
4. **DO NOT** reach or lean into the Autobaler during operation.
5. **POSITION** the beltue gauge and belt tray(s) so as to prevent injury due to tripping.
6. **CAUTION** opening the top door beware of possible handle rebound.
7. **CAUTION** opening the bottom door 1. Stand to the side, 2. Beware of possible door rebound.
8. **NEVER** attempt to enter the Autobaler for 1. Jawstripping, 2. Side lift off, 3. Jawing or for any reason without stopping the baler via the key switch or stop button, then the door can be opened.
9. **NEVER** operate the Autobaler unless qualified to do so. See CHM# 001 for training details and training procedure or contact the Autobaler supplier or manufacturer.
10. **NEVER** manually handle the belt, use belt tensioning tray(s) provided.
11. **ALWAYS** remove key from unattended Autobaler.

## TRETHERWEY INDUSTRIES AUTOBALER

**"FACTORS FOR EFFICIENT OPERATION OF THE AUTOBALER"**

1. **FREE MATERIALS ONLY**
2. **NO TIMBER OR HARD OBJECTS**
3. **NO COMPRESSED SLABS OR BALES**
4. **NO BOXES CONTAINING HARD OBJECTS**
5. **DO NOT CYCLE AUTOBALER WITHOUT MATERIALS IN THE HOPPER**
6. **IDEALLY, PLACE FLATTENED CARDBOARD FLAT INTO THE HOPPER**
7. **DO NOT OPEN THE BOTTOM DOOR UNTIL:**
  - A. THE BALE IS TIED OFF
  - B. THE FINGERS ARE IN RETRACT POSITION
8. **READ THE OPERATION AND INSTALLATION MANUAL CAREFULLY BEFORE USE**



## **CHAPTER 2**

### **LIFTING AND HANDLING INSTRUCTIONS OF THE AUTOBALER**

<b>TI100 Specifications</b>	
<b>Bale Weights</b>	<b>100-140kgs</b>
<b>Bale Size</b>	<b>750 x 750 x 1000</b>
<b>Cycle Time</b>	<b>28 seconds</b>
<b>Unit Weight</b>	<b>1250kg</b>
<b>Thrust Load</b>	<b>5350kg</b>
<b>Power</b>	<b>2.2Kw</b>
<b>Plug required</b>	<b>4pin Clipsal compatible</b>
<b>Height</b>	<b>2500mm</b>
<b>Width</b>	<b>1940mm</b>
<b>Depth</b>	<b>920mm</b>
<b>Transport Height</b>	<b>2050mm</b>
<b>Baler Capacity</b>	<b>2-3 bales per hour</b>

<b>TI200 Specifications</b>	
<b>Bale Weights</b>	<b>175-200kgs</b>
<b>Bale Size</b>	<b>750 x 750 x 1000 (mm)</b>
<b>Cycle Time</b>	<b>28 seconds</b>
<b>Unit Weight</b>	<b>1650kg</b>
<b>Thrust Load</b>	<b>10160kg</b>
<b>Power</b>	<b>2.2Kw</b>
<b>Plug Required</b>	<b>4pin Clipsal compatible</b>
<b>Height</b>	<b>2500mm</b>
<b>Width</b>	<b>1940mm</b>
<b>Depth</b>	<b>920mm</b>
<b>Transport height</b>	<b>2050mm</b>
<b>Baler Capacity</b>	<b>2-3 bales per hour</b>

### **TRANSPORTING THE AUTOBALER SAFELY**



When moving or relocating the baler always follow the Work Method Statement, in most cases it will be a requirement of the organization that the Work Method Statement be completed signed and handed in to the appropriate person or persons for approval before carrying out the task. The following procedure is for the safe transportation and movement of the Autobaler

#### **1. BALER RELOCATION PROCEDURE**

1. Before removing or lifting the baler ensure that the lifting equipment is in good order and has capacity to lift the baler – check baler weight in baler specifications.
2. Autobalers balers can be moved with a forklift unit or a pallet truck
3. Before moving the baler ensure that there is sufficient clearance (height wise)
4. Where possible attach the baler to the moving means to prevent possible overbalance
5. Where required situate traffic cones and safety barriers
6. Always transport baler units as close to the ground level as possible – if

forward movement is required always used another qualified person as a guide

7. Proceed slowly – downhill grade always in reverse

#### **2. REMOVING THE AUTOBALER FROM THE PALLET**

- a. Unwrap and cut metal strapping
- b. Insert the fork lift tines beneath the front lower door. Ensure that the fork lift tines are fully through to the baler feet.
- c. Lift the baler no more than 80mm off the pallet & check again to ensure sufficient tine protrusion through the rear slots
- d. With tines under the baler always move:-
  - as close as possible to the floor
  - at idle speed only
  - in reverse to ensure good vision

*Note: When transporting the Autobaler where lifting on a truck is required*

- a. Never lift the baler more than 300mm unless on a pallet or strapped securely to the fork lift, as the baler could slip off the tines (metal to metal)
- b. If lifting the baler from beneath the baler base, fasten the baler to the fork mask using strap or chain
- c. When lifting the baler more than 300mm, always be on level ground and never transport the baler in an elevated position
- d. When transporting or moving the baler on the fork lift, always travel in reverse to ensure good vision
- e. **Safety Equipment: Compliant safety boots, high visibility vest, hearing protection, eye protection. Head protection if required.**

#### **3.LOCATING FROM TRUCK TO DOCK.**

When loading the baler for its final destination, the baler is to be loaded in such a way as to facilitate removal at the customer end.

ie. If the baler is to be unloaded using a forklift truck, baler should be situated accordingly.

NB: if baler is to be unloaded via pallet jack, then the pallet containing the baler needs to be rotated through 90 degrees.

## Work Method Statement

Activity	_____	Contractor	_____
Person completing this statement	_____	Telephone	_____
Date	_____	Contract Number	_____

Key Steps	Equipment or plant required	Possible Hazards	Safety controls including personal protective equipment (PPE)	Licenses, qualifications or work permits
<b>1.</b>				
<b>2.</b>				
<b>3.</b>				
<b>4.</b>				
<b>5.</b>				
<b>6.</b>				
<b>7.</b>				
<b>8.</b>				
<b>9.</b>				

## **CHAPTER 3**

### **SAFETY**

#### **A. Location of Autobaler:**

- a. Never place the Autobaler near any landings or elevated loading docks, unless these areas have the appropriate safety arrangements and approvals.
- b. Never place the Autobaler under a man hole, air conditioner, refrigeration unit, light or any position where a service technician may have occasion to work above the machine.
- c. Never place the Autobaler on a loading dock, close to the edge or the above landings edge.
- d. Never place the Autobaler in a position where unauthorised persons have access.
- e. Always consult an OH&S officer.

#### **B. Area of Operation:**

- a. Ensure that baler trolley is stored in a position away from the operator's passageway.
- b. Ensure that twine rolls & twine safety cage are positioned close to the right hand side of the Autobaler to prevent tripping. If cage is provided with hooks, use these to affix cage to safety barrier.
- c. Ensure that electric lead is not in a hazardous position and is not left lying on the floor, particularly if there is a chance of water being on the floor.

#### **C. Operation of Autobaler:**

- a. Always keep hands and arms out of the Autobaler hopper during operation.
- b. Always, when entering the pressing chamber for re-stringing etc, wait until the motor stops and turn the key to the "Off" position.
- c. Never attempt to load heavy objects over the top door during the baling process, (reduce boxes of books, brochures etc to smaller quantities).
- d. When removing full bales from the Autobaler, always use the Auto-eject or eject trolley
- e. When ejecting full bales, never pull on the twine in such a manner that if the twine breaks, or the knot fails, a fall will result which may cause an injury.
- f. Always use the baler trolley, pallet jack or fork lift to relocate full bales.
- g. Always be aware of door rebound when opening top or bottom doors, always stand to the side.
- h. Never stand in front of the pressing chamber when ejecting full bales, always stand to the side, (eject models only.)
- i. Never attempt to operate Autobaler with the front door open.
- j. Never attempt to clean, lubricate or work in the vicinity of the cylinders during operation.

#### **SAFETY CLOTHING / FOOTWEAR**

- a. During assembly, location and operation of the baler, safety compliant footwear must be worn.
- b. Firm fitting work place compliant clothing must be worn.
- c. Safety compliant work place gloves, hearing protection and eye protection must be worn.
- d. General

**Always remove Autobaler key when machine is not in operation, or is unattended.**

## **SAFETY ESSENTIALS**

1. Before commencing the baling process ensure that the bottom door is latched correctly to prevent the door bursting open during process.
2. Never climb onto the baler from any side or reach in during operation or stand on elevated objects.
3. When removing the bale, grip the handle of the eject trolley firmly and pull back with care.
4. Always place the bale transport trolley centrally and in the floor channels to prevent bale side roll.
5. On inclines, take care to prevent run away and potential injury to others.
6. Use only the safety knife for twine cutting.
7. To prevent strain injury ensure that the doors and latches open freely – lubrication may be required
8. Remove baler key if in a safety sensitive zone.
9. Never operate a faulty machine tag out and call 1800 888 403
10. Autobaler operators must be licenced to legally operate Autobalers
11. Note smaller framed people or people of low strength and fitness can sustain injuries from over exertion with bale removal and location – ensure that the operator is of sufficient strength and fitness to safely perform this task.

## **CHAPTER 4**

### **OPERATION OF AUTOBALER**

#### **BALE REMOVAL PROCEDURE**

Larger Autobaler are equipped with auto ejection systems the standard series have manual bale removal system

#### **Removal of the Bale**

##### **Step 1.**

Before commencing the baling especially with smaller granulated materials place a sheet of cardboard on the bottom of the baler to prevent clogging of the baler floor grooves.

##### **Step 2.**

Fully open both upper and lower baler doors using the bale extraction trolley supplied with the machine. Insert the trolley tines into the baler lots.

##### **Step 3.**

With the trolley forks fully inserted, grip the top of the trolley handle firmly and pull back, carefully drawing the bale from the chamber. (note for ease of extraction the bottom door of the baler must be fully opened.)

##### **Step 4.**

With the bale extracted from the baler the bale can be wheeled away and stored.

#### **Safety**

Those responsible for the safe operation of the baler must:

1. Ensure that the persons removing the bale have been sufficiently trained in the safest removal procedure.
2. Must be of sufficient strength and fitness to safely carry out this task.
3. Bale trolley storage to prevent a tripping hazard – store the bale trolley with the forks beneath the left hand side and the trolley against the baler.





## TWINING UP THE TI100/TI200

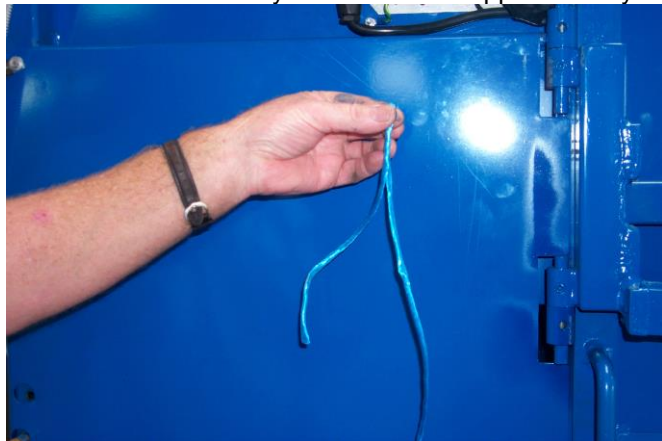
The following procedure is for the twining of the TI100/TI200 Autobaler.

### Step 1.

Place the roll of twine under the left hand side of the baler. The roll must be the correct side up. The draw end of the twine feeds from the entire of the roll from the top side. Twine type must comply with OH&S requirements (recommended twine type is Superlash8)

### Step 2.

From the drawn end lay the twine back approximately 200mm as shown



### Step 3.

Tie a knot in the end to form a non-slip loop as per illustration.



### Step 4.

In some instances a double know may be required as shown. The reason for this will be explained in a later step.



**Step 5.**

Hook the looped twine end on the baler tab as per illustration 5 and take the twine to the opposite side as per illustration 6 then bring the twine back to left hand side as illustrated and cut off at this point using the safety knife supplied illustration 7. This will give the correct length of twine required – Repeat this process three times to give the required amount of twine up the machine.



Illustration 5



Illustration 6



Illustration 7

**Step 6.**

Fully open all doors and step into the baler chamber (note before entering the baler turn the baler key to the off position) Hook the twine loop over the domed hook as illustrated on the left hand side.

**Step 7.**

Take the twine down under the tab on the left side on the bottom then across and under the tab on the right hand side then up to the domed hook on the right hand side.





**Step 8.**

To attach the twine end to the domed hook on the right hand side rotate the twine end around the domed hook twice then tie off using one tie off loom only. Repeat this procedure on both side twines.

**Step 9.**

Transverse twine (from rear to top)

1. Hook twine loop onto the domed hook on the rear inside wall of the baler.
2. Place the twine under the tabs on the floor (near to front as illustrated).
3. Holding the twine end in the left hand close the bottom door using the right hand.
4. Twine will then come up the inside of the lower door over the top and attach to twine tab as in step 10.

**Step 10.**

Twine end will come over the top of the bottom door and attach to twine tab by rotating the twine around the twine tab twice then inserting twine into tab slot as illustrated.



## CONTROLLER LAYOUT AND FUNCTION



### Controller

Almost the total function of your Autobaler is via the Cybasmart control unit. The various functions of the controller are as follows:

- 1. Power In** - Power to the controller unit enters through the 3 phase power cable at the power in point. It is essential that the lead and plug be kept in good working order and free from possible damage and moisture entry. Note: all repairs to the electrical components must be carried out by those qualified to work with 3 phase power. If power at anytime becomes absent at the controller, (power light out), check the power entry system from the controller back to the main power source.
- 2. Serial Number** - Every controller unit has its individual serial number. When ordering parts for the controller or the electrical system always quote the controller serial number as well as the baler serial number and date of manufacture.
- 3. Ignition Switch** - The controller ignition switch has a security type key. If the baler is not in use or is in a public area it is advisable for the key to be removed. If additional keys are required these will need to be specially ordered from Farnells; from the baler manufacturer or the manufacturer's agent or representative.
- 4. Emergency Stop Button** - The emergency stop button is for emergency use. The emergency stop disables all electrical functions within the baler systems. To activate the emergency stop simply push the button firmly in. To release the emergency stop button to the active mode rotate the button clockwise until the button pops forward.
- 5. Magnetic Door Switch** - The magnetic door switch is activated at the top of the upper door adjacent to the controller unit. One half of the magnetic switch is attached to the controller via plug socket (7) the other section of the switch is attached to the door. It is essential that these sections of the switch be correctly adjusted to each other. The two halves of the switch must never come into contact with each other or serious switch damage may occur. A correctly adjusted switch will have each section squarely situated to each other and will have a minimum of 1.5mm clearance to each other with a maximum clearance at any time of 4mm. More clearance than this will create a door open light to illuminate on the controller. During operation the movement in the top door may create a switch movement either apart of out of line with each other – this will depend on the machine and activate the door open light. If switch adjustment is required adjust then carefully close the door ensuring that the two sections of the magnetic switch have the required clearance to prevent switch damage.
- 6. Door Magnetic Switch Plug** - This is the plug as described in (6) that is attached to the controller from the second half of the Magnetic Door Switch
- 7. Cycle Button** - The cycle button activates the cycle mode, when activated the baler arms will come down if in the retracted position. If the baler arms are down the baler will do a full cycle, i.e. arms up then back down. This should result in the system being "activated" the system active light will be illuminated. When materials are deposited into the baler chamber and the infra-red beam emitting from the controller to the receiver on the rear wall is broken the baler will

automatically start and do a full cycle, while ever the infrared beam remains broken the baler will continue to cycle until the beam is cleared of material.

**8. Full Bale Light and Siren** - When a full bale has been achieved a "full bale" will show on the display. When these come on the automatic function feature of the baler will cease. The baler though can be manually operated to draw down surplus materials. A large piece of material can also at this point be placed in the chamber, the baler manually cycled to form a flat tidy top bale.

**9. Power to Motor Port** - The power to motor port couples the motor and the controller together. The power socket can be removed by rotating the power to motor socket nut.

**10. Polarity Change Port** - This port can be interchanged with the Power to Motor Port (14) to reverse the polarity of the motor. (Note motor must always rotate in a clockwise direction).

**11. Warnings** - The bale counter display also doubles as a display screen showing various problem indicators i.e. pressure switch, overheating etc.- Only on some models

**12. Connection Socket** - The connection socket contains the wiring looms from the controller to the following functions:

1. Solenoid valve to main compaction arms
2. Solenoid valve to bale eject cylinder
3. Pressure switch control wires
4. Power boost wiring
5. Full Bale switch

**13. Light Indicator Grouping** - A series of vertical lights show the various functions of the baler:

- The up indicator light (top light) illuminates when the cycle button is activated and baler arms are rising.
- The down light will illuminate when the baler direction is down.
- The third light down (red) is the power light. This light should illuminate when the key switch is turned on 2. The eject button is released and indicates power at the baler.
- Door open light will indicate when the top door is open or the machine has developed a system fault such as an overheated system or pressure related problem.
- The active light indicated that the baler system is active and will automatically start and cycle when materials break the infrared beam.

**14. Warning** - Warning symbol indicates the presence of dangerous voltage within and is a warning to those qualified to ensure a power supply is disconnected before opening of the unit. To those who are not qualified to work with high voltage a warning not to open the unit with authorisation.

**15. Fuse** - The controllers' electronic system is protected by a fuse. To access the fuse unscrew the fuse holder.

Fuse Type: 32mm glass fast blow fuse

Fuse Value: 4A

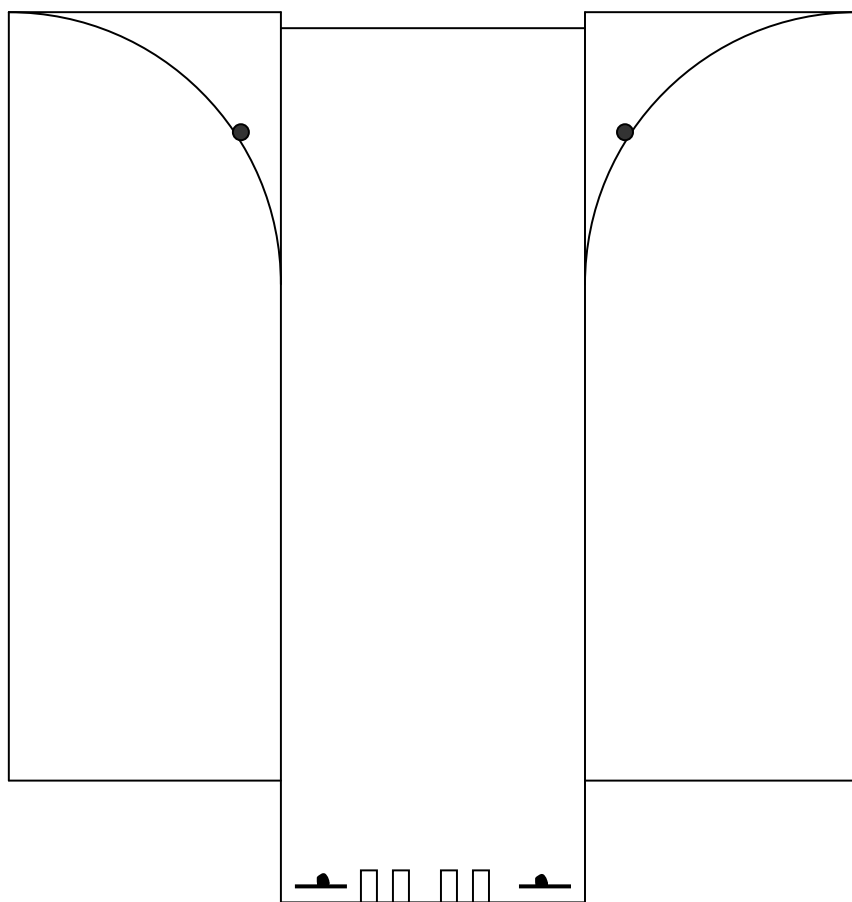


# ***AUTOBALER***



# ***TRAINER MATERIAL***

# **AUTOBALER TRAINER MATERIAL**



## **INDEX**

1. Controller Operation
2. Set Up
3. Baler Fit Out
4. Initial Set
5. Tying the Loop
6. Transverse Twining
7. Initial Fill
8. Baler Operation
9. Tidy Bale Procedure
10. Tying Off
11. Transverse Twine tie off
12. Retracting Fingers
13. Opening the Doors
14. Bale Removal and -  
Storage Safety Procedure

Baler Serial No: \_\_\_\_\_

Date: \_\_\_\_\_

Customer: \_\_\_\_\_

Address: \_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

Trainer: \_\_\_\_\_

Signature: \_\_\_\_\_

## 1. **Controller Operation**

1. Turn the key on – power light on
2. Close both doors
3. Disengage emergency stop key rotation
4. Cycle button to cycle
5. Full bale display on LED

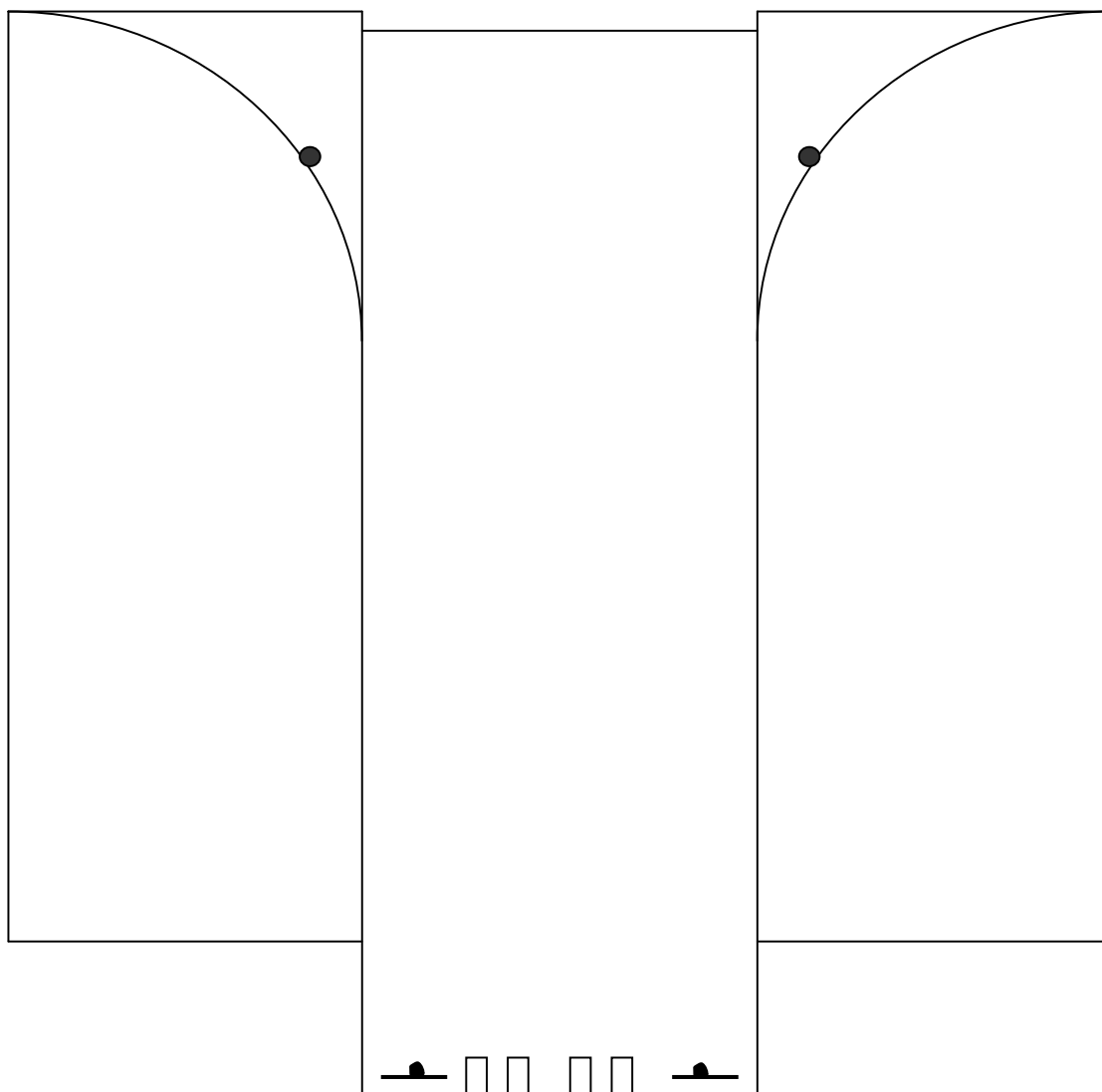


Trainer Signature of compliance:

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## 2. ***Set Up***

1. Remove the protective wrapping
2. Move all sundry items from within the baler
3. When moving or relocating the baler carefully follow the lifting instruction and safety procedure.

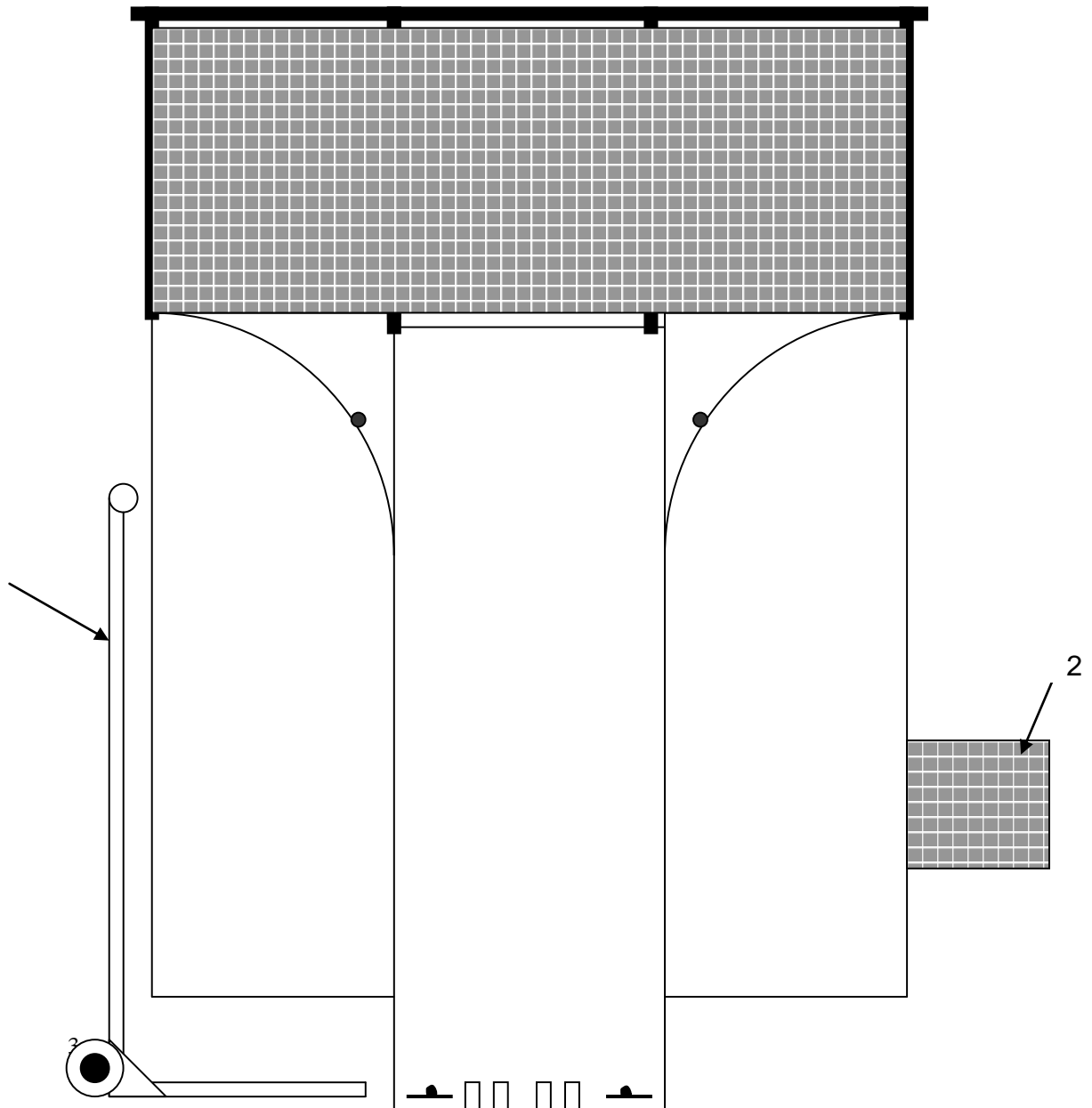


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### 3. *Baler Fit Out*

1. Fit the mesh hopper above the baler
2. Position the twine cage to the side of the baler
3. Situate the baler removal and storage trolley
4. Fit canopy to balers with auto cycle provisions



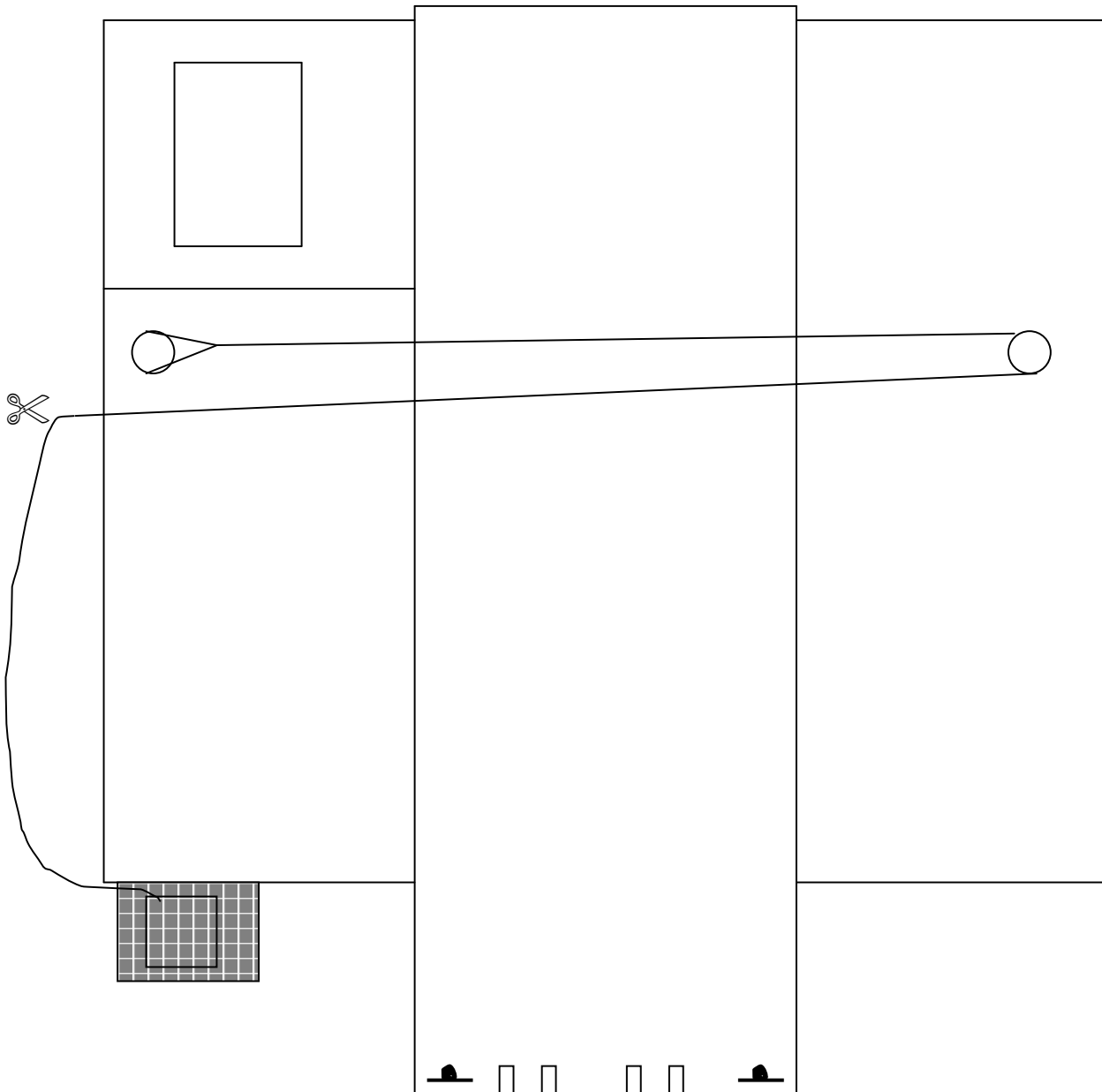
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#### 4. Initial Set

1. Turn the controller key on
2. Press retract button – check motor rotation for clockwise direction – stand fingers up and clear of the bale chamber
3. Check that twine roll is correct side up – draw twine and cut to length as on the illustration below (all three twines are the same length)

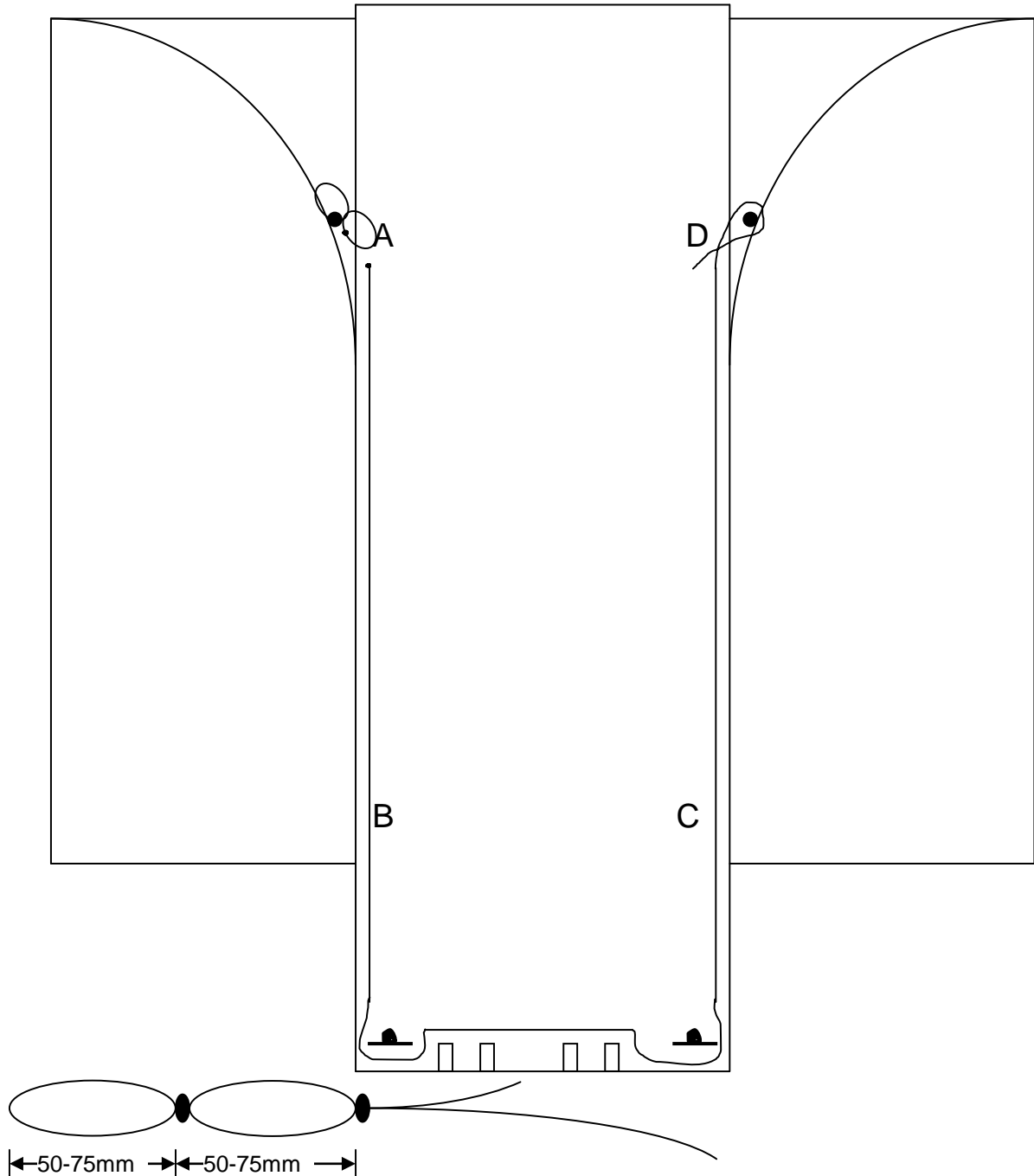


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## 5. *Tying the Loop*

1. Tie the double loop in twine ends.
2. Open all doors
3. Attach the outer loops of the twine to the left hand side of the baler
4. Down to tab on left side then across the floor then under the tab on the right hand side.
5. Rotate the twine end around the eye bolt twice then tie off with one loop
6. Repeat his process on all three twines

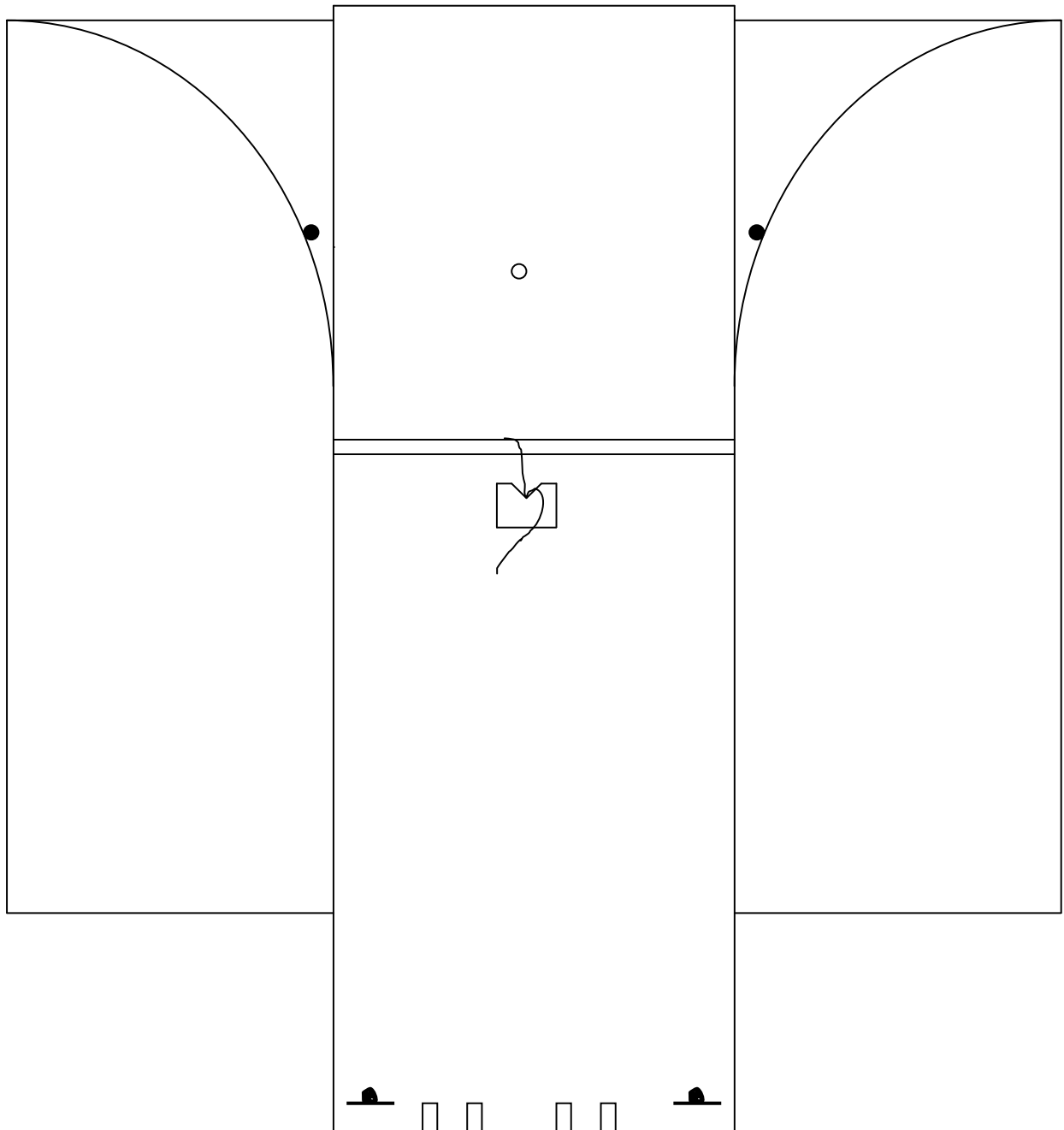


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**6. Transverse Twining**

1. Hook twine loop or domed hook on rear will of baler
2. Position twine under rear twine tab on the baler floor
3. Position twine under front floor tab
4. Close bottom door and brine twine up the inside of the front door and over the top and fix twine end to twine tab by rotating once then fixing the twine in the tab slot.



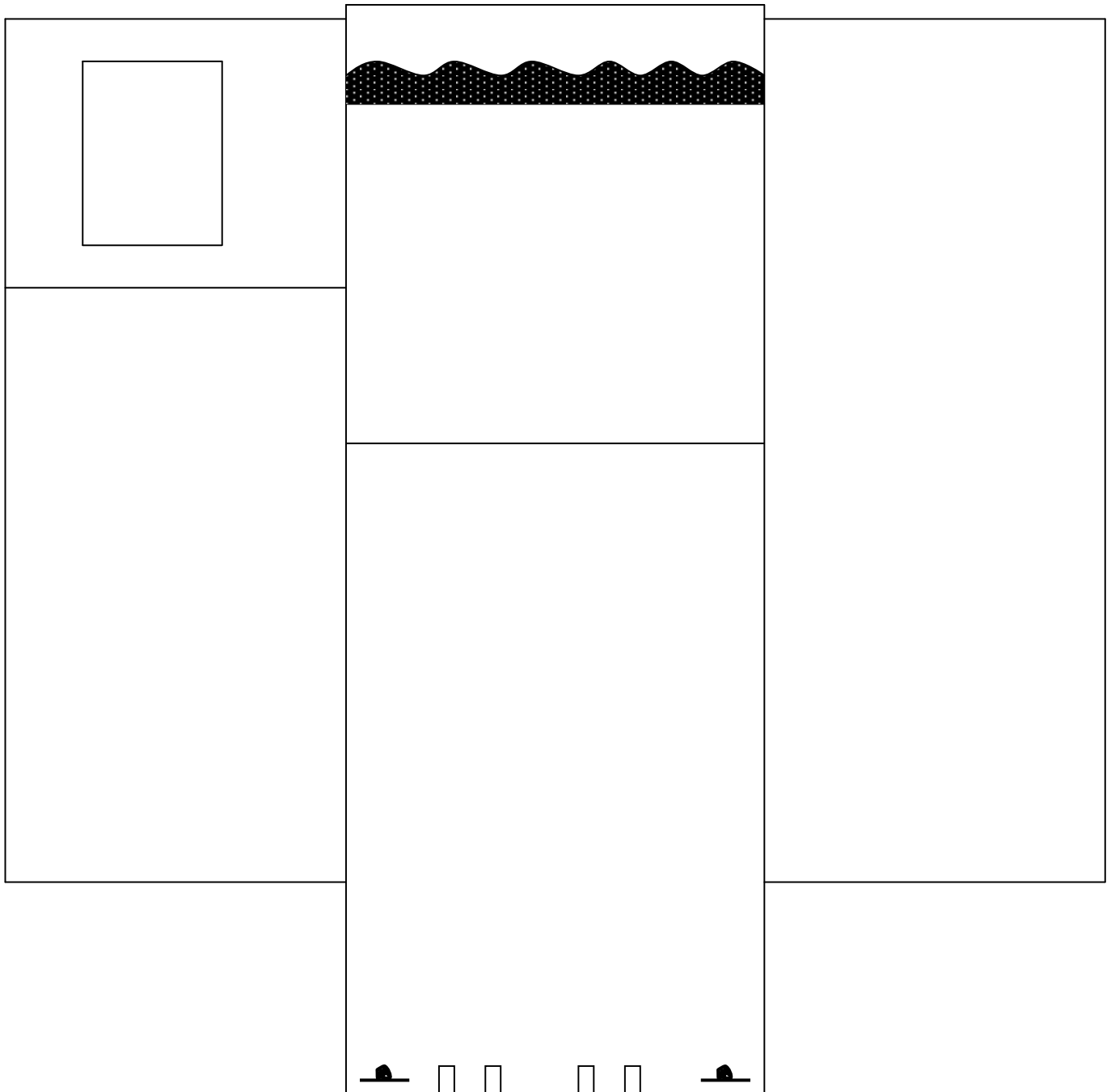
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7.

**Initial Fill**

1. Fill the lower section of the baler chamber with the top door open. (*note pressing fingers need to be fully retracted*)
2. When the lower section is full close the top door and deposit materials over the top door until visible.
3. Activate the cycle button
4. Cycling the baler with o material or insufficient materials will cause a loud bump.

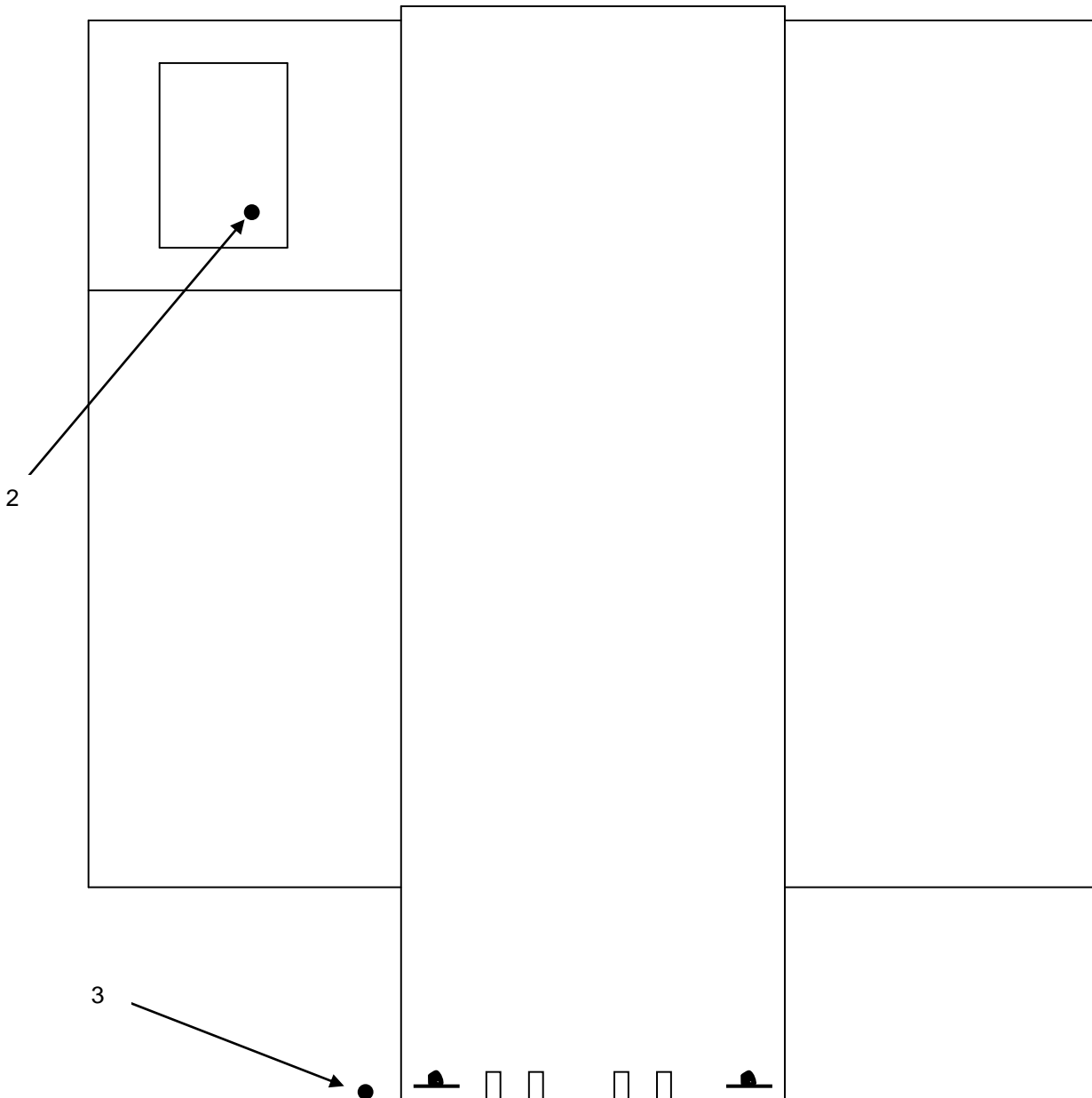


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## 8. **Baler Operation**

1. TI100 & TI200 balers have automatic cycle function.
2. Button or automatic activation is required for each cycle.
3. Peddle (or foot activation is optional) on TI100 & TI200 units



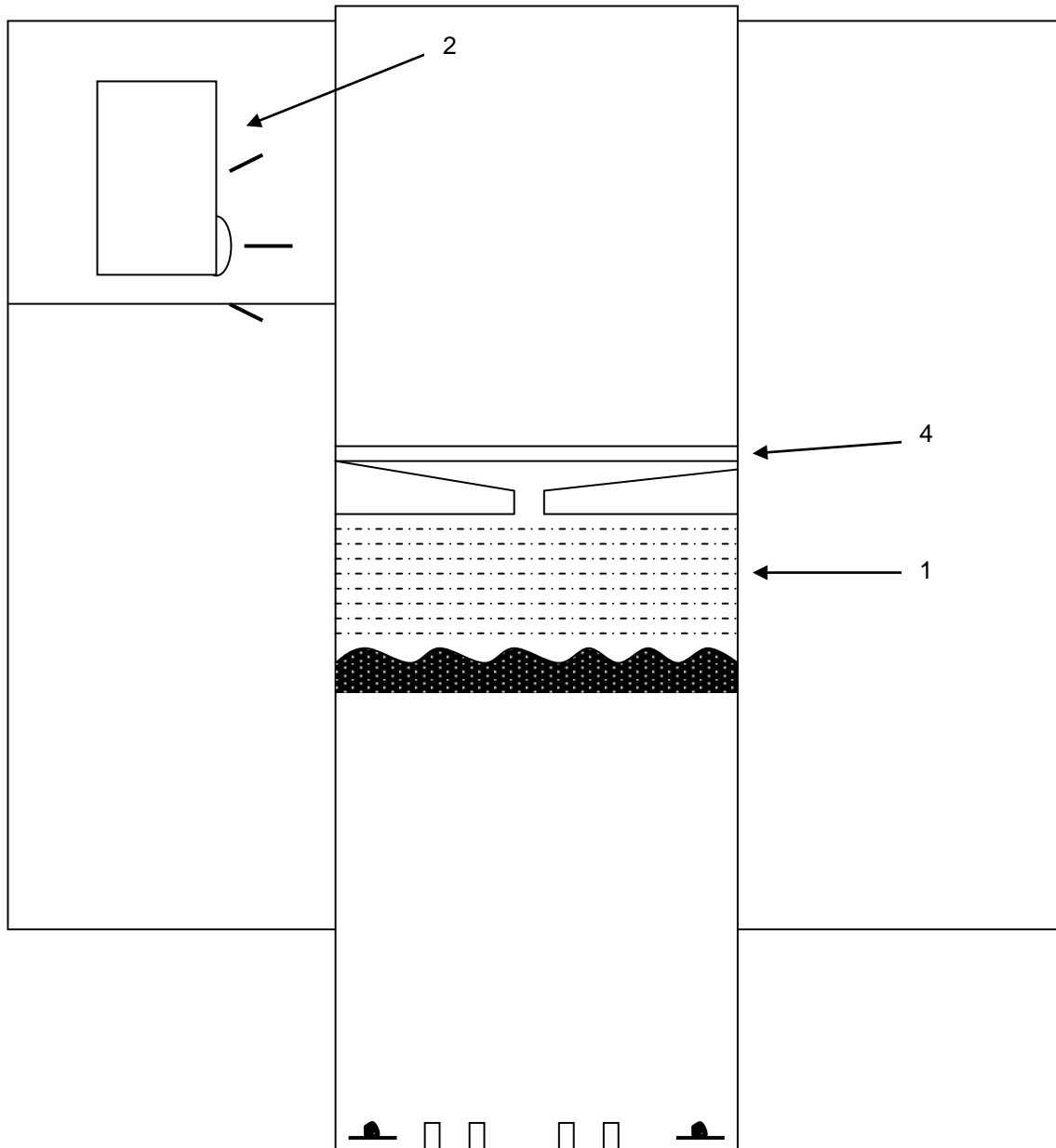
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9.

***Tidy Bale Procedure***

1. Last 10% of the bale, flattened material laid flat
2. When full bale is indicated on screen:
  - i. Remove excess material by cycling manually by pressing the cycle button (several cycles may be required)
  - ii. For neat top, place large flattened material on the top of the bale and activate cycle button.

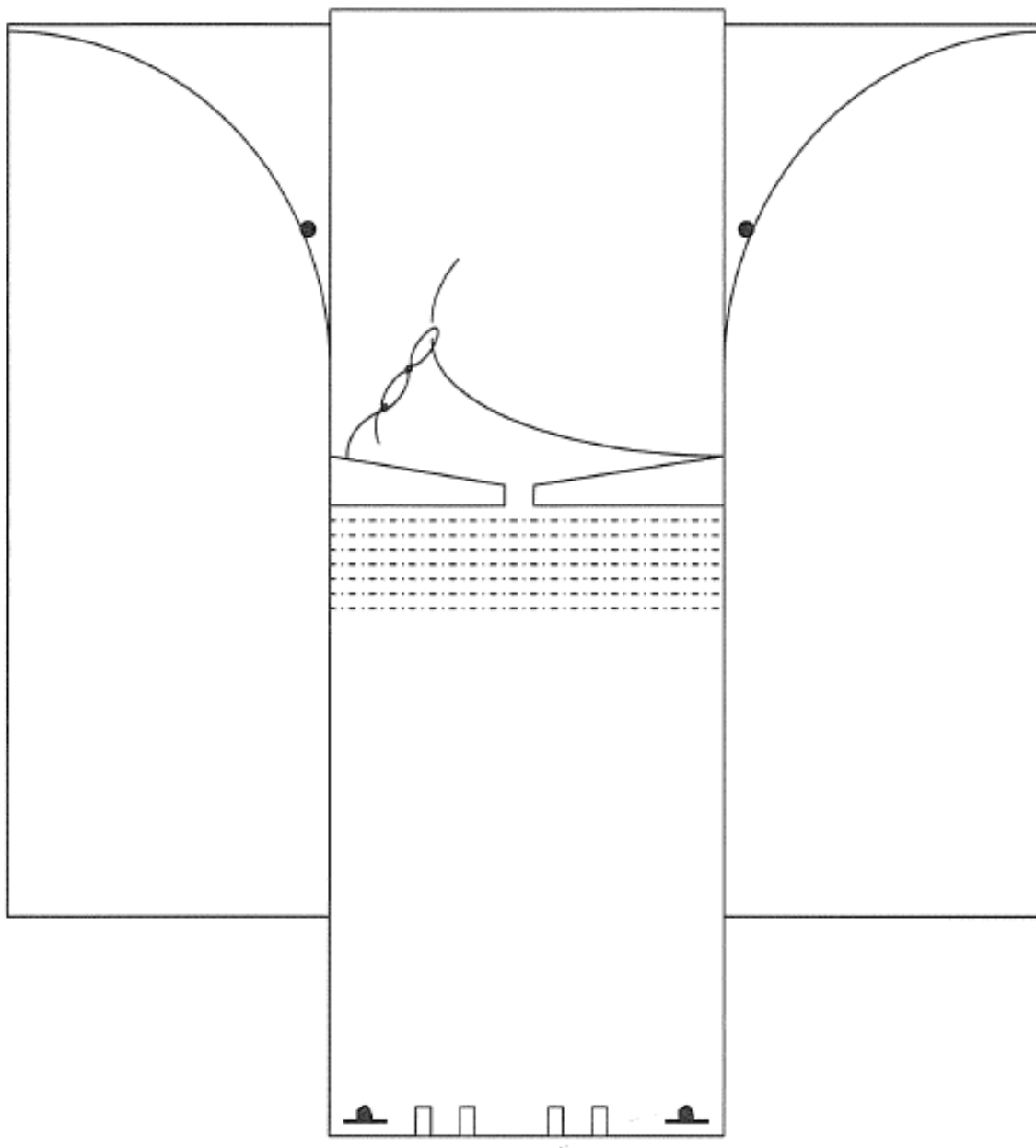


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## 10. ***Tying Off***

1. Open the top door
2. Remove loose or protruding materials from above the fingers
3. Unhook the twines on the looped ends (*cut upper loop if too tight and use lower loop to tie off*)
4. Untie plain twine end and insert through the loop. Pull tight and tie off securely.

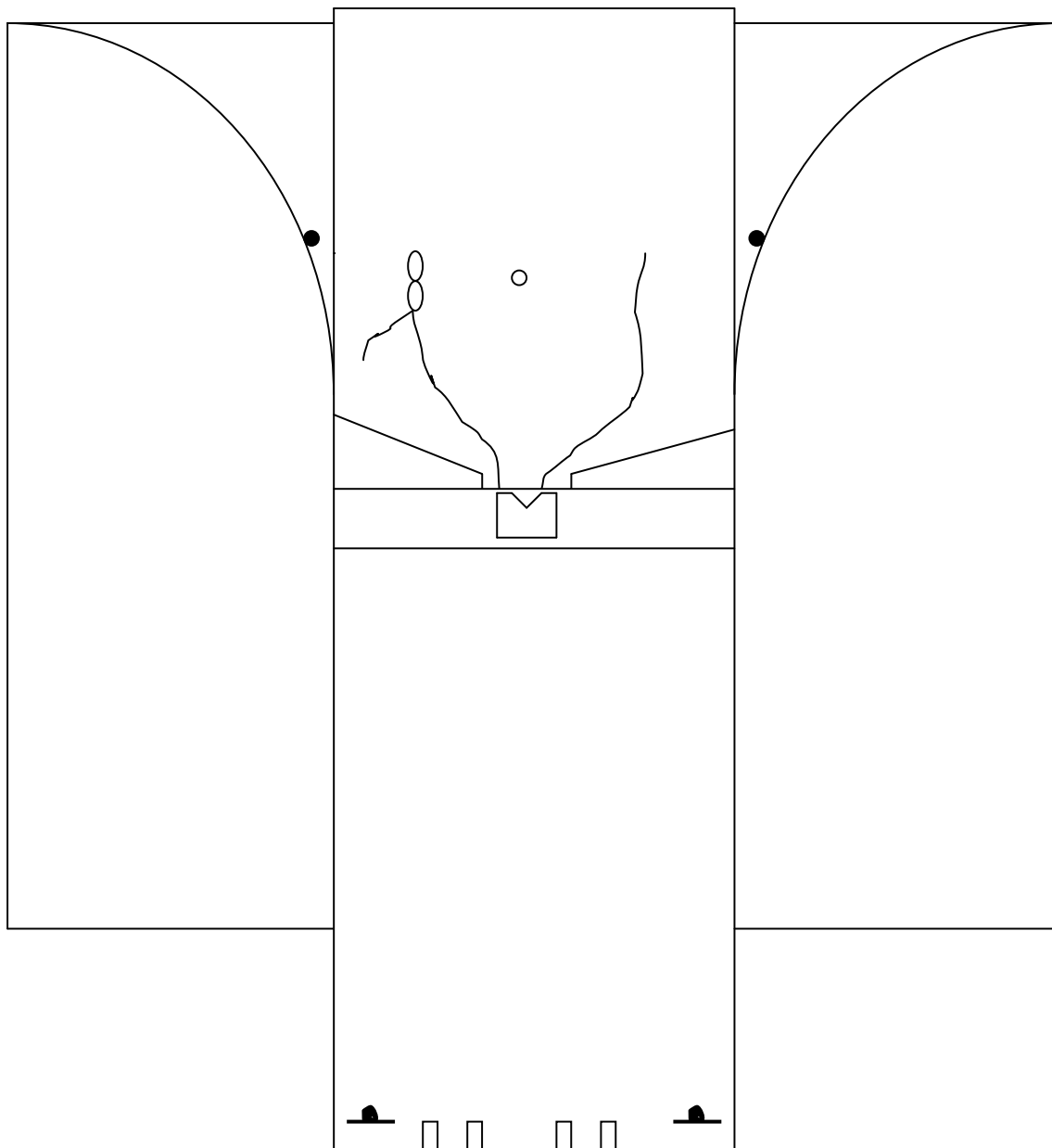


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# 11. Transverse Twine Tie Off

1. Unhook from rear baler wall.
2. Release plain end from the tab on the outer front lower door.
3. Pass the plain end through the looped end. Pull tight and tie off securely



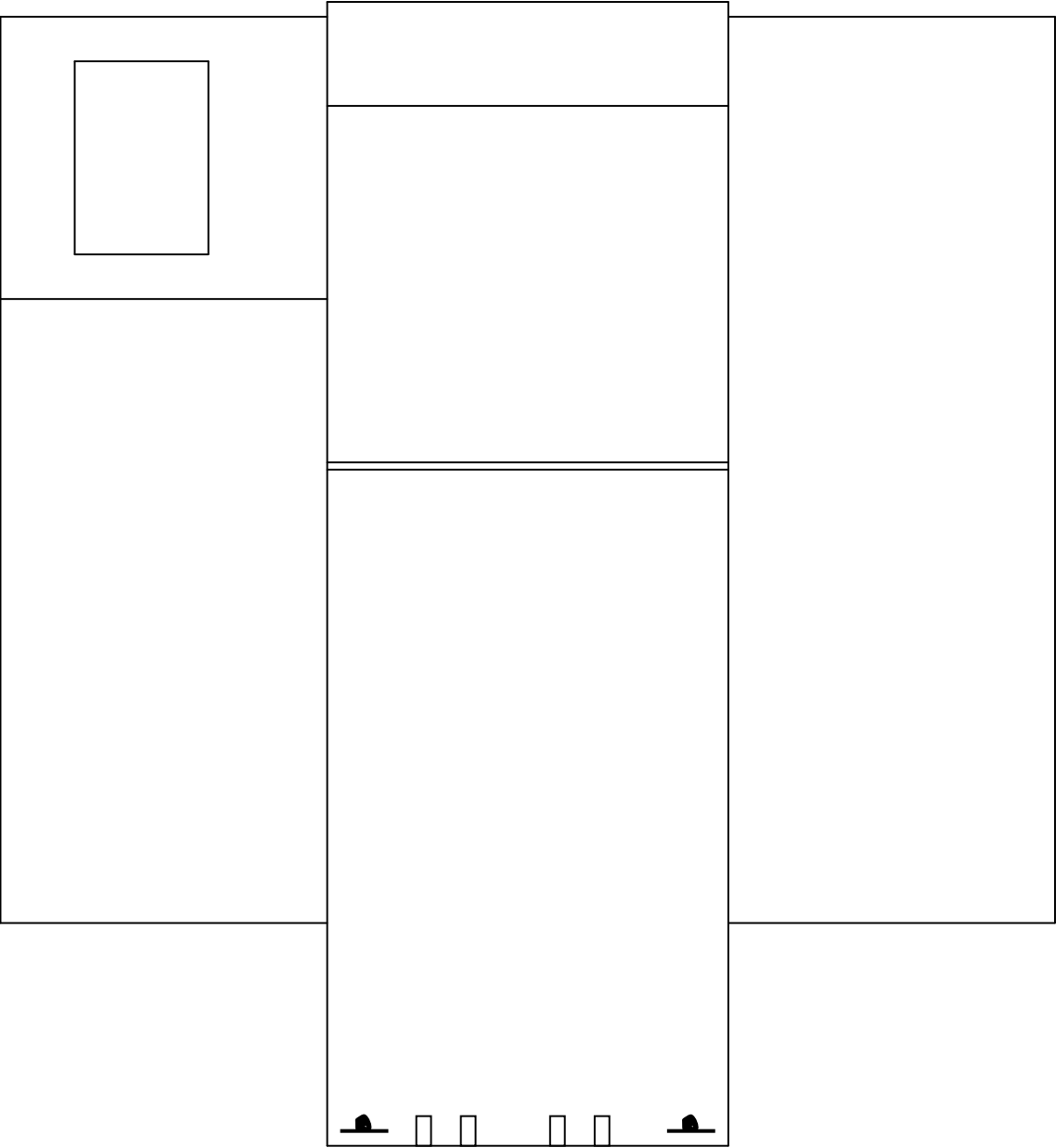
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**12. Retracting Fingers**

- 1. Close top door
- 2. Turn power on
- 3. Press retract button (hold button until the fingers are fully retracted)

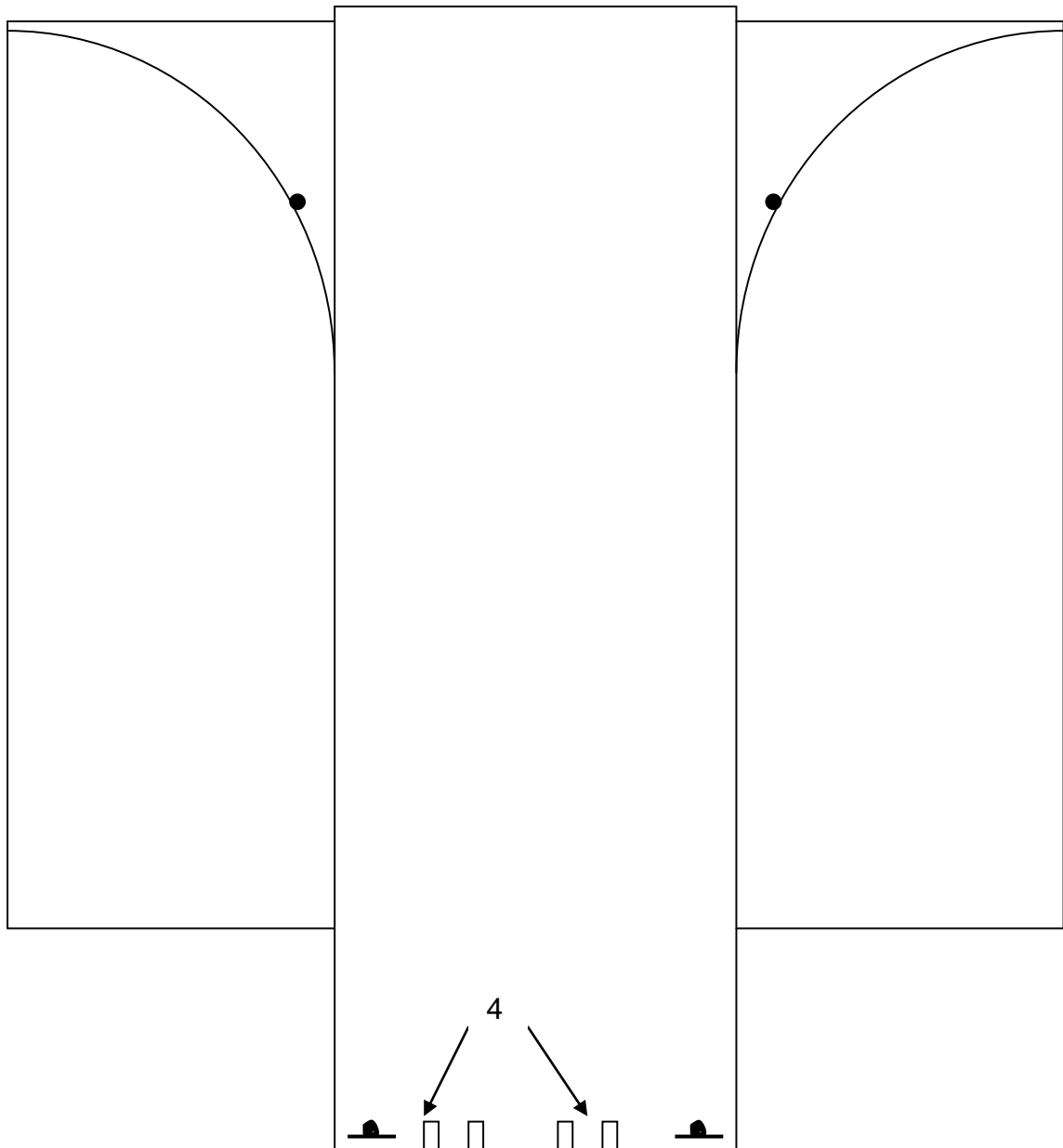


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### 13. *Opening the doors*

1. Open the top door (beware of possible rebound)
2. Open the bottom door (beware of possible rebound)
3. Open the bottom door fully
4. Insert the bale removal trolley tines into slots in the baler floor or with auto eject models position the bale transport trolley for ejection onto the trolley.
5. When fully inserted gently pull back on trolley handle and wheel away for storage.
6. Note do not open the bottom door with the fingers down.

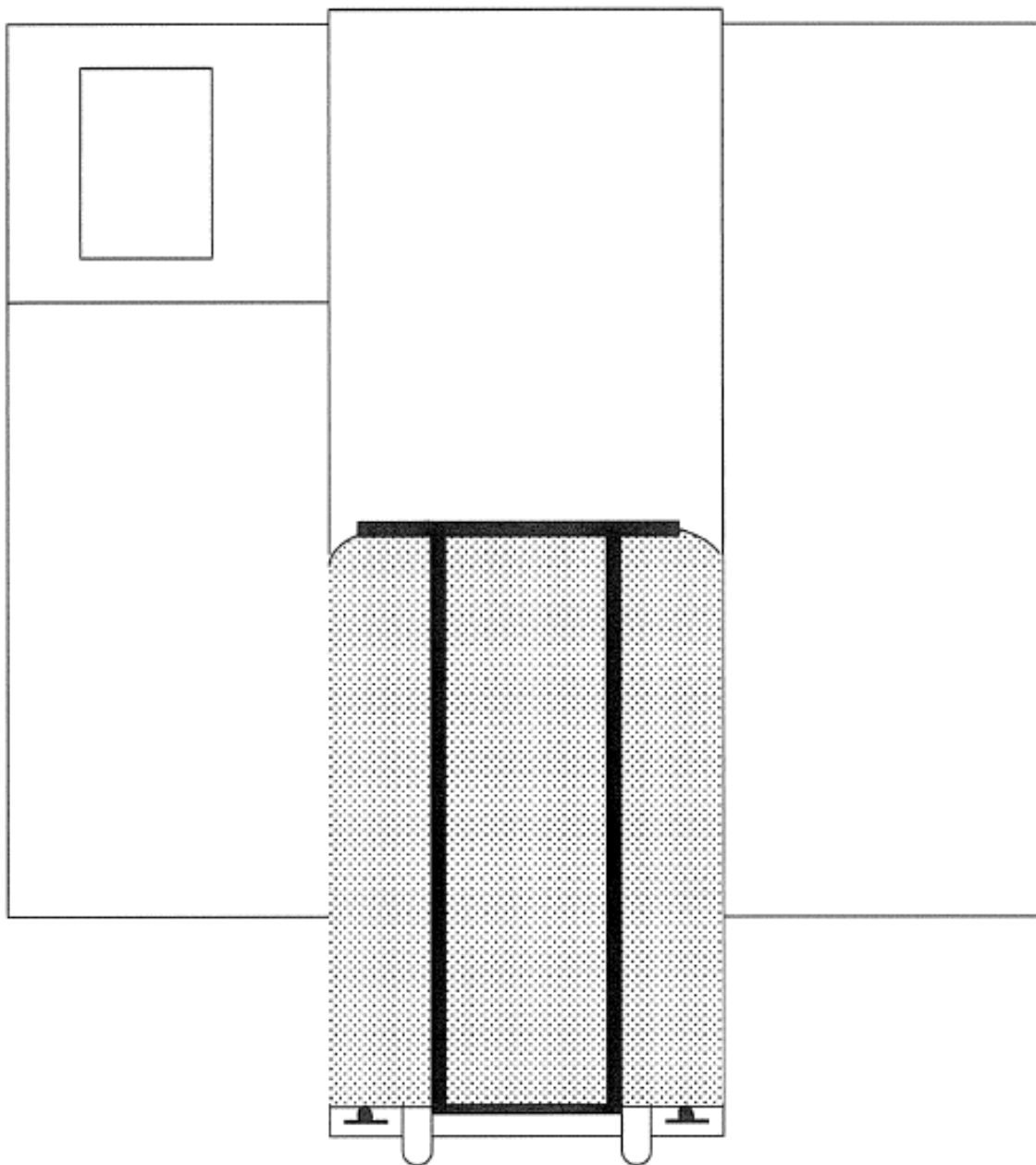


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**14. Bale removal and storage safety procedure**

1. Ensure that the person removing the bale is of sufficient strength and fitness to prevent personal injury.
2. Heavier bales may require a three wheeled trolley, supplied as an option at the customers request.
3. Beware of over balance and possible back or foot injury.



See picture on following page

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### ***Bale Removal Options***



**Autobaler Trainee Particulars (Kit)**

Company: \_\_\_\_\_

Address: \_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

Trainee Name: \_\_\_\_\_

(Print Clearly in Capitals)

Address: \_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

Phone No: \_\_\_\_\_

Employer: \_\_\_\_\_

Date Of Training: \_\_\_\_\_

Autobaler Model Trained To Use: \_\_\_\_\_

I, \_\_\_\_\_ (Trainer) witnessed the competency of

\_\_\_\_\_ In the safe competent use of the Autobaler Model

\_\_\_\_\_ and I received a copy of the Training Manual.

I hereby validate this assessment.

Signed (Trainer): \_\_\_\_\_

Date \_\_\_\_\_

Signed (Trainee) \_\_\_\_\_

Date \_\_\_\_\_

Special Comments \_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

## Trainee Exam Questions (Autobaler TI100/TI200 Series)

1. If the baler is in a public access area and the baler will be unattended for a long period, what precaution for public safety should you take:
  - a. Sit and watch the baler..... ☐
  - b. Remove the key..... ☐
  - c. Do nothing..... ☐
2. What function does the retract button have:
  - a. General operation..... ☐
  - b. Cycles the baler..... ☐
  - c. Raises the fingers only..... ☐
3. The purpose of the safety bar is:
  - a. To do chin ups..... ☐
  - b. For emergency stopping..... ☐
  - c. No particular use..... ☐
4. When twining the baler at what position should the baler fingers be:
  - a. Right down..... ☐
  - b. Half way down..... ☐
  - c. Fully up..... ☐
5. What is the purpose of the plastic tabs on the base (floor) of the baler:
  - a. Decoration..... ☐
  - b. Place twine beneath..... ☐
  - c. Structural..... ☐
6. The last 10 - 20% of the bale, how would you place flattened material:
  - a. On its edge..... ☐
  - b. Anyway..... ☐
  - c. Flat in the baler..... ☐
7. Tying of the finished bale should be done with the:
  - a. Fingers up (retracted)..... ☐
  - b. Fingers half way..... ☐
  - c. Fingers right down..... ☐
8. Opening of the top door, I should:
  - a. Open it the best I can..... ☐

- b. It doesn't matter..... ☐
- c. Grip the handle firmly..... ☐
10. Ejecting the bale, I should:
- a. Pull as hard as I can on the twine..... ☐
- b. Place the eject trolley in front of the baler with all doors open and in a roll away from the baler position..... ☐
- c. the best I can..... ☐
11. Where should the bale transport trolley be stored when not in use:
- a. Under the right hand side..... ☐
- b. Under the left hand side..... ☐
- c. Anywhere..... ☐
12. Real heavy objects i.e. boxes of magazines etc. How should I load them into the baler:
- a. Over the top door..... ☐
- b. Open the top door..... ☐
- c. The best I can..... ☐
13. If the baler operates with the top door open, I must:
- a. Continue as normal..... ☐
- b. Shut the machine off, remove the key and place out of order sign..... ☐
- c. Take care..... ☐
14. Was the knot test passed? Yes ☐ No ☐



# COMBO-OPERATION AND SERVICE



The Combo unit is a small baler attached to the left hand side on the Autobaler. The combo unit is powered from the main baler hydraulic/electronic system



## Combo Baler Operation

### Step one: Twining

- Turn power key to off position
- Open fully both combo doors
- Using Superlash 8 twine, twine the baler as followed.
  1. Without cutting the twine, release the feed end of the twine from the roll and tie a double knot as on page 34.



2. Take hooked twine down to base twine tabs and across bottom



3. Bring both twines up from base and over top of lower door and attach to twine tabs as illustrated. Cut twines leaving sufficient length as illustrated.

NOTE: Ensure the bottom door is securely latched.

### Step two: Operation



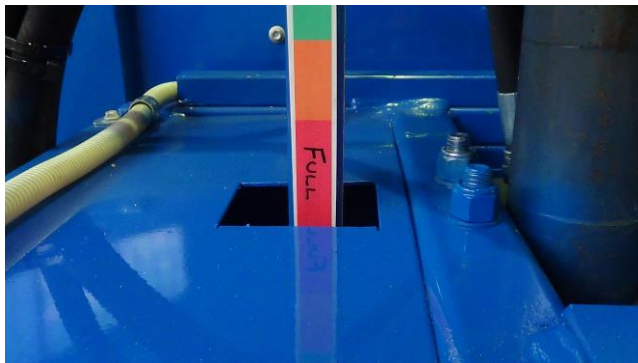
1. Securely close all doors
2. Load the combo unit
3. With left hand hold the spring loaded combo lever down.



4. With the lever still held in down position activate green controller cycle button. Baler will start.



5. When combo unit pressing plate reaches full down stroke immediately push the lever from down to fully up position and hold in up position until pressing plate has fully returned. On the return before releasing lever from up position stop baler system by pressing E-Stop or opening combo upper door.



6. When combo pressing plate slows with red showing on indicator bar the combo unit has a full bale. Stop baler by pressing the E-Stop or opening the upper door with lever still held down.



7. Open top combo door fully, pressing plate should be close to level with the top of the bottom door. Unhook twine ends from the back wall hooks and insert these ends under the cross rails of the pressing plate. (note this task is made easier by placing a plastic or cardboard cap on the top of the bale prior to the final stroke. Release the twine ends from the twine tabs on the outer lower door and insert under pressing plate cross rail and thread through the loop on the other end of twine and tie of, repeat this on both twines.



8. With the bale twines securely tied of close the top door securely. Hold the lever in fully up position then start baler by pressing the green button on the controller. Pressing plate will rise fully at this point. Stop by pressing the E-Stop or opening top combo door.

NOTE: Baler must be turned off via E-Stop or key before releasing lever to neutral

9. Open top and bottom combo doors fully and remove completed bale

FOR SERVICE INFORMATION CALL 1800 888 403

## **CHAPTER 6**

### **MAINTENANCE & CLEANING SECTION**

*Always disconnect Electrical Supply before Changing Any Equipment!*

#### **A. MAINTENANCE DEFINITION**

**Standard Maintenance:-** A service provided at four monthly.

**Average usage:-** A baler producing up to 5 bales per day - recommended preventative maintenance period not to exceed four months and to be serviced according to the standard servicing schedule.

**High usage:-** a baler producing more than five bales per day - recommended service period not to exceed four months and to be serviced according to the standard servicing schedule.

**Major Maintenance:-** A serviced preformed every 12 months or every 660 bales and to be serviced according to the standard servicing schedule. A major service has the additional service elements.

1. Oil filter change
2. Hydraulic oil test and changed if required
3. Finger lock spring change
4. Main cylinder pivot pin check for wear or fatigue

#### **B. WEEKLY MAINTENANCE CHECK**

- a. Check safety guards around moving parts. Are they in place? Are they damaged?
- b. Check Autobaler key switch, is it functional and in good order?
- c. Check emergency stop button, is it functional and in good order?
- d. Check safety bar, is it functional and in good order?
- e. Check power lead, is it undamaged? Is it clear of any moisture?
- f. Check Autobaler response to opening top door. Opening more then 50mm (approx. 2 inches) should cause the machine to cease cycling.

***If any of the above checks reveal damage or malfunction, the machine should be shut down and the key removed until the fault is repaired***

#### **C. PREVENTATIVE MAINTENANCE:**

- a. Every 4 months, or every 500 bales, the operation of the Autobaler should be checked by a qualified person to ensure that all safety features are functioning correctly and are undamaged.
- b. From time to time, a qualified electrician should inspect all power leads and electrical contacts.

#### **D. MACHINE CLEANING:**

To keep your Autobaler in top working condition, frequent cleaning is required.

##### **Power Unit:**

Never attempt to service the power unit without first thoroughly cleaning the unit.

- Remove the retainer screws holding the hinged mesh covers
- Note: Always disconnect the power socket from the power source plug before attempting any guard removal
- Remove the key from the controller and attach an 'in service' note to the baler
- Keeping the power unit clean will prevent overheating and system contamination

**NOTE:** - Power unit must be cleared of accumulated material pieces on a regular basis to prevent overheating.

##### **Cylinder enclosures:**

As with the power unit service, totally isolate the power, remove the key and fix an 'in service' sign.

- Undo screws and remove side meshes to give good access to both sides. Clean all loose materials from this area of the machine. Often materials become compacted behind the hydraulic cylinders adding additional strain to the machine (remove these materials)
- This should be done at least every monthly depending on the use of the baler

##### **Baler Chamber:**

Using a soft cloth, clean the outside of the machine to keep it in good appearance. Never use petrol or mineral solvents to clean the machine as this may damage the paint.

#### **E. GENERAL HOUSE KEEPING**

Daily remove material build up around the baler, especially between the rear of the baler and the wall. A material build up creates a fire and vermin hazard. Keep the access area to the baler free of all materials to prevent a trip hazard and other OH&S concerns.

#### **F. SERVICE INTERVALS**

- i. Autobalers require regular maintenance intervals to ensure that they perform and operate safely, reliably and efficiently.
- ii. Autobalers must be serviced by qualified service people who have been instructed in the service of Autobalers



- iii. Autobalers must be serviced according to the service requirements as laid out in the maintenance manual supplied with each Autobaler.
- iv. It is a requirement that when an Autobaler has an interval service that the appropriate service leaf be dated and filled out according to the service and signed by the service technician.
- v. It is recommended that a service interval not exceed 4 months or every 500 bales. Autobalers must be serviced within this period during the warranty period.
- vi. An integral component of the service is a comprehensive safety check to ensure interlocks and all other safety devices and guards are in good safe working order.

## G. RECOMMENDED LUBRICANTS

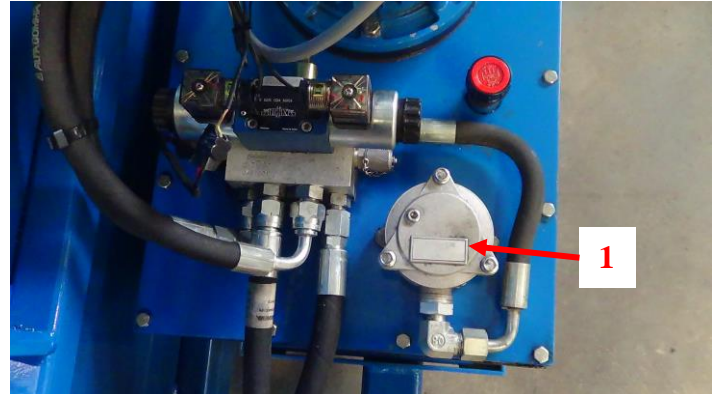
- i. Recommended hydraulic oil *AWH 32 Castrol*
- ii. Autobalers have high pressure pivot points which require high pressure grease, therefore it is recommended that only Pro-ma MBL grease be used in the service of Autobalers or a grease with equivalent lubrication properties (see data sheet). If maintenance periods are exceeded or lubricants used which are outside the manufacturers recommendations, Autobaler warranty may be voided.

## H. DATA SHEET, PRO-MA MBL 8 GREASE

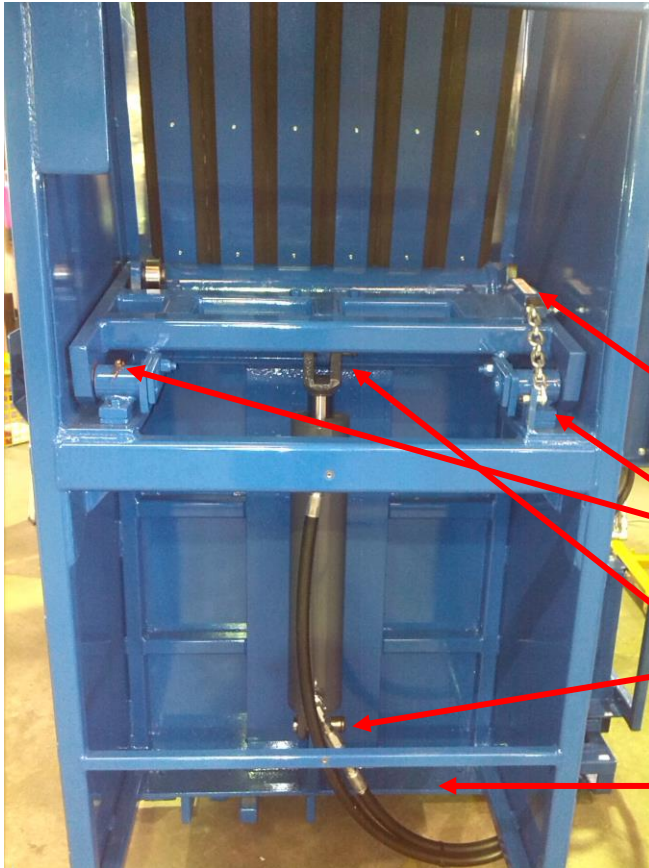
### Benefits Of Use

1. Performs within high and low temperature operating ranges
2. Resists water and water washout
3. Provides oxidation stability
4. Protects against rust
5. Protects against extreme pressure
6. Works well with high loading or severe shock loading
7. Extends lubrication periods
8. Prevents excessive seal swelling

## Hydraulic Power Unit Service



1. Filter Cartridge No \_\_\_\_\_ replace every 12 months.
2. Oil level dip stick- with hydraulic cylinders fully closed oil level 75mm below lid level. Use 32 grade Hydraulic fluid- oil must remain 100% free of contamination.



## Servicing Autobaler Compaction System

Service Period recommendation- 4-6 monthly

1. Remove both left and right hand covers.
2. Using hi-velocity spray lube lubricate top and bottom hydraulic cylinder pivot pins.
3. Grease pivot bearings- do not over grease.
4. Fingerlock slide lock –(lubricate with light oil only do not grease slide)
5. Door slide on pivoting side grease lightly often for ease of operation.

Fingerlock slide

Pivot Bearing Grease Nipples

Hydraulic Cylinder Pivot pins

Bottom door Slide  
(on opening side only)



## Autobaler Service- Hinge System

Lubricate every 4-6 months

1. Door hinges- screw grease nipple into hinge provision and grease sparingly.
2. Pivots without grease nipple provisions grease using spray grease lubricant.
3. Lubricate connect linkage using spray Lubricant.

Upper Door Hinges

Lower Door Hinges

Connect Linkage

Latch Hinges

**The Base Grease Used in MBL Grease has the Following Specifications**

NLGI Grade.....2  
Soap Type.....Lithium-Complex  
Texture.....Buttery

**Base oil viscosity**

CST at 40°C.....148  
CST at 100°C.....14  
SUS at 100°F.....767  
SUS at 210°F.....75  
Base oil viscosity index.....90  
Dropping point C (F) (ASTM D 2265).....280° + C (500° + F)

**Penetration, mm/10 (ASTM D 217)**

Unworked.....280  
Worked 60 Strokes.....285  
Worked 100,000 strokes, % change.....+ 10

**Trident probe viscosity (ASTM D 3232)**

204°C (400°F), poises.....15

**Oil Separation (ASTM D 1742)**

24 hr at 25°C (77°F), %.....3

**Lubrication life (ASTM D 3336), no.204 bearing**

10,000 rpm, 163°C (325°F), hrs.....290

**Oxidation stability (ASTM D 942)**

Pressure drop at 100hr, kPa (psi).....14 (2)  
Pressure drop at 500hr, kPa (psi).....70 (10)  
Roll stability (ASTM D 1831) % penetration change.....+ 10

**Wheel bearing test (ASTM D 1263 modified:60-9 pack 160°C (325°F)**

Leakage, g.....1.5

**Load carrying properties:**

Timken load (ASTM D 2509, kg (lb).....25 (55)

**4-Ball EP test (ASTM D 2596)**

Load wear Index, kg.....40  
Weld point, kg.....250

**4-Ball wear test (ASTM D 2266), 40 kg 1200rpm,**

75°C (167°F), 1 hr. Wear scar diameter, mm.....0.40

**Ball-joint test (ASTM D 3428)**

Brine sensitivity (noise and wear).....Pass  
Torque stability.....Pass  
Water washout (ASTM D 1264), % at 80°C (175°F).....4  
Rust prevention (ASTM D 1743), ASTM rating.....1

**Low temperature torque (ASTM D 1478), -40°C ( -40°F)**

Starting, g-cm.....13,000Running,  
g-cm.....5,000

**Mobility (U.S. Steel method)**

Flow rate at -18°C (0°F), g/sec.....0.5

**Rubber swell (GM method) 70hr at 100°C (210°F)**

Volume change, %.....+ 12

**Handling**

Product contains petroleum oil, copper and lead particles, **Do NOT store near heat, sparks or flame.** Wash with soap and water after contact with skin. KEEP OUT OF REACH OF CHILDREN. A material Safety Sheet is available from Pro-Ma Systems.

**Warning**

Do NOT take internally. **Harmful or fatal if swallowed.** Contains copper and lead particles and hydrocarbons. If swallowed contact a doctor immediately. Wash hands after use.

**Medical advice**

Contains petroleum oil, copper and lead particles. **If swallowed, do NOT induce vomiting.**  
Call physician immediately.

**Available Sizes**

450g, 2.5kg, 20kg, 60kg, and 202.5kg.

**3. Material Safety Data Sheet**

Product Name: **SUPERDRAULIC RANGE**

Date Issued: 3 June 1997

**IDENTIFICATION**

Use: General purpose hydraulic oil.

Not classified as hazardous according to criteria of Worksafe Australia.

Company: WESTERN OIL  
1 COOMBES DR  
PENRITH

UN No. :Not Assigned  
Main Class :Not Assigned  
Subsidiary Risk :Not Assigned  
Poisons Schedule :Not Allocated  
Hazchem Code :Not Assigned  
CAS No. :Not Relevant

**PRODUCT PROPERTIES**

Appearance & Odour : **Clear and bright oily liquid. Mineral oil odour.**

Chemical Reactivity: **Stable. Reacts with oxidising agents.**

Solubility in Water: **Negligible**

Property	Value	UOM	Temp
Specific Gravity	0.87	-	15
Melting Point	Not Available		
Vapour Pressure	Expect<0. 0005	kPa	20
IBP	Typically 280	deg C	
FEP	Not Available		
Evaporation Rate	Not Available		
Vap Dens (Air=1)		>1	-
Fire/Explosion Hazard			
Flash Point	Typically>224	deg C	
Autoignition	Typically>320	deg C	
% Volatiles	Not Available		
LEL	Expected 1	%v/v	
UEL	Typically 10	%v/v	

**PRODUCT INGREDIENTS**

Blending Ingredient	Proportion	Method	CAS No.
Highly refined mineral oil	High >99.4%	m/m	
Complex mixture of additives	Low < 0.6%	m/m	

**HEALTH HAZARDS****HEALTH EFFECTS**

Acute

**Swallowed**

Slightly toxic, may cause gastric irritation

**Eye**

Product may cause slight to moderate irritation to the eyes.

**Skin**

Mildly irritating to skin. Prolonged and repeated skin contact may cause dermatitis due to defatting effect.

**Inhaled**

Inhalation of the vapours (generated at elevated temperatures) or mists can cause irritation to the nose and throat.

**FIRST AID****Swallowed**

If swallowed, do NOT induce vomiting , seek medical advice.

**Eye**

Flood eyes with plenty of water for 20 minutes. If irritation occurs seek medical advice.

**Skin**

Remove contaminated clothing and wash skin thoroughly with soap and water.

### **Inhaled**

Remove affected person from contaminated area and seek medical advice. If not breathing apply artificial respiration and seek urgent medical advice.

### **Advice to Doctor**

## **PRECAUTIONS FOR USE**

### **Exposure Standards**

Worksafe Exposure Standard :- time weighted average (TWA) 5 mg/m<sup>3</sup> (oil mist) short term exposure limit (STEL) 10mg/m<sup>3</sup> (oil mist)

### **Engineering Controls**

Special ventilation is not normally required due to the low volatility of the product at normal temperatures. However, in the operation of certain equipment or at elevated temperatures, mists or vapour may be generated and exhaust ventilation should be provided to maintain airborne concentration levels below the exposure standard or where no exposure standard is allocated, as low as is reasonably practicable.

### **Personal Protection**

Avoid contact with the skin and eyes, and avoid breathing vapours or mists. When exposure is likely, personal protective equipment in a combination appropriate to the degree and nature of exposure, should be selected from the following list:-

- (1) Eye protection
- (2) PVC gloves
- (3) PVC apron and sleeves, or full PVC covering
- (4) PVC or rubber boots

Where the concentration of vapour or mist is expected to approach the exposure limit, the following additional equipment is recommended:-

- (1) Short elevated exposures, eg spillage - goggles and correct respiratory protection should be worn.  
NB. If the vapour/mist concentrations exceed the exposure limit by more than 10 times, air supplied apparatus should be used.
- (2) For prolonged elevated exposures - Full face air supplied or self contained breathing apparatus should be worn.

### **CONTAMINATION**

If contamination occurs, change clothing and discard internally contaminated gloves and footwear. Launder contaminated clothing before reuse.

Observe good personal hygiene.

Eye wash fountains and safety showers should be available for emergency use.

### **REFERENCES**

For detailed advice on Personal Protective equipment, refer to the following Australian Standards

HB 9 (Handbook 9)	Manual of industrial personal protection.
AS 1337	Eye protectors for industrial applications.
AS 1715	Selection, use and maintenance of respiratory protective devices.
AS 1716	Respiratory protective devices.

### **Flammability**

Combustible liquid, will not burn unless preheated

Refer to AS 1940 - Storage and handling of flammable and combustible liquids and AS 2865 - Safe working in a confined space, for more specific information on these subjects.

## **SAFE HANDLING INFORMATION**

### **Storage & Transport**

Classified as a class C2 combustible liquid for storage and handling purposes. Store in a well ventilated place away from ignition sources, oxidizing agents foodstuffs and clothing. Keep containers closed when not in use.

### **Spills & Disposal**

Extinguish or remove all sources of ignition and stop leak if safe to do so. Contain the spill with sand or earth and take up with a vacuum truck or absorb with absorbent material, sand or earth. Place used absorbent in suitable sealed containers and follow state or local authority regulations and guidelines for disposal of the waste. Clean area with detergent and water. Do not allow product to enter drains, sewers or water courses inform the local authorities if this occurs.

### **Fire/Explosion Hazard**



Combustible. Combustion products include oxides of carbon. Keep storage tanks, pipelines, fire exposed surfaces etc cool with water spray. Shut off any leak if safe to do so and remove sources of re-ignition. Use foam, CO2 or powder to extinguish fire.

***OTHER INFORMATION***

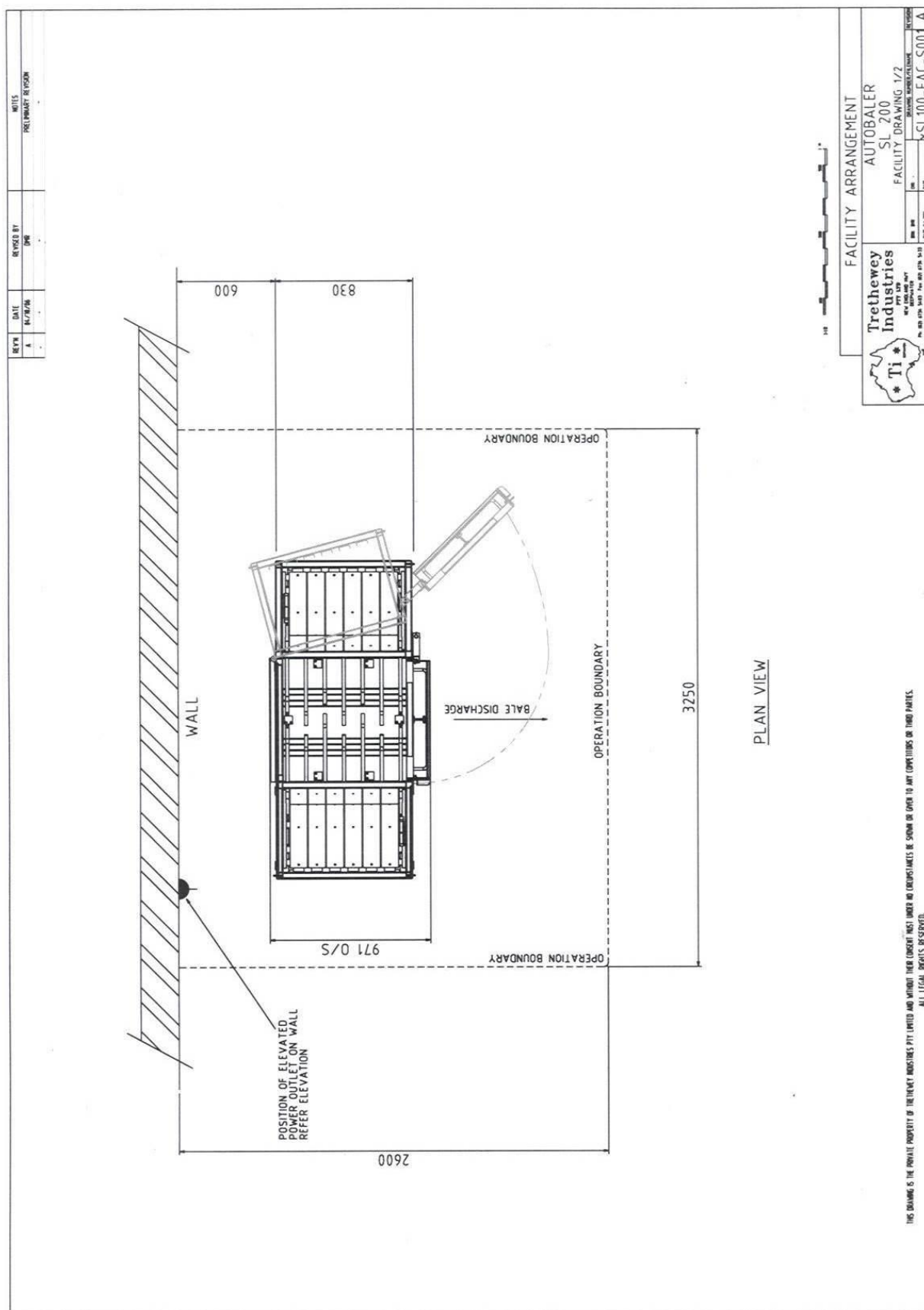
Long term animal experiments have shown that any health risks are associated with the level of aromatic and polycyclic constituents in the product. These constituents are removed during the manufacturing process to a level at which no health risks are expected as a result of normal handling.

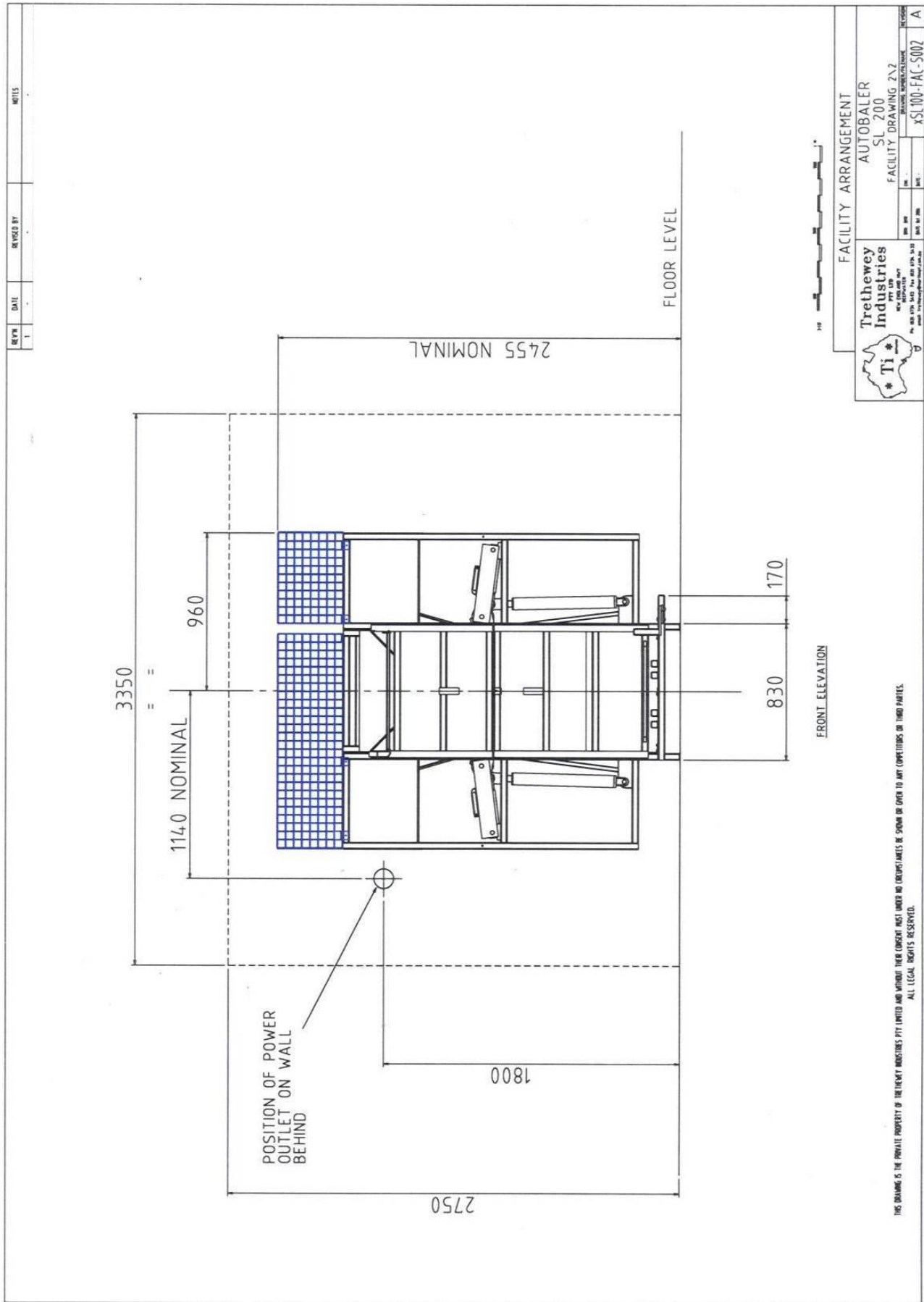
***CONTACT POINT***

Emergency Response :- 02 4732 3305

\*\*\* END \*\*\*

## CHAPTER 7





# BALER FINGER BRAKE UNIT

FITTING AND ADJUSTMENT INSTRUCTIONS





# Auto baler finger brake

Auto-balers operate within the decibel range except if cycle without or with insufficient materials in the chamber beneath in the chamber beneath the descending finger unit.

To eliminate this bang sound the baler must always be operated with sufficient materials in the chamber. ( I.e. Above the top of the bottom door)

A finger brake device can be fitted to reduce greatly the excessive noise if operated incorrectly.



The unit is as illustrated and consists of a clevis bracket and adjustable spring, a section of transmission belt and a spring anchor unit.

The finger brake unit will retro fit most EXSL/TI model auto balers.

## Fitting Instructions

1. Raise fingers to vertical position by engaging the retract button on auto sensor models, on non-auto sensor models raise finger units by pressing the green button.
2. **(Safety)** With finger unit fully raised turn control unit off and remove key and tag baler out also unplug baler from power wall socket.
3. Remove both side covers (NOTE: Some models have hinged doors).
4. With both sides open and finger units vertical attach brake unit as followed using figure 4

NOTE: ensure strap area of the barrel is free of rust, welding spatter ect as these or any roughness will cause excessive wear to the brake strap.

With surface clean fit unit as in illustration 4.

5. With strap  $\Pi$  shaped saddle over baler square section frame and strap around barrel as in illustration 4, attach spring as in illustration 5.
6. Tension spring using tension bolt.

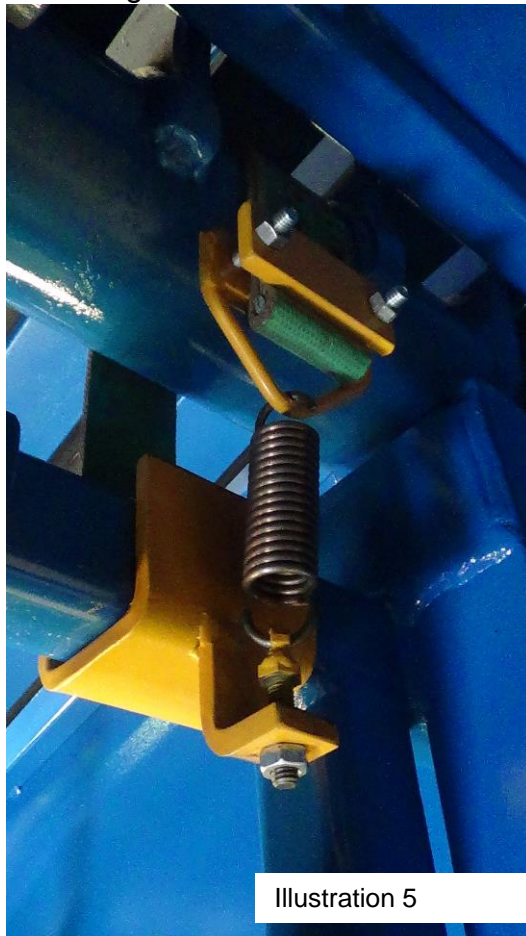


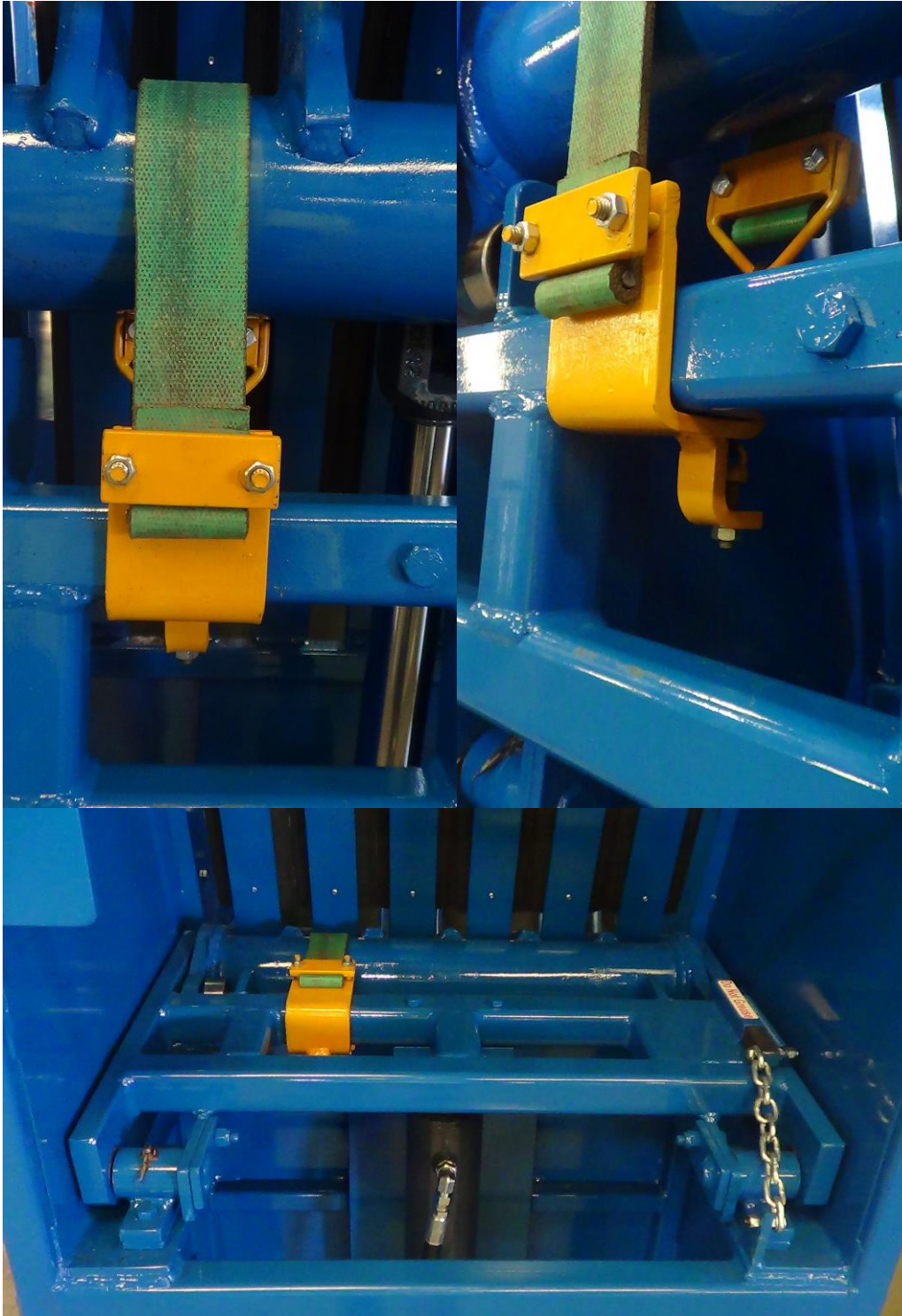
Illustration 5



Illustration 4

## Testing Finger Unit Brake

1. Temporarily fit end guard or close doors as the case may be.
2. Cycle baler without material in the baler chamber
3. Keep adjusting spring tension until the finger units break and collapse without excessive noise.
4. NOTE: If the brake is over tensioned the finger units will not rotate and collapse. If this occurs reduce the spring tension.
5. After some use (12 weeks) these may need re adjusting.



If further information is required Call service line 1800 888 403