

AUTOBALER

SL100/200 SERIES

OPERATION MANUAL



Trethewey Industries
14 Carl Baer Circuit
Deepwater
NSW 2371
Australia



Declaration of Conformity

Application of EC Directive(s)

Standard(s) to which Conformity is declared:

MD: 98/37/EC Machinery Directive

LVD: 73/23/EEC Low Voltage Directive

EMC: 89/336/EEC EMC Directive

Manufacturer's Name: Trethewey Industries Pty Ltd

Manufacturer's Address: 14 Carl Baer Circuit, Deepwater NSW 2371

Description of Equipment: **AUTOBALER.**

Model: **SL100/200**

Trethewey Industries Pty Ltd hereby declares that the product(s) specified above conform to the above directive(s) and Standard(s). This apparatus must not be put into service until the equipment into which it is incorporated has been declared in conformity with the essential requirements of the relevant EC directives.

Full Name: Reginald Trethewey

Position: Owner

Signature:

Date: 18th June 2007

**For and on behalf of Trethewey Industries Pty Ltd, Deepwater NSW, Australia
Compliance**

Compliance assessed and approved by:

Laidler & Associates Australia Pty Ltd
For: Electrical Directives
PO Box 5398 Maroochydore Business Centre
Qld 4558 Australia

Roger Lim, MIE Aust, CPEng, MSIA
Risk Plant Consultants Pty Ltd
PO Box 1155 Blackburn North
VIC 3130 Australia

Owners Manual

Thank you for choosing Autobaler SL100/200. 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

SL100/200 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 & CYBERSMART
CONTROLLER**

MODEL - SL100/200

**AUTOBALER SERIAL NUMBER - _____
CONTROLLER SERIAL NUMBER - CS_____**

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 purchasers 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.

**Copyright
Manual**

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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. The Autobaler is equipped with an infra red sensor eye which creates a cycle motion whenever material breaks the infra red beam path.

Autobalers are an extremely 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 500 agricultural baling machines. Five years ago Trethewey 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:

TRETHEWEY INDUSTRIES Pty Ltd
A.B.N. 84 072 739 827

Innovative Design & Manufacturing



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 . SL100/200 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

EN ISO 12100-1	Safety of machinery - Basic concepts, general principles for design - Part 1 Basic terminology, methodology
EN ISO 12100-2	Safety of machinery - Basic concepts, general principles for design - Part 2 Technical principles and specifications
EN 294	Safety of machinery Safety distances to prevent danger zones being reached by the upper limbs
EN 349	Safety of machinery Minimum gaps to avoid crushing of parts of the human body
EN 418	Safety of machinery - Emergency stop equipment, functional aspects Principles for design
EN 811	Safety of machinery Safety distances to prevent danger zones being reached by the lower limbs
EN 953	Safety of machinery - Guards General requirements for the design and construction of fixed and movable guards
EN 954-1	Safety of machinery - Control systems - Part 1 General principles for design
EN 982	Safety of machinery Safety requirements for fluid power systems and their components - Hydraulics
EN 1037	Safety of machinery Prevention of unexpected start-up
EN 1050	Safety of machinery Principles of risk assessment
EN 1088	Safety of machinery - Interlocking devices associated with guards Principles for design and selection
EN 60204-1	Electrical - equipment of machines Part 1 General requirements
AS 4024.1	Electrical Equipment

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

INSPECTION & ASSESSMENT METHODS

This follow up assessment of the improvements of the machine was carried out on the machine at Campbellfield following the initial assessment on 15 August 2003 and Inspection report No: 150803. The machine was assessed for compliance with the Essential Health and Safety requirements of Annex I of the EC Machinery directive 98/37/EC and the following harmonised EN standards -

EN 292 Safety of machinery - basic concepts, general principle for design

EN 1050 Safety of machinery - Principles of risk assessment

EN 418 Safety of machinery - Emergency stop equipment, functional aspects

EN 954.1 Safety of machinery -Safety related parts of control systems

EN 1088 safety of machinery - Interlocking devices associated with guards

EN 294 Safety of machinery - safety distances to prevent danger zones being reached by the upper limbs

EN 60204 Safety of machinery - Electrical equipment of industrial machines.

Baler Test Report

Comprehensive Autobaler Test Report

Date:

Serial No:

Testing Officer:

Electrical Test Performed By:

Noise Emission Test:

Hydraulic Test:

Autobaler Quality and Reliability Test - Full Mechanical Test

Test Report No:

Testing Officer:

Operational Test Report No:

Testing Officer:

Lubrication Test Report No:

Testing Officer:

Testing Officer:

Signature:

Hydraulic Pressure and Performance Test

Report on Safety and Hydraulic Performance+

This report is suitable for pressure systems below 2500 psi.

System Pressure Required:

System Pressure on Test:

System Pressure Spikes:

Pressure Switch Firing Range:

Pressure Switch Firing Test:

Hydraulic Delivery Hose Rating:

Fluid Type and Grade:

Hydraulic 32 Grade

Cylinder Brand and Type:

Duration of Cycle Test:

Date:

Inspector:

Signature:

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:
 - Active 2 to earth:
 - Active 3 to earth:

Pass

Fail

Pass

Fail

Pass

Fail

Earthing continuity:

Pass

Fail

Flexible supply cord:-

- External visual inspection of plug connection:
 - Visual inspection of cord termination to equipment:

Pass

Fail

Pass

Fail

**Visual inspection of wire termination
in electric motor terminal housing:**

Pass

Fail

Date:

Inspection number:

--

Inspector:

ANSWER

Inspector registration number:

ANSWER

Trethewey Industries

New Machinery Hazard Identification assessment and Control

Description: Autobaler

Model: SL100/SL200

Brand:

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

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

CHAPTER 1 - Warnings

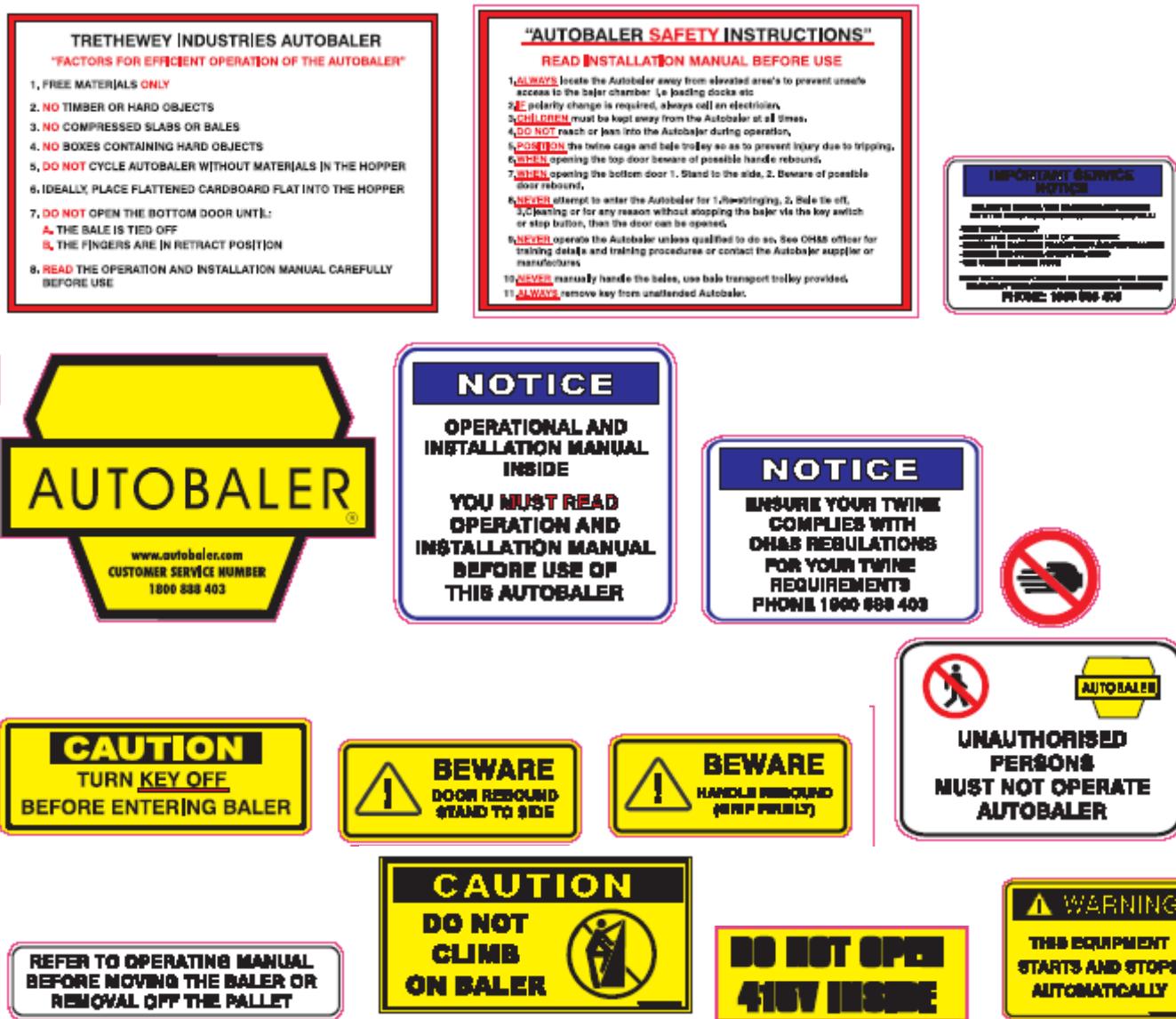
1. Autobalers must only be operated by qualified people.
 2. Only qualified people to service or repair Autobalers.
 3. Before servicing or repair familiarise yourself with the relevant instruction manual.
 4. The Autobaler must not be used in a manner contrary to the manufacturer's instructions.
 5. Prior to moving the Autobaler ensure the fork lift capacity is at least 1.5 tonne.
 6. On installation or repair ensure the machine is effectively earthed. (All electrical work to be carried out by qualified electrician).
 7. Always disconnect the electrical supply before servicing or repair due to electrical hazard.

Failure to observe Safety Precautions could lead to severe injury.

We recommend operators using the following personal protective equipment:-

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

COPY OF WARNING NOTICES ON MACHINE (INCLUDING NAMEPLATE)



CHAPTER 2 - LIFTING AND HANDLING INSTRUCTIONS OF THE AUTOBALER

	SL100
<i>Transport width</i>	2300
<i>Operating width</i>	2300
<i>Depth</i>	1280
<i>Transport height</i>	2060
<i>On pallet height</i>	2300
<i>Height with canopy</i>	2200
<i>Compaction chamber</i>	750x750x1100
<i>Bale weight</i>	100-120kgs
<i>Cycle time</i>	25 seconds
<i>Compaction force</i>	7000kgs
<i>Motor 3 phase</i>	3kw
<i>Baler mass</i>	1100kgs
<i>Shipping weight</i>	1200kgs

	SL200
<i>Transport width</i>	2300
<i>Operating width</i>	2300
<i>Depth</i>	1280
<i>Transport height</i>	2060
<i>On pallet height</i>	2300
<i>Height with canopy</i>	2200
<i>Compaction chamber</i>	750x750x1100
<i>Bale weight (in average supermarket conditions)</i>	175-200kgs
<i>Cycle time</i>	25 seconds
<i>Compaction force</i>	11,000kgs
<i>Motor 3 phase</i>	3kw
<i>Baler mass</i>	1500kgs
<i>Shipping weight</i>	1600kgs

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) lower door ways will require that the hydraulic cylinder be lowered (see cylinder lowering procedure)
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 grad always in reverse

2. REMOVING THE AUTOBALER FROM THE PALLET

- a. Unwrap and cut metal strapping
- b. Open baler door
- c. Insert the fork lift tines through the slots beneath the front lower door. Ensure that the fork lift tines are fully inserted through to the opposing slots situated in the rear baler wall.
- d. Lift the baler no more than 80mm off the pallet & check again to ensure sufficient tine protrusion through the rear slots
- e. Lift sufficiently i.e. 50mm to clear pallet, & slide the pallet from beneath the baler with caution
- f. With tines through the baler slots, 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. Always transport on a solid hardwood pallet
 - b. Never lift the baler more than 300mm unless on a pallet, as the baler could slip off the tines (metal to metal)
 - c. If lifting the baler from beneath the baler base, fasten the baler to the fork mask using strap or chain
 - d. When lifting the baler more than 300mm, always be on level ground and never transport the baler in an elevated position
 - e. When transporting or moving the baler on the fork lift, always travel in reverse to ensure good vision
 - f. Safety Equipment: Compliant safety boots, high visibility vest, hearing protection, eye protection. Head protection if required.

2. POSITIONING THE AUTOBALER ON THE PALLET

The baler is lifted beneath the lower front door (NEVER LIFT BEYOND THE FORK LIFT TRUCK CAPACITY)

- a. Ensure that the baler chamber is completely empty of any loose baler components or materials
- b. Insert the fork lift tines through the slots between the bottom of the lower door and the base. These front tine slots correspond with slots in the rear wall
- c. Before attempting to lift, ensure that the fork lift tines are fully through the rear slots.
Dismount the fork lift and check to ensure that fork lift tines are fully inserted.
- d. Lift the baler 200mm off the floor
- e. Slide the pallet equally under the baler from the side, ensure that the pallet can be fork lifted from the front
- f. Lower the baler gently onto the pallet and strap the baler to the pallet if transporting a long distance

3. BALER 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.

i.e. If the baler is to be unloaded using a forklift truck, pallet 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
1.				
2.				
3.				
4.				
5.				
6.				
7.				
8.				
9.				

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 ejecting the bale stand to one side to prevent injury from the ejecting bale.
4. Always place the bale transport trolley centrally to the bale to prevent bale side roll.
5. On inclines, chock bale trolley to prevent run away
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 licensed to legally operate Autobalers

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.
- 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.
- 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. Trethewey Industries recommend that the following checks be carried out:-

WEEKLY CHECKS

- 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 than 50mm (approx 2 inches) should cause the machine to cease cycling.

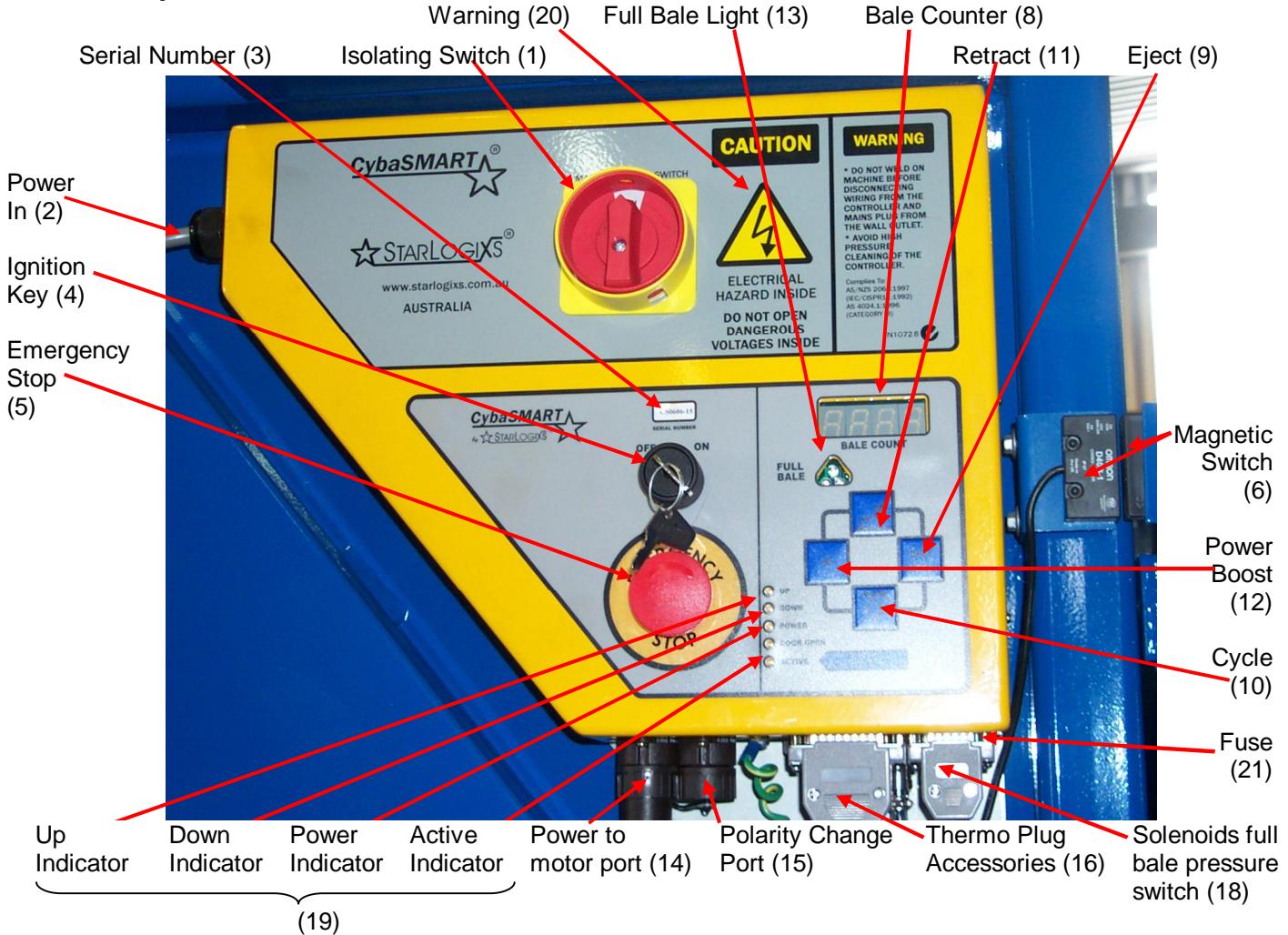
IF ANY OF THE ABOVE CHECKS REVEAL DAMAGE OR MALFUNCTION, THE MACHINE SHOULD BE SHUT DOWN AND THE KEY REMOVED UNTIL THE FAULT IS REPAIRED.

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.

CHAPTER 4 - USING THE AUTOBALER

Controller Layout and Function



Controller

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

- 1. Isolating Switch** The isolating switch is situated on the upper end of the controller. The purpose of the isolating switch is to isolate the power to the unit when ever a service or repair is carried out. It is therefore the manufacturers recommendation that when ever the machine is tagged ~~out of service~~ that the tag be attached to the isolating switch via a padlock this will ensure that the machine will remain inactive and safe for the technician.
- 2. 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.
- 3. 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.
- 4. 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 manufacturers agent or representative.
- 5. 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.
- 6. 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 active 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.

7. 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

8. Bale Counter The bale counter as the name suggests simply counts the number of bales being compacted. The bale counter performs an important function. Service intervals are time base or in situation of above average use are based on the number of bales completed. Refer to the Service Section of your Operators Manual for service intervals.

9. Eject The eject button activates the eject system removing the completed bale from the baler chamber. To operate the eject the bale must be complete with twines or fasteners secured, pressing fingers fully retracted, both doors fully open, and the bale transport trolley situated correctly in front of the bale to be ejected. The operator must stand to the side and safe from the passage of the ejecting bale. When ejecting the bale the eject button must be kept activated until the bale is fully ejected into the trolley.

10. 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.

11. Retract Button The purpose of the retract button is to raise the pressing arms to a vertical (out of the chamber position) and to remain there. This function is used when the bale is complete, tied off and ready to be ejected.

12. Power Boost Button The power boost button provision is used only after the full bale light and indicator has signalled a full bale. This button applies extra power to fully close the four main power hydraulic cylinders to give a constant bale size and length.

13. Full Bale Light and Siren When a full bale has been achieved the full bale light and siren will signal full bale. 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.

14. 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.

15. 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).

16. Thermo and Accessories Plug (*pug cap on spare port must always be attached!*) This port has the wiring to the thermo unit which detects overheated hydraulic oil and closes down the machine when the oil exceeds 60 degrees celsius. This will show on the door open light and also on the controller display as a overheat warning.

17. Warnings The bale counter display also doubles as a display screen showing various problem indicators i.e. pressure switch, overheating etc.

18. 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

19. 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.

20. 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.

21. 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 Valve: 4A

CHAPTER 5 - TRAINING
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 _____

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. Through which holes in the twine lock bar would you insert the twine:
 - a. One hole only
 - b. Two holes only
 - c. All holes

5. When twining the baler at what position should the baler fingers be:
 - a. Right down
 - b. Half way down
 - c. Fully up

6. What is the purpose of the plastic tabs on the base (floor) of the baler:
 - a. Decoration
 - b. Place twine beneath
 - c. Structural

7. The last 10 - 20% of the bale, how would you place flattened material:
 - a. On its edge
 - b. Anyway
 - c. Flat in the baler

8. Tying of the finished bale should be done with the:
 - a. Fingers up (retracted)
 - b. Fingers half way
 - c. Fingers right down

9. Opening of the top door, I should:

- a. Open it the best I canõ õ õ õ õ õ õ õ õ õ õ õ õ õ õ õ .
- b. It doesn't matterõ õ õ õ õ õ õ õ õ õ õ õ õ õ õ õ õ
- c. Grip the handle firmlyõ õ õ õ õ õ õ õ õ õ õ õ õ õ õ õ .

10. Ejecting the bale, I should:

- a. Stand aside and hold finger on buttonõ õ õ õ õ õ õ õ õ õ .
- b. Push button and walk awayõ õ õ õ õ õ õ õ õ õ õ õ
- c. Push button and stand in front of baleõ õ õ õ õ õ õ õ õ õ .

11. Where should the bale transport trolley be stored when not in use:

- a. Under the right hand sideõ õ õ õ õ õ õ õ õ õ
- b. Under the left hand sideõ õ õ õ õ õ õ õ õ õ .
- c. Anywhereõ õ õ õ õ õ õ õ õ õ õ õ õ õ õ õ ..

12. Real heavy objects i.e. boxes of magazines etc. How should I load them into the baler:

- a. Over the top doorõ õ õ õ õ õ õ õ õ õ õ õ õ õ
- b. Open the top doorõ õ õ õ õ õ õ õ õ õ õ õ õ .
- c. The best I canõ õ õ õ õ õ õ õ õ õ õ õ õ õ

13. If the baler operates with the top door open, I must:

- a. Continue as normalõ õ õ õ õ õ õ õ õ õ õ õ õ
- b. Shut the machine off, remove the key and place ~~out~~ of orderq signõ õ õ õ õ õ õ õ õ õ õ õ õ õ
- c. Take careõ õ õ õ õ õ õ õ õ õ õ õ õ õ

14. Was the knot test passed?

Yes

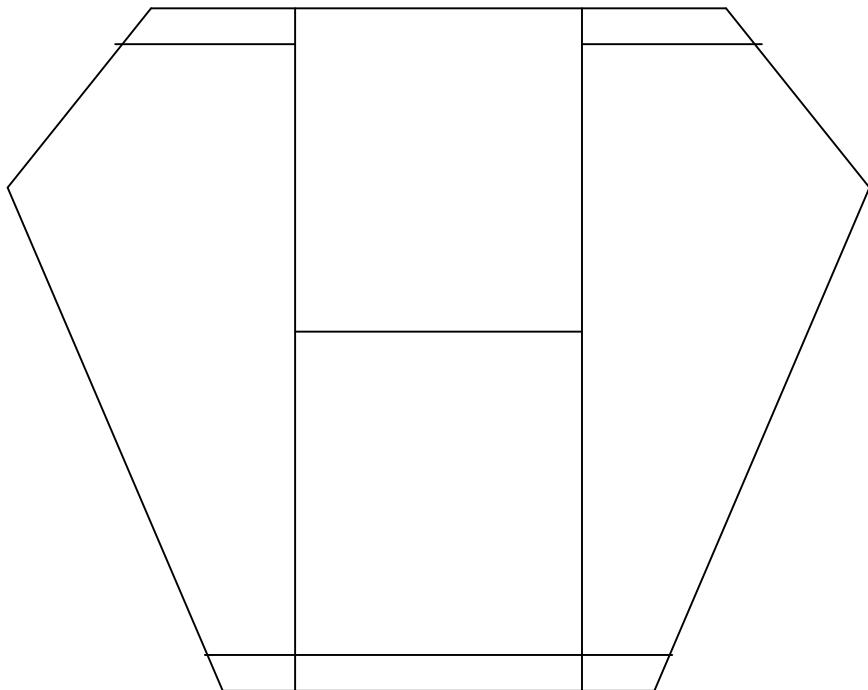
No

AUTOBALE



TRAINER MATERIAL

AUTOBALER TRAINER MATERIAL



INDEX

1. Controller
2. Set Up
3. Baler Fit Out
4. Initial Set
5. Pre-Twine
6. Tying the Loop
7. Twining
8. Twining
9. Twining Transverse
10. Initial Fill
11. Baler Start Up
12. Automatic Operation
13. Tidy Bale Procedure
14. Tying Off
15. Maintaining Twine Tension
16. Transverse Twine Tie Off
17. Retracting Fingers
18. Opening Doors
19. Situating Bale Trolley
20. Ejecting the Bale

Baler Serial

Number

Date

Customer

Address

Trainer

Signature

1. Controller Operation

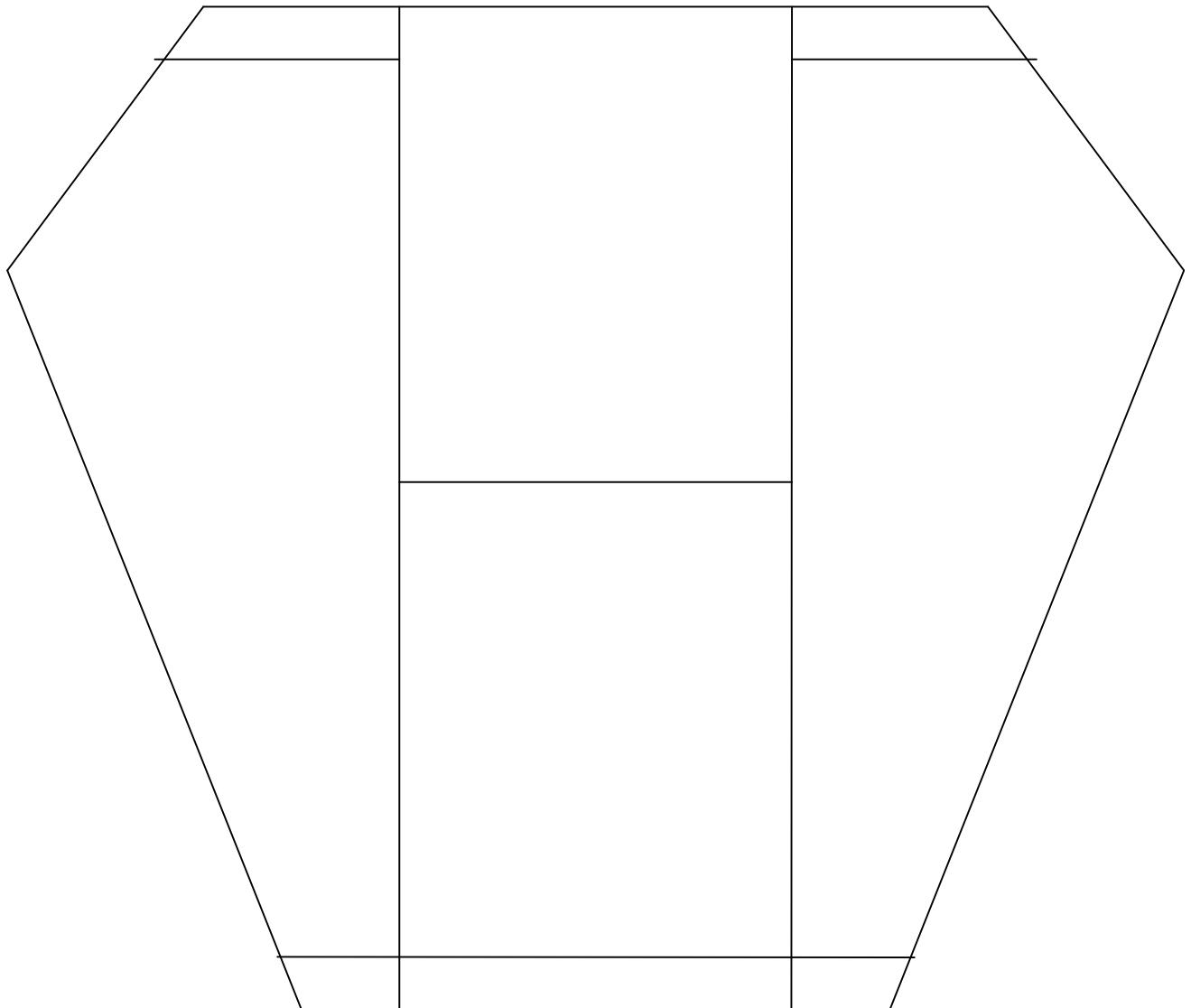
1. Turn the key on . power light on
2. Engage coded key bar . door open light on.
3. Disengage emergency stop key rotation
4. Cycle button to cycle
5. Retract button to raise fingers only
6. Eject must be held in to eject
7. Red light and beeper full bale indicators



Trainer Signature of compliance:

2. Set Up

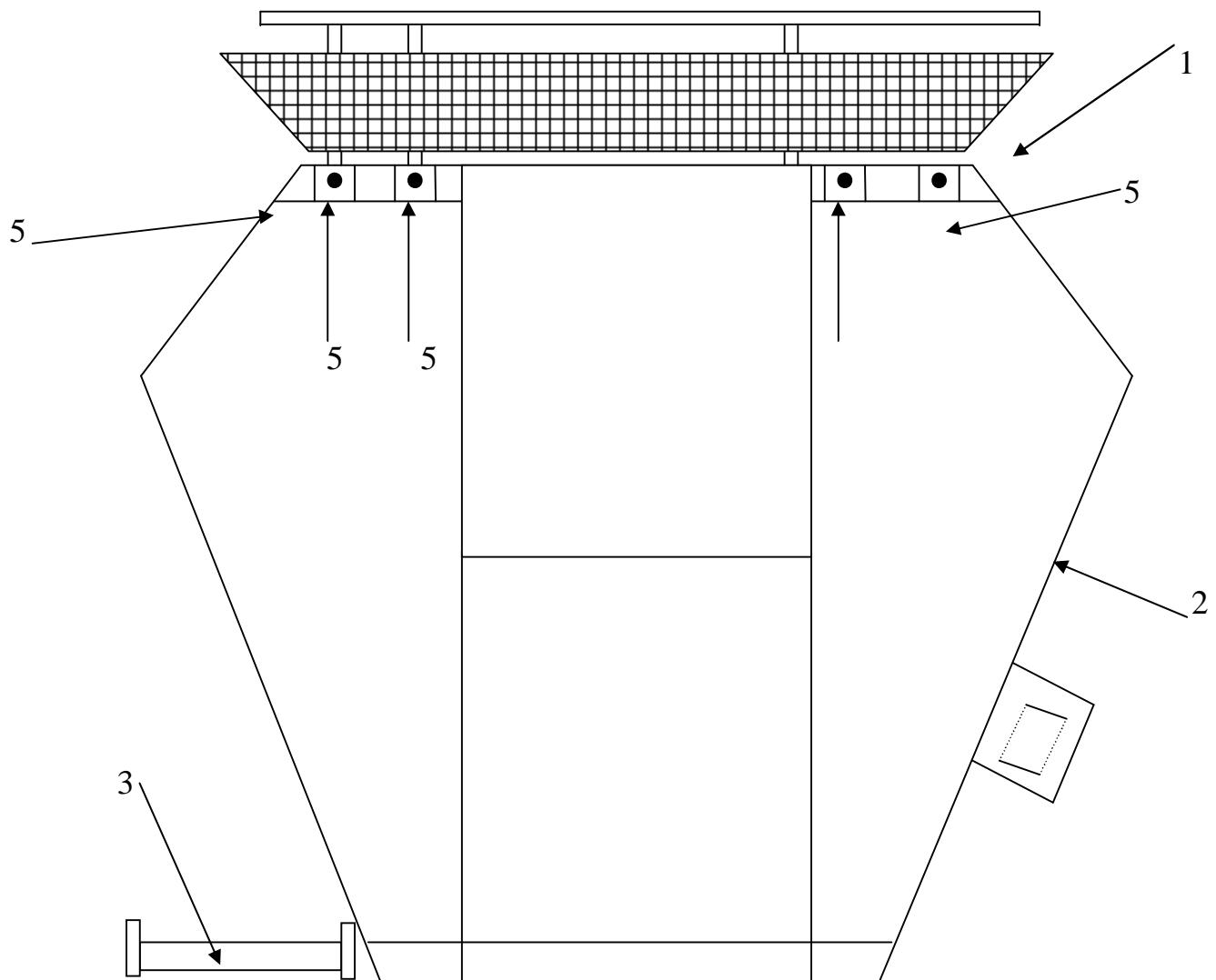
1. Remove The Wrapper.
2. Cut The Straps.
3. Remove all items from within the baler.
4. Following the lifting directions, remove the baler from the pallet, Chapter 5 in manual.



Trainer Signature of compliance:

3. Baler Fit Out

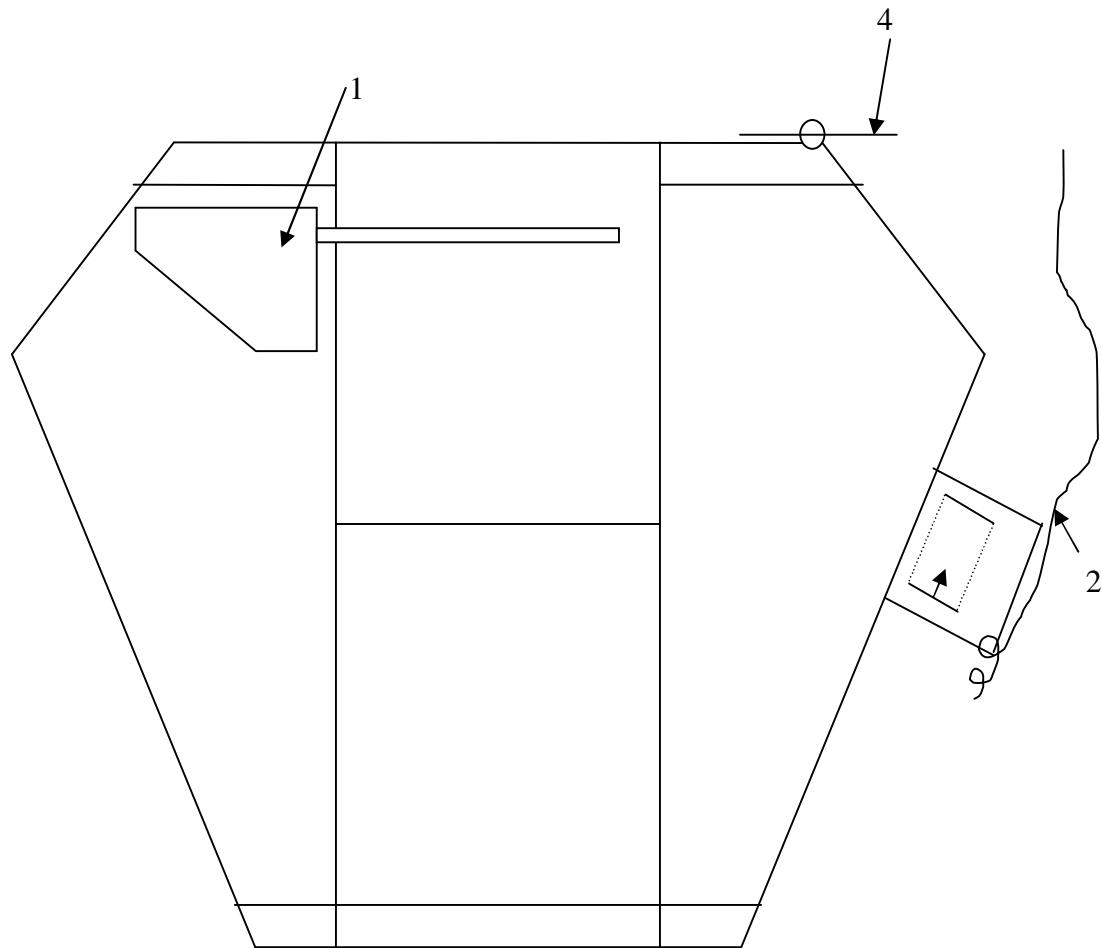
1. Fit the mesh hopper and canopy, Chapter 4.
2. Position the twine cage to the baler side.
3. Situate the baler trolley.
4. Plug in baler power socket, motor must rotate clockwise.
5. Ensure all grub screws holding the mesh hopper and canopy are tight.



Trainer Signature of compliance:

4. Initial Set

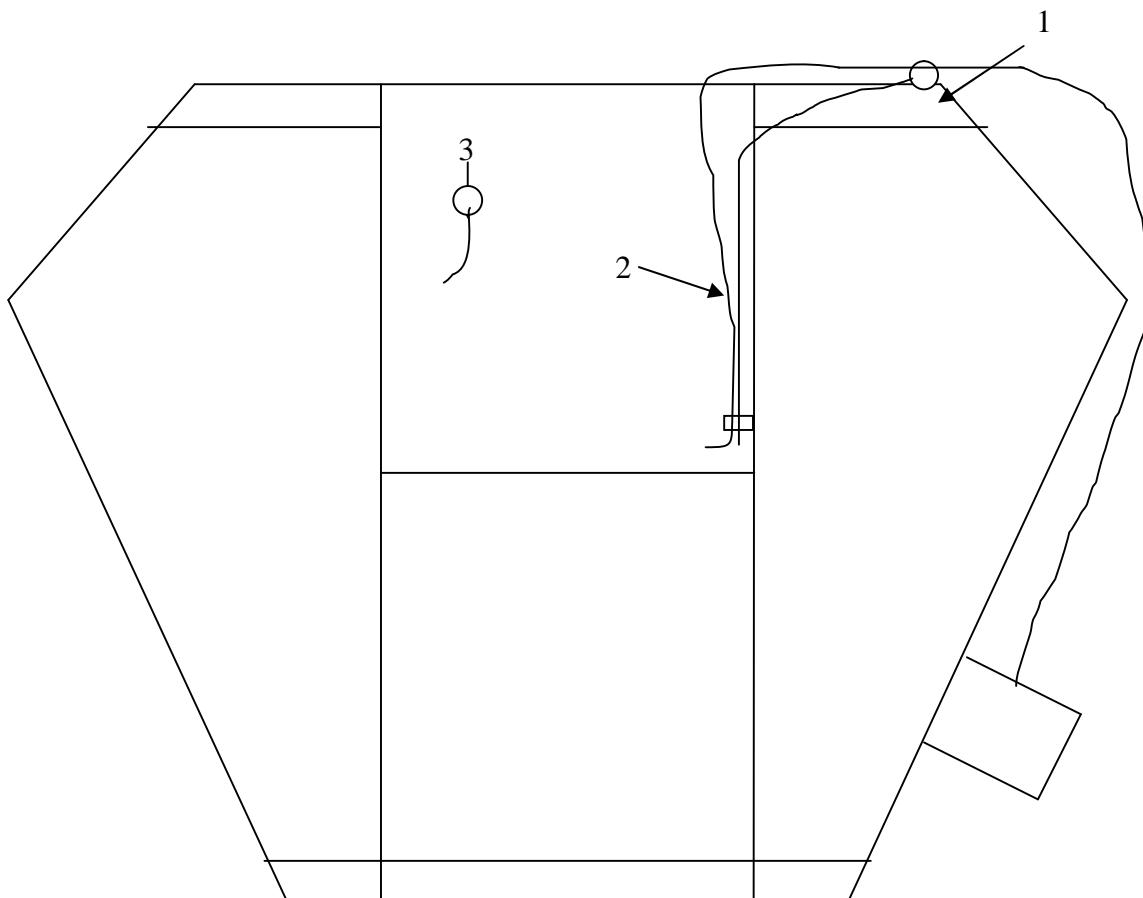
1. Turn on power, engage code key bar, press retract button to stand fingers up.
2. Draw each twine from centre of twine roll.
NOTE twine roll must be right way up.
3. Heat seal twine end or use tape around.
4. Open baler doors fully, check twine holes are fully open.



Trainer Signature of compliance:

5. Pre-Twine

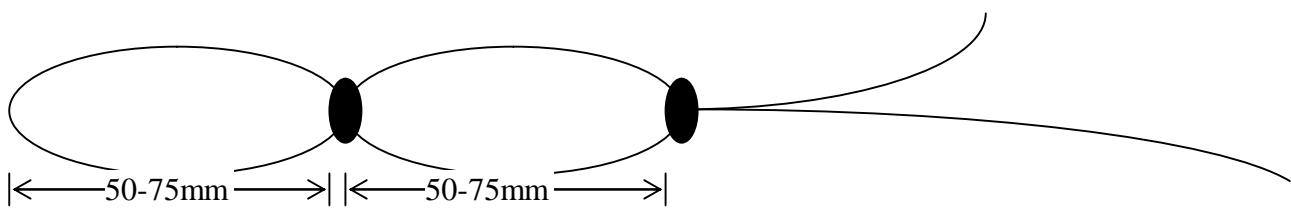
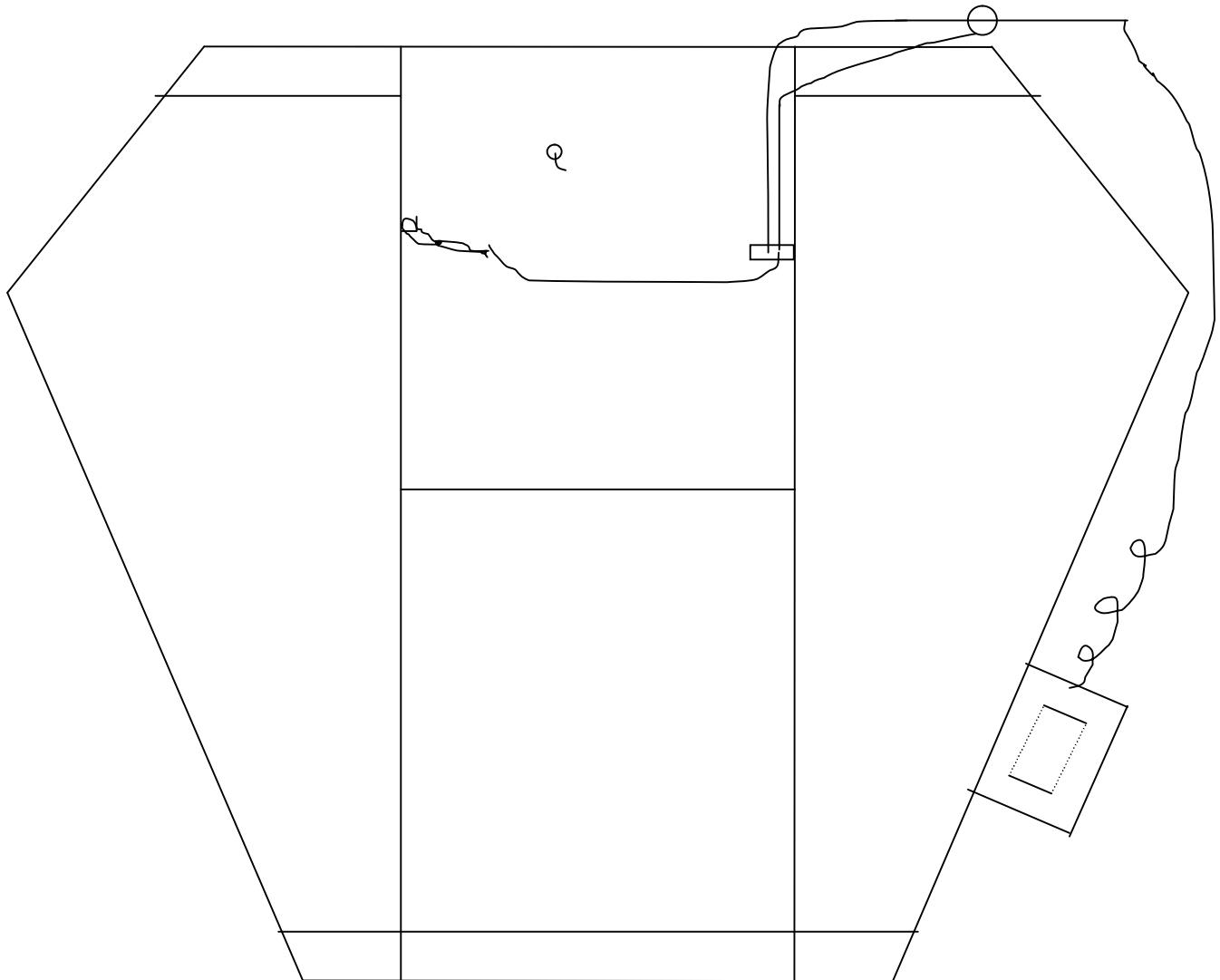
1. Insert sealed twine end through open hole in twine lock bar.
2. Front two twine on inside of the baler chamber and insert through eyelets (collars).
3. Rear twine in rear twine lock hole and down the back outside and into chamber through hole in back.



Trainer Signature of compliance:

6. *Tying The Loop*

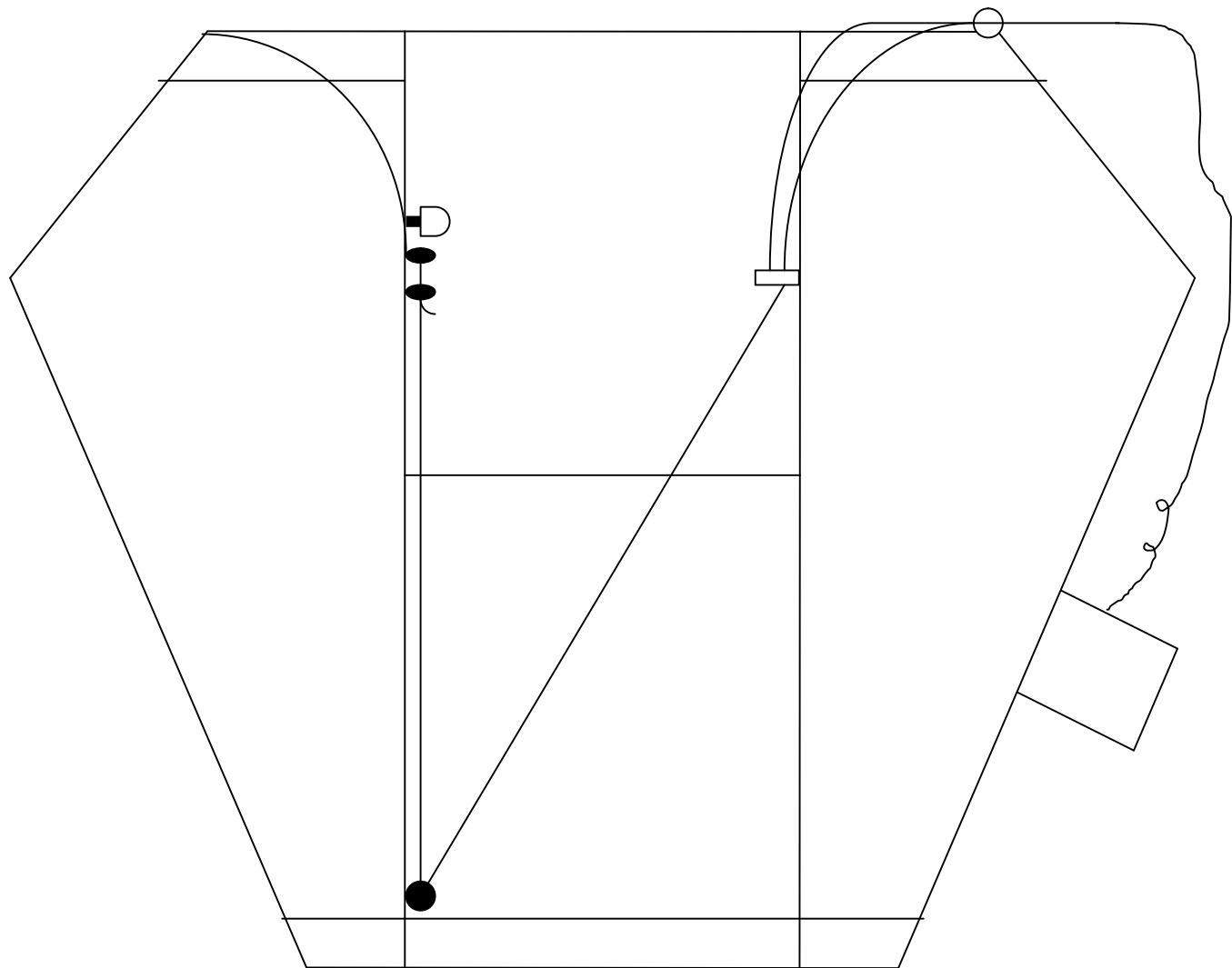
1. Tie double loop in twine ends (side twines only).
2. Take looped ends across and hook onto hook on opposite side.



Trainer Signature of compliance:

7. ***Twining***

1. Take twine down and hook under plastic tab directly below.

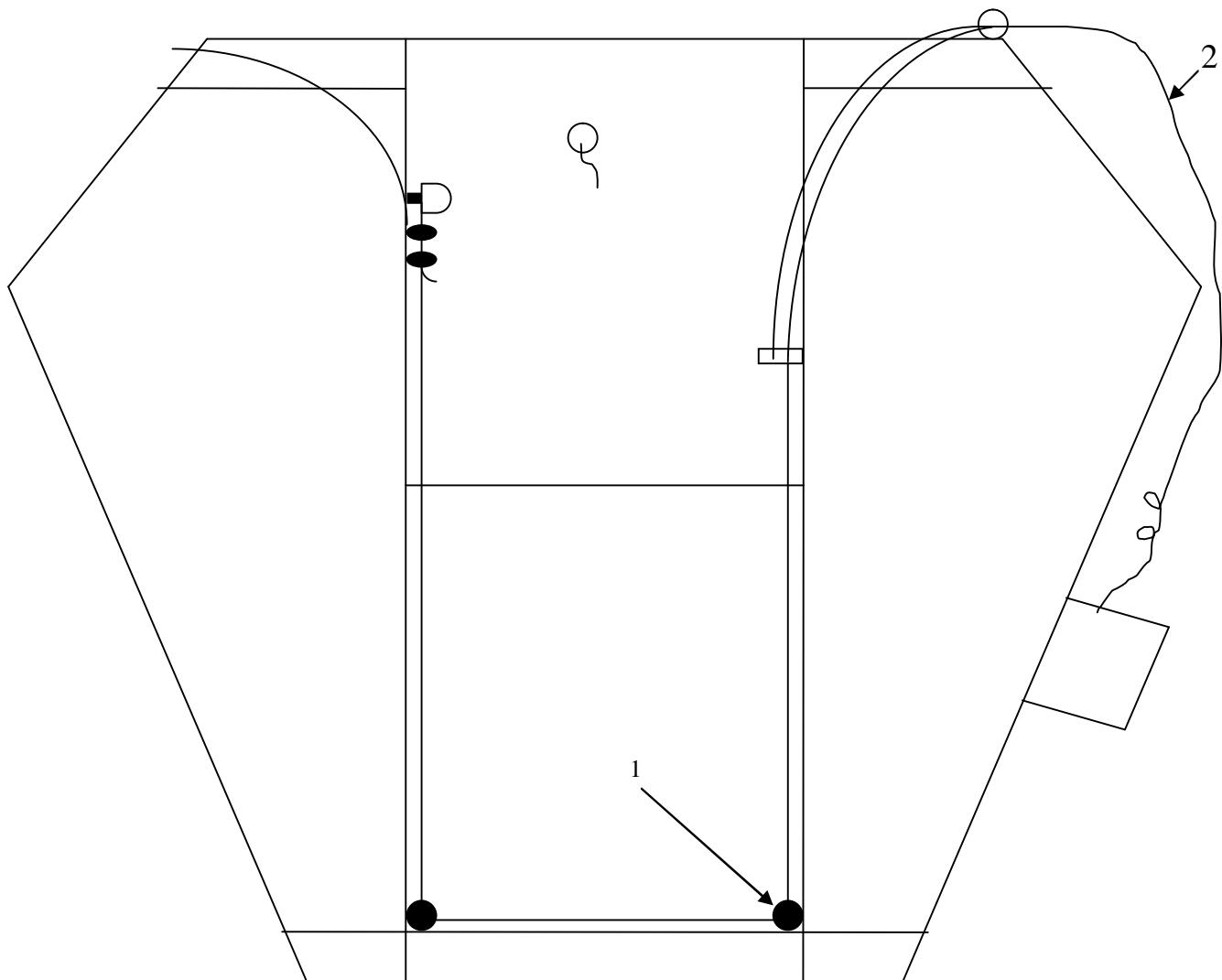


Trainer Signature of compliance:

8.

Twining

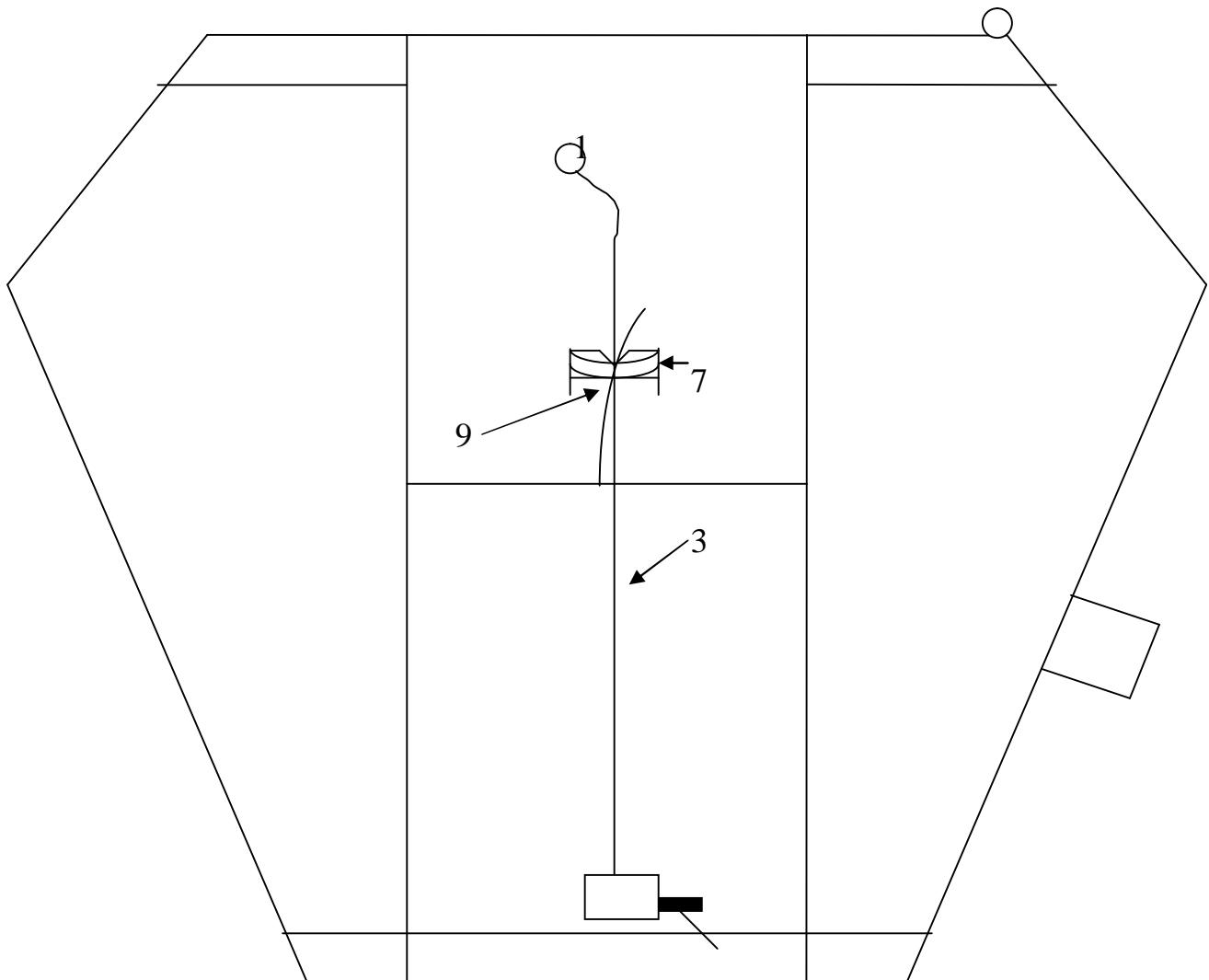
1. Take side twines across under the tab on the right hand side.
2. Surplus slack twine inside, pull out from the outside.



Trainer Signature of compliance:

9. Twining Transverse

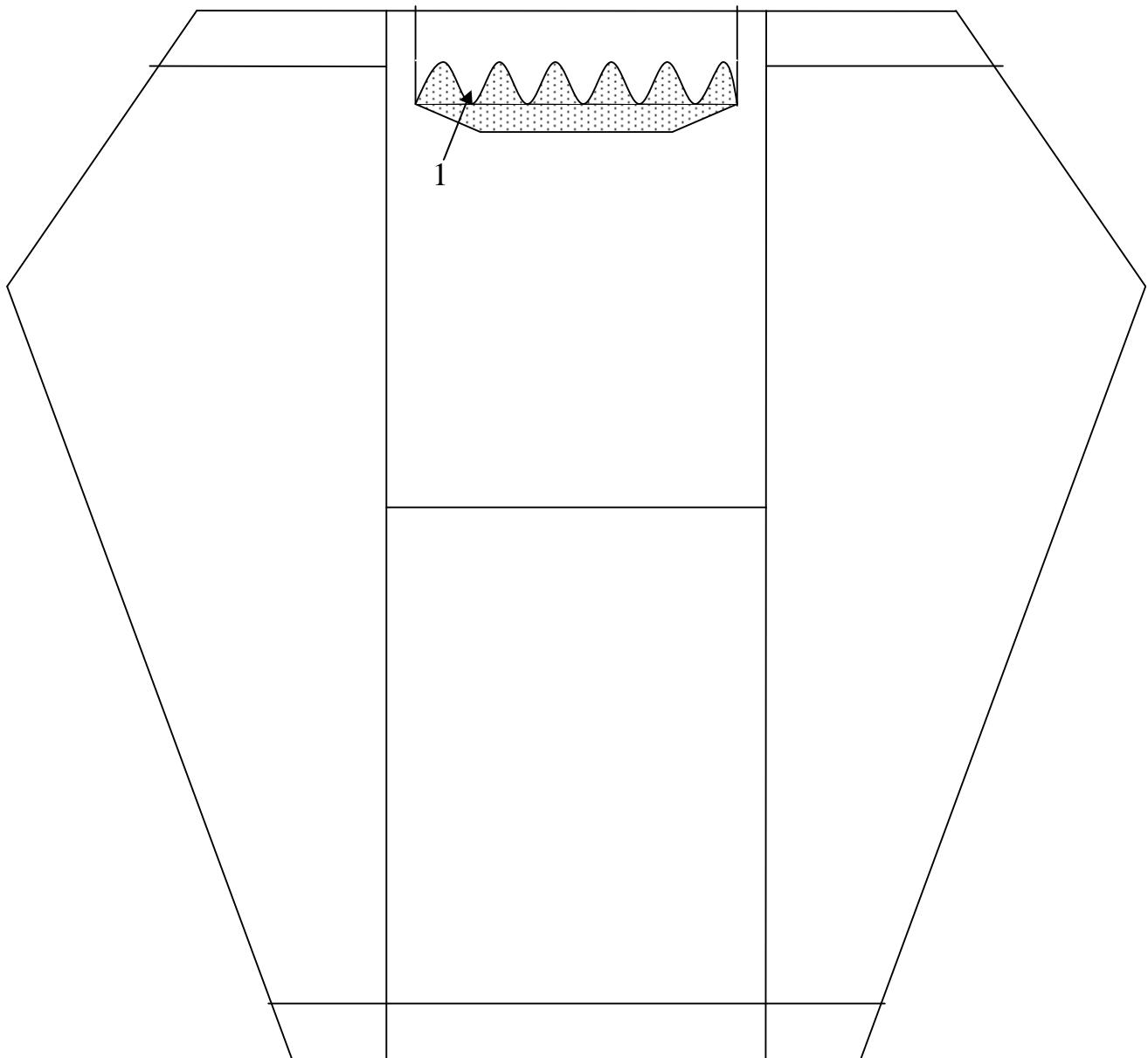
1. Twine from rear
2. Pull through two stretched arms length (3.5m).
3. Place twine under rear tab then forward under front tab.
4. Hold twine in left hand to left side.
5. Close bottom door with right hand.
6. Bring twine over the top of the bottom door from the inside.
7. Twist twine end around the tab twice and bring end into slot.
8. Latch bottom door.
9. Twine end about halfway down the front door.
10. Close top door.



Trainer Signature of compliance:

10. Initial Fill

1. Throw in material until visible.

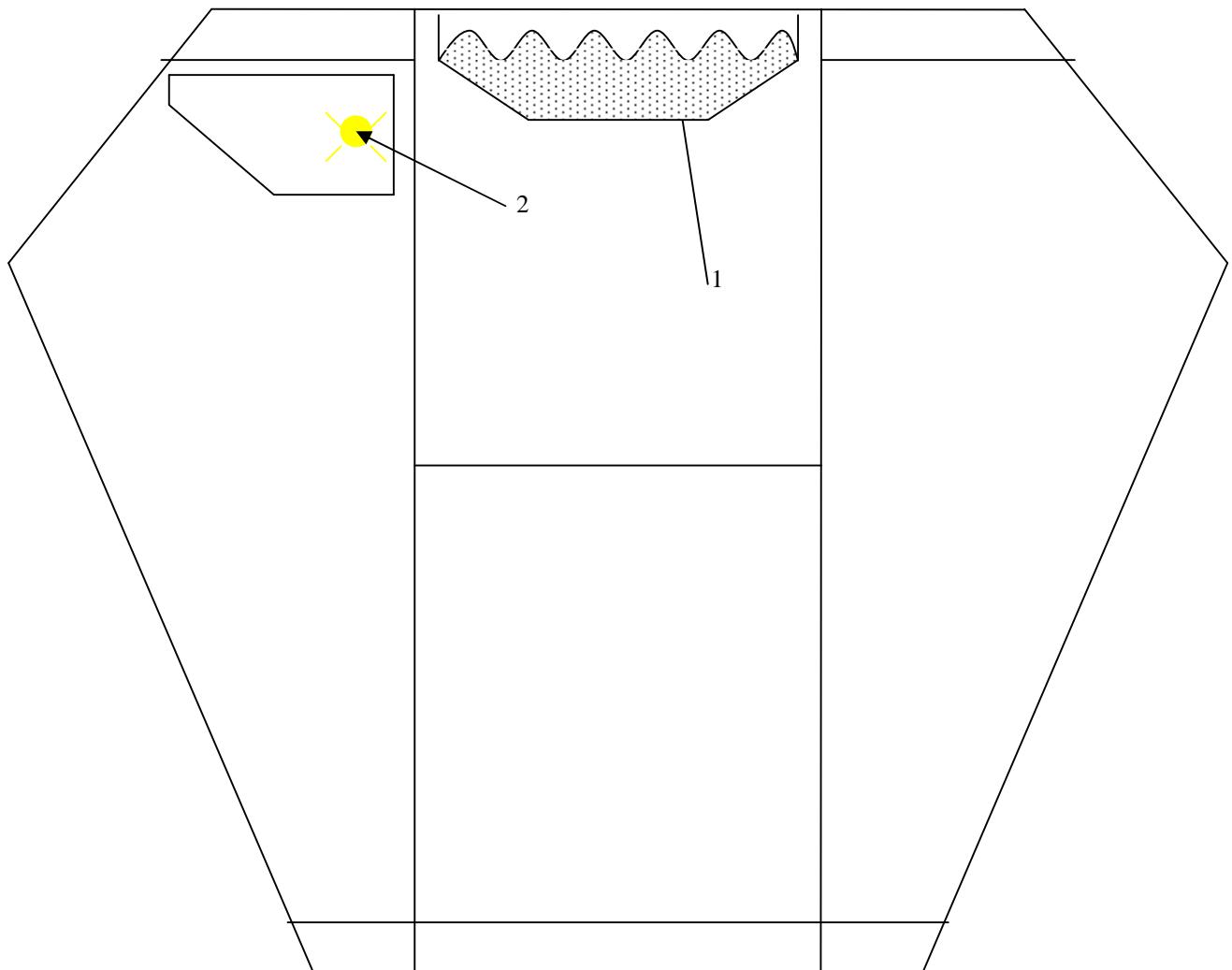


Trainer Signature of compliance:

11. Baler Start Up

1. With material visible :-
2. Turn on baler.
3. Press in coded key bar.
4. Press cycle button marked cycle.

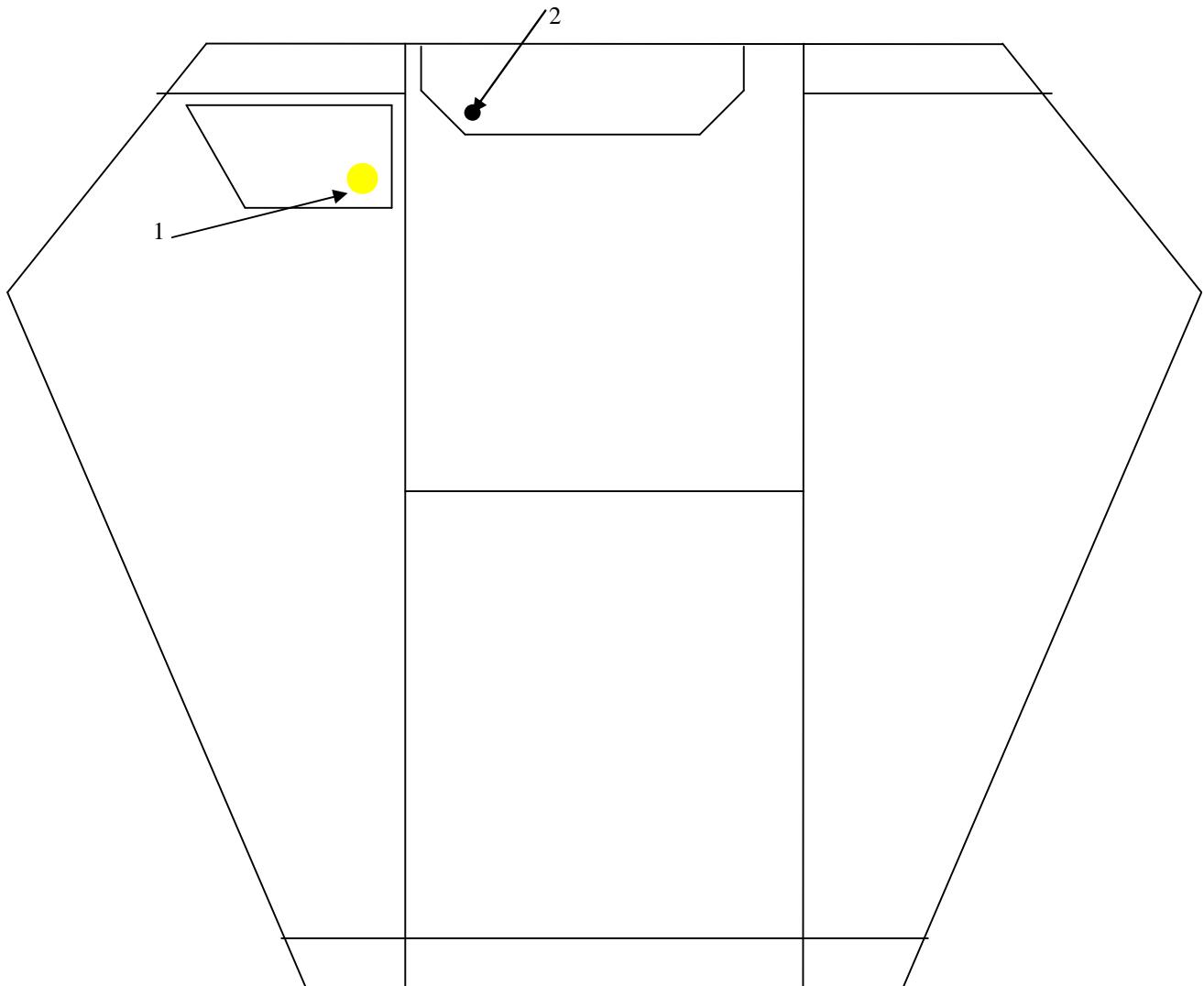
Note: If baler is cycled with no or little material in the hopper, the baler may make a sharp clunk (this will not damage the baler).



Trainer Signature of compliance:

12. Automatic Operation

1. Active light will flash after cycle button has been activated.
2. When loading baler, direct material evenly and towards censor eye to activate the baler.
3. Throw full boxes in any time through the cycle path.
4. Large boxes, throw these in the first 50% of the bale.
5. Flattened cardboard on its flat. (Horizontal)
6. DO NOT Overload, one person at a time.

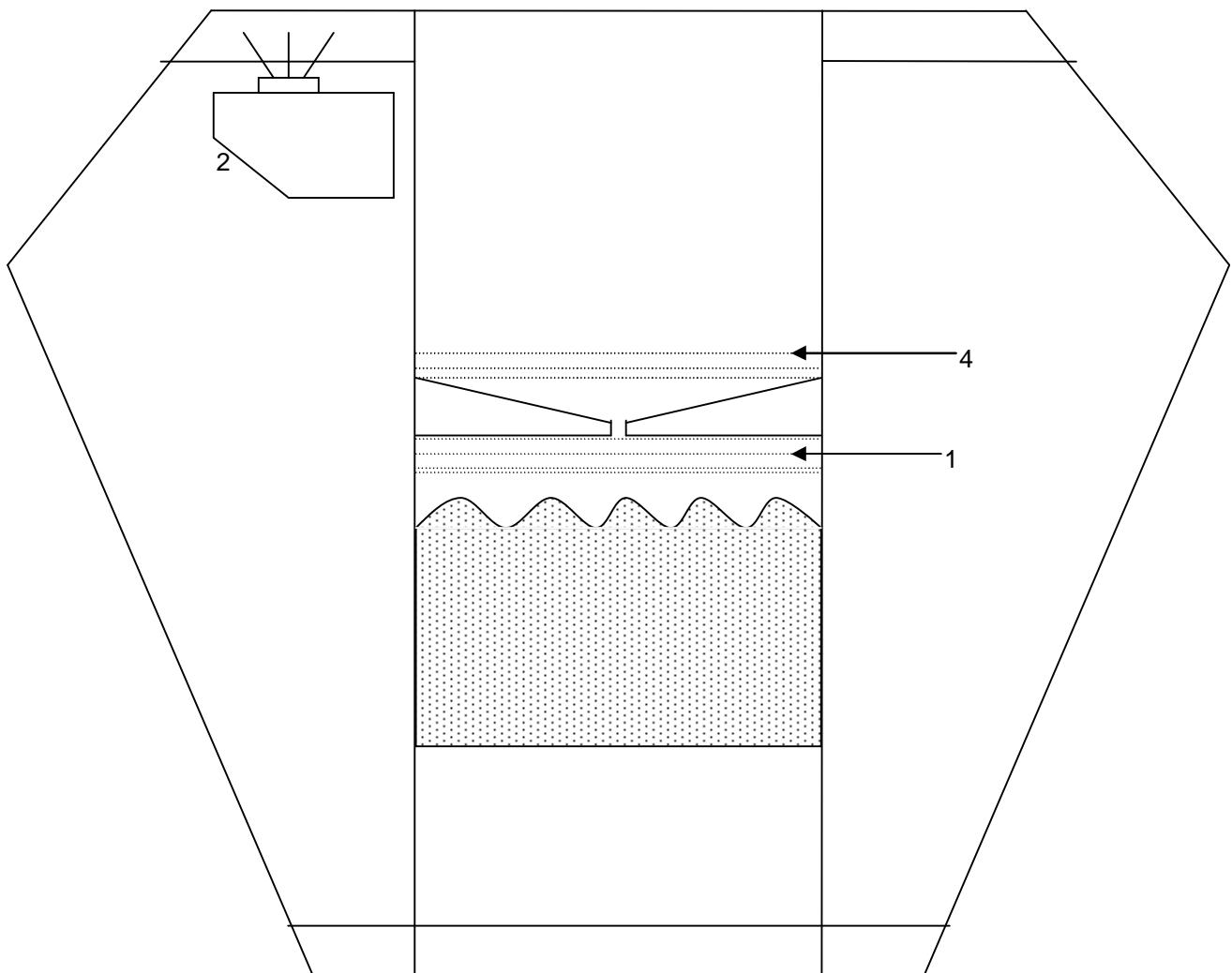


Trainer Signature of compliance:

13. Tidy Bale Procedure

1. Last 10% of bale, flattened material on flat.
2. When full bale light comes on:-
3. Remove excess materials by cycling manually by pressing cycle button (several cycles).
4. For neat top add large flattened material and manually cycle by activating cycle button.

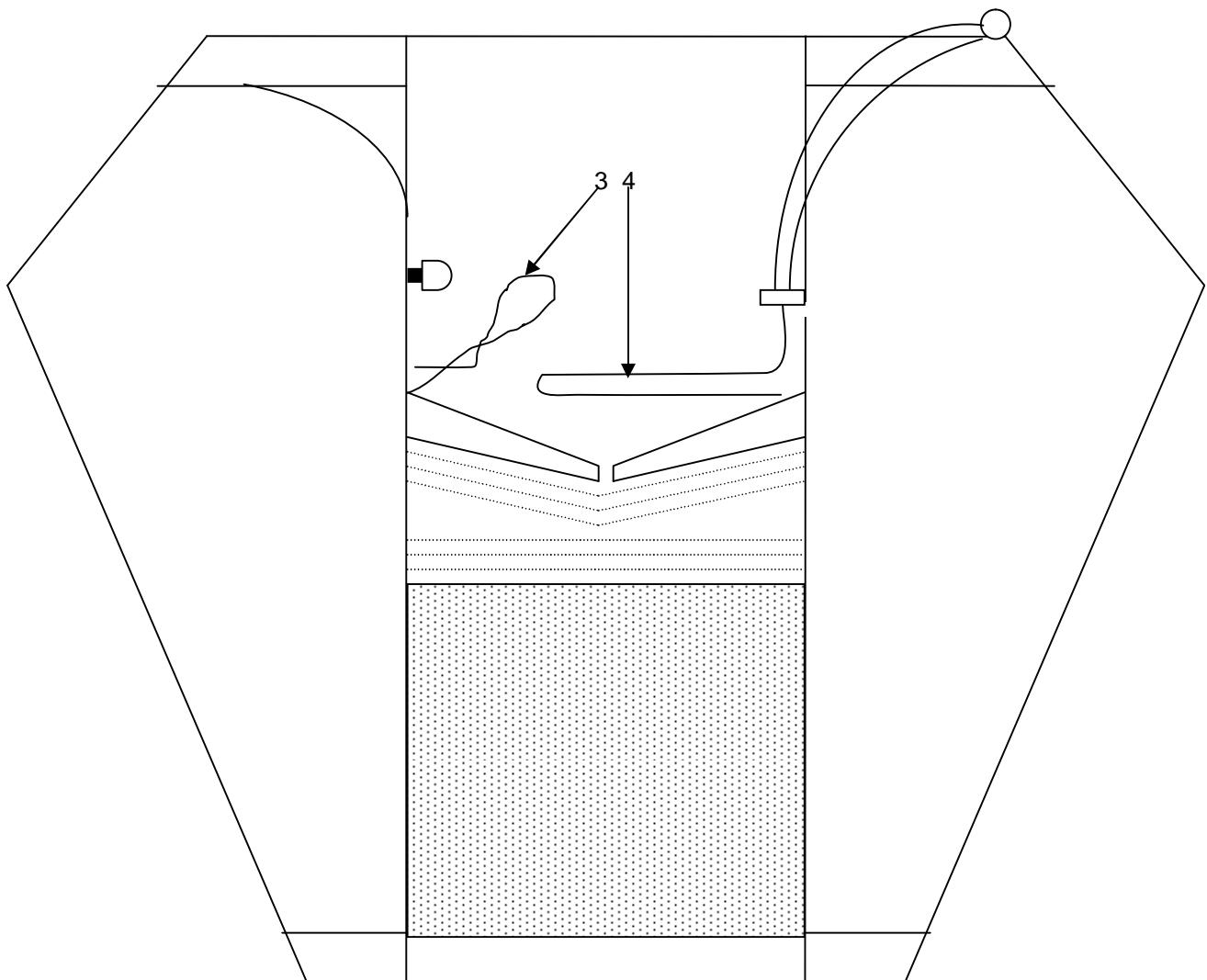
5. NOTE: Baler will not cycle automatically when full bale light and indicator are activated



Trainer Signature of compliance:

14. Tying Off

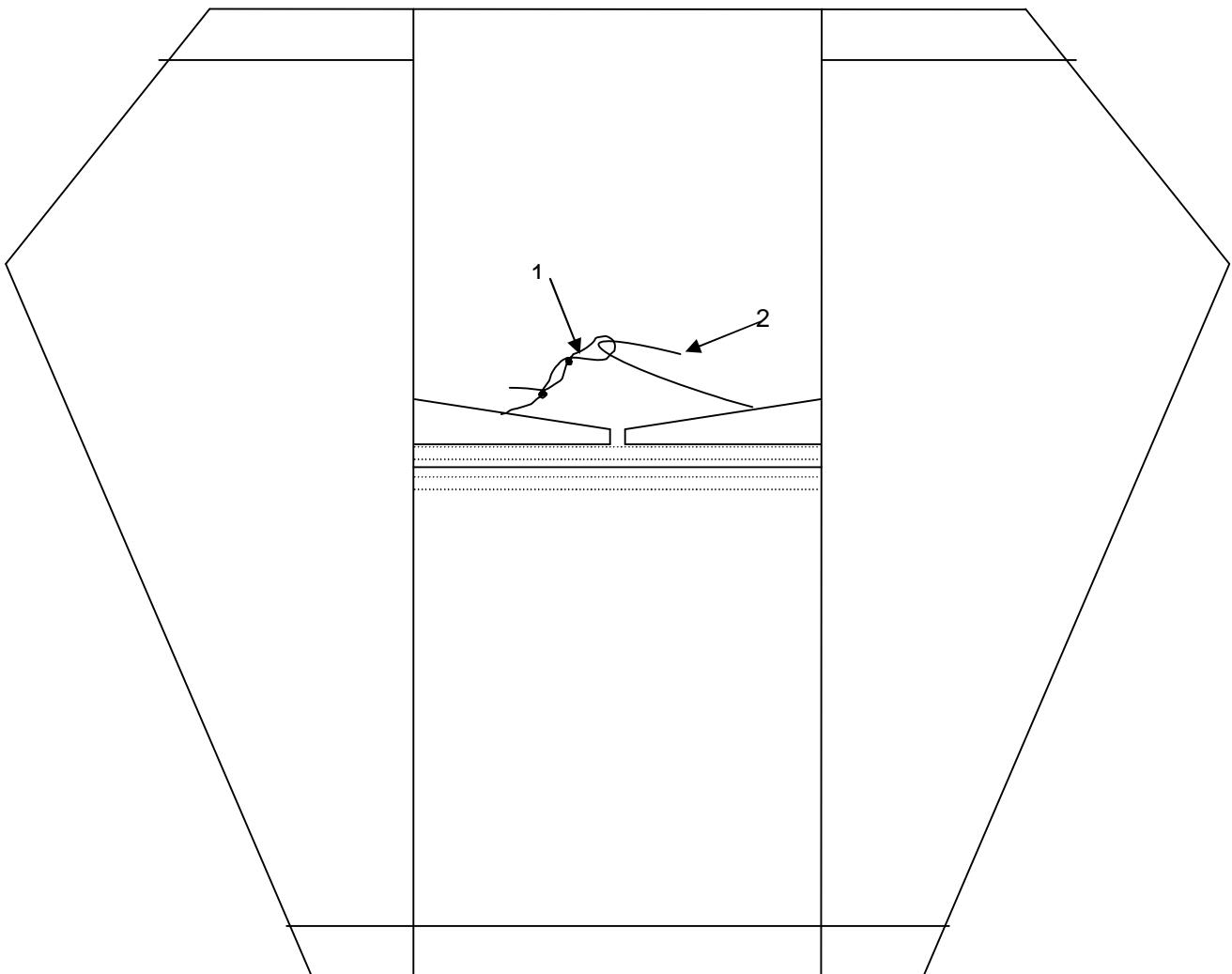
1. Open the top door
2. Remove any loose materials from above the fingers.
3. Unhook the twines on left side by pulling on the twines then lifting of the hook or if very tight cut top loop.
4. Pull twine across from right hand side from beneath the eye collars and cut where loop touches left hand side wall.



Trainer Signature of compliance:

15. Maintaining Twine Tension

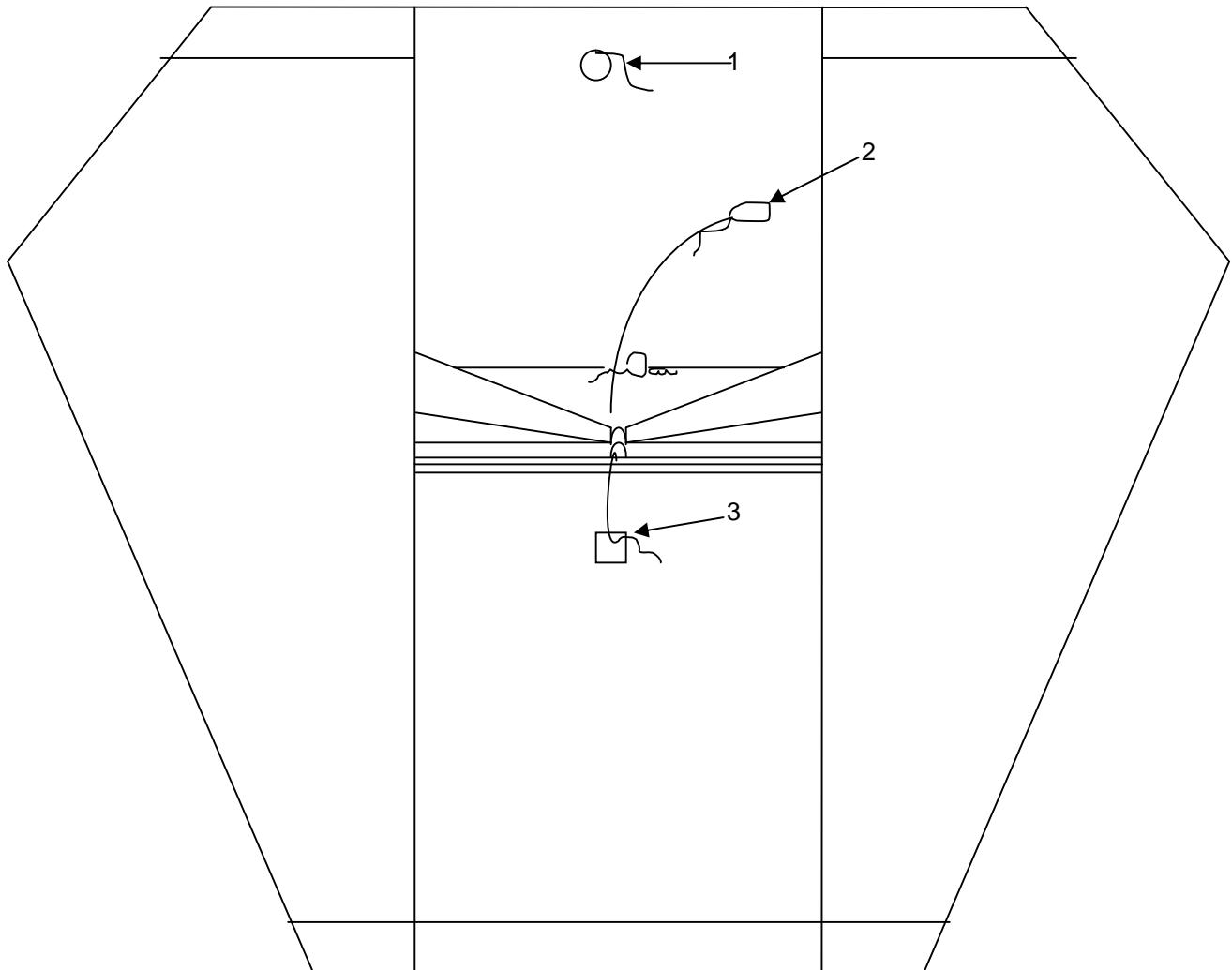
1. Loop through
2. Pull tight
3. With left hand hold tension by gripping the twine on the loop
4. Tie off twine.
5. Repeat on both twines.



Trainer Signature of compliance:

16. Transverse Twine Tie Off

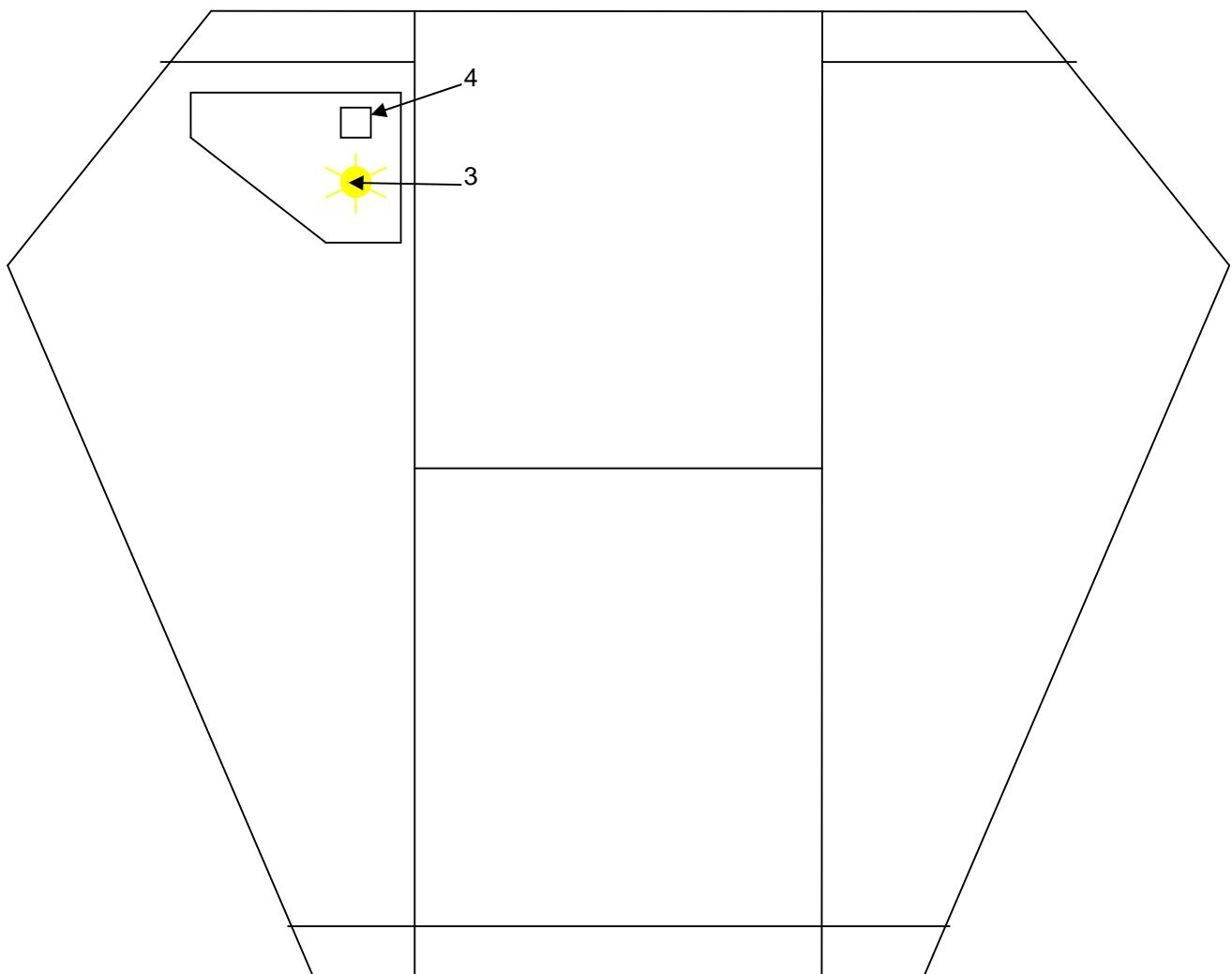
1. Pull transverse twine through the hole 100mm and cut.
2. Lower cross twine end, tie a loop as in side twines, see illustration.
3. Undo twine off front tab.
4. Pass loose end through loop and pull tight and tie off.
5. NOTE Pressing fingers must be down and on the top of the bale when tiring off the bale.



Trainer Signature of compliance:

17. Retracting Fingers

1. Close top door.
2. Press in key lock bar.
3. Turn on power- release the emergency knob.
4. Press button marked retract.

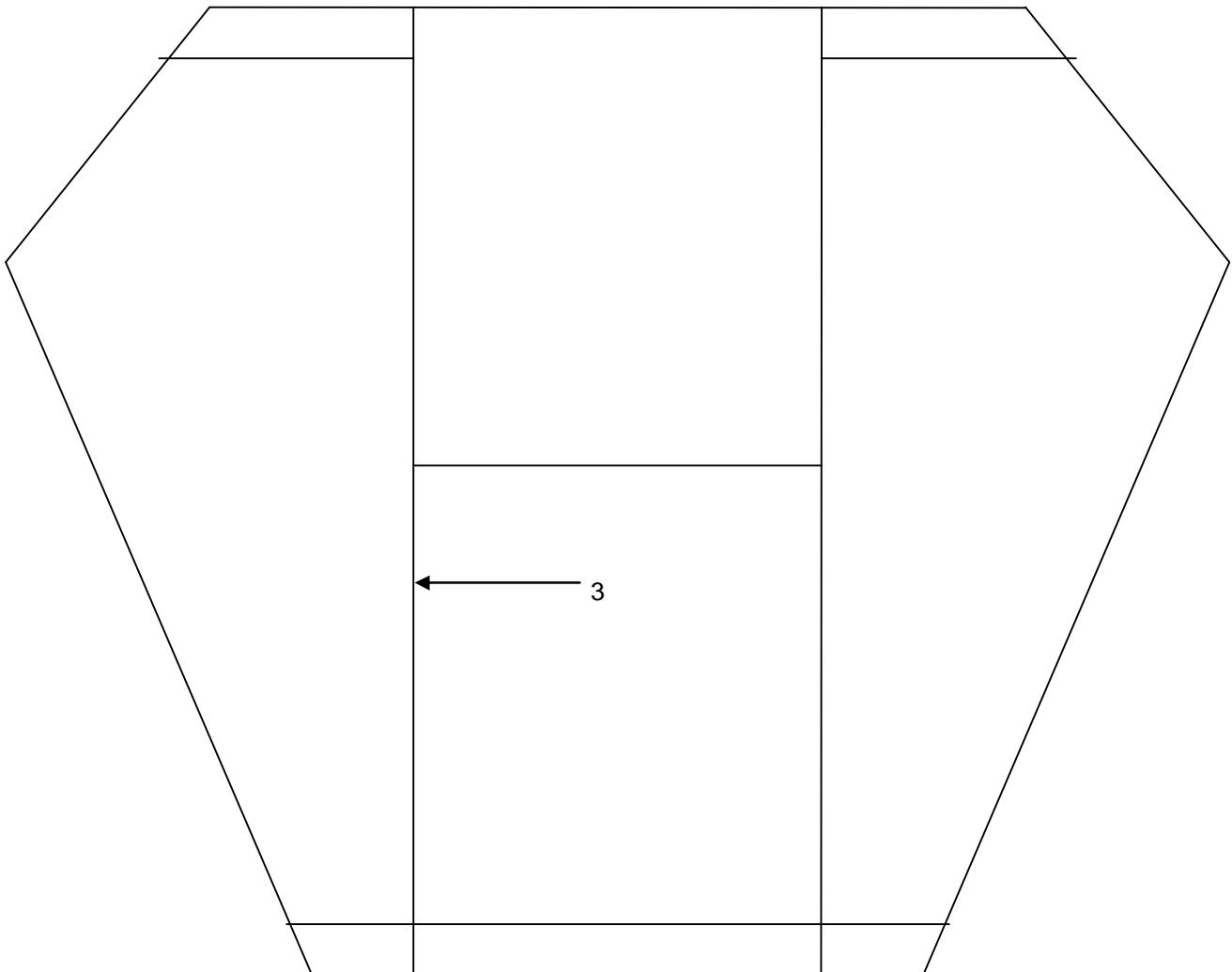


Trainer Signature of compliance:

18. Opening Doors

1. Open top door.
2. Attach rebound chain to bottom door on the last link.
3. Open bottom door latch, unlock rebound chain.
4. Fully open door.

Note: Never attempt to open the bottom door with the pressing fingers down. (They must be retracted in fully up position).

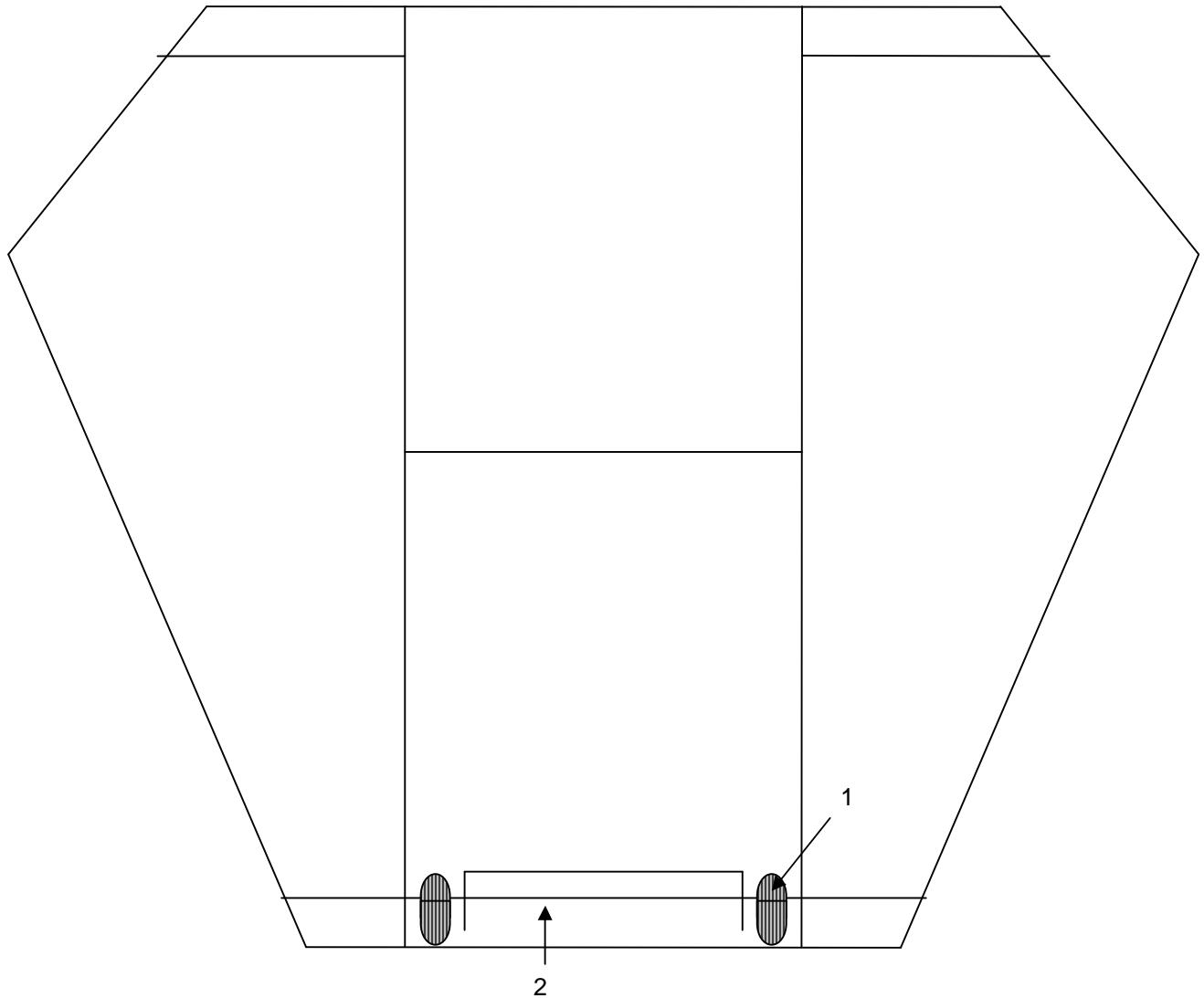


Trainer Signature of compliance:

19. Situating Bale Trolley

-WITH DOORS FULLY OPEN-

1. Situate bale trolley:-
2. Central to the baler.
3. Out 75mm from contact.
4. Roll away from baler direction.

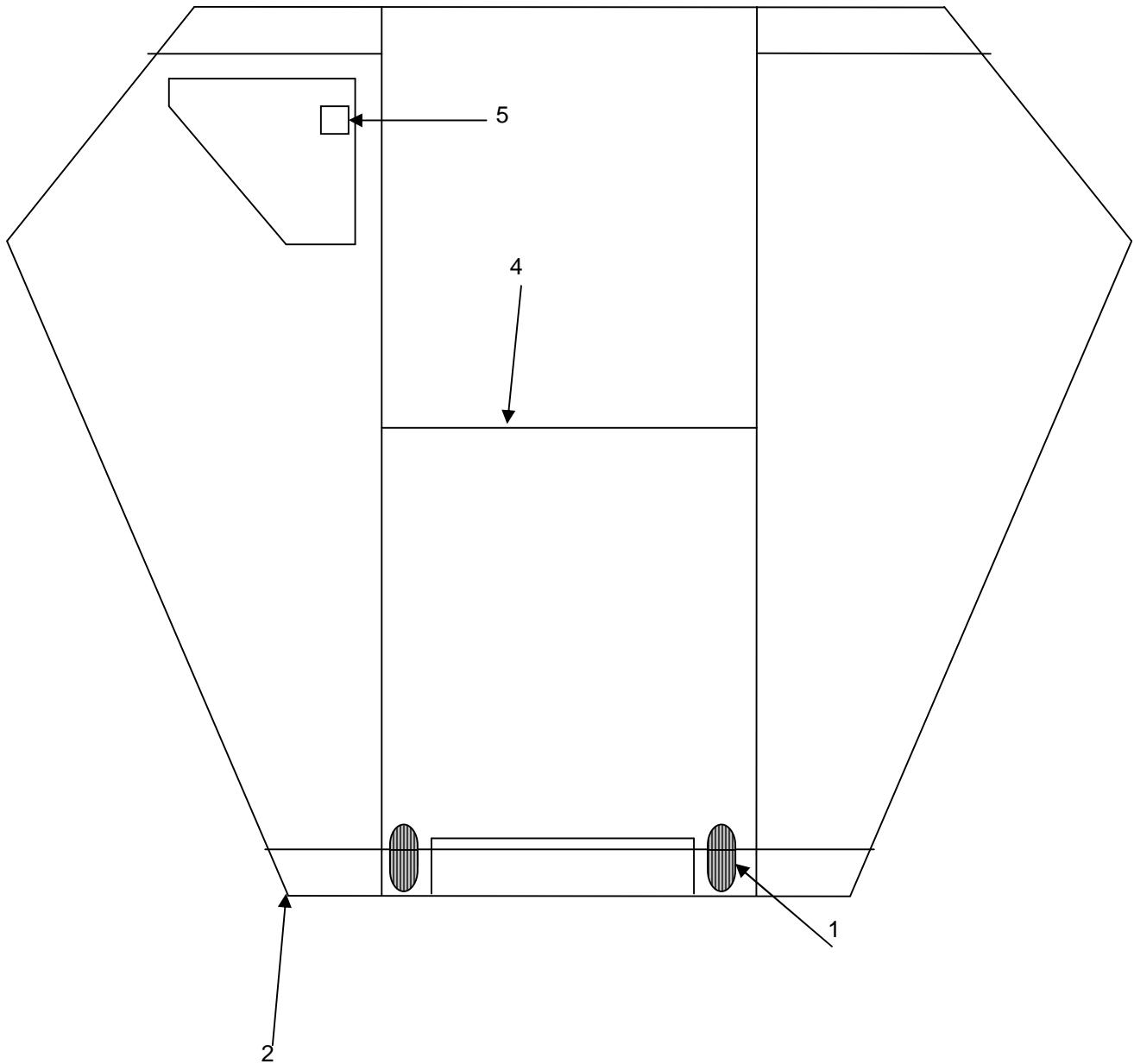


Trainer Signature of compliance:

20. Ejecting The Bale

1. All doors fully open and bale trolley situated.
2. Stand to the left of the bale area.
3. With right hand, grip the left cross twine.
4. Pull firmly, at the same time pressing and holding the eject button until the bale is firmly on the trolley.
5. Roll bale away on the trolley.
6. Push bale sideways off trolley to unload.
7. Start again at step four . Initial Set.

Note: Push eject arms back in using foot



Trainer Signature of compliance:

CHAPTER 6 - MAINTENANCE & CLEANING SECTION

Always disconnect Electrical Supply before changing any equipment

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 1500 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. Fingerlock spring change
4. Main cylinder pivot pin check for wear or fatigue

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

Eye Cleaning - The sensor eyes are situated inside the press chamber; these detect material as it is deposited into the baler. If one or both of these eyes becomes contaminated, this will cause the baler to cycle continuously; creating excessive wear in the baler that may cause possible overheating. Regularly clean the sensor eye covers using a soft clean cloth, never use mineral based cleaners or harsh scrubbers, only use a soft clean cloth.

Power Unit Cleaning - 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 sign 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.

Cleaning the Cylinder Unit Enclosures - As with the power unit service, totally isolate the power, remove the key and fix an ~~in~~ service sign to the baler.

- 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

Cleaning the 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.

General Housekeeping - 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.

Maintenance Intervals and Lubricants

1. SERVICE INTERVALS

- Autobalers require regular maintenance intervals to ensure they perform and operate safely, reliably and efficiently.
- Autobalers must be serviced by qualified service people who have been instructed in the service of Autobalers
- Autobalers must be serviced according to the service requirements as in the maintenance manual supplied.
- 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.
- 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.
- 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.

2. RECOMMENDED LUBRICANTS

- Recommended hydraulic oil AWH 32 Castrol
- 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 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.

DATA SHEET, PRO-MA MBL8 GREASE Benefits Of Use

- Performs within high and low temperature operating ranges
- Resists water and water washout
- Provides oxidation stability
- Protects against rust
- Protects against extreme pressure
- Works well with high loading or severe shock loading
- Extends lubrication periods

- Prevents excessive seal swelling

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: .13,000

Running, 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

HandlingProduct 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

Ingredient	Proportion	Blending 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

TIBMan013Rev01Aug07

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/m³ (oil mist) short term exposure limit (STEL) 10mg/m³ (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.

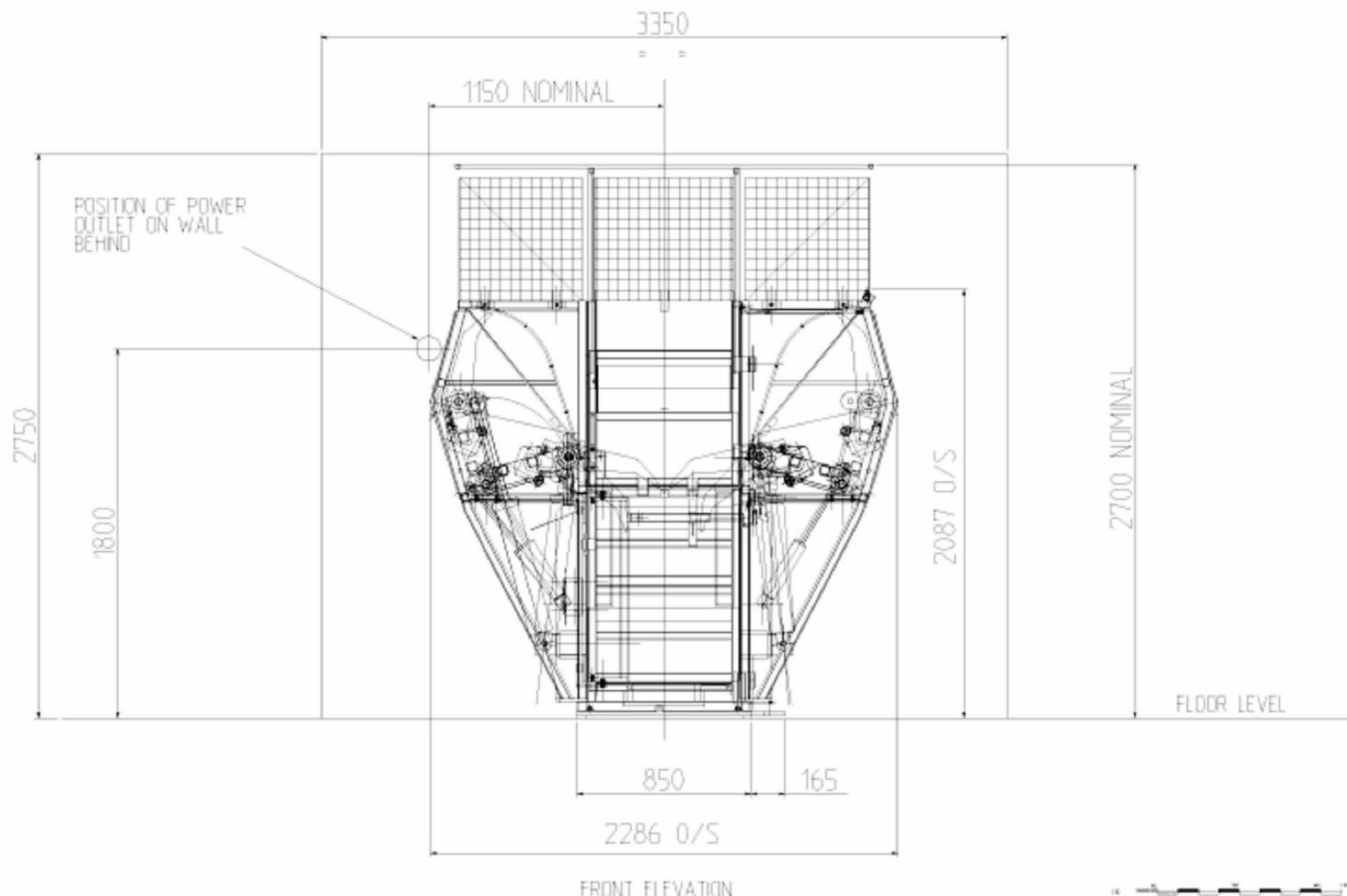
CONTACT POINT

Emergency Response: - 02 4732 3305

*** END ***

CHAPTER 7

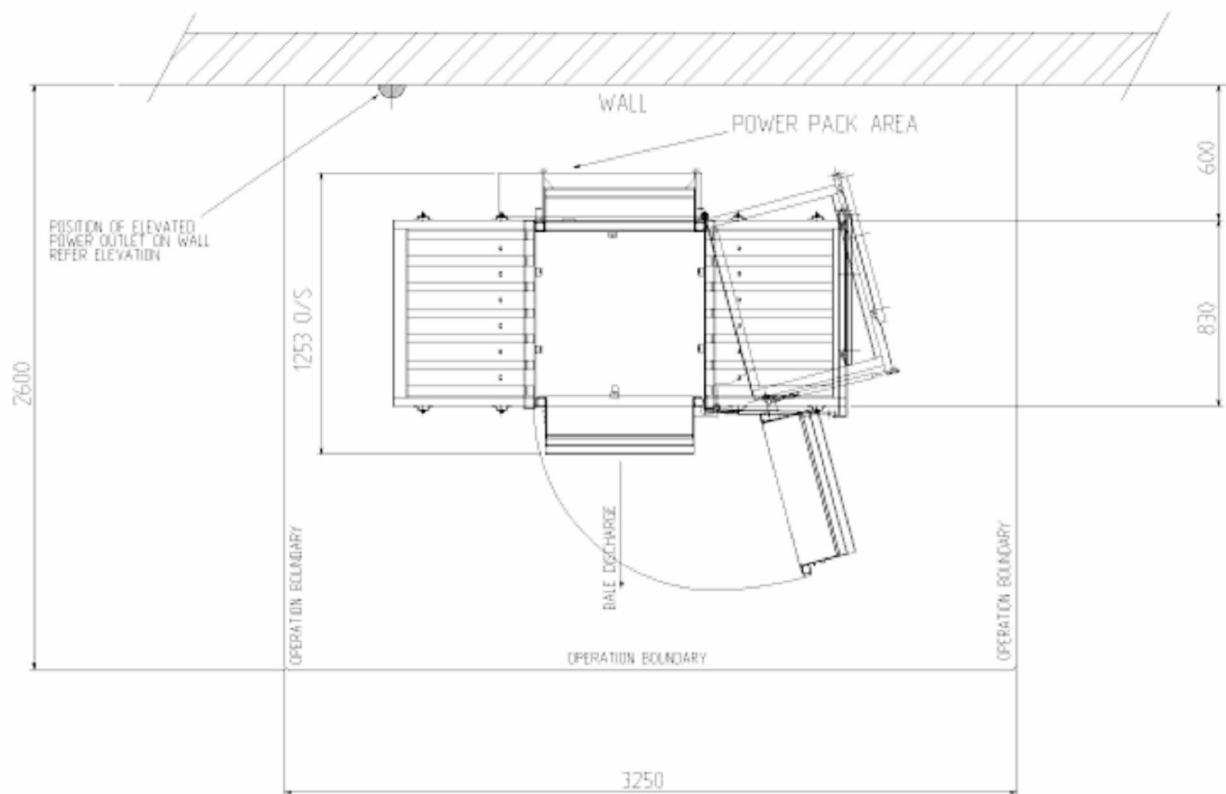
REV	DATE	REVISED BY	NOTES
1	-	-	-



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REV	DATE	REVISION	NOTE
A	2013/08	C00	INITIAL REV01



PLAN VIEW

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