AUTOBALER

SERVICE MANUAL

SL100/SL200 SERIES

For Assistance or Advice Call:
02 67 345 403 or Service Line 1800 888 403

AUTOBALER®
www.autobaler.com

Trethewey Industries
New England Highway
14 Carl Baer Circuit
Deepwater
NSW 2371

Ti

Note:

When servicing a press or addressing a press problem please check the press serial and model numbers and the date of manufacture. This manual will apply to earlier models, however, there will be issues with earlier models which will not be covered by this manual, and an amendment to this manual covering earlier models is available. Please contact the press manufacturer on their service agent.

To be equipped to service a problem press, the technician, before leaving to service the machine, especially where a customer has phoned with a problem, will need via the phone to establish the possible source of the problem, so as to be equipped to deal with that particular problem. However if the technician from the information given is unable to identify the possible problem, he should contact the manufacturer before leaving to ensure that the correct components and testing equipment are taken to the problem machine, thus minimising the down time of service and inconvenience to the customer.

Caution:

If the machine requires welding:

1. Always completely remove the electronic control units' connections as welding may seriously damage the controller.

2. Always anchor the earth lead of the welder directly to the part being welded.

3. Clean to bare metal the position of the earth clamp.

4. Ensure that no electric or electronic wiring plastic etc is in the vicinity or the heat affected area.

CUSTOMER SERVICE NUMBER: 1800 888 403

Table of Contents

Chapter 1
Baler Check before Commissioning

Trethewey Industries balers undergo a thorough quality check before they are despatched from the factory. This ensures that they are all in perfect order. Due to varying conditions during the transporting procedure the balers will require a pre-start up check.

The installer should be a person trained, qualified and approved by the baler manufacturers for the purpose of pre-start up and machine commissioning.

When installing a baler the pre-start up check should be as follows:

1. Thoroughly check the baler for obvious damage from transport and handling.
2. Check the baler for moisture contamination. The manufacturers' recommendation is that balers not be transported in a manner that will cause water contamination to the electrics and the electronics.
3. Check the electrical system for obvious damage
4. Check hydraulic system for oil leaks
5. Check Safety Bar
6. Insert all strings through string lock as in stringing set up in the operator's manual
7. Bottom Door Adjustment

1. Check the Baler for Damage from Transport & Handling
Walk around the baler and inspect for any damage that may have occurred during transport. If any damage has occurred record the damage found and contact the manufacturer immediately.

2. Check the Baler for Moisture Contamination
If water contamination has occurred, the baler should not be connected to the power supply until the installer is fully satisfied that the moisture risk no longer exists. In case of severe water contamination dismantling of the following may be required to allow evaporation of the trapped moisture.

a) Check the motor junction box, if moisture is present the unit must be allowed to dry before use.
b) Solenoid valve coils.
c) Electronic censor unit situated on the rear of the upper roppel.
d) The electronic controller unit, to check this unit if contamination is suspected
e) Remove the controller from the machine.
f) Remove the entry plate from the back of the controller.

If moisture is present allow to dry thoroughly if excessive water contamination had occurred to the controller unit it may require replacing with a dry unit. In many cases this is the best option, moisture in sensitive electronic components may take long periods to dry thoroughly. Attempting a start up with a moist unit may result in serious damage to the control unit.

3. Check the Electrical System for Obvious Damage
1. Check the plug unit for any damage or lose wires
2. Check the lead from the plug to the controller for damage, if in doubt use an appropriate multi-meter
3. Check the power connection units at the bottom of the controller for firm undamaged connection
4. Check the power entry to the motor junction box. If damage or a fault is suspected call a qualified electrician
5. Do not connect to a wall socket (point) that shows damage or is in poor repair.

4. Check Hydraulic System for Oil Leaks.
1. Check the fluid level in the reservoir, the oil should be showing on the dip stick. If no oil is present then add oil (awh 40) until oil is present. Caution (Do not over fill)
2. Check oil tank for transport damage.
3. Check hydraulic hoses for damage, if damaged replace hoses (check with manufacturer for correct hose type).
4. Systematically check all fittings (hose ends and fittings can be bumped during transport and location).

5. Check safety bar
1. Check for free operation
2. Check to see that bar is functioning correctly.

6. Insert all strings through string lock as in stringing set up in the operator's manual
1. Open and close the top door several times then open the top door fully.
2. Pull each string through the lock bar and check to see that the lock bar is not cutting or damaging the string (twine). If damage is occurring the adjustment on the string lock connector may need adjustment (to adjust - undo one of the connector link bolts, rotate one revolution, reconnect and re-test).

7. Bottom Door adjustment check
Situated on the right hand side of the baler on the bottom of the lower door is an adjustable link connector. A correctly adjusted door will spring open 10-20mm when pushed closed and is unlatched. On the bottom link are two hexagonal nuts. The link can be lengthened or shortened as required by adjustment of these two nuts. Note - See manual for door link adjustment.

Safety

1. 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.

2. 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.

3. 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.

<u>SAFETY CLOTHING / FOOTWEAR</u>

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.

Always remove Autobaler key when machine is not in operation, or is unattended.
Trethewey Industries recommend that the following checks be carried out:-

WEEKLY

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.

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 2
Commissioning of a New Autobaler

This is the stage where a fully functional Autobaler is handed over for use by the end-users. At the conclusion of this commissioning, the installer must be satisfied that the Autobaler will perform as specified, and that the end-users are fully conversant with the operation and the safety guidelines.

Initially, the installer must be satisfied that:-

- The Autobaler is complete, as specified by the manufacturer
- The Autobaler is the specific model, as requested
- The power source is as specified
- All accessories and attachments are as requested
- All functions of the Autobaler operate correctly
- The motor rotates in a clockwise direction
- The hydraulic oil reservoir is full
- There are no hydraulic oil leaks
- There is no damage to any safety barriers
- The twine lock operates efficiently
- There are no safety concerns regarding the location of the Autobaler
- A qualified electrician has checked the power source, lead and electrical contacts

The installer must now:-

- Ensure that one, or more, of the end-users are completely trained in the safe use of the Autobaler
- Ensure that those trained are fully aware of safety procedures associated with the safe use of the Autobaler
- carry out a full training session, incorporating these factors

At the completion of the training session, the installer must:-

- Complete the “Job Completion” form, detailing precisely what was delivered and accepted by the end-user
- Complete the “Training & Trainee Particulars” forms, detailing the names of those who attended the training session. These persons will be sent a certificate stating that they are competent to operate the particular Autobaler, as well as have the overall knowledge to train others in its operation

Training the end-users should be carried out as follows:-

- Ensure that the person who has ultimate responsibility for the operation of the Autobaler is amongst those to be trained initially. i.e. Head Storeman or Cleaner.
- Carry out the training, using the end-users as much as possible, from the stage of inserting the twine initially, to the removal of a full bale
- At all stages of the training process, make sure that those being trained are fully aware of the safety aspects associated with the operation of the Autobaler

Training is to be conducted as follows:-

- Preparation of the twine for insertion into the Autobaler
- Feeding of twine through the twine lock and collars
- Feeding of twine through hole in rear of pressing chamber
- Affixing of twine to cup head bolts, explaining need for double knots
- Placement of twine under lugs on the base of the pressing chamber
- Allowance for length of twine from hole in rear of pressing chamber
- Fixing of twine from rear wall, under lugs, up the inside of bottom door and fixed on attachment
- Closing of front doors and explaining of safety features i.e. Autobaler key, emergency stop button, safety bar, coded key switch and door opening cut out
- Explanation of electronic eye function
- Demonstration of operation of Autobaler with no material in pressing chamber
- Explanation that material should be visible above top door level prior to activation of Autobaler
- Feeding of material to be baled, explaining reasons for non-operation and motor cut out
- Explanation of “bale full” signals
- Demonstration on how to “tidy up” final bale
- Explanation on why bottom door should never be opened during baling process
- Tying of bale and retraction of fingers
- Opening of bottom door, with emphasis on possibility of rebound
- Placement of bale trolley and description of auto-eject function
- Eject of full bale, with emphasis on need for manual assistance and care to be taken by standing aside pressing chamber

Commissioning and Training Procedure

1. Trainers and service people must always have a manual when training or attending the baler.
2. Trainers must have all training documentations and must be completed by each trainee.
3. Site Inspection – Ensure the baler is situated to comply with all OH&S requirements
4. Unwrap the baler – Remove the baler from the pallet following the baler removal procedure.
5. Remove the components from within the baler chamber attach the twine cage to the lower mesh on the right hand side – situate the hopper mesh – fit over head screen.
6. Complete the baler pre-delivery check
7. Commission the Baler
8. Train the Staff Following the Staff Training Procedure Autobaler trainee material
9. Complete the Pre-Post Installation check
10. Return the require forms to the company – Trainee questionnaires, trainee details and all original documents are to be returned to Trethewey Industries
11. Invoice for payment can only be processed when all the documents have been returned to Trethewey Industries.

Woolworths Job Completion and Training Procedure

1. Job Completion form MUST BE completed and stamped with the store stamp and signed by the Store Manager and the Technician.
2. MUST PROVIDE PROOF OF DELIVERY
3. Head Storeman to be trained as a trainer, it will be his responsibility to ensure any new staff are fully trained in the safe operating procedure.
4. Training Manuals must be provided to all trainees.
5. Questionnaire must be completed and correct.
6. Statements of Attainment will only be issued if the trainee passes the test.
7. Staff training report MUST BE Completed.
8. Trainer to fax through copy of Training Report and Job Completion and Staff Training Reports to be posted back ASAP.
9. Copies of the Job Completion to be attached to tax invoice when sent.
10. Original Copies of Job Completion and Staff Training Report to be sent monthly to Tony Fattore Woolworth by Michele Lawson, with monthly summary.
11. Supply Tony Fattore report as Service as completed, Job Completion Report will also be required.
12. Set up excel file for service to provide with reports

Chapter 3
Installation Instructions for the Overhead Safety Canopy

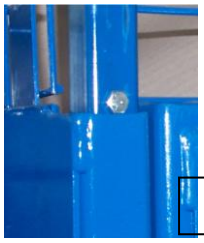
FITTING OF THE OVERHEAD FRAME

- 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 6734 5403


Fitted Overhead Safety Canopy.

FITTING OF THE SAFETY CANOPY:


Rear Canopy legs position


Mesh mounting lugs

Chapter 4
Oil Leaks

1. Determine leak
2. Check oil level
3. JIC hose fittings leak
4. O-fitting leak
5. Suction hose leak
6. Solenoid leak
7. Pump leak
8. Cylinder leak
9. Pressure by pass valve leak
10. Electronic switch leak
11. Hose leak
12. Regen leak
13. Parts Listing

If an oil leak in the hydraulic system occurs-

1. Determine Leak.
Determine the leak point, leaks are often difficult to locate, clean oily areas and place a sheet of cardboard beneath the effected area, and observe for leaks, this may required the machine to operate for a period.

2. Check Oil Level.
The level of oil in the reservoir needs to be checked, with the main cylinders closed (fingers down) check level on the dip stick, top up if required (never overfill).

3. JIC Hose Fitting Leaks.
If the oil leak is from a JIC hose end fitting, tighten up the fitting on the hose end whilst holding firm the inserted male fitting. - Caution do not over tighten.

4. O-ring Fitting Ring.
If the oil is coming from the base of a fitting (most hydraulic fitting on the machine are an O- ring type, check to see that the backing nut, on the fitting is tight. If this fails to correct the leak, remove the fitting and replace the O-ring seal (**See** Part Listing for O-ring part Number) or replace the fitting - Caution: O-ring must be fitted to the fitting correctly without damage. When the lock nut is tightened, the O-ring on the fitting must not be forced against the thread on the fitting, ensure that the fitting is screwed in sufficiently.

5. Suction Hose Leak.
a) Check the suction fitting into the pump, remove the fitting and apply thread seal tape - Caution: tape must be wound onto the fitting firmly and in the opposite direction of the fitting screwing in. Tape must not come closer to the front of the fitting than 5mm or thread tape contamination to the oil system may occur.
b) Check suction hose for damage.
c) Tighten suction hose clamps - new clamps may be required - double clamping may be required in some circumstance (2 clamps each end).

6. Solenoid Leaks
Leaks from beneath the solenoids
a) Thoroughly clean solenoids before dismantling to prevent hydraulic system contamination.
b) Situated on the solenoids are electrical wire sockets - before removal, carefully mark so that these go back on as they came off. (Same position). To remove the wiring cap, remove screw in cap centre.
c) With Allen key remove 4 cap screws on the solenoid unit. Each solenoid unit has four oil ports each port has a small O-ring inserted (replace the O-ring if required) **see*:*** Parts List for O-ring Number.
d) When reassembling ensure both surfaces are thoroughly clean - ensure O-ring are correctly fitted and in all four ports, tighten down cap screws evenly. NOTE: Solenoid unit will only fit one way (the direction should be noted before removal).

7. Pump Leak.
Leak from the hydraulic pump:
a) Carefully check the inlet and outlet fittings into the pump for possible leaks.
b) Replace the faulty pump; return this to the manufacture or a dealer for service.

8. Cylinder Leaks.
Hydraulic Cylinder Leak
a) Check fittings into cylinder for possible oil leaks.
b) Check welding at the base of the cylinder for cracks resulting in a leak.

c) Excessive hydraulic cylinder shaft leakage: - As the cylinders age some leakage from the seals will occur this is normal when this becomes excessive replacement of the cylinders or the fitting of the cylinder seal kit will be required. **See**: Parts List for cylinder numbers.

9. Pressure Bypass Valve Leak

Oil leaking from the pressure bypass valve mounted to the aluminium block:

a) Check to see valve is firm (or)
b) Remove valve unit and replace O-rings.
c) Renew O-ring on outer cap.

10. Electronic Switch Leak.

Oil leaking from the hydraulic / electronic switch unit mounted to the aluminium block:

a) Tighten up the pressure unit, if this fails, replace the seal. ***See*** Parts List.
b) If oil is coming from the top of the switch unit from behind the wires from inside the switch unit, replace the entire switch.

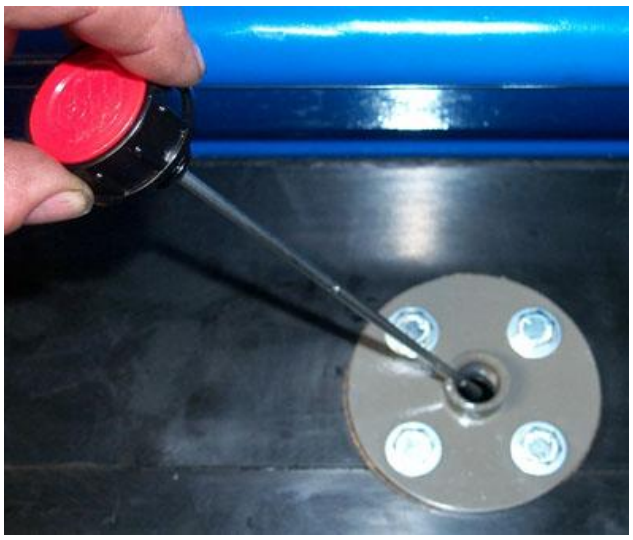
11. Hose Leak.

Hoses can develop leaks and fractures as a result of age or damage or a hose fault, if a leak occurs in a hose replace the hose. ***See*** Parts List for correct hose.

12. Regen Leak. Regen valve leak (Unit on cylinder)

a) Tighten fittings
b) Renew O-rings on O-ring fittings.

Solenoid Cap



Dipstick

Dipstick

Chapter 5
Pressing Fingers Malfunction

Malfunction of the pressing fingers

The pressing fingers are the 2 clusters of 9 fingers, one set on each side of the press. On the pressing stroke (down) these fingers come into the upper hopper through slots in walls of the upper chamber. These fingers compress the materials in the upper hopper into the lower chamber. When the compression stroke is complete and as materials are placed into the upper hopper during normal operations, these fingers return to an upper position, as these fingers return they also relax and withdraw through the slotted side walls of the hopper without disturbing the material above, when the fingers are withdrawn from the hopper they rotate, locking in a vertical position for the compression cycle.

Malfunction 1 "Limp Finger Set"

1. When the press is cycled and is returning both sets of fingers are in a fully raised position (Observe that both fingers are actually standing completely up).
2. As the direction of the cycle changes from up to coming down and one finger fails to remain ridged and rotates to horizontal position the horizontal finger will then push in through the side of the hopper with no pressing effect at all. This malfunction may occur on each stroke or at random depending on the problem.

Steps to remedy

1. Isolate the machine power by removing the key from the panel. (Note pressing fingers should be completely down cylinders fully closed)
2. Remove the rear mesh safety screen from the problem side of the press.
3 Locate C shaped lock. Clean from around locking system rubbish cardboard etc.
4. Earlier model presses have no bearings on the Fingerlock pivot and may simply require lubrication both on the pivot and the side contact plate, recommended lubricants (Pro-ma lube spray). Check that the lock, pivot bolt is not over tensioned.
5. Later model machine locks, pivots on sealed bearings No. 6203LU. Check lock for freeness replace bearings if required.
6. Lock is preloaded forward with a tension spring.
    a) Check that the spring is attached both ends
    b) Check that spring has full tension. When lock is manually pulled back it should snap closed positively (unbolt one end of chain to test.)
7. Attached to the rear end of lock via two shackle plated is the release chain which is also attached to the press frame via the other end. Check that the shackles are free and that chain is untangled (Note if chain becomes tangled it will shorten the length of the chain possibly breaking the chain (or the chain anchor bolts) as the press travels in the down cycle.
8. Clean the two surfaces of contact on the lock. Remove grease compressed paper etc. Roughen surfaces using a course file. (on older models only, if required)
9. See Flow Chart (Appendix 10)

Malfunction 2

Correct function of the finger system, the fingers travel in a downward direction rigidly locked when the fingers have travelled 80^{o} of their downward path the lock chain comes into tension releasing the lock. With the locks released the finger assembly becomes limp on the return stroke, withdrawing through the side, and then rotating to the vertical position and re- locking. ***Malfunction 2*** **-** Is when the finger assembly remains rigid in both directions - rigid down is correct, rigid up is a malfunction.

Steps to Remedy

1. Remove key for safety
2. Check main barrel pivot for seizure
    a) Lubricate main pivots
    b) Check for string, wire etc. tangled between the moving surfaces barrel unit should rotate freely.
3 Check that the lock chain is attached both ends and working - malfunction 2 is normally caused when the lock release chain becomes detached. (one or both ends)
4. See Flow Chart Appendix 9

Malfunction 3 "Low System Pressure"

One or both fingers malfunctioning in the previous chapters in finger malfunction we look at various mechanical reasons for the fingers failing to remain locked and rigid on the pressing stroke. As previously mentioned the finger units need to be raised to their maximum for the locks to engage if the fingers fail to fully extend the lock or locks may not engage which will cause the fingers to collapse on the descending stroke.

Malfunction 4 "Inadequate System Pressure"

Refer to system pressure chapter 13.

The four main areas of Fingerlock failure in order of priority:-

1. *Finger lock spring*
2. *Disconnected chain*
3. *Broken finger lock body*
4. *Frozen or damaged bearing*

Chapter 6
Press Cycles Down With Front Door Open

If press fingers move down with the top door open, Stop immediately and call manufacturer or safety officer

The front door is equipped with a limit switch or a coded switch unit when functioning correctly it ensures that:-

1. The machines pressing fingers will cycle up and down while ever the top door remains closed;
2. When the top door is opened during the cycling process the pressing fingers immediately stop and require reactivating when the door is closed again;
3. When the pressing fingers are down and the front door is closed, the pressing fingers will, with some models, retract when the up or retract button is activated, the fingers returning to an up position and remaining there;
4. With the front door open under no circumstances should the pressing fingers be able to move in a downward direction.

Malfunctions of door limit switch
A - Pressing fingers moving down with the top door open.
B - Press not cycling except in the retraction or (fingers up) and bale eject mode.

"Machines fitted with a roller switch on the right-hand side"
If the machines pressing fingers move in a pressing (down) direction with the top door open the most likely cause is the limit switch on the right hand side of the door not contacting correctly with the circular cam (earlier models). Later models have a switch arrangement adjacent to the controller.

The recommended clearance between the limit switch roller and the cam divot is 1mm. When the gap between the switch roller and the cam divot becomes too great, the cam will not push the limit switch via the roller deep enough to activate the switch, thus allowing the machine to cycle with the door open. (Earlier models only)

On the other hand if the limit switch is over adjusted with the switch roller and the cam in contact or close to contact, the machine may become unreliable or even stop cycling. With the switch activated with the door closed (as an over adjusted switch may be) the machine would only start and run in:

a) When the eject button was activated
b) When the up button was pressed, press would start (if fingers were down)
c) Return to the top position stopping there.

To Correct:

1. Close the top door
2. Adjust the limit switch in or out as required to 1mm clearance on the closest point of the limit switch roller. Securely lock in this position. Caution - do not over tighten switch lock nuts (use a mild locking agent). Using a multi-meter check switch for correct function.

Switch replacement number: SL100 - SL10086
SL200 - SL20086

Replace switch if damaged or faulty

1. Using a multi-meter check the switch function. With the door closed the switch should be in closed mode - with the top door open the switch should be in an open mode.
2. Wiring check. (See appendix 8).

"Balers fitted with a key coded switch on the left hand side"
If the baler cycles with the top door open, check the following:-

1. Ensure that the coded key is securely attached to the key bar on the top door. Replace rubber mounts if required.
2. Ensure that the coded key is fully inserted when engaged.
3. Check the coded switch for contamination entry.
4. Replace the coded switch if faulty. (Appendix 7)

Coded Key Bar

Chapter 7
Press Fails to Start

See Flow Chart Appendix 15

Chapter 8
Press Starts but Fails to Cycle

See Flow Chart Appendix 16

Chapter 9
Press Continually Cycles

1. The most common cause with the press continually cycling is obstructions over the censor eyes - check the eyes that they are free of obstructions clean both eyes with a soft clean rag.
2. The press continually cycles with clean clear eyes.
3. See flow chart Appendix 11.

Eye

Chapter 10
Press Noises

"Press Noises" causes/solutions

It is important that the press be operated in a manner that created the minimum levels of noise especially if the machine is situated in a confined space.

"Possible areas of noise and their control"

1. *The press is equipped with a high speed motor coupled to a two stage pump.* These in combination and situation in a confined space can create excessive noise levels. A motor/pump silencing box option is available from the manufacturers or their service agents.
2. *The press is emitting a high level squeal from the hydraulic system.* If the squeal is constant and the press is not cycling the possible problem is the hydraulic pressure switch. See Chapter 14 for pressure switch adjustment or replacement.
3. The pressing fingers are making a loud banging sound on the down cycle. This will happen as a result of insufficient material in the press.
4. The press makes a bumping sound as the fingers rise (in the up direction). The possible cause is a faulty damper strut. See chapter 16.
5. Squeal from main pivots. This may occur during damp weather. Lubricate using (pressure pack).

Chapter 11
Press Fails to Press Heavy Bales

Bale weights can vary significantly when pressing cardboard and paper, there are several factors in the materials which can contribute to this:

1. During moist weather moisture is absorbed into the materials increasing its weight and also reducing its structural strength both these factors contribute to heavier denser bales.
2. Bales pressed quickly tend to be lighter (in some cases up to 20 %) than bales which are pressed over a longer period of time, bales pressed over a longer period have a longer time for the materials to collapse and settle (repressed bales are often lighter).
3. Bales pressed from the SL100 & SL200 can vary in weight as previously stated depending on conditions and materials the SL100 will press a bale 100-140 kgs per bale and the SL200 will press a bale 200-220 kgs per bale.
4. Low System Pressure - See Chapter 13 Adjusting System Pressure.
5. Faulty or Maladjusted Pressure Switch - See Chapter 14 Pressure Switch.

Light Bale Low Density Bale Problems

Full Bale Light Comes on Early.

This fault is not uncommon, in some cases the light may come on each time the fingers complete the pressing cycle down, regardless of how much material there is in the bale.

Adjusting the Full Bale Switch

a) The pressing fingers are to be right down and the main Hydraulic cylinders fully closed. Note: Be sure the cylinders are fully closed; if necessary remove some materials from beneath the pressing fingers. Check the closing mark on the cylinder shaft to be certain cylinders are fully closed.
b) Locate full bale switch situated on the left hand side of the press (motor side) on the front corner. Note: The switch can be adjusted by removing lower left mesh guard.
c) The full bale switch is mounted to a plate which in turn is mounted under the bearing anchor bolt.
d) The switch can come out of adjustment as a result of this plate rotating, moving the switch roller away from the frame section which activates the switch (in some machines there are bolted switch activators), to see Appendix6.
e) Using a lever gently rotate the plate back until the switch roller axle is a little into the brass housing, do not over travel switch. ***NOTE: Do not lever against the switch, the switch is very fragile and will not take any force at all. You may need to relax the bearing anchor bolt under which the plate is mounted.***
f) The back edge of the switch anchor plate should be parallel with the press frame bar.
g) Hold the bolt head firmly and tighten nyloc nut until it is very firm. (Caution: The bolt can rotate causing the anchor plate also to rotate out of adjustment).
h) The full bale switch can be finely adjusted on the full bale switch adjustment nuts.
i) If the full bale switch is damaged or faulty replace .*See parts list* in owners manual.
j) Final check. Cylinder fully closed
k) Roller axle.

Chapter 12
Stringing Systems, Procedures and Problems

Stringing System "Initial Stringing" (Required 3 rolls of string)
Recommended twine gauge Supalash 8 (depending on bale weights)
Often problems experienced with the twine system are as result of wrong procedure or incorrect twine.

For the correct procedure for the initial stringing of the baler see stringing chapter in Owners Manual.

1. Position the 3 rolls of twine on the string lock side of the baler ensure that the string rolls are the correct side up and drawing from the correct end of the twine roll.
2. Burn seal the end of the twine (for the initial stringing only)
3. If the pressing fingers are down, raise the finger assembly, by activating the up button, the pressing arms will raise and stop in the fully up position. Turn key off.
4. Fully open the bottom door and the top door.
5. Situated on the top right hand side of the press hopper is a string lock bar.
6. Insert the twine from the outside through the string lock bar holes
7. Continue down with the twine and through the collar immediately below string bar see stringing chapter of owners manual.
8. String lock bar has three holes through which the three string ends are inserted from the outside, the two strings closest to the front come down the inside of the hopper and through the collars immediately below lock bar.
9. The third twine end is inserted through the hole in the string lock bar at the back position (rear of press) see twining chapter of owners manual.

The rear string passes through the twine lock bar and back inside the press through the hole in the rear panel of the press. The above initial procedure is for new balers or when fitting new rolls of twine.

"Stringing for each bale"

1. Take the string end (inserted through the collars and the rear door).
2. On the two side strings pull some string through the collars and tie in each string a double non slip loop.
3. Draw the strings across the baler as per to the inside of the opposite hopper wall and loop the string loop over the doomed hook.
4. Pull string down towards the bottom of the press and place the twine under plastic tab 4, then across under tab 5.
5. Repeat the procedure on both side twines. If the twine has surplus slack pull surplus through from the outside before closing the doors.
6. With the doors still open, draw the string across from the rear wall (approximately 2.4 metres). Place twine under tabs 6 and 7. Close the bottom door and bring the twine up the inside of the front door, over the top of the bottom door and attach to the square tab on the front of the bottom door, by rotating the twine several times around the tab.
7. See twining chapter in owners' manual & Appendix 17

Before loading the Baler

1. Check that side strings are securely attached to the domed hooks, situated on the left hand wall.
2. Check that strings are under tabs securely.

Loading of the Baler

1. After stringing, close securely both doors.
2. Pressing fingers are still fully raised clear of the box.
3. Load materials into the hopper over the top of the top door.
4. When the materials are level with the top of the top door. First turn on the key and secondly press down button. From this point the press will automatically cycle while ever materials bridge the censor eyes.
5. When the full bale light is illuminated remove surplus materials from above the fingers.
6. Note if excessive materials are protruding above from between the fingers
   a) Open top door
   b) Push up button pressing arms will return to vertical position and stop
   c) Distribute and flatten top of bale
   d) Close the top door and press the down button

   Fingers will stop on the top of the pressed material.
7. Open the top door fully.
8. Draw side strings across the top of the bale from beneath the collars.
9. Unhook the looped ends from the domed hooks.
10. Cut the strings from below the collars; join the two ends by inserting cut end through the loop pulling tight & tying off.
11. (A) Undo string from the front door tab;
    (B) Tie a loop in the cross string, pull tight, cut and tie off.
12. With top door still open activate up button, the finger will stand and stop vertically.
13. Open the bottom door fully and eject the bale, see bale ejection.

String Problems

A String becomes detached from the domed hooks.

1. Excessive slack in the twine can cause this. Ensure that the strings are firm after stringing.
2. String loops are not sitting into the domed hood correctly in the hooks.

B Loops tighten on the hook.

1. Incorrect loop. The loop must be a no slip loop. i.e. double the twine end back along itself for about 300mm and tie a loop knot near the end then come back 100mm and tie another loop knot, this gives a double loop knot. See Appendix 17 illustration 2.

C Loop is hard to unhook when the press is full of compressed material.

1. In the previous paragraph is an explanation on how to do a double knot.
2. When the tension is too great to unhook simply cut the top loop when ready to tie off the bale and use the loop section between the two knots to tie the other end.

D String lock is cutting the twine.

1. Twines vary in diameter especially if a twine not recommended is being used. The twine lock system is adjustable, if the twine is being cut as a result of over adjustment remove one of the bolts on the twine lock connector bar, linking the top door with the twine lock bar - lengthen the connector bar by rotating (one rotation may be sufficient depending on twine diameter).

E Twine damage

1. If the twine is being damaged and the bales are coming out with loose twines, the twines are being pulled through the locking bar during the pressing operation. This will require that the adjustable link be shortened. Note if the bar is over adjusted the lock will cut or damage the twine.

Chapter 13
Bale Ejection System

The way the bale is made, the way it is capped and the type of materials being pressed, can determine how difficult it will be to remove the bale from the press.

Capping of the Bale

After the full bale light has come on and fingers are down firmly on top of the compressed materials:-

1. Open the top door (**only**) then-
2. Activate the up button, the arm will rise and stay up.
3. Level the cardboard on top of the compressed material. Amounts of cardboard raised up in the centre distribute to the outer sides of the hopper- close the top door and activate down button.
4. Fingers should now be down firmly on top of the compressed material – open fully the top door only.
5. Remove any loose amounts of cardboard.
6. Unhook twines from the left hand side of the hopper.
7. With the top door fully open, take hold of twine below the collars, right hand side and draw across the bale top.
8. Cut the twine allowing enough length to go through the loop and tighten off as firmly as possible.
9. Do the same with the twine from front to back, tie a non slip loop in the back end of the twine- untie the front from the tab on the top of the bottom door, pull tight and tie off.
10. With the front top door remaining open, activate the up button fingers will rise and stay up.
11. With pressing fingers up, open the bottom door to its maximum.
12. Place transport trolley in front of the bale.
13. Activate eject button with left hand and assist bale ejection with the right hand.

Difficulties in Bale Removal

In the previous paragraph the importance of tying off the bale firmly was stressed, a bale tied off firmly has minimum expansion when the bottom door is released and offers less resistance in ejecting.

Problems:-

1. When ejecting button is activated the motor starts, yet the bale fails to eject.
   a. Ensure that both doors are opened to their maximum.
   b. If eject arms are working a thud feeling should be felt on the bale. (When the machine is new, the tacky paint surface can offer some resistance, especially if the compressed material has been in the press for some length of time, creating a bonding effect. To remove such bales, may require substantial assistance from the operator by pulling firmly on top of the bale at the same time as operating the eject button, this situation will improve with use.
2. Motor fails to start when the eject button is activated:-
   a. Ensure that the pressing fingers are raised as previously stated and that both doors are fully opened.
   b. Check the emergency stop button.
   c. Check the power light on the controller, if the power light is not on check the power supply to the controller.
   d. Check the press fuse.
3. When the eject button is activated the motor starts but the hydraulics on the eject fails to function.
   a. Check the wiring going to the eject solenoid valves, mounted on the top of the block. On the block are two solenoid values, the single ended valve operates the bale ejection system.
   b. Check the wiring in the valve plug unit for loose or disconnected wires.
4. A test unit is available, to test for the correct signal response from the controller - these are available from the press manufacturers or your local hydraulics service agent.
5. (1) If the motor starts when the eject button is activated
   (2) And the correct electronic signal is reaching the solenoid on the eject valve yet the valve fails to respond:
   - Replace the solenoid valve unit.
   - Remove and dismantle the valve, clean the internal working parts thoroughly in clean fuel to remove any possible contamination.
   - Replace the solenoid valve coil.

   Note: If there is no signal from the controller to the valve:-
   - Check the wiring from the controller to the valve for damage or for loose or disconnected wires or loose fittings.
   - Replace the main controller unit.

Chapter 14
Press Movement on the Floor during Operation

STRUT MALFUNCTION

The likely cause of press movement in locating on the floor is a faulty damper strut. See Appendix 3.

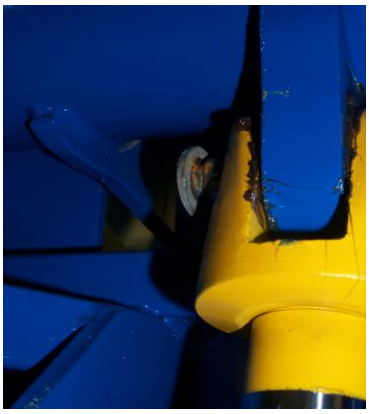
Steps to check:-

1. Ensure that there is sufficient material in the hopper to prevent the fingers crashing on the down stroke during test.
2. As the press is cycled in the up stroke, finger assemblies, come into contact with rubber bumpers.
3. If the damper struts are functioning correctly, finger assemblies will contact the bumpers, without a bump or without making a bumping sound. If a strut is faulty, one or both of the assemblies will contact the bumpers with force; this bump force causes the press to move on the floor.

Steps to correct:-

1. Check strut anchor points to ensure strut is connected.
2. Identify faulty strut and remove.
3. Dismantle faulty strut:
    - Remove cap retaining screw
    - Top of cap
    - remove shaft assembly
    - check that the piston unit remains well secured to the shaft
    - Replace piston o-ring 6 Part No. (on o-ring models)
    - thoroughly clean unit
    - recharge o-ring models with AWH 45 grade
    - recharge older units without o-rings with 90-160 grade
    - amount of oil as per
    - reassemble and refit the damper to the machine
    - replace anchor bolts if worn
    - bottom bolt 2½" HT top bolt 2½ x ½" HT bolt with nyloc nuts

If one strut only is malfunctioning, it is still advisable to remove and service both left and right hand struts.



Chapter 15
Doors Latching and Opening

The correct operation of the front lower door is an important function of the press, both for the ease of operation, safety of the operator and the performance of the press. For the bottom door to perform satisfactorily attention to lubrication is essential. See Lubrication Guide Chapter 18.

1. The bottom door is interlinked with the right-hand side section of the press, as the bottom door is opened the side section of the press also pivots out, releasing the tension on the bale for easier ejection. As the bottom door is closed the above mentioned side section of the press is drawn in (hence the need to keep rotating and sliding components well lubricated.
2. The side section movement is a result of an adjustable connection link between the front door and the base.

Adjusting Front Door Latch

The purpose of the link being adjustable is for adjustment on the door latch. The link can be lengthened or shortened as required to give the correct clearance between the two latch surfaces as the door closes the two flat surfaces should just contract. If the bottom door is difficult to close in the last 50 - 75mm, the last adjustable link may require lengthening (Note: a small amount of rotation can make a big difference, adjust by ¼ turns. A repeat of the procedure may be required until the door latch closes satisfactorily, and also opens well under loaded conditions i.e. Full bale). When the correct adjustment has been achieved, tighten nuts 3 on the adjuster. The connector link is secured to the press both ends by 2 X 2 ½ HT Bolts with nyloc nuts. These bolts to be done up firmly but not over tightened - replace bolts if worn.

Bottom Door and Latching System

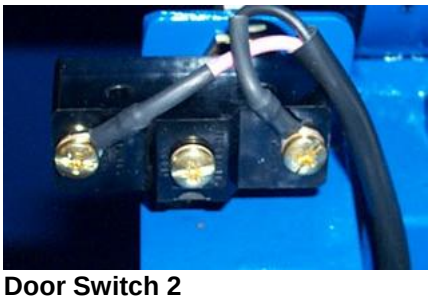
Service, Operation and Adjustment

- Check front bottom door for soundness (welding etc)
- Lubricate hinges.

Door Latch Adjustment

1. With the door open check the rotational freeness of the vertical door latch bar and lubricate to freeness.
2. Close the door until latch is in position. The approximate gap between the flat surfaces of the vertical bar and the press latch lugs should be approximately 1mm.
3. To adjust the door gap clearance lengthen or shorten as required, the adjustable link is situated at the bottom right hand corner of the press, if the link is over adjusted the door will not close, if under adjusted the latch surface will collide.
4. This procedure may need to be repeated until the press door opens satisfactorily under loaded conditions.
5. The adjustment link is secured to the press both ends by 2 X 2 ½ HT Bolts; these should be firm but not over tightened.

Door Switch



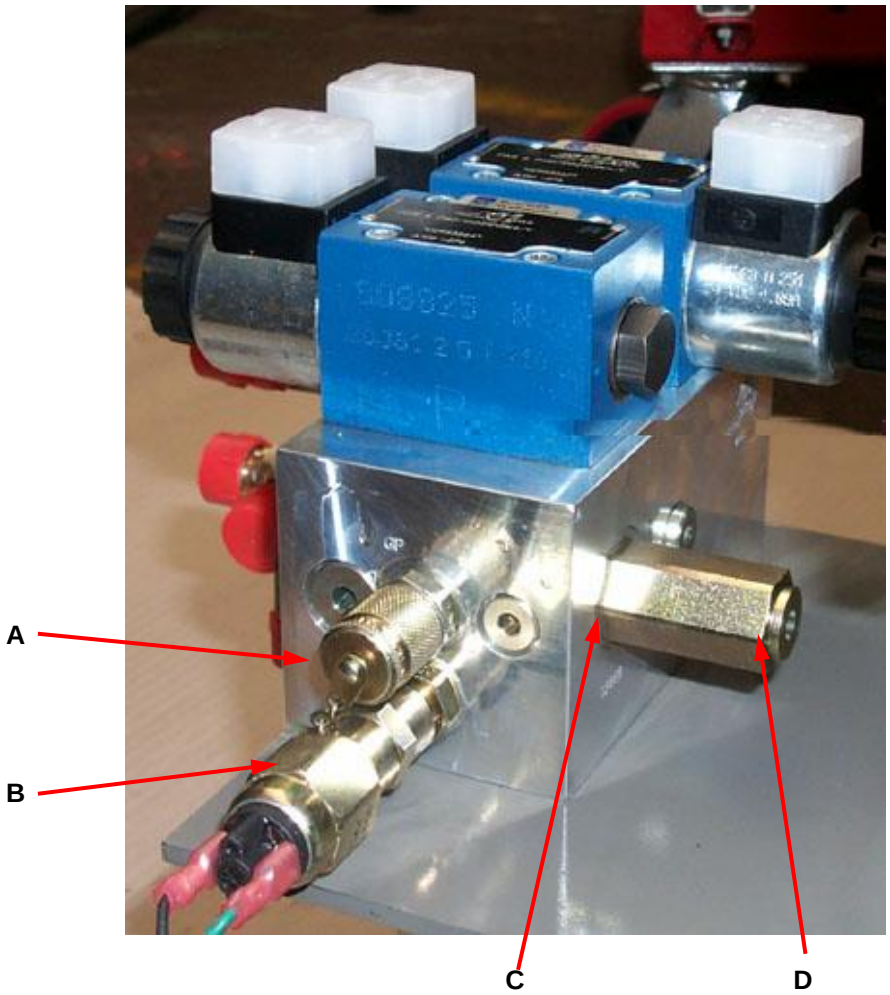
Door Switch 2

Door Link Adjuster

Door Adjustment

Door Link Adjuster

Chapter 16
Adjusting System Pressure



Testing and Adjusting the Hydraulic System Pressure

Autobalers have a recommended system pressure of 2100psi. With time and system wear the pressure may reduce to the point of creating functional problems in the baler system.

Testing System Pressure

1. A hydraulic pressure gauge with a capacity of 3000psi plus will be required.
2. To attach the pressure gauge to the baler test port A. Remove the dust cap from the baler test port fitting and attach the pressure gauge.
3. Remove one of the two wires from the hydraulic pressure switch B. “remove the wire spool fitting carefully”
4. Cycle the baler until full system pressure is reached.

Adjusting the Hydraulic system pressure

1. Remove cap C from the system relief valve D
2. Insert a 3/16 Allen key into the relief valve D through the open plug port.
3. To Increase the system pressure rotate the adjustment screw in approximately ¼ turn per 500psi.
4. Systems that fail to respond to adjustment could have the following issues:
    a) Insufficient hydraulic oil (top oil up to recommended level)
    b) Coupling key sheared off – check coupling
    c) Hydraulic pump wear
    d) Inner strainer filter blocked creating pump cavitation
    e) Cylinder internal failure permitting oil to escape past the piston seals

Chapter 17
Pressure Switch

The pressure switch plays a vital role in the operation of the machine; the pressure switch is simply an adjustable switch in the hydraulic system. The system pressure is set at approximately 2100 - 2250 psi and fixed. The pressure switch is set to fire at approximately 2000 psi, or as determined.

When the cylinders reach their full stroke on the up part of the cycle full pressure is reached in the system, this causes the pressure switch to fire, sending an electronic pulse to the yellow controller.

The electronic controller in turn sends the appropriate response to the solenoid valve in the hydraulic system, the solenoid valve then activates changing the flow direction of the oil path from the bottom port on the cylinder to the top port, and this change causes the cylinders now to commence closing thus commencing the (down) pressing path of the cycle.

When the cylinder is fully closed full pressure is again reached, the pressure switch fires and solenoid valves are activated, oil flow to the top of the cylinder ceases and is directed to the tank.

Switch Malfunction

1. If the pressure switch A is set too high the press will not cycle, it will reach the up stroke and bypass in the main system via bypass valve.
2. If the pressure switch is set too low. Low bale weight will occur. The pressing fingers also may become unreliable; as the pressing fingers are stood up progressively more pressure is required. If the pressure switch is set to low it may fire before the finger assemblies are fully up. If the fingers are not fully up the locks on the finger units will not activate and the fingers will malfunction on the down (pressing) stroke.

Pressure Switch Adjustment

1. Ensure that there is sufficient (cardboard) material in the press to prevent the fingers of the unit crashing at the bottom end of the pressing stroke.
2. Activate & send pressing fingers down.
3. Turn off power key.
4. Ensure that both wires to the pressure switch are firmly connected.
5. Insert a 3mm Allan key into the pressure switch between the two wire connections.
6. Rotate the Allan key (in) clockwise ½ of one turn (leave Allan key inserted) by rotating the switch ½ of one turn this should prevent the pressure switch firing at the top end of the stoke as it normally would.
7. Start the press & activate the up button, press arms should rise & stop in the fully up position, if the switch still activates, allow the arms to travel down & stop. Rotate the Allan key further in until press does stop at the top. (Caution switch can be damaged if the key is rotated to far).
8. When the press pressing arms have reached the top position & no longer changing & coming down with motor still running. **Very slowly** start releasing switch adjustment by rotating inserted Allan key in an anti clockwise (out) direction until the switch activates & the arms proceed down.***(Caution Beware of Moving Cylinder)***
9. Stop press turn off key.
10. At the point where the switch fired, rotate Allan key (still inserted in the pressure switch) a further1/8 of one turn anti clockwise (out).
11. Test to see machine cycles reliably, remove Allan key.

Pressure Switch Replacement

The pressure switch will require replacement when:

1. The switch fails to respond to the adjustment
2. When oil is leaking from inside the switch
3. Behaves unreliably

If the pressure switch is suspected of being faulty replace. *Note: If the switch is sourced from the manufacturer it will be pre-set and should operate when fitted. If the pressure switch is not pre-set then the technician will need to follow the setting procedure as in the pressure switch adjustment.*

Chapter 18
Emergency Bar Operation

The emergency stop bar is situated on the top of the top door.

The emergency bar is often subjected to damage from fork lifts loading skips etc. It is therefore important that its function and maintenance be understood.

The bar consists of eight components:

1. Emergency bar support Bracket
2. Emergency bar
3. Connection Bolt
4. Sleeve
5. Spring
6. Washer
7. Nut
8. Limit switch

The emergency bar if operating correctly, when depressed should stop the press during any part of its cycle. To recommence the cycle the appropriate button will need to be activated on the controller.

Emergency bar operation

1. Ensure that the emergency bar bracket is firmly attached to the door, check for damage, bending etc.
2. Check the emergency bar when depressed that is returns freely via compression spring.
3. The purpose of sleeve is to control the down movement of the emergency bar to protect the limit switch from damage.

Limit Switch Fitting

Correct limit switch fitting.

1. With the emergency bar fully up and working freely the clearance between the button on the limit switch and the bottom of the emergency bar should be a minimum of 1mm.
2. Adjust the limit switch vertically in the slotted holes in the switch mounting plate so that when the emergency bar is fully depressed the emergency bar is not in contact with the plastic switch housing.
3. Operate the emergency bar, when depressed the limit switch button should be contacted and the switch make an activated click sound. When released the emergency bar should rise above the switch button.
4. Check the limit switch mounting bolts for firmness.

Switch Wiring

1. The switch operates in the normally closed mode.
2. The two wires are attached to the outer terminals. Terminal 1, com and 2, NC
3. Check the wiring from the limit switch on the emergency bar to the wiring on the door limit switch for damage or short circuits. Use a multi-meter.

Testing the emergency bar switch.

1. Set the multi-meter on low ohms scale, or continuity light, these should indicate a short between terminals 1 and 2 of the limit switch is not operated. Operation of the switch should remove the short circuit. (Terminals 1 and 2 outer terminals).

Chapter 19
Damper Strut

The damper struts are situated on either side of the baler unit. It is essential that these be working correctly. These ensure that the finger assembly return smoothly.

FULL SERVICE PROCEDURE

1. Remove the damper from the Autobaler (remove anchor bolts at both ends)
2. Remove the small cap retainer screw on the side of the damper barrel
3. Carefully remove the cap by tapping off
4. Slide out the piston assembly and take care, DO NOT DAMAGE THE SEAL
5. Replace oil with 32 grade hydraulic oil, 50mm depth in the barrel (approx 1/3 of a cup / 100ml)
6. Replace seals: Shaft seal - Ludowici R87-088 and Piston & cap seal - 2” x 3mm O’ring

SERVICE CHECK

1. Raise the fingers to a vertical position and stop in that position, this can be done by pressing the retract button found on the controller
2. If a strut is working correctly, the assembly will slow 50mm before contacting the plastic stoppers
3. Leave strut attached to the baler
4. Remove the strut cap, total oil volume in each strut 100ml
5. Using a long clean rule, measure oil on top of the piston (minimum 5mm of oil depth)
6. Add 32 grade hydraulic oil if required
7. Before closing the cap, smear grease around the cap O’ring
8. Re-assemble and check for good function

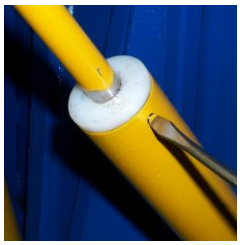


Fig 6

Fig 7

Fig 8

RECOMMENDED LUBRICANTS

Only lubricants recommended by the manufacturer are to be used in the Autobaler. Failure to use the recommended lubricants will result in voidance of the baler warranty. Autobalers have high pressure pivot points and therefore must only be lubricated with high pressure long life lubricants.

HYDRAULIC OIL: CASTROL HYSPIN 32 GRADE
GREASE: PBL 8
SPRAY LUBRICANT: PBL 8 SPRAY LUBE

For further details and possible supply of the recommended lubricants, Please phone:-

TOLL FREE: 1800 888 403 OR (02) 67 345 403

Chapter 20
Lubrication

Lubrication Chart
The life and performance of the machine will be determined by how well the press is serviced and maintained. Though this applies to the whole life of the press, it is especially important during the first twelve months of the presses life.

Hydraulic System
Replace filter every 12 months. Where conditions are dusty, replace more often.

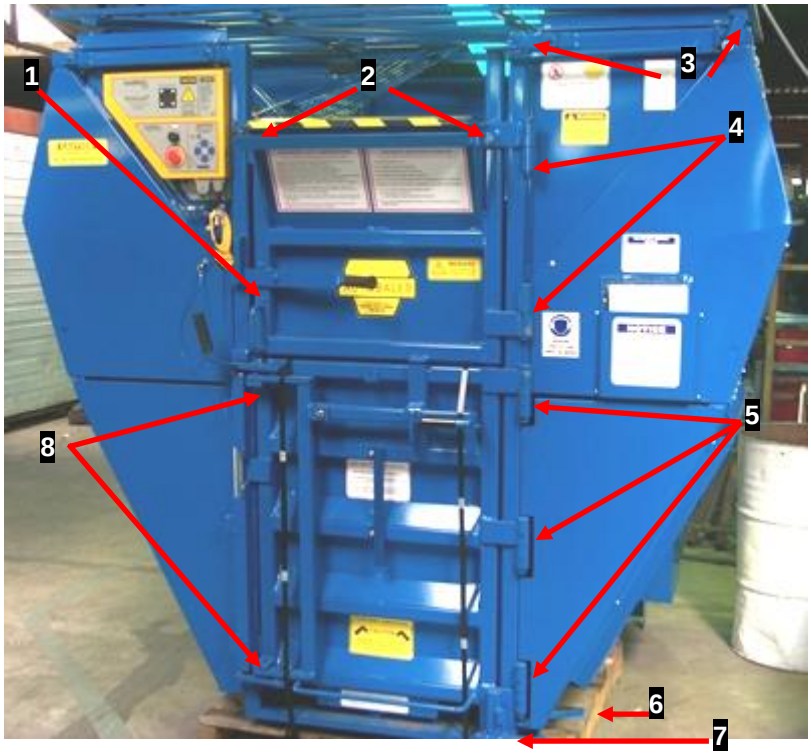
Hydraulic Oil
- Oil type AWH 45 (recommended).
- Tank capacity SL100 25 L
  SL200 100L

Oil Change Period
Recommended oil change period every 1500 bales or every 2 years, under dusty conditions oil change will be required more often.

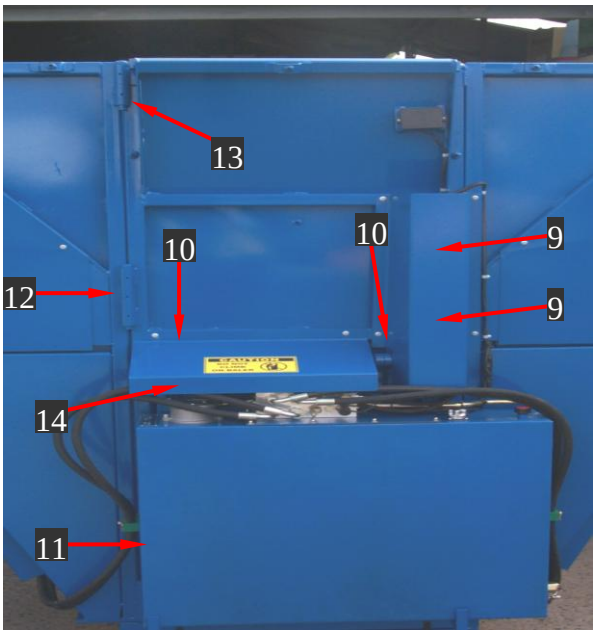
(EACH MAINTENANCE PERIOD)
1. Upper door latch pivot, one pump of grease each service per pivot
2. Emergency bar pivots, oil pivot & ensure that the bar is working freely
3. Connector link pivots, connecting top door with rotary twine lock, Grease both ends
4. Upper door hinges, using KZD needle nose coupler, ¼ pump per coupling
5. Lower door hinges, using KZD coupler, ¼ pump per pivot
6. Side door slide plate, the side door assembly slides on this plate - grease generously
7. Connector link, an adjustable link. Grease both ends, see link adjustment for adjustment
8. Lower door latch clevis, grease lightly
9. Lower latch clevis, lightly grease
10. Secondary latch slide, grease lightly
11. Latch bar support, small lug welded to the vertical latch bar, lightly grease
12. Eject cylinder anchor points, grease lightly
13 Eject axle pivots, using KZD coupler (one pump)
14. Filter, change annually (see filter service details)
15. Lower side wall pivots, using KZD coupler ½ pump each
16. Dip stick, with the main cylinders fully closed, the oil level should be within 100mm from tank top
17. Middle side wall pivot, ½ pump per pivot using KZD coupler
18. Upper side wall pivot, ½ pump per pivot using KZD coupler
19. Upper & lower cylinder anchors, main hydraulic cylinder pivots situated both sides of the baler. Using KZD coupler, lever cylinder clevis to one side & squirt grease into pivot then lever clevis the other direction & squirt grease into the pivot. Rotate anchor pin ensuring grease has penetrated pivot. The anchor pin should turn freely. Repeat this procedure on all pivots (upper & lower, as well as on both sides). If difficulties are experienced with grease penetration, removal of the anchor pin may be required. Once removed, grease pin & inner clevis & refit, ensure that pin is fastened securely
20. Upper & lower damper anchors using KZD coupler grease upper & lower pin ensuring good grease penetration
21. Damper service (see damper service)
22. Chain shackles, grease pivots & slide lightly
23. Barrel grease nipples, 2 nipples situated on each finger barrel, 5 to 10 pumps per barrel
24. Main bearings, grease sides of bearings lightly
25. Finger lock roller, these are situated on each side of the baler, grease lightly

FULL LUBRICATION GUIDE

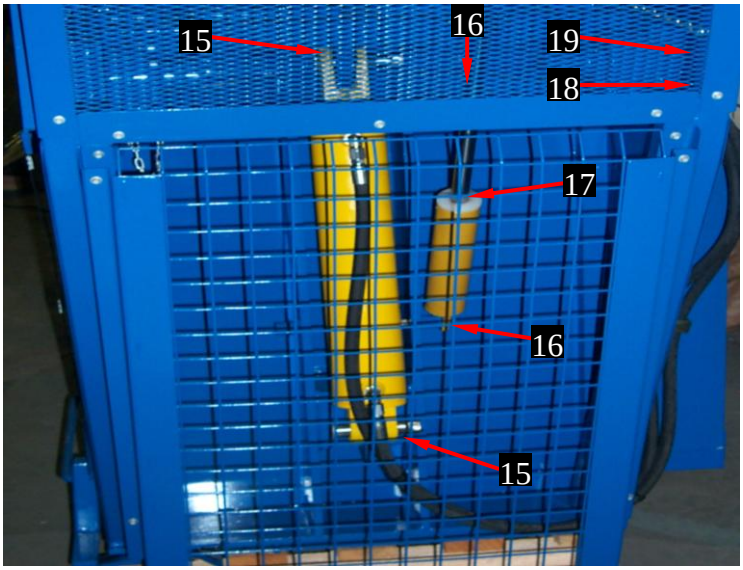
1. Upper latch pivot
2. Emergency bar pivots
3. Connector link pivots
4. Upper door hinges
5. Lower door hinges
6. Side door slide plate
7. Connector link
8. Lower latch pivots



9. Eject Cylinder anchor points
10. Eject axle pivot
11. Lower side wall pivots
12. Middle side wall pivot
13. Upper side wall pivots
14. Filter



15. Upper & Lower cylinder anchors
16. Upper & lower damper anchors
17. Damper service point
18. Chain shackles
19. Finger lock roller



Chapter 21
Press Fails to Cycle Automatically

1. Autobalers will not cycle automatically after the full bale indicator has responded; at this point the baler will only cycle manually using the cycle button.
2. The baler will not cycle automatically if the baler active light is not flashing. The three most common faults for active light failure are as follows:
   a) As the baler cycles under load movement in the top door can affect the door interlock momentarily breaking the circuit and stopping the baler cycle and rendering the auto function inactive – adjust as required.
   b) Automatic function can also be affected by a hydraulic pressure switch problem. If the hydraulic pressure switch fails to fire at either the top or bottom end of the stroke the auto function will be negated. Pressure switch adjustment or replacement may be required.
   c) Automatic function can also result from the sensor failure, situated at the rear of the baler hopper is the receiver section of the eye unit. This may require replacement. Contact your local service organisation for a replacement unit or contact the baler manufacturer on: **1800 888 403**

Chapter 22
Maintenance Instructions

This should include safe working procedures for carrying out all preventative maintenance & repairs
This should also include any special tool requirements for maintenance.

1. SERVICING PROCEDURE

Before attending a service site, the following may be required:

1. Source from the baler owner or operators the following
   a) When the internal services are due
   b) Date & time suitable to carry out the service
   c) An accurate location of the baler
   d) Whether site induction & training is required to enter the site
   e) What type of clothing & footwear are required
   f) Machine type & serial number
   g) Does the baler require attention i.e. repair/adjustment over & above a regular service, so that likely parts required can be taken
2. Personal Protective Equipment required
   a) A high visibility shirt or vest
   b) Regulation safety glasses
   c) Regulation footwear
   d) Hearing protection
   e) Hand cleaner
   f) Towel roll
3. Before commencing the service
   a) Isolate the power source from the machine
   b) Clean the area to be working in
   c) Remove the baler key & place an “out of service” sign if required
   d) Remove the guards relevant to a service

2. LUBRICANTS REQUIRED TO SERVICE AUTOBALERS

1. Tube of PBL (Pro-ma) long life grease
2. PBL or similar spray lubricant
3. 32 grade hydraulic oil, Note: a minimum of 20 litres is required for top up purposes in a regular service. Sufficient oil should be carried for maintenance which requires an oil change. For a complete oil change, the amount of oil required for the 100 and 200 series Autobalers is 60 litres.

A container or containers will be required to deposit the used baler oil. In the likely event of an oil spill, carry a sufficient amount of oil absorbent substance to ensure that the floor area is completely oil free on completion of the job. Used oil must be disposed of via an oil recycler or in a legal manner.

3. TOOLS REQUIRED FOR A PREVENTATIVE MAINTENANCE

1. Cartridge type grease gun
2. Oil pump
3. Oil funnel
4. KZD needle nose coupler

4. BALER SPARES REQUIRED FOR A SERVICE

1. Oil filter - SL100 - CR40 (AFR30C10NR/HN)
   SL200 - CR65GN (OMTF111F10NA1/LA)
2. Pressure switch
3. Fingerlock spring, part No: SL10059/SL20059
4. Plastic twine tabs
5. Assorted high tensile bolts (2 ½” x ½” x ht nyloc)
6. Roller type limit switch (omron)
7. Cable ties
8. Spare cylinders, see parts list numbers
9. Cylinder anchor bushes see parts list number
10. Controller mount anti vibration fasteners, see parts list number
11. Spare finger lock chains, see parts list number
12. Spare damper
13. 4 amp controller fuse
14. Full bale light bulb
15. Coded key mount rubbers
16. Spare eye unit

The parts listed above are the parts which may be required & recommended be carried by all authorised service agents

Chapter 23
Servicing

Service Period - Every 4 months
M/M = Major Maintenance every 12 months or every 660 bales

Major Maintenance

1. **Auto-baler service essentials**
2. **Replacing the Finger Lock Springs**
3. **Replacing the Oil Filters**
4. **Servicing Finger Assemblies**
5. **Door Adjustment Check**
6. **Damper Unit Service**
7. **Electronics**
8. **Service Check on Finger Locks**
9. **Hydraulic Check**
10. **Full Lubrication Guide**
11. **Safety Check List**
12. **Service Guide**
    - Lubrication
    - Dampers
    - Hydraulics
    - Electrics
    - Controller – Eye Operation
    - Solenoid Valve System
    - Safety Bar Operation
    - Full Bale Indicator Operation
    - Structural
    - Twine System
    - Top Door
    - Guarding
    - Finger Assembly Check
    - Bottom Door
    - General Operation
    - Signage

FIVE AUTO-BALER SERVICE ESSENTIALS

1. CLEAN all loose material from within the balers' upper and lower sections and behind the compaction cylinders. Caution – when cleaning around the power unit area care must be taken with wiring and wiring connectors.

2. LUBRICATE the baler in accordance with the manufactures recommendations i.e. lubricate all moving parts, upper and lower cylinder pivots, door latches and hinges, side door slide plate, hydraulic unit oil level etc.

3. Complete a safety audit form i.e.: door interlocks emergency bar, emergency stop, baler location guarding, work practices etc.

4. Check the baler function and operation. I.e.: all finger units' functions correctly, finger units standing smoothly (check damper function) door latch operation.

5. DOOR LATCHING. Check baler door latch operation check and repair worn door latches. Check for safety of Latching and ease of operation.

2. REPLACING THE FINGER LOCK SPRINGS

For good reliable service, the finger lock springs require replacement on a frequent basis. The SL100/SL200 balers have a pair of finger locks, one on each side of the baler. “Replace annually” spring part number: SL10059/SL20059

The finger lock has attached a chain via two shackles; the chain is attached to the other end of the baler structure. Attached to the finger lock unit is a tension spring, the tension spring is attached to the finger by a spring which is attached to the finger by a 3/8” bolt (see finger lock illustration)

STEPS TO THE FINGER LOCK SPRING REPLACEMENT

1. Locate the finger lock assembly (Left to Right)
2. Remove the outer mesh screens
3. Ensure that the finger assemblies are down (cylinders are fully closed)
4. Release the finger lock chain on one end, this will allow finger lock to close releasing the tension in the finger lock springs
5. Remove the existing spring by rotating the upper spring hook from the top lug (use vice grip tool)
6. Unhook the spring from the bottom anchor bolt
7. Check the anchor bolt for firmness
8. Attach new spring to the bolt lug at the bottom (full loop end of spring)
9. Grip the top of the spring firmly using clamp vice grip pliers, lift and rotate spring into the top anchor lug hole
10. Re-attach chain to the finger lock
11. Check to see that springs are fully and securely attached

3. REPLACING THE OIL FILTERS

It is recommended that the oil is tested annually to check for Oil contamination; Oil damage from overheating; Water ingressions from high pressure cleaning.

The hydraulic system requires a filter change every third service. The filter is situated on the hydraulic tank which is situated at the side or rear of the Autobaler

Filter Changing Procedure:-

a) Remove the three small studs on the tank; these are located on the top of the unit (see illustration 1)
b) Lift filter out of the unit (Note: the unit does not require removal from the tank)
c) Replace the new filter taking care with the re-assembly making sure that the filter is the correct way up (see illustration 2)
d) Ensure no contamination occurs; clean well before disassembly and re-assembly
e) Tighten the filter unit lid down evenly
f) Run the machine and check for oil leaks

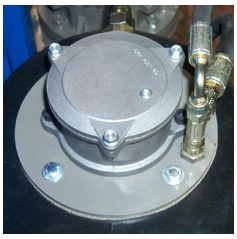


Illustration: 1


Illustration: 2

4. SERVICING OF THE FINGER ASSEMBLIES

The finger assemblies consist of a left and a right hand unit.

1. Check the anchor bolts on each of the main bearings, if bolts are broken replace with 2 ½ x ½ or 2” x ½“ UNC HT bolts with Nyloc nuts.
2. Machines equipped with nylon main bushes lubricate using pressure pack lubricant.
3. Check bearing pivot shaft securing pins/bolts.
4. Finger assemblies consist of finger/barrel cluster coupled to the finger frame assembly by a full length hard chrome pin, check that the pin fastening is secure.
5. Lubricate grease nipple on main barrel.
6. Check finger assembly for weld failure or fatigue.
7. Check top cylinder anchor
8. Remove one split pin from the anchor pin.
9. Remove the anchor pin- check pin and lug sleeve for excessive wear, replace the pin and bush if required.
10. Check the cylinder clevis for cracks, fatigue or wear, replace if required.
11. Lubricate pivot with lithium based grease before reassembly.
12. Dismantle and lubricate the bottom cylinder anchor, check hydraulic cylinder fittings for oil leaks.

5. DOOR ADJUSTMENT CHECK

The front door on the AutoBaler is connected to the side door pivoting via an adjustable linkage.


Fig 11

If a linkage assembly is incorrectly adjusted the bottom door latch can be difficult to open or close.

1. Check the linkage arrangement for damage.
2. Check that all bolts are attached and in good order, replace with a 2" X ½ " HT bolt if required.
3. To adjust, lengthen or shorten adjustment link as required.
4. In most cases the link will require lengthening - to lengthen, release 5/8 lock nut furthermost from the press, rotate ½ turn, follow up lock nut closest to the press, tension up. If the adjuster is over length the door won't close.

A correctly adjusted door-

- When the bottom door is pushed fully closed without latching it will spring back open from 15-20 mm.
- Lubricate all pivot points on the linkage, door hinges and the door latch.

☐ Door Check Complete.

6. DAMPER UNIT SERVICE.

The damper struts are situated on either side of the baler unit. It is essential that these be working correctly. These ensure that the finger assembly return smoothly.

FULL SERVICE PROCEDURE

1. Remove the damper from the Autobaler (remove anchor bolts at both ends)
2. Remove the small cap retainer screw on the side of the damper barrel
3. Carefully remove the cap by tapping off
4. Slide out the piston assembly and take care, DO NOT DAMAGE THE SEAL
5. Replace oil with 32 grade hydraulic oil, 50mm depth in the barrel (approx 1/3 of a cup / 100ml)
6. Replace seals: Shaft seal - Ludowici R87-088 and Piston & cap seal - 2" x 3mm O'ring

SERVICE CHECK

1. Raise the fingers to a vertical position and stop in that position, this can be done by pressing the retract button found on the controller
2. If a strut is working correctly, the assembly will slow 50mm before contacting the plastic stoppers
3. Leave strut attached to the baler
4. Remove the strut cap, total oil volume in each strut 100ml
5. Using a long clean rule, measure oil on top of the piston (minimum 5mm of oil depth)
6. Add 32 grade hydraulic oil if required
7. Before closing the cap, smear grease around the cap O'ring
8. Re-assemble and check for good function

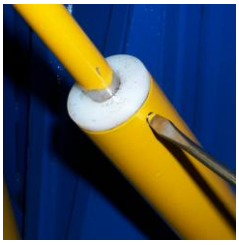


Fig 6

Fig 7

Fig 8

7. ELECTRONICS - FOR DETAILED INFORMATION SEE STARLOGIXS

1. Check the operation of the key switch and emergency stop button. See illustration 5.
2. Check the operation of the cycle buttons.
3. Check the door open switch. The baler must not be able to cycle down with the top door open.
4. Check the operation of the eject function "with all doors open". Press the eject button, eject arms will swing into the press chamber ejecting the bale, eject arms require manual retraction (i.e. press in with your foot). Note if the eject fails to eject the possible cause will be a top door limit switch - adjust the limit switch.
5. When servicing the baler record the bale count on the bale counter situated on the controller. Illustration 5.
6. Check the operation of the sensor units. With the press active light on place a piece of material between the sensor eyes, the motor should start and the press commences the up direction of its cycle.
7. Check emergency / safety bar on the top door - adjust if necessary.

8. In the case of a controller failure, replace the controller unit.

Illustration 5

8. SERVICE CHECK ON FINGER LOCKS

Finger lock unit (see illustration 10) consists of a C shaped lock which hold the pressing assembly rigid on the down (pressing stroke) if the pressing assembly fails to remain rigid the fingers will drop and will push into the pressing chamber in an abnormal fashion.


Figure 10

The most common cause of the problem is a finger unit.

Initial Check:

1. The finger lock unit is sprung loaded forward by a tension spring (known as a finger lock spring); if this fails the finger lock will not function. Replace if broken or stretched.
2. Check finger lock, pivot the finger lock must pivot freely (lubricate pivot).
3. Check that no obstructions i.e. plastic twine, paper, etc are obstructing the finger function.
4. Attached to the finger lock unit via shackle plates is a chain. This chain is also attached to the body of the press by a hi-tensile bolt, if this chain is detached - reattach. Note - ensure nyloc nuts are used on attaching bolts.
5. Some older models are not equipped with a roller on the top of the finger lock, if the point of the finger lock has become worn;
6. Replace finger lock with a service unit.
7. Build up finger lock with weld and smooth off with a grinder *(Note if replacing the finger lock chain, it must be the correct length - if the chain is too short it will come into excessive tension when the pressing arms are fully down causing the bolts or chain to fail. On the other hand, if the chain is too long the finger lock will not open at the correct point causing the fingers on the pressing assembly to rise in an unco-lapsed form. This can cause the finger lock unit to fail (breakage).*
8. Check that the finger lock unit is functioning correctly.

9. HYDRAULIC CHECK

1. Check for oil leaks in the reservoir, cylinders, hoses & fittings.
2. Check for damaged or unsupported hoses.
3. Replace reservoir oil every 2 years - 32 grade Hydraulic Oil.
4. Replace oil filter (CR40AN) every 12 months.
5. Check for damage, tightness and function of the solenoid valves.
6. Balers are equipped with a pressure test port on the aluminium valve block - older model balers 220 PSI - later models 2000 PSI.
7. Check oil level. Oil should be showing on the dip stick - **Caution - DO NOT OVER FILL.**

Chapter 24
Forms

- **Service Guide**
    1. Lubrication
    2. Dampers
    3. Hydraulics
    4. Electrics
    5. Controller – Eye Operation
    6. Solenoid Valve System
    7. Safety Bar Operation
    8. Full Bale Indicator Operation
    9. Structural
    10. Twine System
    11. Top Door
    12. Guarding
    13. Finger Assembly Check
    14. Bottom Door
    15. General Operation
    16. Signage
- **Baler Installation Procedure Conformity Document**
- **Declaration of Conformity**
- **Safety Check List**
- **Seven Essentials when Visiting a Baler**
- **AutoBaler service report**
- **Staff Training Report**
- **Pre Installation information**
- **Pre & Post Commissioning Checks**
- **Job Completion Sheet**

1. Lubrication

Hydraulic cylinder pivots (top and bottom)		
Door Hinges	Use KZD Coupler attachment	
Side Door Pivots	Use KZD Coupler attachment	
Side Door Slide	Use KZD Coupler attachment	
Door	Use KZD Coupler attachment	
Door Link		
Grease Finger Barrel unit (2 grease nipples per barrel)		
Grease Eject Bar Pivots at Rear of Press		
Grease Side Doorslide Plate at Bottom		

Comments

2. Dampers

Lubricate Pivots – Top and Bottom	
Check Oil Level, See Oil Level Checking and Refilling Procedure	
Check for Leaks (replace seals)	
Check for Operation	

Comments

3. Hydraulics

Check System Pressure, 2200psi (illustration 27)	
Check Pressure Switch Firing, 1900 psi (illustration 31)	
Check Hoses for Damage	
Check Hydraulic Oil Level, 32 grade	
Lubricate cylinder pivot pins, remove pins and lightly grease using long life lithium based grease	
Check split pins on the cylinder anchor pins, replace if required	
Check all hydraulic hose and pipe fittings for leaks	
Check hydraulic system filter, replace if required. Normal replacement period 12 months, more often in dusty conditions	

Comments

4. Electrics

Check Wiring for Damage or Lose Unsaddled Wiring	
Check Power Plug and Point	
Check Electrics Generally Report or Repair Damaged or Dangerous Situations	

Comments

5. Controller

Check Controller for Correct Function	
Check for and Report Damage	
Check all Fittings to the Controller for Firm Positive Connection	
Check Controller Anchor Screws	
Clean the Sensor Eye Glass	

Comments

6. Solenoid Valve System

Check All Wiring to Valve System for Damage or Contamination, Clean Thoroughly
Check Screws are Firm on Solenoid Wiring Caps
Check Wires are Firm on Solenoid Wiring Caps
Check Wires are Firm and Moisture Boot is Fixed on Hydraulic Pressure Switch
Check and Repair for Oil Leaks
Comments

7. Safety Bar Operation

Check That Safety Bar Functions Correctly
Check Switch For Operation or Damage
Check That all Bolts and Screws etc are in Good Working Order
Comments

8. Full Bale Indicator Operation

Check Full Bale Light, Replace Bulb if Required (illustration 35)
Check full bale limit switch situated on the left side of the baler behind the front main bearing – with the pressing fingers right down (in the box) hydraulic cylinders fully closed. At this point the full bale limit switch situated behind the bearing should be depressed until the roller axle is just out side the switch body. Adjust if required. (illustration 45)
Check wiring connection to switch
Clean any rubbish or contamination from the switch
Comments

9. Structural

Thoroughly check for cracks or failed welds or any signs of fatigue or structural damage and report
Check all bolts, especially bolts attaching the main finger pivot bearings replace broken bolts with high tensile bolts
Check cylinder anchor lugs for fatigue
Comments

10. Twine System

Check to see that the twine lock through which the twine passes does not cut the twine, adjust if required
Check twine plastic clips on the baler base are in good order, replace or report
Comments

11. Guarding

Check that mesh guards are secure and free of damage, repair or report.
Comments

12. Top Door

Check latch is functioning correctly	
Adjust and lubricate latch	
Lubricate hinges	
Check top door limit switch if functioning correctly	
Check coded witch that they enter centrally, adjust if required (illustration 16)	

Comments

13. Finger Assembly Check

Check bearing anchor point bolts (replace if required)	
Lubricate as mentioned in lubrication section	
Check centre pivot bar for secure fastening i.e. circlips etc	
Check finger lock operation, see finger lock service manual	

Comments

14. Bottom Door

Difficult to close, situated at the right hand bottom of the door is a connecting and adjustment link, Adjust as required

Comments

15. General Operation

Report any abnormalities

If the baler is moving on the floor or bumping severely as the pressing arms are standing, the cause will be in the small yellow cylinders' situated on either side of the press. Service as in damper service if this fails to correct the bumping remove the small yellow cylinder, dismantle the cylinder and service or repair as required.

Comments

16. Signage

Report missing safety signage	
Report damaged signage	

Comments

Trethewey Industries
Baler Installation Procedure Conformity Document

	Yes	No
Has the client agreed on a dispatch date:		
Has the correct model required by the client been checked to conform to his requirement		
Has the pre-installation form been sent to the client		
Has the pre-installation form been completed and returned		
Are there issues that require attention from the return of the pre-installation form i.e. forklift, power, transport etc		

What are the issues?
1.
2.
3.
4.

Have these issues been addressed		
Has the baler arrived on site		
With the baler at the site and all issues addressed, has a day and time been agreed on Date:		
Has the number of people for training been established		

Number to be trained	Number of People
Baler Serial Number	
Baler Type	
Customer	
Date	
Officer Signature	

Trethewey Industries
Declaration of Conformity

Training Procedure Conformity

Product Type _____

Serial Number _____

Machine Type _____

Customer Name _____

Baler Location _____

Date _____

Conformity Declaration

- ☐ Service Agent manual Carried
- ☐ Baler Removal from Pallet
- ☐ Pre-commissioning Check
- ☐ Post Commissioning Check
- ☐ All Store Documents ie Woolworths
- ☐ Trainee Documents

Trainer Material Presented

- ☐ Controller
- ☐ Set-up
- ☐ Baler Fit Out
- ☐ Pre-twine
- ☐ Tying the Loop
- ☐ Twining
- ☐ Twining Transverse
- ☐ Initial Fill
- ☐ Baler Start Up
- ☐ Automatic Operation
- ☐ Tidy Bale Procedure
- ☐ Tying Off
- ☐ Maintaining Twine Tension
- ☐ Transverse Twine Tie Off
- ☐ Retracting Fingers
- ☐ Opening Doors
- ☐ Situating Bale Trolley
- ☐ Ejecting the Bale
- ☐ Full Bale made
- ☐ Trainees Competent

I hereby declare that I/we have fully complied

Signed: _____

Date: _____

Autobaler Service Report / Safety Check List

Name/Location _____ Store # _____ Date _____

Baler Model _____ Serial # _____ Controller # _____ Bale Count _____

Five Auto-Baler Service Essentials

CLEAN all loose material from within the balers' upper & lower sections & behind the compaction cylinders. Caution – when cleaning around the power unit area care must be taken with wiring & wiring connectors.

LUBRICATE the baler in accordance with the manufactures recommendations i.e. lubricate all moving parts, upper & lower cylinder pivots, door latches & hinges, side door slide plate, hydraulic unit oil level etc.

COMPLETE a safety audit form i.e.: door interlocks emergency bar, emergency stop, baler location guarding, work practices etc.

CHECK the baler function & operation. i.e.: all finger units' functions correctly, finger units string smoothly (check damper function) door latch operation.

CHECK baler door latch operation check & repair worn door latches. Check for safety of Latching & ease of operation.

Service Requirements	Good	Poor	Action Taken
Check top door operation, must not open more than 30mm without activating switch			
Check safety operation situated on the top door			
Check emergency stop			
Check key operation			
Check power leads for damage placement etc			
Check baler situation, must not be near where service is required e.g. lights			
Check upper & lower door catches for positive lock			
Check all guarding, report, refit or correct if required			
Report unsafe operator practices			
Report other areas of safety concerns			
Check safety signage is in good order			
Check twine cage placement, cage must be situated to prevent tripping			

Service Grease points & lubrication

- ☐ All moving parts
- ☐ Connector link
- ☐ Lower door latch clevis
- ☐ Safety latch for lower door
- ☐ Latch clevis
- ☐ Clean & check mounts on sensor eye
- ☐ Secondary latch slide
- ☐ Bottom door slide
- ☐ Bottom door link adjustment
- ☐ Chain plates
- ☐ Eject cylinder anchor point
- ☐ Eject axle pivot
- ☐ Emergency bar pivots
- ☐ Lower 7 Upper Door hinges
- ☐ Cylinder pivot pins
- ☐ Safety Bar wedge
- ☐ Remove all material from hydraulic area, all moving parts must be free
- ☐ Latch bar support
- ☐ All side wall rear hinges
- ☐ Damper strut pivots
- ☐ Finger Locks

When Visiting a Baler

The compacting arm assemblies must remain rigid on the first 90% of the compression stroke & fully bent on the up stroke. If not:

- ☐ Check the finger lock spring
- ☐ Check the finger lock chain for attachment at both ends
- ☐ Check the finger lock for freeness & positive locking
- ☐ Check that the pressure switch is firing in the correct range

Top door security fingers must not be able to move down with the top door open

- ☐ Check coded key for attachment & operation
- ☐ Older balers check limit switch on the top door hinge
- ☐ Check alignment of magnetic switch on 2005 + models
- ☐ Check mounting of magnet switch i.e. Fasteners

Is the baler operating smoothly? When the finger assembly is standing up the action must be smooth with no bumps or jar

- ☐ Check damper struts for attachment
- ☐ For operation, add 1/3 cup light oil if required

Bottom door closer, must close with ease

- ☐ Grease all door slide
- ☐ Adjust the bottom door, adjust link until door closes with ease

Check for oil leaks

- ☐ Correct the leak if present
- ☐ Check the reservoir oil level * Ensure the cylinders are in a closed position

General check

- ☐ Baler operation
- ☐ Twine Tabs
- ☐ Eject Operation
- ☐ Structural soundness

Service Compliance Declaration

Complete & attach tear out section of Autobaler service booklet & return (found behind the left front panel in service pouch)

Service Compliance Declaration: _____

Service Agent Provider: _____

Signature: _____

Any other comments: _____

Print Name: _____

Position: _____

Authorised Persons Signature: _____ Date: _____

JOB COMPLETION SHEET: CARDBOARD BALERS

Store Name & No: _____

Purchase Order No: _____

Delivery Date Requested: _____

Date of Installation: _____

Planned Date of Staff Training: _____

EQUIPMENT SUMMARY

TYPE	MODEL	SERIAL No's
Autobaler		Autobaler:
		Controller:

Installation & Commissioning Completion Checklist: (please tick on completion)

Positioned, Installed & Commissioned (as per supply agreement) YES

Relevant Accessories provided (as per supply agreement):

1.	Cleaning Signage	YES	2.	Warning Signage	YES
3.	Maintenance Signage	YES	4.	Operators Manual	YES
5.	Cleaning Instructions	YES	6.	Bale Trolley	YES
7.	Bale Twine (_____rolls)	YES	8.	Twine Safety Cage	YES
9.	Extension Hopper	YES	10.	Overhead Cage Canopy	YES

Baler checked for Travel Damage YES

3 Phase, 20 Amp, 4 pin plug provided YES

3 Phase rotation checked YES

Check all fittings for hydraulic oil leaks YES

Limit Switches checked & functioning correctly YES

Adequate Signage to Push Buttons as per AS1543-1985 Section 4.4.3 YES

Electrical Cable Length is acceptable & is supported off the floor YES

Comments_____

_____

The above has taken place to my satisfaction.

Store Managers Name_____ Signature _____

Technicians Name_____ Signature _____

New England Highway. Telephone: 02 6734 5403
DEEPWATER NSW 2371 Facsimile: 02 6734 5433
Email: melissa.brown@autobaler.com michelletully@autobaler.com michellelawson@autobaler.com

STAFF TRAINING REPORT

This is to certify that on ____ / ____ / ____ the following Staff Members of _____ _____ were trained to competently & safely operate & clean the following equipment:-

EQUIPMENT SUMMARY

TYPE	MODEL	SERIAL No's
Autobaler		Autobaler:
		Controller:

Name *(please print)*	Signed	✓Trainer
Name *(please print)*	Signed	
Name *(please print)*	Signed	
Name *(please print)*	Signed	
Name *(please print)*	Signed	
Name *(please print)*	Signed	
Name *(please print)*	Signed	
Name *(please print)*	Signed	
Name *(please print)*	Signed	

The equipment was fully operational at time of training & showed no signs of fault.

Comments_____

_____

Store Managers Name_____ Signature _____

Technicians Name_____ Signature _____

New England Highway. Telephone: 02 6734 5403
DEEPWATER NSW 2371 Facsimile: 02 6734 5433
Email: melissa.brown@autobaler.com michelletully@autobaler.com michellelawson@autobaler.com

Pre Installation Information

Company Name: _____

Address: _____

_____

Contact: _____ Phone: _____

Fax: _____ Email: _____

Autobaler Model Requested: _____

Office Use Only

Serial Number: _____ Controller Number: _____

Delivery Date Requested: _____

Installation Date and Time: _____

Has the Autobaler Been Delivered: _____

Installation and Training Site Assessment Request

1. Delivery: is there a 1.5 tonne fork lift available? Y/N
2. Extra delivery cost may be incurred if alternative delivery is required.
3. I would prefer to make by own deliver arrangements Y/N
4. Will any manual handling be required? Y/N
5. What distance does the AutoBaler have to be moved? _____
6. Will the AutoBaler be located in your Delivery Dock? Y/N
7. Is the Delivery Dock raised? Y/N
8. Is the Delivery Dock at ground level? Y/N
9. Is there any further information we should be aware of the endure the smooth installation of your Autobaler? _____
   _____
10. Does the site meet all the OH&S requirements? Y/N

Comment: _____

_____

11. Is the AutoBaler site ready? Y/N

12. Power Requirement, is the appropriate power available? Y/N
I.e.: (415V x 20 amp x 4 pin) it is the responsibility of the site manager to ensure that the power connection capacity in the building is compatible with the baler requirements eg Circuit breaker must suit the baler AMPS

13. Is sufficient material available for training to be conducted? Y/N
SL100 – 100kg material
SL200 – 180kg material
SL400 – 300kg material

14. Staff training: Are all staff to be trained available for the installation time requested? Y/N

15. Do you require multiple training sessions for different shifts? Y/N

16. I am aware that extra training sessions will attract a fee of $225.00 + gst, and agree to pay this cost if extra training is provided Y/N

17. A Trethewey Industries Representative will be available to conduct your training and installation at the time requested. If for any reason there are time delays ie Power or staff unavailable, please contact the office directly to reappoint prior to the installation or **extra charges will apply.**

18. Service Agent: Do you have a local referred service provider? Y/N

19. Please provide contact details to enable all relevant information to be forwarded to them to assist in the servicing of your Autobaler:

Service agent details:

Name: _____

Address: _____

Phone: _____ Fax: _____

Trethewey Industries must be notified if the site is not reads, this will enable rescheduling of the training staff, failure to do so will attract retraining charges.

I confirm that the site is reads and the appropriate power as outlined above is connected and ready. I accept that if any information is not correct and the commissioning and training cannot be carried out as organized, I will be responsible for the cost incurred for the trainers' time if they are unable to proceed or are delayed.

Installation authorized on behalf of the specified company:

Name: _____

Title: _____

Signature: _____

Date: _____

Please list the names of the people to be trained in the safe operation of the AutoBaler. Groups MUST not exceed 5 people, as competency based assessment will be conducted on all trainees individually.

1. _____

2. _____

3. _____

4. _____

5. _____

Pre & Post Commissioning Checks

Company Name: _____

Address: _____

City: _____

Contact: _____ Phone: _____

Installation Date: _____ Model: _____

Serial Number: _____

Controller Number: _____

Pre Installation Check

Checks to be Carried Out	**Fail**	**Pass**	**Cleared**
1. Check that the paler is free of transport DAMAGE			
2. Check the motor rotation (clockwise)			
3. The power lead is safely situated			
4. Bale trolley is stored beneath the baler overhanging on the left side			
5. Deposit baler wrappings and trash			

Post Installation Check

Checks to be Carried Out	Fail	Pass	Cleared
1. All Hydraulic cylinder fittings			
2. All Hydraulic hose and pipe fittings			
3. Pressure switch setting			
4. System Pressure			
5. Bale full switch			
6. Coded upper door switch			
7. Safety Bar			
8. Upper & Lower Doors			
9. Dampers			
10. All bolts & Split pins etc			
11. All electrical wiring			
12. All OH&S concerns			

Comments: _____

_____

_____

_____

Trethewey Representative: _____

Signature: _____ Date: _____

Chapter 25
Safety Procedure for Training

1. Autobaler Location
2. Bale trolley location, store trolley away to prevent trip hazard or injury.
3. Twine cage correctly attached and twine placed in cage.

Point out safety devices:-

a) Safety bar operation
b) Emergency stop button
c) Key switch
d) No reaching into baler
e) No standing or climbing on the baler
f) Turn the baler off when unattended
g) Care and position when ejecting baler
h) Importance of reading and observing all safety instructions
i) Bale location in approved designated area.

MACHINE OPERATION

1. Motor rotation check. To test, press retract button, if fingers go up rotation is correct.
2. Fitting of upper mesh hopper
3. Location of twine cage
4. Initial stringing
5. Complete stringing
6. Double knot and why? Twine under left tab then under right tab
7. Transverse twine, length, fitting etc
8. Bottom door closing
9. Twine (transverse) front door (tie off)
10. Close top door
11. Place flat cardboard in base prior to loading.
12. Initial loading to top door height, to prevent fingers banging in empty chamber.
13. Initial starting of press
14. Explain eye location and function
15. Continue to load
16. Large boxes should be loaded during the first 75% of capacity, for the last 25% load flat boxes to create a flat cap
17. Red light illuminates
18. Cycle several times to level top
19. Remove excess if required
20. Place cap on bale
21. Open top door, explain door switch safety
22. Always turn key off or press Emergency stop to neutralise unit
23. Explain how opening top door releases twine via the twine lock
24. Unlock twine from left hand hooks
25. Pull twine across from right hand side
26. Cut to correct length
27. Tie off
28. Pull transverse twine across and tie loop
29. Twine from tab to loop and tie off
30. Close top door
31. Turn on system, press retract button
32. Open bottom door
33. Place bale trolley
34. Eject bale
35. Wheel away
36. Restring baler

Bale Trolley

FINISHING OFF THE BALE

When full bale light comes on

1. Remove excess material from above the pressing fingers
2. Place top cap
3. Press cycle button

OR

Remove excess

1. Stand fingers up, press retract
2. Remove excess
3. Place cap
4. Press cycle button

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 100/200 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. 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 can……..☐
   b. It doesn't matter……☐
   c. Grip the handle firmly……..☐

10. Ejecting the bale, I should:
   a. Stand aside and hold finger on button……☐
   b. Push button and walk away……☐
   c. Push button and stand in front of bale……..☐

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……..☐

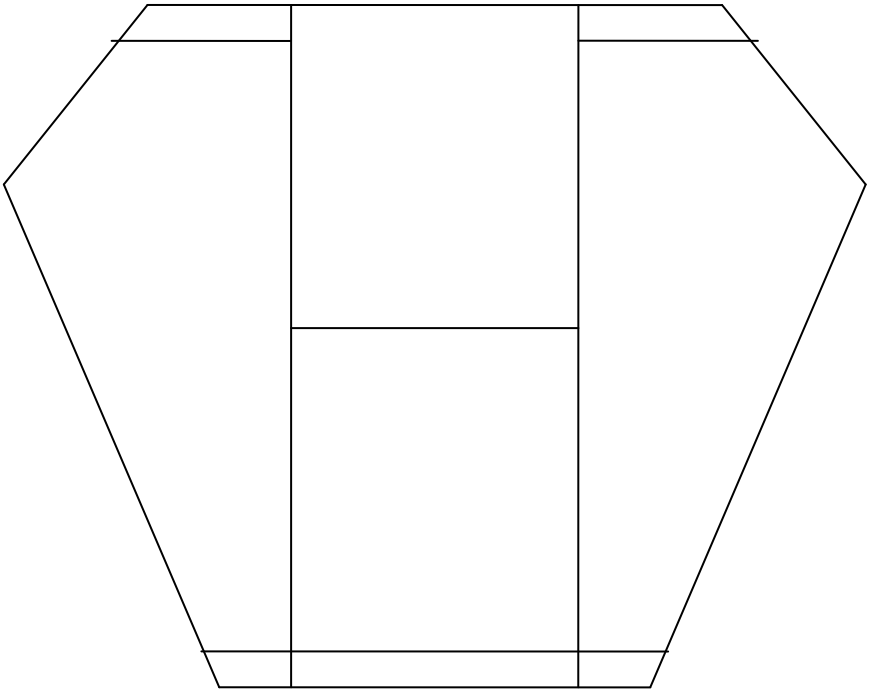
12. Real heavy objects i.e. boxes of magazines etc. How should I load them into the baler:
   a. Over the top door……☐
   b. Open the top door……..☐
   c. The best I can……☐

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 ☐

AUTOBALER

TRAINER MATERIAL



INDEX

Baler Serial Number _____

Date _____

Customer _____

Address _____

Trainer _____ Signature _____

1. ***Controller Operation***

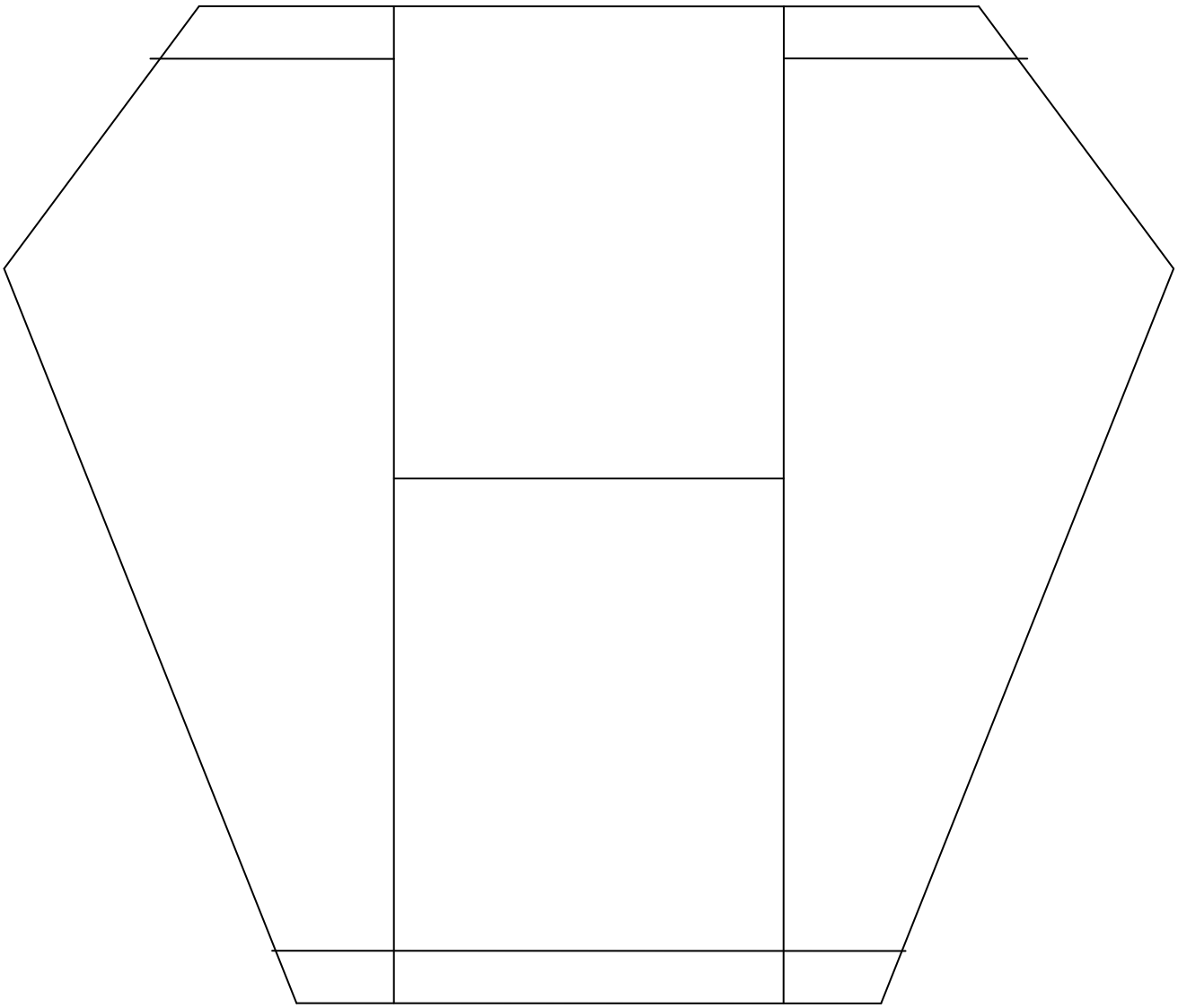
1. Turn the key on – power light on
2. Engage coded key bar – door open light on.
3. Disengage emergency stop key rotation
4. Cycle button to cycle
5. Retract button to raise fingers only
6. Eject must be held in to eject
7. Red light and beeper full bale indicators

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.

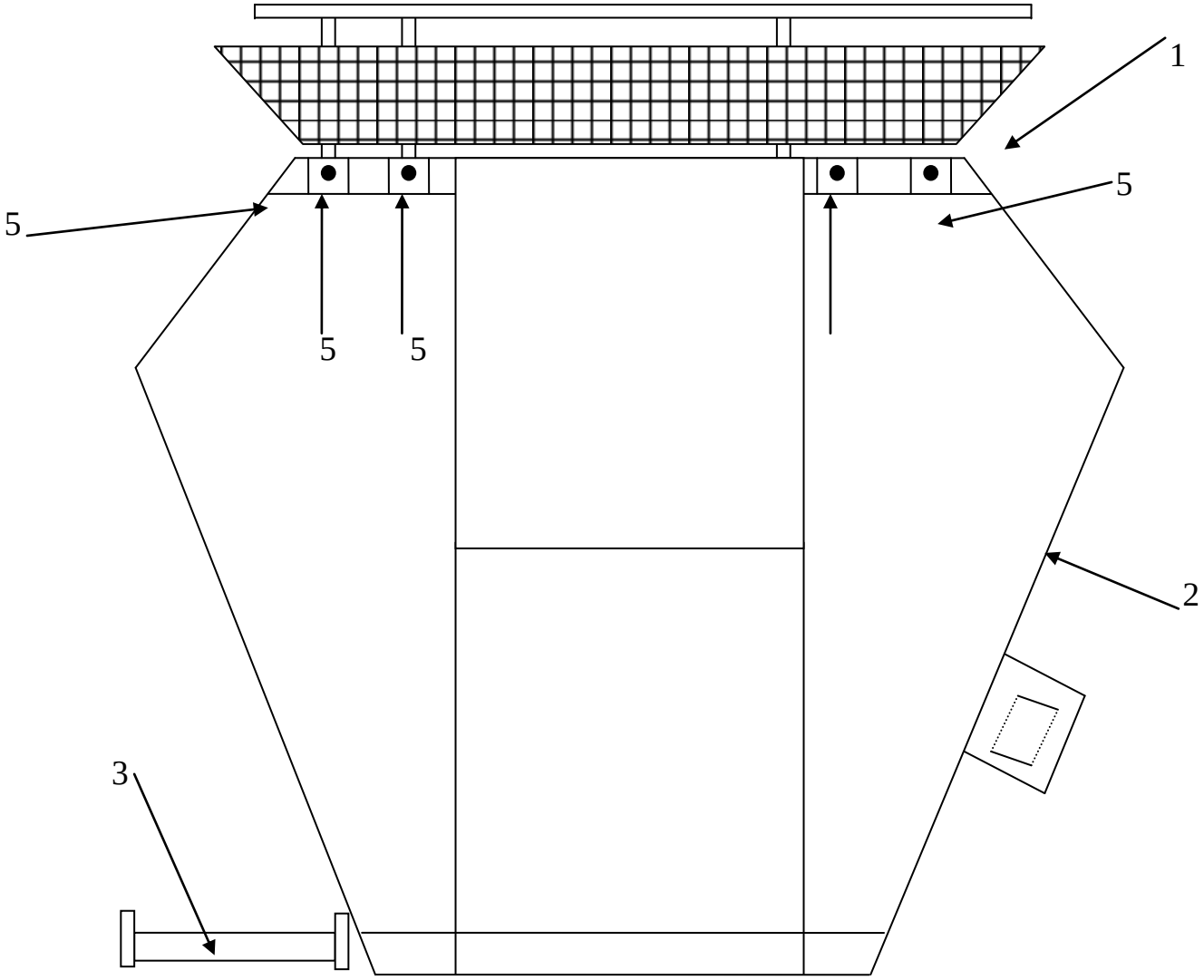


Trainer Signature of compliance:

_____

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.

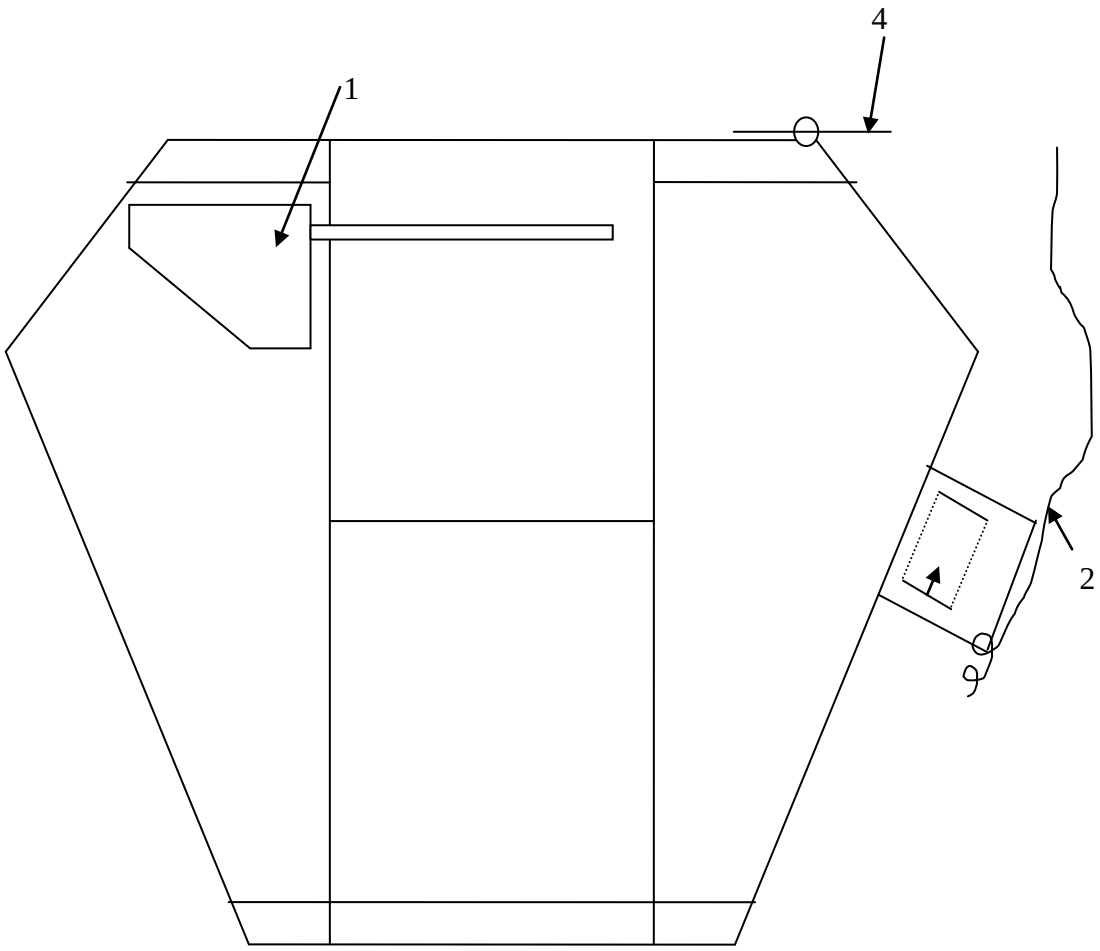


Trainer Signature of compliance:

_____

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.

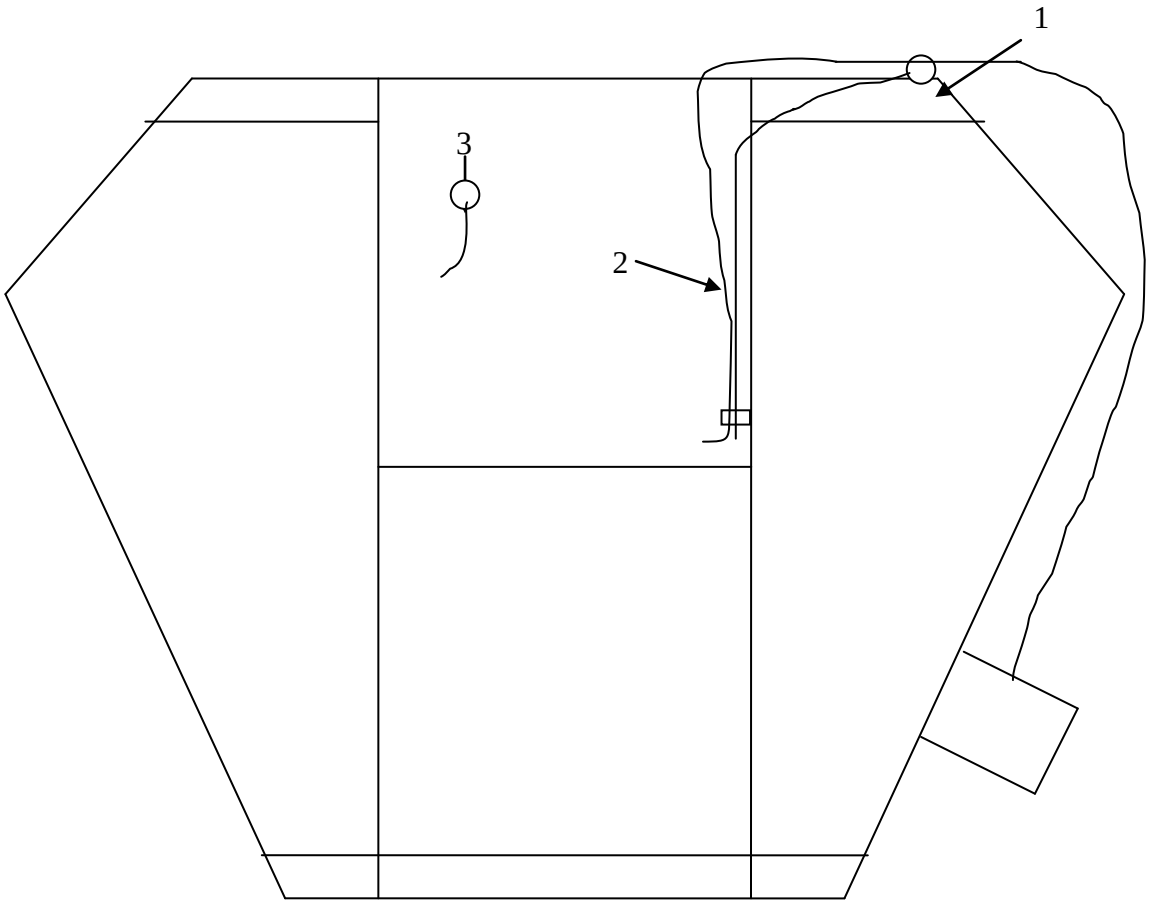


Trainer Signature of compliance:

_____

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.

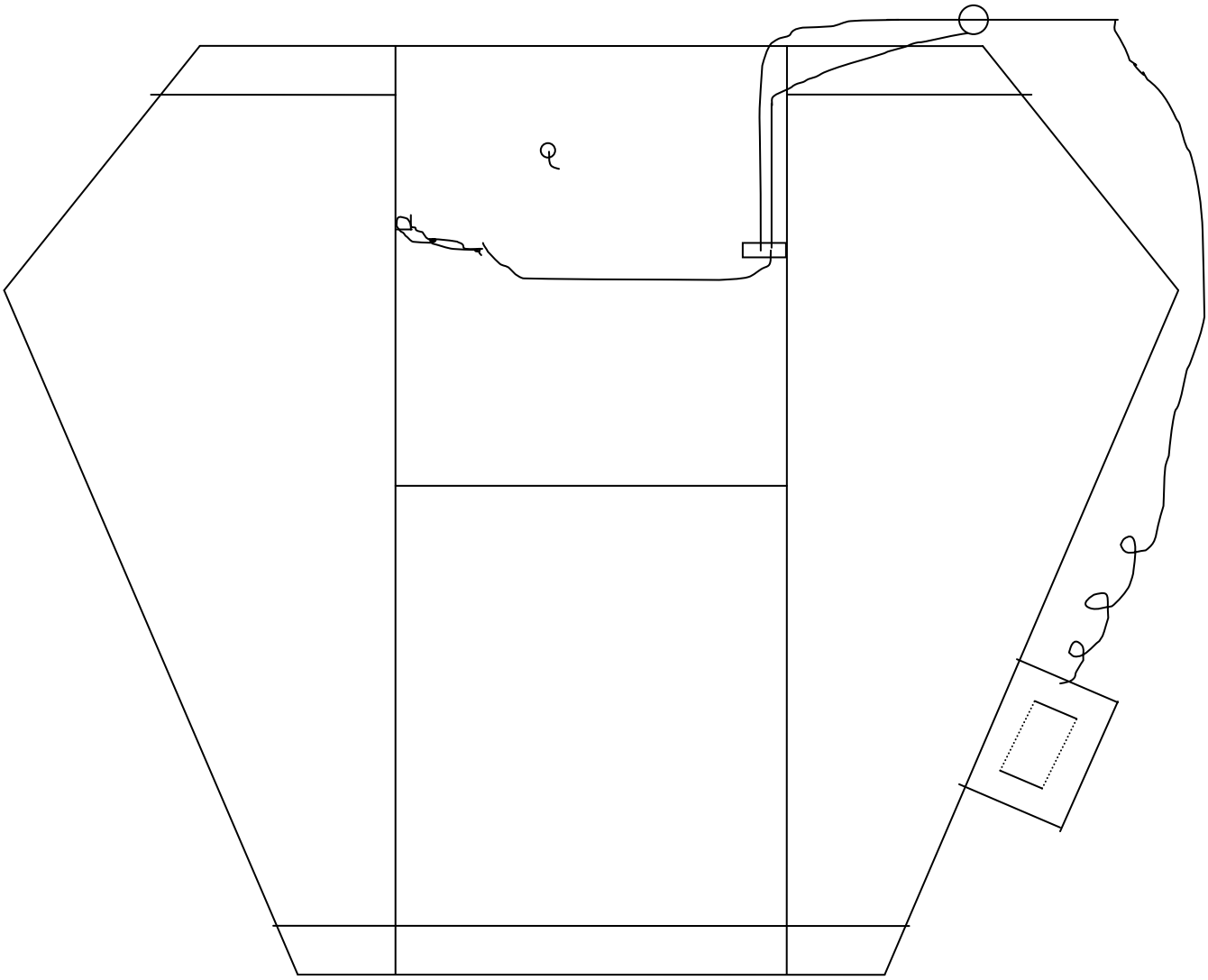


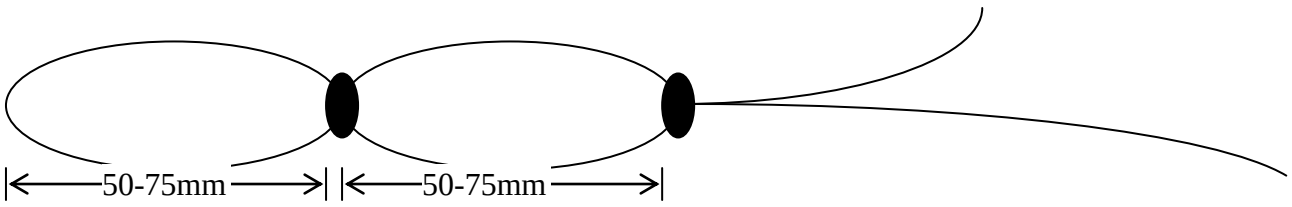
Trainer Signature of compliance:

_____

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.



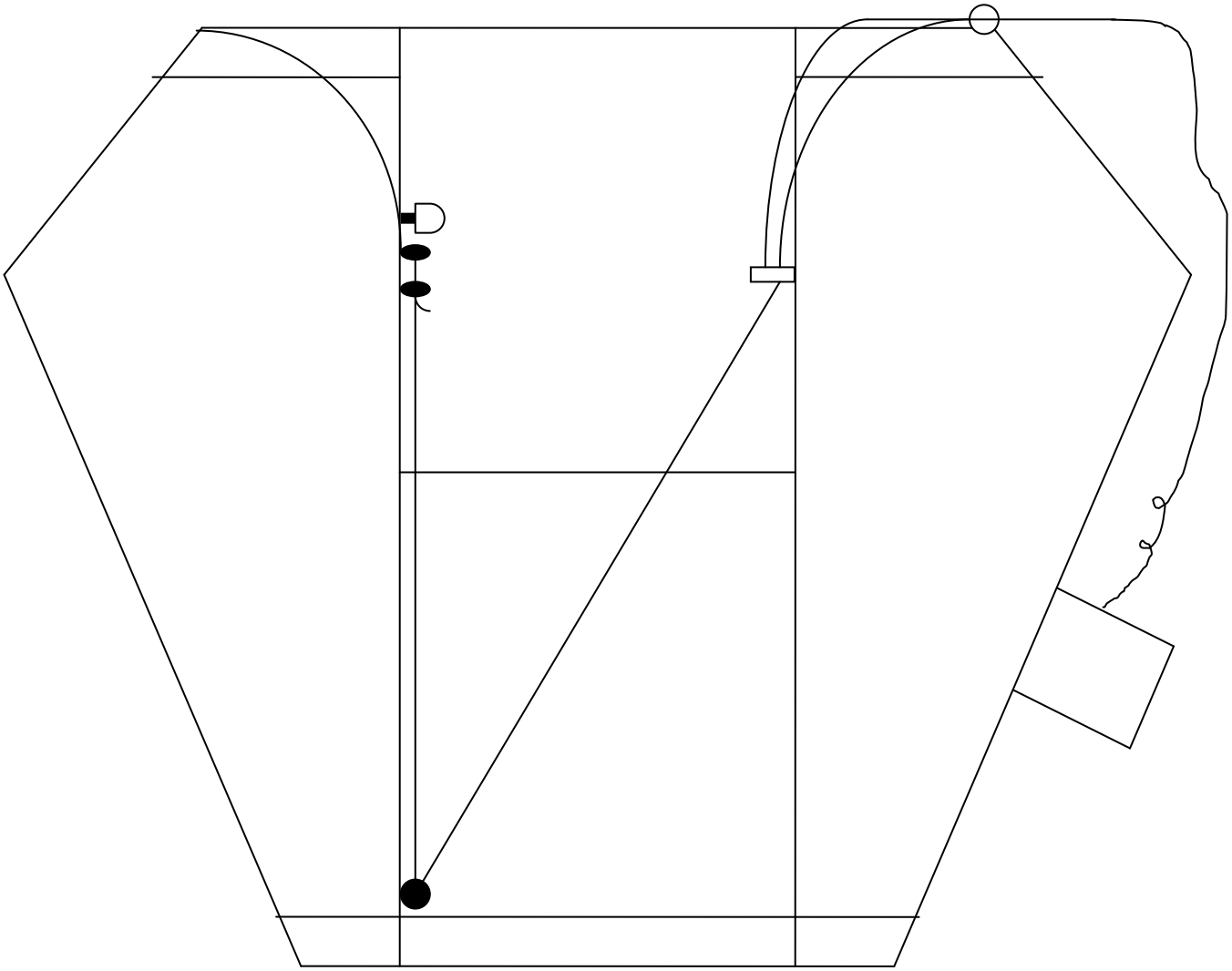


Trainer Signature of compliance:

_____

7. ***Twining***

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

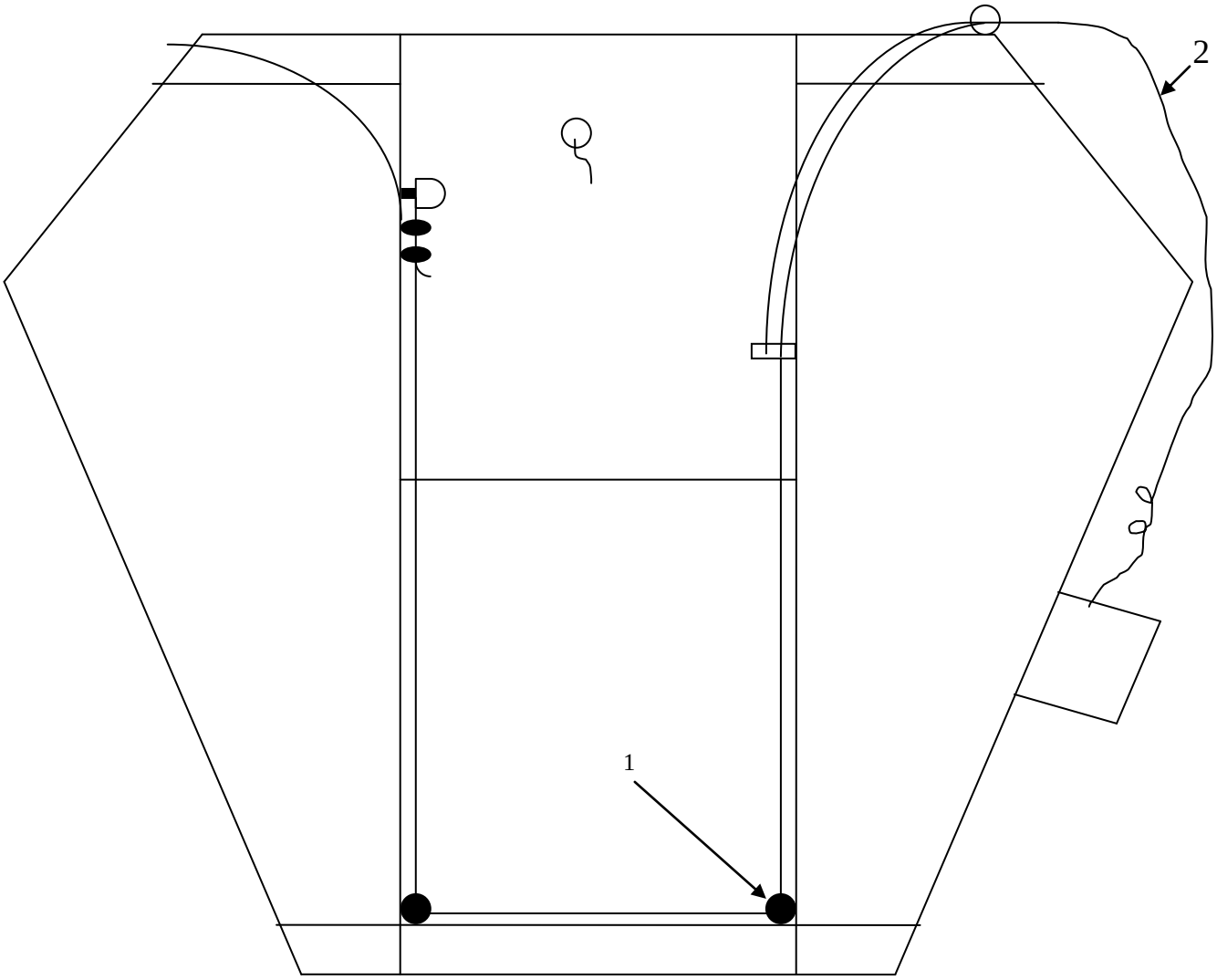


Trainer Signature of compliance:

_____

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.

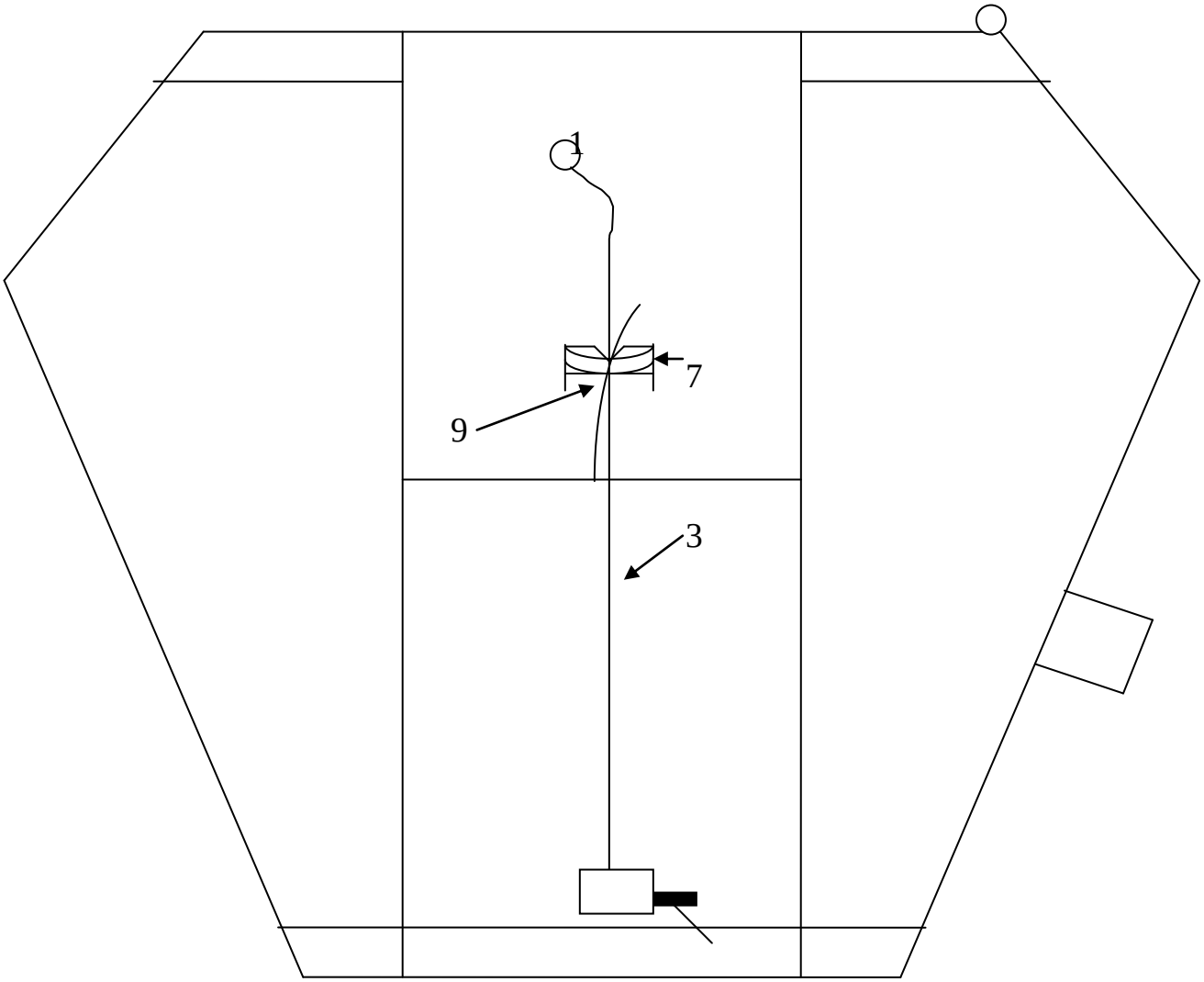


Trainer Signature of compliance:

_____

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.

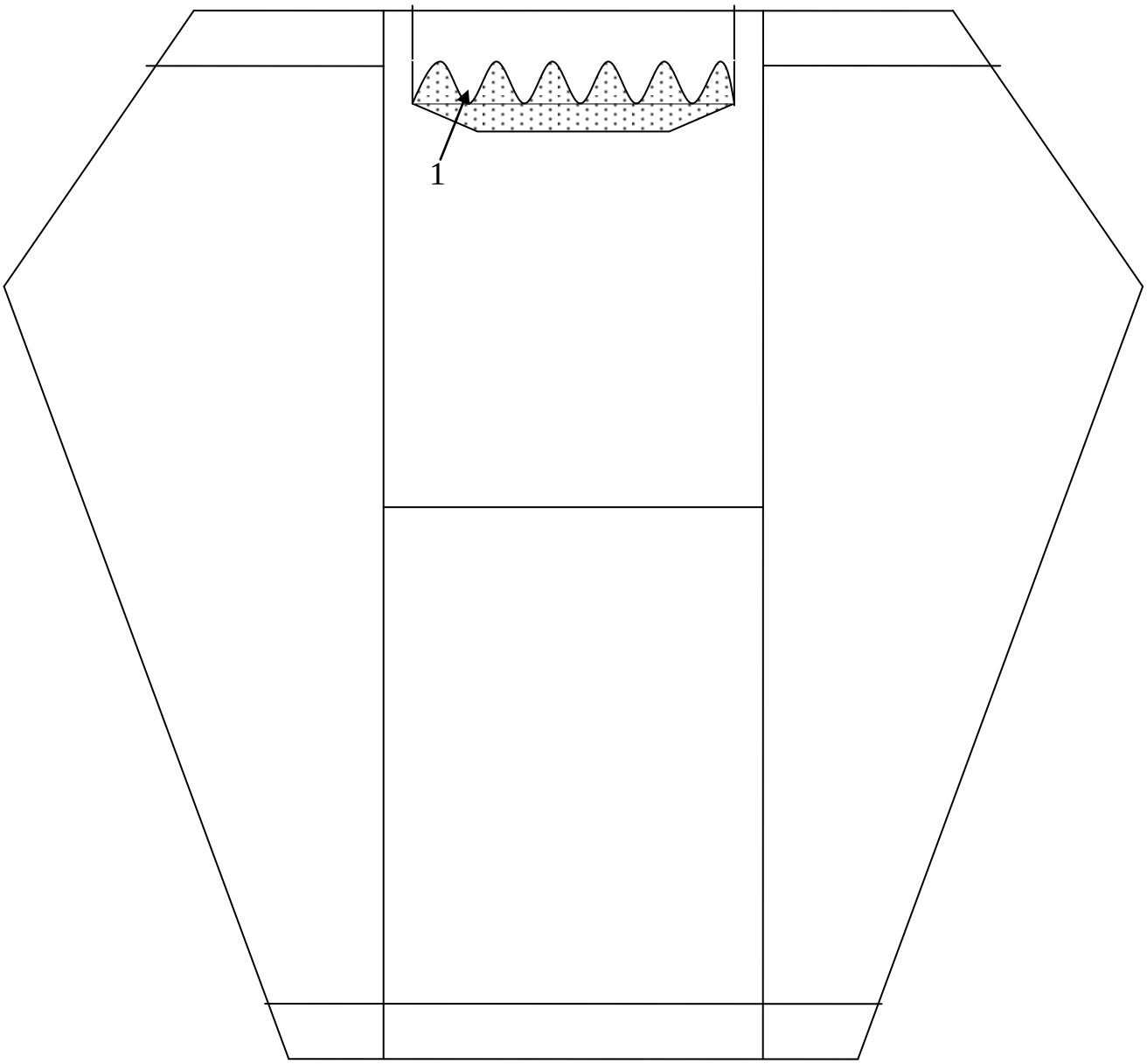


Trainer Signature of compliance:

_____

10. Initial Fill

1. Throw in material until visible.



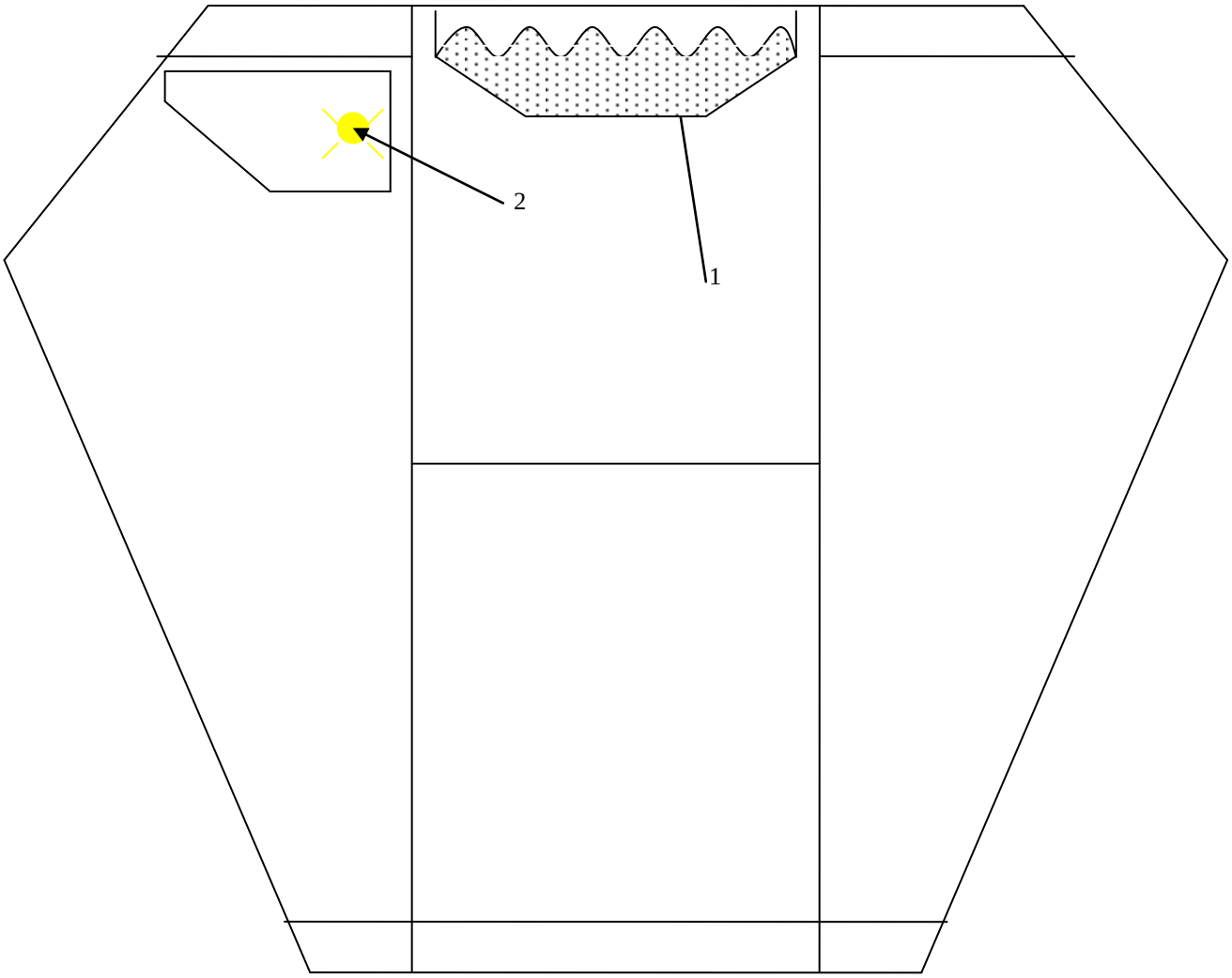
Trainer Signature of compliance:

_____

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).

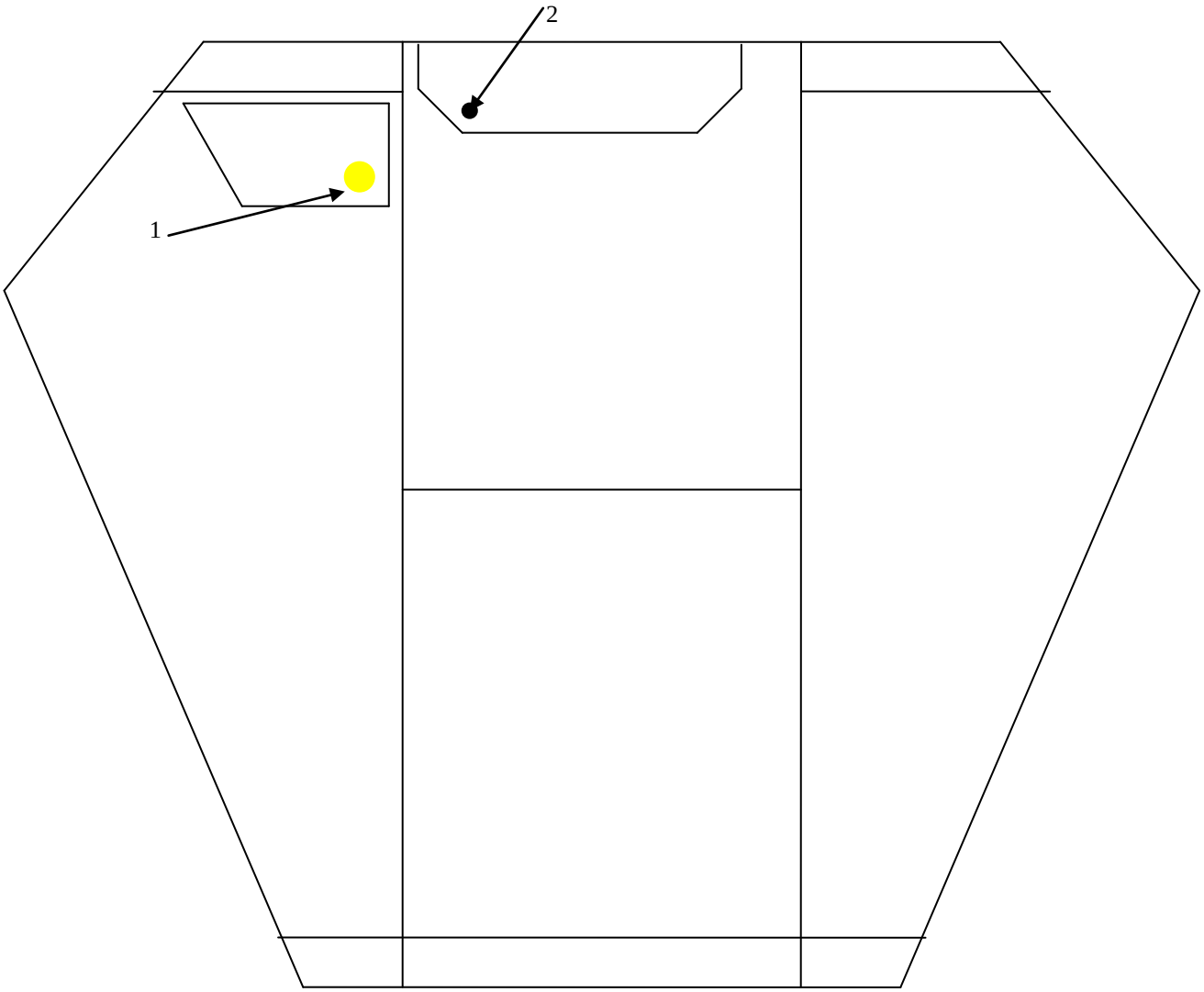


Trainer Signature of compliance:

_____

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.



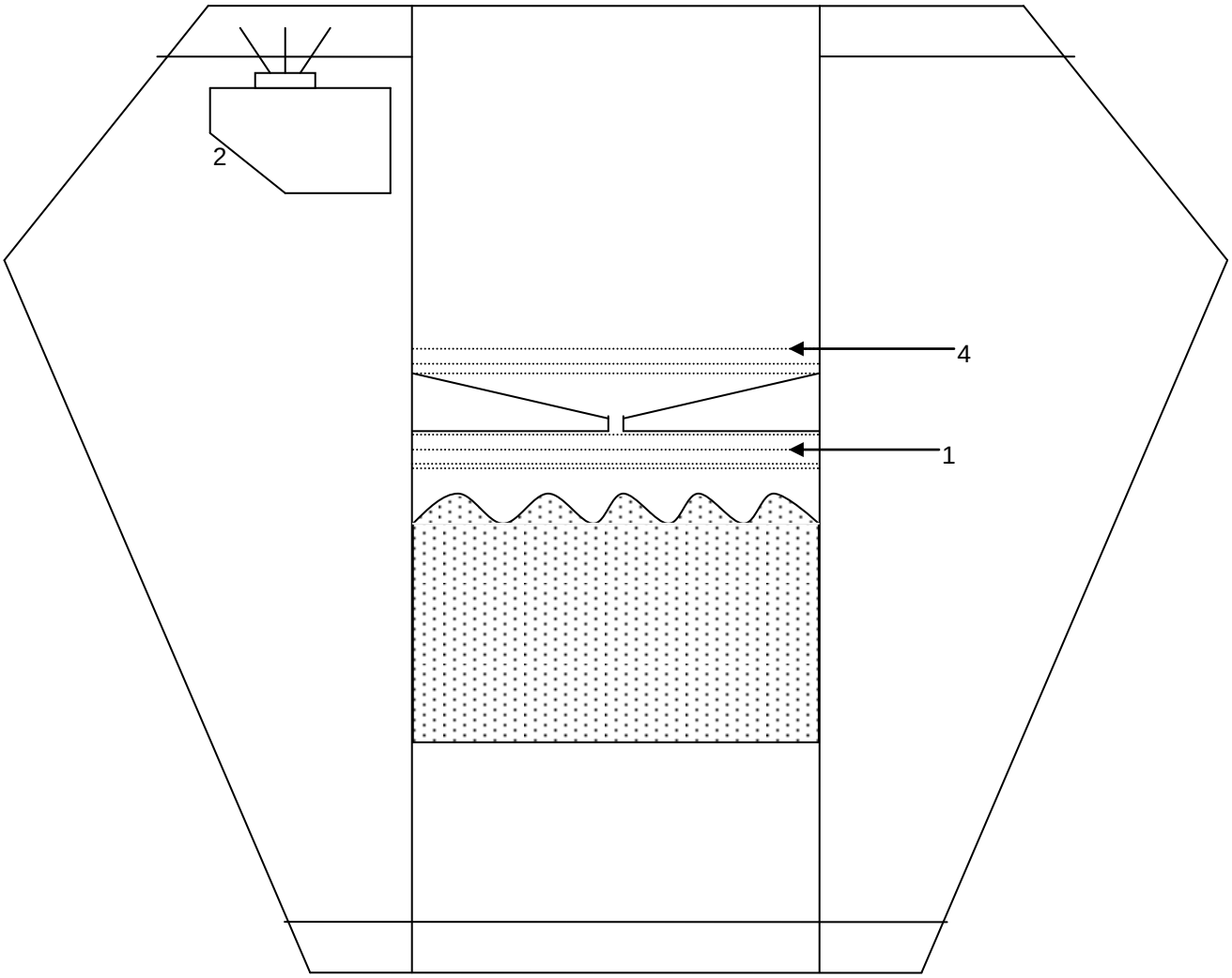
Trainer Signature of compliance:

_____

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

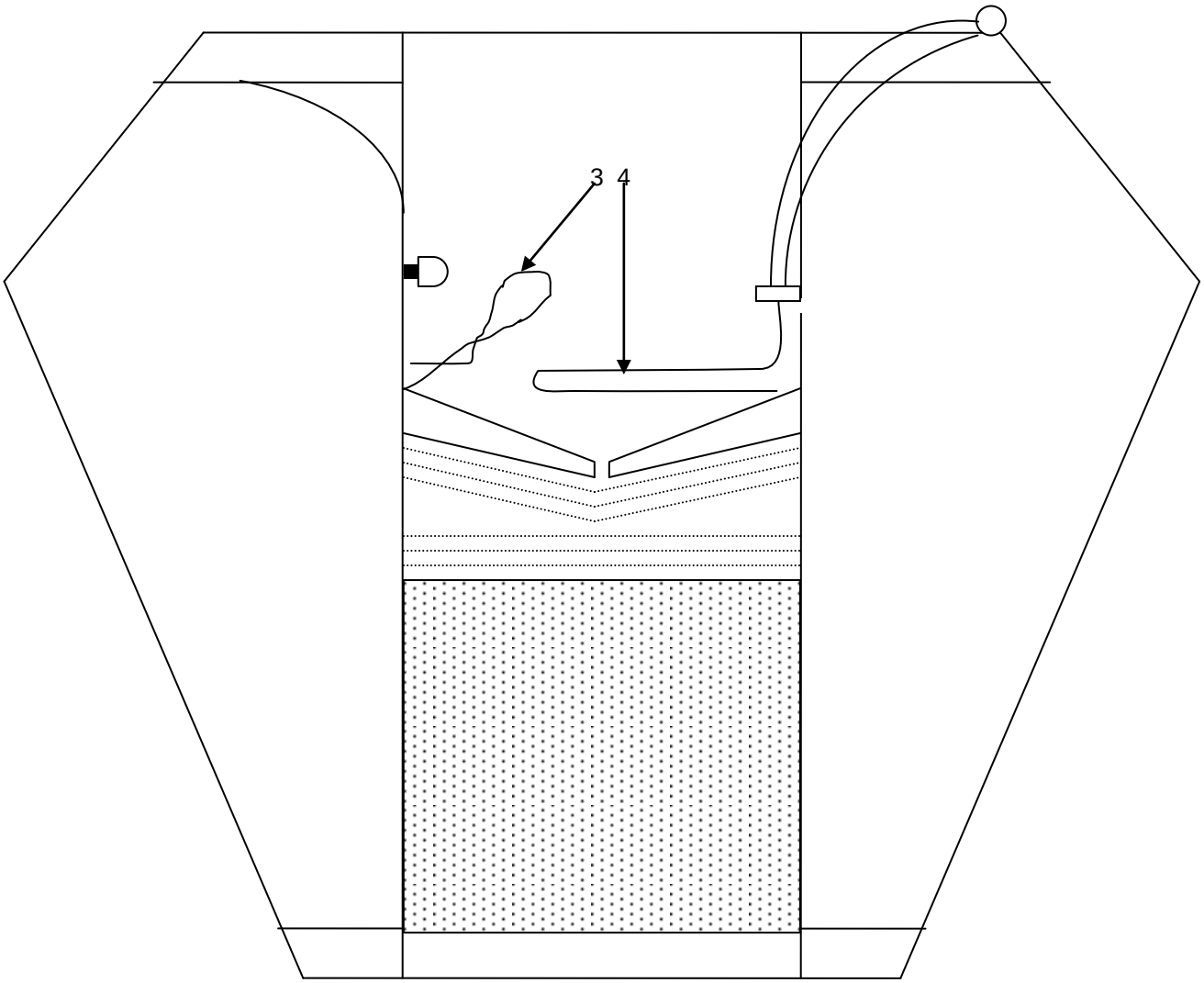


Trainer Signature of compliance:

_____

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.

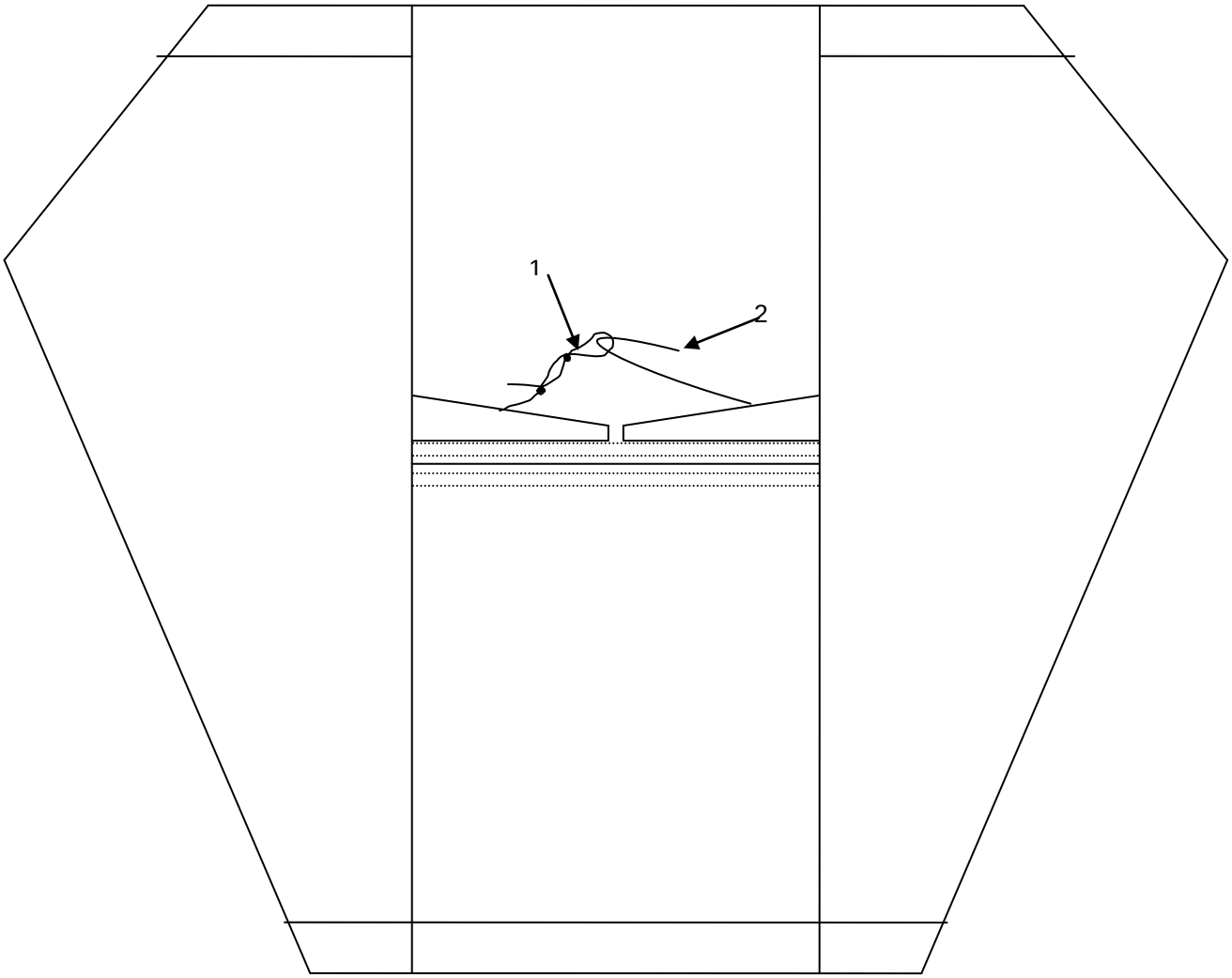


Trainer Signature of compliance:

_____

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.

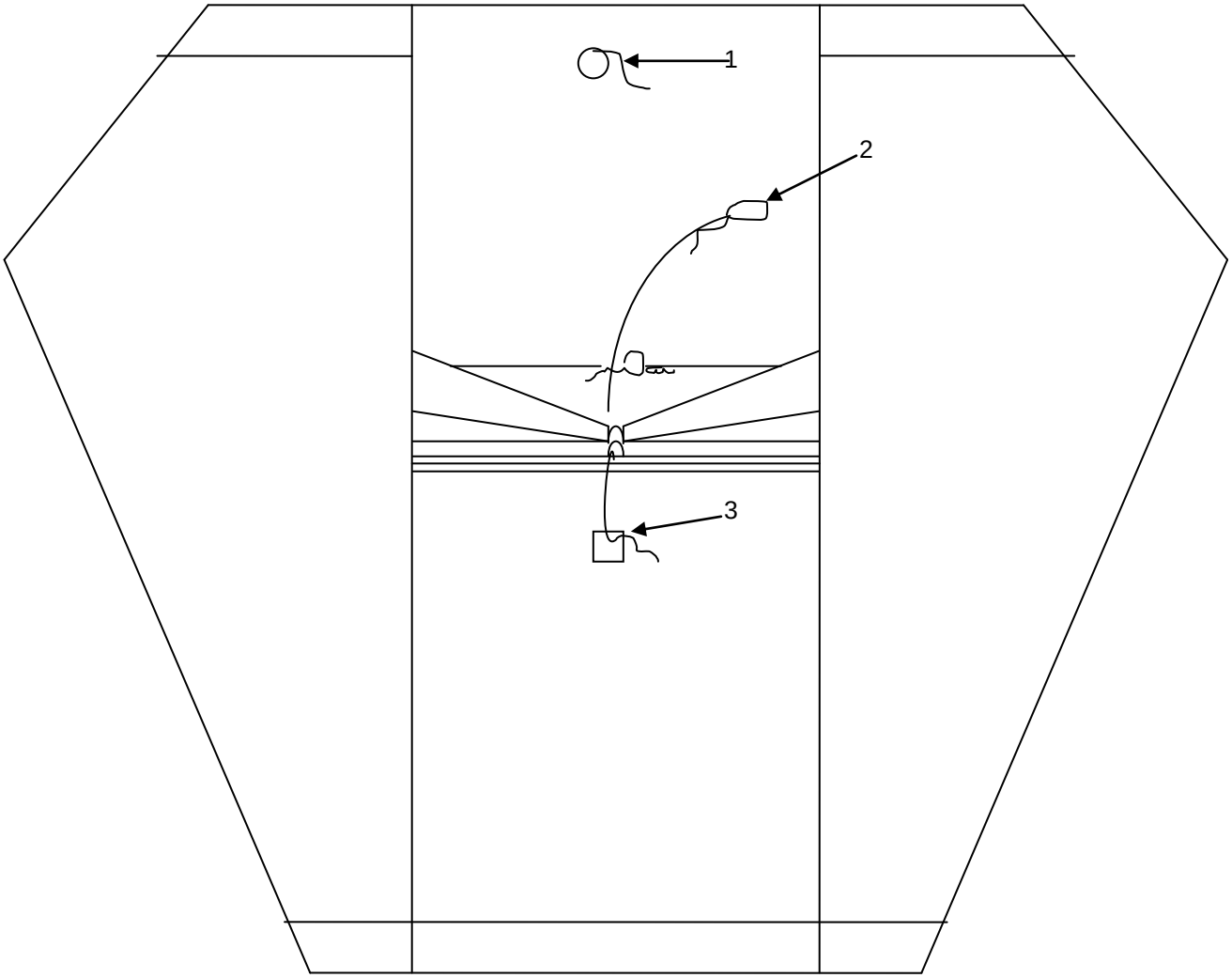


Trainer Signature of compliance:

_____

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.

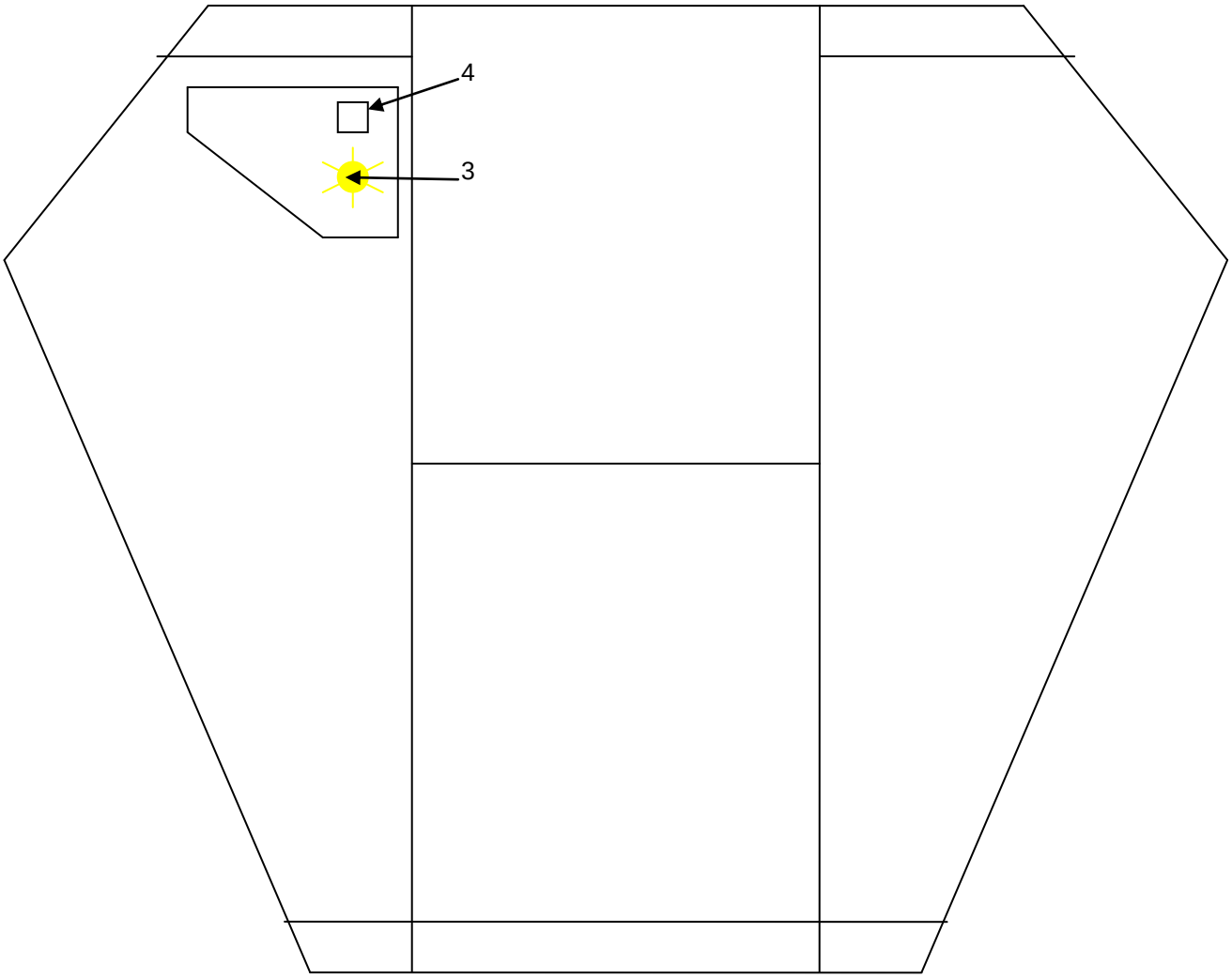


Trainer Signature of compliance:

_____

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.



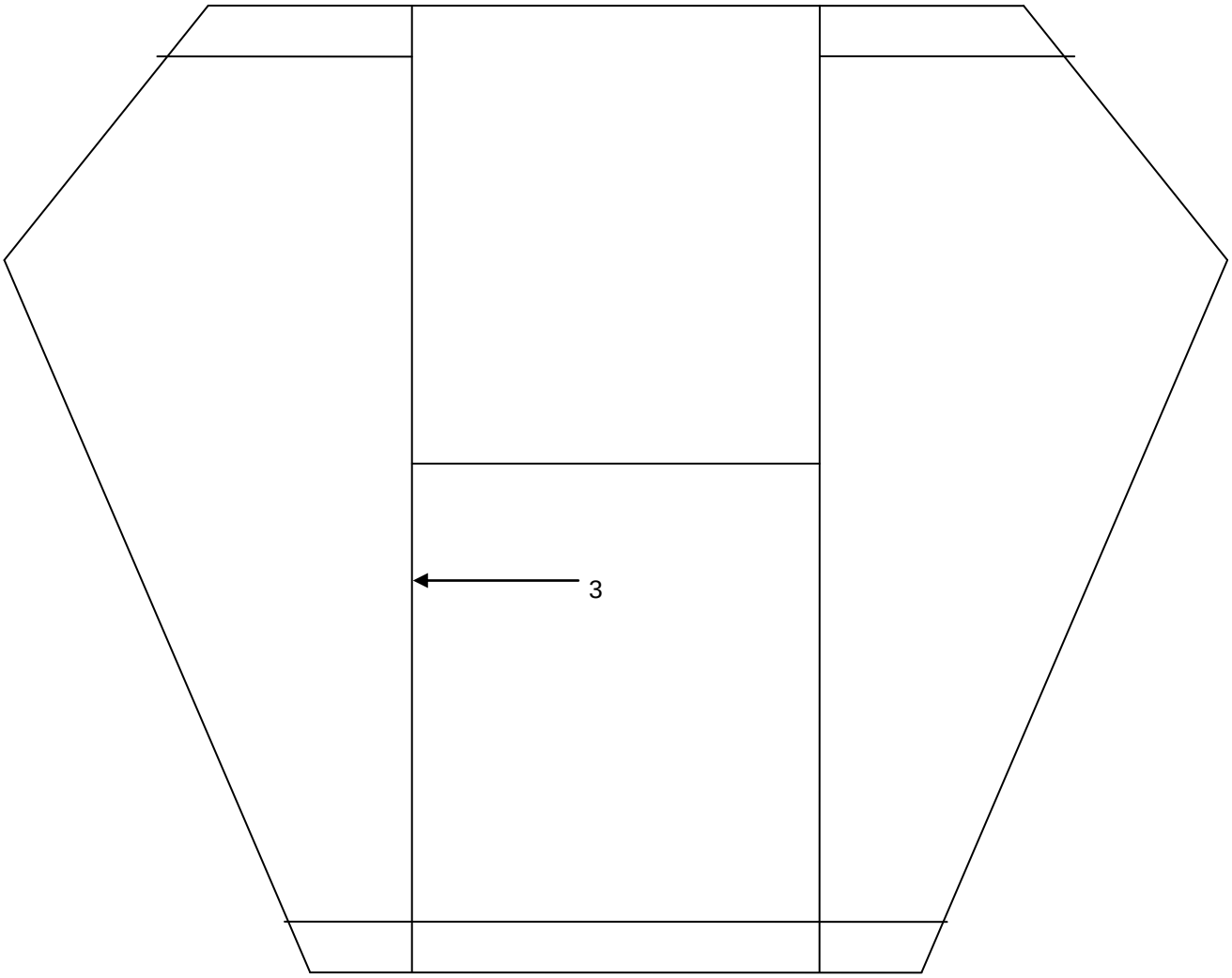
Trainer Signature of compliance:

_____

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).



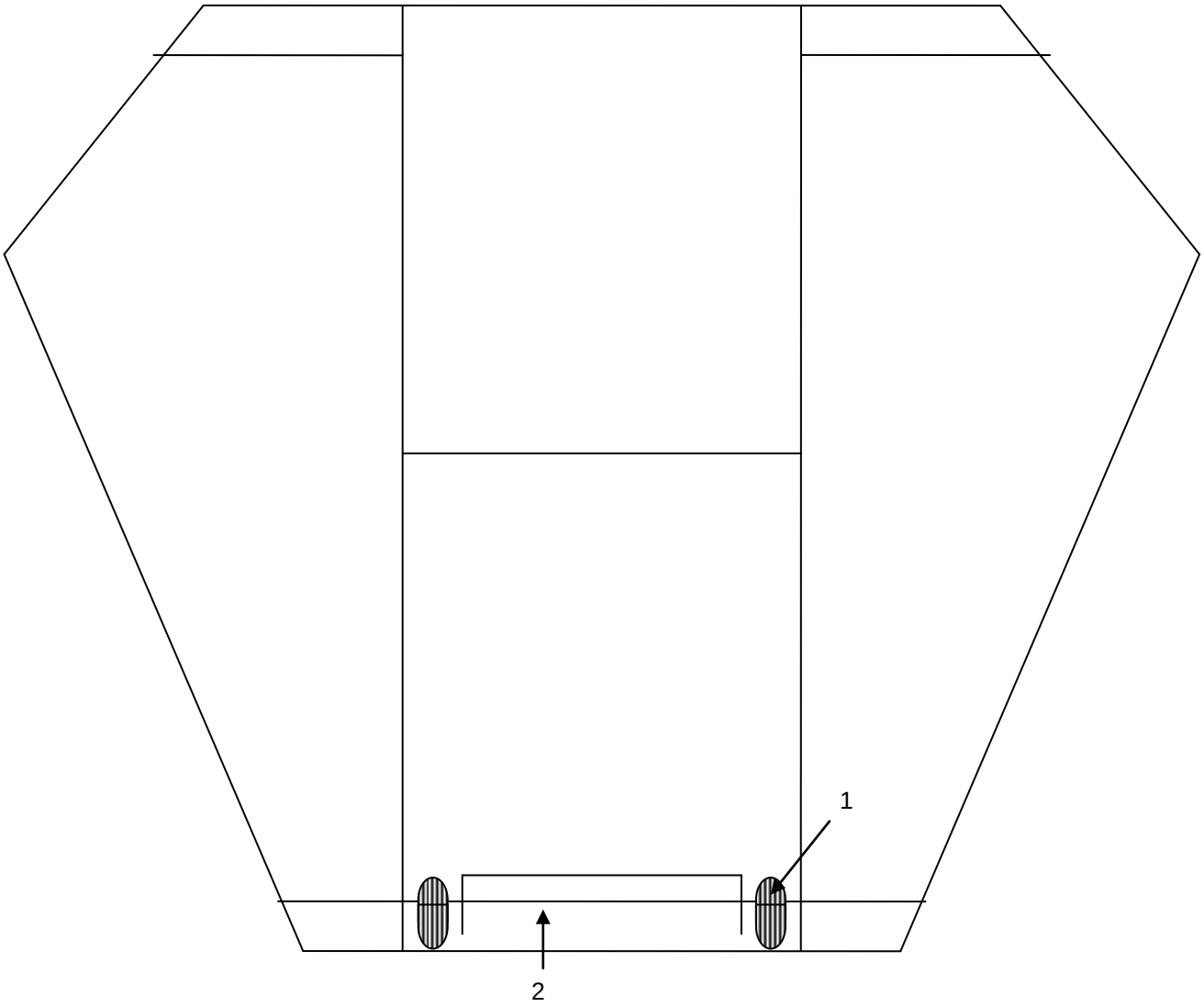
Trainer Signature of compliance:

_____

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.



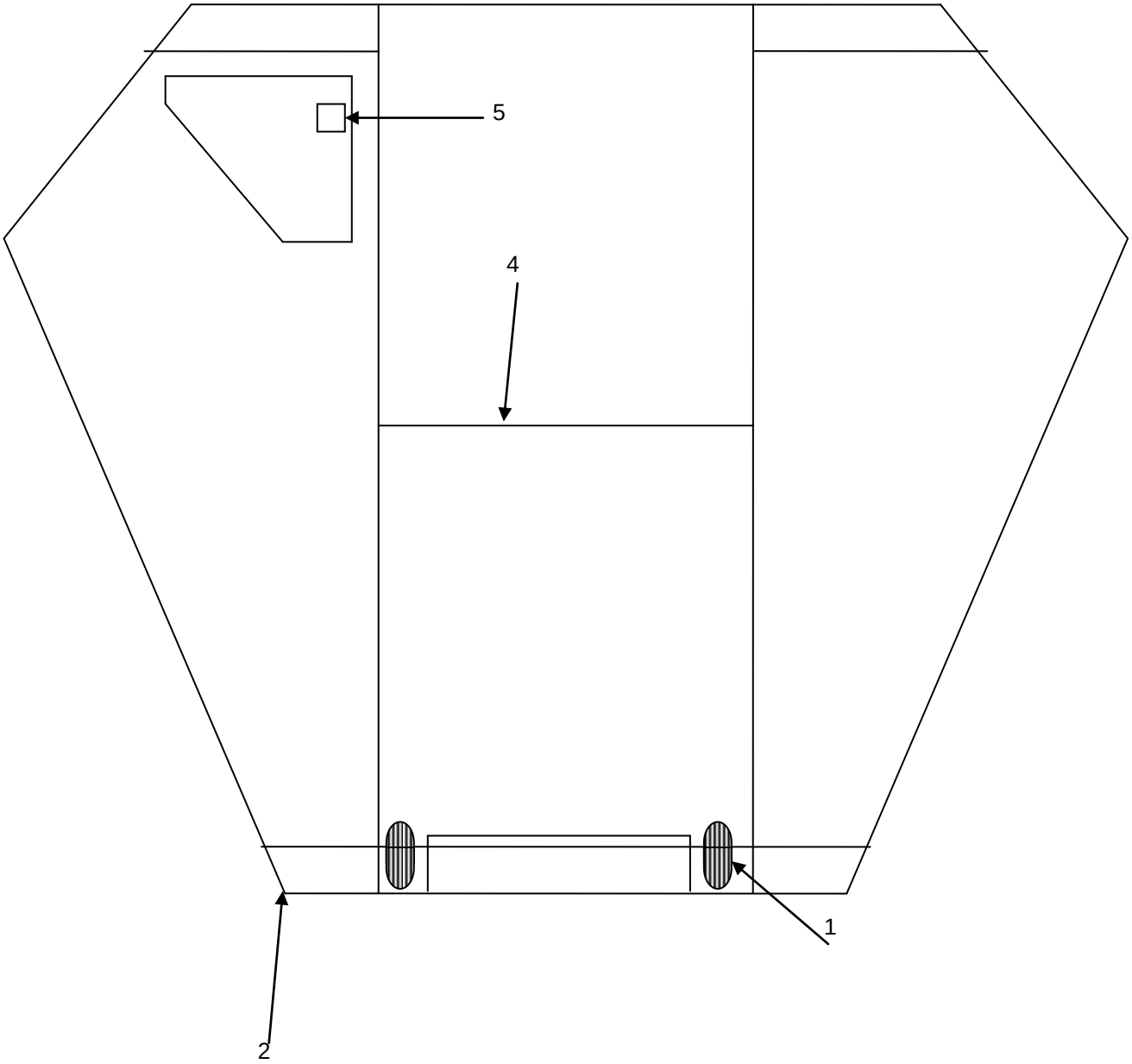
Trainer Signature of compliance:

_____

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:

_____

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 form 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 licences to legally operate Autobalers

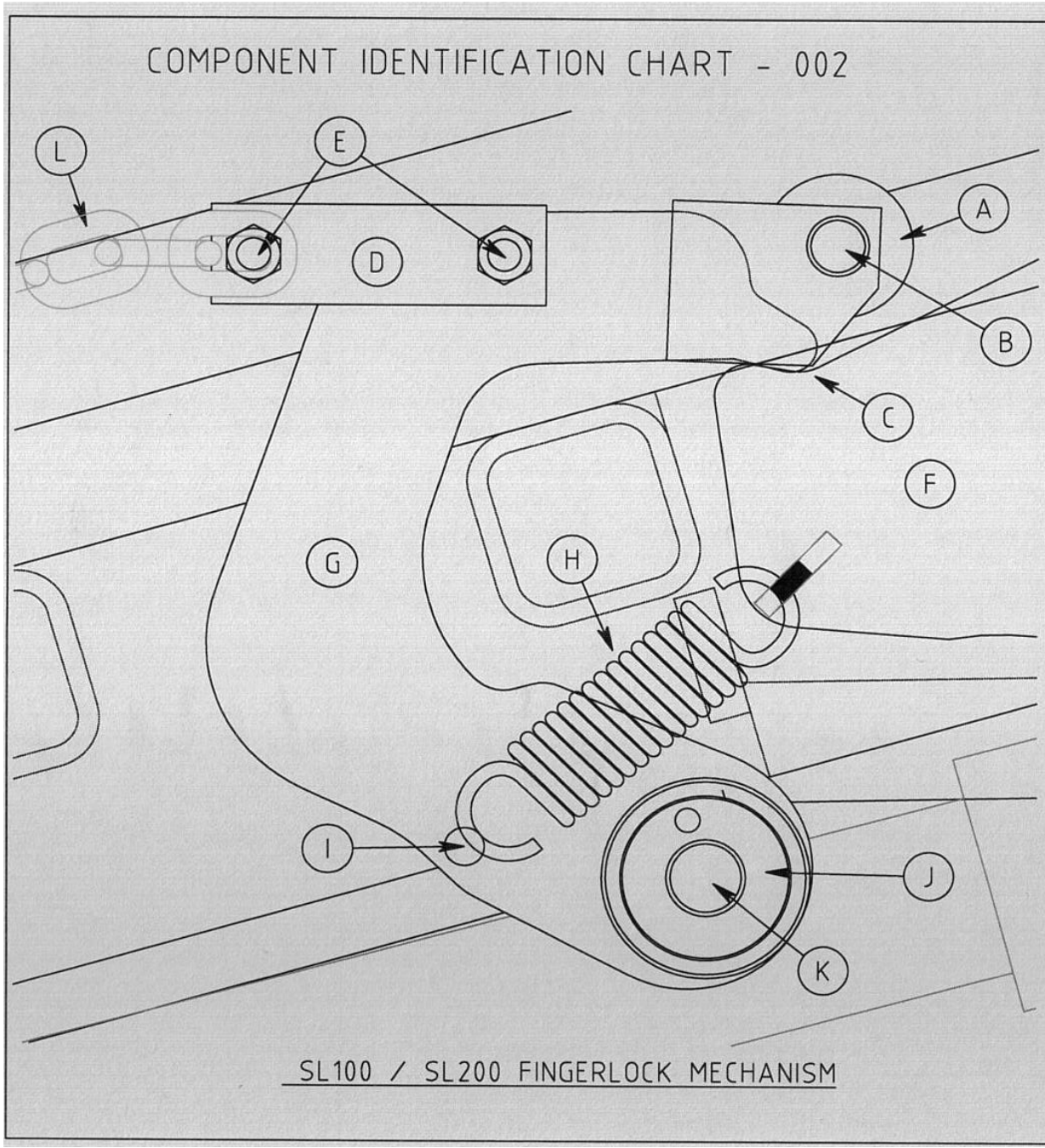
Chapter 26
Parts Listing

Component	Part Number for SL100	Part Number for SL200
Power Pack Unit	SL10001	SL20001
Electric Motor	SL10002	SL20002
Bell Housing	SL10003	SL20003
Pump	SL10004	SL20004
Pump Coupling	SL10005	SL20005
Coupling Spider	SL10006	SL20006
Coupling Motor Key	SL10007	SL20007
Coupling Pump Key	SL10008	SL20008
Coupling Grub Screws	SL10009	SL20009
Main Valve Block	SL10010	SL20010
Main Solenoid Unit	SL10011	SL20011
Eject Solenoid Unit	SL10012	SL20012
Solenoid Coils	SL10013	SL20013
Solenoid Coil Caps	SL10014	SL20014
Bypass Valve Unit	SL10015	SL20015
Test Port Unit	SL10016	SL20016
Pressure Switch Unit	SL10017	SL20017
Dip Stick	SL10018	SL20018
Filter Unit	SL10019	SL20019
Filter Cartridge	SL10020	SL20020
Filter Fitting In	SL10021	SL20021
Filter Fitting Out	SL10022	SL20022
SM023	SL10023	SL20023
Power Pack Acorn Nuts	SL10024	SL20024
Motor Fastening Studs	SL10025	SL20025
Hydraulic Hose Bottom Left	SL10026	SL20026
Hydraulic Hose Bottom Right	SL10027	SL20027
Hydraulic Hose Top Left	SL10028	SL20028
Hydraulic Hose Top Right	SL10029	SL20029
Eject Hose Delivery	SL10030	SL20030
Eject Hose Return	SL10031	SL20031
Regen Unit	SL10032	SL20032
Isolating Switch	SL10033	SL20033
Control To Is Cable	SL10034	SL20034
Main Cable	SL10035	SL20035
4 Pin Plug	SL10036	SL20036
Electrical Fittings	SL10037	SL20037
Electrical Fitting	SL10038	SL20038
Finger Frame	SL10039	SL20039
Finger Frame Bearing	SL10040	SL20040
Finger Frame Bearing Block	SL10041	SL20041
Finger Frame Block Bolts	SL10042	SL20042
Bearing Axle	SL10043	SL20043
Axle Retainer Bolt	SL10044	SL20044
Finger Unit Left Hand	SL10045	SL20045
Finger Unit Right Hand	SL10046	SL20046
Finger Unit Axle	SL10047	SL20047
Finger Axle Retainer Bolt	SL10048	SL20048
Finger Lock Right Hand Side	SL10049	SL20049
Finger Lock Left Hand Side	SL10050	SL20050
Finger Lock Shackles	SL10051	SL20051
Finger Lock Shackle Bolts	SL10052	SL20052
Finger Lock Chain	SL10053	SL20053
1. Finger Lock Chain Bolt	SL10054	SL20054
2. Finger Lock Chain Bolt	SL10055	SL20055
Finger Lock Bearing	SL10056	SL20056
Finger Lock Roller	SL10057	SL20057
Finger Lock Roller Axle	SL10058	SL20058
Finger Lock Spring	SL10059	SL20059
Finger Lock Spring Anchor Bolt	SL10060	SL20060

Finger Lock Main Axle	SL10061	SL20061
Finger Lock Axle Grub Screw	SL10062	SL20062
Finger Lock Split Pin	SL10063	SL20063
Finger Lock Washer	SL10064	SL20064
Eject Frame	SL10065	SL20065
Eject Bearing Block	SL10066	SL20066
Eject Bearing Bolts	SL10067	SL20067
Eject Finger	SL10068	SL20068
Eject Hydraulic Cylinder	SL10069	SL20069
Eject Hydraulic Fitting (Cylinder)	SL10070	SL20070
Eject Guard	SL10071	SL20071
Eject Guard Flap	SL10072	SL20072
Eject Anchor Pin	SL10073	SL20073
Twine Lock Bar	SL10074	SL20074
Twine Lock Connector	SL10075	SL20075
Twine Lock Bolt	SL10076	SL20076
Twine Lock Spring Connector	SL10077	SL20077
Twine Lock Bar Split Pin	SL10078	SL20078
Emergency Stop Bar	SL10079	SL20079
Emergency Bar Bolt Kit	SL10080	SL20080
Emergency Bar Spring	SL10081	SL20081
Coded Key Bar Insert	SL10082	SL20082
Coded Key Anchor Tab	SL10083	SL20083
Coded Key Bolt Kit	SL10084	SL20084
Coded Key	SL10085	SL20085
Coded Key Switch	SL10086	SL20086
Upper Door Handle	SL10087	SL20087
Upper Door Handle Grip	SL10088	SL20088
Upper Door Handle Bolt Kit	SL10089	SL20089
Main Upper Door Unit	SL10090	SL20090
Upper Door Studs	SL10091	SL20091
Upper Door Hinge Pins	SL10092	SL20092
Lower Door Unit	SL10093	SL20093
Vertical Latch Unit	SL10094	SL20094
Lower Door Hinge Pins	SL10095	SL20095
Lower Door Link Unit	SL10096	SL20096
Link Unit Bolts	SL10097	SL20097
Main Frame Hinge Pins	SL10098	SL20098
Main Frame Hinge Bushes	SL10099	SL20099
Front Upper Left Hand Cowl	SL100100	SL200100
Front Upper Right Hand Cowl	SL100101	SL200101
Rear Upper Left Hand Cowl	SL100102	SL200102
Rear Upper Right Hand Cowl	SL100103	SL200103
Lower Right Hand Front Cowl	SL100104	SL200104
Lower Left Hand Front Cowl	SL100105	SL200105
Lower Left Hand Rear Cowl	SL100106	SL200106
Lower Right Hand Rear Cowl	SL100107	SL200107
Side Upper Mesh	SL100107	SL200108
Lower Right Hand Side Mesh Unit	SL100109	SL200109
Lower Left Hand Side Mesh Unit	SL100110	SL200110
Lower Mesh Hinge Units	SL100111	SL200111
Side Mesh Upper Cover Strips	SL100112	SL200112
Side Mesh Lower Cover Strips	SL100113	SL200113
Canopy Unit	SL100114	SL200114
Canopy Legs	SL100115	SL200115
Upper Mesh Unit	SL100116	SL200116
Plastic Twine Tabs	SL100117	SL200117
Main Seal	SL100118	SL200118
Hydraulic Cylinders	SL100119	SL200119

COMPONENT IDENTIFICATION CHART 001
ITEM
PART No.
DESCRIPTION
QTY.
A
SL0047
MAIN CENTRE AXLE
1
B
SL100120
SL200120
CYLINDER PINS
2
C
SL100121
SL200121
CLEVIS (UPPER)
-
1
D
SL10045
SL20045
FINGER CLUSTER
-
1
E
SL100122
SL200122
MAIN FINGER FRAME ASSEMBLY
-
1
F
SL00123
BEARING ASSEMBLY
2
G
-
DAMPER UNIT
1
H
-
FINGERLOCK UNIT
1
I
-
HYDRAULIC CYLINDER
1
J
-
ANCHOR BOLTS
4
A
B
C
D
E
F
G
H
I
J
SL100 / SL200 COMPACTION MECHANISM

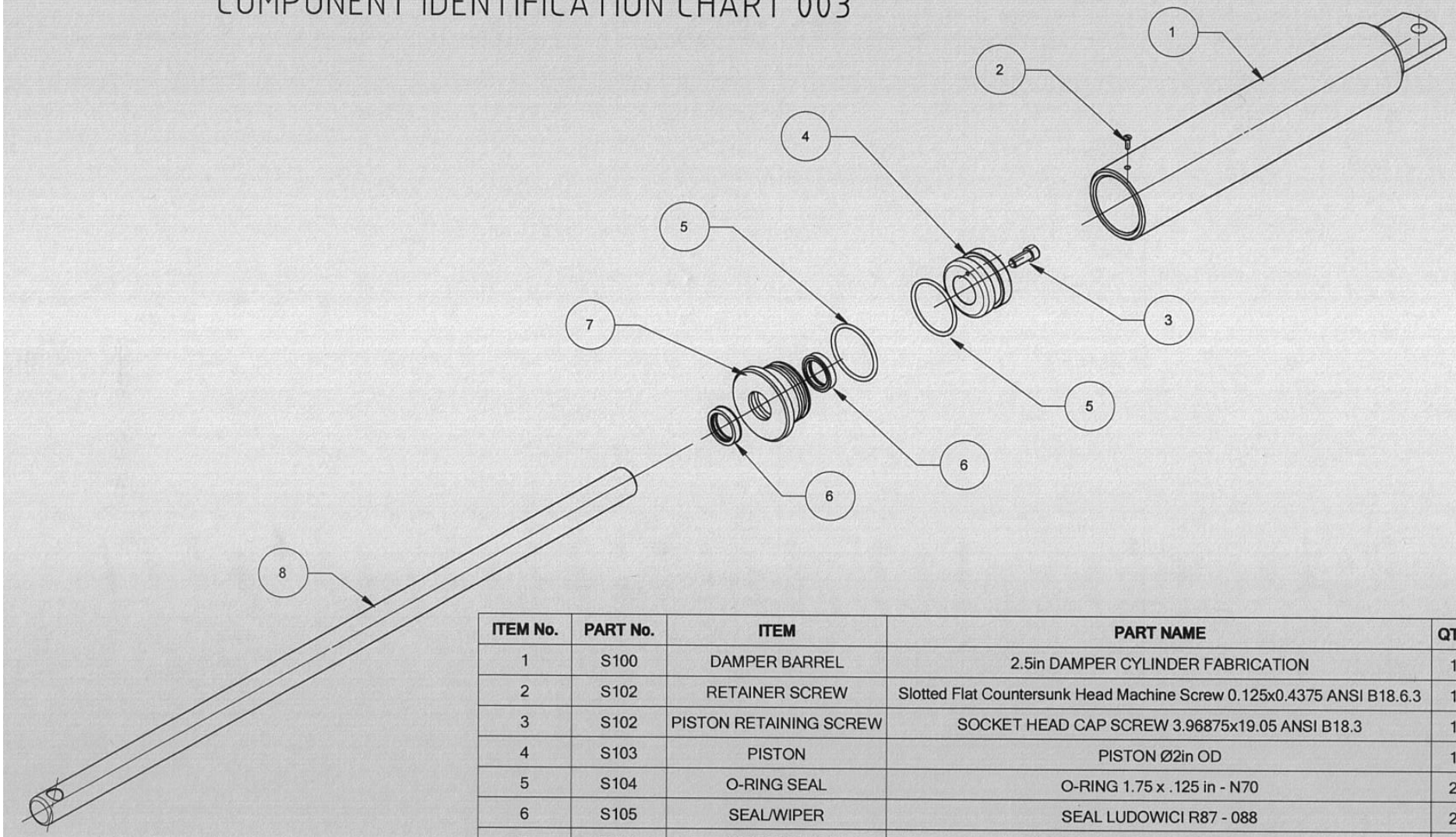
COMPONENT IDENTIFICATION CHART - 002



SL100 / SL200 FINGERLOCK MECHANISM

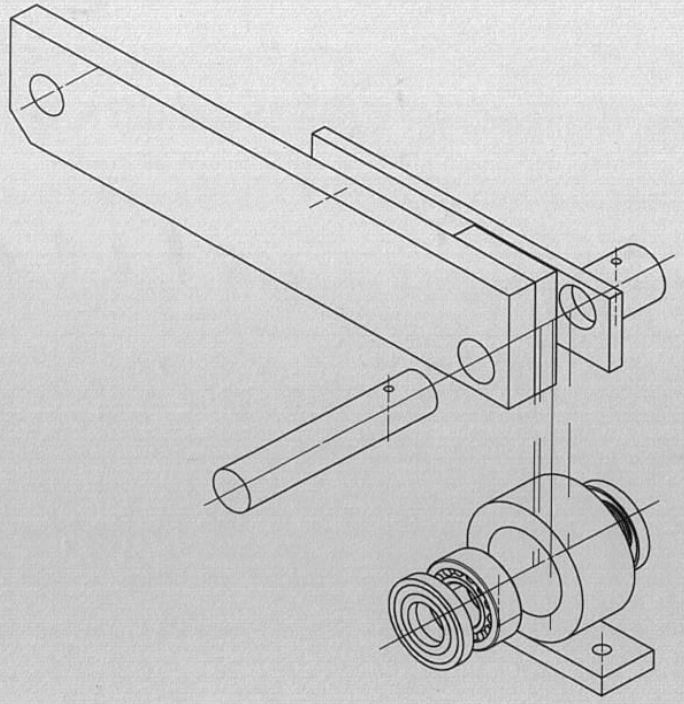
ITEM	PART No.	DESCRIPTION	QTY.
A	SL10057 SL20057	FINGERLOCK ROLLER -	-
B	SL10058 SL20058	ROLLER PIVOT BOLT	-
C	-	LOCKING DIVOT	-
D	SL10051 SL20051	CHAIN ATTACHING SHACKLE -	-
E	SL10052 SL20052	SHACKLE BOLTS -	-
F	SL10050 SL20050	FINGER	-
G	SL10049 SL20049	FINGERLOCK BODY	-
H	SL10059 SL20059	FINGERLOCK SPRING	-
I	SL10060 SL20060	FINGERLOCK SPRING ANCHOR BOLT	-
J	SL10056 SL20056	FINGERLOCK BEARING	-
K	SL10061 SL20061	FINGERLOCK AXLE	-
L	SL10053 SL20053	FINGERLOCK CHAIN	-
M	SL10062 SL20062	FINGERLOCK AXLE GRUB SCREW	-
N	SL10063 SL20063	FINGERLOCK AXLE SPLIT PIN	-
O	SL10064 SL20064	FINGERLOCK SPACER WASHER	-

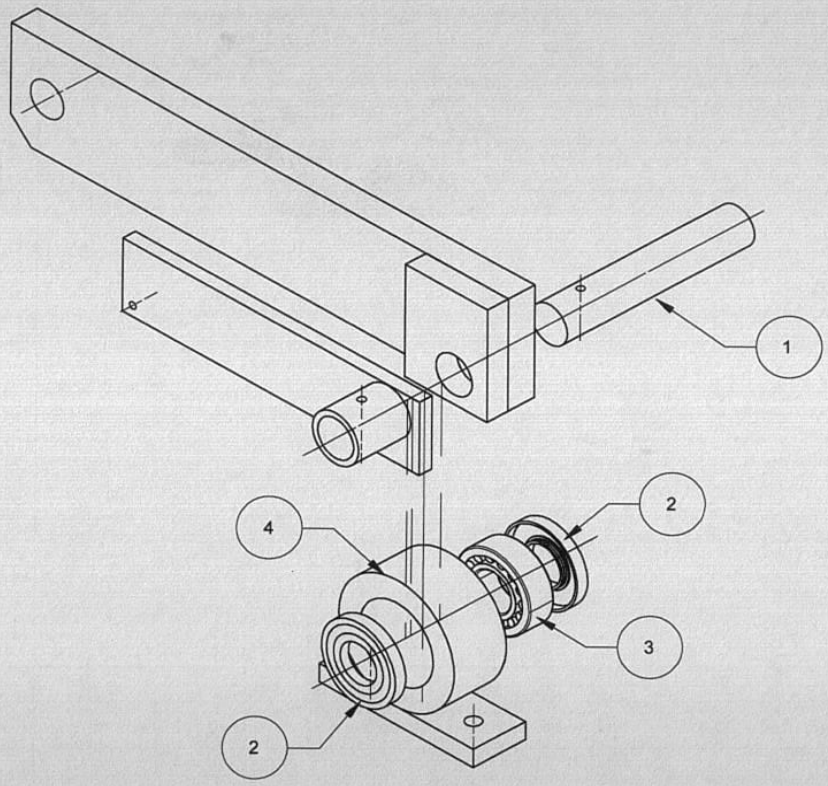
COMPONENT IDENTIFICATION CHART 003



ITEM No.	PART No.	ITEM	PART NAME	QTY
1	S100	DAMPER BARREL	2.5in DAMPER CYLINDER FABRICATION	1
2	S102	RETAINER SCREW	Slotted Flat Countersunk Head Machine Screw 0.125x0.4375 ANSI B18.6.3	1
3	S102	PISTON RETAINING SCREW	SOCKET HEAD CAP SCREW 3.96875x19.05 ANSI B18.3	1
4	S103	PISTON	PISTON Ø2in OD	1
5	S104	O-RING SEAL	O-RING 1.75 x .125 in - N70	2
6	S105	SEAL/WIPER	SEAL LUDOWICI R87 - 088	2
7	S106	DAMPER CAP	DAMPER CAP Ø1in ID Ø2in (minor)OD	1
8	S107	SHAFT	SHAFT Ø1in x 670mm	1

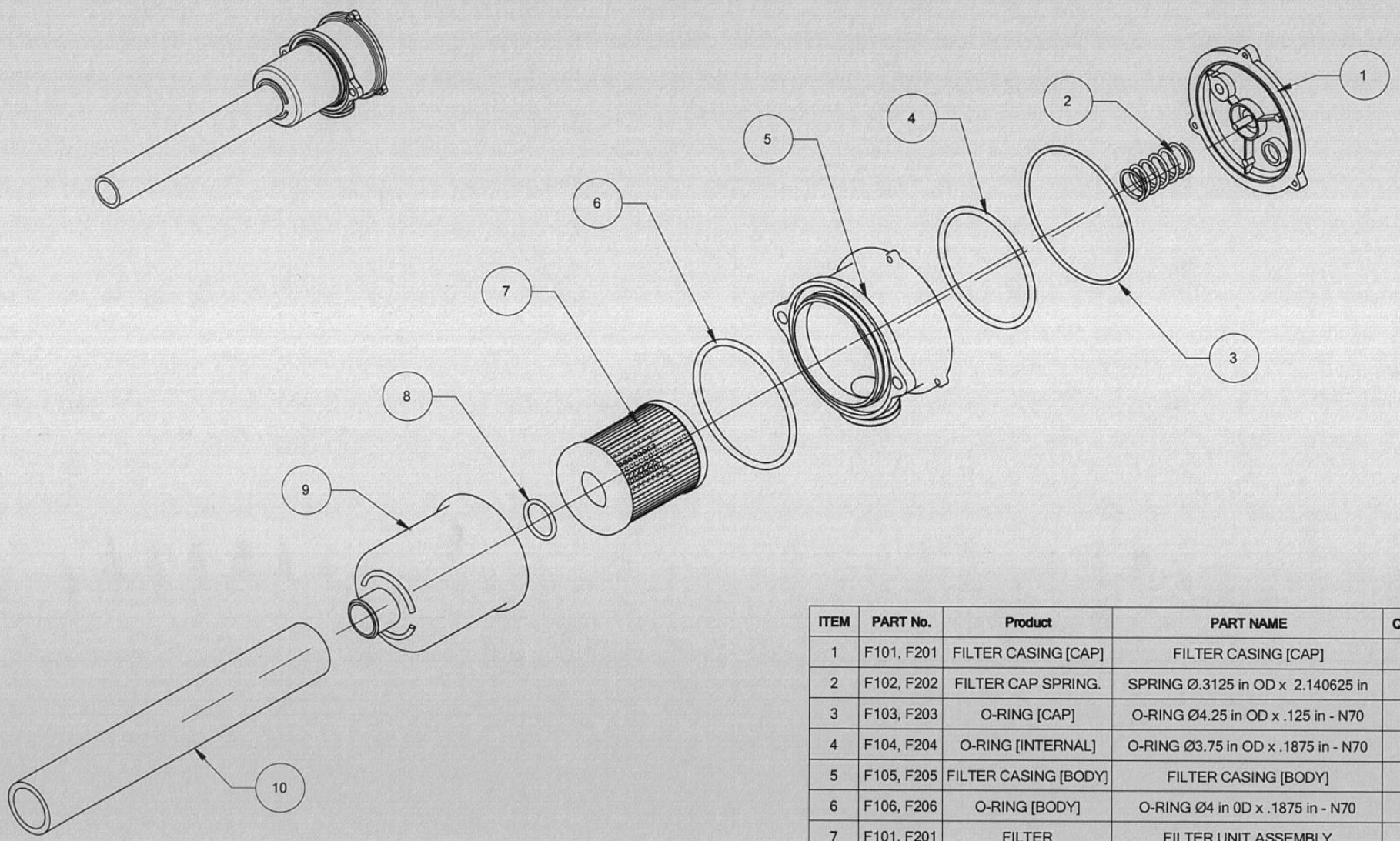
COMPONENT IDENTIFICATION CHART 004





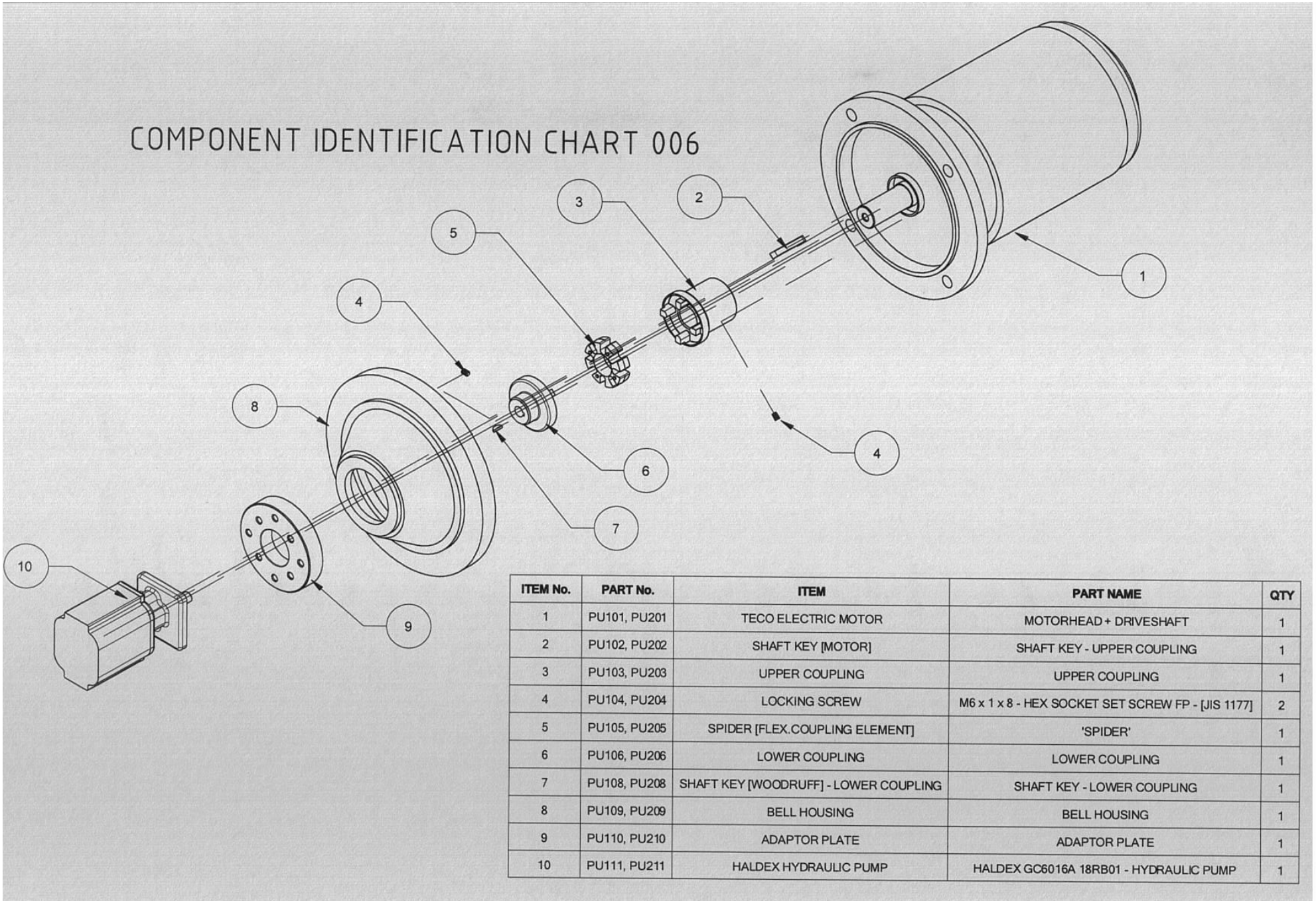
ITEM	PART No.	Product	PART NAME	QTY.
1	B001	PIVOT SHAFT	PIVOT SHAFT	2
2	B002	BEARING SEAL	SEAL NAK TC 35 72 10	4
3	B003	BEARING	RHP 22207EJW33C3 - BEARING	2
4	B004	BEARING HOUSING	BEARING HOUSING ASSEMBLY	2

COMPONENT IDENTIFICATION CHART 005



ITEM	PART No.	Product	PART NAME	QTY.
1	F101, F201	FILTER CASING [CAP]	FILTER CASING [CAP]	1
2	F102, F202	FILTER CAP SPRING.	SPRING Ø.3125 in OD x 2.140625 in	1
3	F103, F203	O-RING [CAP]	O-RING Ø4.25 in OD x .125 in - N70	1
4	F104, F204	O-RING [INTERNAL]	O-RING Ø3.75 in OD x .1875 in - N70	1
5	F105, F205	FILTER CASING [BODY]	FILTER CASING [BODY]	1
6	F106, F206	O-RING [BODY]	O-RING Ø4 in 0D x .1875 in - N70	1
7	F101, F201	FILTER	FILTER UNIT ASSEMBLY	1
8	F108, F208	O-RING [CUP]	O-RING Ø1.375 in OD x ..125 in - N70	1
9	F109, F209	FILTER CUP	FILTER CUP [MOULDED PLASTIC]	1
10	F110, F210	OUTLET HOSE	HOSE Ø1.625 in OD x Ø1.25 in ID x 11 ir	1

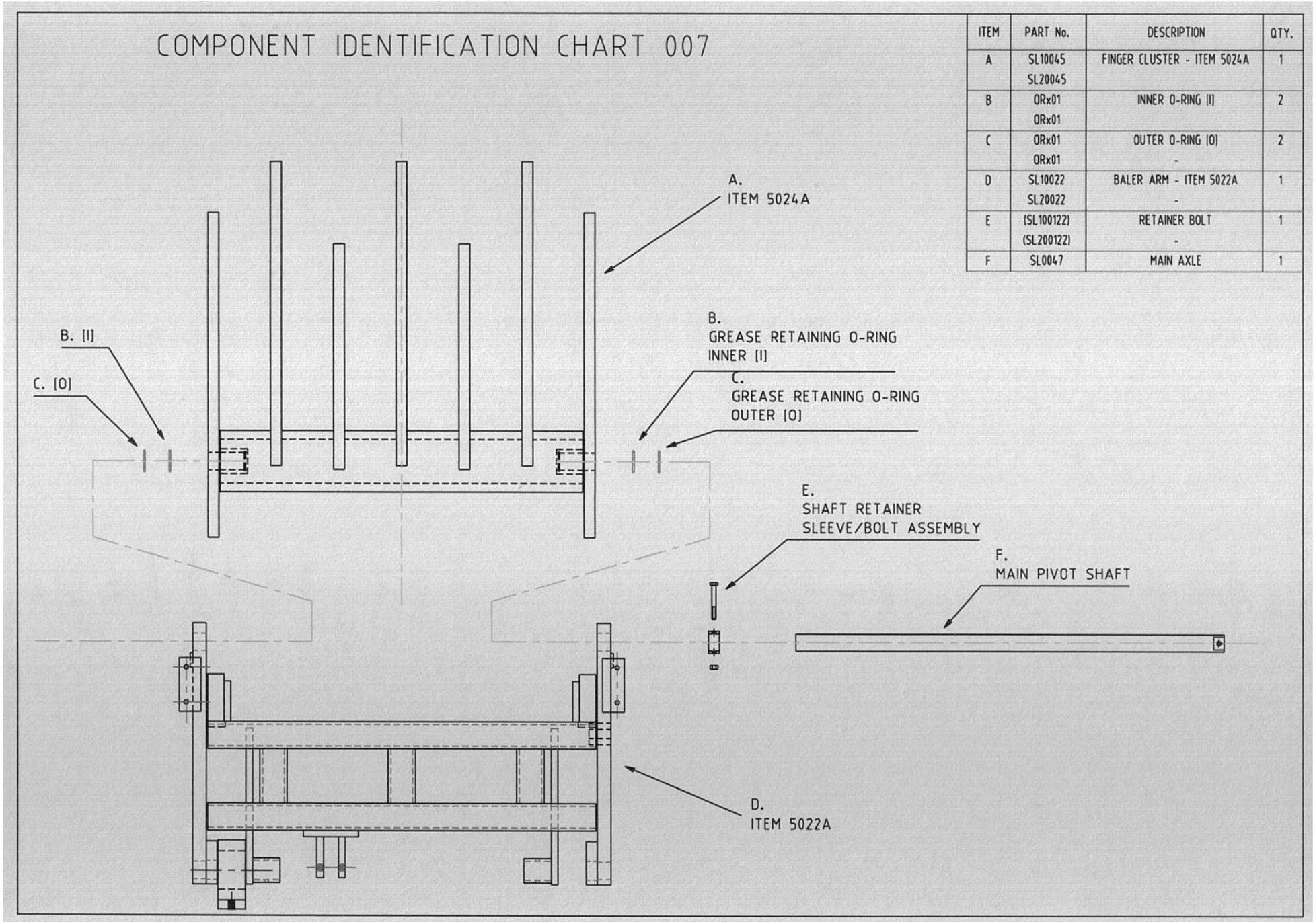
COMPONENT IDENTIFICATION CHART 006

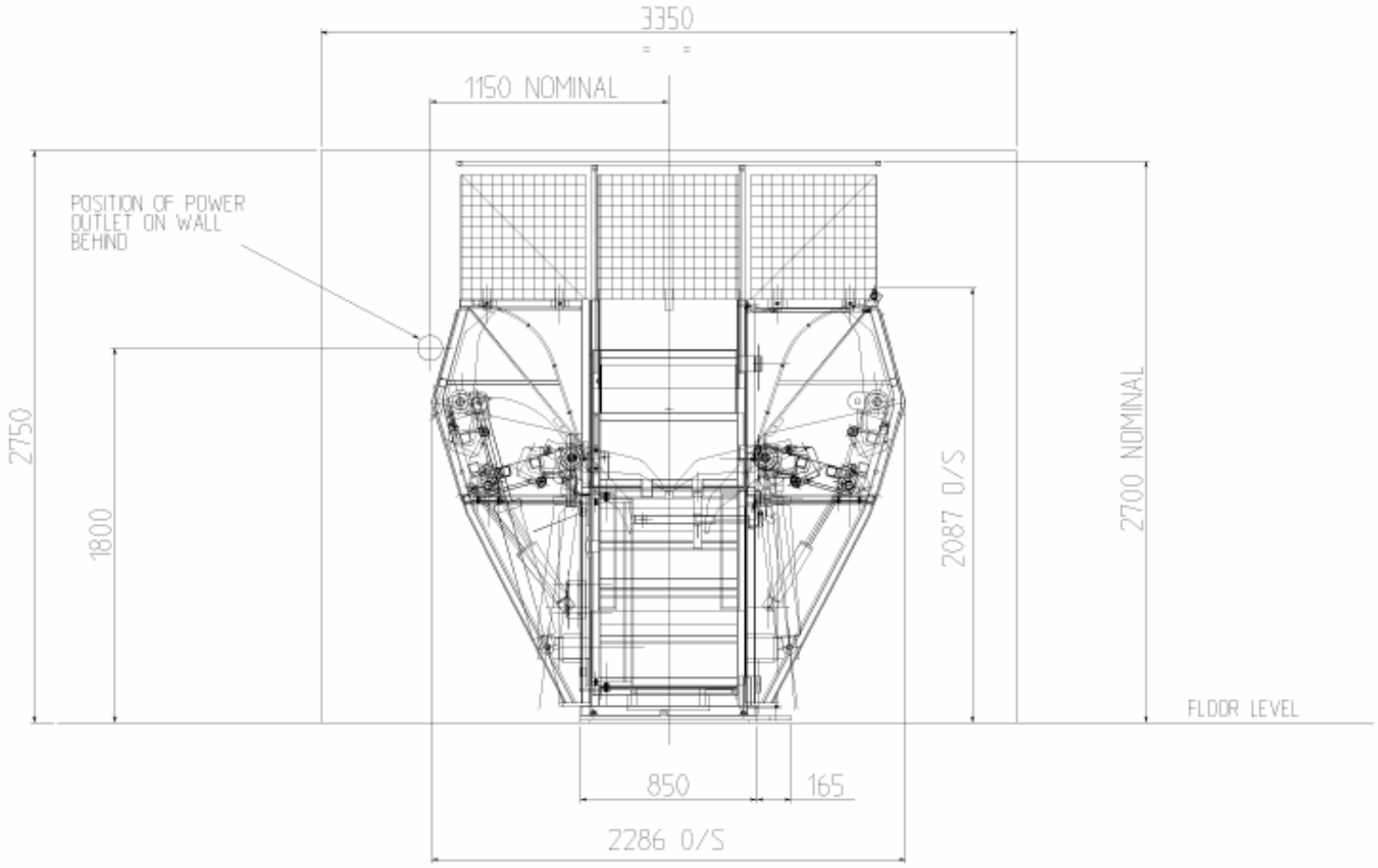


ITEM No.	PART No.	ITEM	PART NAME	QTY
1	PU101, PU201	TECO ELECTRIC MOTOR	MOTORHEAD + DRIVESHAFT	1
2	PU102, PU202	SHAFT KEY [MOTOR]	SHAFT KEY - UPPER COUPLING	1
3	PU103, PU203	UPPER COUPLING	UPPER COUPLING	1
4	PU104, PU204	LOCKING SCREW	M6 x 1 x 8 - HEX SOCKET SET SCREW FP - [JIS 1177]	2
5	PU105, PU205	SPIDER [FLEX.COUPLING ELEMENT]	'SPIDER'	1
6	PU106, PU206	LOWER COUPLING	LOWER COUPLING	1
7	PU108, PU208	SHAFT KEY [WOODRUFF] - LOWER COUPLING	SHAFT KEY - LOWER COUPLING	1
8	PU109, PU209	BELL HOUSING	BELL HOUSING	1
9	PU110, PU210	ADAPTOR PLATE	ADAPTOR PLATE	1
10	PU111, PU211	HALDEX HYDRAULIC PUMP	HALDEX GC6016A 18RB01 - HYDRAULIC PUMP	1

COMPONENT IDENTIFICATION CHART 007

ITEM	PART No.	DESCRIPTION	QTY.
A	SL10045 SL20045	FINGER CLUSTER - ITEM 5024A	1
B	ORx01 ORx01	INNER O-RING (I)	2
C	ORx01 ORx01	OUTER O-RING (O)	2
D	SL10022 SL20022	BALER ARM - ITEM 5022A	1
E	(SL100122) (SL200122)	RETAINER BOLT	1
F	SL0047	MAIN AXLE	1





FRONT ELEVATION

REVN	DATE	REVISED BY	NOTES
1	-	-	-

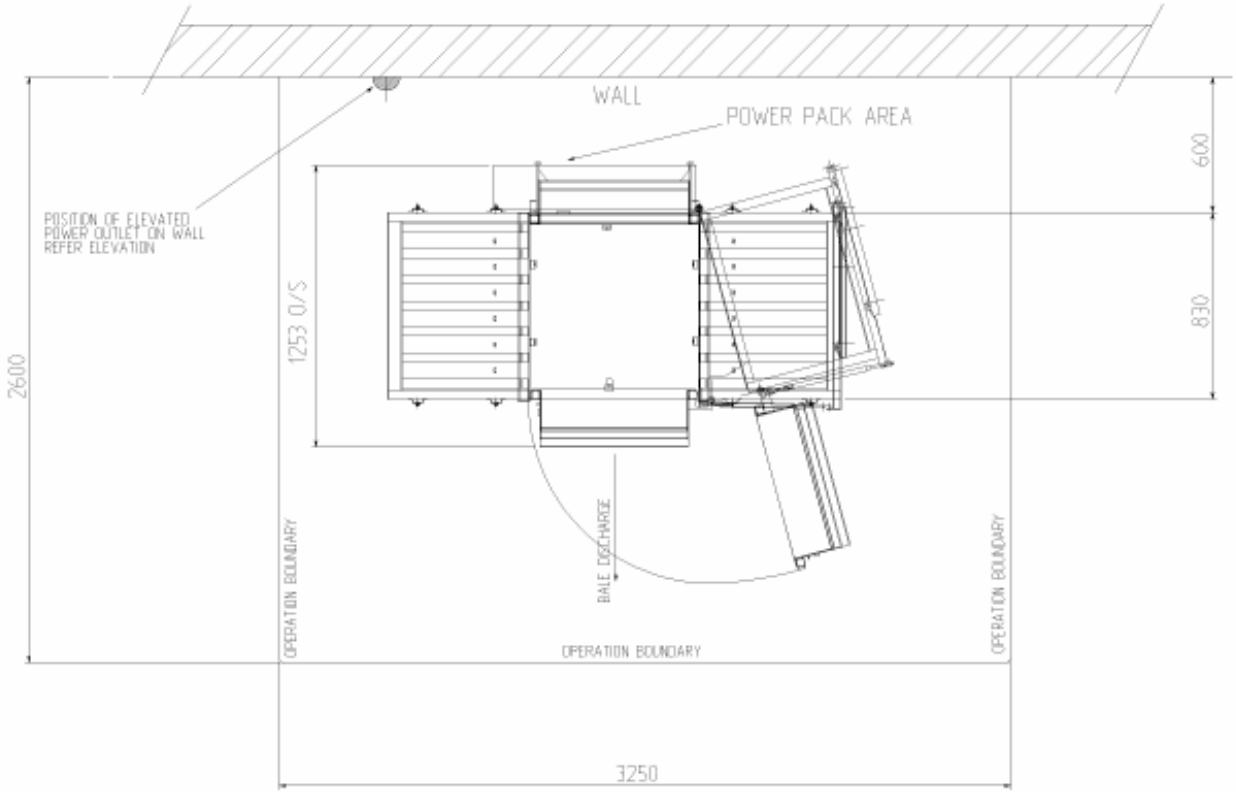
FACILITY ARRANGEMENT

Trethewey Industries

AUTOBALER SL 200 GENERAL ARRANGEMENT

SL200-FAC-S002 A

REV'N	DATE	REVISED BY	NOTES
A	20/03/06	DMR	PRELIMINARY REVISION
-	-	-	-



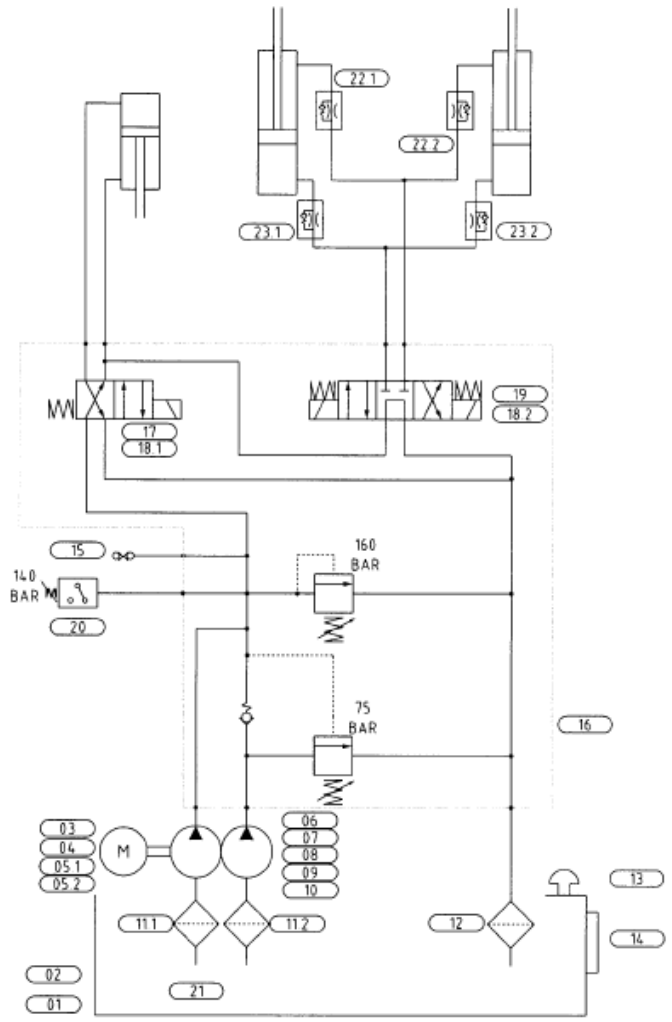
PLAN VIEW

FACILITY ARRANGEMENT

Trethewey Industries

AUTOBALER
SL 200
GENERAL ARRANGEMENT

SL200-FAC-S001 | A



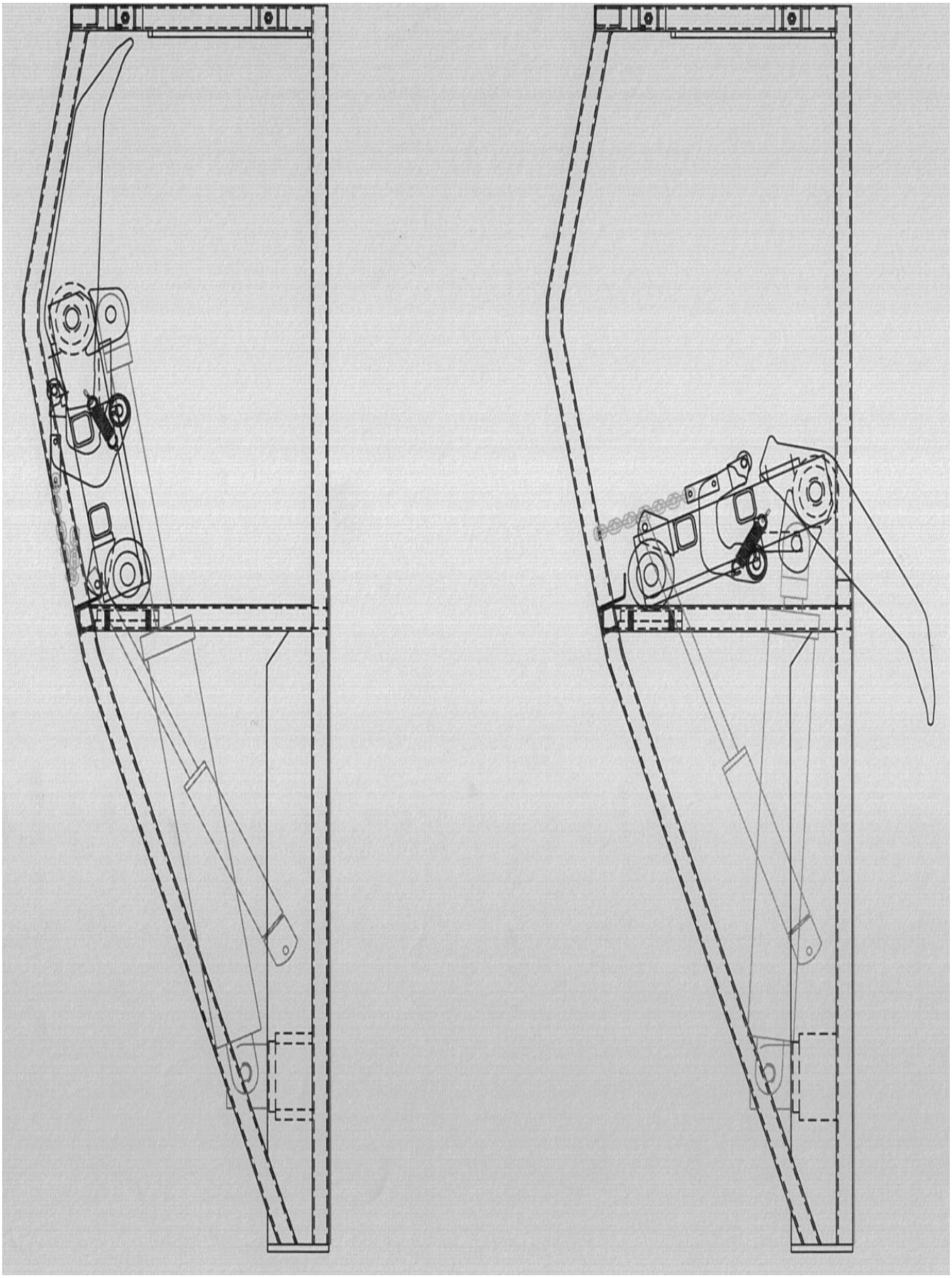
ITEM No.	PART No	DESCRIPTION	QTY.
01	03234-416-01	RESERVOIR	1
02	03234-406-01	RESERVOIR LID	1
03	03234-406-02	ELECTRIC MOTOR	1
04	03234-416-02	BELL HOUSING	1
05	03234-416-03	BELL HOUSING GASKET	2
06	03234-416-04	PUMP GASKET	1
07	03234-416-05	MOTOR COUPLING	1
08	03234-416-06	COUPLING ELEMENT	1
09	03234-416-07	PUMP COUPLING	1
10	03234-409-01	DOUBLE PUMP	1
11	03234-416-08	SUCTION STRAINER	2
12	03234-416-09	RETURN FILTER	1
13	03234-416-10	FILLER BREATHER	1
14	03234-416-11	FLUID LEVEL GLASS	1
15	03234-407-01	GAUGE TEST POINT	1
16	03234-406-03	MANIFOLD	1
17	03234-413-01	DIRECTIONAL CONTROL VALVE	1
18	03234-413-02	BOLT KIT	2
19	03234-413-02	DIRECTIONAL CONTROL VALVE	1
20	03234-413-02	PRESSURE SWITCH	1
21	03234-413-02	INT FITTING KIT	1
22	03234-413-02	FLOW CONTROL	2
23	03234-413-02	FLOW CONTROL	2
24	03234-413-02	MANIFOLD FITTING	4
25	03234-413-02	MANIFOLD ADAPTOR	4
26	03234-413-02	INSTALLATION KIT	1

PART NAME: MD100	RENOLD AUST. PTY. LTD. WELLINGTON RD., MULGRAVE VICTORIA, 3170
CLIENT: TRETHEWEY EH03234/9	DRN NC DATE 5/05/2005 CKD DATE ISSUE DATE
USED ON: WAISTE COMPACTOR	DRG. No.
SCALE: NTS	

Chapter 28
Appendix

Contents

Appendix 1

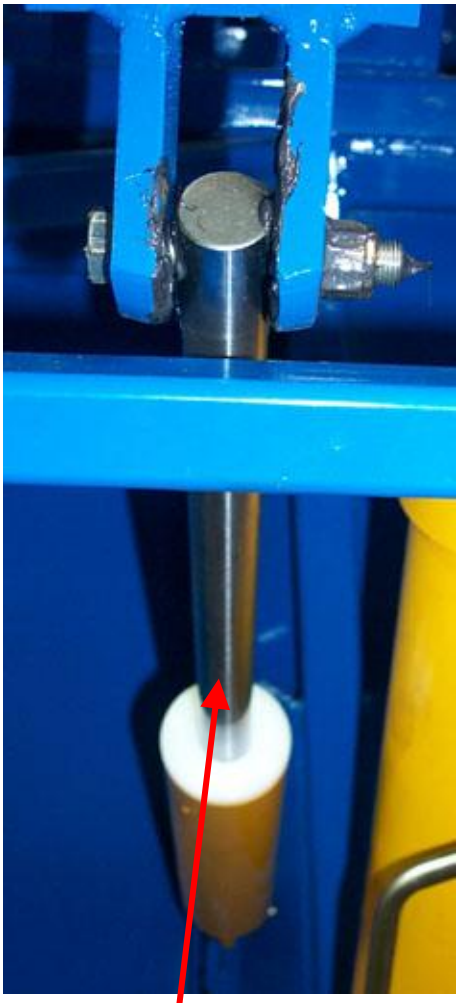


Appendix 2

SL100 Valve Block

SL200 Valve Block

Appendix 3



Damper

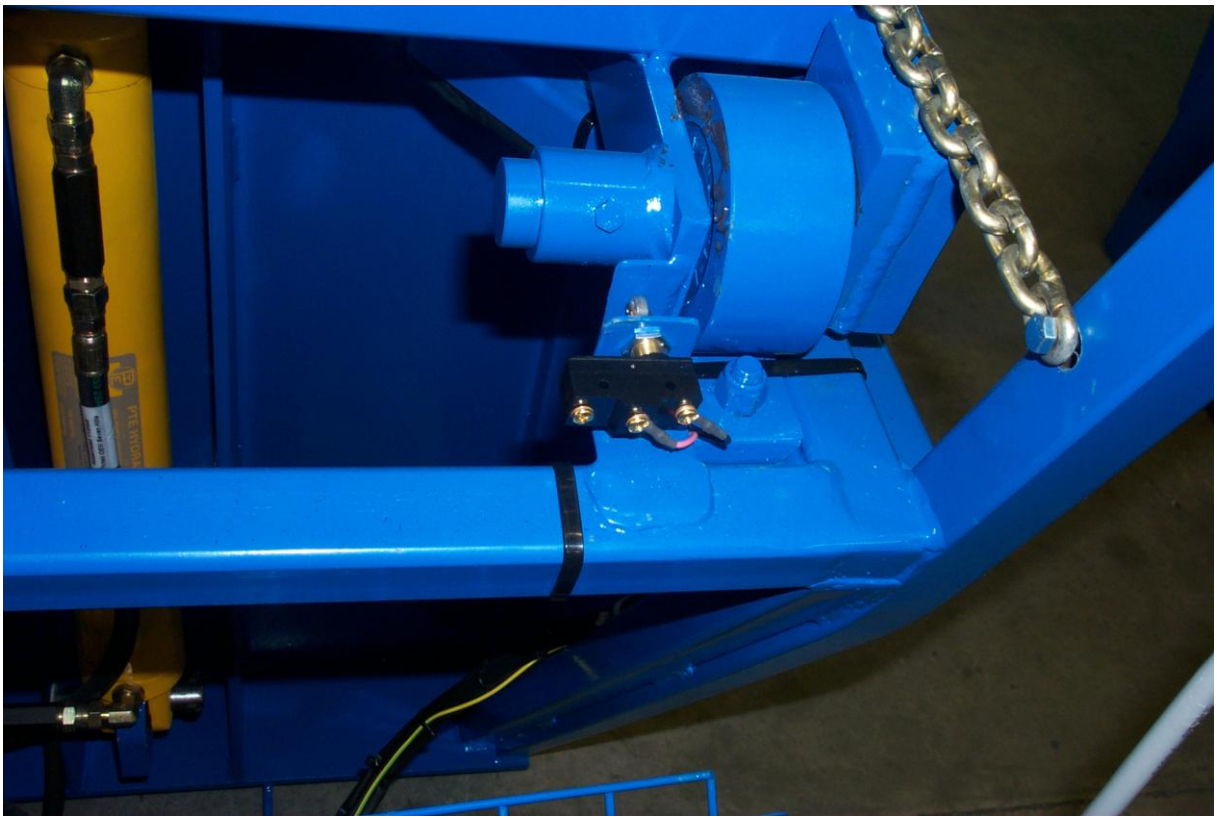
Appendix 4

Door Link Adjuster

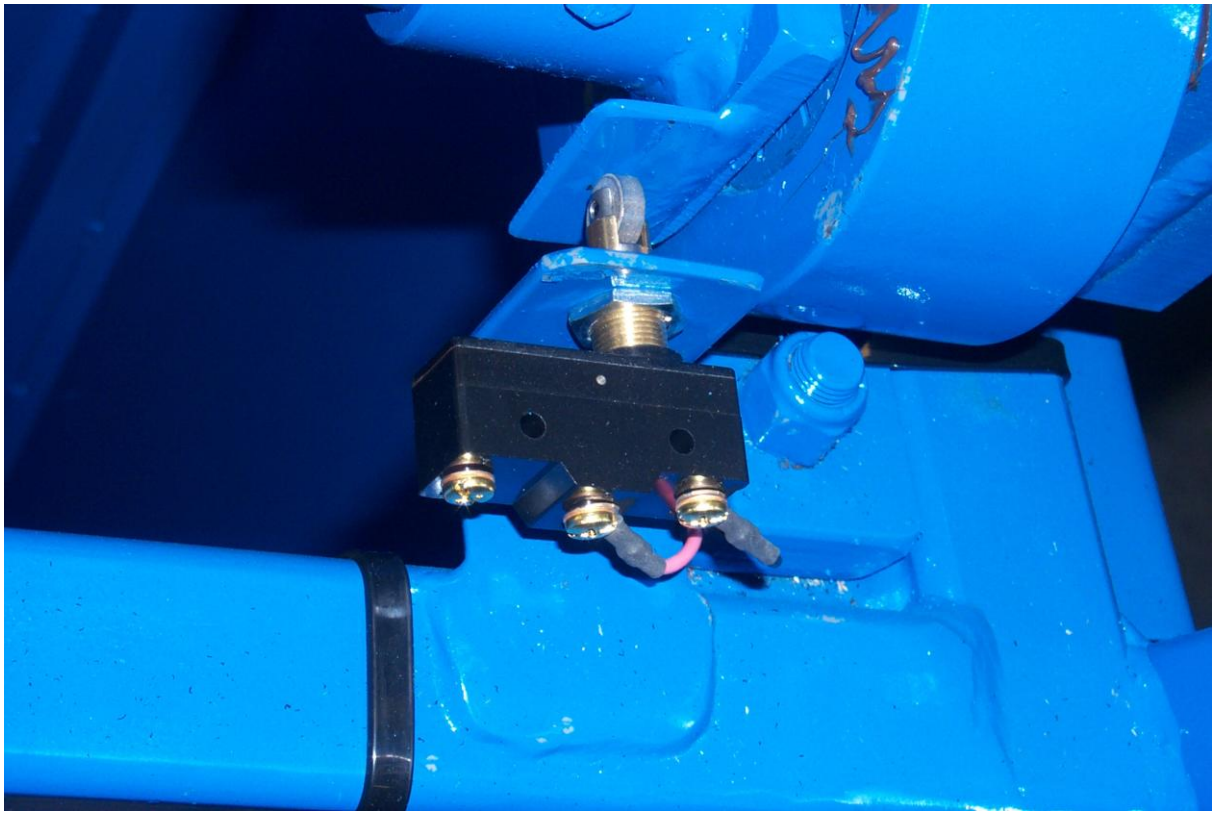
Door Link

Eject

Appendix 6



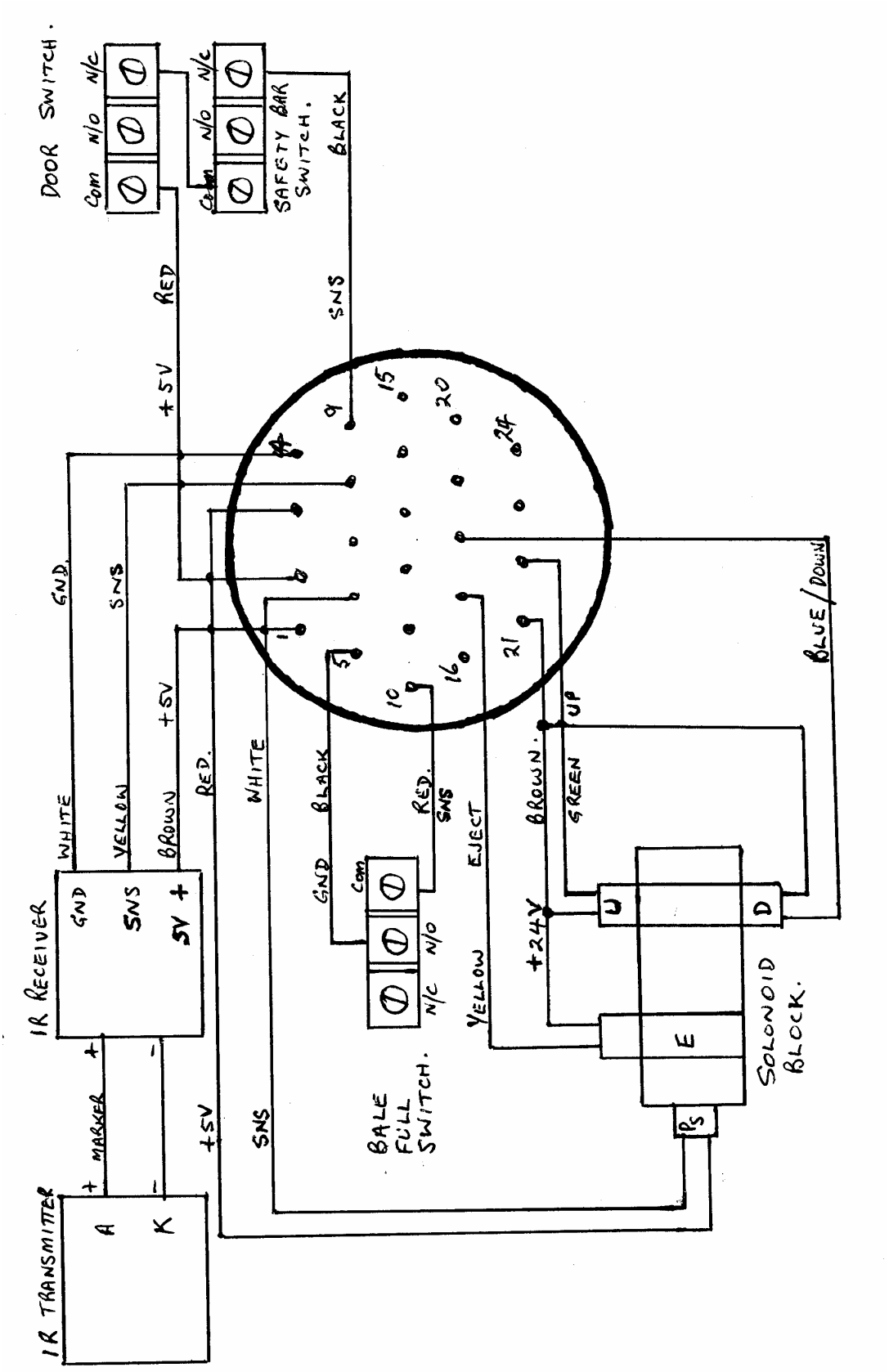
Full Bale Switch



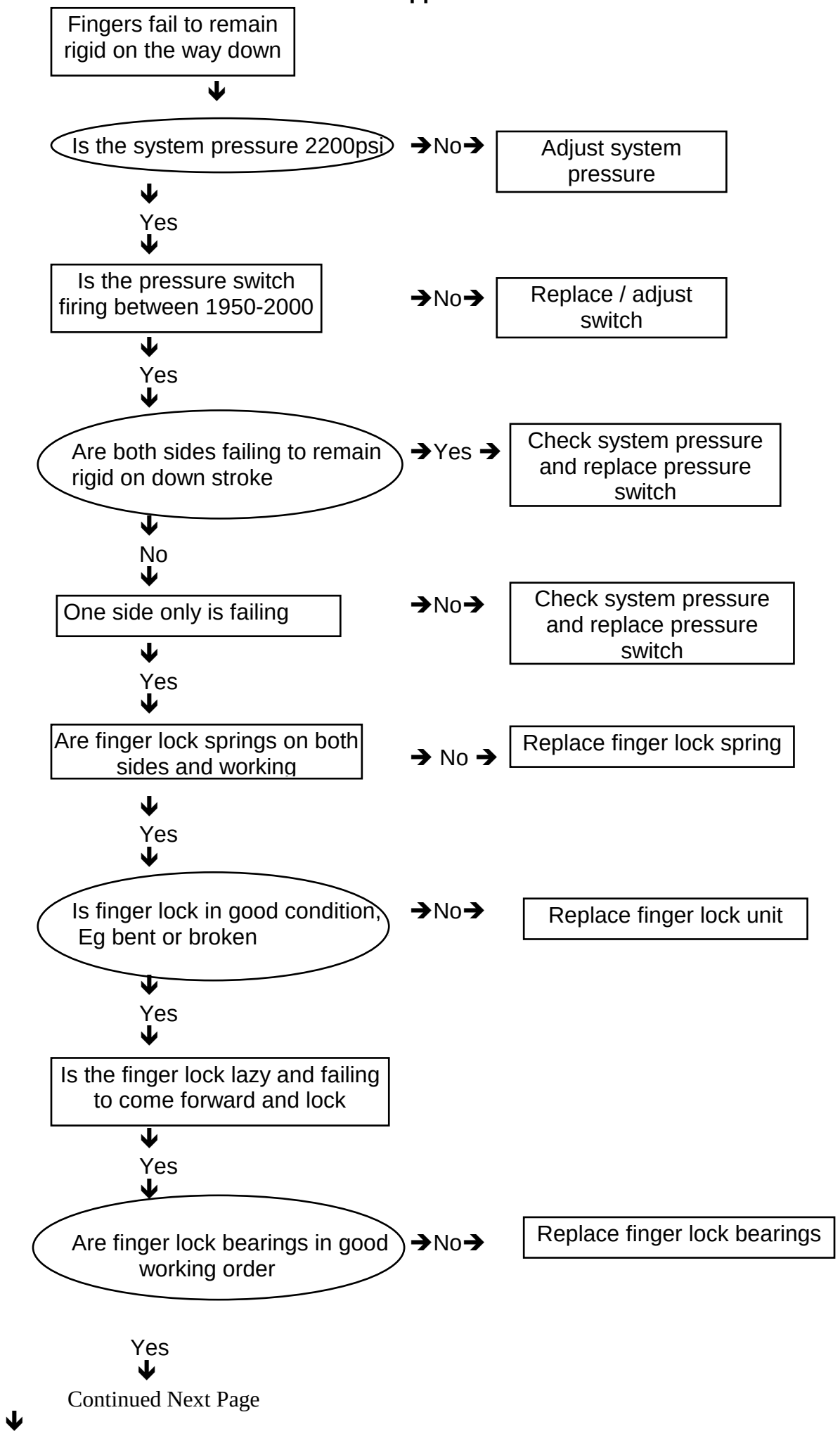
Appendix 7

Door Switch

Appendix 8


DOOR SWITCH.
COM N/O N/C
SAFETY BAR SWITCH.
BLACK
SNS
RED
+5V
GND.
WHITE
YELLOW
BROWN
IR RECEIVER
GND
SNS
5V +
MARKER
IR TRANSMITTER
A
K
BALE FULL SWITCH.
N/C N/O
EJECT
+24V
BROWN.
GREEN
UP
BLUE/DOWN
U
D
E
RS
SOLONOID BLOCK.

Appendix 9

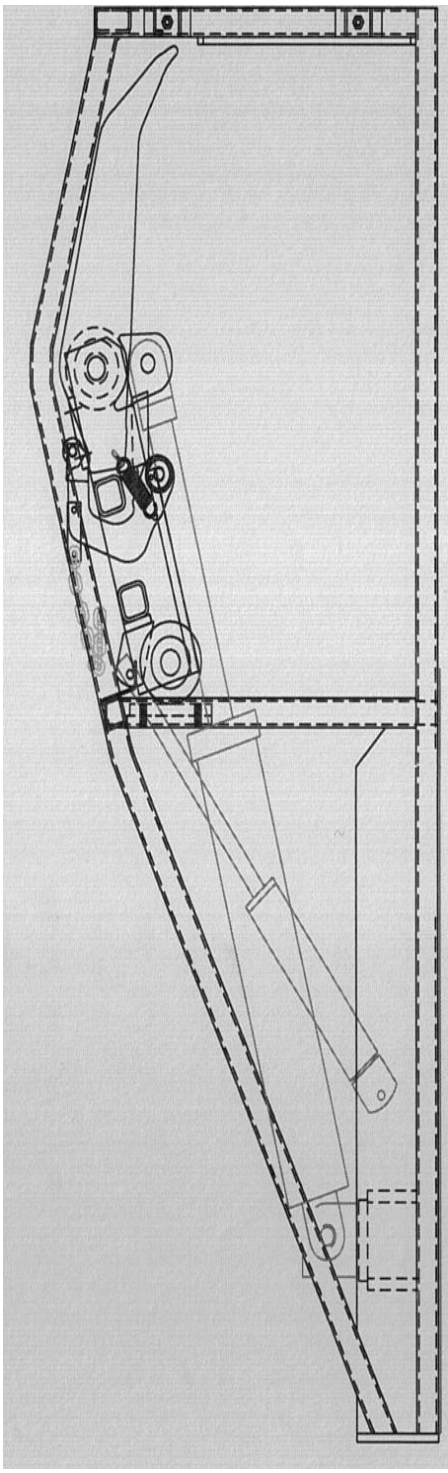

Fingers fail to remain rigid on the way down
Is the system pressure 2200psi
No
Adjust system pressure
Yes
Is the pressure switch firing between 1950-2000
No
Replace / adjust switch
Yes
Are both sides failing to remain rigid on down stroke
Yes
Check system pressure and replace pressure switch
No
One side only is failing
No
Check system pressure and replace pressure switch
Yes
Are finger lock springs on both sides and working
No
Replace finger lock spring
Yes
Is finger lock in good condition, Eg bent or broken
No
Replace finger lock unit
Yes
Is the finger lock lazy and failing to come forward and lock
Yes
Are finger lock bearings in good working order
No
Replace finger lock bearings
Yes
Continued Next Page

Yes

With the pressing arms right down (cylinders fully closed), remove the chain connecting the finger lock to the baler. The finger lock unit should snap forwards freely and lock over the finger unit abutment. Caution, when re-attaching the chain, ensure that the chain is not twisted and is securely and firmly attached to the baler body.

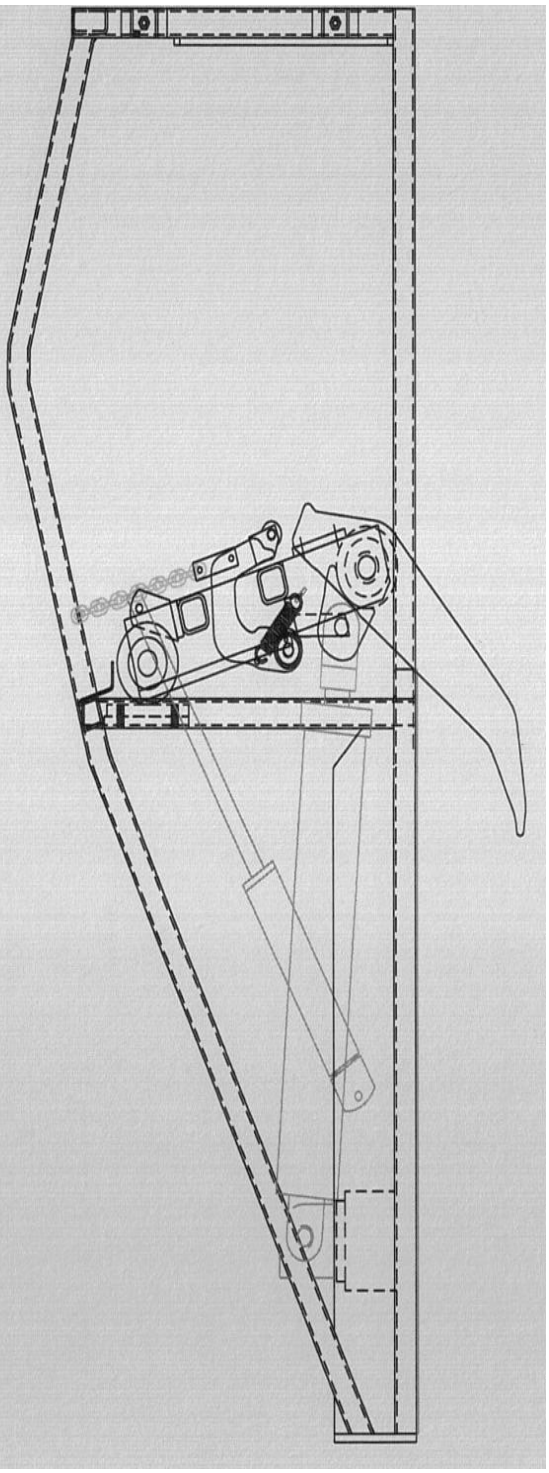
SAFETY - Before removing the guards to service the finger lock unit, isolate the power and remove the key.

Illustration 1



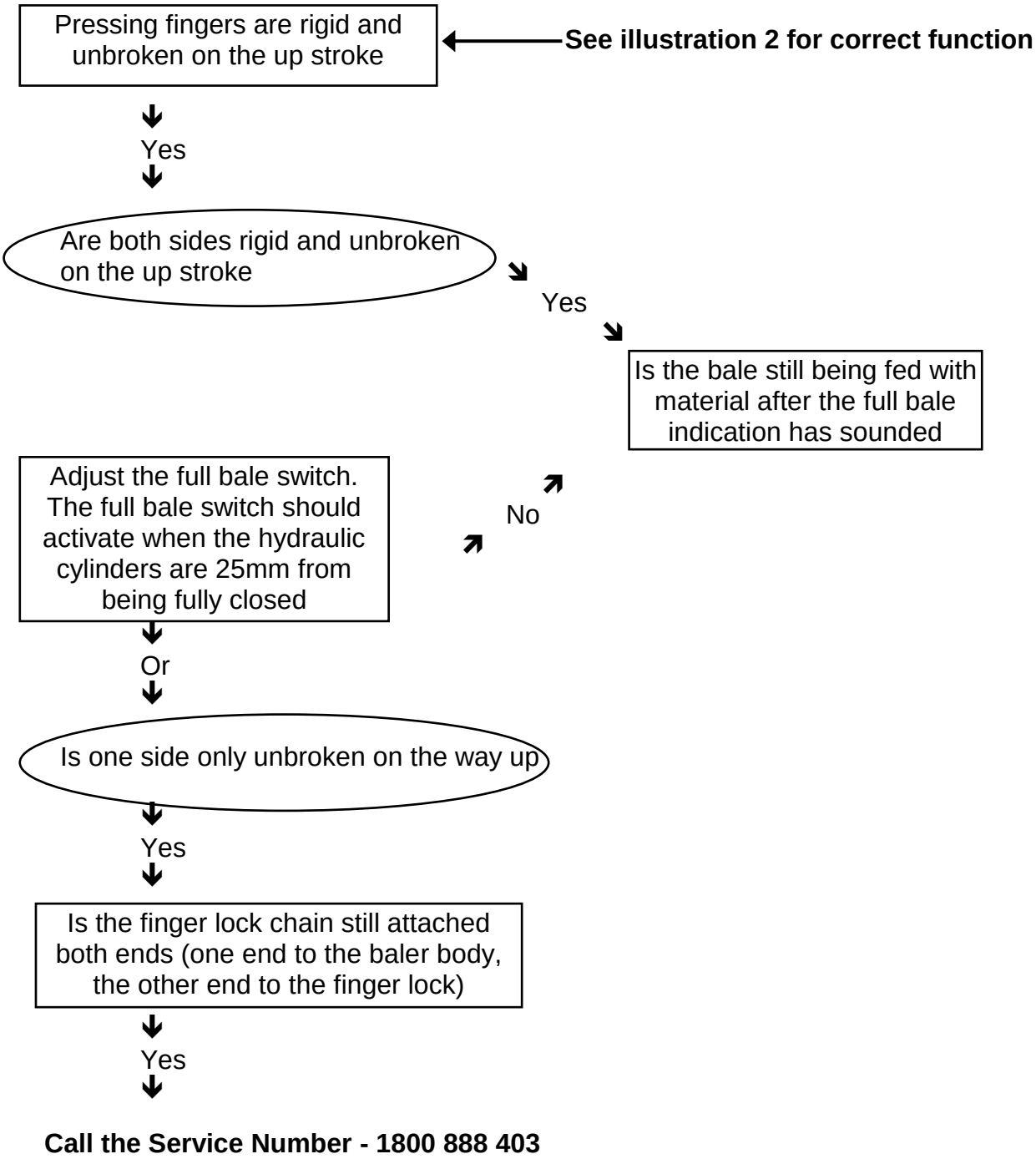
Correctly locked finger unit on descending stroke

Illustration 2

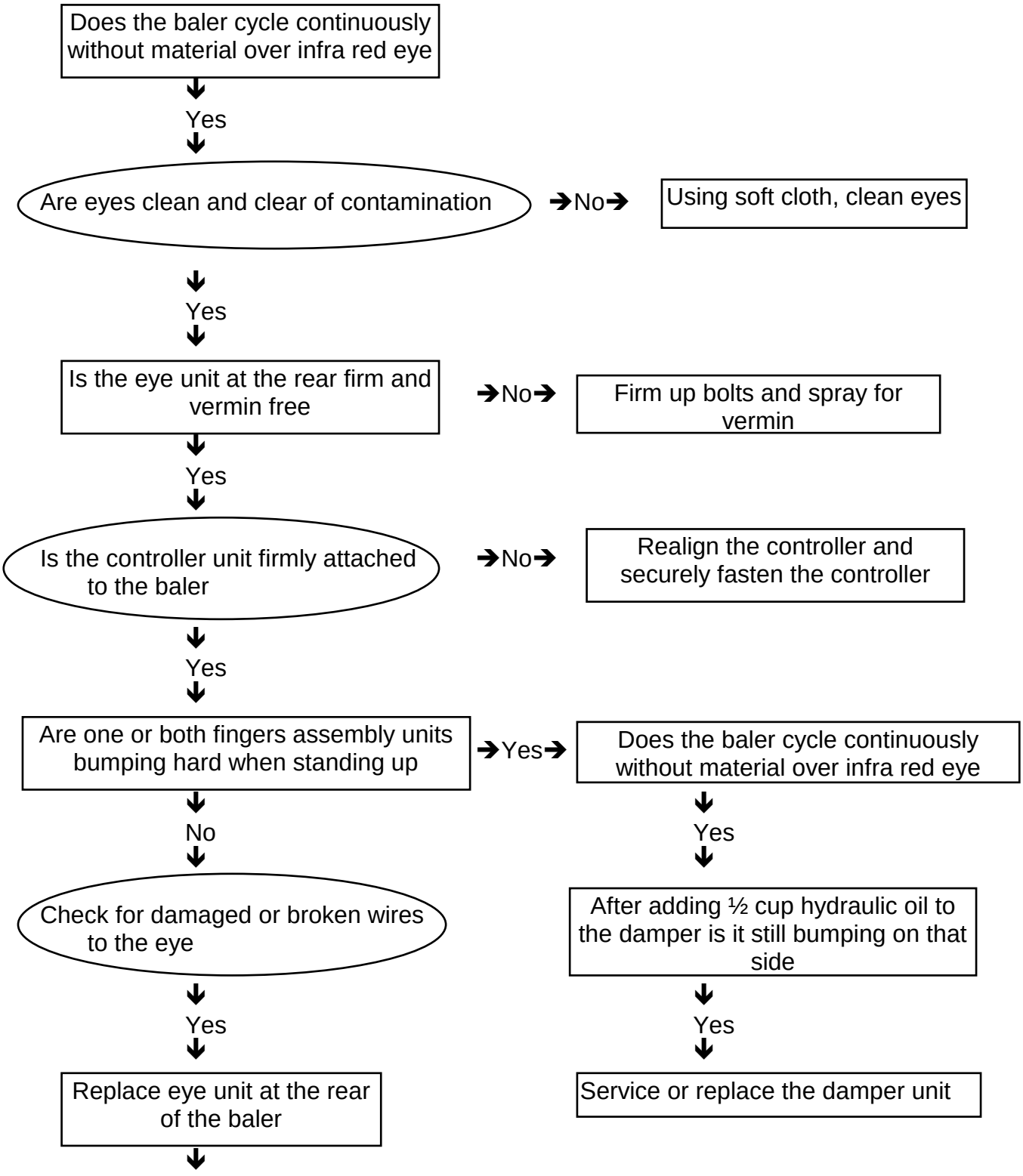


Correctly broken finger unit on ascending stroke

Appendix 10

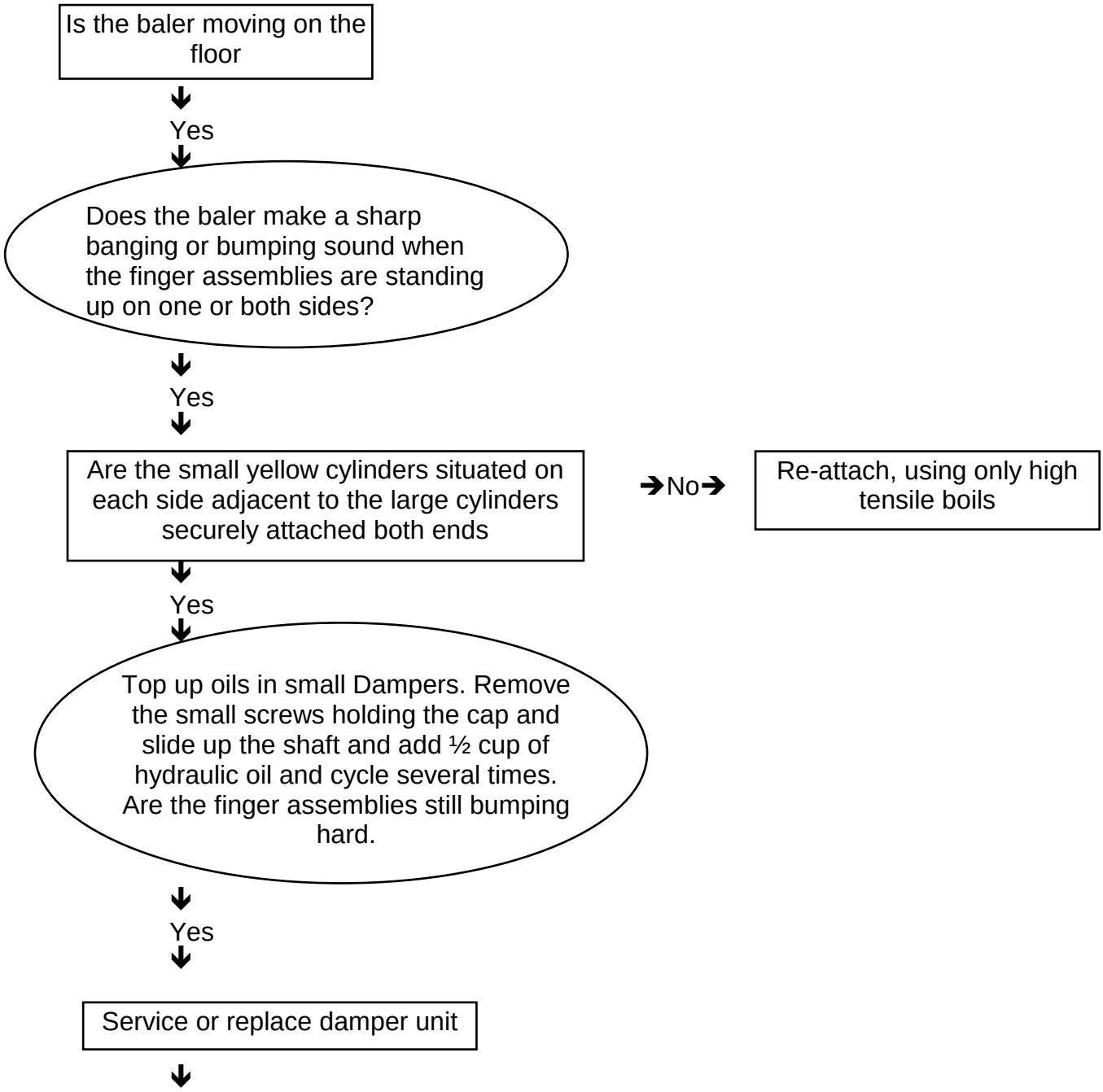

Pressing fingers are rigid and unbroken on the up stroke
See illustration 2 for correct function
Yes
Are both sides rigid and unbroken on the up stroke
Yes
Is the bale still being fed with material after the full bale indication has sounded
No
Adjust the full bale switch. The full bale switch should activate when the hydraulic cylinders are 25mm from being fully closed
Or
Is one side only unbroken on the way up
Yes
Is the finger lock chain still attached both ends (one end to the baler body, the other end to the finger lock)
Yes
Call the Service Number - 1800 888 403

Appendix 11



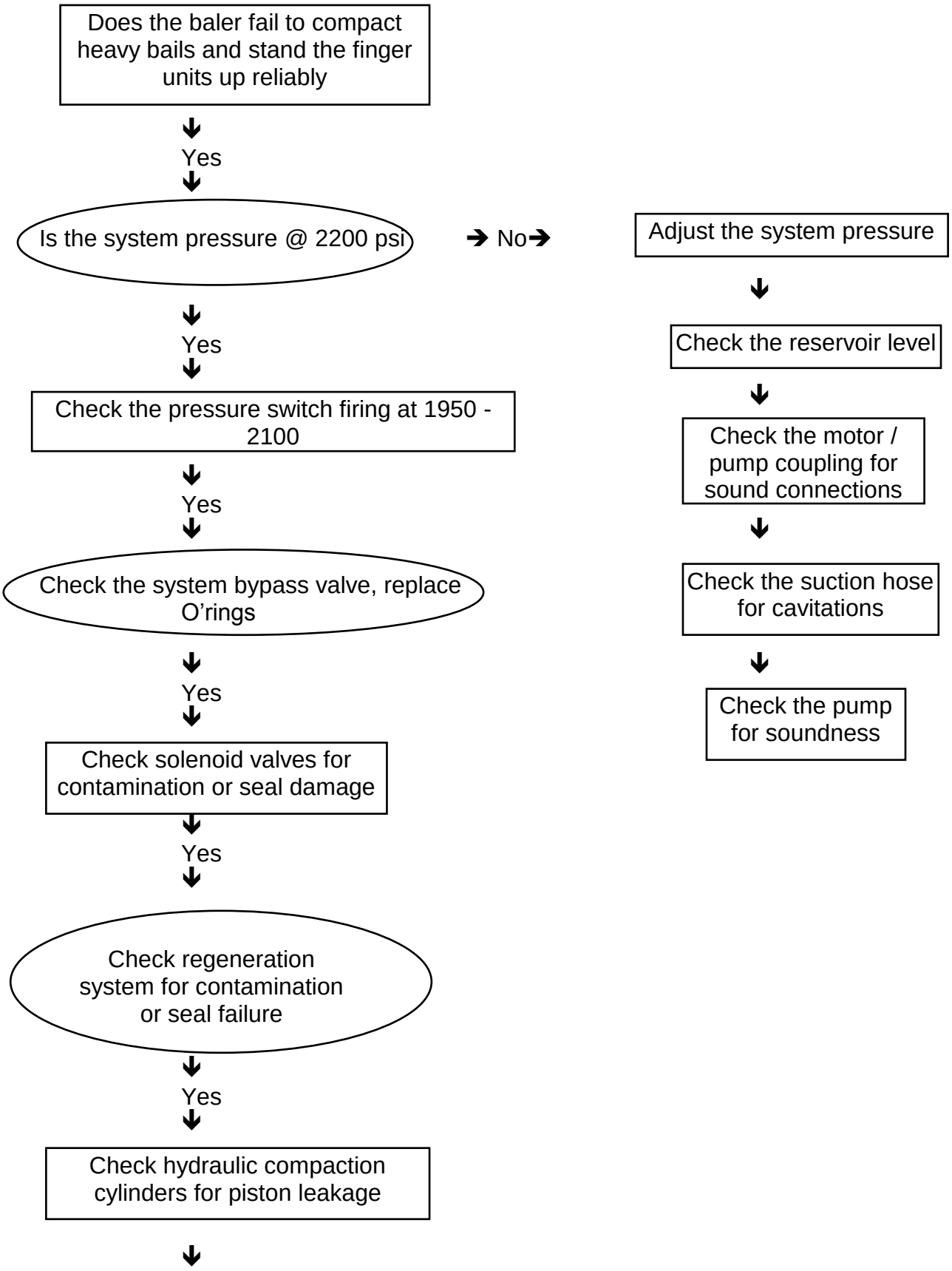
Call Service Hotline: 1800 888 403

Appendix 12



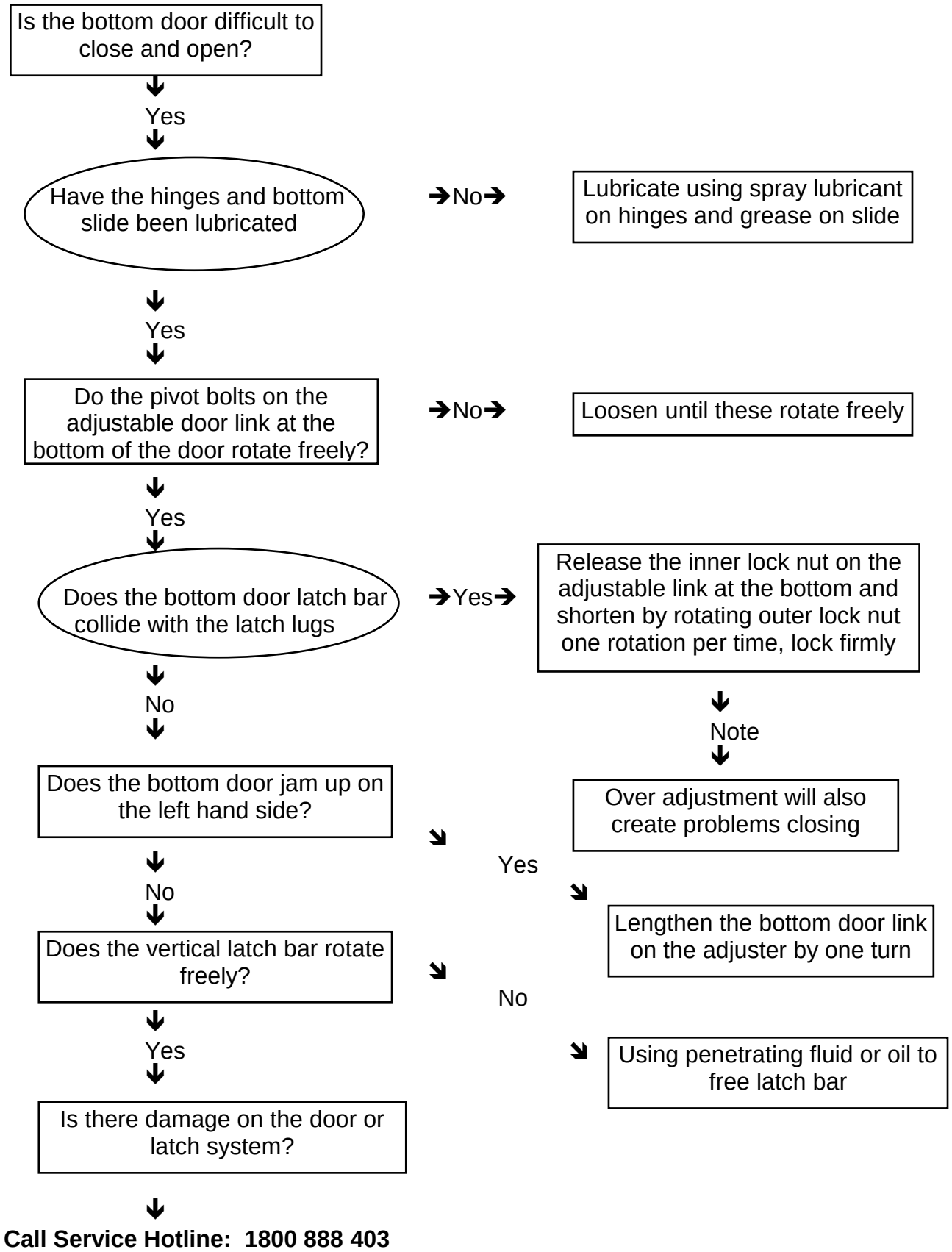
Call service hotline: 1800 888 403

Appendix 13



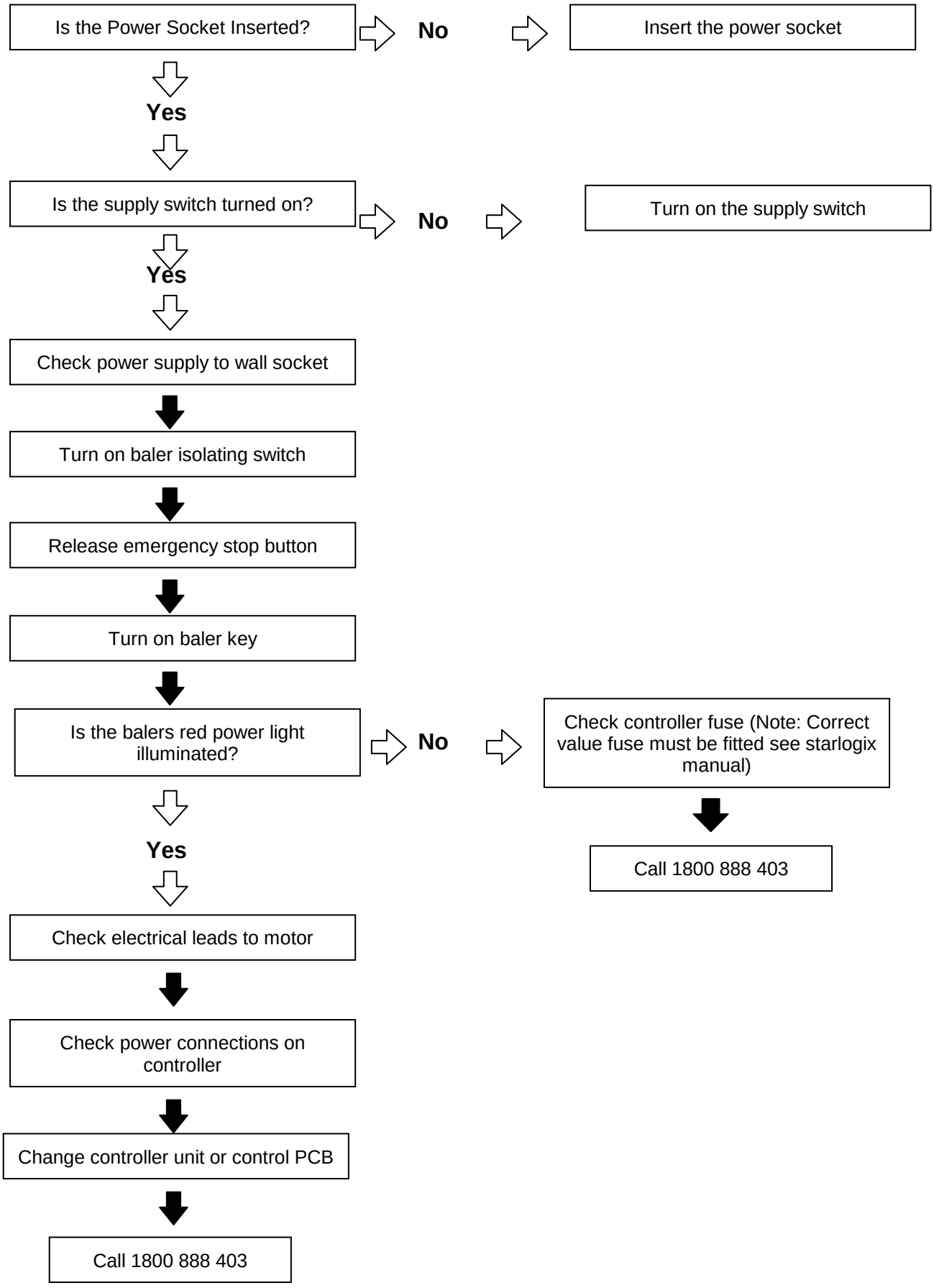
Call Service Hotline: 1800 888 403

Appendix 14

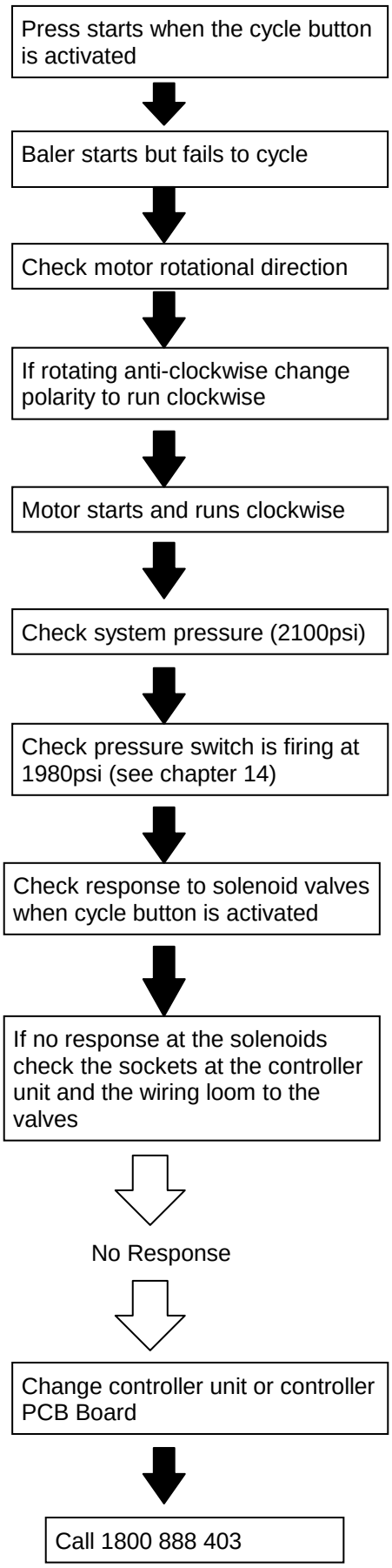


Call Service Hotline: 1800 888 403

Appendix 15


Is the Power Socket Inserted?
No
Insert the power socket
Yes
Is the supply switch turned on?
No
Turn on the supply switch
Yes
Check power supply to wall socket
Turn on baler isolating switch
Release emergency stop button
Turn on baler key
Is the balers red power light illuminated?
No
Check controller fuse (Note: Correct value fuse must be fitted see starlogix manual)
Call 1800 888 403
Yes
Check electrical leads to motor
Check power connections on controller
Change controller unit or control PCB
Call 1800 888 403

Appendix 16


Press starts when the cycle button is activated
Baler starts but fails to cycle
Check motor rotational direction
If rotating anti-clockwise change polarity to run clockwise
Motor starts and runs clockwise
Check system pressure (2100psi)
Check pressure switch is firing at 1980psi (see chapter 14)
Check response to solenoid valves when cycle button is activated
If no response at the solenoids check the sockets at the controller unit and the wiring loom to the valves
No Response
Change controller unit or controller PCB Board
Call 1800 888 403

Appendix 17

1

2

3

4

5

6

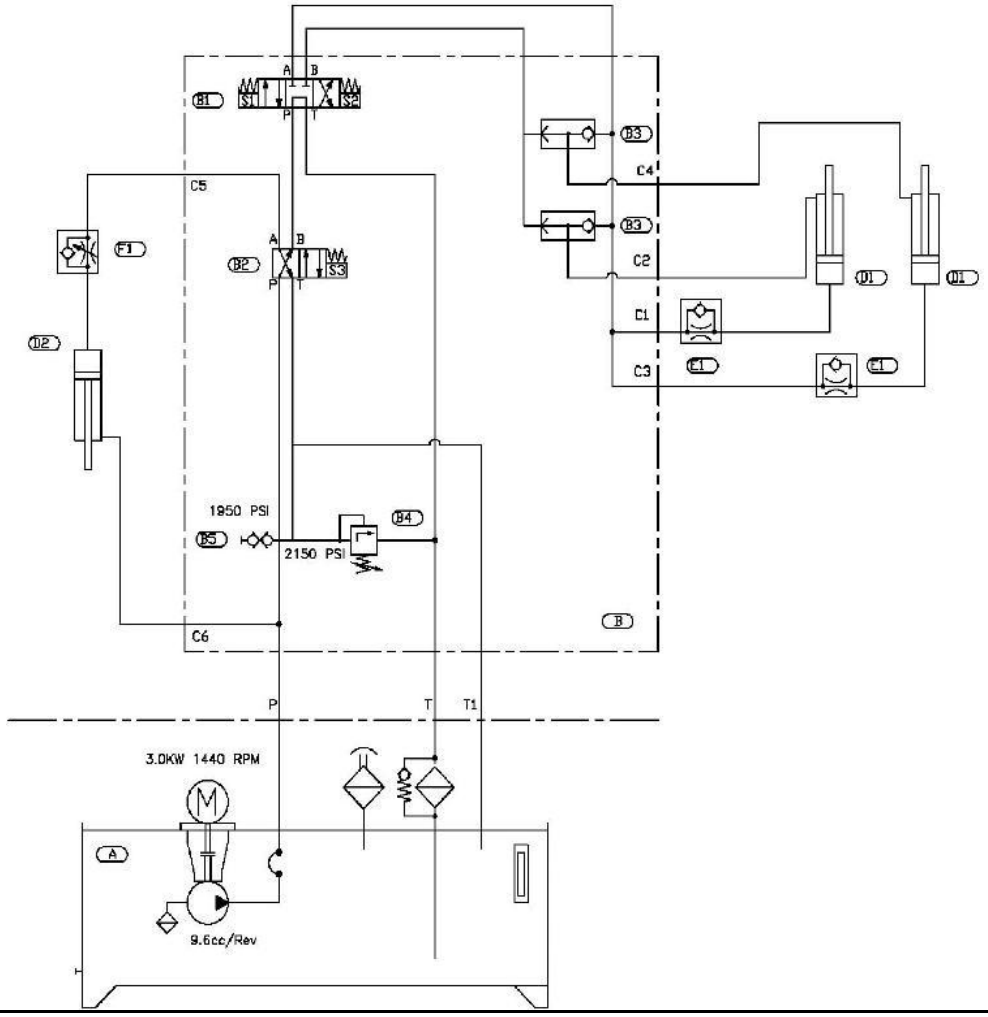
7

8

9

Appendix 18

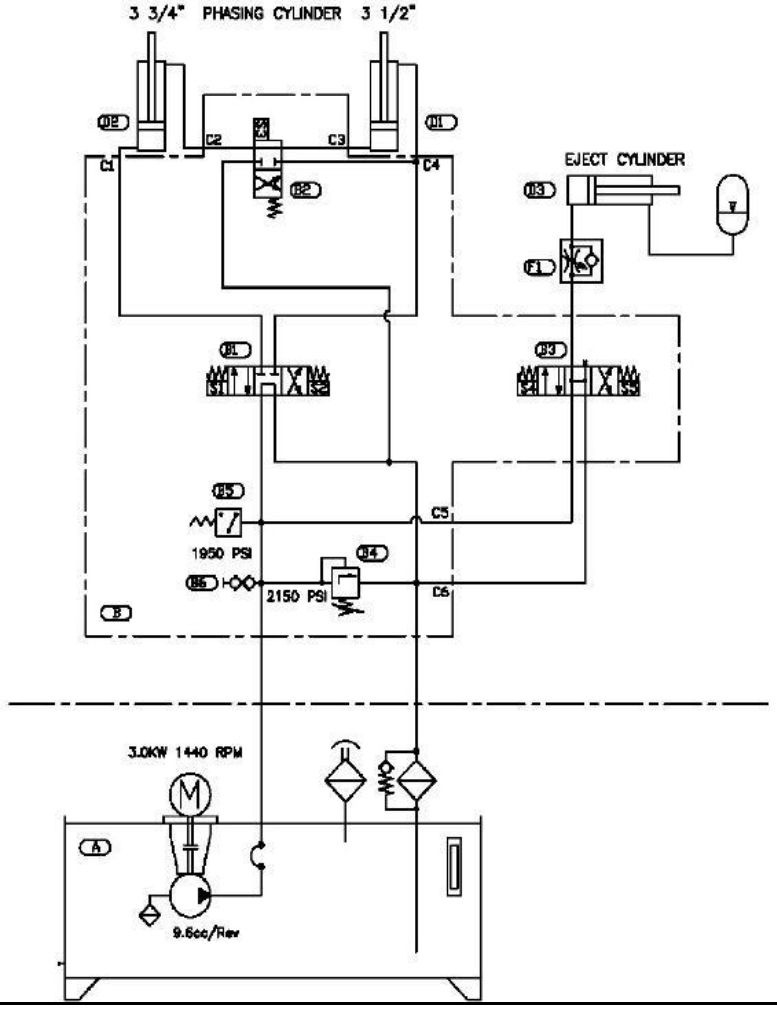
Standard SL100/200 Hydraulic Circuit Diagram



TRETHEWEY INDUSTRIES - SL200 STANDARD CYLINDERS / REGEN / EJECT			
ITEM	**TRETHEWEY PART NUMBER**	**DESCRIPTION**	**QTY**
A1	IHS-25LTR-TANK/ALU	25 Litre Tank	1
A2	IHS-25LTR-LID/ALU-SL200	25 Litre Tank Lid	1
A3	IHS-25LTR-GASKET/ALU	25 Litre Tank Gasket	1
A4	IHS-BH-D100/112-GP1/2	D100/112 Bellhousing	1
A5	IHS-D100/112-GASKET	Bellhousing gasket - E/mtr	1
A6	IHS-GP2/GASKET	Bellhousing gasket - Pump	1
A7	IHS-CPLG-ND65C-28	28mm Coupling Half	1
A8	IHS-CPLG-R62	Coupling Spider	1
A9	IHS-CPLG-ND65P2	Grp2 Coupling Half	1
A10	IHS-SUCT/STR-3/4"	Suction Strainer	1
A11	IHS-FILTER-AFR-40L	Return Filter	1
A12	IHS-FILLER/BREATHER	Filler / Breather	1
A13	IHS-3"LEVEL/TEMP-GAUGE	Level / Temp Gauge	1
A14	IHS-PUMP/GP2/DIN/11CC/2D16GAS	11.00cc GRP 2 Pump	1
A15	TI-SL100/200-H&FKIT-STD/INT	Internal Hose & Fitting Kit	1
A16	IHS-EM-4KW/3PH/4PL/FL	4.0Kw 4 Pole 3 Phase E/mtr	1
B	TI-200-C1-MANIFOLD-SL200-2150	SL200 Manifold - STD Cylinders	1
B1	IHS-C3/4WE6G60/G24NZ4	Cetop 3 4/3 Valve	1
B2	IHS-C3/2B3L/DC24	Cetop 3 4/2 Reverse Cross Over	1
B3	TI-200-C1-MANIFOLD-SV	Shuttle Valves	2
B4	TI-200-C1-MANIFOLD-RV	Relief Valve	1
B5	TI-SL200-D-PR/SWITCH-1950-BAC	Pressure Switch	1
D1	TI-200-E3-CYL/DA-4.0X18	4.0" X 18" D/A Cylinder	2
D2	TI-200-E3-CYL/DA1.5X4	1.50" X 4" D/A Cylinder	1
E1	TI-100/200-G1-CHECK/ORIFICE-2.7	3/8"BSPP CHECK WITH 2.7mm ORIFICE	2
F1	IHS-FCV-BPCV-14	1/4" BSPP Flow Control c/w Bypass Check	1
G1	TI-SL100/200-H&F/KIT-STD/NORDON	External Hose & Fitting Kit	1

Appendix 19

Phasing Type SL100/200 Hydraulic Circuit Diagram



TRETHEWEY INDUSTRIES - SL200 PHASING CYLINDERS / REGEN / EJECT			
ITEM	**TRETHEWEY PART NUMBER**	**DESCRIPTION**	**QTY**
A1	IHS-25LTR-TANK/ALU	25 Litre Tank	1
A2	IHS-25LTR-LID/ALU-SL200	25 Litre Tank Lid	1
A3	IHS-25LTR-GASKET/ALU	25 Litre Tank Gasket	1
A4	IHS-BH-D100/112-GP1/2	D100/112 Bellhousing	1
A5	IHS-D100/112-GASKET	Bellhousing gasket - E/mtr	1
A6	IHS-GP2/GASKET	Bellhousing gasket - Pump	1
A7	IHS-CPLG-ND65C-28	28mm Coupling Half	1
A8	IHS-CPLG-R62	Coupling Spider	1
A9	IHS-CPLG-ND65P2	Grp2 Coupling Half	1
A10	IHS-SUCT/STR-3/4"	Suction Strainer	1
A11	IHS-FILTER-AFR-40L	Return Filter	1
A12	IHS-FILLER/BREATHER	Filler / Breather	1
A13	IHS-3"LEVEL/TEMP-GAUGE	Level / Temp Gauge	1
A14	IHS-PUMP/GP2/DIN/11CC/2D10GAS	9.6cc GRP 2 Pump	1
A15	TI-SL100/200-H&FKIT-PHASE/INT	Internal Hose & Fitting Kit	1
A16	IHS-EM-3.0KW/3PH/4PL/FL	3.0Kw 4 Pole 3 Phase E/mtr	1
B	TI-200-B1-MANIFOLD-PHASE/REG/EJECT	SL200 Manifold - Phasing Cylinders	1
B1	IHS-C3/4WE6G60/G24NZ4	Cetop 3 4/3 Valve	1
B2	IHS-C3/2B11BL/DC24	Cetop 3 4/2 Valve	1
B3	IHS-C3/4WE6G60/G24NZ4	Cetop 3 4/3 Valve	1
B4	TI-200-C1-MANIFOLD-RV	Relief Valve	1
B5	TI-SL200-D-PR/SWITCH-1950-BAC	Pressure Switch	1
B6	TI-200-B6-TEST	Test Point	1
D1	TI-200-D1-PHASECYL/3.75X18	3.75" X 18" Phasing Cylinder	1
D2	TI-200-D2-PHASECYL/3.5X18	3.5" X 18" Phasing Cylinder	1
D3	TI-200-D3-CYL/DA1.5X4	1.50" X 4" D/A Cylinder	1
F1	IHS-FCV-BPCV-14	1/4" BSPP Flow Control c/w Bypass Check	1
G1	TI-SL100/200-H&F/KIT-PHASE/EZY	External Hose & Fitting Kit	1