



**ABBEY**  
MACHINERY

*since 1947*

# *Slurry Tanker*

CE

**Maintenance,  
Operating Instructions  
and Spare Parts Lists**



**ABBEY**  
MACHINERY

*since 1947*

**ABBEY Machinery Ltd**  
Well Road, Nenagh, Co. Tipperary, Ireland.

Tel: 00 353 67 31278 Fax: 00 353 67 33229

info@abbeymachinery.com  
www.abbeymachinery.com

**ABBEY TANKER PDI. CHART**

This Dealer pre-delivery inspection chart is to be completed and signed by the dealer or their representative before the machine is supplied to the customer.

*Complete the Slurry Tanker PDI Chart*

Model \_\_\_\_\_ Date \_\_\_\_\_ Serial No. \_\_\_\_\_

*Tick box below after item is checked*

- Check all hydraulic connections.
- Check opening and closing of all gate valves:
  - Rod is fully opening vertically and not kicking left or right
  - Lollypop is not getting jammed in housing
  - No visible oil leak
  - 50mm of tread visible above spring
- Check hydraulic brakes by connecting the standard female brake fitting to the tractor and ensure they operate properly.
- Check all Gearbox Oil Levels in the pump.
- Check pump control handle operation and its securing bolts.
- Check wheel studs are torqued correctly, axle bolts hand brake.
- Check play on wheel bearings by rocking the wheels and check tyre pressures.
- Check bolt on hitch bolts where fitted (optional).
- Check all hose clips.
- Check all safety guarding and devices are fitted, and in good working order.
- Check all lubrication points and grease sprung drawbar where fitted (optional).
- Check all lighting is working correctly.
- Check and ensure the right PTO shaft is cut to the correct length.
- Check the oil lubrication drop rate while running the pump and the pressure setting on the tank manometer gauge.
- Check for air leaks in the tank when tank is pressurised.
- Visually check the tandem under carriage (if fitted) and make sure all bolts are tight and all hydraulic fittings are tight.
- Check all U-bolts are tight on tandem axles (if fitted).
- Check splash plate is adjusted correctly.
- Check the machine overall visually and that a copy of the instruction manual is being supplied to the customer with the machine.

**P.D.I. For Additional Attachments if Fitted**

***Auto-filler***

- Check the Sequence valves are operating correctly and adjust if required.
- Adjust arm to the right height for the pod when it is hitched up to customers tractor

***Hydraulic Top Fill Hatch***

- Check function of Hydraulic top fill and clamp nut sealing the door

**P.D.I. For Additional Attachments if Fitted (Con'd)**

***Boom Arm***

- Check hydraulic operation lifting/lowering and Swiveling
- Check chain and sprocket are aligned correctly

***Docking Station***

- Prime docking station by following the instructions in this manual
- Set auto filler arm height to suit hopper

***Centivac System with rain run fitted***

- Check gearbox oil level
- Check function of the hydraulic motor

***DCI Arm***

- Arm functions properly and clamps securely into pod

***Turbo Pump***

- Check gearbox oil level
- Function of hydraulic functions in sequence

***In-Cab Electric Control Valves***

- Check each hydraulic function is working correctly
- Check wiring and hose routing cannot be fouled
- Mount control box in cab and explain functions to the customer

***Air over Hydraulics***

- Test brakes on air only
- Check that tractor is building up required pressure

***Auto Weight Transfer System***

- Check function of additional feature

Sign below after working through the above check list, and log on to [www.abbeymachinery.com](http://www.abbeymachinery.com) dealer section to register this machine.

N.B. Machine must be registered for warranty purposes.

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

Instruction Manual Contents

Section No.		Page No.
1.0	<b>Function of the Tanks</b>	5
2.0	<b>Working With Slurry Safety Warning</b>	6
3.0	<b>Safety Warning</b>	
	3.1 Slurry Tanker Noise Levels	8
	3.2 Machine Safety Labels	9
4.0	<b>Setting up for Use</b>	
	4.1 Vacuum Tanks	11
	4.2 Open Top Tanks	12
	4.3 Extra components	12
5.0	<b>Operating Instructions</b>	
	5.1 Vacuum System	19
	5.2 Centivac System	20
	5.3 Open Top Tanks	23
	5.4 Top Fill Hatches	23
	5.5 Auto-Filler Unit	24
	5.6 Steering Axle Tandem Tanks	29
6.0	<b>Tanker Care and Maintenance</b>	31
7.0	<b>Vacuum Pump</b>	
	7.1 Use	37
	7.2 Maintenance	40
8.0	<b>Replacement Parts</b>	42
9.0	<b>Trouble Shooting</b>	68
10.0	<b>Warranty &amp; EC Declaration of Conf.</b>	70
11.0	<b>Terms and conditions</b>	71

\*\*\* IMPORTANT NOTICE \*\*\*

1. Drawings in this manual are not to scale.
2. While every care is taken to ensure that all information in this manual is correct, the manufacturer cannot be held responsible for any errors or emissions therein.
3. When ordering parts ensure you have the correct reference number and also the serial number of the tank.

### **THE RANGE OF ABBEY TANKS INCLUDE**

Vacuum Tanks, Centivac Tanks, Open Top Tanks, & Injection Tanks.

#### **1.0 THE FUNCTION OF THE TANKS**

The Abbey vacuum tank is a trailed machine which is capable of independently transporting liquid slurries from one area to another. The tanks are designed solely for agricultural use, but may in certain circumstances be used for transporting liquids for other purposes i.e. water, sewage sludge's. It may be noted that the standard Abbey tank has not been designed to travel at speeds over 40 km/h.

The principle of the standard Abbey vacuum tank is to suck slurry into the tank, transport it and then either land spread it or dispose of it in a safe legal manner. The tank design was solely built for this function and should be operated within the limits of the instruction manual.

The centivac tank is based on the same principle as the standard vacuum tank, and can be used for land spreading of slurries. The Abbey centivac tank uses a second pump whereby the liquid can be land spread via a raingun which is mounted on the side of the tank. This raingun should be used in line with the regulations of the particular EC country in question.

The open top tank is a non-pressurised tank which is filled through a hopper shaped opening in the top of the tank. The Abbey topfill slurry pump can be used for this purpose. The slurry can then be spread using a splash plate which is mounted on the back of the tank.

The Abbey applicator tank works on the same principle of the standard vacuum tank. The slurry is placed/injected into the ground with the use of a purpose built machine fitted to the back of the tanker chassis.

The above descriptions of the functions of each tank, are provided to show how each tank can be used. Further detail on the tanks and their variations can be found on the relevant sales leaflets.

#### **\* IMPORTANT**

#### **READ INSTRUCTIONS CAREFULLY BEFORE OPERATING THIS MACHINE**

\* The entire manual must be read and understood before operating this machine. If there is confusion about the safe operation of any part of the machine, contact your dealer before operating it.

## 2.0 WORKING WITH SLURRY SAFETY WARNING

Unless adequate precautions are taken Liquid Manure Storage can pose a threat to the safety of both people and livestock. Slurry Tanks can contain gases which are produced by the decomposition of the slurry. These gases have been known to kill persons entering Slurry Storage Tanks as well as animals on slats above tanks which are being agitated.

To ensure the safety of persons working in and around Slurry Tanks, the following precautions should be taken during mixing and emptying.



1. Don't allow Slurry to rise to the level of the slats.
2. If silage effluent is added to Slurry this should be done slowly with the minimum of agitation.  
**Caution:** Dangerous gases can be released when slurry is agitated.
3. Provide good ventilation when mixing slurry inside a slatted house.
4. Never enter a tank unless it has been thoroughly ventilated, slurry may give off poisonous gases.
5. If you must enter a tank then wear a safety harness with a lifeline held by two men.
6. Airline breathing equipment should be worn where continuous adequate ventilation is not possible.
7. Lift the minimum number of slats to permit access for the tanker pipe, pump or mixer. Where the slats have been lifted erect temporary barriers to stop anyone falling into the tank.
8. Do not stand over openings when slurry is being agitated or loaded.
9. Secure the suction hose so that it cannot fall into the pit or tank.
10. One of the gases produced can be flammable so do not smoke or use naked flames, near slurry equipment, when entering a slurry tank or near manholes of underground tanks.
11. Avoid driving heavy tractors and slurry tankers over slats which are only designed to carry livestock.
12. All livestock must be removed from slatted houses before slurry is agitated, and must remain out of the house until all gases have dispersed from the ventilated house.
13. Never leave slurry tanks unsecured especially if young children are around.
14. Slurry can have the potential to cause intoxication asphyxiation, or explosions in badly ventilated buildings.



**ABBEY**  
MACHINERY

*since 1947*

1. Top Ball Valve

2. Manometer Gauge

3. Front Ball Valve

4. Pressure Relief Valve

5. Pump Control Handle

6. Oil Drip Feed Adjustment



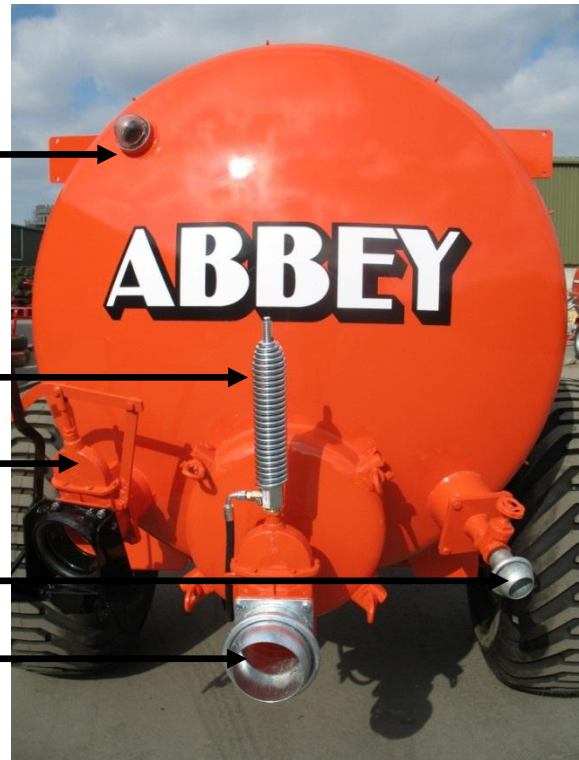
7. Sight Glass

8. Ram & Spring Assembly

9. Inlet Valve

10. 2" High Pressure Hose Attachment

11. 6" Outlet



### 3.0 SAFETY WARNING

- 1) Ensure that the tractor PTO shield and pump PTO guard are in place and the PTO shaft guard is fitted properly.
- 2) PTO guards should be kept well lubricated, refer to the accompanying leaflet for operating and maintenance instructions on the shaft.
- 3) Do not operate the manual control on the rear valve or open the rear manhole while the tanker is pressurised high pressure liquid could cause injury.
- 4) Operators should be trained and know how to use the tanker controls while standing as far away as possible from the revolving shaft.
- 5) Suitable close-fitting clothing should be worn with no loose fabric to catch in the shaft.
- 6) Take care to match the tractor horsepower to tanker on soft sloping ground to prevent dangerous uncontrollable situations from occurring.
- 7) If you have any doubts as to the safety operation of the Slurry Tanker advice should be sought from your local dealer or direct from the Manufacturer.
- 8) **Caution:** Never enter a tanker to clean or inspect it unless it has been thoroughly ventilated. Any gases that have remained in the tank after working it can be lethal.
- 9) When opening or inspecting the manual or hydraulic top fill point (if fitted), caution should be taken to avoid falling from such a height.
- 10) If a ladder is fitted to the tank it must not be used while the tank is working or pressurised.
- 11) Do not operate the tank with excessively worn hitch eye. Replace it! The hitch eye should be checked regularly particularly on tanks used for long periods during the season.
- 12) Damaged or worn hydraulic hoses should be replaced.
- 13) Both standard lifting points on the top of the barrel of the tank must be used if the tank is to be lifted off the ground. Drawing A, page 8 shows the positions of the lifting points.
- 14) Never operate the tank in an unsafe manner.
- 15) **Warning** - Under no circumstances should the pump guard be used as a step.
- 16) Do not attempt to approach any part of the power shaft while it is working.
- 17) **Caution:** The Abbey tank has not been designed to travel at speeds over 40 km/hr and should be used in line with the road regulations regarding trailed machines in your particular country. If you require the tank to operate at speeds higher than this contact your Abbey dealer. Purpose built tankers will be required.
- 18) The PTO shaft is to be left on the stand provided, when the machine is not in use to prevent the shaft guard from being damaged.
- 19) **Caution:** Before carrying out maintenance or adjustment on the Abbey tank, stop the tractor, apply both the tractor and tank parking brakes, and disconnect the PTO shaft.
- 20) **Caution:** Always regularly check that the lights are working correctly when using the machine on the road.



### **3.1 Slurry Tanker Noise Levels**

Continuous A-weighted sound level at workstations. Noise levels exceed 70 db(a)

Peak C-weighted instantaneous sound pressure exceeds 63pa.



**Caution:** The necessary protective devices should be worn when operating the machine if required.

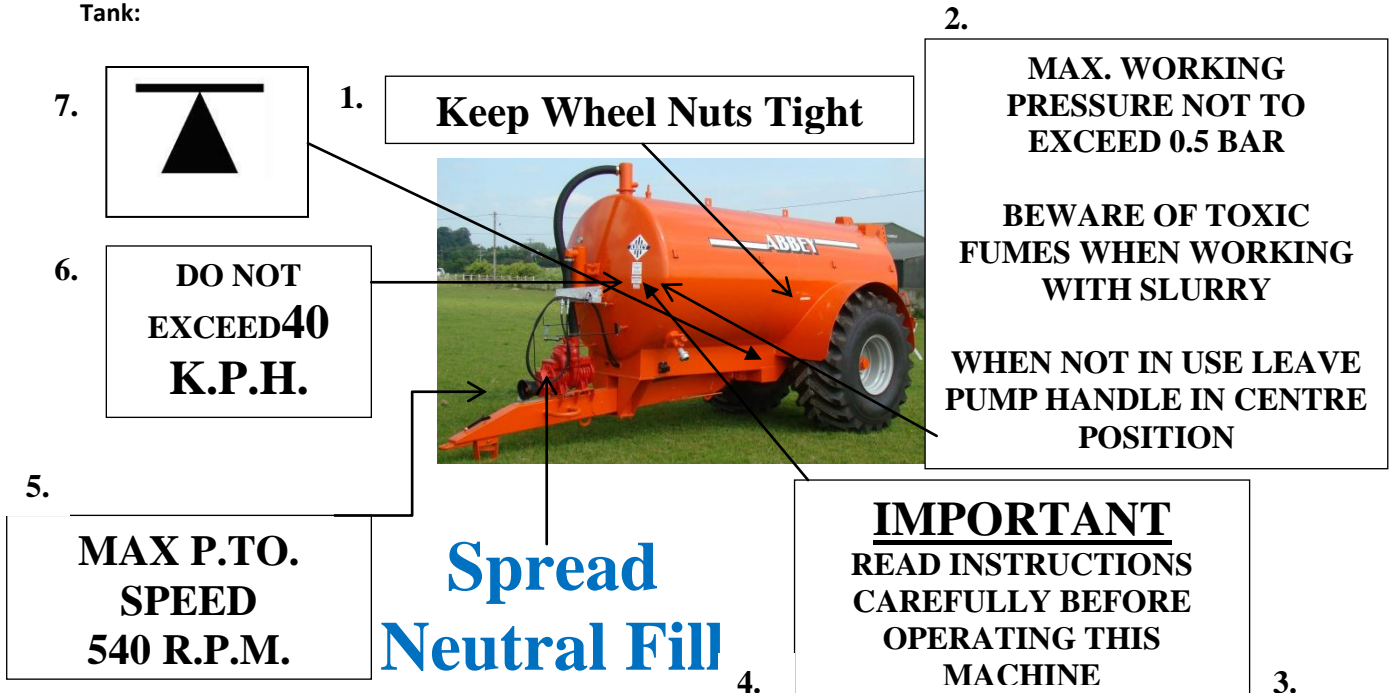


**3.0 SAFETY WARNING (Con'd)**

**3.2 Machine Safety Labels**

The machine safety labels shown in this section are placed in important areas on your machine to draw attention to potential safety hazards.

**Tank:**



1. Keep wheel nut tight and check at regular intervals
2.
  - Max working pressure of this machine
  - Be aware that you are working with toxic fumes
  - When not using Tanker, leave pump handle in the neutral position
3. **Important** that you read and understand this instruction manual before operating this machine
4. Handle position indicator:
  - Handle in spread, Pump pressures tank
  - Handle in neutral, Free flow of air through pump
  - Handle in Fill, Pump creates a vacuum in tank
5. Max Tractor input PTO speed
6. Max Tanker speed
7. Lifting Point/Jacking point/Support Point

**On 2500R and 3000R Tankers on Back dome:**

**TANKER SHOULD NOT BE FILLED ABOVE THIS LEVEL WHEN USING ON PUBLIC HIGHWAY**

Tanker should not be filled above the level of this sight glass when going on the public road

**3.0 SAFETY WARNING (Con'd)**

**Additional if Ladder or Rain Gun fitted:**

**DO NOT  
CLIMB  
LADDER  
WHILE  
MACHINE IS  
WORKING**

When machine is moving or being operated do not climb the ladder

**DANGER!  
NEVER USE RAINGUN  
NEAR OVER HEAD  
POWER LINES**

Never use the hydraulic rain gun attached to the tanker near overhead power lines

**Tandem Tankers:**

**Bogie 'U' bolts, undercarriage nuts  
and wheel nuts to be kept tight**

Bolts on bogie to be kept tight and checked at regular intervals

**PTO:**



PTO Shaft Warning

**Pump:**



Vacuum Pump Safety Warnings

#### 4.0 SETTING UP FOR USE

##### 4.1 VACUUM TANKS

- a) Connect Tanker to Tractor on pick-up Hitch or Draw bar. Measure P.T.O. Shaft leaving minimum 3" of closure to allow turning circle and shaft closing. Ensure P.T.O. Guards are fitted. If connecting to a tractor drawbar the necessary hitch eye reducer bush must be used.
- b) Connect the following and check that they are working correctly. The tank hydraulic brakes and the pump control (if fitted) to the external services of the tractor. The hydraulic rear valve to the external services and connect the tank lights to the tractor.
- c) Check that all valves and hoses are operational. Test run tanker with Control lever set in pressure position to ensure that there are no leaks. Check rear inspection door. Should this door develop Air Leak at any stage, the adjustable locking clamps can be tightened. If this does not resolve the problem remove the door rubber seal and check that it is intact.
- d) Check that wheel nuts are tight and hubs are greased. R = Remould N = New

Check Tyre Pressures:

16.5 x 22.5		R	43 P.S.I.	560/60 R 22.5	N	58 P.S.I.
1300 x 530/533		N	51 P.S.I.	600/55 R26.5	N	36 P.S.I.
400R 22.5		R	60 P.S.I.	650/55 R26.5	N	58 P.S.I.
15R x 22.5		R	60 P.S.I.	710/50 R26.5	N	58 P.S.I.
18.4 x 26		N	30 P.S.I.	425/65 R22.5	N	90 P.S.I.
22/ 70x20	(Mode 1100)	N	30 P.S.I.	21.3 x 24	N	36 P.S.I.
22/ 70x20	(Model 1600)	N	35 P.S.I.	23.1 x 26	N	36 P.S.I.
550/60-22.5		N	36 P.S.I.	28.1 x 26	N	36 P.S.I.
				30.5 x 32	N	36 P.S.I.

- e) Daily check wheel nuts on the tank after every load for the first week, tighten if necessary.
- f) **Important:** On Tandem Tankers the suspension U Bolts and wheel nuts should be re-tightened after first 5/10 miles and then checked weekly thereafter.  
Suggested torque settings are shown below:

	Tightening Torque (duNm=Kpm)
M14 x 1.4	13
M16 x 1.5	20
M18 x 1.5	27
M20 x 1.5	35
M22 x 1.5	45
M22 x 2	43
M24 x 1.5	55

#### **4.0 SETTING UP FOR USE (con'd)**

#### **4.2 OPEN TOP TANKS**

- i. Connect the tanker to the tractor pick-up hitch. Measure the P.T.O. shaft as above and ensure all guards are in place.
- ii. Connect up the hydraulic brakes and the tank lights, and check both are working.
- iii. Test run the tank before filling and check the wheels as per (d) on page 11.

#### **4.3 EXTRA COMPONENTS (IF FITTED)**

##### **Top Fill Hatch**

1. Ensure the hatch is clamped tightly and is sealed fully while pressurising the tank.
2. If the hatch is hydraulically operated connect the marked hoses to the tractor, and check to ensure it is sealed. Adjustments can be made by increasing or reducing the top link length.

**Centivac System - Danger!** Never operate the rain gun near overhead power lines.

1. Running the Centrifugal pump dry for prolonged periods will cause over-heating.
2. Connect up the marked hydraulic hoses of the rain gun to the tractor (if fitted).
3. Rotate the rain gun through 360 Degree's and check to see if it functions correctly
4. When working the pump ensure liquid is allowed to drip from the centrifugal pump shaft to lubricate the graphite cord/packing, This is not necessary when the pump is fitted with a mechanical seal.

##### **Hydraulic Break Away Brake**

Before using the tanker fitted with the hydraulic break away system, the following check should be used to ensure it operates correctly. Also the complete brake system needs to be checked at regular intervals and parts replaced and maintained (i.e. leaking cylinders, worn brake shoes, incorrectly set brakes) for this system to work properly.

Connect the brake connection to the tractor and ensure it is firmly plugged into the point on the tanker. Connect the cable to the tractor. Adjust the cable to a suitable length allowing a minimum amount of slack. Make sure the system is set to the normal braking position. Switch on the tractor and press the brake pedal in the tractor fully for 10 seconds to charge the brake line and fail safe system.

If tractor disconnects from the tanker accidentally the cable will pull out and automatically apply the tanker brakes.

**Please note.** Prior to disconnecting the brake hose from the tractor, relieve all pressure from the system by operating the fail safe system a number of times.

#### 4.0 SETTING UP FOR USE (con'd)

##### Docking Station



When the arm lowers the tanker side valve will open

Double Valves open automatically as the station is pushed down by the self-fill arm.

Flexible suction hose feeding the station



##### Priming the station

Slowly pressurise the system fully and the valves will open.

Then dump the pressure and allow the station lower to a pre-set height. A typical setting is 700mm. Both gate valves should close as it is lowered. Close the ball valve to retain the pressure and now the station is ready for use.

***Carefully read and understand fully the Abbey instructions prior to operating this machine.***

##### Principles of the Station

Slowly forcing the self-filler arm into the docking station hopper and pushing down will cause the double gate valves to open automatically and allow the tanker to be filled.

When the tanker is full, raising the self-fill arm will gradually allow the docking station shut off.

##### **Caution Pressurised System.**

No maintenance should be carried out, without relieving the systems of its working pressure.



#### **4.0 SETTING UP FOR USE (con'd)**

##### **Docking Station (Con'd)**

##### **Aligning the Arm**



Align the arm rubber boot with the hopper near edge.

Without the suction hose connected to the station, push the arm into the hopper and ensure the double valves operate and the docking station castors are free to manoeuvre to suit the arm.



Both Valves open as the arm pushes down.

***Carefully read and understand fully the Abbey instructions prior to operating this machine.***

##### **Re Set the Docking Station as follows**

For storage or transport it may be necessary to vent the pressure from the system.

To re set. Connect a hose to the hopper and an available tractor, open the hydraulic ball valve and slowly prime the system. This will cause the docking station to raise and the 6" valves to open fully (a good time to flush out the pipe work with water).

Now dump the system pressure which will allow the valves close and the hopper lower to a pre-set height. At this height (typically 700 mm) shut off the ball valve to retain the pressure. The docking station is ready for use. Always make a dry run to align the arm before connecting the suction hose.

Always wash down the unit after use to ensure proper operation.

**4.0 SETTING UP FOR USE (con'd)**

**Electronic & Electric Controls**



Rear mounted quick release clip for quick transfer between tractors.

Continuous operation of motor functions

The following 8 functions can be operated on the tanker version. Gate valves x2, hydraulic top fill, Trailing shoe working and folding. Inlet turbo pump or rota cut filters. Self-Filler units and tandem axle steering. A feeder version is also available with other functions.

All functions can be controlled individually by one cab mounted wired unit. Which controls a valve bank on the machine, via an electronic junction box. A hydraulic feed and return hose are all that is required between tractor and tanker



The following functions are possible with this standard electric diverter box ( standard on trailing shoe).

Please note with this unit, the tractor still controls the hydraulic service and the box acts to divert the oil to a different function.

- 5 standard functions can be operated here,
- Locking and unlocking electro hydraulic valves.
- Trailing shoe work & fold diverter
- C. filter (Rota cut) & rear spread valve diverter
- A total of 4 hoses will run between tractor and tanker.



**Hydraulic Valve Banks**

Typically the Electronic control is linked to a hydraulic valve bank via a junction box. See over leaf.

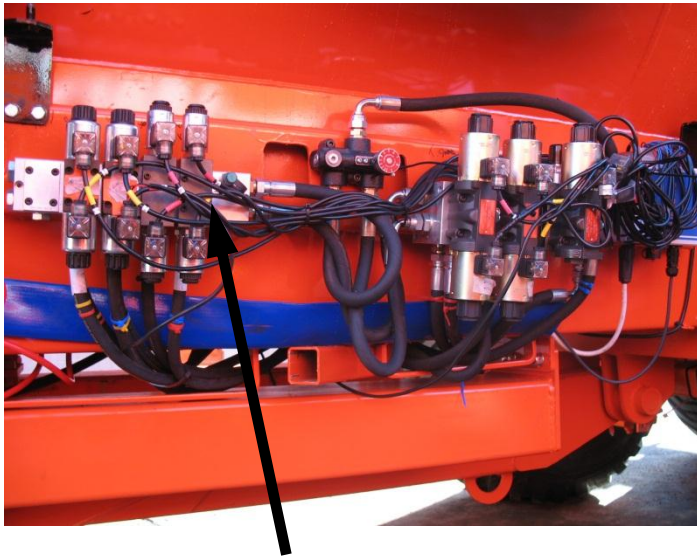
All logic is controlled by this unit and fault finding is simplified with the internal lighted circuit.

Simple LED's in the Hirschman plugs on solenoid valves also simplify trouble shooting.

The Electric Control is linked to simple hydraulic diverters

#### 4.0 SETTING UP FOR USE (con'd)

##### Components in the Electronic Control System



Small cetop 3 solenoids control the minor functions while cetop 5 solenoids are preferred for motor functions

Above are the electro hydraulic solenoids operated by the cab controller to work the hydraulic functions on the tanker.

The cab mounted electronic unit, controls all the solenoids on an individual basis via the blue junction box on the right side of this photo.

More complex systems like load sensing hydraulic valve banks for power beyond systems can be included if required.

##### Automated Hydro Electric

Full electro hydraulic control of all tanker functions.

Full electronic control of application rates with the use of a flow meter, electric actuator and wheel sensor. This allows the control of the exact application rate required and automatically maintains this rate independent of forward speed changes.

Cab mounted controller

Controls all hydraulic functions with application rate data being recorded and application rates controlled as the tanker is spreading.





#### 4.0 SETTING UP FOR USE (con'd)

##### Forced Steering

##### Fitting the control rod mounting



Tractor Pickup hitch, new control rod to be fabricated beside it.

Mounting clevis.  
Horizontal distance of approx 240mm from pin to pickup hook

Control rod  
Adjustable in length to suit the tractor



**Control rod mounting**  
Preferably under the level of the pick up hook.  
Allows good Clearance with chassis

*Carefully read and understand fully the Abbey instructions prior to operating this machine.*

##### Mounting the control rod position on the tractor for forced steering

The hitch position for the control rod will need to be fitted beside the tractor hitch. A horizontal dimension of 240mm from the hook centre to the mounting pin of the control rod should be maintained. It is preferable to mount the control Rod position lower than the pickup hook for max clearance between the rod and any chassis parts it could collide with.



##### **Caution Pressurised System.**

No maintenance should be carried out with relieving the systems of its working pressure.

#### 4.0 SETTING UP FOR USE (con'd)

##### Re Setting Forced Steering



First time setup. Remove locking bracket.  
Release all pressure from the system.

Drive the tractor and feeder forward in a straight line for approx. 30m. To make sure axles are in line with the tractor.

Adjust the length of the control rod until the control ram is stroked half its length. 175mm for this ram

Remove steering locking bracket



***Carefully read and understand fully the Abbey instructions prior to operating this machine.***

##### Re Set the steering as follows

Release all hydraulic pressure from the system, and remove the steering locking bracket from the steering rams if factory fitted for transport.

Drive the tractor and feeder forward on a level surface, in a straight line to align all axles ( with no pressure in the system).

Now adjust the length of the control rod between the tractor and machine, until the control ram under the front of the chassis has stroked half its length. Lock all positions tabs on the control rod to prevent it varying in length, when the locking pin assembly is faced away from the chassis. Once adjusted to suit a particular tractor, no further adjustment of the control rod is required. Use the locking pin in future to hitch the machine to the tractor.

Open the ball valves to prime the steering system. Keep pressurising the system until the pressure clocks read 80 bar. Close all taps and test the steering system by driving the tractor at low speeds to ensure it is working correctly, both in forward and reverse directions.

## **5.0 OPERATING INSTRUCTIONS**

### **5.1 Vacuum System**

**VACUUM PUMP:** It is recommended that the pump is run at maximum 250 R.P.M. for the first 3 hours of use. This is important to ensure that all parts of the pump are well lubricated. It is also recommended that you follow this procedure when the tanker has not been used for a long period of time.

1. Connect the suction hose to the inlet and ensure the other end is completely submerged in the slurry. Never allow the suction hose to touch the floor of the slurry tank.
2. Move the handle on the vacuum pump to the fill position so that it will create a vacuum in the tank.
3. Engage the P.T.O. and run at 400 R.P.M.
4. After engaging the P.T.O. open the inlet valve.
5. Always ensure to set the screw on the pump oiler as per the vacuum pump use section 7.1.
6. When the tanker is full (i.e. slurry appears at the sight glass). The inlet gate valve should be closed and the vacuum pump stopped (by disengaging the P.T.O). Safety ball valves protect the vacuum pump from the slurry, but are not to be used to determine when the tank is full. If the tone of the pump changes while it is working. Immediately close the inlet valve (the tank may be full).
7. Remove the suction hose, set up the spread plate and check all fill points are closed.

### **SPREADING**

1. Move the handle on the pump to the central position for a few seconds until the vacuum is released. Then set the pump handle into the spread position. This operation could be made at the end of the filling sequence.  
**Note:** Adjustment of the inverted spreader plate can be found on page 27.
2. To begin spreading engage the tractor P.T.O. at speed of 450 R.P.M. Only use PT.O. to keep Manometer at 0.6 Bar and Pressure Relief Valve open. If revs, above this are used it will cause excessive heat in the pump.
3. When Manometer gauge reads 0.5 BAR open outlet valve. Rate of application depends on forward speed of the tractor and spreading plate setting.  
When tank is empty close outlet valve and disengage P.T.O.
4. If slurry is too thick to spread, agitate with an Abbey mixer or slurry pump. Water should also be added to the slurry in the pit or lagoon to make it thinner while mixing.
5. **CAUTION:**  
Disengage the PT.O. when turning.  
Before opening the rear door or top-fill hatch, depressurise the tank by opening the rear valve.  
**(Never remove a sight glass while the tank is full or pressurised)**

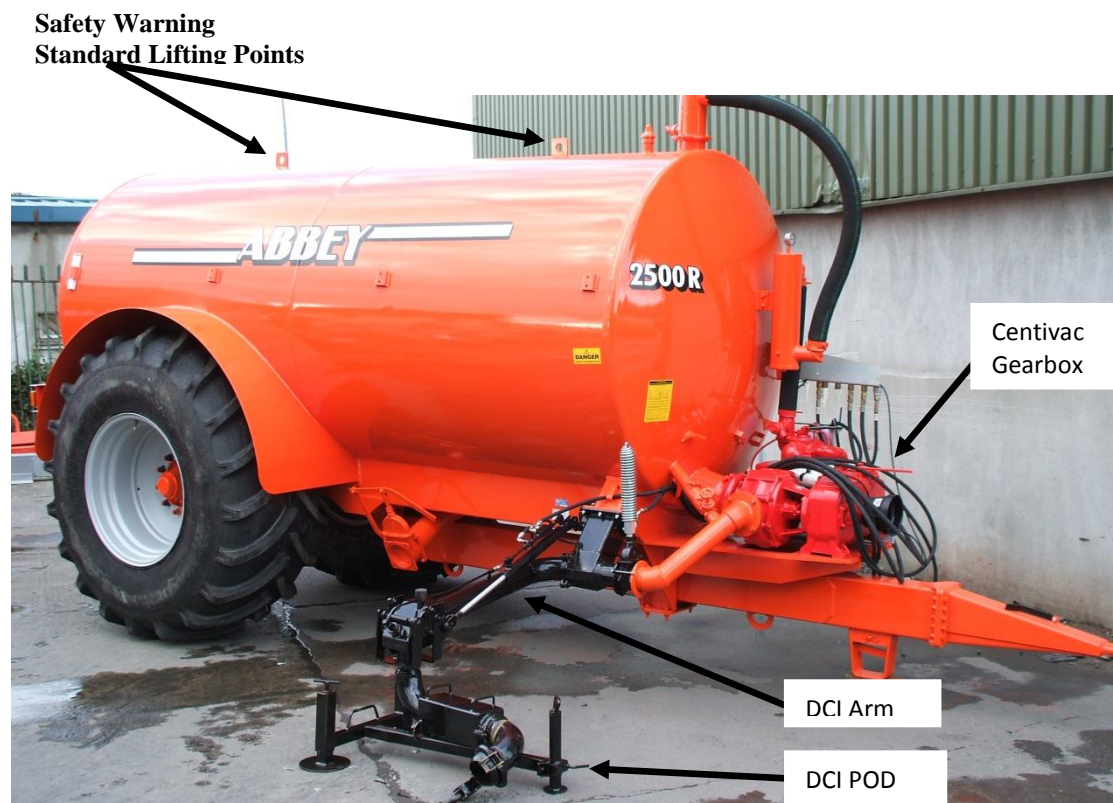


## 5.0 OPERATING INSTRUCTIONS (CONT.)

### 5.2 CENTIVAC SYSTEMS

#### To discharge tanker using rain gun.

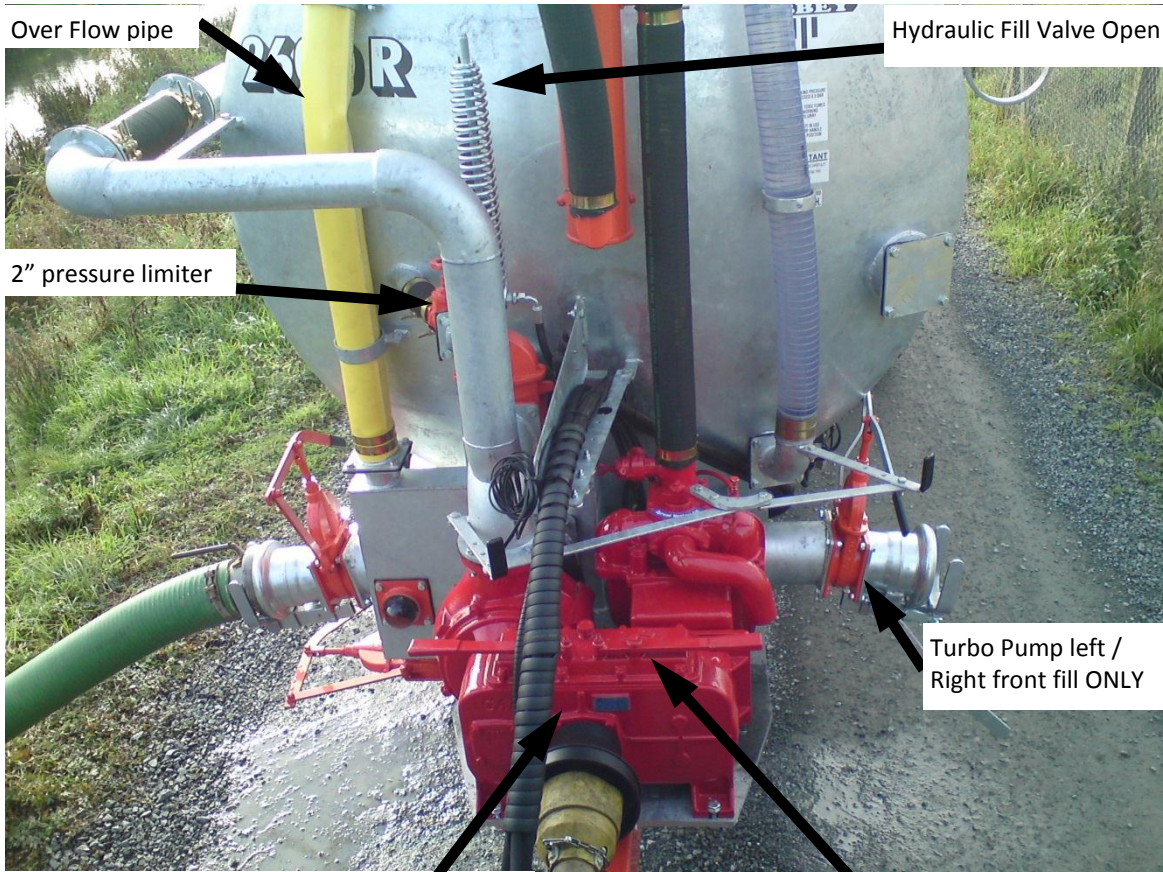
1. Change handle on vacuum pump to central position, to release vacuum pressure.
2. **Caution:** Ensure P.T.O. shaft is disengaged.
3. Change handle on gearbox to centrifugal pump (i.e. rain gun).
4. Open delivery valve on discharge pipe and set 2" back pressure valve.
5. Engage P.T.O. and commence spreading.
6. The rain gun can then be rotated 360° to the required position.
7. Empty the stone trap on the tank at regular intervals during the working day
8. When operating a Centivac tanker always engage the tractor P.T.O. at low rev's when using the Vacuum Pump to fill or spread. Revs can gradually be built up to the correct level after engaging the P.T.O.
9. The same procedure for operating an D.C.I Arm.



Drawing A

**5.0 OPERATING INSTRUCTIONS (CONT.)**

**5.2 Turbo Pump**



**DANGER KEEP CLEAR  
of rotating parts.**

Vacuum & Turbo pump on/off prior to PTO ON

**Positions shown**  
Vacuum Pump On  
Centivac Pump On

**Filling with Turbo Pump, Set as follows ( normal operation 1000 rpm)**

Hydraulic **Fill valve** tanker front **OPEN** (spread valve on side of tanker closes automatically)

**Rearsread valve CLOSED** on rain gun pipe.

Vacuum pump in **FILL** position.

Vacuum and Turbo **Pumps on**.

Connect Hose at left/ right front. **Fill as normal**.

Trap system will cut when tanker full.

**Please note:**

For fuller loads, 3/4 way thru filling, switch pump vacuum pump to neutral and continue turbo pump filling.

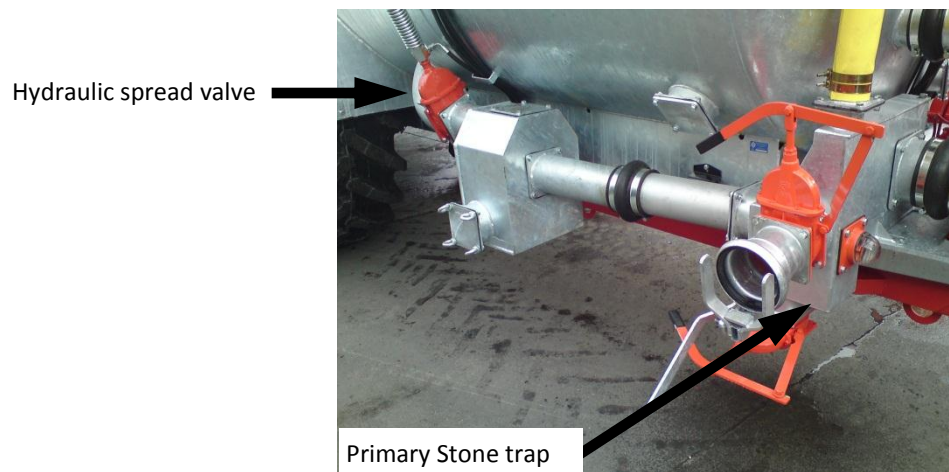
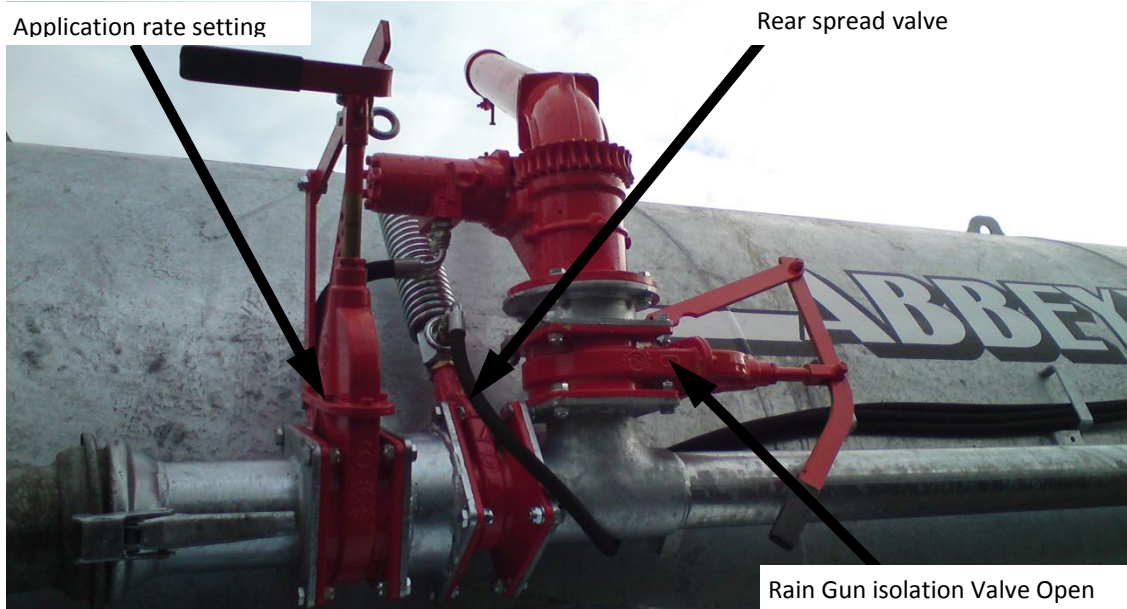
Shut off PTO prior to slurry reaching tanker top.

**Caution:** When filling the tank with slurry it needs to be primed first with the vacuum pump. The Impeller needs to be submerged in slurry before it can be activated.



## 5.0 OPERATING INSTRUCTIONS (CONT.)

### Rain Gun Pipe Work



**Spreading with Turbo Pump ONLY, Set as follows (Normal operation 540 rpm)**

Hydraulic **Spread valve Open** on side of the tanker(Fill valve on front of tanker opens automatically).

Vacuum pump in **Neutral** position and Vacuum **Pump off**.  
Turbo **Pump on**.

Application rate **pre-set**, set **forward speed** and **spread load** through shoe or plate,  
To spread **OPEN rear valve then PTO on**.

To turn at headland **PTO off then close rear valve**, turn, valve **open and PTO on**.

When Tanker empty and no pressure on the cylinder empty the primary stone trap.

**5.0 OPERATING INSTRUCTIONS (CONT.)**

**5.3 OPEN TOP TANKS**

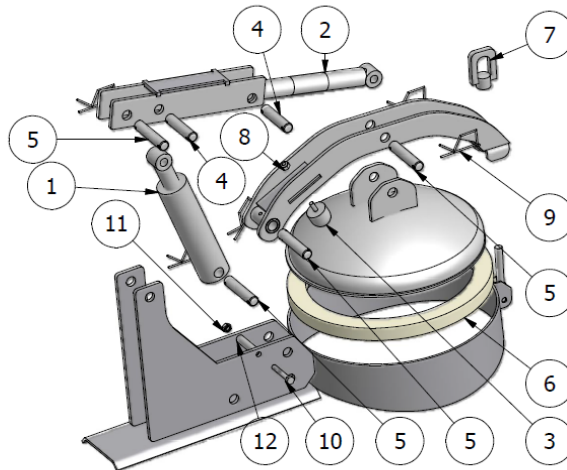
Operating instructions:

1. Fill the tank through the open top hopper.
2. Once full, the tank can then transport the slurry to the field.
3. Engage the P.T.O. and run at 540 r.p.m., while running the tank at the required ground speed.
4. Do not engage the P.T.O. with the tank stationary because this will cause an excessive amount of slurry to be spread in one place.

**5.4 TOP FILL HATCHES**

1. This hatch is used for both filling and can also be used as an inspection point (note the tank must not be pressurised). Read through the safety warning of this manual before using this hatch as an inspection point.
2. Open the hatch, make it secure and reverse or drive the tank under the filling pipe.
3. Once the tank is full, close the hatch securely either hydraulically or with the clamps provided before pressurising the tank!

**HYDRAULIC TOPFILL HATCH**



PARTS LIST		
ITEM	QTY	PART NUMBER
1	1	HTF01.001
2	1	ABY3603
3	1	DP5048MP
4	2	ABY9234 S
5	4	ABY9234
6	1	ABY9870
7	1	Ring Nut M20
8	1	DIN985-M10
9	12	CLP3553
10	1	Din 931-M12x120
11	1	DIN985 M12
12	1	SPACER MSTSM120X3.5X83

**Part No. Aby Tank XHTF (in kit form)**

## 5.0 OPERATING INSTRUCTIONS (CONT.)

### 5.5 ABBEY AUTO-FILLER UNIT

Operating and Assembly

Instructions:

Description The Abbey Auto Filler arm is used to speed up the filling of the Abbey Vacuum tank without the operator leaving the tractor seat.

The Abbey Auto Filler unit uses a rotating arm to lower the suction coupling into the filling hopper. Then the vacuum pressure of the tank will suck the coupling to the hopper creating a water tight seal so that the tank can be filled. This quick connection speeds up the time required to fill the vacuum tank (i.e. suction hoses do not have to be connected and disconnected to fill each load). The Abbey auto-filler is set up to lower the filling arm at a pre-set speed and seat the coupling into the hopper with the minimum of hydraulic pressure. Lowering the auto filling arm changes the vacuum pump to the fill position and opens the hydraulic gate valve for filling. Lifting the arm, closes the hydraulic gate valve and changes the pump to the spread position. If at any stage the flow valves must be closed fully, note down the position these valves were set at before closing fully. so that they can be reset to the same position. The Auto-filler unit can be supplied in kit form or already fitted to a new tank.

**IMPORTANT:** Read and understand this operating instruction manual before operating this unit.

Hydraulic Top Fill Hatch

Auto Fill Arm

Hydraulic Gate Valve

Speed control valve settings

Hydraulic changeover





### Operating the Auto-Filler Unit

Connect the two hoses to the tractor to operate the auto filler. Warning! Ensure all persons are standing clear before operating the arm.

1. Check that the Auto filler is operating correctly and become very familiar with the hydraulic system before attempting to fill a vacuum tank.

Ensure that the arm lowers into the filling hopper, the vacuum pump changes to the fill position and the hydraulic gate valve opens. The gate valve closes and the vacuum pump changes to the spread position when the arm is being lifted. Set up the speed that the arm of the filler unit lowers by adjusting the outer flow valve of the three. The pump change-over can be operated independently of the arm and gate valve by closing the ON/OFF tap under the flow valves. If at any stage the flow valves must be closed fully note down the colours these valves were set at before closing fully so that they can be reset to the same position.

2. With the arm working correctly the vacuum tank can be filled as follows:

Connect the suction hose to the filling hopper and lower the opposite end of the hose into the storage tank. Drive the tanker forward and while lowering the arm locate it in the filling hopper.

With the arm seated in the hopper (Note: Do not force maximum pressure down on the hopper with the ram) engage the tractor P.T.O. and ensure the pump has changed to the fill position and the hydraulic gate valve has opened fully. The rubber coupling will create a water tight seal (using the Tank Vacuum) once the Auto filler hydraulic gate valve is opened, and the tank will fill with slurry after a few minutes.

When the tank is full, slowly lift the arm and the hydraulic gate valve will close. Disengage the tractor P.T.O. and then lift the arm fully into its transport position. The vacuum pump will change to spread as the arm lifts fully.



**Warning!** Always ensure that the filling arm has lifted completely into its transport position. The tank can then be used to transport and spread the slurry. Caution! Never allow pressure to build up in the tank after spreading, because lowering the arm with the tank pressurised may cause any remaining slurry to be released (under pressure) through the arm.

## **5.0 OPERATING INSTRUCTIONS (CONT.)**

### **Operating the Bi-Directional Auto-filler Unit left to Right Movement**

To change the Bi-Directional Auto-filler Unit from Left to Right fill position the following procedure must be followed;

#### **Step 1**

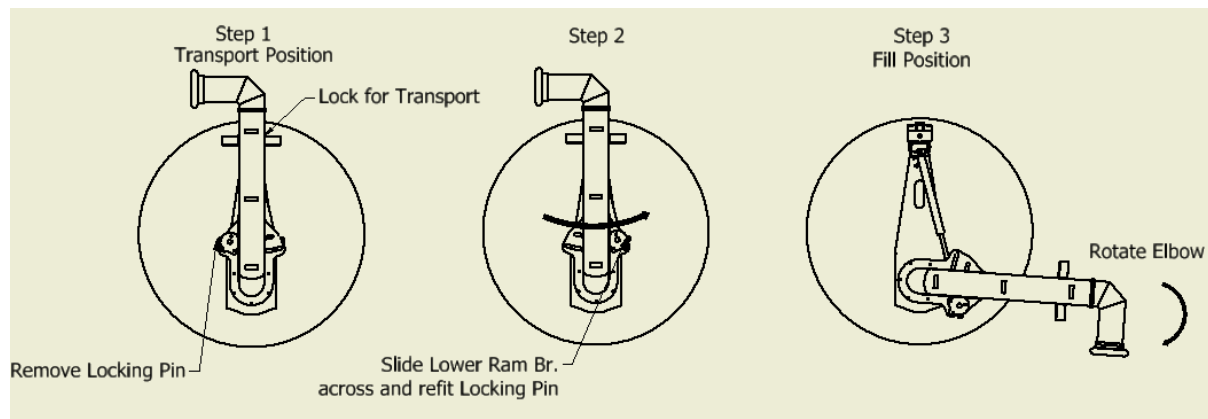
1. Raise Arm into Transport Position ensuring arm is locked in place for transport.
2. Remove Lower Locking Pin.

#### **Step 2**

1. Slide Lower Ram Bracket fully across.
2. Re-fit Locking Pin.

#### **Step 3**

1. Lower Arm into Fill Position.
2. Rotate Fill Arm End Elbow.

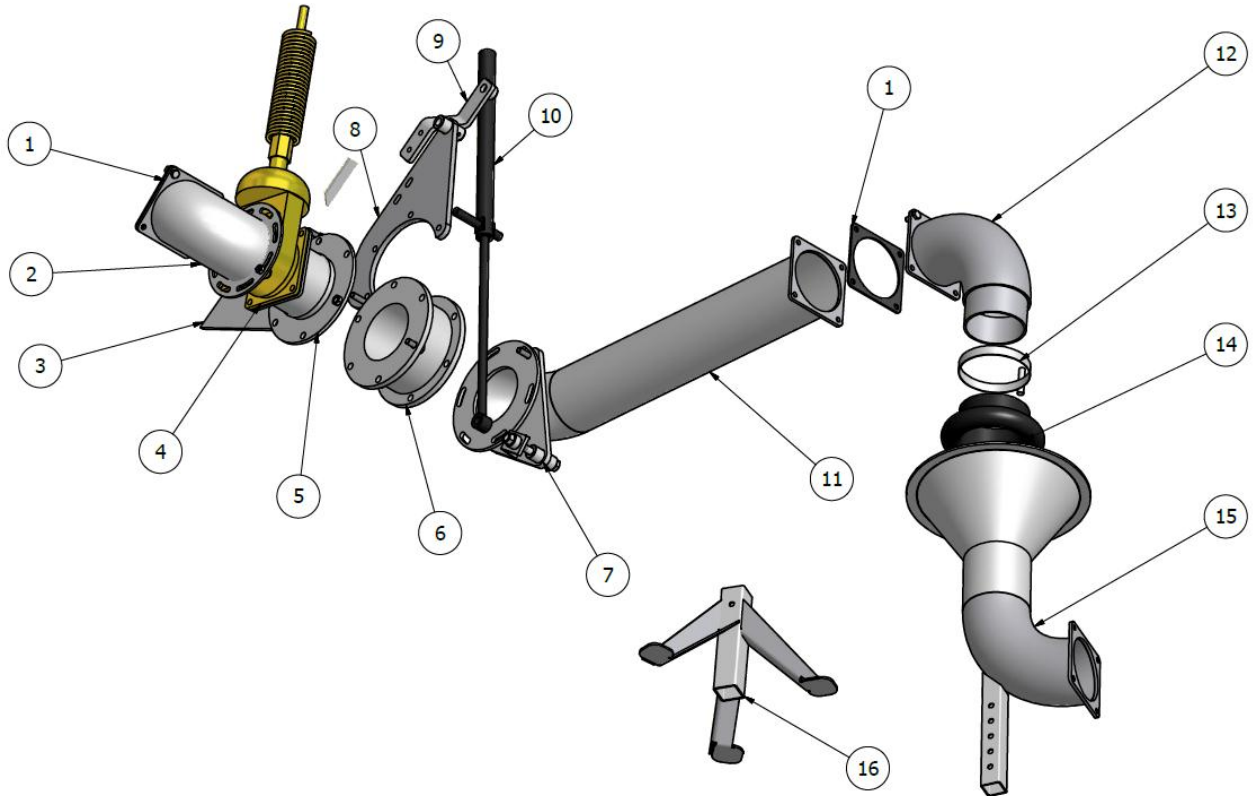




**5.0 OPERATING INSTRUCTIONS (CONT.)**

**ABBEY Auto-Filler Unit**

**Assembly/Parts Drawings**

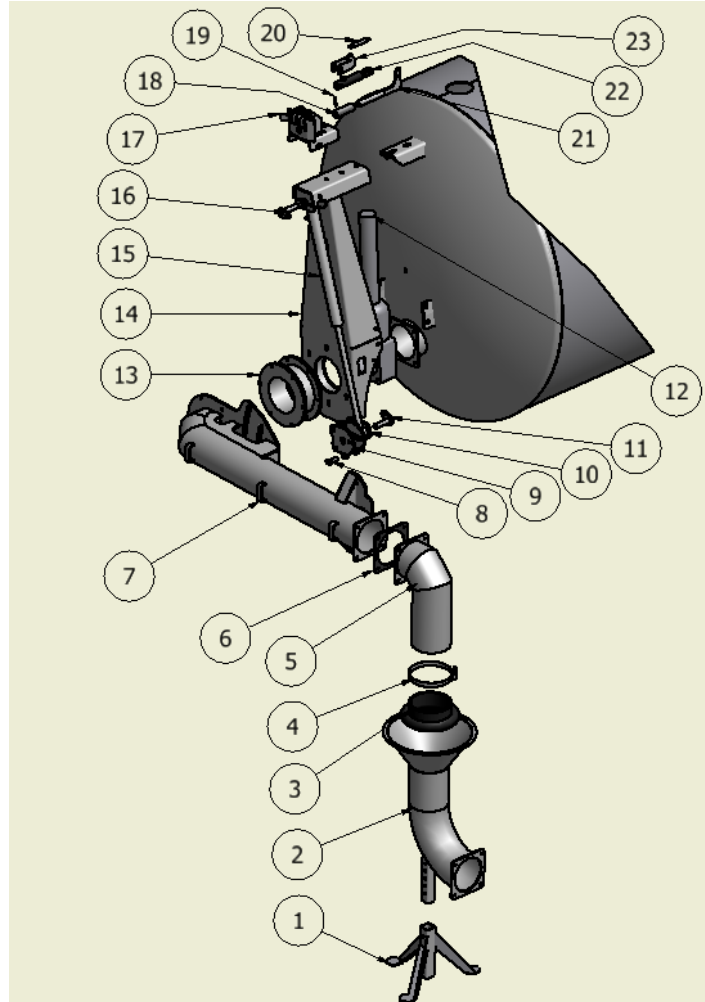


No.	Components	Qty.	Part No.
1	Rubber Gasket for flanged valve	2	ABY2080
2	Flanged Bend	1	ABY351
3	Arm Reinforcing Plate	1	ABY350
4	Double Flange Heavy Duty Gate Valve	1	ART5F2-6
5	Double Flanged Adaptor 6"	1	ABY352
6	Swivel Unit 6"	1	ABYBP2001 /G
7	Small Ram Mounting Plate	1	ABY355
8	Large Ram Mounting Plate	1	ABY353
9	Auto Filler Ram Mounting Bracket	1	ABY354
10	Auto filler Arm Ram	1	ABY4916
11	Auto Filler-Arm	1	ABY358
12	Auto Filler Arm End	1	ABY356
13	Milkolar Jubilee Clip	1	CLP162-174
14	6" Auto Filler Rubber Coupling	1	ABYBP1101/G
15	6" Auto Filler Hopper	1	ABY357
16	Hopper Stand	1	ABY3564

**5.0 OPERATING INSTRUCTIONS (CONT.)**

**ABBEY Bi-Directional Auto-Filler Unit**

**Assembly/Parts Drawings**



Pos.	Component	Qty.	Part No.	Pos.	Component	Qty.	Part No.
1	Hopper Stand	1	ABY3564	16	Upper Ram Bracket	1	ABY364
2	8"Auto Filler Hopper	1	ABY357/8"	17	Locking Bracket	1	ABY365
3	8"Auto Filler Rubber Coupling	1	ABYBP1101/H	18	Locking Pin Spring	1	ABY4946
4	Jubilee Clip	1	CLP201-213	19	Locking Roll Pin	1	PIN4946
5	8" Auto Filler Arm End	1	ABY 356/8"	20	Locking Ram Return Spring	1	ABY97841001
6	8" Rubber Gasket	1	ABY-8309800	21	Locking Pin	1	ABY366
7	8" Bi-Directional Auto Filler Arm	1	ABY360	22	Locking Ram	1	ABYTS-46
8	Lower Ram Br. Locking Pin	1	ABY515	23	Return Spring Locator	2	ABY367
9	Lower Ram Br.Flange	1	ABY361				
10	Lower Ram Bracket & Bushes	1	ABY362				
11	Lower Ram Pin	1	ABY368				
12	8" Hydraulic Gate Valve	1	ART7F2/51 8"				
13	8" Swivel	1	ABYBP2001/H				
14	8"Bi-Directional A-Frame	1	ABY363				

## 5.0 OPERATING INSTRUCTIONS (CONT.)

### 5.6 STEERING AXLE TANDEM TANKS

The following points should be understood when operating a Steering Axle Tandem Tanker. This axle is designed to operate and allow the tanker have a shorter turning circle compared to a rigid tandem. The rear steering axle follows the front tandem axle automatically and does not require the operator to mind the steering on the tank. Please note towing a tandem axle tanker is different to towing a standard single axle tanker. The steering axle must be locked for reversing. It can be locked for increased straight-line stability on the road - The tanker must always be moving forward at slow speed prior to the steering axle being hydraulically locked. When used on the road the tandem will perform well at typical agricultural speeds. Please note the Tanker is designed for use as described in the Abbey Tanker Instruction Manual.

### BRAKE ADJUSTMENT

We have been upgrading the brakes on all Abbey machines, to achieve the required braking efficiency of 25% in-line with braking requirements.

The upgraded braking system has been designed to be used with standard female hydraulic brake coupling to achieve the above braking efficiency and is now supplied on all Abbey machines. It is essential the above coupling is used in conjunction with the upgraded brakes, because braking is achieved gradually (with the assistance of the tractor brake pedal).

It is important to note that it is not recommended to use a standard male hydraulic coupling (in the place of the standard female brake coupling) to achieve the upgraded hydraulic brakes. If however you choose to replace the brake coupling with a standard male end (which is against our recommendations). then the tank cam lever bar should be adjusted as follows.

The bar connecting the Hydraulic Ram to the cam levers should be moved in one hole as shown in Fig. 1. This adjustment is necessary because of the higher output pressure produced by the standard tractor spool valves and the immediate/excessive force that would be transferred by the brake ram on to the brake drums.

Cam Levers on standard axles are adjusted by removing cam lever on cam shaft and re-positioning on the next spline. On larger axles (Recess) cam levers can be adjusted by rotating the adjustment bolt on the cam lever itself.

**Fig.1 Moving the Cam Bar in one hole**



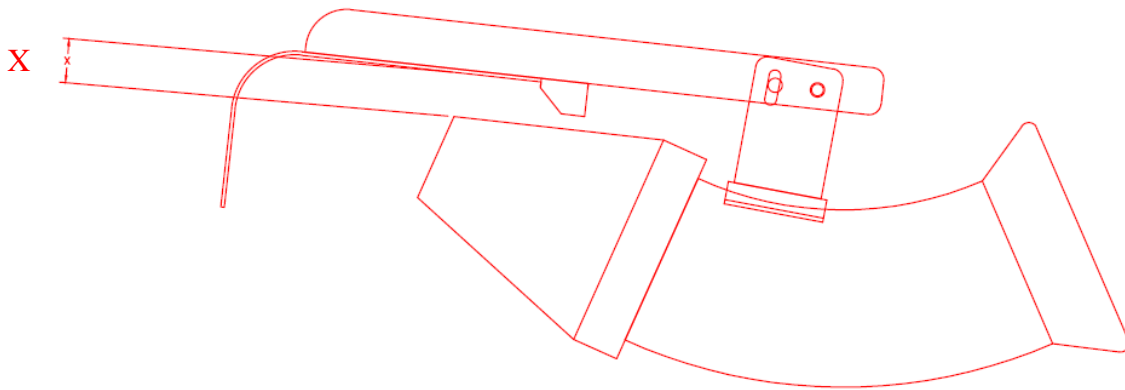
**Please Note:** Braking regulations can vary from country to country. Please check legal brake usage in your country.



**5.0 OPERATING INSTRUCTIONS (CONT.)**

**5.7 Inverted Splash Plate**

X (mm)	Approx. Spreading Width
30	11-12M (36')
12	4-5M (12')



**Note:-**

The cone must set up as shown to achieve the correct spread pattern. Pushing the splash plate down so that the half-moon shape band hits the rubber cone is not the proper set up.

Spreading width may vary depending on the density of the slurry

Check for blockages form time to time

## 6.0 TANKER CARE AND MAINTENANCE

1. Daily check all wheel nuts are tight for the first working week and once a week thereafter.
2. Check that pressure relief valve on front of tank is free and working. also ensure the pressure gauge is fully functional at all times.
3. Check that the hydraulic rear gate valve will fully open. If not reduce the pressure on the hydraulic ram return spring, remove allen screws and pull out gate to clean behind.
4. Tanks are fitted with two float ball valves for double protection. Reference page 36.
  - a. is located on top of tank. This valve closes automatically when tank is full.
  - b. valve is located on front of tank to catch any overflow or foam which may get through top valve.

Check to ensure those valves are free.

5. Check all hoses for cracks and replace if necessary.
6. Check P.T.O. Guard Shields and replace if necessary. The accompanying shaft instruction and maintenance manual must be consulted before maintaining or using the shaft.
7. Regularly check and ensure that the rear spreading valve is opening fully otherwise slurry will enter the upper valve housing and eventually break the gate valve. This breakage is not covered by warranty.
8. Ensure Impeller Pump Centivac System is drained in frosty weather (i.e. Raingun).
9. Maintain the tyre pressures as recommended.
10. At the end of the working season or period the complete tank should be washed down, this will extend the working life and will make any damaged or broken parts more obvious.
11. **Caution:** When refitting parts to the tank care must be taken so that they are refitted in the correct manner and won't create any risk to the safety of the operator. If there is any confusion when refitting parts contact your local dealer before completing operation.
12. **Caution:** Special care should be taken to replace damaged hydraulic fittings or hoses.
13. **Caution:** When vacuum pump doesn't work for a long period we suggest to operate as stated in the Washing Section 7.2.3.
14. **Caution:** Insufficient lubrication will cause damage to the vacuum, see section 7.1 for the correct lubrication. Excessive lubrication may affect maximum output.
15. On some axles it may not be possible to grease the inner bearing without removing the hub. Ensure bearing hubs are checked and greased regularly. All other grease points on the machine should be checked regularly.
16. Cleaning stones or dirt out of the tank. Take note of sections 2 & 3 before doing so. The back door or sump of the well ventilated tank should be removed to clean the tank. Remove as much of the debris / dirt as possible without entering the tank. If entry is required the necessary precautions should be taken.
17. Repairs should be carried out by a qualified person.
18. The tank should not be pressurised or filled when it is to be stored for any period of time.
19. Check wheel bearings after first 25 loads for play if they require adjustment contact your local dealer.
20. Procedure for tightening U-Bolts on self-steer tankers.
  - a. Clean threads with a wire brush.
  - b. Slacken both nuts on the U-bolt approx. 1/2 turn.
  - c. Spray the threads with loosening oil.
  - d. Tighten each nut, alternating between nuts.

**Note:** It is important to slacken each nut before tightening. just attempting to tighten the nut without doing this will not give the right result.

All U-bolts and undercarriage nuts should be checked after the first 30 loads. Thereafter the above checks should be carried out at least 3 times per annum.



**6.0 TANKER CARE AND MAINTENANCE (CONT.)**

21. Slack adjusters allow cam lever adjustment on the tandem tankers without the need to remove the lever (to take up wear on the axle shoes). Turning the bolt head on the slack adjuster will rotate the cam lever to increase the pressure applied to the shoes. Please note over adjustment will cause the brake to stick and give inconsistent braking.

**MAINTAINING TANKER PAINT FINISH**

It must be noted because some slurry can contain a certain concentration of acid, washing down of the machine regularly is important in maintaining the paint finish. The following list is provided to guide you, the operator, to maintain the tanker and thus the paint finish.

1. Washing machines with high powered washers will cause damage to paint finish due to the cutting effect provided by some units.
2. Mechanical damage to the paint work (scratch marks etc.) should be touched up by light sanding of the damaged area and then painting over the area.
3. Regular washing is the most effective method of maintaining a machine's paint finish i.e. at the end of each day's work.
4. Mechanical or acid damaged areas of the paint work should not be left for prolonged periods without repainting, If left exposed the damaged area will rust and cause more extensive damage to the paint work.

**GENERAL MAINTENANCE INTERVALS FOR TANKS**

	Daily	Weekly
Grease the machine.	√	
Grease universal joints on each end of P.T.O. shaft.	√	
Check pump Gearbox Oil level.	√	
Ensure pump lubrication rate is set right and you have enough oil for the day.	√	
Splash plate is set right.	√	
Tighten wheel nuts		√
Check tyre pressure and grease wheel hubs.		√
Check pump & trap system & pressure gauge is operating correctly.		√
Ensure any additional components are operating correctly i.e. quick attach fittings, Auto-filler units, Centivac systems.		√
Check hydraulic gate valve operates and open rear valve fully		√
Pressure and vacuum relief valves are working.		√
Wash down tanker fully.		√
Brake cam levers pulling evenly		√
Check wear on vacuum pump blades		√



**6.0 TANKER CARE AND MAINTENANCE (CONT.)**

**Procedure on changing wheel:**

1. Call a tyre company to fix/replace the wheel. (These companies are professionals with proper lifting equipment and can have the wheel replaced or fixed on site, consider the cost is minimal compared to the costs associated with the serious consequences if something goes wrong)

**If this is not possible:**

2. Pull up to a level area and apply the handbrake (if fitted) on the trailed machine away from any major road and Insert wheel jocks on both sides of the inflated wheel. If machine is still attached to the tractor insure its parking brake is effectively engaged. Please wear high visible clothing when working near live traffic.
3. It is necessary to remove all contents in the trailed machine. Transfer into another storage vehicle that is at your disposal. Please inform the local authorities if your vehicle is a hazard to other road users.
4. Loosening the wheel nuts ½ a turn before jacking the machine up.
5. Ensure your jacking lifting equipment has sufficient lift capacity. Check the unladen weight of the machine off the CE stamp against the tonnage lift capacity of your equipment. Place under the suggested jacking point. (See Figure 1)



*Figure 1 - Symbol for jacking or support point<sup>[1]</sup>*

6. Place jack under jacking point axle on the side of the axle you wish to raise. Please ensure that ground conditions are suitable to withstand the load of the machine.
7. When raising the machine always use an axle stand as an safety device. Put under axle before lifting takes place and raise stand every few inches/centimetres or whenever possible. Do not attempt to lift the machine unless you have a secondary device to support its weight other than the lifting jack.

**Note:** Before removing the wheel (if the wheel is over 25kg's) it is recommended that you have another capable body to give you a helping hand and not to attempt to remove on your own.

8. Remove and replace wheel. When tightening wheel nuts use the proper torque settings and every second nut always move to the opposite side of the wheel.
9. Double check each nut when finished.

Suggested torque settings are shown below:

	Torque (duNm=Kpm)
M14 x 1.4	13
M16 x 1.5	20
M18 x 1.5	27
M20 x 1.5	35
M22 x 1.5	45
M22 x 2	43
M24 x 1.5	55



**Please Note Positions on the following Tankers:**

**Standard Range:**



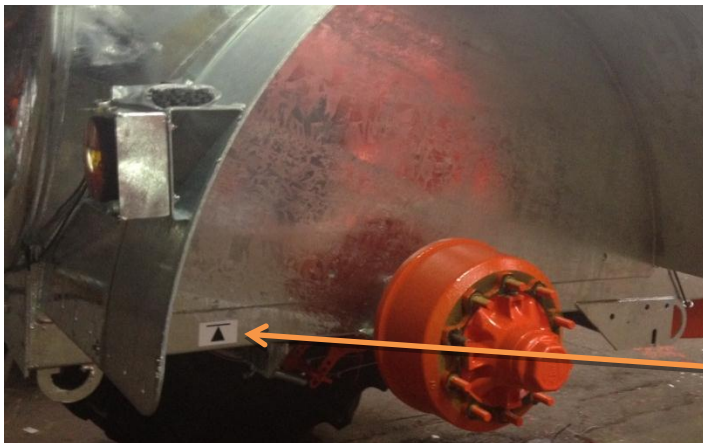
Position on the flat under the side support between the axle and transport hook, only the side of the wheel change.

**Eco Range:**



Position on the flat under the side support between the axle bolts and transport hook, only the side of the wheel change

**Recess Range:**



Position on the flat under the side support between the axle bolts and transport hook, only the side of the wheel change.

**Note: It is up to the operator to evaluate that the machine is lifted securely at the suggested lifting points to prevent the lifting equipment slipping for any reason.**

**Tandem Range:**

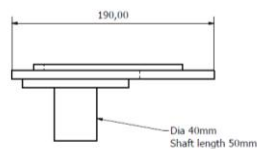
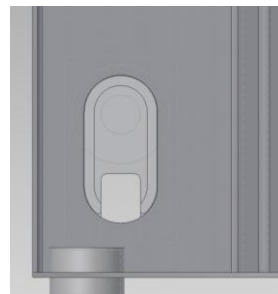
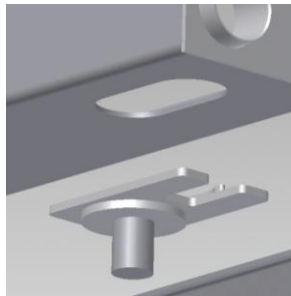


Position under the axle pivot pins, only the side of the wheel change.

**Note:** It is up to the operator to evaluate that the machine is lifted securely at the suggested lifting points to prevent the lifting equipment slipping for any reason.

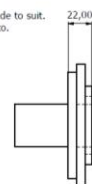
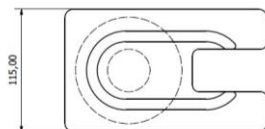
**Special Attention:**

Abbey has always supported its barrel on the ECO/Recess and Tandem Range with a full length chassis. Due to this Abbey can provide a specially designed aiding tool (Part number ABYLS01) for lifting that will fit to all tankers produced after June of 2012. This tool slots up into the hole as shown below and prevents slippage between two metal surfaces. Also this position is on the very end of each chassis rail keeping the operator out of the crush zone at all times when setting up. Please revert to your local Abbey dealer for more details. Machines build prior to this can order a glove that is designed especially so wrap around the chassis support to prevent slippage. (Part Number ABYLS02)

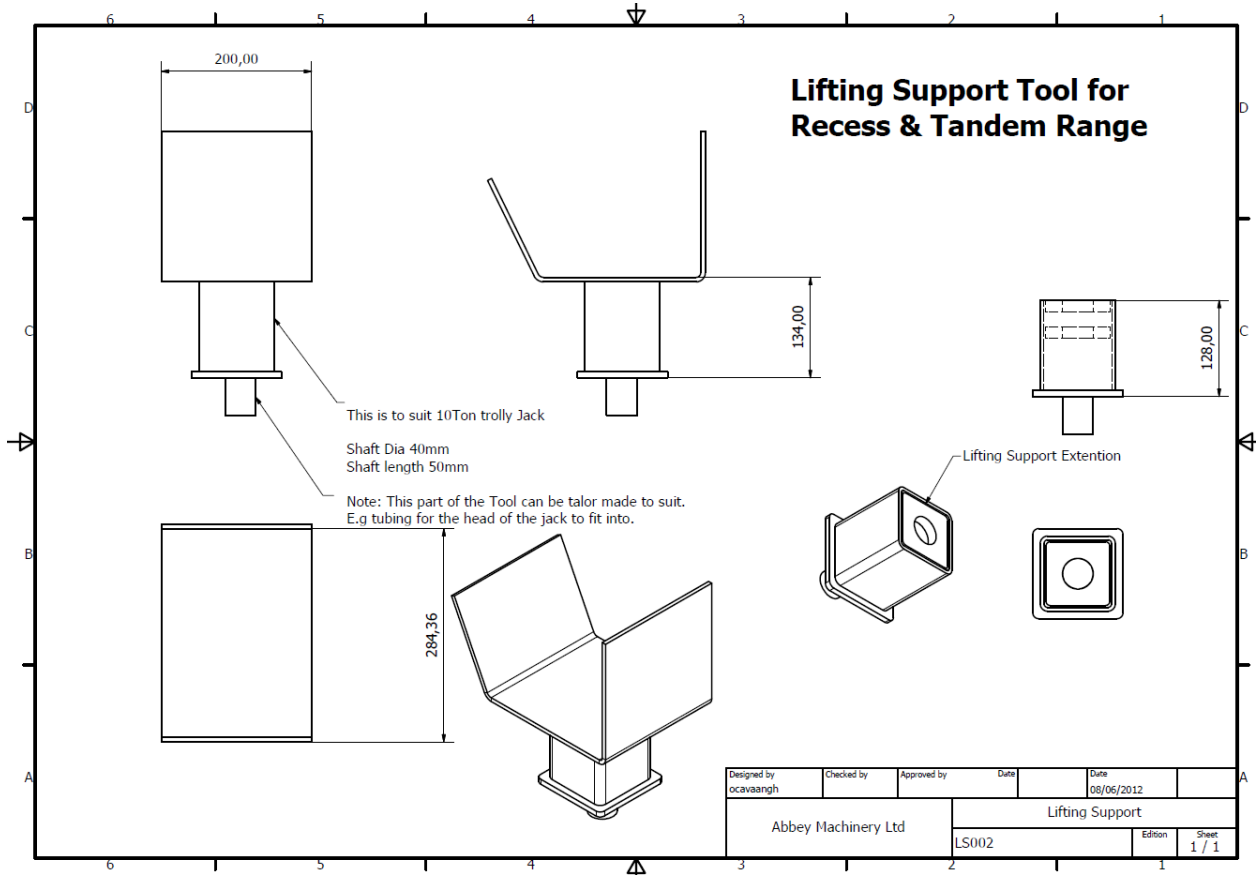
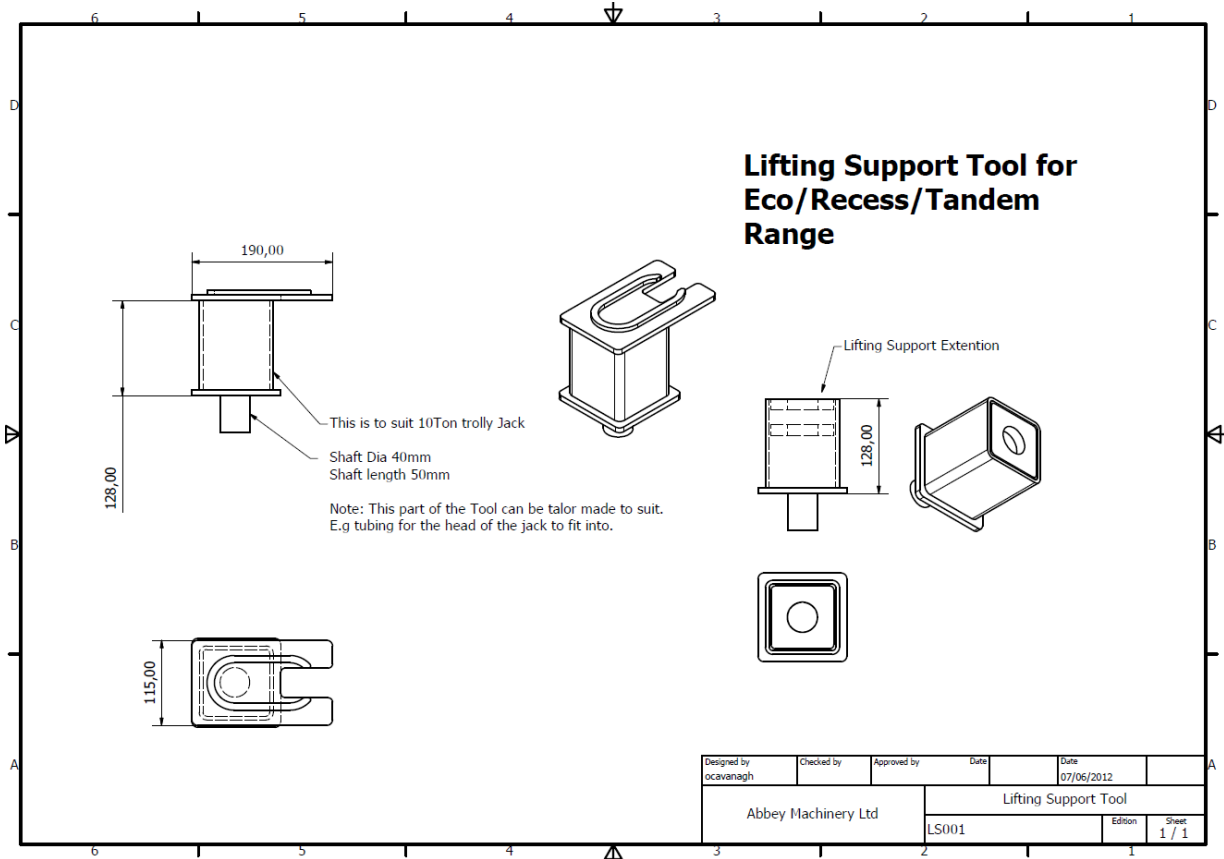


This is to suit 10Ton trolley Jack

Note: This part of the Tool can be tailor made to suit.  
E.g tubing for the head of the jack to fit into.



**Lifting Support Tool for  
Eco/Recess/Tandem  
Range**



**7.0 THE VACUUM PUMP**

**7.1 USE**

**7.1.1 LUBRICATION**

Before starting, ensure that the Vacuum Pump is filled with oil either for the interior lubrication system or gearbox (overdrive).

For internal lubrication, the min. oil level is stated by the mark at the lower end of the level (fig. 1) which is on manifold and consequently the max. level is at full reservoir.

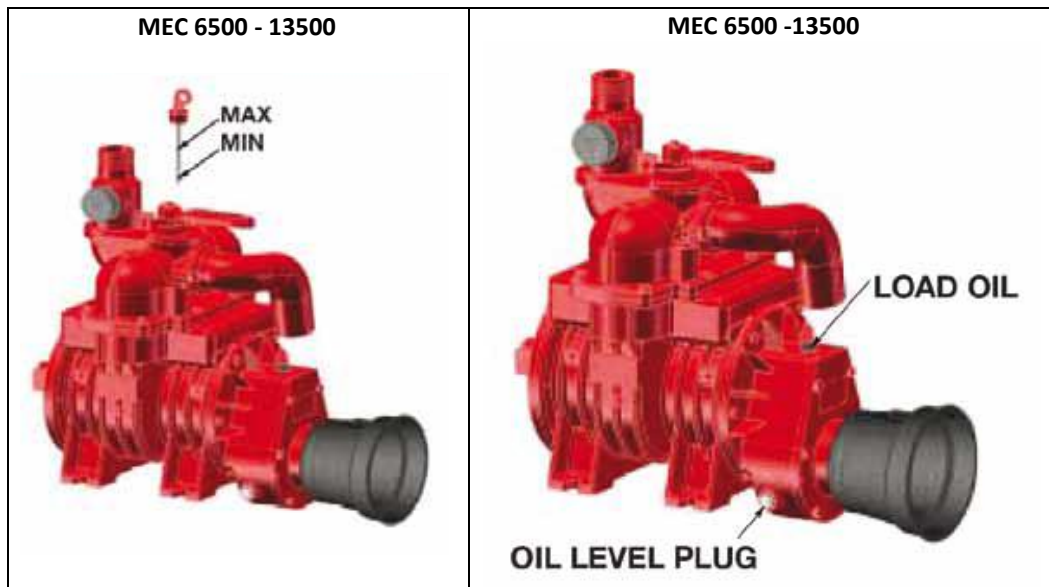


Fig.1

Fig.2

The reservoir capacity is stated on the following table:

Model	MEC 6500	MEC 8000	MEC 9000	MEC 1100	MEC 13500	Star 60	Star 72
Capacity L.	3.1	3.8	2	2.5	3	3.7	3.7

## 7.0 THE VACUUM PUMP (Con'd)

The overdrive has an oil level plug (Fig. 2 & 4) on the left side of the gearbox and indicates the level of oil to be maintained. For a right lubrication you have always to see the oil on the level.

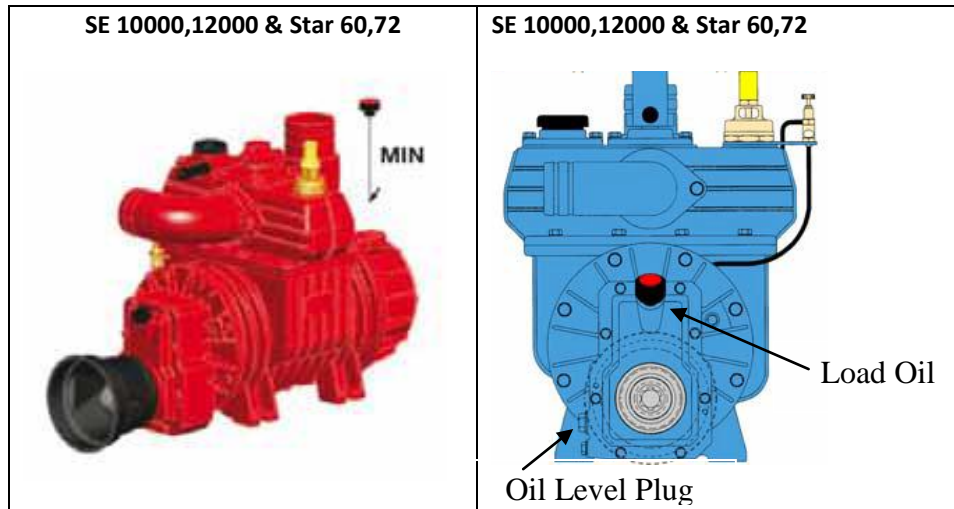


Fig.3 Fig.4

For internal lubrication, the min. oil level is stated by the total length of the cap with oil level (Fig. 3) which is on the rear reservoir and consequently the max. Level is at full reservoir.

### 7.1.2. OIL TO USE

#### Reservoir

- The recommended light oil for all seasons is SAE 30 Lawnmower Engine Oil
- Summer: mineral oil Engler viscosity at 50° SAE 20 3.30/6.60
- Winter: mineral oil Engler viscosity at 50° SAE low 2.30/3.30

#### Gearbox

- The recommended gear oil for all seasons is 80/W90 - approximate quantity in Mec 8000 pump is 0.25 litres!  
 Mineral oil Engler viscosity at 50° SAE 60 w 20/26 or SAE 90  
 Don't use hydraulic oil or a cleansing for lubrication.  
 You can use Ecological oil but with the same specifications of the mineral oil suggested.

### 7.1.3 OIL QUANTITY FOR LUBRICATION

During work of the vacuum pump check that the regulator drops the following quantity of oil:

Mec 6500-8000	Mec 9000-13500	Star 60	Star 72
40-50 drops/Min	50-60 drops/Min	30-40 drops/Min	35-45 drops/Min

These are valid either for force feed or automatic lubrication.

When necessary, add only new and clean oil in the reservoir.

In the gearbox make a first oil change after 100 real working hours and the next one every 300 real working hours.

## 7.0 THE VACUUM PUMP (Con'd)

### 7.1.4 OIL REGULATION FOR LUBRICATION

To regulate the oil fall, as from the above mentioned table, on the pump with force feed lubrication it is sufficient to operate on the regulation unit nut "A" (Fig. 5) after having loosened the nut "B".

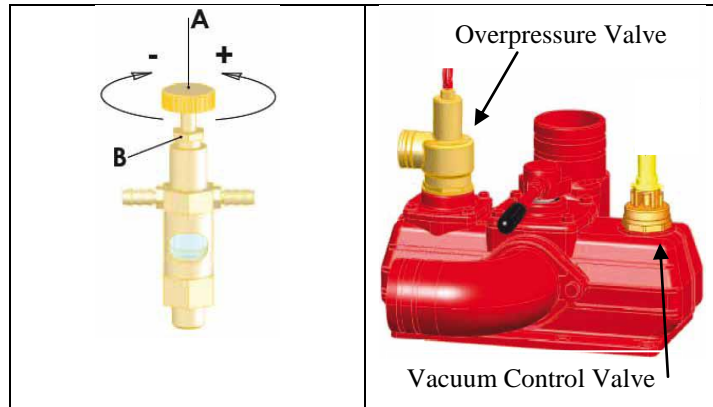


Fig.5

Fig.6

When the regulation is finished clasp again the nut "B".

Oil delivery regulation, on the automatic, lubrication is made in our factory during final test of the vacuum pump.

### 7.1.5. OVERPRESSURE AND VACUUM CONTROL VALVES

**Pressure:** The max. pressure allowed is 1.5 BAR on the pump.

To keep this valve and to obtain a lower max. pressure Abbey have fitted a dimensional overpressure valve to release the air capacity in excess of 0.5 BAR.



**CAUTION:** This valve is factory set but should be checked at regular intervals to ensure the max. pressure isn't exceeded. See section 8 for setting.

**Vacuum:** Too high a vacuum can cause ovalization and waving of the body or vane breakage. For this reason we suggest the use of a vacuum control valve.

### 7.1.6. RUNNING TIME

The max. running time we suggest is not over 6-8 minutes.

A longer utilisation time without interruption can cause overheating and also vane damage.

If the utilisation time is extended owing to the density of material to suck, it is necessary to thin or mix the material.

### 7.1.7. Hydraulic Drive oil flow rates

The oil flow requirement for an hydraulic driven Vacuum pump is:

- 64Ltr/min for Mec9,000 to reach 12000rpm
- 107Ltr/min for Mec11,000 & Mec13,500 to reach 1200rpm

## 7.0 THE VACUUM PUMP (Con'd).

### 7.2 MAINTENANCE

#### 7.2.1 VALVES

Check periodically that float and safety valves placed on the tank are in perfect working order.

#### 7.2.2 VANES

Check the wear of the vanes placed on the vacuum pump and replace the complete set when the height is sensibly reduced (about 10-15% of the original height). Vane sizes for vacuum pumps.

In order to check the state of wear of the blades found in the Exhauster! Compressor, proceed as follows:



- remove threaded inspection plug
- rotate the rotor until a blade is aligned with the inspection hole;
- measure the distance between the external surface of the rotor and the external side of the blade;
- if this distance is greater than 10-15% of the original height of the blade, replace the complete set of blades.

**IMPORTANT:** before inserting the new blades, carefully check their size and, if necessary shorten them until they are the same length as the rotor.

Model	Blade Number	Dimensions
Mec 6500	7	370x46.5x6.3
Mec 8000	7	450x46.5x6.3
Mec 9000	5	300x60x6.5
Mec 1100	5	370x60x6.5
Mec 13500	5	460x60x6.5
Star 60/SE 10000	6	350x70x7.5
Star 72/SE 12000	6	400x70x7.5

#### 7.23 WASHING

Washing of the pump internal with diesel oil is recommended during the working day. If slurry gets into the vacuum pump it is necessary to immediately wash the internal pump by sucking gas oil (approx. 1/2 litre) through the exhaust elbow with the pump handle on spread position. You have to make the same operation when the vacuum pump stops working for a long time.

Item	How	When?
Check oil Adjustment	Inspect the level sight glasses	Daily
Check oil level on the tank	Use the oil level on outside of tank	Weekly
Check the blades wear	Remove threaded plug	Every 300 working hours
Check that the over-pressure and vacuum regulator valves are working correctly	Remove valves	Weekly
Oil Tank washing	Remove tank	Yearly
Wash body (Internally)	Put in oil + diesel oil (after washing lubricate with oil only)	Daily or whenever manure enters or when inactive for a long time

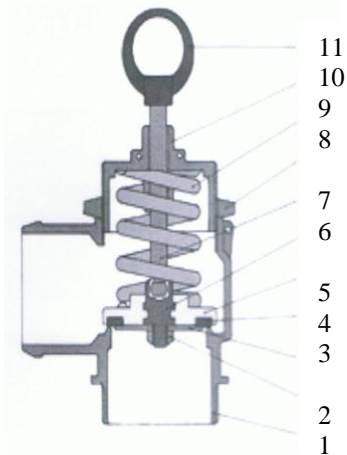


Wash lubrication pump	Use a brush and compressed air	Once a year or for prolonged inactivity
Check that the overflow valves are working correctly	Remove valves	Monthly
Lubricate the power take-off	Oil the P.T.O. with a brush and lubricating oil	Monthly
Wash and clean the valves	Remove valves	Monthly

### 7.2.4 Setting of blow off valve/decompression valve

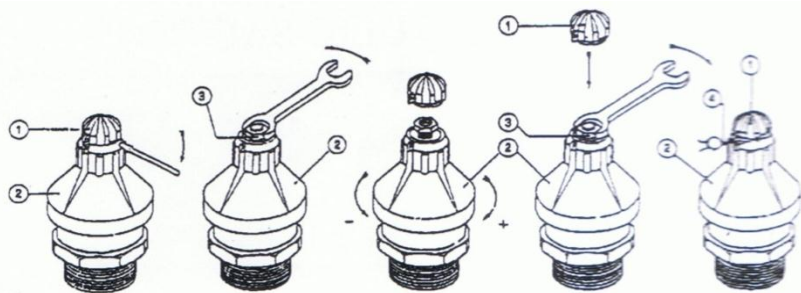
It is essential that the blow off valves are set to the correct pressure when the pumps are being tested. The setting procedure is as follows:

- Loosen the locking collar ( No. 8 in the diagram)
- For increased blow off pressure turn the threaded section (No.10 in the Diagram) in a clockwise direction.
- For decreased blow off pressure turn the threaded section (No.10 in the Diagram) in a anti-clockwise direction.
- Tighten the locking collar and check that the blow off pressure is correct.



#### PROCEDURE FOR THE SETTING OF THE DEPRESSION VALVE

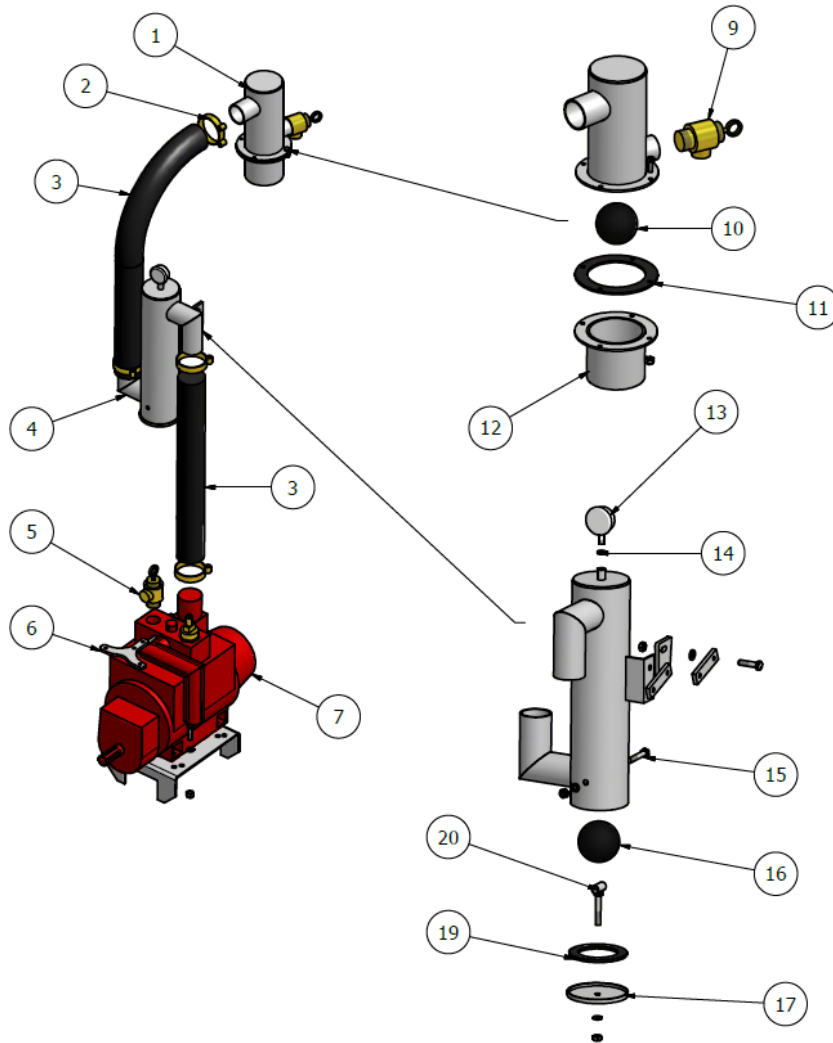
A B C D E



- A. Take off the cover (1) from the adjusting bell (2) by using the point of a screwdriver in the special incision.
- B. Loosen the stop set nut (3) by holding firm the adjusting bell (2).
- C. Regulate the pressure on the spring by turning the adjusting bell (2). Turn in clockwise for increasing the pressure and turn in anti-clockwise for reducing it. During this operation it is necessary to avoid the rotation of the stem acting with a screwdriver in the special incision that you find in the stem.
- D. As soon as the regulation is completed, screw again the stop set nut (3) by holding firm the adjusting bell (2). The set nut must be screwed with a screwing torque of 10Nm (at least). Insert the cover (1) with pressure on the adjusting bell (2).
- E. Put the setting-seal by tying with a wire (4) the cover (1) and the adjusting bell (2), and finally apply the plumb.

## 8.0 Replacement Parts

### 8.1 Vacuum Tank Pressure System

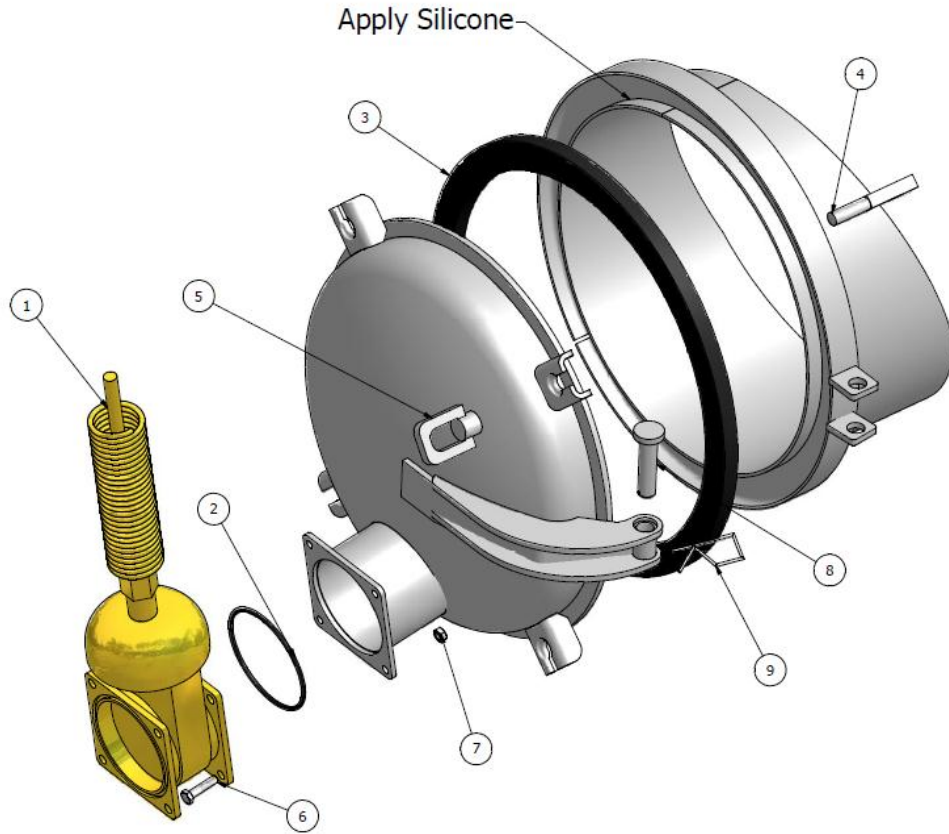


Item No:	Description	Part Number
1	Top Trap	-
1a	60mm Top Trap	ABY9017
1b	80mm Top Trap	ABY9021
1c	100mm Top Trap	ABY9050
2	Hose Clip 85mm-90mm	CLP85-91
3	80mm Trap Hose	HOS6031-80
4	Main Trap	-
4a	60mm Main Trap	ABY9019
4b	80mm Main Trap	ABY9051
4c	100mm Main Trap	ABY9052
5	1 1/2" Safety Valve	ART13-1 1-2
6	Pump Handel T-Bar (Star Pump)	BPSAS35-Y

Item No:	Description	Part Number
7	Vacuum Pump	-
9	1 1/2" Safety Valve	ART13-1 1/2
10	Rubber Ball	ABY2135-100
11	Rubber Washer	ABY2140-L
12	Top Trap Hosing	-
13	60mm Manometer Gauge	ABY2130-60
14	3/8" Dowdy Washer	-
15	M12x160 Bolt	Din 931-M12x160
16	Rubber Ball	ABY2135-100
17	Main Trap Base Plate	To be Created
19	Rubber O-Ring	ABY2140-S-N/T
20	Drop Bolt Bush	ABY9024-DB

**8.0 Replacement Parts (Con'd)**

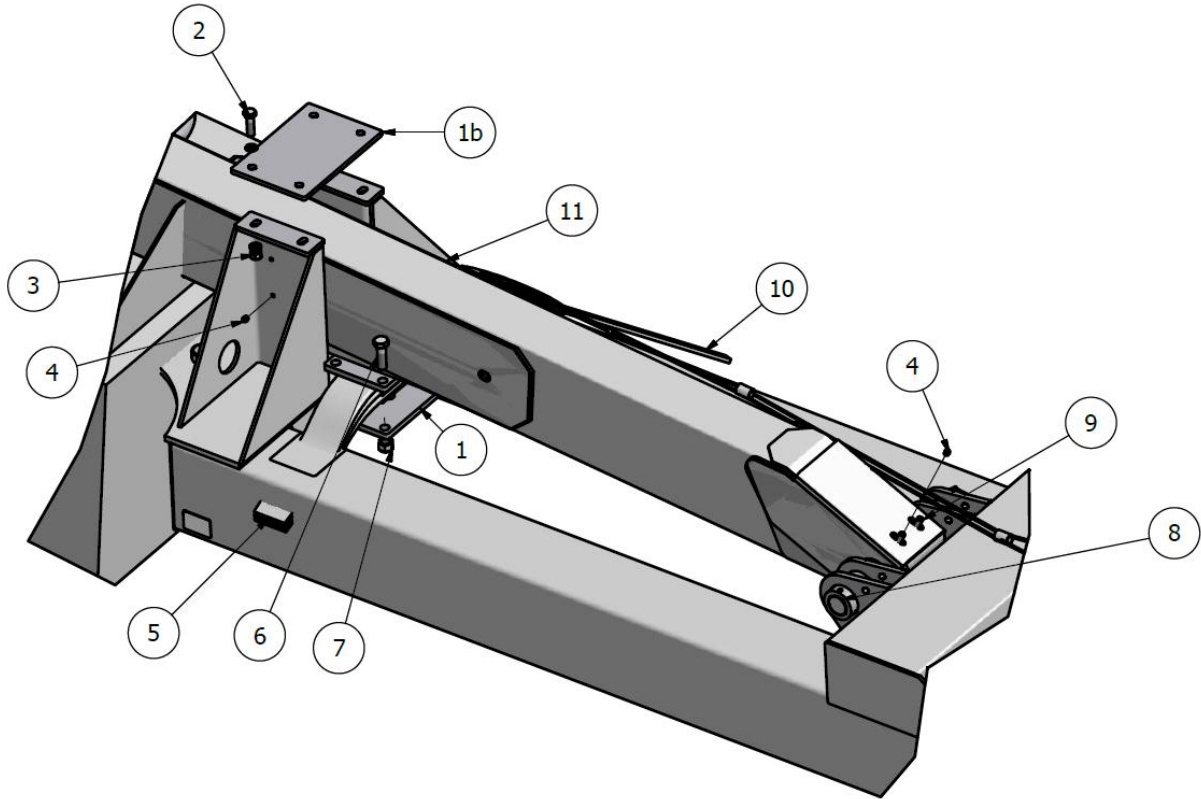
**8.2 Back Door Assembly (24")**



Item No:	Description	Part Number
1	6" Heavy Duty Gate Valve	ART5F2/51 6"
2	O-Ring	ART6F-6-10
3	Rear Door Seal	ABY2170-44X25MM
4	Door Closing Hook	ABY2179
5	Ring Nut	Ring Nut M20
6	M12x30	DIN 931-1 - M12 x 30
7	M12 Lock Nut	DIN985- M12
8	Pin For Back Door	ABY9331-P
9	4mm R-Clip	CLP3553

## 8.0 Replacement Parts (Con'd)

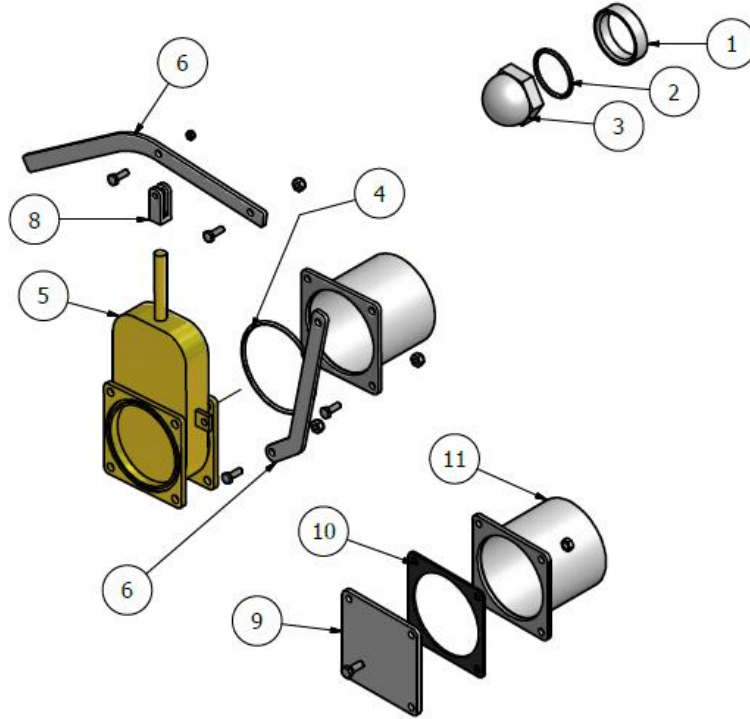
### 8.3 Chassis Parts



Item No:	Description	Part Number
1	Spring Plate	ABY4356200TP
1b	Cross Plate	ABY4356200BP
2	M16x40	DIN913-1-16x40
3	M16 Lock Nut	DIN085-M16
4	Grease Nipple	NIP1/8X180
5	Parabolic Spring	ABY4356200
6	M20x120	DIN982-M20X120 12.9
7	M20 Lock Nut	DIN085-M20
8	Pivot Pin	ABY3523B
9	Grease Pipe	ABY3528
10	Handbrake Lever	ABY3618
11	Sprung Drawbar	-

**8.0 Replacement Parts (Con'd)**

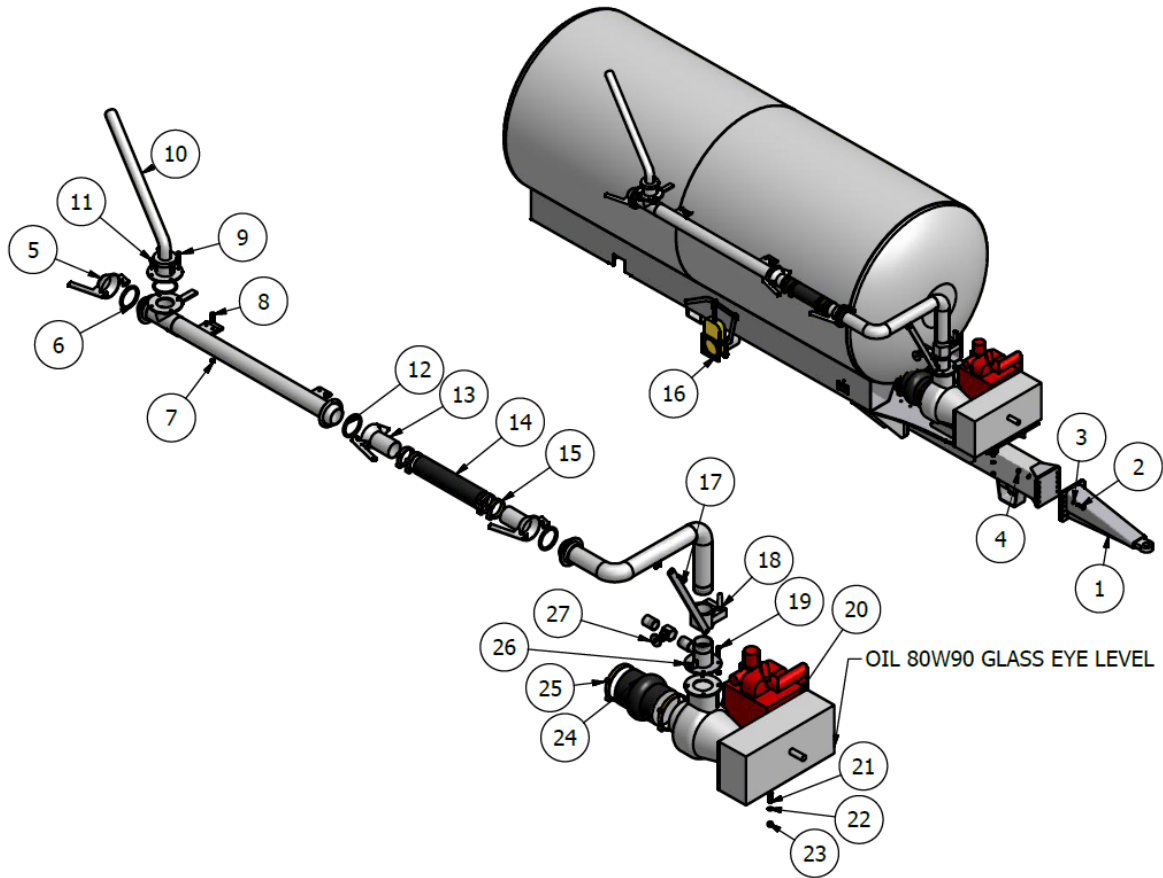
**8.4 Additional Parts**



Item No:	Description	Part Number
1	3" Treaded Sleeve	ABY2156-3
2	O-Ring	ABY2154-3
3	Glass Eye	ABY2152-3
4	O-Ring	ART6F-6-10
5	6" Gate Valve	ART7F2-6
6	Manual Handles	ABY9135
8	Clevis	ART5-6-9
9	Rubber Flange	ABY2080
10	Blank Off Plate	ABY2080/1
11	Flanged sleeve	ABY2085



**8.0 Replacement Parts (Con'd)**  
**8.5 Centivac System**



Item No:	Description	Part Number
1	Centivac Bolt On Hitch	-
2	M16x60 bolt	DIN931-1-M16x60 12.9 Grade
3	M16 Flat Washer	DIN125A-M16
4	M16 Lock Nut	DIN985-M16 12.9 Grade
5	100mm Female Plug	ABY2554-100
6	Rubber O-Ring	ABY2620-100
8	M12x35	DIN 933-M12x35
9	M12x40	DIN933-M12x40
10	Rain Gun	ABYJET99H
11	M12x35	DIN 933-M12x35
12	Rubber O-Ring	ABY2620-100
13	100mm Female Fitting	ABY2573-100
14	100mm Trap Hose	HOS6031-100

Item No:	Description	Part Number
15	Clip 113-121mm	CLP113-121
16	6" Gate Valve	ART7F2-6
17	M12x35	DIN 933-M12x35
18	4" Gate Valve	ART3-4
19	M12x35	DIN 933-M12x35
20	Garda Pump	GRDPUMP
21	M16x55 bolt	DIN933-M16x55
22	M16 Flat Washer	DIN125A-M16
23	M16 Lock Nut	DIN985-M16
24	8" Rubber Coupling	ABYBP1101/H
25	Clip 214-226mm	CLP214-226
26	Flange Fitting for Centivac	ABY2635F/100-50
27	2" Gate Valve	ABY2092-2



**ABBEY**  
MACHINERY

*since 1947*

**8.0 Replacement Parts (Con'd)**

**8.6 Manual & Hydraulic Change Over**

**Manual Activating Handle to suit All MEC Pumps  
Sold in Kit form only**



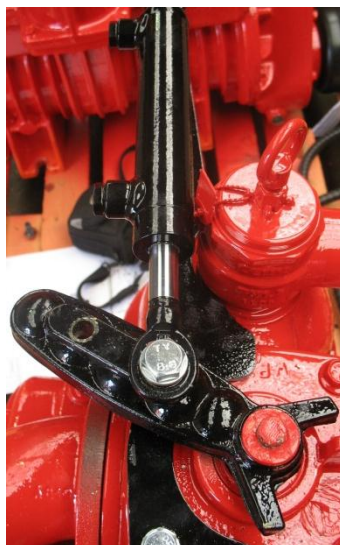
**Part No: ABY9180**

---



**Part No: ABY9160 (10,000/12,000)  
Part No: ABY9140 (MEC Pumps)**

---



**Part No: ABY9160-CL (MEC Pumps)**

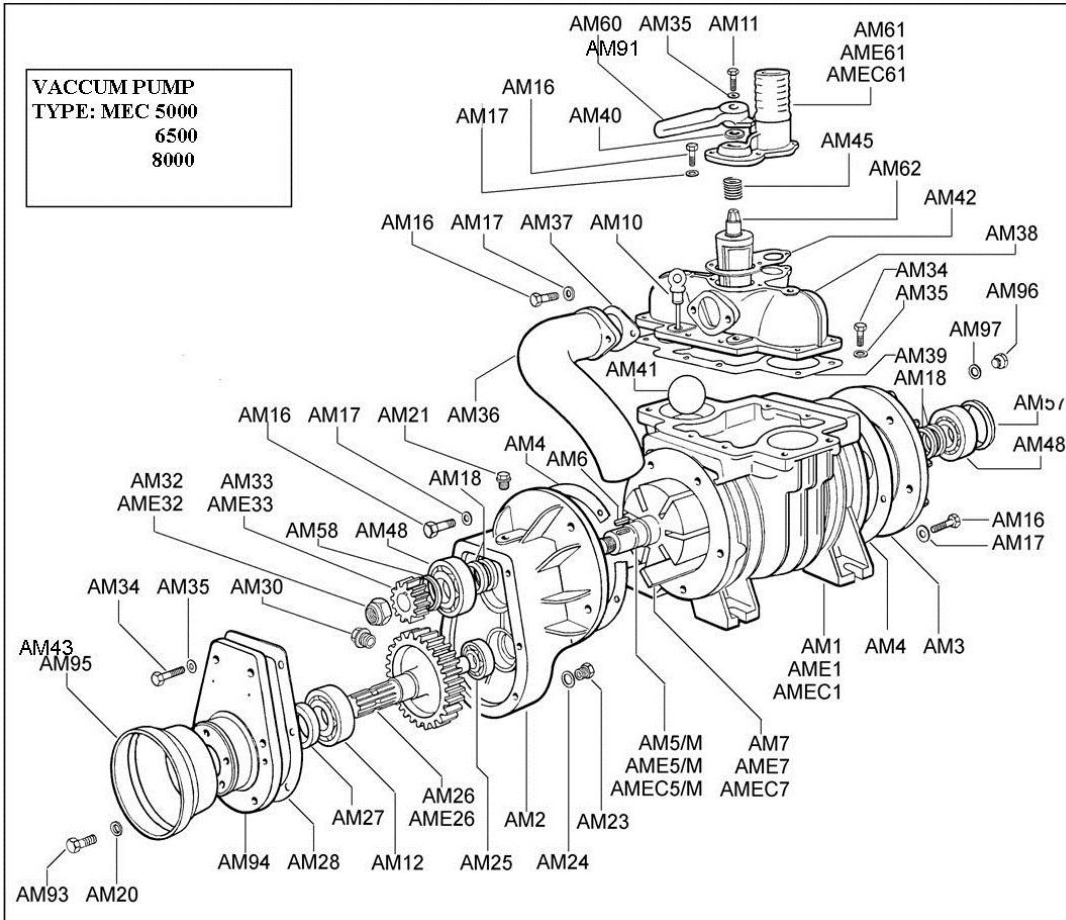


**ABBEY**  
MACHINERY

since 1947

**8.0 Replacement Parts (Con'd)**

**8.7 Vacuum Pumps**



SECTION 1	
CODE	DESCRIPTION
MECAM1	"BATTIONI" MEC 5000 PUMP ROTOR HOUSING
MECAM2	"BATTIONI" MEC PUMP GEARBOX HOUSING
MECAM3	"BATTIONI" MEC PUMP REAR FLANGE
MECAM3/P	"BATTIONI" MEC PUMP FRONT FLANGE
MECAM4	"BATTIONI" MEC PUMP FLANGE GASKET
MECAM5/H	"BATTIONI" MEC 5000 PUMP ROTOR (HYD)
MECAM5/M	"BATTIONI" MEC 5000 PUMP ROTOR
MECAM6	"BATTIONI" MEC PUMP DRIVE ROTOR KEY
MECAM8	"BATTIONI" MEC PUMP HOSE NIPPLE
MECAM9	"BATTIONI" MEC PUMP ALLEN SCREW (HANDLE)
MECAM10	"BATTIONI" MEC PUMP OIL DIPSTICK
MECAM12	"BATTIONI" MEC PUMP BEARING (6307)
MECAM13	"BATTIONI" MEC PUMP REAR COVER GASKET
MECAM14	"BATTIONI" MEC PUMP REAR SUPPORT COVER
MECAM15	"BATTIONI" MECPUMP REARCOVER GREASE NPPL
MECAM18	"BATTIONI" MEC PUMP OIL SEAL 48X62X8MM
MECAM21	"BATTIONI" MEC PUMP 3/8" PLASTIC OILPLUG
MECAM24	"BATTIONI" MEC ALUMINIUM WASHER 10X16MM
MECAM25	"BATTIONI" MEC PUMP BEARING (6304)
MECAM26	"BATTIONI" MEC PUMP GEAR Z-55 (5000)
MECAM27	"BATTIONI" MEC PUMP OIL SEAL 35X62X10MM



### 8.0 Replacement Parts (Con'd)

CODE	DESCRIPTION	
MECAM29	"BATTIONT" MECPUMP FRONT G/BOX COVER OLD	
MECAM30	"BATTIONT" MEC PUMP OIL INSPECTION PLUG	
MECAM31	"BATTIONT" MEC PUMP HOSE COUPLER	
MECAM32	"BATTIONT" MEC PUMP 24x2MM LOCKNUT	
MECAM33	"BATTIONT" MEC PUMP GEAR Z-21 (5000)	
MECAM36	"BATTIONT" MEC PUMP EXHAUST PIPE	
MECAM37	"BATTIONT" MEC PUMP EXHAUST GASKET	
MECAM38	"BATTIONT" MEC PUMP HEAD UNIT	
MECAM39	"BATTIONT" MEC PUMP HEAD GASKET	
MECAM40	"BATTIONT" MEC PUMP OILSEAL 30x40x7MM	
MECAM41	"BATTIONT" MEC PUMP TRAP BALL	
MECAM42	"BATTIONT" MEC PUMP HOSE COUPLER GASKET	
MECAM43	"BATTIONT" MEC PUMP PTO GUARD (OLD)	
MECAM45	"BATTIONT" MEC PUMP COMPRESSION SPRING	
MECAM46	"BATTIONT" MEC PUMP RUBBER HOSE 210MM	
MECAM47	"BATTIONT" MEC PUMP VALVE	
MECAM48	"BATTIONT" MEC PUMP BEARING (6208)	
MECAM49	"BATTIONT" PUMP FRONT COVER GREASE NIPP.	
MECAM52	"BATTIONT" MEC PUMP ROTOR SHAFT KEY	
MECAM53	"BATTIONT" MEC PUMP FRONT SHAFT SPACER	
MECAM54	"BATTIONT" MEC PUMP SMALL FRONT COVER	
MECAM55	"BATTIONT" PUMP ROTOR SHAFT BEARING 6207	
MECAM57	"BATTIONT" MEC PUMP SPACER RING 80x70x5	
MECAM58	"BATTIONT" MEC PUMP SPACER RING 50x40x5	
MECAM60	"BATTIONT" MEC PUMP SELECTOR HANDLE	
MECAM61	"BATTIONT" MEC PUMP HOSE COUPLER 60(NEW)	
MECAM62	"BATTIONT" MEC PUMP SELECTOR VALVE	
MECAM77	"BATTIONT" DIRECT DRIVE PUMP COUPLING	
MECAM80	"BATTIONT" MEC PUMP OIL SEAL 55X68X8MM	
MECAM81	"BATTIONT" MEC HYDRAULIC MOTOR SUPPORT	
MECAM87	"BATTIONT" DIRECT DRIVE PUMP COUPLING	
MECAM91	"BATTIONT" MEC HYDRAULIC ACTIVTING HANDLE	
MECAM94	"BATTIONT" MECPUMP FRONT G/BOX COVER	
MECAM95	"BATTIONT" MEC PUMP PTO GUARD (21902)	
MECAM96	"BATTIONT" MEC PUMP IRON PLUG	
MECAM97	"BATTIONT" MEC ALUMINIUM WASHER 16X20	
MECAME1	"BATTIONT" MEC 8000 PUMP ROTOR HOUSING	
MECAME5/H	"BATTIONT" MEC 8000 PUMP ROTOR (HYD)	
MECAME5/M	"BATTIONT" MEC 8000 PUMP - DRIVE ROTOR	
MECAME26	"BATTIONT" MEC PUMP GEAR Z53 (6500,8000)	
MECAME31	"BATTIONT" MEC PUMP LARGE HOSE COUPLER	
MECAME32	"BATTIONT" MEC PUMP - 27x2MM LOCKNUT	
MECAME33	"BATTIONT" MEC PUMP GEAR Z23 (6500&8000)	
MECAME61	"BATTIONT" MEC PUMP HOSE COUPLER 80(NEW)	
MECAME82	"BATTIONT" MEC HYD MOTOR TRANS COUPLING	
MECAMEC1	"BATTIONT" MEC 6500 PUMP ROTOR HOUSING	
MECAMEC5/M	"BATTIONT" MEC 6500 PUMP - DRIVE ROTOR	
MECAMEC31	"BATTIONT" MEC PUMP 80MM HOSE COUPLER	
MECAMEC32	"BATTIONT" MEC PUMP - NUT	
MECAMEC61	"BATTIONT" MEC PUMP HOSE COUPLER 76	
MECHOSE	"BATTIONT" MEC PUMP - OIL PUMP HOSE	
MECPUMP	"BATTIONT" MEC PUMP - OIL PUMP COMPLETE	
BPSSEPUMP	"BATTIONT" BPSE PUMP - OIL PUMP COMPLETE	

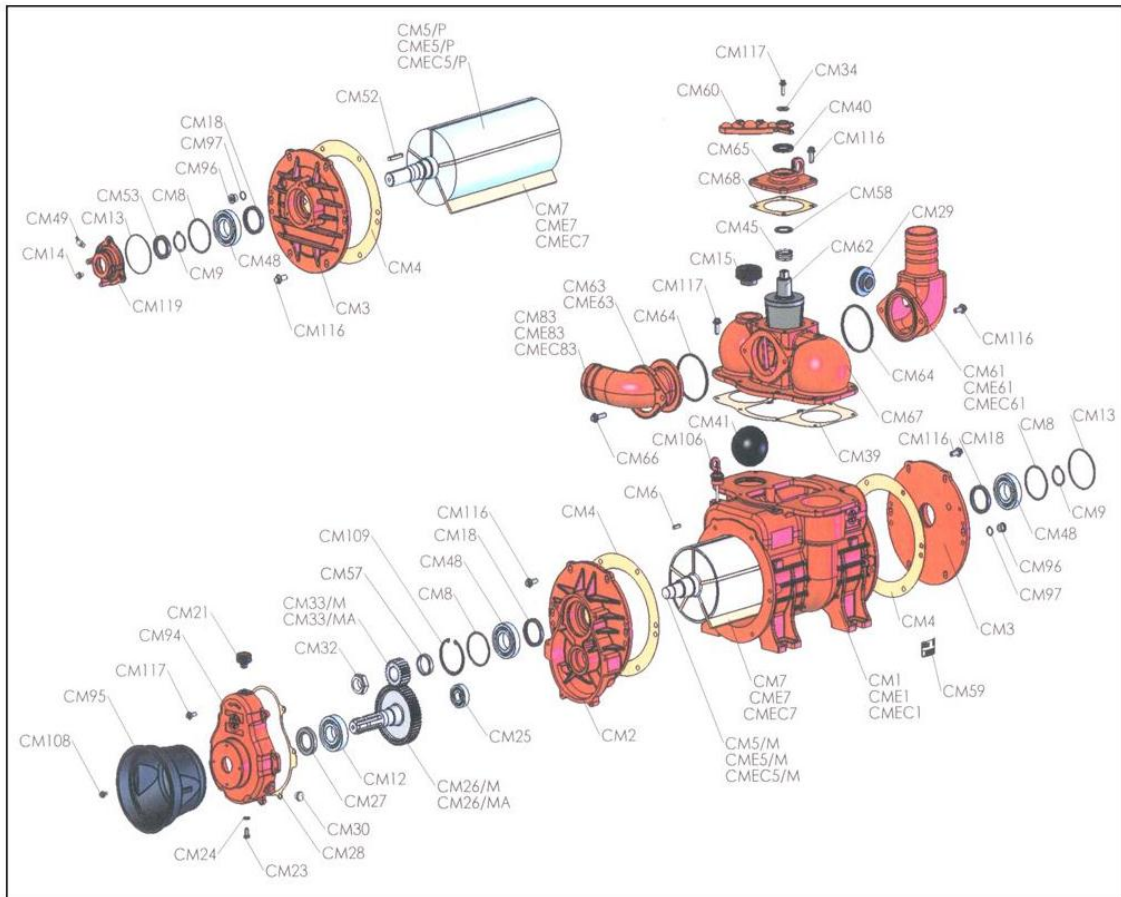


**ABBEY**  
MACHINERY

since 1947

**8.0 Replacement Parts (Con'd)**

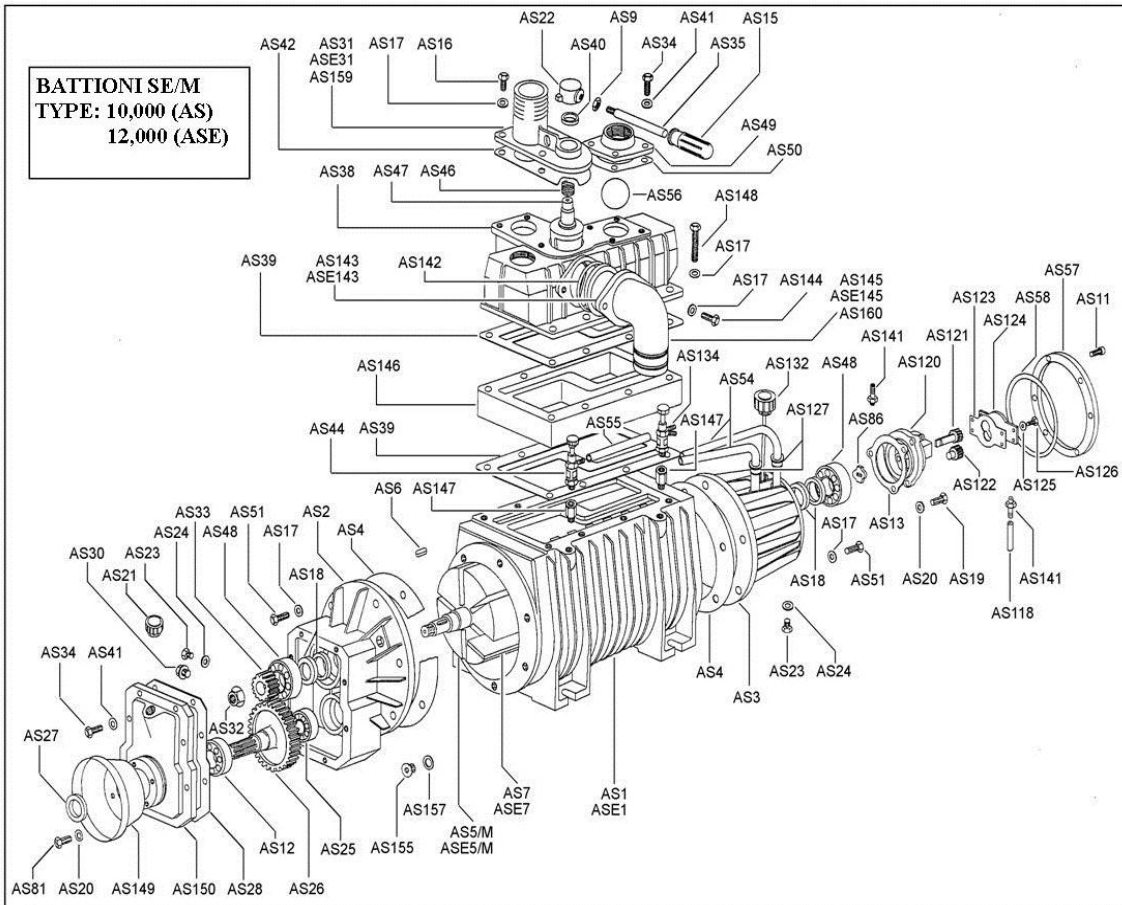
VACCUM PUMP  
TYPE: MEC 9000  
11000  
13500



**8.0 Replacement Parts (Con'd)**

CODE	DESCRIPTION	
MECCM1	"BATTIONI" MEC 9000 PUMP ROTOR HOUSING	
MECCME1	"BATTIONI" MEC 11000 PUMP ROTOR HOUSING	
MECCMEC1	"BATTIONI" MEC 13500 PUMP ROTOR HOUSING	
MECCM2	"BATTIONI" MEC PUMP GEARBOX HOUSING	
MECCM3	"BATTIONI" MEC PUMP REAR FLANGE	
MECCM4	"BATTIONI" MEC PUMP FLANGE GASKET	
MECCM5/M	"BATTIONI" MEC 9000 PUMP ROTOR	
MECCME5/M	"BATTIONI" MEC 11000 PUMP ROTOR	
MECCMEC5/M	"BATTIONI" MEC 13500 PUMP ROTOR	
MECCM6	"BATTIONI" MEC PUMP DRIVE ROTOR KEY	
MECCM7	"BATTIONI" MEC 9000 PUMP VANES (7 VANE)	
MECCME7	"BATTIONI" MEC 11000 PUMP VANES (7 VANE)	
MECCMEC7	"BATTIONI" MEC 135000 PUMP VANES (7 VANE)	
MECCM8	"BATTIONI" MEC PUMP O-RING 80MM DIA	
MECCM9	"BATTIONI" MEC PUMP SEEGER RING 40MM DIA	
MECCM12	"BATTIONI" MEC PUMP BEARING (6307)	
MECCM13	"BATTIONI" MEC PUMP SEAL RING	
MECCM15	"BATTIONI" MEC PUMP PLUG	
MECCM18	"BATTIONI" MEC PUMP OIL SEAL (48X62X10)	
MECCM21	"BATTIONI" MEC PUMP OIL PLUG	
MECCM25	"BATTIONI" MEC PUMP BEARING (6304)	
MECCM26/M	"BATTIONI" MEC PUMP GEAR 53 TOOTH	
MECCM27	"BATTIONI" MEC PUMP OIL SEAL 35X62X10MM	
MECCM28	"BATTIONI" MEC PUMP FRONT COVER GASKET	
MECCM29	"BATTIONI" MEC PUMP PLUG	
MECCM30	"BATTIONI" MEC PUMP OIL LEVEL PLUG	
MECCM32	"BATTIONI" MEC PUMP M27 LOCK NUT	
MECCM33/M	"BATTIONI" MEC PUMP GEAR 23 TOOTH	
MECCM34	"BATTIONI" MEC PUMP WASHER 8X23X4	
MECCM39	"BATTIONI" MEC PUMP MANIFOLD GASKET	
MECCM40	"BATTIONI" MEC PUMP OIL SEAL (30X50X7)	
MECCM41	"BATTIONI" MEC PUMP TRAP BALL 90MM DIA	
MECCM45	"BATTIONI" MEC PUMP SPRING	
MECCM48	"BATTIONI" MEC PUMP BEARING (6208)	
MECCM49	"BATTIONI" MEC PUMP LUBRICATOR	
MECCM59	"BATTIONI" MEC PUMP THERMO LABEL	
MECCME61	"BATTIONI" MEC PUMP HOSE COUPLER 80MM	
MECCM62	"BATTIONI" MEC PUMP SELECTOR VALVE	
MECCM63	"BATTIONI" MEC PUMP SUPPORT FLANGE 80MM	
MECCM64	"BATTIONI" MEC PUMP SEAL RING 189MM	
MECCM65	"BATTIONI" MEC PUMP COVER	
MECCM67	"BATTIONI" MEC PUMP MANIFOLD	
MECCM68	"BATTIONI" MEC PUMP MANIFOLD COVER GASKET	
MECCME83	"BATTIONI" MEC EXHAUST 80MM	
MECCM95	"BATTIONI" MEC PUMP PTO GUARD (21902)	
MECCM96	"BATTIONI" MEC PUMP IRON PLUG	
MECCM97	"BATTIONI" MEC PUMP ALUM WASHER 16X20X1.5	
MECCM106	"BATTIONI" MEC PUMP OIL LEVEL ROD	

### 8.0 Replacement Parts (Con'd)



#### SECTION 1

CODE	DESCRIPTION
BPSAS1	"BATTIONI" SE 10000 PUMP ROTOR HOUSING
BPSAS2	"BATTIONI" PUMP FRONT GEARBOX HOUSING
BPSAS3	"BATTIONI" PUMP REAR GEARBOX HOUSING
BPSAS4	"BATTIONI" PUMP REAR HOUSING GASKET
BPSAS5	"BATTIONI" SE 10000 DRIVE ROTOR (4 VANE)
BPSAS5/M	"BATTIONI" SE 10000 DRIVE ROTOR (6 VANE)
BPSAS6	"BATTIONI" PUMP ROTOR SHAFT KEY (8X7X30)
BPSAS10	"BATTIONI" PUMP SMALL GLASS
BPSAS11	"BATTIONI" PUMP BACK COVER STUD-M6X16MM
BPSAS12	"BATTIONI" PUMP FRONT G/BOX BEARING-6308
BPSAS15	"BATTIONI" PUMP HANDLE KNOB
BPSAS16	"BATTIONI" PUMP TOP HOSE COUPLER STUD
BPSAS18	"BATTIONI" PUMP ROTOR SEALS
BPSAS19	"BATTIONI" PUMP REAR COVER STUD
BPSAS21	"BATTIONI" PUMP OIL FILL PLUG
BPSAS22	"BATTIONI" PUMP ACTIVATING HANDLE END
BPSAS23	"BATTIONI" PUMP OIL DRAIN STUD
BPSAS25	"BATTIONI" PUMP GEARBOX BEARING 6306
BPSAS26	"BATTIONI" PUMP FRONT SHAFT GEAR (Z52)
BPSAS27	"BATTIONI" PUMP OIL SEAL (40x62x10)
BPSAS28	"BATTIONI" PUMP FRONT FLANGE GASKET
BPSAS29	"BATTIONI" PUMP GEARBOX FRONT FLANGE
BPSAS30	"BATTIONI" PUMP SIGHT GLASS
BPSAS31	"BATTIONI" PUMP TOP HOSE COUPLER (M80)
BPSAS32	"BATTIONI" PUMP TOP SHAFT LOCK NUT
BPSAS33	"BATTIONI" PUMP SMALL FRONT GEAR (Z-26)

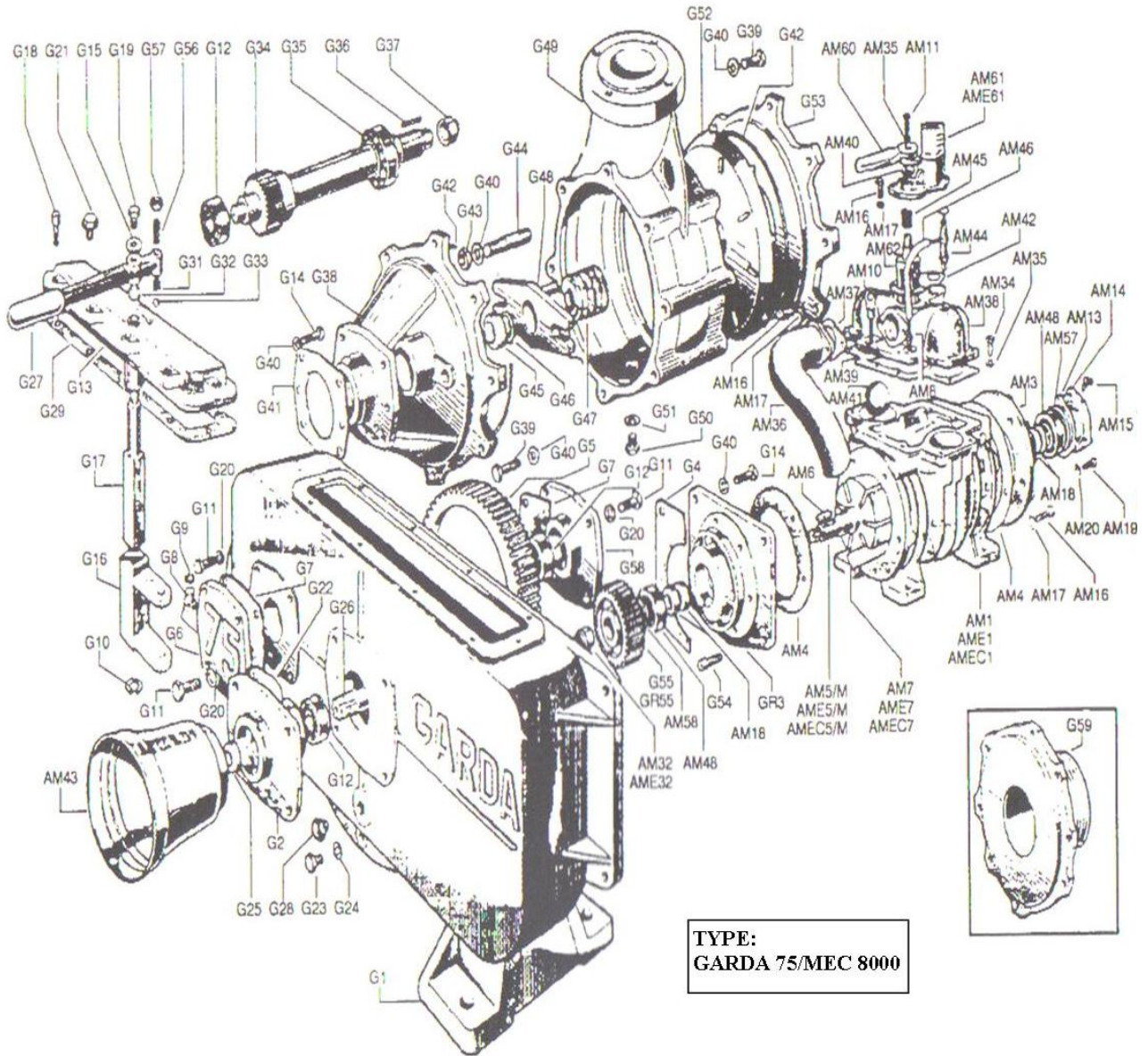
**8.0 Replacement Parts (Con'd)**

CODE	DESCRIPTION	
BPSAS36	"BATTIONI" PUMP EXHAUST OLD TYPE	
BPSAS36NT	"BATTIONI" PUMP EXHAUST NEW TYPE	
BPSAS37	"BATTIONI" PUMP EXHAUST GASKET	
BPSAS38	"BATTIONI" PUMP HEAD	
BPSAS39	"BATTIONI" PUMP HEAD GASKET	
BPSAS40	"BATTIONI" PUMP ACT HANDLE SEAL(35 50 7)	
BPSAS41	"BATTIONI" PUMP - M8 FLAT WASHER	
BPSAS42	"BATTIONI" PUMP HOSE COUPLER - GASKET	
BPSAS46	"BATTIONI" PUMP ACTIVATING HANDLE FITTIN	
BPSAS47	"BATTIONI" REVERSING GEAR	
BPSAS48	"BATTIONI" PUMP GEARBOX BEARING (6309)	
BPSAS49	"BATTIONI" PUMP TRAP BALL COVER	
BPSAS50	"BATTIONI" PUMP TRAP COVER GASKET	
BPSAS54	"BATTIONI" PUMP RUBBER HOSE - 340MM	
BPSAS55	"BATTIONI" PUMP RUBBER HOSE - 200MM	
BPSAS56	"BATTIONI" PUMP TRAP BALL	
BPSAS57	"BATTIONI" PUMP REAR HOUSING COVER	
BPSAS57-O	"BATTIONI" PUMP REAR HOUSING COVER (OLD)	
BPSAS58	"BATTIONI" PUMP REAR SHAFT SUPPORT ORING	
BPSAS118	"BATTIONI" PUMP RUBBER HOSE - 120MM	
BPSAS119	"BATTIONI" PUMP OIL HOSE CONNECTION	
BPSAS120	"BATTIONI" PUMP REAR SUPPORT COVER	
BPSAS121	"BATTIONI" PUMP LARGE REAR GEAR	
BPSAS122	"BATTIONI" PUMP SMALL REAR GEAR	
BPSAS123	"BATTIONI" PUMP OIL PUMP GASKET	
BPSAS124	"BATTIONI" PUMP REAR COVER	
BPSAS127	"BATTIONI" PUMP RUBBER GROMMET	
BPSAS127/S	"BATTIONI" PUMP SMALL RUBBER GROMMET	
BPSAS131	"BATTIONI" PUMP RUBBER REDUCER	
BPSAS132	"BATTIONI" PUMP OIL DIP STICK	
BPSAS133	"BATTIONI" PUMP ACTIVATING HANDLE	
BPSAS134	"BATTIONI" PUMP OILER VALVE	
BPSAS141	"BATTIONI" PUMP CONNECTOR	
BPSAS142	"BATTIONI" PUMP SEAL RING	
BPSAS143	"BATTIONI" PUMP EXHAUST BRACKET	
BPSAS145	"BATTIONI" PUMP REVOLVING ELBOW (10000)	
BPSAS146	"BATTIONI" PUMP MANIFOLD SPACER	
BPSAS147	"BATTIONI" PUMP DRAIN COCK SPACER	
BPSAS149	"BATTIONI" PUMP SHAFT GUARD (21902)	
BPSAS150	"BATTIONI" PUMP GEARBOX COVER	
BPSAS155	"BATTIONI" PUMP IRON PLUG	
BPSAS159	"BATTIONI" PUMP MANIFOLD COVER	
BPSAS160	"BATTIONI" PUMP REVOLVING ELBOW (M76)	
BPSASE1	"BATTIONI" PUMP SE 12000 ROTOR HOUSING	
BPSASE5	"BATTIONI" SE 12000 DRIVE ROTOR (4 VANE)	
BPSASE5/M	"BATTIONI" SE 12000 DRIVE ROTOR (6 VANE)	
BPSASE31	"BATTIONI" PUMP TOP HOSE COUPLER (M100)	
BPSASE36	"BATTIONI" PUMP EXHAUST OLD TYPE	
BPSASE36NT	"BATTIONI" PUMP EXHAUST NEW TYPE	
BPSASE87	"BATTIONI" PUMP REAR SUPPORT COVER	
BPSASE143	"BATTIONI" PUMP EXHAUST BRACKET	
BPSASE145	"BATTIONI" PUMP REVOLVING ELBOW (12000)	



**8.0 Replacement Parts (Con'd)**

**8.9 Garda Pump with Gland Seal**



TYPE:  
GARDA 75/MEC 8000

SECTION 1	
CODE	DESCRIPTION
ABY2250	"GARDA" RUBBER JOINER FOR GARDA PUMP
GRDG1	"GARDA" PUMP FRONT HOUSING
GRDG2	"GARDA" PUMP FRONT SHAFT COVER (OLD)
GRDG3	"GARDA" PUMP FRONT FLANGE (COVER)
GRDG4	"GARDA" PUMP FRONT FLANGE GASKET
GRDG5	"GARDA" PUMP LARGE GEAR Z-97 (M3)
GRDG6	"GARDA" PUMP IMPELLER SHAFT FRONT COVER
GRDG7	"GARDA" PUMP REAR FLANGE GASKET
GRDG8	"GARDA" PUMP FRONT FLANGE GREASE NIPPLE
GRDG9	"GARDA" PUMP CIRCLIP
GRDG12	"GARDA" PUMP DRIVE SHAFT BEARING (6307)
GRDG13	"GARDA" PUMP TOP HOUSING COVER
GRDG15	"GARDA" PUMP WASHER - M8

### 8.0 Replacement Parts (Con'd)

GRDG16	'GARDA" PUMP HANDLE - ACTIVATOR	
GRDG17	'GARDA" PUMP HANDLE EXTENSION	
GRDG18	'GARDA" PUMP SCREW - M8 X 35MM	
GRDG19	'GARDA" PUMP SCREW - M8 X 20MM	
GRDG21	'GARDA" PUMP TOP HOUSING COVER STUD	
GRDG22	'GARDA" PUMP HOUSING SHAFT COVER GASKET	
GRDG25	'GARDA" PUMP DRIVE OIL SEAL - 35X62X10	
GRDG26	'GARDA" PUMP MAIN DRIVE SHAFT	
GRDG27	'GARDA" PUMP ACTIVATING HANDLE	
GRDG28	'GARDA" PUMP SIGHT GLASS	
GRDG29	'GARDA" PUMP HOUSING TOP COVER GASKET	
GRDG30	'GARDA" PUMP ALLEN SCREW	
GRDG31	'GARDA" PUMP SPRING	
GRDG32	'GARDA" PUMP OIL SEAL - 19X27X6	
GRDG33	'GARDA" PUMP BALL	
GRDG34	'GARDA" PUMP IMPELLER DRIVE SHAFT	
GRDG35	'GARDA" PUMP SHAFT BEARING (4210-A)	
GRDG36	'GARDA" PUMP IMPELLER SHAFT KEY-8X7X50	
GRDG37	'GARDA" PUMP SHAFT SPACER BUSHING	
GRDG38	'GARDA" PUMP IMPELLER FRONT HOUSING	
GRDG41	'GARDA" PUMP IMPELLER HOUSING GASKET	
GRDG42	'GARDA" PUMP 320 X 3.53MM O-RING	
GRDG43	'GARDA" PUMP IMPELLER FR HOUSING NUT M12	
GRDG44	'GARDA" PUMP IMPELLER HOUS.-THREADED BAR	
GRDG45	'GARDA" PUMP OIL SEAL - 50x70x10MM	
GRDG46	'GARDA" PUMP OIL SEAL (H-187)	
GRDG47	'GARDA" PUMP GLAND PACKING	
GRDG48	'GARDA" PUMP CLAMPING BRACKET	
GRDG49	'GARDA" PUMP IMPELLER HOUSING	
GRDG50	'GARDA" DRAIN STOPPER GAS 1/4"	
GRDG52	'GARDA" PUMP IMPELLER	
GRDG53	'GARDA" PUMP REAR IMPELLER HOUSING	
GRDG54	'GARDA" PUMP ROTOR HOUSING COVER SCREW	
GRDG55	'GARDA" PUMP HOUSING 39 TOOTH GEAR (M28)	
GRDG55-50	'GARDA" PUMP HOUSING 50 TOOTH GEAR	
GRDG56	'GARDA" PUMP STOP DOWEL	
GRDG58	'GARDA" PUMP BACK COVER	
GRDG59	'GARDA" PUMP HOUSING	
GRDG98	'ABBEY" SEAL FOR GARDA PUMP	
GRDG99	'GARDA" PUMP NO.99 SHAFT FOR GARDA PUMP	
GRDG100	'GARDA" PUMP IMPELLER FRONT HOUSING	
GRDG102	'GARDA" PUMP HANDLE KNOB	
GRDG103	'GARDA" PUMP GEARBOX FRONT COVER	
GRDG106	'GARDA" PUMP PTO SHAFT GUARD (219000141)	
GRDAG55	'GARDA" PUMP HOUSING 45 TOOTH GEAR (M40)	
GRDGR55	'GARDA" PUMP HOUSING 39 TOOTH GEAR (M32)	

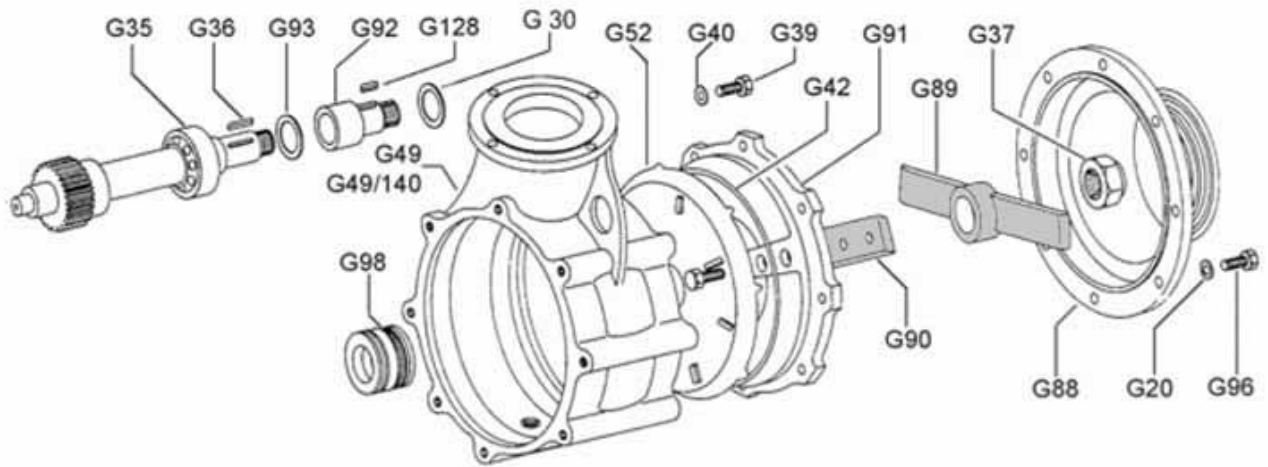






## 8.0 Replacement Parts (Con'd)

### Turbo Pump

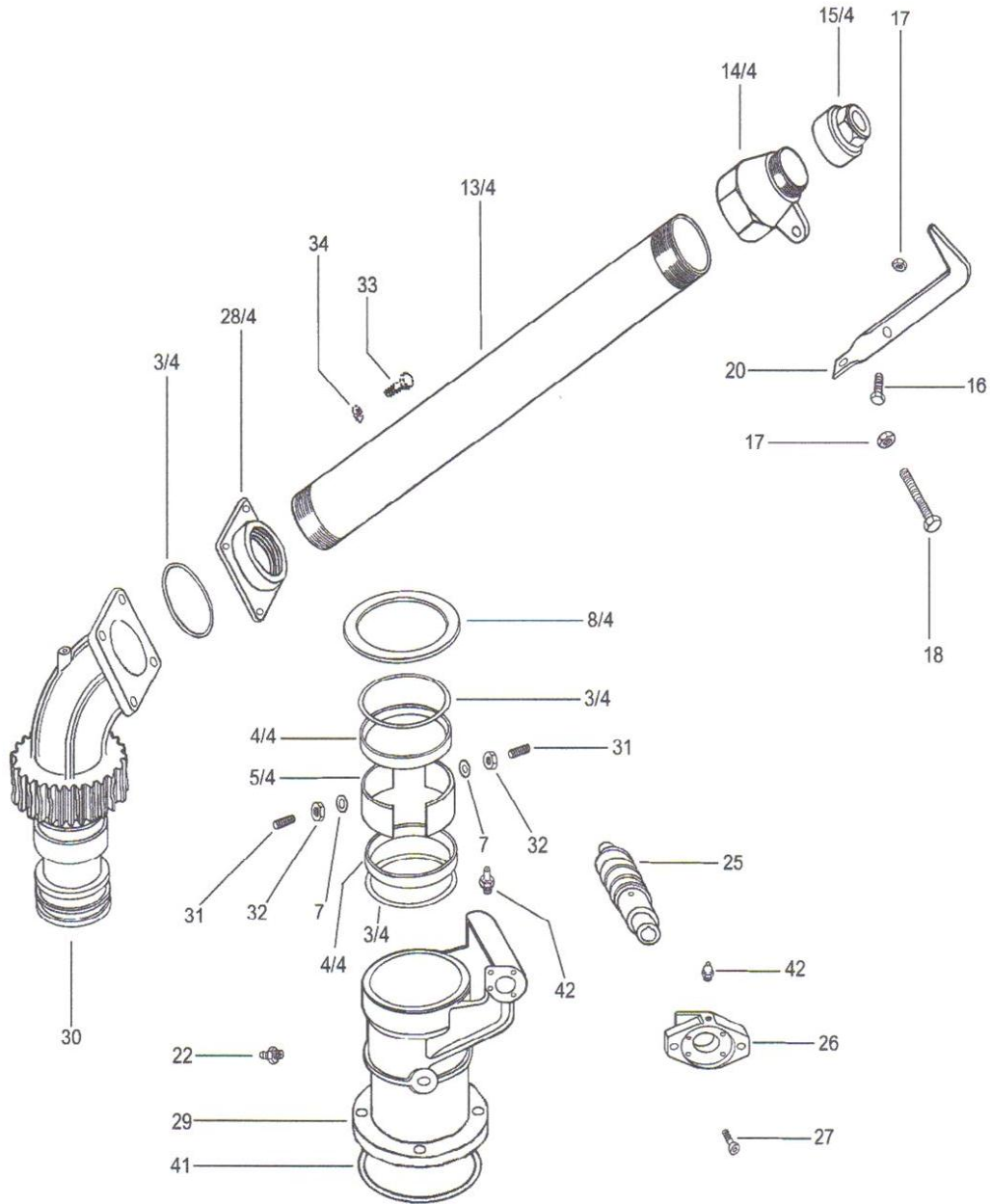


Part Number	Description
GRDG20	Smooth washer $\varnothing$ 10
GRDG30	Blank washer $\varnothing$ 30x56
GRDG35	Ball bearing
GRDG36	Key 8x7x50
GRDG37	Self-locking nut M 30x2
GRDG39	Screw M 12x30 TE
GRDG40	Smooth washer $\varnothing$ 12
GRDG42	Seal ring $\varnothing$ 298x3.53
GRDG49	Scroll GARDA 6500
GRDG49/140	Scroll GARDA 6500 - $\varnothing$ 140
GRDG52	Impeller GARDA 6500
GRDG88	Closing flange
GRDG89	Blade
GRDG90	Counter-blade
GRDG91	Blade-holder flange
GRDG92	Extension
GRDG93	Spacer
GRDG96	Screw M 10x30 TE 6
GRDG98	Centrifugal frontal mechanical seal



**8.0 Replacement Parts (Con'd)**

**HYDRAULIC RAIN GUN**



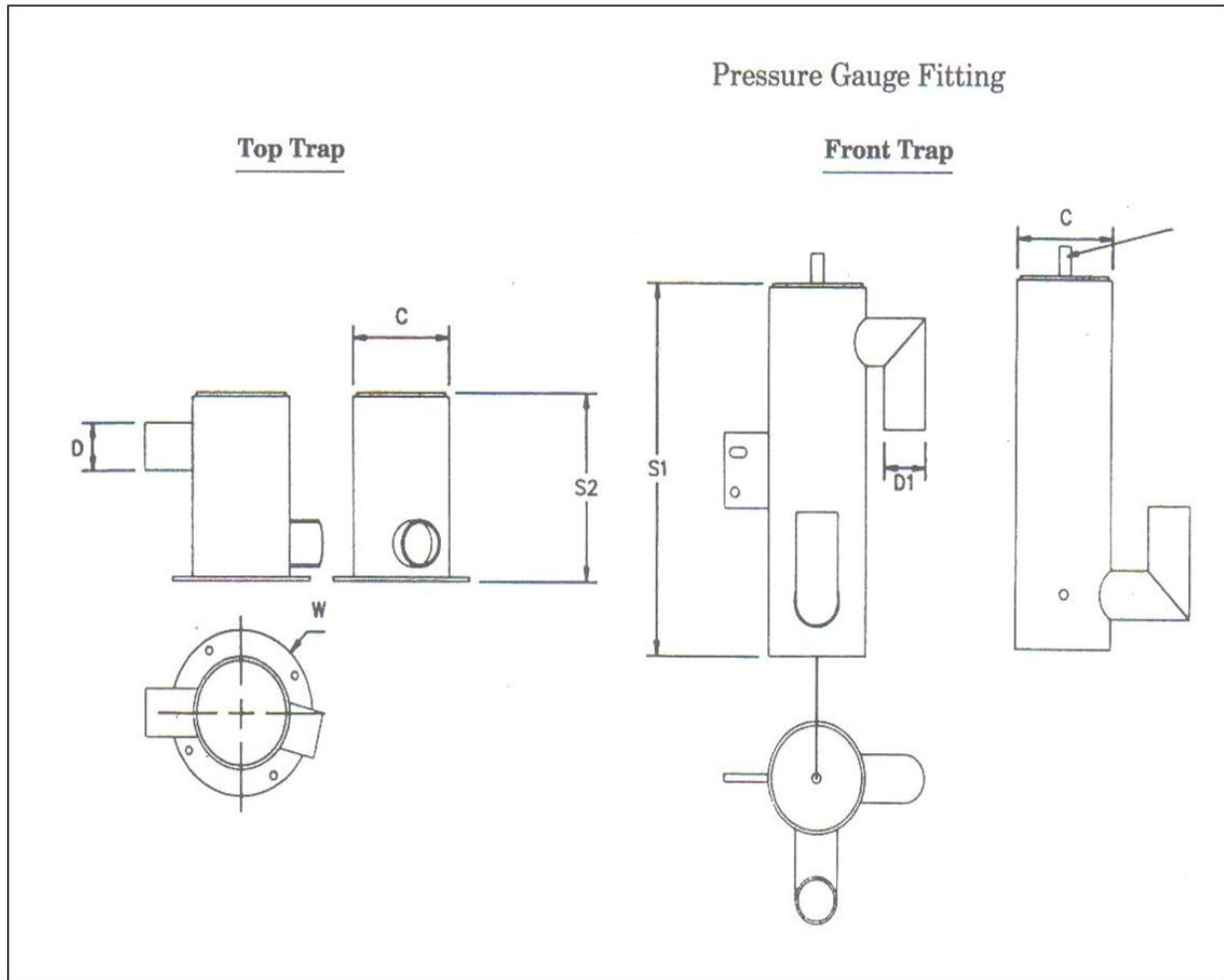
### 8.0 Replacement Parts (Con'd)

ABYJET1	"ABBEY" RAIN GUN FLANGED HOUSING	
ABYJET2	"ABBEY" RAIN GUN BASE BRACKET C/W COG	
ABYJET3/4	"ABBEY" RAIN GUN ORING FOR FLANGE	
ABYJET4/4	"ABBEY" RAIN GUN PLASTIC RING	
ABYJET5/4	"ABBEY" RAIN GUN CENTRE STEEL RING	
ABYJET7	"ABBEY" RAIN GUN WASHER M10x16	
ABYJET8/4	"ABBEY" RAIN GUN RUBBER SEAL	
ABYJET9	"ABBEY" RAIN GUN BRASS BUSHING	
ABYJET10	"ABBEY" RAIN GUN SPIRAL GEAR	
ABYJET11	"ABBEY" RAIN GUN SHAFT	
ABYJET11H	"ABBEY" RAIN GUN MANUAL HANDLE	
ABYJET13/4	"ABBEY" RAIN GUN 4" PIPE	
ABYJET14/4	"ABBEY" RAIN GUN 4" NOZZLE HOLDER	
ABYJET15/4	"ABBEY" RAIN GUN 4" NOZZLE	
ABYJET16	"ABBEY" RAIN GUN DEFLECTOR SCREW	
ABYJET17	"ABBEY" RAIN GUN DEFLECTOR NUT	
ABYJET18	"ABBEY" RAIN GUN DEFLECTOR ADJ.SCREW	
ABYJET20	"ABBEY" RAIN GUN SLURRY DEFLECTOR	
ABYJET21	"ABBEY" RAIN GUN KEY	
ABYJET22	"ABBEY" RAIN GUN GREASE NIPPLE	
ABYJET25	"ABBEY" RAIN GUN SPIRAL GEAR (HYDRAULIC)	
ABYJET26	"ABBEY" RAIN GUN SPIRAL GEAR BRACKET HYD	
ABYJET27	"ABBEY" RAIN GUN GEAR BRACKET BOLT	
ABYJET28/4	"ABBEY" RAIN GUN - 4" FLANGE	
ABYJET29	"ABBEY" MANUAL RAIN GUN - BASE PLATE	
ABYJET29H	"ABBEY" HYDRAULIC RAIN GUN - BASE PLATE	
ABYJET30	"ABBEY" RAIN GUN BASE BRACKET C/W COG	
ABYJET31	"ABBEY" RAIN GUN ALLEN STUD	
ABYJET32	"ABBEY" RAIN GUN SMALL NUT M10	
ABYJET33	"ABBEY" RAIN GUN FLANGE SCREW M10x25	
ABYJET34	"ABBEY" RAIN GUN FLANGE WASHER M10	
ABYJET35	"ABBEY" RAIN GUN SPIRAL GEAR (MANUAL)	
ABYJET36	"ABBEY" RAIN GUN SPIRAL GEAR BRACKET MAN	
ABYJET37	"ABBEY" RAIN GUN GEAR BRACKET BOLT	
ABYJET38	"ABBEY" RAIN GUN WASHER M6	
ABYJET39	"ABBEY" RAIN GUN BRASS WASHER	
ABYJET40	"ABBEY" HYDRAULIC RAIN GUN BASE PLATE	
ABYJET41	"ABBEY" RAIN GUN O-RING	
ABYJET42	"ABBEY" RAIN GUN LUBRICATOR	
ABYJET50	"ABBEY" RAIN GUN HYDRAULIC MOTOR	
ABYJET99	"ABBEY" MANUAL RAIN GUN KIT	
ABYJET99H	"ABBEY" HYDRAULIC RAINGUN KIT LESS MOTOR	
ABYBP2001/G	"ABBEY" RAIN GUN - 150MM SWIVEL JOINT 6"	
ABYBP2001/H	"ABBEY" RAIN GUN - 200MM SWIVEL JOINT 8"	



**8.0 Replacement Parts (Con'd)**

**8.10 Traps**



TOP TRAP					
PUMP	TANK	C	D1	S2	PART NO.
6500	900	140	60	235	ABY9017
8000	1100	140	80	235	ABY9021
	1300	140	80	235	ABY9021
	1600	140	80	235	ABY9021
	1600R	140	80	235	ABY9021
	2000	140	80	185	ABY9021
	2000R	140	80	185	ABY9021
	2250R	140	80	185	ABY9021
10000/	3000	156	100 or 80	285	ABY9050
	4000+	156	100 or 80	285	ABY9050

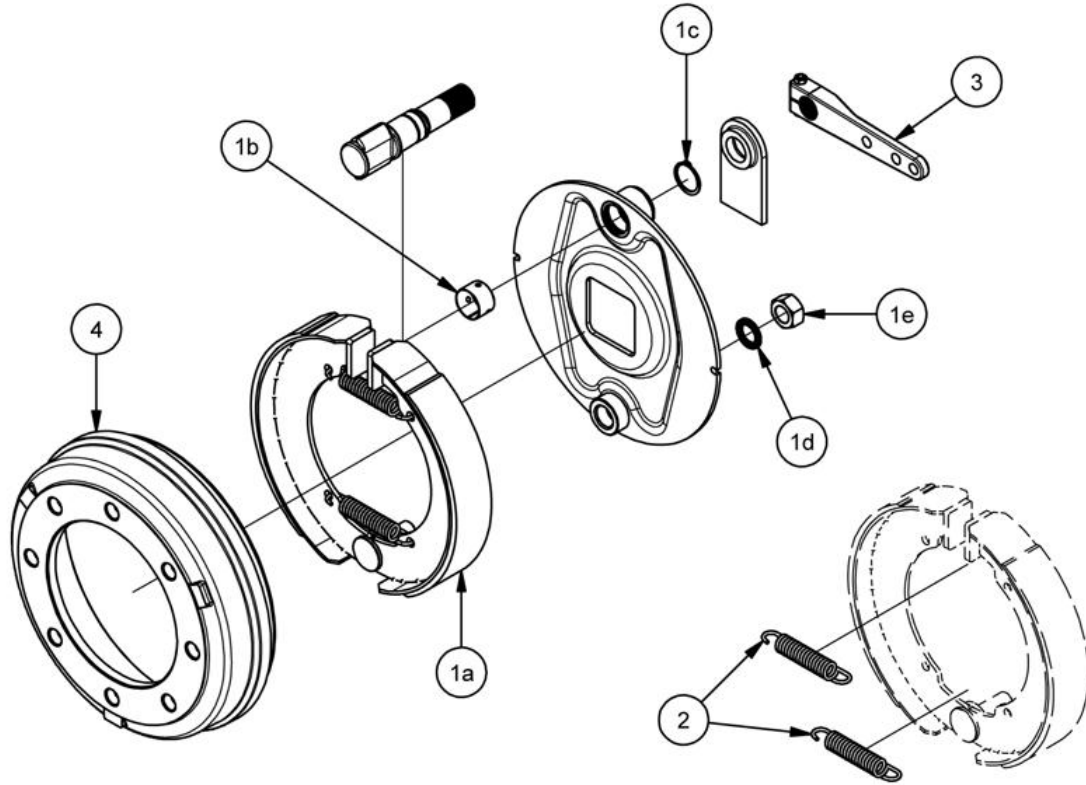
FRONT TRAP					
PUMP	TANK	C	D1	S1	PART NO.
6500	900	140	60	463	ABY9019
8000	1100	140	80	463	ABY9051
	1300	140	80	463	ABY9051
	1600	140	80	463	ABY9051
	1600R	140	80	463	ABY9051
	2000	140	80	565	ABY9051
	2000R	140	80	565	ABY9051
	2250R	140	80	565	ABY9051
10000/	3000	165	100 or 80	565	ABY9052
	4000+	165	100 or 80	565	ABY9052



**8.0 Replacement Parts (Con'd)**

**8.11 Axles**

**350X60 Braked Axel**

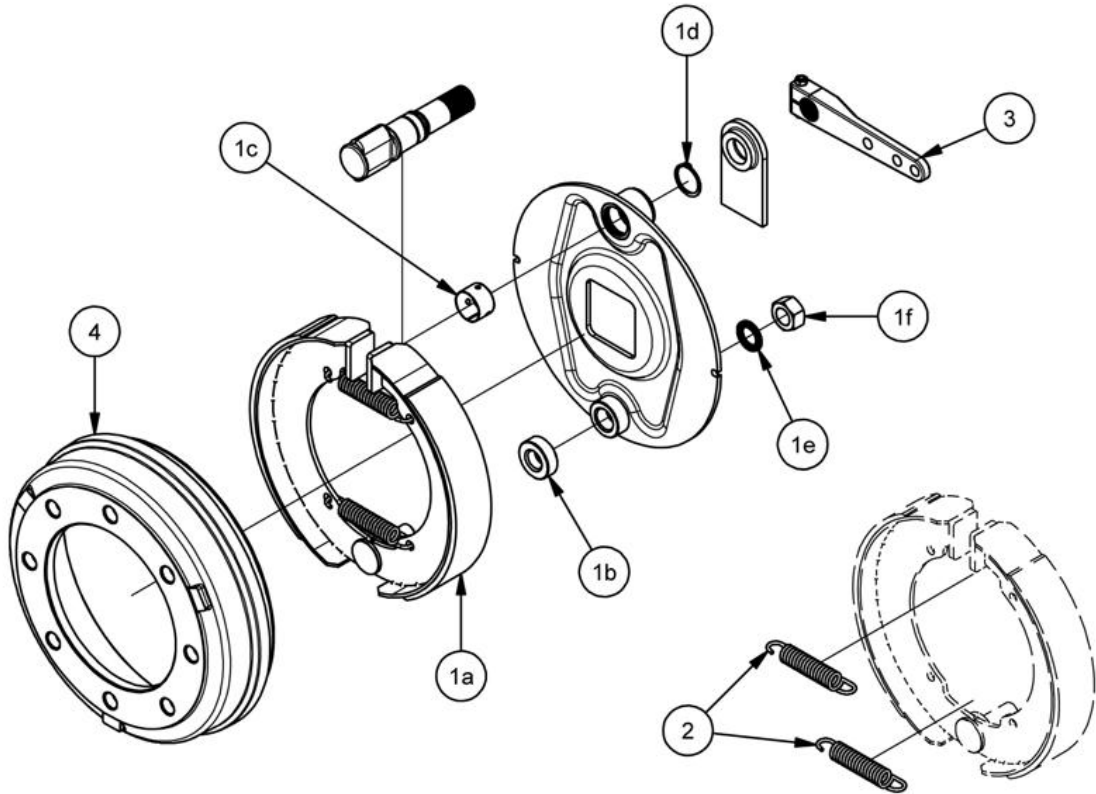


Item No:	Description	Part No:
1a	Brake Assembly	ADR9RE0014
1b	Camshaft	ADR9RE0014
1c	Retaining Ring	ADR9RE0014
1d	Washer	ADR9RE0014
1e	M24x1,5	ADR9RE0014
2	Spring	ADR9RK0004
3	Lever	ADR9RQ0001
4	Drum 8 Holes	ADR66LNF0804



**8.0 Replacement Parts (Con'd)**

**400X80 Braked Axle**

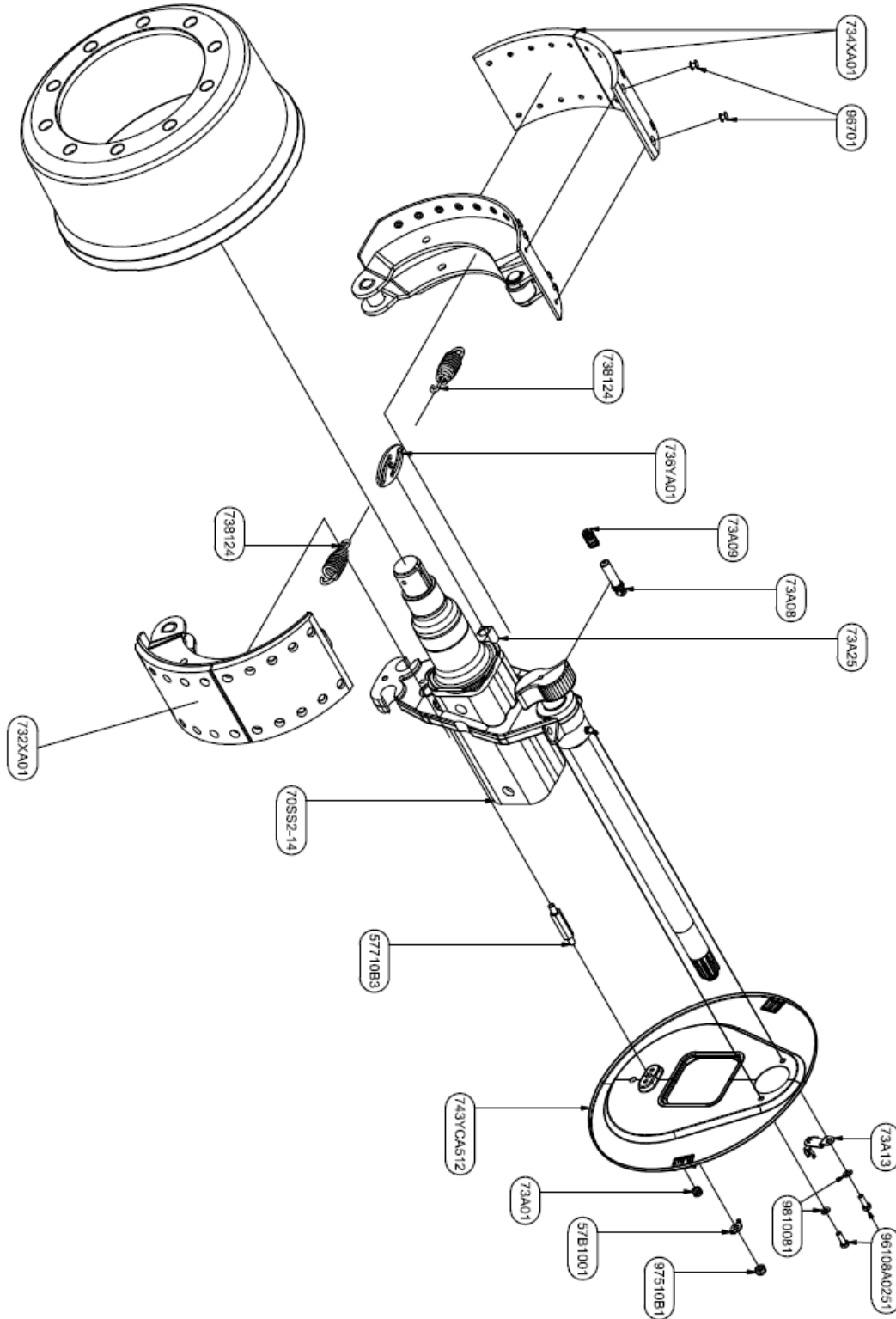


Item No:	Description	Part No:
1a	Brake Assembly	ADR9RE0048
1b	Adapter	ADR9RE0048
1c	Camshaft	ADR9RE0048
1d	Retaining Ring	ADR9RE0048
1e	Washer	ADR9RE0048
1f	M24x1,5	ADR9RE0048
2	Spring	ADR9RK0005
3	Lever	ADR9RQ0001
4	Drum 8 Holes	ADR66LNF0801



**8.0 Replacement Parts (Con'd)**

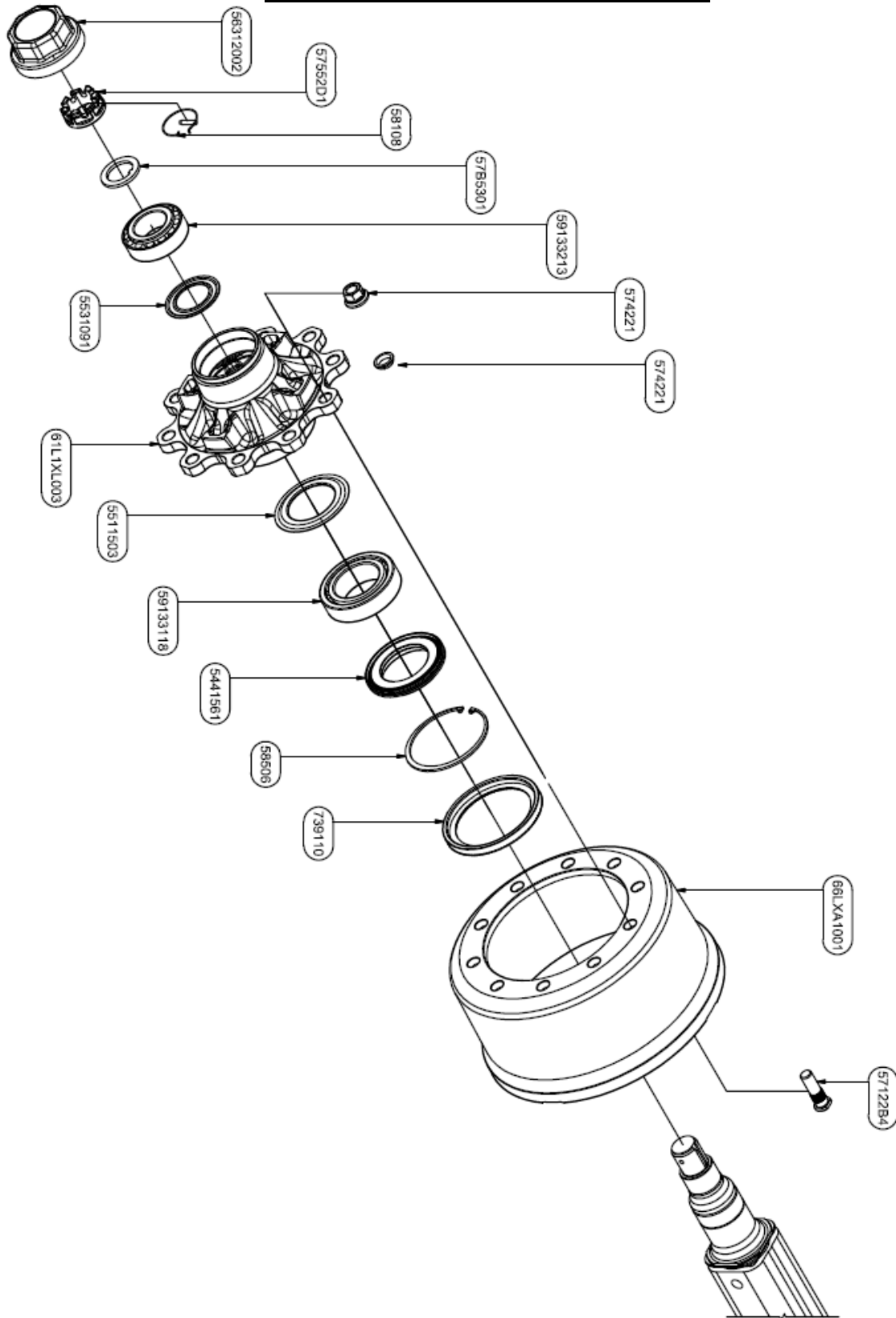
**ADR 1800x150 Axle420x180 Brake Shoe**





**8.0 Replacement Parts (Con'd)**

**ADR 1800x150 Axle420x180 Brake Shoe**

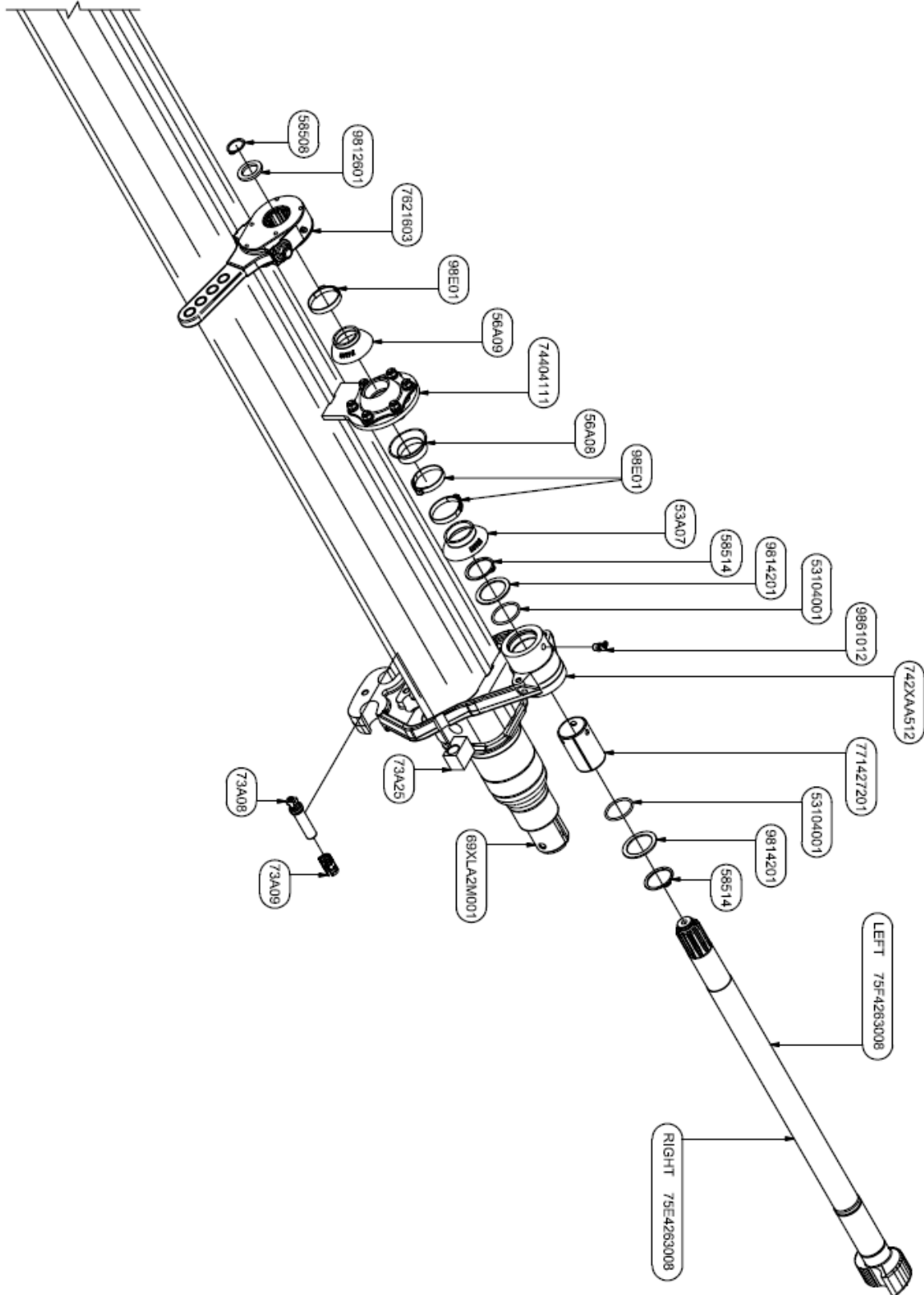






**8.0 Replacement Parts (Con'd)**

**ADR 1800x150 Axel420x180 Brake Shoe**



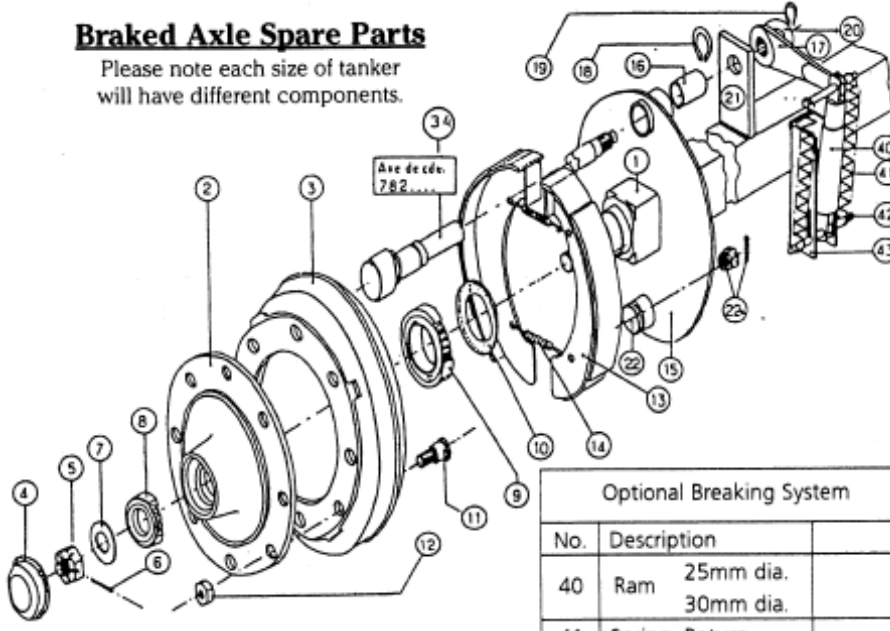


**8.0 Replacement Parts (Con'd)**

**Tandem Bogie**

**Braked Axle Spare Parts**

Please note each size of tanker will have different components.

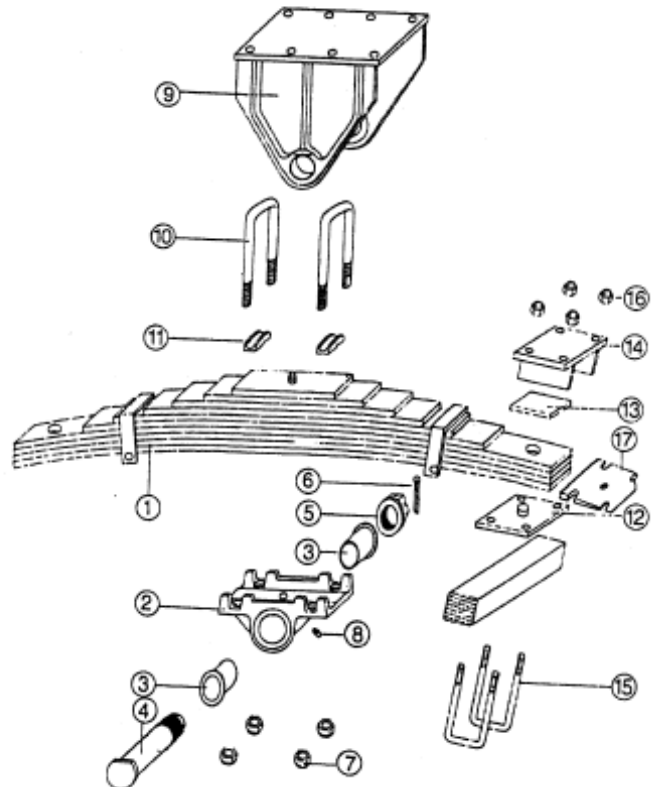


No.	Description
1	Axle
2	Hub, Steel
3	Brake Drum, Cast
4	Hub Cap
5	Castellated Nut
6	"R" Clip
7	Washer
8	Bearing, Outer
9	Bearing, Inner
10	Grease Seal
11	Wheel Stud
12	Wheel Nut
13	Brake Shoe
14	Springs, Return
15	Back Plate
16	Bush
17	Cam Lever
18	Circlip
19	Bolt or Circlip
20	Washer
21	Support Arm

Optional Breaking System	
No.	Description
40	Ram 25mm dia. 30mm dia.
41	Spring, Return
42	Pin
43	Support Bracket

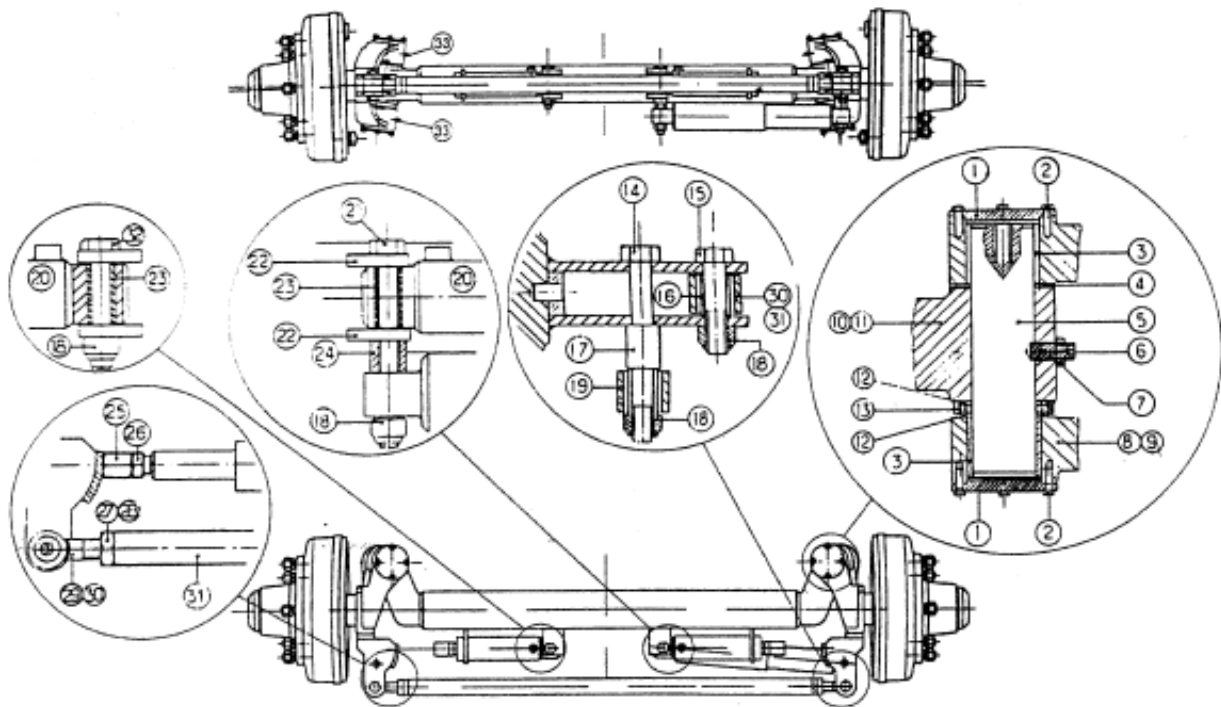
**Tandem Axle Tanker Bogie**

No.	Description
<b>Suspension</b>	
1	Spring
Axle Centres	
Capacity	
2	Central Rocker
3	Bush (Shouldered)
4	Pin
5	Nut (Castellated)
6	Split Pin
7	Nut
8	Grease Nipple
9	Central Hanger
10	U Bolt
11	Saddle
<b>Axle</b>	
12	Plate (Bottom)
13	Plate (Rubber)
14	Plate (Box)
15	U Boltr
16	Nut
17	Wedge



## 8.0 Replacement Parts (Con'd)

### Tandem Axle Tanker Steering Axle



No.	Quantity	Description
1	4	Caps
2	16	Cap Bolt
3	4	Bronze Bush D60 B70 G60
4	2	Washer DN61 D100 H4.5
5	2	King Pin
6	2	Locating Screw HC CUV-16-45 T 8.8
7	2	Lock Nut HM, M16 T8
8	1	Steering Arm (Right)
9	1	Steering Arm (Left)
10	1	Pivot (Right)
11	1	Pivot (Left)
12	4	Washer WSB1112
13	2	Washer (Shim) LFX ZN60 D85 H7.5
14	1	Bolt H, M20-180 T 8.8
15	2	Bolt H, M20-100 T 8.8
16	2	Flexibloc
17	1	Distance Piece D36 x 20.5 Lg 40
18	6	Nut Nylock H M 20 T 8
19	1	Hydraulic Damper 238
20	2	Hydraulic Ram D40 100mm Stroke
21	1	Bolt H 20-190 T 8.8
22	4	Bracket for Damper and Ram
23	3	Bush
24	1	Distance Piece D36 x 20.5 Lg 33
25	2	Nut (Adjusting)
26	2	Lock Nut
27	1	Lock Nut HM, M30 T, 8 Right
28	1	Lock Nut HM, M30 T, 8 Left
29	1	Track Rod End Right
30	1	Track Rod End Left
31	1	Track Rod
32	2	Bolt H M20-120 T, 8
33	4	Grease Nipple

## **9.0 Trouble Shooting For Slurry Tankers**

Don't panic, take your time and think through the problem logically, LOOK FOR THE OBVIOUS! Things like damaged hoses, loose fittings or wrongly connected quick release fittings (at the tractor) will cause problems.

Try to identify common conditions or circumstances where the problem exists.

Change only one thing at a time when trying to identify the problem area, if that doesn't solve it, put it back the way it was, and then try the next thing. Changing more than one thing at a time can cause confusion.

### **Vacuum Pump**

1. Overheating of Vacuum Pump:
  - Check that the oiler is getting the right amount of drops per min
  - Check that 6/8" fill valve is open fully and that nothing is blocked
  - Reduce rev's on tractor to 540 RPM
  - Excessive use, pump should only be run up to 8mins at a time
  - Blades are too long:
    - i. Open back plate and add gaskets or
    - ii. Take out veins and trim off ends
2. Oiler working intermittently or not at all.
  - Have you used the correct oil. Heavy oil will not travel through the system
  - Check pipes connecting reservoir, pump and that oilers are not blocked
  - Clean out oiler
  - Oil pump on back housing may be defected and needs to be replaced
3. Pumps veins sticking:
  - Revs too low, increase to 540 RPM
  - Run diesel through the pump to clean out
  - Have you been using milking machine oil? This swells the veins and causes veins to stick.  
Replace all veins
4. Pump Seized:
  - Using milking machine oil(Vacuum oil) can lead to veins jamming and breaking in rotor either causing it to just jam the rotor or it could also lead to bending the rotor
  - Excess use and not replacing the veins can lead to the same
5. Insufficient Pump Output:
  - Veins too short or worn
  - Veins sticking in rotor
  - Lack of oil feed
  - Are there any air leaks?
  - Is the pressure relief valve set correctly? Factory sets this at 0.8 bar
6. Pump Handel Sized or very stiff:
  - Operating temperatures too low and has frozen. Wait to taw
  - Bottom of selector valve needs a slight shim inserted
7. Slurry comes out of exhaust:
  - Is there excessive effluent in the slurry causing it to fraught?
  - Ball in traps has gone oval and needs to be replaced



## **9.0 Trouble Shoot For Slurry Tankers (Con'd)**

### **Garda Pump**

8. Leaking from gland pack from gearbox to pump:
  - This is normal. This should be leaking slightly to keep gland lubricated
  - Excessive leaking will require gland to be replaced
9. Slurry does not exit at required pressure or does not exit at all:
  - Vacuum pump lever not in the neutral position
  - Are all valves open?
  - Is the pump shaft rotating? Check lever is engaging the gears
  - RPM too low, increase RPM
  - Slurry too Thick, add water
  - Impeller is worn and needs replacing

### **Axle**

10. Wheels have a little play or wobble:
  - Wheels bearing need to be tightening
  - Bearing need to be replaced
11. Brakes making noise or don't seem to be functioning:
  - Make sure both Cam levers are traveling the same distance, Adjust so both levers are pulling even
  - Check hydraulic brake line and fitting on tractor
  - Brake pads need to be replaced

### **Tank**

12. Slurry not coming out or not coming out pressurized:
  - Rear gate valve not open fully or not open at all
  - Obstruction in spread plate nozzle
  - Tank not built up to efficient pressure
13. Rear Hydraulic Gate Valve:
  - Sticking:
    - i. Material caught around lollypop, clean out
    - ii. Lollypop slightly bigger than housing, sand down edges
    - iii. Ram opening too fast, fit regulator fitting to restrict the flow of oil
  - Ram opening and closing but lollypop not responding:
    - i. Treads in ram has unscrewed itself, disassemble to tread back in using lock-tight to prevent it from happening again.

### **10.0 Warranty**

The following warranty terms relate to parts only.

Abbey Machinery LTD will not accept claims for labour or mileage.

1. This Vacuum Tanker is covered by the manufactures warranty for twelve months or one season.
2. Vacuum Tanker used by agricultural contractors is covered by manufactures warranty for six months from the date of purchase.
3. Vacuum Tanker hired out to and operated by third parties is not covered by manufacturer's warranty.
4. Manufactures warranty does not cover wearing parts, e.g. Pump vanes, splash plate, wheels, etc.
5. Under no circumstances will warranty claims be accepted for any damage caused by failing to adhere to the operating instructions or maintenance requirements as outlined in this manual.
6. Warranty claims will only be assessed when all alleged faulty parts have been returned to the manufacturer. All parts dispatched to replace damaged parts under warranty consideration are chargeable, pending decision on claim.
7. For general warranty consideration please see terms and conditions of sale set out overleaf.

### **EC Declaration of Conformity**

for machinery

according to Machinery Directive 2006/42/EC; Annex II A

**Manufacturer:** Abbey Machinery  
Well road  
Nenagh  
Tipperary  
Ireland

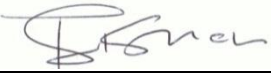
We declare that this delivery of the following machine is complete and conforms to the essential safety requirements of Machinery Directive 2006/42/EC.

**Product Model No:** \_\_\_\_\_  
of Vacuum liquid manure containers

**Type of machine:** Vacuum Tanker

**Serial number:** From 14000 onwards

All basic health and safety requirements according to Annex I of the above-mentioned directive are applied and observed.

Signature:   
Paul Callan  
Operations Manager

## **11.0 Terms and Conditions of Sale**

### **General Consideration:**

- ❖ Abbey Machinery Ltd, shall hereinafter be referred to as “the Company”.
- ❖ All products and/or components or whatever kind and all services sold by the company shall be sold subject to these Terms & Conditions of Sale and shall hereinafter be referred to as “the Goods”.
- ❖ The buyer of the goods shall hereinafter be referred to as “the Purchaser”.
- ❖ The Conditions of Sale shall be deemed to be incorporated in all tenders, quotations, delivery dockets, invoices, credit notes, and other documents of a similar nature submitted by the company for the supply of the goods.
- ❖ Any terms or conditions in the purchaser’s order which are inconsistent with these Terms & Conditions of sale shall not form part of any contract between the company and the purchaser unless accepted in writing.
- ❖ Unless previously withdrawn, offers by the company shall remain open for acceptance for a period of 30 (thirty) days or such longer period as the company may agree in writing.
- ❖ Each and every provision of these conditions of sale and reservation of title clause and every part of every such provision shall be deemed to be separate and severable, and enforceable accordingly.
- ❖ The law of the Republic of Ireland shall govern the operation and interpretation of these conditions of sale and reservation of title clause, but the company may sue for monies on foot of any sale in any jurisdiction.

### **Purchaser’s Rights**

Nothing contained herein or in any other document in relation to any contracts is intended to affect or prejudice nor will affect or prejudice the contractual rights enjoyed by the purchaser by virtue of the Sale of Goods Act 1893 and 1980 and in particular, of sections 12,13,14 and 15 of the said Act of 1893 as amended or where goods are sold outside the jurisdiction of the Republic of Ireland, the statutory rights of a Purchaser who is a Consumer as hereinafter defined.

### **Conditions and Warranties**

- ❖ Where the purchaser deals as a consumer within the meaning of the Sale of Goods and Supply of Services Act 1980, the goods are sold subject to any conditions and warranties implied by the Sale of Goods Acts, 1893 and 1980 or any amending statute.
- ❖ Save in the case where the purchaser deals with as a consumer as hereinbefore defined, all statements, representations and conditions or warranties as to the quality of the goods or their fitness for any particular purpose whether expressed or implied by law or otherwise are hereby expressly excluded.
- ❖ Whilst every care is taken that the goods are in accordance with specifications and of good material standard and workmanship, the Company shall not be liable for any loss or injury arising directly or indirectly from the use of the Goods or any component thereof whether manufactured or supplied by them or otherwise.
- ❖ In the case of products manufactured by the company, as our manufacturing policy is one continuous improvement, the company reserves the right to amend specifications, without notice.
- ❖ Except where the purchaser of the goods is a consumer as hereinbefore defined, all terms and conditions as implied by statute or common law in the case of contracts for the supply of goods and services are hereby expressly excluded.

### **Repairs and Alterations**

Any products accepted for repair or alterations by the Company shall be held by the Company and repaired and altered by it entirely at Customer's own risk.

### **Force Majeure**

If circumstances occur which could not have been foreseen at the time the contract was concluded and which are beyond the control of the company and directly or indirectly prevent, hinder or make more difficult the full or partial performance of the contract, such circumstances being, inter alia war, threat of war, civil war, natural disasters, riots, strikes, lockouts, fire, breakdowns in the Company's factory, delayed or incorrect deliveries by the Company's suppliers, government measures, blockages, the Company shall have the right without incurring further liability either to suspend performance of the contract wholly or in any part or to treat the contract as cancelled and thereupon all amounts due to the company by the purchaser by virtue of the contract become immediately payable but without prejudice to the right of the Company to claim full compensation including compensation for loss of profit. The company shall have similar rights in relation to the contract in the event of the purchaser committing an act of bankruptcy, suspending payment of its debts., entering into an agreement with its creditors, closing its business or in the case of a limited company having a Receiver or Liquidator appointed over it or its assets (Liquidation for the purpose of restructuring excepted).

### **Prices and Terms of Payment**

- ❖ All prices are subject to alteration without notice and prices charged for goods and services are those ruling on the date of dispatch. This clause also applies to backorders. All prices are exclusive of V.A.T. and the same, together with carriage when charged, shall be borne by the Purchaser.
- ❖ The Company must be paid in full without deduction in respect of alleged or counterclaims in accordance with the terms specified by the company from time to time and if no date for payment has been specified, by the last day of the month following month of invoice.
- ❖ If part only of an order shall be supplied, the terms of payment shall apply to the goods actually delivered, notwithstanding the shortfall.

### **Damage in Transit and Shortages**

On delivery, the goods must be checked against the delivery note which shall be signed by or on behalf of the purchaser. Such signature is an acknowledgement that the goods have been received in good condition and order. The Company will accept no responsibility for damage in transit or shortages unless same are noted on the Delivery Note, before signature. In any event all claims must be received by the Company within 7 (seven) days of the receipt of the Goods by the Purchaser.

### **Risks and Reservation Title**

- ❖ No property in any of the goods the subject matter of this Contract shall pass the Purchaser until the invoice covering same has been paid in full.
- ❖ The goods shall be at the Purchaser's risk from the date of delivery until they are paid for in full and during this same time the purchaser shall store the Goods so as clearly to show them to be the property of the company.
- ❖ The personnel of the Company its servants or agents will be allowed free access to the Goods and place of storage at all reasonable times with the intention that such personnel may remove such Goods in exercise of any provisions in this clause. Any expense incurred in so doing shall be borne by the Purchaser.