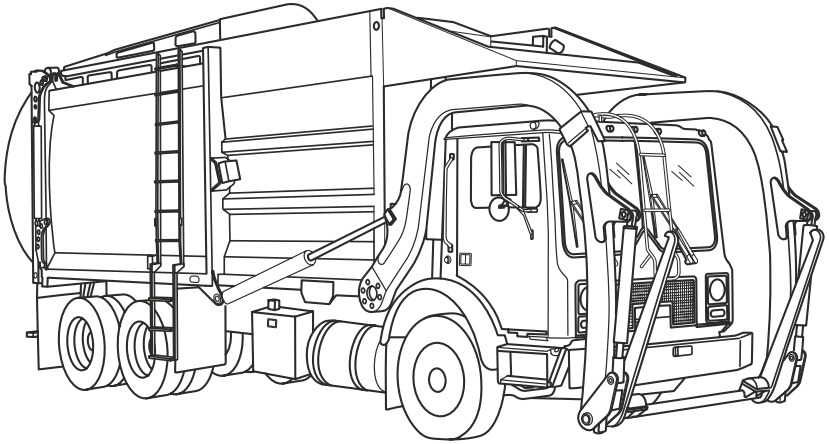
OPERATOR'S MANUAL
Front End Loader



Includes Information for the
Following Front Loader Models:

- Atlantic Series®

Publication No. W1002-ML-313
Rev. 1. June 2018

Disclaimer:

This manual must not be used to repair your vehicle. Repair information is available by calling Boughton Engineering Limited Service Department - Tel: +44 (0) 1902 623441.

The information in this Operator's Manual will be your guide to operation and operator maintenance for this equipment.

All information, illustrations, and specifications in this manual are based on the information available at the time this manual was published. The illustrations used in this manual are intended as representative reference views only. Because of our continuous product improvement policy, we may modify information, illustrations, and/or specifications to explain and/or exemplify a product, service, or maintenance improvement. We reserve the right to make any change at any time without notice. Contact Boughton Engineering Limited for the most up to date information related to your vehicle.

1.0 Identification Plates

A Boughton Engineering Limited identification plate (Figure 1) is located on the left front side of the refuse vehicle body. The identification plate contains the Model number, Serial number, Contract number & Date of manufacture of your refuse vehicle system.

In addition manufacturer plates, normally located in the drivers cab, are fitted to the vehicle. These will include a stage I and stage II plate and detail:-

Stage I Plate:-
Base vehicle manufacturer.
Stage I vehicle approval.
Vehicle identification number (VIN).
Maximum operating weights - Gross vehicle weights and maximum permitted axle loads.

Stage II Plate:-
Bodywork installer.
Stage II vehicle approval.
Vehicle identification number (VIN).

When contacting Boughton Engineering Limited regarding your vehicle please quote as much information as possible including:-

Model Number.
Serial Number.
Contract Number.
Vehicle Identification Number (VIN).

Figure 1.

⚠ WARNING

The operator of this vehicle must be properly trained to operate this vehicle.

If you do not have the proper training to operate this vehicle, you are putting yourself and others at risk of serious injury or death.

If you are uncertain how to operate this equipment, inform your supervisor or contact Boughton Engineering Limited on +44 (0) 1902 623430.

NOTE

This manual is limited to the operation and light maintenance of the refuse collection system only.

This manual does not include the operation or maintenance of the chassis vehicle upon which the refuse collection system is mounted.

2.0 Purpose of Manual

This Operator Manual provides operation and operator maintenance instructions for the Atlantic Series Front End Loader® refuse collection system manufactured by McNeilus Truck and Manufacturing, Inc and Boughton Engineering Limited.

The information in this operator manual will be your guide to operation and operator maintenance for this equipment.

Keep this manual with the vehicle at all times.

3.0 Scope

This manual provides information for use by the equipment operator under the following headings:

1. **Safety.** Includes important safety information.
2. **General.** Includes equipment identification.
3. **Operation.** Includes control functionality and normal equipment operation.
4. **Preventive Maintenance.** Includes basic preventive maintenance information for the operator.

4.0 Parts and Service

Contact Boughton Engineering Limited Parts and Service to order parts, receive service information, or for other assistance.

Tel: +44 (0) 1902 623440 - Parts.

Tel: +44 (0) 1902 623441 - Service.

Email: service@boughtonengineering.com

Contents

SAFETY

1.0 Important Safety Information

READ AND UNDERSTAND THIS ENTIRE MANUAL BEFORE OPERATING, REPAIRING OR ADJUSTING YOUR BOUGHTON / MCNEILUS EQUIPMENT.

PERSONS USING AND MAINTAINING THIS EQUIPMENT MUST BE THOROUGHLY TRAINED AND FAMILIAR WITH THE PRODUCT.

IF INCORRECTLY USED OR MAINTAINED, THIS EQUIPMENT CAN CAUSE SEVERE INJURY.

Always keep this manual in a location where it is readily available for persons who operate or maintain the product. Additional copies of this manual are available from Boughton Engineering Limited. Please contact Boughton Engineering Limited if you require additional manuals or if you have any questions about the information in this manual, this product, or safe operating procedures.

THESE SAFETY PROCEDURES ARE FOR YOUR OWN PROTECTION

Do not operate this equipment until you have read the contents of this manual thoroughly. Contact Boughton Engineering Limited if you require assistance.

Should operators of this equipment have a reading or learning disability, dyslexia, or other such condition, they must be assigned a mentor/trainer to read and explain to them the entire contents of this manual as well as the safety guidelines, danger, caution, and warning decals on this unit. Such individuals should not be allowed to operate this equipment until they thoroughly understand all of these materials. Failure to do so can result in serious injury or death.

Safety and safe working procedures must be followed at all times.

LOCKOUT/TAGOUT procedures must be followed when performing Daily Checks or Scheduled Periodic Maintenance on this equipment.

If you are unfamiliar with the LOCKOUT/TAGOUT procedures or any other safety requirements, please contact Boughton Engineering Limited.

1.1 Safety Notices

THIS SAFETY SYMBOL INDICATES IMPORTANT SAFETY MESSAGES IN THIS MANUAL.

WHEN YOU SEE THIS SYMBOL, CAREFULLY READ THE MESSAGE THAT FOLLOWS.

BE ALERT TO THE POSSIBILITY OF PERSONAL INJURY OR DEATH.

The following safety notices are used throughout this manual.

DANGER

Danger indicates an imminently hazardous situation which, if not avoided, will result in death or serious injury.

Danger is used in the most extreme situations.

WARNING

Warning indicates a potentially hazardous situation which, if not avoided, could result in serious injury or death.

CAUTION

Caution indicates a situation that might result in property damage.

SAFETY NOTICE

The “signal words” of DANGER, WARNING, and CAUTION have specific meanings to alert you to the relative level of hazard.

Take the safety warnings seriously. If you do not understand them or have questions about them, call Boughton Engineering Limited.

1.2 LOCKOUT/TAGOUT Procedure

⚠ DANGER

LOCKOUT/TAGOUT procedures must be followed when working on this equipment including, but not limited to, cylinders being changed or maintained. Failure to heed these instructions/warnings can result in serious personal injury or death.

Before carrying out any maintenance work on the vehicle and body equipment, read and follow the "Minimum LOCKOUT/TAGOUT Procedures for Drivers and Operators" section 1.2.3.

Under UK law (the Health and Safety at Work etc Act 1974) employers are responsible for ensuring the safety of their employees and others. This responsibility is reinforced by regulations.

Before entering the refuse vehicle body it is a legal requirement that the "Confined Space Regulations 1997" are complied with in full. See section 1.2.1.

Before performing any work at height it is a legal requirement that the "Work at Height Regulations 2005" are complied with in full. See section 1.2.2.

1.2.1 Confined Spaces Regulations 1997

The Confined Spaces Regulations 1997 apply where the assessment identifies risks of serious injury from work in confined spaces.

A "confined space" means any place, including any chamber, tank, vat, silo, pit, trench, pipe, sewer, flue, well or other similar space in which, by virtue of its enclosed nature, there arises a reasonably foreseeable specified risk.

These regulations contain the following key duties:

- avoid entry to confined spaces, e.g. by doing the work from the outside;
- if entry to a confined space is unavoidable, follow a safe system of work; and
- put in place adequate emergency arrangements before the work start

The Management of Health and Safety at Work Regulations 1999 require employers and self-employed people to carry out a suitable and sufficient assessment of the risks for all work activities for the purpose of deciding what measures are necessary for safety. For work in confined spaces this means identifying the hazards present, assessing the risks and determining what precautions to take.

A Brief guide to "Working Safely" in confined spaces" is available from the HSE. www.hse.gov.uk

1.2.2 Working at Height Regulations 2005

Falls from height are one of the biggest causes of workplace fatalities and major injuries. Common causes are falls from ladders and through fragile roofs. The purpose of WAHR is to prevent death and injury from a fall from height.

Work at height means work in any place where, if there were no precautions in place, a person could fall a distance liable to cause personal injury. For example you are working at height if you:

- are working on a ladder or a flat roof;
- could fall through a fragile surface;
- could fall into an opening in a floor or a hole in the ground.

Before working at height you must work through these simple steps:

- avoid work at height where it is reasonably practicable to do so;
- where work at height cannot be avoided, prevent falls using either an existing place of work that is already safe or the right type of equipment;
- minimise the distance and consequences of a fall, by using the right type of equipment where the risk cannot be eliminated.

1.2.3 Minimal LOCKOUT/TAGOUT Procedures for Drivers and Operators

When performing duties such as cleaning out behind the refuse vehicle panel, clearing trash from hopper seals and under vehicle or any other operator task, perform both the mandated minimal and supplemental LOCKOUT/TAGOUT procedures.

• 1.2.3.1 For All Vehicles

1. Park on level surface.
2. Place automatic transmission in neutral (standard transmission in first gear).
3. Set parking brake.
4. Press E-STOP.
5. Turn engine off.
6. Remove key and place in pocket.
7. Turn battery disconnect off, and lock or tag disconnect.
8. Chock wheels.

• 1.2.3.2 For Bodies Equipped with a Tailgate.

⚠ WARNING

Never attempt to prop a body or tailgate unless completely empty.
Never walk or work under a raised body or tailgate unless props are in place.
Failure to do so may result in serious personal injury or death.

1. Park on level surface.
2. Place automatic transmission in neutral (standard transmission in first gear).
3. Set parking brake.
4. Raise tailgate as needed to gain access. Refer to the specific procedure in this manual.
6. Deploy props. Refer to the specific procedure in this manual.
7. Lower tailgate. Refer to the specific procedure in this manual.
5. Press E-STOP.
6. Turn engine off.
7. Remove key and place in pocket.
8. Turn battery disconnect off, and lock or tag disconnect.
9. Chock wheels.
10. Always use an appropriate and safe tool to clear rubbish

• 1.2.3.3 For Bodies Equipped with Ejection Wall (Packer Plate).

1. Perform all steps in Section 1.2.3.1 For All Vehicles.
2. Relieve hydraulic pressure on refuse vehicle panel:
   a. Turn pump and then the chassis engine off.
   b. Turn chassis key on but do not start the engine.
   c. Press the Extend and Retract buttons which will relieve any residual hydraulic pressure.
   d. Turn key off.
5. Close and latch access door when finished.

• 1.2.3.4 Ladder Procedures

1. Perform all steps in Section 1.2.3.1 For All Vehicles.
2. Always use three point contact when using a ladder to prevent falls.
3. Never climb into or on top of a refuse vehicle body without using approved fall protection equipment. Refer to 1.2.2.

• 1.2.3.5 Cab Spill Shield Procedures

1. Perform all steps in Section 1.2.3.1 For All Vehicles.

1.3 Battery Disconnect Switch

If your vehicle is equipped with a BATTERY DISCONNECT switch, it is located near the battery box. use the battery disconnect switch when performing any maintenance so the vehicle cannot be accidentally started.

1. Turn the battery disconnect switch (Figure 1, Item 1) anticlockwise so the hole on the switch aligns with the hole in the bracket (Figure 1, Item 2).
2. Install the safety lockout device ring (Figure 2, Item 1) through the holes on the battery disconnect switch and the bracket.
3. Install a padlock (Figure 2, Item 2) onto the safety lockout device ring, lock it, and put the key in your pocket. If more than one person is working on the vehicle, each person must install their own padlock.

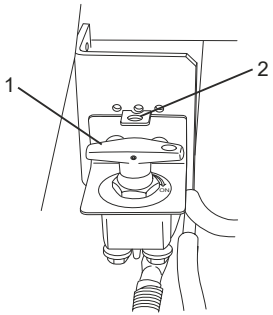


Figure 1

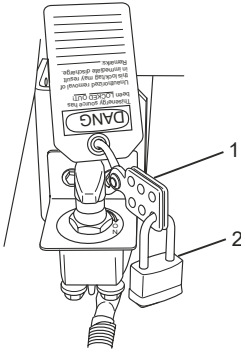


Figure 2

1.3.1 Battery Cable Disconnect

If the refuse vehicle is not equipped with a battery disconnect switch, disconnect the negative (black) battery cable first, then disconnect the positive (red) cable.

⚠ WARNING

For trucks without a battery disconnect switch, to prevent accidental vehicle start-up, which could cause death or serious injury, disconnect battery cables (negative cable first) before proceeding.

Disconnect negative (-) battery cable first. If positive (+) cable should contact ground with negative (-) cable connected, the resulting sparks can cause a battery explosion, which could result in death or serious injury.

1.4 Safety Equipment

In addition to any in cab fire extinguishers your vehicle may be fitted with external portable fire extinguishers.

These fire extinguishers must be suitable for inflammability classes A, B and C.

When replacing fire extinguishers, or adding additional extinguishers, ensure that they comply with BS EN 3 and are rated as class A, B and C.

Fire extinguishers must be fixed securely to the vehicle.

Fire extinguishers must be inspected and maintained to ensure that they are safe and in a condition where they can be used to extinguish a fire if required.

1.5 Reporting Safety Defects

⚠ WARNING

Never operate the vehicle or mounted equipment if there is a know defect.

Take the vehicle out of service and report the defect to Boughton Engineering Limited.

Only qualified technicians should carry out repair on damaged or defective equipment. DO NOT return the vehicle into service until any damage or defect has been rectified.

If you believe that your vehicle has a defect which could cause a crash or could cause injury or death, you should immediately take your vehicle out of service and inform Boughton Engineering Limited of your concerns.

Serious defects may be reported to the DVSA, in addition to informing Boughton Engineering Limited. To report a vehicle with a serious defect see www.gov.uk/vehicle-recalls-and-faults.

A serious safety defect is something:

- about the way the vehicle is designed or made that's likely to cause injury or death.
- that happens suddenly and without warning.

Things aren't classed as a serious safety defect if:

- they can be found during routine maintenance and servicing.
- you're warned about them by warning lights, noticeable changes in handling and unusual noises.
- they're caused by you misusing the vehicle, e.g. overloading your vehicle causing a tyre failure.

2.0 Product Safety Information

2.1 General

⚠ WARNING

Safety decals must be replaced anytime they are damaged, missing, or cannot be read clearly.
Failure to have proper decals in place can result in serious injury or death.
If you require safety decals, please contact Boughton Engineering Limited for replacement safety decals.

⚠ WARNING

The Packer must not be modified in anyway without authorisation from Boughton Engineering Limited.

Modifications may not comply with applicable safety standards, including the requirements of the Machinery Directive 2006/42/EC, and may result in serious personal injury.

Please contact Boughton Engineering if you require assistance.

⚠ WARNING

Wear Personal Protective Equipment (PPE) such as hard hats, safety glasses or goggles, sturdy gloves, hearing protection, steel toed boots, and snug fitting sturdy long-sleeve shirt and long trousers when operating or maintaining the Packer. Reflective clothing is recommended for drivers and employees while packing during hours of darkness. Serious injury can result without proper PPE.

⚠ WARNING

Read, understand, and follow all aspects of the Confined Spaces Regulations 1997.

Information is found in the Safety section of this manual.

Failure to follow regulations may cause serious personal injury or death.

2.2 Cab Operation

DANGER

If the Packer comes into contact or close proximity with a power line or there is any arcing, stay in the truck cab and keep away from the metal parts of the unit. Do not let anyone come close to the truck. Do not attempt to jump clear of the truck. Stay in the cab. The power company must disconnect the power before you can safely leave the cab.

Minimum clearance from power lines:

Low-voltage <1 kV	1 metre
11 kV - 33 kV	3 metre
132 kV	6 metres
275 & 400 kV	7 metres

Know the clearance of overhead obstructions. Never drive the Packer under any overhead obstruction. Failure to do so may result in damage to the Packer body or truck, and may result in serious personal injury or death.

Refer to ENA publication -

Look Up! A Guide to the Safe Use of Mechanical Plant in the Vicinity of Electricity Overhead Lines. www.energynetworks.org.

Refer to HSE Guidance Note GS6 -
Avoiding Danger from Overhead Power Lines. www.hse.gov.uk/pubns/gs6.pdf.

DANGER

Always drive defensively. Never exceed posted speeds. Use lower speeds when going around curves, corners, or motorway on/off ramps. You are carrying a high centre of gravity load. Failure to comply can lead to a roll over or other loss of control of the vehicle resulting in serious personal injury or death.

WARNING

Operators must comply with Employee Responsibilities as defined by the Health and Safety at Work Act 1974.

Operators must comply with all legal requirements relating to the safe use of a vehicle on the highway. It is the operator's responsibility to use the vehicle within the limits laid down by legislation. Refer to the UK Construction and Use Regulations etc.

⚠ WARNING

Be sure all non-operator personnel are at least 6 metres away from all areas of the Packer.

Failure to observe may cause serious personal injury or death.

⚠ DANGER

Make sure the area above the vehicle is clear of objects and power lines before raising the arm.

Failure to observe may cause serious personal injury or death.

⚠ WARNING

If equipped with optional camera or object detection system, do not rely exclusively on the camera or object detection system. Follow all other safe driving procedures. Failure to heed this warning may result in serious personal injury or death.

⚠ WARNING

No passenger is allowed in the cab unless a manufacturer's approved passenger seat and seat belt are provided. Serious injury or death can result.

⚠ WARNING

At the landfill or when operating off-road, use the lowest transmission gear and proceed at low speed (3 mph maximum). Failure to comply can cause serious injury.

⚠ WARNING

It is important that the pump ON indicator light is working. No damage will be done to the hydraulic system if the Packer is driven with the pump in the ON position. However, the controls will function if accidentally bumped. This can cause serious injury or death.

⚠ CAUTION

Always check indicator lights in the chassis cab or on the control panel at the front of the Packer. Replace bulbs or lights when required. (Note: All models may not have indicator lights.) Failure to inspect indicator lights may lead to more serious conditions.

⚠ CAUTION

Stow arms, forks, and container in hopper at the lowest height during transit. Be sure containers are stored at their lowest level in the hopper.

Failure to do so may result in a collision with bridges, overhead power lines, etc.

⚠ CAUTION

Use caution when raising the arm assembly with a container.

⚠ CAUTION

If you detect a problem with any control function, it must be repaired immediately. DO NOT operate the Packer with malfunctioning controls.
Damage to property or equipment may occur.

2.3 Outside Operation

⚠ DANGER

Never attempt to clear a jammed Packer or container lift, enter a body or open an access door unless power is shut down, LOCKOUT/TAGOUT procedures have been complied with, and the employee is authorised, trained, and competent to perform such activities. Failure to comply may result in serious personal injury or death.

⚠ WARNING

Never walk or stand behind vehicle while it is backing up.
Failure to heed these instructions/warnings may result in serious personal injury or death.

⚠ WARNING

Keep access door closed when in operation.
Do not open access door unless:

1. Engine is stopped.
2. Key is removed from ignition.
3. Hydraulic pressures are relieved.
4. LOCKOUT/TAGOUT Requirements are complied with.

Failure to heed these instructions/warnings may result in serious personal injury or death.

⚠ WARNING

Be sure all non-operator personnel are clear of the area around the Packer before operating the Packer. Remain attentive at all times when operating the controls. Watch the mirrors for activity. Never back up the Packer unless and until you are completely sure it is safe. Use a spotter/observer and/or get out and check yourself, if necessary, to ensure it is safe to do so. Thoroughly understand the controls before operating the Packer. Failure to heed this warning may result in serious personal injury or death.

⚠ WARNING

Never climb on windshield guard (if equipped). This is not a ladder. If equipped, use the ladder provided on the body to access the top of the vehicle.
Failure to comply may result in serious personal injury or death.

⚠ WARNING

If refuse is spilled on the cab shield, only use a extendable handled rake or broom to remove the refuse. Never climb on the cab shield.
A fall from the cab shield may cause serious personal injury or death.

⚠ WARNING

Before opening the tailgate, be sure you have adequate clearance above the tailgate to prevent contact with buildings, electrical lines, and any other overhead obstructions.
Failure to comply can cause damage to the vehicle and serious personal injury.

⚠ WARNING

Always keep hands and feet and other parts of your body clear of revolving or moving parts.

Failure to comply can cause serious injury.

⚠ WARNING

The Packer and chassis should never be overloaded.
Do not exceed the manufacturer's recommended gross vehicle weight.

Do not overload the Packer and chassis. Gross weights and maximum axle weights must comply with UK Construction and Use Regulations.

Failure to comply can cause serious injury.

⚠ CAUTION

If chassis is equipped with a battery disconnect switch, it must be turned off anytime the equipment is parked overnight, in a shop, or out of service for any extended period of time.

Failure to do so may result in a fire and personal injury or property damage.

⚠ DANGER

When closing the tailgate ensure that the area between the back of the vehicle and the tailgate is clear of any persons before starting the close tailgate procedure.
Serious personal injury or death may occur.

2.4 Maintenance

SAFETY NOTICE

Before entering vehicle body or performing maintenance to the vehicle, read and follow HSE Guidance on working in confined spaces.

The LOCKOUT/TAGOUT procedures detailed in section 1.2 of this manual must be followed at all times.

Follow all safety instructions in your Boughton Vehicle Manual.

Shut off vehicle engine, lock cab doors, and keep keys in your pocket before entering body or performing any work to the vehicle.

Place magnetic "DANGER" signs on both cab doors.

Failure to do so can result in serious personal injury or death.

⚠ WARNING

Packer must be disabled by the following steps before proceeding.

1. Place transmission in NEUTRAL.
2. Apply chassis parking brake.
3. Shut engine OFF.
4. Remove chassis ignition key and maintain in personal possession.
5. Turn chassis BATTERY switch OFF.

Failure to disable the Packer may result in serious personal injury or death.

⚠ DANGER

LOCKOUT/TAGOUT procedures must be followed when working on this equipment including, but not limited to, cylinders being changed or maintained. Failure to heed these instructions/warnings can result in serious personal injury or death.

⚠ CAUTION

Disconnect battery before welding on body. Failure to do so might result in personal injury or damage to property or equipment.

⚠ WARNING

If a container is dropped in the hopper, call maintenance for assistance in removing the container from the hopper.

Failure to do so may result in serious personal injury or death.

⚠ DANGER

If the hydraulic or electrical system on the Packer fails to operate for any reason, call a competent technician to repair the problem. Never let any untrained personnel attempt to fix any problems or malfunctions that may occur.
If you are not trained or do not have the competence, never attempt to fix any problems or malfunctions that may occur.
Never alter the original equipment manufacturer's design.

⚠ DANGER

Auxiliary pusher or tag axles must be supported with jack stands, blocks, or similar devices while being serviced or maintained to prevent serious personal injury or death if auxiliary axle drops unexpectedly.

Failure to do so may result in serious personal injury or death.

⚠ DANGER

Use the three-point rule when climbing the Ladder.

Failure to heed may cause serious personal injury.

⚠ WARNING

Inspect ladder bolts every 30 days for wear and replace if necessary.

Failure to do so may result in serious personal injury or death.

⚠ DANGER

Verify that the tailgate props are fully seated in the pockets on the tailgate.

Serious personal injury or death may occur.

⚠ CAUTION

Never attempt to prop a tailgate unless completely empty.
Never walk or work under a raised tailgate unless props are in place.

Failure to do so may result in serious personal injury or equipment damage.

⚠ DANGER

Whenever the tailgate is in a raised position, it must be securely propped or blocked so it cannot fall on anyone.

Serious personal injury or death may occur.

DANGER

Stand clear when the tailgate is in motion and during the unloading cycle. Do not stand under or cross under the raised tailgate.

Serious personal injury or death may occur.

WARNING

Anytime a tailgate is raised in the shop or for maintenance, the tailgate must be supported to prevent the tailgate from coming down unexpectedly. Never allow anyone to work around or enter the tailgate area unless the tailgate is raised and supported!

Failure to follow this procedure can result in serious injury or death.

WARNING

Never place yourself between the tailgate and the body. Always engage both tailgate props when performing maintenance or inspections in or around the open tailgate area.

Failure to engage both tailgate props may result in serious personal injury or death.

WARNING

Daily inspections should be performed on the Packer. This includes proper operation of the controls, hydraulic systems, electrical systems, optional cameras are clean and working, camera lens is clean, lighting system including turn signals, back up alarm, brake lights, clearance lights, head lamps, tail lamps, safety equipment, and work lights are all operational. The Packer's air system must operate properly and have no leaks. Water and moisture should be drained from the Packer's air system daily.

Failure to ensure all systems are operating properly can result in serious personal injury or death.

DANGER

Never attempt to use extraneous sources of power or extraneous machines to overcome a malfunctioning system.
Never override with overhead cranes, forklifts, jacks, etc. or alter or modify systems or equipment that may be malfunctioning.

Failure to heed these instructions/warnings can result in serious personal injury or death.

⚠ CAUTION

Correct all identified deficiencies BEFORE operating the Packer.
Failure to correct deficiencies may cause damage to equipment.

⚠ WARNING

Do not wear watches, rings, and jewellery while working with electrical and mechanical equipment. These items can be hazardous and can cause serious and painful injuries if they come into contact with electrical wires, moving parts, or hydraulic equipment.

⚠ WARNING

Use only the access door for entry to the Packer. Remember to follow the LOCKOUT/TAGOUT procedures when entering the Packer body. Only exit the Packer body through the access door.

⚠ WARNING

If equipped with optional camera, camera lens must be kept clean at all times to help achieve good monitor pictures.

Failure to heed this warning may result in serious personal injury or death.

⚠ WARNING

When working on the Packer, the wheels must be blocked, the parking brake on, LOCKOUT/TAGOUT procedures in effect, and the keys out of the truck's ignition.

Failure to do so may result in serious personal injury or death.

2.5 Hydraulics

Call Boughton Engineering Limited Service on +44 (0) 1902 623441 anytime you have questions concerning hydraulic hoses, tubes, or pipes.

⚠ DANGER

Hydraulic systems operate under very high pressure. Hydraulic fluid escaping from a pressurized system can penetrate unprotected body tissue. Never inspect for hydraulic leaks with bare hands or other exposed body parts. As a minimum, wear leather gloves and use cardboard or wood to inspect for leaks. If leaks are present, relieve pressure and allow system to cool prior to servicing. If injured by escaping hydraulic oil, contact a physician immediately.

Serious complications may arise if not treated immediately.

⚠ WARNING

Hydraulic components can be heavy. Use caution while lifting these components. Serious personal injury can be avoided with proper handling of the components.

⚠ WARNING

Hydraulic hoses and tubing must be inspected on a daily basis for leaks, cuts, abrasions, damage, aging, improper clearance, and along the frame for hidden damage. If you find hoses with any such adverse conditions or damage, they must be replaced before the vehicle is returned to service!
Failure to properly inspect and maintain your vehicle may result in serious personal injury or death.

⚠ WARNING

Hydraulic systems are hot. DO NOT TOUCH! Serious personal injury or death may result from hot oil. When you have completed working on the hydraulic systems, thoroughly clean any spilled oil from the equipment. Do not spill any hydraulic fluid on the ground. Clean any hydraulic fluid from your skin as soon as you have completed your maintenance and repairs. Dispose of used oil and filters as required by law.

⚠ WARNING

The hydraulic cylinders can be holding a function in a certain position when the engine is OFF. An example of this would be a function being held in the lift or partial lift position by the cylinders. If a hydraulic line is removed or the hydraulic circuits or controls are being worked on, gravity may allow the function being held in position to drop. All workers and personnel must remain clear of these areas when working on or operating the Boughton / McNeilus equipment. Block and secure all applicable devices and functions before beginning work or operation.

Failure to comply with this can result in serious injury or death.

⚠ WARNING

Hydraulic hoses have the SAE ratings marked on the hose to assist in selecting the correct hose. Replacement hydraulic hose and fitting components must be supplied by the same manufacturer to prevent serious injury or death. An as example: Brand “A” hose and brand “B” fitting will not normally be compatible.

⚠ WARNING

All hydraulic pressure must be relieved from the hydraulic system prior to removing any components from the system. To relieve the hydraulic pressure from the hydraulic system, turn the chassis engine OFF and operate the Packer controls with the key in the ON position. This will allow the spools to shift and relieve the hydraulic pressure.

Failure to comply can result in serious injury or death.

⚠ WARNING

Hydraulic systems operate under high pressure. Only qualified, experienced people properly trained in hydraulic system maintenance should attempt repairs or troubleshoot hydraulic systems. Use the proper tools and equipment when servicing the hydraulic system.

Failure to comply can cause serious injury. Please contact Boughton Engineering Service on +44 (0) 1902 623441 if you require assistance.

⚠ WARNING

Do not steam clean or pressure wash the pump or hydraulic hose. Cleaning the pump with a high pressure washer or steam cleaning may damage the pump's seals and allow water to enter the hydraulic system. Cleaning the hydraulic hose with a high pressure washer or steam cleaning will damage the hose's outer covering and steel braid and lead to premature failure. The pump and hydraulic hose should be wiped with a clean lint-free cloth rather than washed.

⚠ WARNING

Do not heat hydraulic tubing. The carbon content of this steel tube is such that if heated for bending, and either water or air quenched, the tubing may lose its ductility and thereby be subject to failure under high pressure or hydraulic shock conditions. Serious injury can result. Damaged or leaking tubing must be replaced before the Packer is returned to service.
Please contact Please contact Boughton Engineering Service on +44 (0) 1902 623441 if you require assistance or have questions.

⚠ WARNING

Increasing hydraulic pressure beyond the recommendations may result in serious damage to the Packer or serious personal injury or death and may void the Packer Warranty.

⚠ WARNING

All hydraulic pressures must be relieved from the hydraulic system prior to removing any components from the system to prevent oil from spraying or functions or systems from falling.

Failure to follow this procedure can result in serious personal injury or death.

2.6 Electrical

⚠ WARNING

Proximity switches must remain functional for safe operation of the Packer. If a switch does not work, it must be replaced immediately with an OEM switch before the Packer returns to service.

Failure to comply can result in serious injury or death.
Please contact Please contact Boughton Engineering Service on +44 (0) 1902 623441 if you require assistance or have questions.

⚠ WARNING

If a proximity switch does not work, it should be replaced with an OEM switch. Non-OEM switches may not be correct and may result in an accident.

Failure to follow regulations may cause serious personal injury or death.

⚠ WARNING

Electrical wiring, battery wiring, and electrical cable must be inspected on a daily basis for cuts, abrasions, damage, aging, improper clearance and along the frame for hidden damage. If you find electrical wiring or electrical cable with any such adverse conditions or damage, they must be replaced with electrical wiring or electrical cable of equivalent specifications before the Packer is returned to service.

Failure to properly inspect and maintain your Packer may result in serious personal injury or death.

3.0 Decals

The following safety decals are found on your vehicle and warn of hazards related to the use of this equipment.

Read and understand all safety decals before operating this equipment.

NOTE
Depending on the configuration of optional equipment, fitted to your vehicle, the actual location and type of decals fitted may vary.

NOTE
Specifications, appearance and part numbers for safety decals are subject to change without notice.

Refer to the decal illustrations and descriptions, which follow, in conjunction with the Safety Decal Location drawings detailed in Section 3.2.

If any safety decals on the equipment are not clearly readable it is recommended that they are replaced with new items. Please contact Boughton Engineering Service for replacements.

3.1 Decal Graphics

1. Crushing Risk Do Not Enter Side Door.

2. Keep Clear. Crushing Hazard.

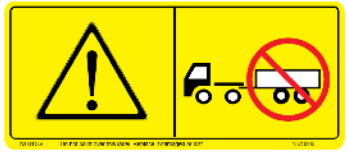
3. Before Carrying Out Maintenance Read All Instructions.

4. Keep Clear of Overhead Electric Cables.

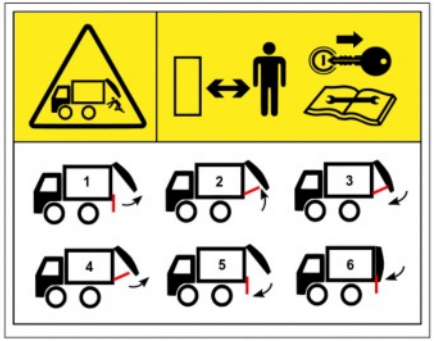
5. Use Hydraulic Fluid Only.

6. Caution High Pressure Hydraulic Pipes.

7. Caution. Read Instruction Before Filling Hydraulic Tank.



11. Do Not Use This Vehicle Tow a Trailer.



8. DANGER. During Maintenance on the Tailgate Install Props and LOCKOUT/TAGOUT.

9 Crushing Risk Keep Clear of Tailgate.

10. Keep Clear Of Rear.

A) Read Instructions Before Carrying Out Maintenance.
B) LOCKOUT/TAGOUT Before Carrying Out Maintenance.
C) Wear Personal Protective Equipment (PPE).
D) Ensure Vehicle is in Neutral and Handbrake is Applied Before Leaving Cab.

E) High Centre of Gravity Vehicle. Take Care When Cornering.
F) High Vehicle. Check for Overhead Obstructions.
G) Keep Clear of High Voltage Electricity Cables.
H) Caution When Reversing. Use Banksman.

12. In Cab Warning Decal.

13. Falling Risk. DO NOT Climb.

14. Secure & Lock Ladder When Not In Use.

15. DANGER Risk of Falling.

16. Keep Clear Of Hopper. Risk Of Falling.

17. Working Load Limit For Lifting.

18. Tailgate Close Control.

19. Conspicuity - Side (Option Rear).

20. Conspicuity - Rear.

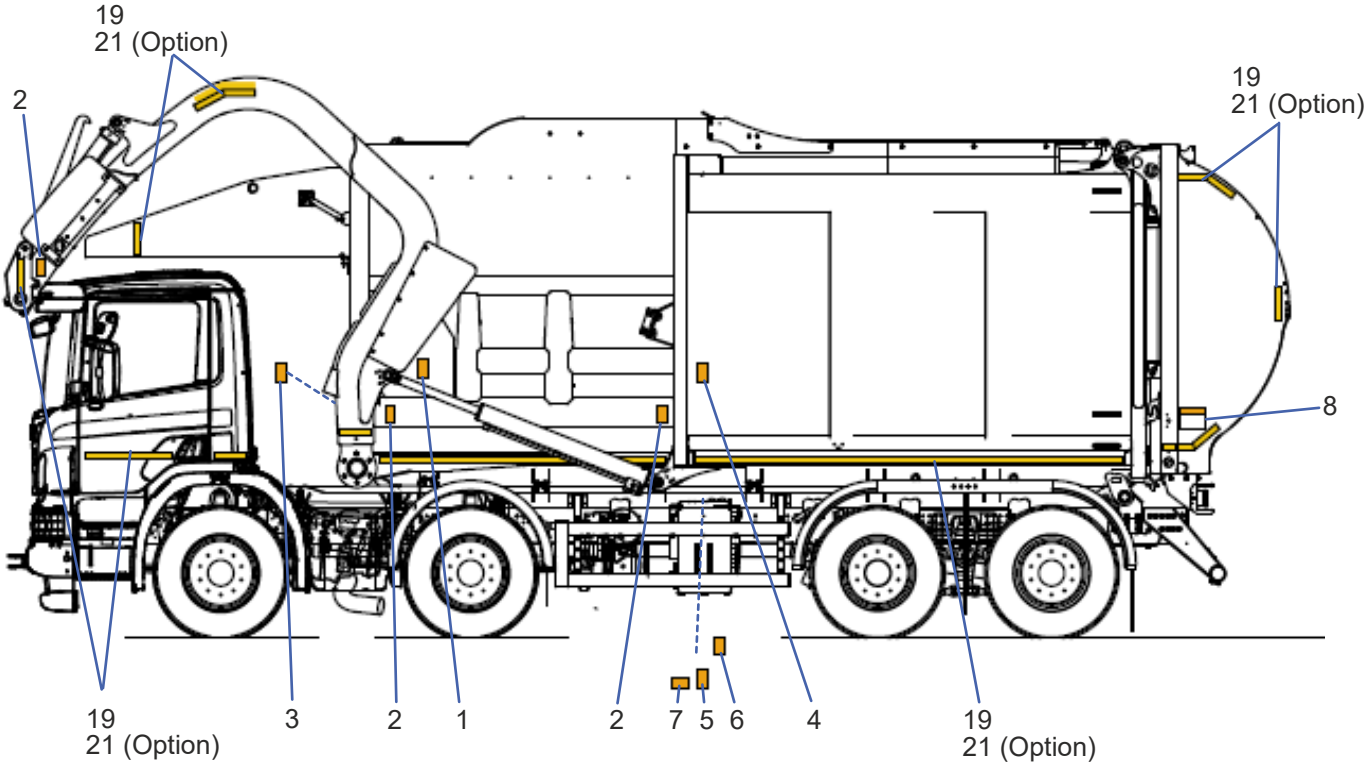
21. Conspicuity - Option Side.

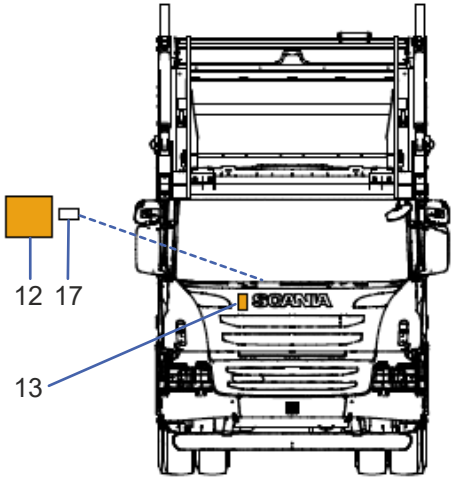
22. Rear Marker Board (Option).

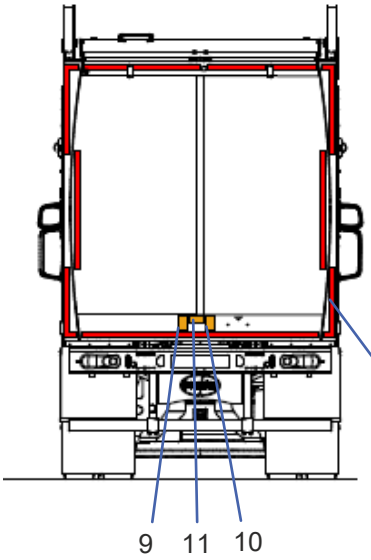
23. Spill Kit Location (Option).

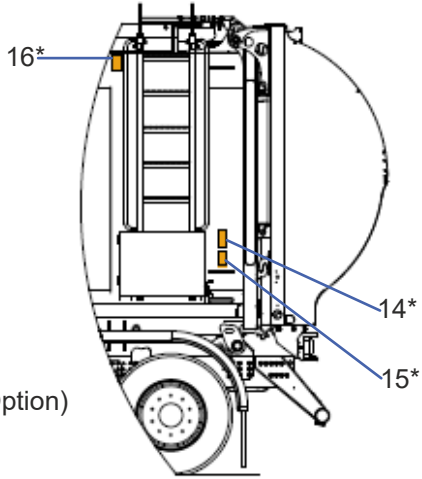
24. Fire Extinguisher Location (Option).

3.2 Decal Location





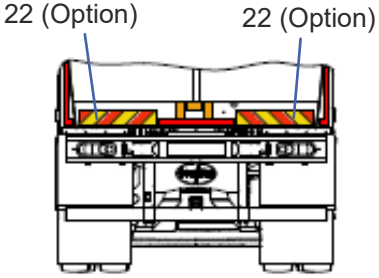


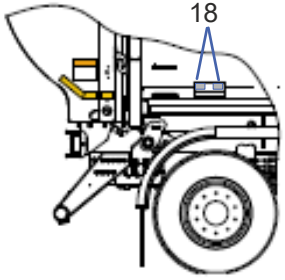


*When Ladders Fitted

Decal 23 Located in Close Proximity to Spill Kit When Fitted.

Decal 24 Located in Close Proximity to Fire Extinguishers When Fitted.





1.0 Exterior Systems Arrangement

1.1 Offside View

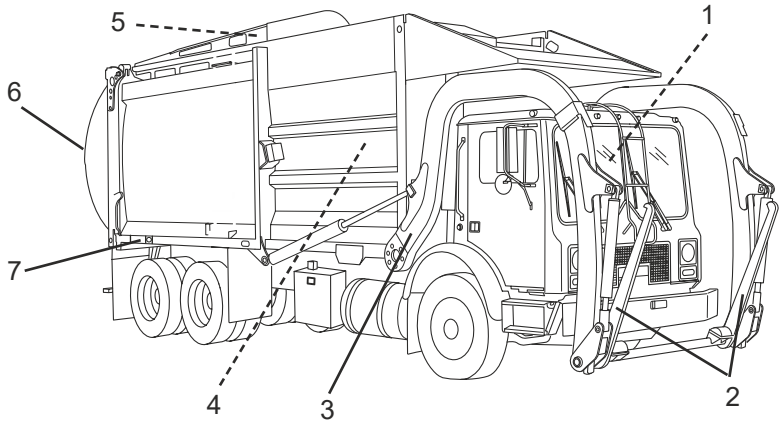


Figure 1

Ref. No	System Description
1	In Cab Controls
2	Fork Assembly
3	Arm Assembly
4	Pack/Eject
5	Top Door
6	Tailgate
7	Two Hand Control - Tailgate Close

1.2 Nearside View

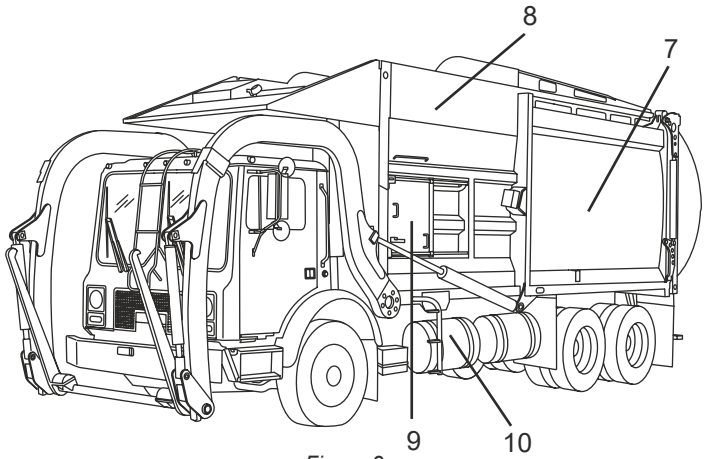


Figure 2

Ref. No	System Description
7	Body
8	Hopper
9	Side Access Door
10	Hydraulic Oil Reservoir

1.3 S-Type Container Specifications

Only lift containers that are compatible with CHEM Technical Standard T.S.11. Check to make sure the container meets the dimensional requirements (Figure 3) before lifting.

Do not use non-compliant containers.

No.	Description	Specification
1	Width of the fork receiver area at the inside surface of the outboard pocket walls.	2032 mm
2	Width of the fork receiver area at the inside surface inboard pocket wall, including bump plates.	1828 mm
3	Height of the pocket between the inside surfaces of the top and bottom wall.	225 mm
4	Height of the pocket above ground at the inside surface of the top wall.	710 mm
5	End of pocket from front face of container.	940 mm
5	End of pocket from front face of container.	660 mm

MAXIMUM BIN WEIGHT - WORKING LOAD LIMIT = 3580 kg

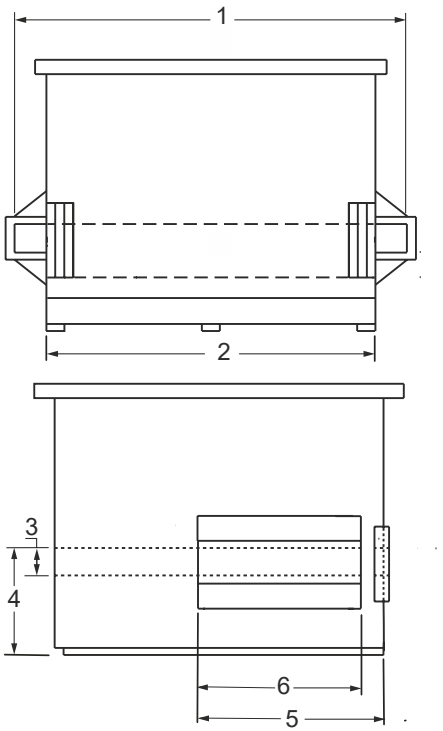


Figure 3

1.0 Instruments and Controls

The following figures and tables identify and describe the instrumentation and controls used on the equipment.

NOTE

Control configurations and locations may vary depending upon customer ordered options.

Your Packer may not have all the features or options covered in this manual. You should pay careful attention to the instructions that pertain to your vehicle. If your vehicle is equipped with special equipment or options not covered in this manual, please contact Boughton Engineering Limited Service on + 44 (0) 1902 623441.

To make sure you understand proper operating procedures, read this section and carefully practice with the controls and instruments to learn how to safely operate the equipment.

1.1 Cab Controls

The in cab controls (See Figure 1) allow the operation of most of the equipment functions from the vehicle cab.

To comply with safety requirements the tailgate of the body CANNOT be closed using the in cab controls.

To close the tailgate the operator must leave the cab and operate the two hand control located to the rear of the body.

No.	Position	Normal use or Reading
1	Control Box	Controls refuse vehicle functions, lights, and options.
2	Joystick	Controls the arm and fork movements.
3	Self Level (Optional)	Controls fork movements during container lift.
4	Diagnostic	Displays diagnostic information related to the system.
5*	Override (Optional)	Main arm override switch. Switches between automatic and manual control.

* Item 5 fitted when a hinge type hopper top door is specified.

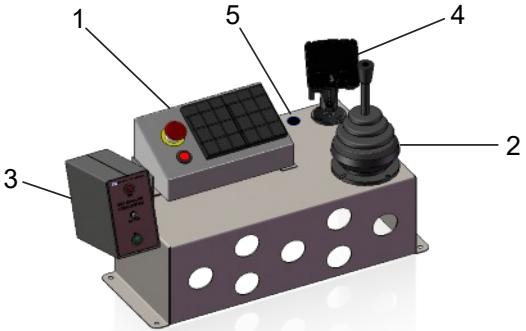


Figure 1

2.0 Controls

2.1 In-Cab Control Panel

The following figures and tables identify and describe the controls used on the in-cab control panel (Figure 2). Not all of the instruments and controls shown here are on your equipment. Items covering various models and options are illustrated.

To make sure you understand proper operating procedures, read this section and carefully practice with the controls and instruments to learn how to safely operate the equipment.

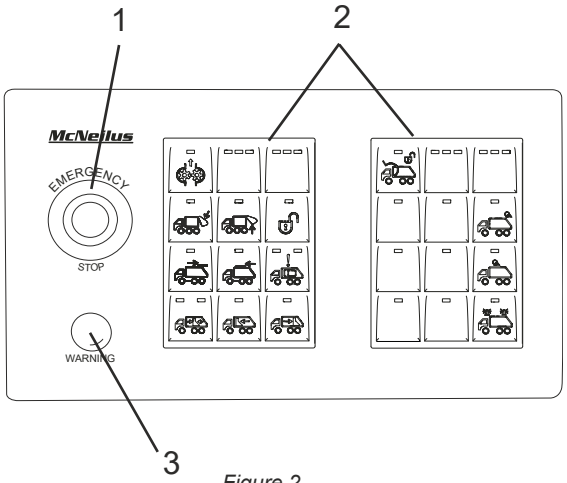


Figure 2

No.	Position	Normal Use or Reading
1	E-STOP Button	Disables all hydraulic and electric refuse vehicle functions.
2	Buttons and LED Lights	Controls refuse vehicle functions, lights and options, and displays error codes and status of operations.
3	Red LED Warning Light	If light is on or flashing, it indicates an unsafe condition. Look at the LED lights on the control box to determine what the unsafe condition is. Under normal operating conditions, the light will be off.

2.1.1 Refuse Vehicle Button Functions

Refuse vehicle functions, lights, some accessories, and options are operated by the buttons on the control box. Accessories and options vary depending on your model. See Figure 3 for button positions.

No.	Position	Normal Use or Reading
1	PUMP BUTTON	Press to activate hydraulic functions. The indicator light above the button will green when the pump is on. Press again to disable hydraulic functions.
2	TAILGATE CLOSE BUTTON (Indicator only)	This button is non functioning. The LED indication illuminates when the tailgate is in the closed position. To close the tailgate the operator must leave the cab and use the two-hand control block on the vehicle rear nearside.
3	TAILGATE OPEN BUTTON	Press and hold button to open the tailgate. You must also press and hold the ACTIVATE button while holding the TAILGATE OPEN button.
4	ACTIVATE BUTTON	Press and hold the button to enable the tailgate functions.
5	TOP DOOR OPEN BUTTON	Press and hold the button to open the top door. The indicator light above the button is green when the top door is fully open.
6	TOP DOOR CLOSE BUTTON	Press and hold the button to close the top door. The indicator light above the button is red when the top door is fully closed.
7	AUTOPACK / EJECT (Sweep) BUTTON	Press this button to start the AutoPack cycle.
8	RETRACT BUTTON	Press this button to retract the pack/ eject to the HOME position.
9	EXTEND BUTTON	Press this button to extend the pack/ eject. Pressing the button stops the auto pack mode if active.
10	ARM OVER BODY OVERRIDE BUTTON	Press and hold to override the interlock to operate the pack/eject function when arms are above the body.
11	NOT ALLOCATED	Non Functioning
12	NOT ALLOCATED	Non Functioning
13	REAR WORK LIGHT BUTTON (OPTIONAL)	Press the button to turn on the rear work lights. Press the button again to turn off the rear work lights. The truck must be moving less than 10 mph for the rear work lights to come on.

No.	Position	Normal Use or Reading
14	NOT ALLOCATED	Non Functioning
15	NOT ALLOCATED	Non Functioning
16	WORK LIGHT BUTTON (OPTIONAL)	Press the button to turn on the work lights. Press the button again to turn off the work lights.
17	NOT ALLOCATED	Non Functioning
18	NOT ALLOCATED	Non Functioning
19	STROBE LIGHT BUTTON (OPTIONAL)	Press the button to turn on the strobe lights. Press the button again to turn the strobe lights off. With the “strobes on with pump” option, the button will not turn the strobe lights off when the pump is on.

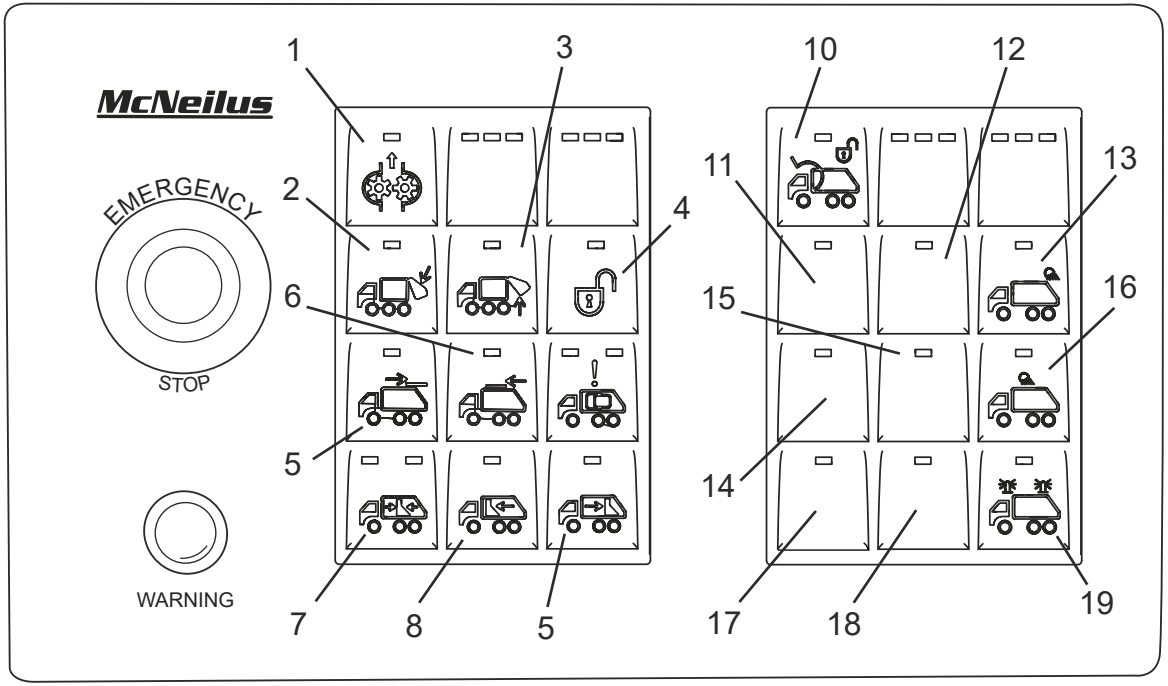


Figure 3

2.1.2 LED Indicator Light Functions

The LED indicator lights are used to display the status of various functions and operations. When the ignition switch is first turned on, the lights perform a self-test, which enables all the lights for a few seconds. See Figure 4 For LED positions.

No.	Position	Normal Use or Reading
1	Pump On LED	The LED will be green when the pump is on.
2	Error Code LED	There are six LEDs that will be on or off depending on the error code. Where errors present refer to the diagnostic display error screen section of this manual to determine the nature of any fault.
3	Tailgate Closed LED	The LED will be green when the tailgate is fully closed. The LED will flash red when the tailgate is in the process of being closed.
4	Tailgate Open LED	The LED will flash red if the tailgate is not fully closed.
5	Activate LED	If a button is pressed that requires the ACTIVATE button to be pressed, but the ACTIVATE button was not pressed, the amber LED will flash, indicating the ACTIVATE button must also be pressed.
6	Top Door LED	The LED will be green when the top door is fully open.
7	Top Door Close LED	The LED will flash red when the top door is in the fully closed position.
8	Side Door LED	When the side door is fully closed, the LED will be off. When the side door is opened, it activates the E-STOP, shuts off the hydraulic pump, and the red LED will flash. The hydraulic pump icon and the amber LED above it will also flash.
9	AutoPack/ Eject (Sweep) LEDs	The two red LEDs will flash when then pack/eject is in the AutoPack mode.
10	Pack/Eject Retract LED	The LED will be green when the pack/ eject is retracted into the HOME position.
11	Pack/Eject Extend LED	The red LED will light when the pack/ eject is extended. The pack/eject will not extend to the full eject mode unless the tailgate is fully open.
12	Arm Over Body Override LED	The LED will be green when the arm is in the over body override mode.
13	NOT ALLOCATED	Non Functioning

No.	Position	Normal Use or Reading
14	NOT ALLOCATED	Non Functioning
15	Rear Work Light LED	The LED will be green when the rear work lights are on.
16	NOT ALLOCATED	Non Functioning
17	NOT ALLOCATED	Non Functioning
18	Work Light LED	The LED will be green when the work lights are on.
19	NOT ALLOCATED	Non Functioning
20	NOT ALLOCATED	Non Functioning
21	Strobe Light LED	The LED will be green when the strobe lights are on.

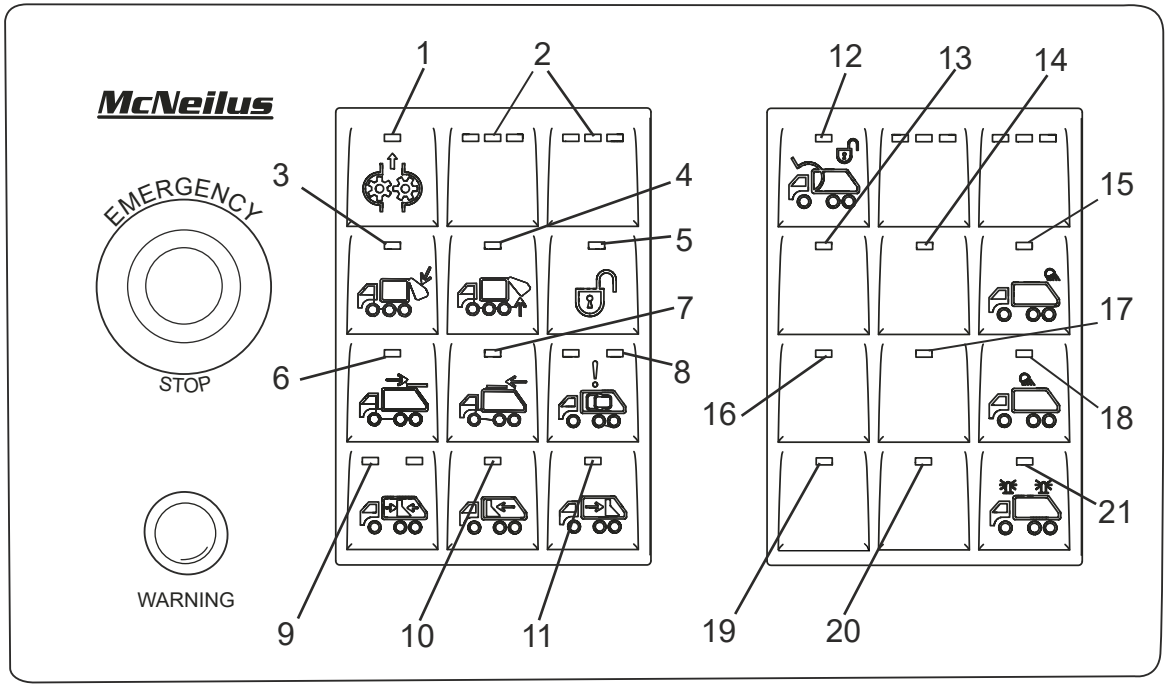

McNeilus
EMERGENCY
STOP
WARNING
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Figure 4

2.2 Diagnostic Display

A diagnostic display is fitted in the cab of all vehicles. This display allows the operator to review details related to the operation of the packer system.

When the vehicle ignition is switched on the display screen will start up and initially display a screen showing the software version after which it will switch to the HOME screen (See Figure 5).

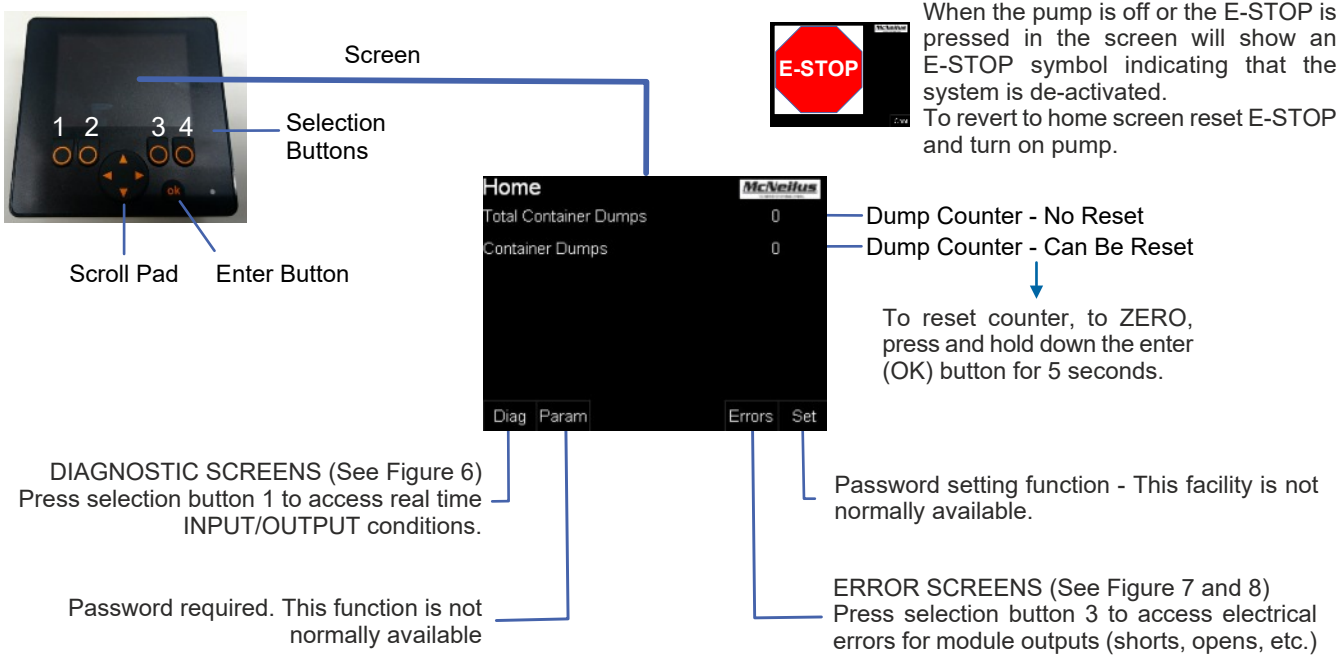


Figure 5

Diagnostic Screens

Example navigation procedure to access information contained on diagnostics screens. Use the scroll pad to navigate to items in the menu list.

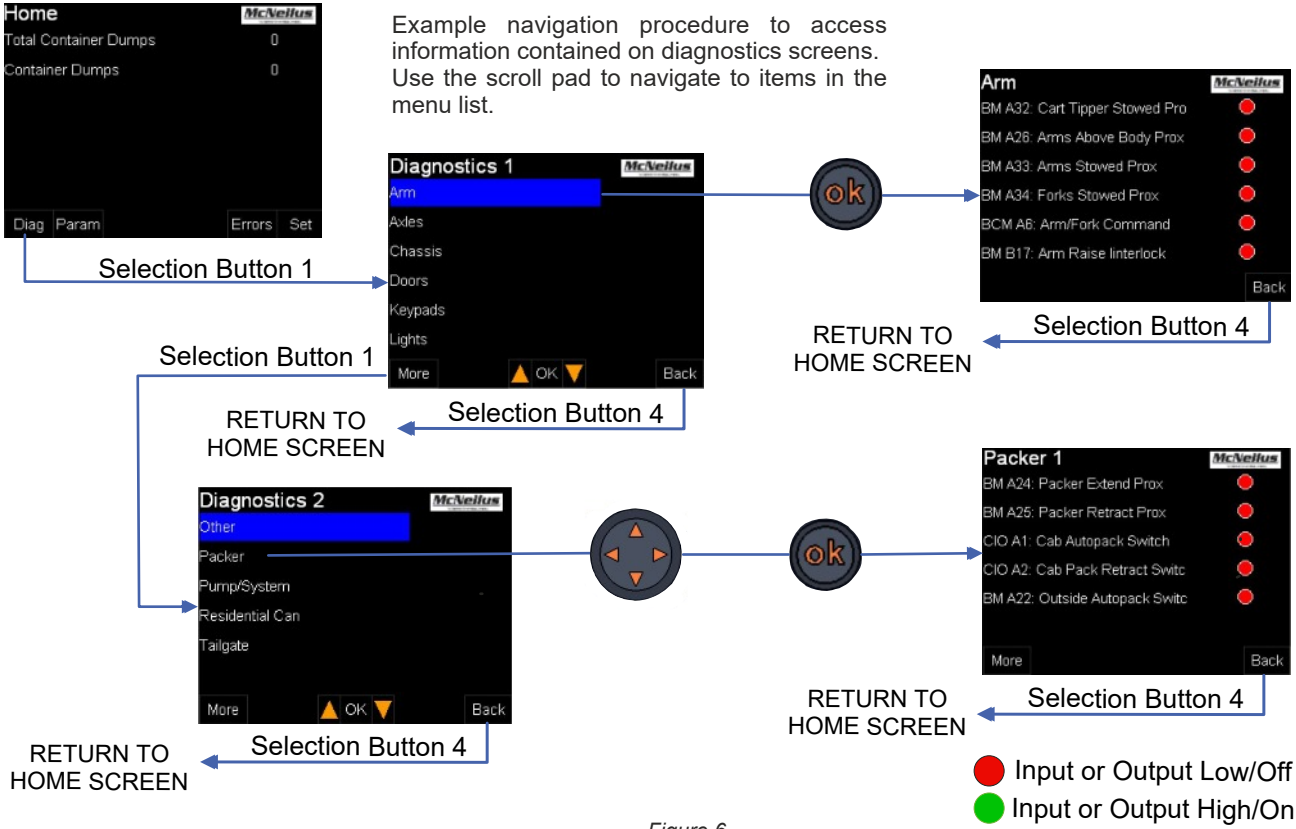


Figure 6

Error Screens

Example navigation procedure to access information contained on error screens. Use the scroll pad to navigate to items in the menu list.

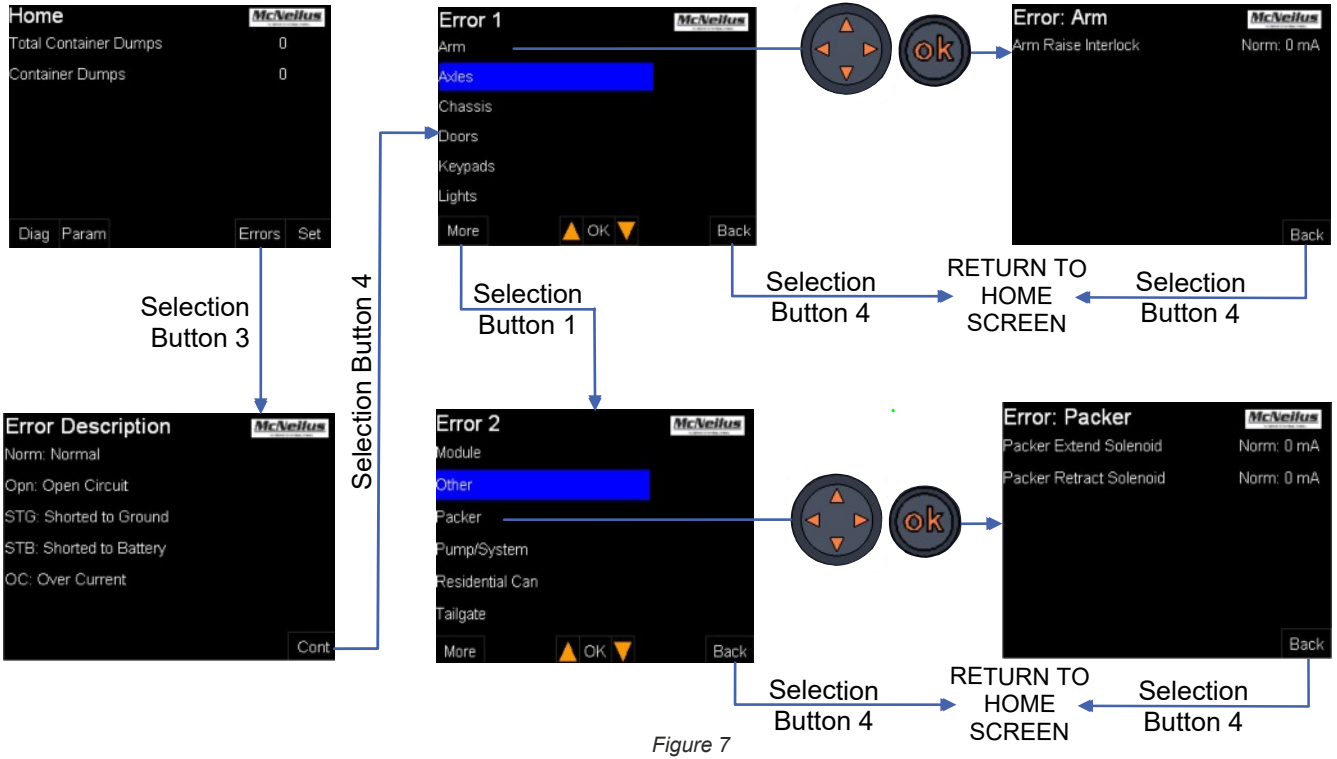


Figure 7

Error Screens - Keypad Check

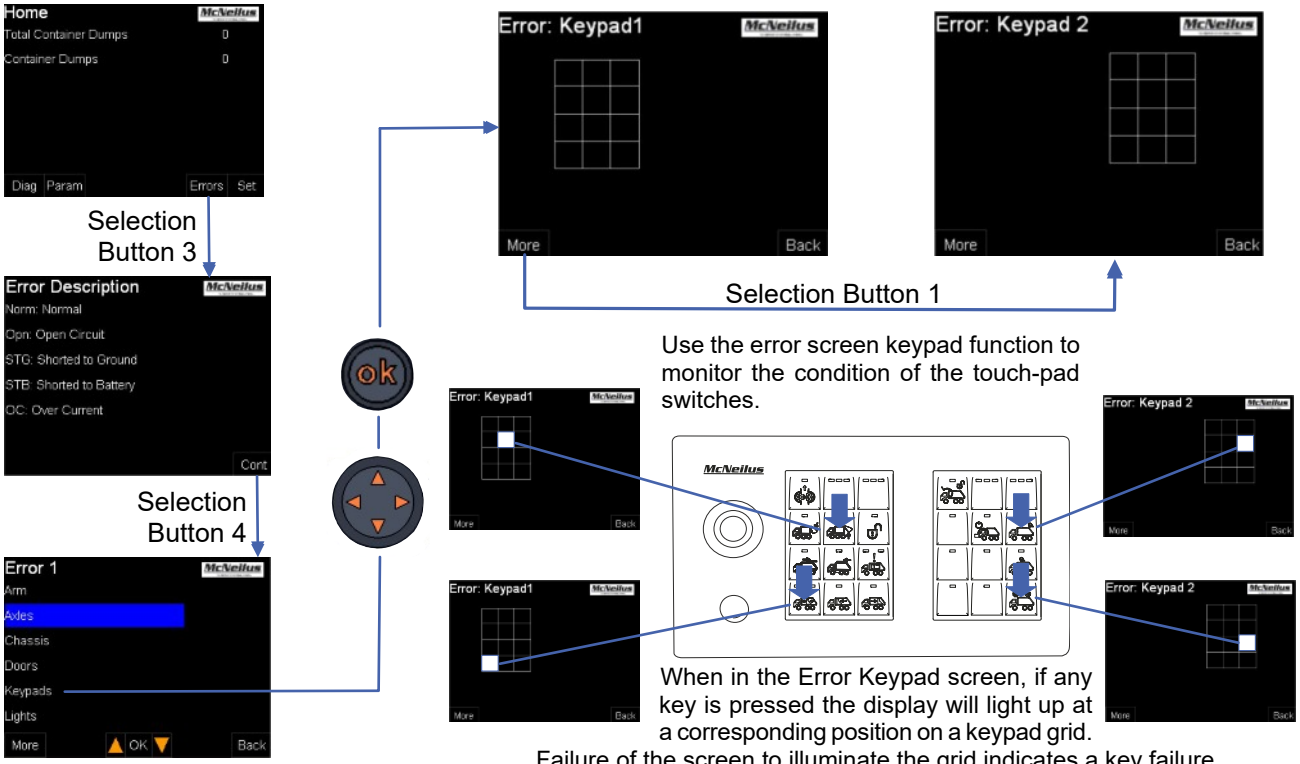


Figure 8

2.3 Arm and Fork Controls

⚠ WARNING

Be sure all non-operator personnel are at least 6 metres away from all areas of the Packer.

Serious personal injury or death may occur.

⚠ DANGER

Make sure the area above the vehicle is clear of objects and power lines before raising the arm.

Serious personal injury or death may occur.

⚠ CAUTION

Use caution when raising the arm assembly with a container.

⚠ CAUTION

Never operate the arms when the canopy is lifted. Failure to comply may cause damage to the canopy or arms.

2.3.1 Dual Axis, Single Lever Joystick

The single lever joystick (Figure 9) controls the movement of both the arm and fork assemblies.

The joystick is spring loaded and automatically returns to the middle (neutral) position when released.

The hold to run button on the end of the joystick must be pressed and held in during all operations (Item A).

- Pull the joystick BACK (Item 1) to raise the arm assembly.
- Push the joystick FORWARD (Item 2) to lower the arm assembly.
- Push the joystick AWAY from the operator (Item 4) to lower the fork assembly.
- Pull the joystick TOWARD the operator (Item 3) to raise the fork assembly.

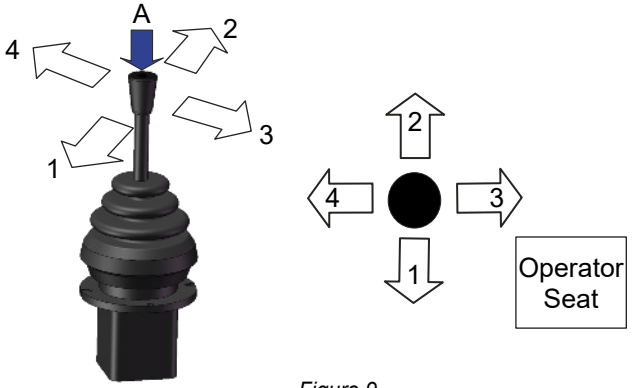


Figure 9

2.3.2 Self Levelling Controller (Option)

Where the fork self levelling facility is fitted to your vehicle a control box (Figure 10) is fitted on the cab control mount.

To activate the self levelling facility press the green “ON” button (Figure 10, Item 1).

When the system is activated the central “ACTIVE” lamp (Figure 10, Item 2) will illuminate.

To deactivate the self levelling facility press the red “OFF” button (Figure 10, Item 3).

When the system is deactivated the central “ACTIVE” lamp will extinguish.

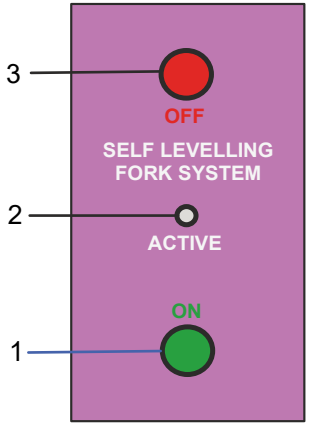


Figure 10

2.3.3 Top Door Opening Mode (Override) Switch (Option)

The main arm control can be overridden where an override switch is fitted (See Figure 11) i.e. where a hinged top door option is specified.

For normal operation the key should be turned clockwise to enable automatic functioning of the system. The green “AUTO” LED will illuminate when the system is in automatic mode (Figure 11, Item 1).

For maintenance purposes, if required, the automatic system can be disabled by turning the key anticlockwise. The “AUTO” LED will extinguish and the red “MANUAL” LED will illuminate (Figure 11, Item 2).

When switched to the manual position the main arms can be operated using the keypad “Arm Over Body Override Switch”. The top door will remain closed during this process.

Return the key to the “AUTO” position before returning the vehicle back into service.

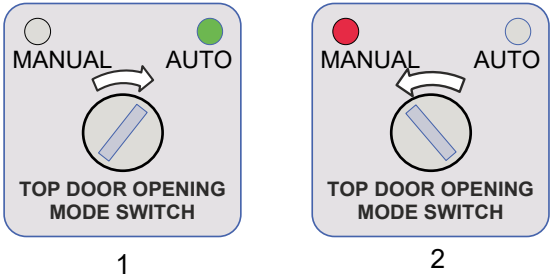


Figure 11

2.4 Fuse Block

The fuse block protects the in-dash controls from an overloaded condition. The fuse block is located on the refuse vehicle behind the cab. Open the cover (Figure 12, Item 1) to gain access to the fuses (Figure 13).

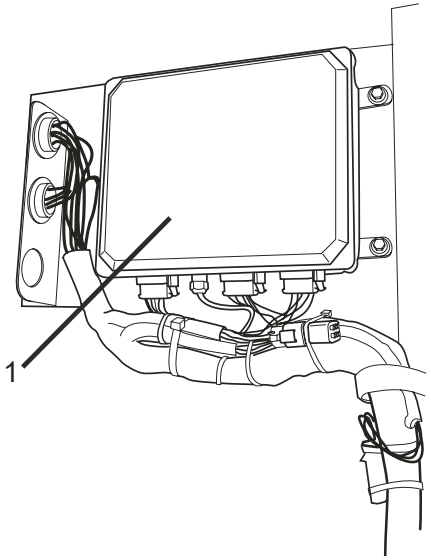
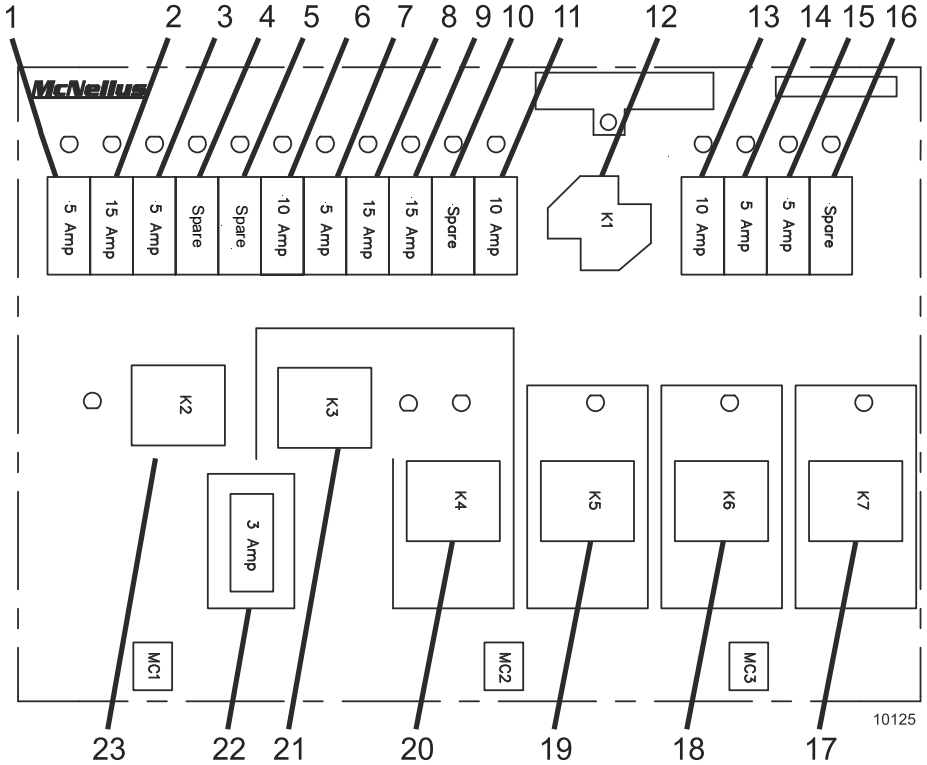


Figure 12

No.	Amp	Description
1	5	Proximity Switch Power Fuse

No.	Amp	Description
2	15	Front Lights Fuse
3	5	Control Power
4		Spare
5		Spare
6	10	3G Power Auxiliary Power Fuse
7	5	Module Power Fuse
8	15	Strobe Light Fuse
9	15	Rear Lights Fuse
10		Spare
11	10	Hydraulic Controls Fuse
12		E-STOP Power Relay
13	10	Hydraulic 1 Fuse
14	5	Top Door Fuse
15	5	Hydraulic 2 Fuse
16		Spare
17		Front Work Lights Relay
18		Rear Work Lights Relay
19		Strobe Lights Relay
20		Spare Relay
21		Ignition Relay 1
22	3	Module Memory Fuse
23		Ignition Relay 2


1
2
3
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5
6
7
8
9
10
11
12
13
14
15
16
McNeilus
5 Amp
15 Amp
5 Amp
Spare
Spare
10 Amp
5 Amp
15 Amp
15 Amp
Spare
10 Amp
K1
10 Amp
5 Amp
5 Amp
Spare
K2
K3
K4
K5
K6
K7
3 Amp
MC1
MC2
MC3
10125
23
22
21
20
19
18
17

Figure 13

2.5 TWO HAND Control Box

⚠ DANGER

When closing the tailgate ensure that the area between the back of the vehicle and the tailgate is clear of any persons before starting the close tailgate procedure.

Serious personal injury or death may occur.

The TAILGATE LOWER function is controlled by a TWO HAND control box positioned to the rear of the offside of the vehicle (See Figure 14).

The tailgate can only be lowered using the TWO HAND control box allowing the operator to ensure that the area between the rear of the vehicle and the tailgate is clear before the tailgate is closed.

To operate TAILGATE LOWER both buttons on the TWO HAND control box must be pushed in simultaneously.

If one button or both buttons are released during the lowering sequence the sequence will be suspended.

To resume lowering of the tailgate push both buttons in simultaneously.

NOTE

An alarm sounds and a dashboard light illuminates when the tailgate is opening and when the tailgate is closing.

Push both buttons in simultaneously.

Figure 14

NOTE

TAILGATE OPEN function cannot be operated from TWO HAND control box.

If the tailgate needs to be raised for any reason the operator will need to return to the cab and operate the in cab control panel buttons.

3.0 Other Equipment

3.1 Fall Arrest Equipment

Your vehicle may be fitted with FALL ARREST SAFETY LINES.

Where fitted the safety lines should always be used when work is being carried out on the roof of the vehicle.

SAFETY NOTICE

Before accessing the roof of the Packer Body ensure that you have read and understand the requirements of the Working at Height Regulations 2005.

To provide adequate fall protection, using the Boughton Engineering safety line system where fitted, only use harness and tether systems which confirm to CE safety standards.

Where vehicles are not factory fitted with fall protection safety lines it is the operator or service personnel's responsibility to ensure that adequate fall protection systems are used.

It is a legal requirement that fall arrest equipment is kept in good repair, including appropriate replacement. Refer to the Personal Protective Equipment Regulations 1992.

The HSE recommends that all fall arrest anchorages should be inspected at least every 12 months.

⚠ DANGER

DO NOT walk on roof areas which are designated, with warning decals, as unsafe.

Where vehicles are fitted with sliding type top doors the door is not strong enough to support a person's weight. Under no circumstances should a sliding type top door be used to access areas on the roof.

Serious personal injury or death may occur.

Where fall arrest safety lines are fitted to your vehicle they will be located along the edges of the areas of the roof where it is safe to walk (See Figure 15).

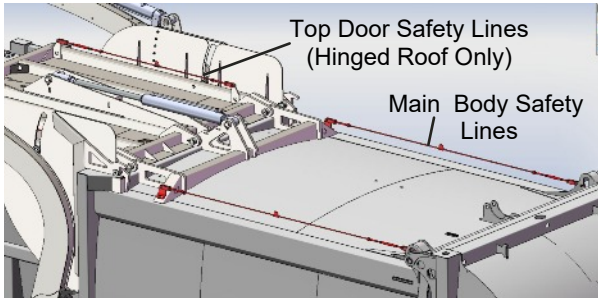


Figure 15

Clip into the safety lines as soon as it is possible to do so and remain clipped in at all times whilst working on the roof of the vehicle.

3.2 Roof Access Ladder

3.2.1 Ladder Deployment

Your waste collection vehicle may be equipped with a roof access ladder (Figure 16).

The lower ladder component must be lifted up and secured to the upper ladder component and the safety cover must be locked in place during transit and storage. Use the roof access ladder only during maintenance.

To operate the ladder, follow these steps:

1. Lift up the spring loaded bolt holding the ladder safety cover in place Figure 16, Item 1) and swing the cover through 180 degrees (Figure 16, Item 2). Engage the spring bolt in the holdback socket (Figure 16, Item 3).
2. Pull the bottom of the ladder away from the body of the vehicle (Figure 16, Item 4) until the stay bar is located in the bottom of the guide slot (Figure 16, Item 5).

⚠ WARNING

Hold the outer ladder throughout the lowering process. If the ladder is released it will extend and may collide with the operator causing injury.

3. Hold the bottom of the outer ladder section and rotate the barrel pins through 180 degrees (Figure 16, Item 6). When both pins have been rotated the outer ladder section is released allowing it to be lowered (Figure 16, Item 7).
4. Allow the ladder to lower until fully extended.

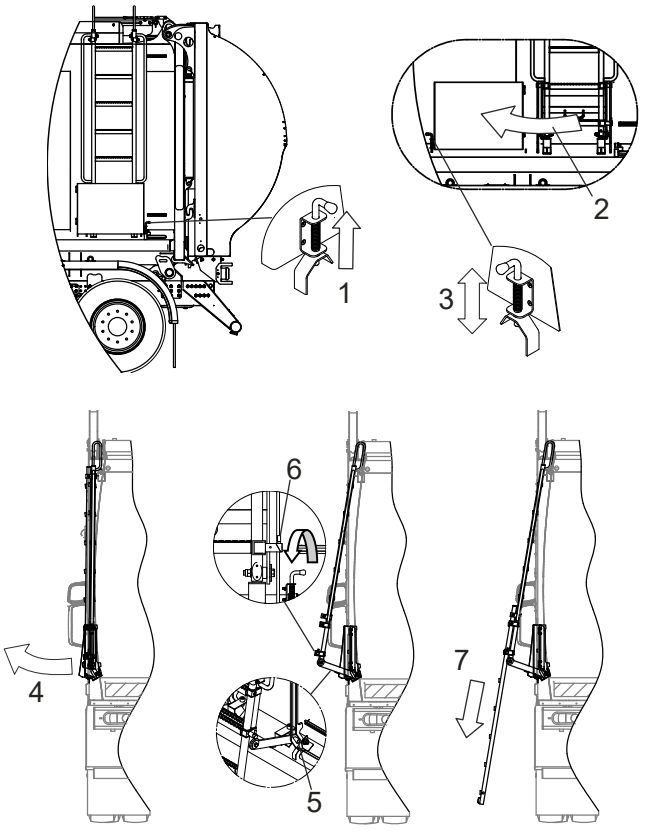


Figure 16

5. Check that the ladder is in the fully down position and that the Ladder stay bar is fully down in the guide slot.

DANGER

Use the three-point rule when climbing the Ladder.

Failure to heed may cause serious personal injury.

6. Your ladder is now deployed and can be used to access the packer roof.

3.2.2 Ladder Stowage

To stow the ladder:-

1. Hold the bottom of the outer ladder section and slide up until the ladder is fully retracted (Figure 17, Item 1)
2. Rotate the barrel pins (Figure 17, Item 2) so that they are in the fully closed position and the pins are engaged in the holes in the outer ladder section. Check that the outer ladder section is securely pinned to the inner ladder section.
3. Using the handle (Figure 17, Item 3) pull the ladder stay out of the bottom of the guide rail then push the stay up in the guide. The ladder will move into the stowage position as the stay moves up the guide.
4. When the ladder is in the stowage position, lift the spring bolt holding the safety cover in the holdback position (Figure 17, Item 4)
5. Rotate the safety cover through 180 degrees and engage the Spring bolt in the door closed position (Figure 17, Item 5).

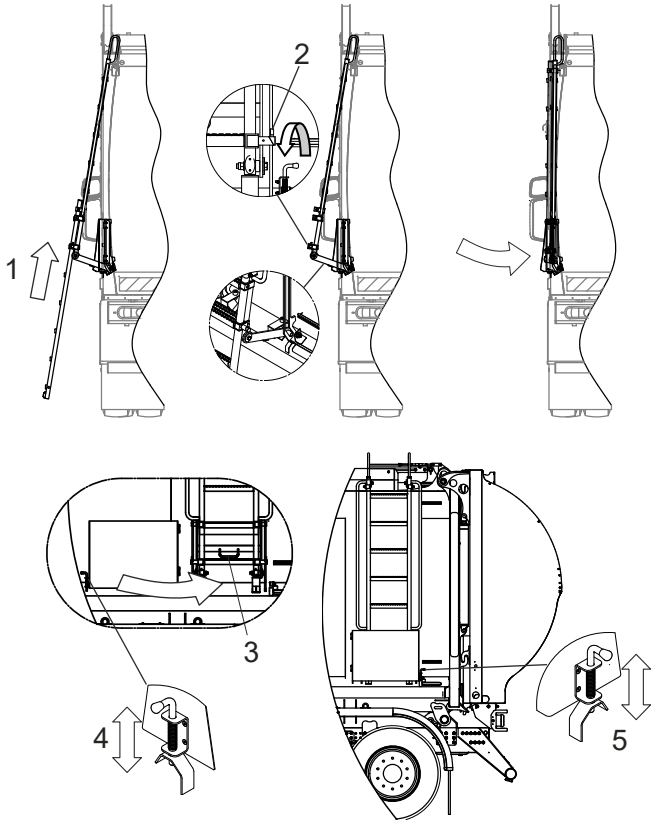


Figure 17

4.0 Control Functions

4.1 E-STOP (Emergency Stop) Function

The E-Stop is located on the in cab Packer control panel (Figure 18).

Press the E-STOP button to IMMEDIATELY DISABLE the refuse vehicle and hydraulic functions.

The E-STOP button is a safety function.

Pressing the red E-STOP button disables all refuse vehicle Electrical, Pneumatic, and Hydraulic functions.

Pull up to release the in-cab control panel E-STOP button (Figure 19).

NOTE

The E-STOP button remains in a locked DOWN position until it is manually released.

NOTE

All E-STOP buttons must be in the UP position before the Packer functions can be restored.

NOTE

If Packer functions are not operational, reset the controls by pulling up ALL of the E-STOP buttons and turning the pump back on.

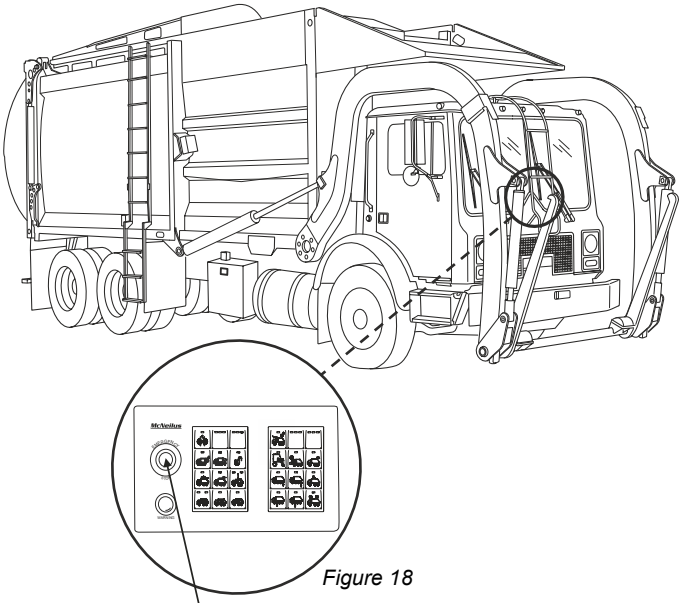


Figure 18

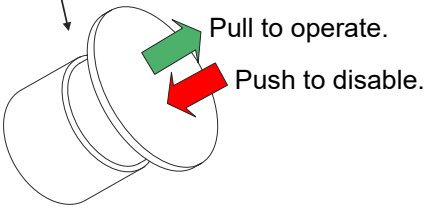


Figure 19

4.2 Pack/Eject Functions

The Pack/Eject Functions are controlled by two buttons located on the in-dash control panel. Automatic cycling of the Pack/Eject Functions is controlled by the AUTOPACK and SWEEP button. Manual cycling of the Pack/Eject Functions is controlled by the EXTEND button or the RETRACT button.

⚠ WARNING

Be sure all non-operator personnel are at least 6 Metres away from all areas of the Packer.

Serious personal injury or death may occur.

4.2.1 Automatic Cycling of Pack/Eject

Conditions

- Tailgate OPEN indicator light must be OFF
- Arms ABOVE BODY indicator light must be OFF
- Top Door CLOSE indicator light must be ON
- Engine speed must be below 1000 rpm.

Press and hold the PACK and SWEEP button (for one second) to activate automatic cycling of the Pack/Eject functions.

When activated, the pack/eject extends from the HOME position (Figure 20, Item 1) into the hopper until it reaches the EXTEND position (Figure 20, Item 2).

The pack/eject then reverses direction and retracts until it returns to the HOME position.

NOTE

The automatic pack and sweep cycle can be interrupted by pressing the E-STOP buttons.

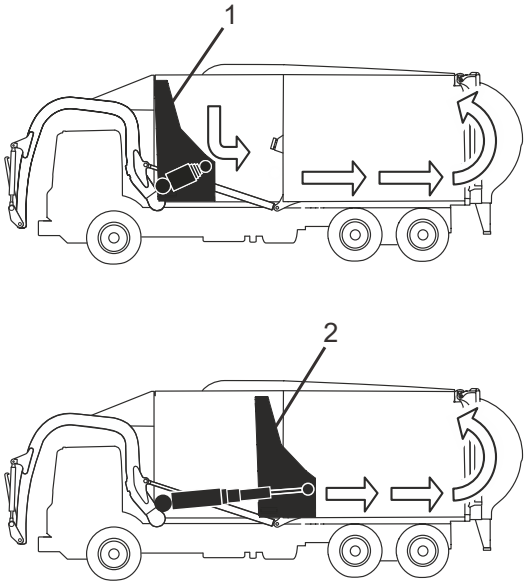


Figure 20

4.2.2 Manual Cycling of Pack/Eject

Conditions

(Applies to Extend Function Only)

- Tailgate OPEN indicator light must be OFF
- Arms ABOVE BODY indicator light must be OFF
- Top Door CLOSED indicator light must be ON
- Engine speed must be below

Manual cycling of the Pack/Eject Functions is controlled by the EXTEND button or the RETRACT button located on the cab control panel.

With the tailgate CLOSED, the pack/eject can only travel from the HOME position (Figure 21, Item 1) to the EXTEND position (Figure 21, Item 2).

Press and hold the EXTEND button to manually control the extend movement of the pack/eject.

When the button is released, the pack/eject will stop at its current position.

Press and hold the RETRACT button located on the cab control panel to retract the pack/eject.

The pack/eject will retract to the HOME position (Figure 21, Item 3).

When the RETRACT button is released, the pack/eject will stop at its current position.

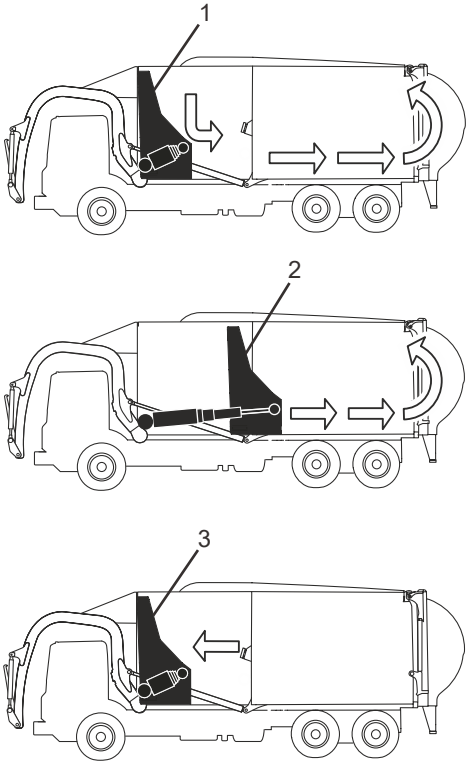


Figure 21

4.2.3 Manual Cycling with Tailgate Open

Conditions

(Applies to Extend Function Only)

- Arms ABOVE BODY indicator light must be OFF
- Top Door CLOSED indicator light must be ON
- Tailgate must be fully open
- Engine speed must be below 1000 rpm

When the tailgate is OPEN, the EXTEND button or the RETRACT button controls the Pack/Eject Functions in the same way with the exception that the pack/eject can travel into the body.

With the tailgate fully OPEN, the pack/eject will extend past the EXTEND position. The distance that the pack/eject extends into the body is determined by holding the EXTEND button.

While holding the EXTEND button, the pack/eject (Figure 22, Item 1) will extend to the rear of the body to eject the load.

Press and hold the RETRACT button to retract the pack/eject

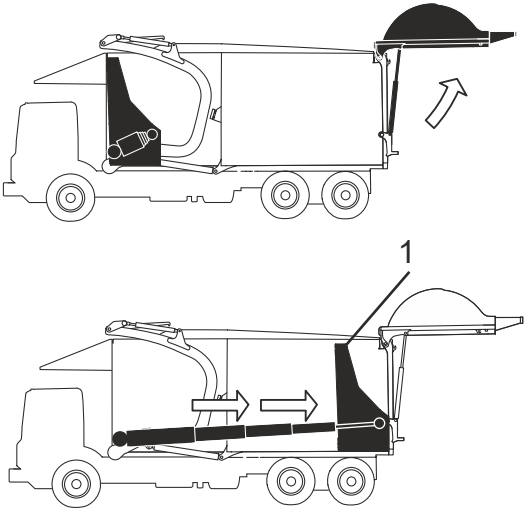


Figure 22

4.3 Arm Functions

The Arm Functions are controlled from the chassis cab.

⚠ WARNING

Be sure all non-operator personnel are at least 6 metres away from all areas of the Packer.

Serious personal injury or death may occur.

⚠ DANGER

Make sure the area above the vehicle is clear of objects and power lines before raising the arm.

Serious personal injury or death may occur.

⚠ CAUTION

Use caution when raising the arm assembly with a container.

Conditions

- Top Door CLOSED indicator light must be OFF
- Pack/Eject RETRACT indicator light must be ON
- Engine speed must be below 1000 rpm

Use the arm controls to raise the arm assembly (Figure 23, Item 1). The ARM ABOVE BODY indicator light will turn on once the arm assembly is above the body (cab).

Use the arm controls to lower the arm assembly (Figure 23, Item 2).

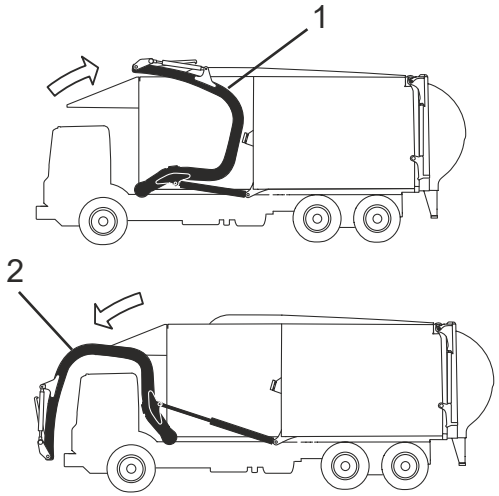


Figure 23

4.4 Fork Functions

The Fork Functions are controlled from the chassis cab.

⚠ WARNING

Be sure all non-operator personnel are at least 6 metres away from all areas of the Packer.

Serious personal injury or death may occur.

⚠ DANGER

Make sure the area above the vehicle is clear of objects and power lines before raising the arm.

Serious personal injury or death may occur.

Condition

- Engine speed must be below 1000 rpm

Use the fork controls to raise the fork assembly (Figure 24, Item 1).

Use the fork controls to lower the fork assembly (Figure 24, Item 2).

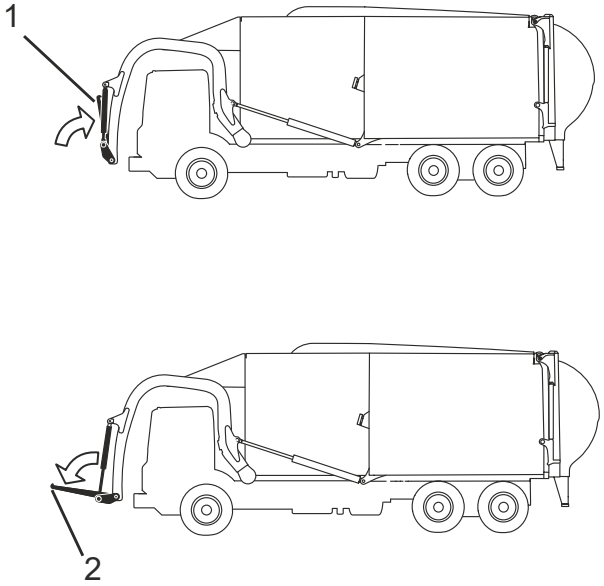


Figure 24

4.5 Self Levelling Functions

With the Self Levelling Function, the fork assembly is automatically rotated when the arm assembly is raised. When activated the Self Level operates during the initial stage of lifting a container and is automatically de-activated when the container is above a pre-determined height depending on the type of vehicle cab.

Self Level resumes when the container is lowered to a pre-determined height depending on the type of vehicle cab. The forks will be automatically levelled during final stages of lowering a container back to the ground.

⚠ WARNING

Be sure all non-operator personnel are at least 6 metres away from all areas of the Packer.

Serious personal injury or death may occur.

⚠ DANGER

Make sure the area above the vehicle is clear of objects and power lines before raising the arm.

Serious personal injury or death may occur.

⚠ CAUTION

Use caution when raising the arm assembly with a container.

Conditions

- Top Door CLOSED indicator light must be OFF
- Pack/Eject RETRACT indicator light must be ON
- Engine speed must be at tick-over for the self levelling function to operate correctly.

After the forks are positioned in the container, activate the Self Level feature by pressing the green button on the Self Level control box (See 1.1. Figure 1)

1. On the in cab joystick, press the hold to run and pull the joystick back to raise arms and container (Figure 25, Item 1).
2. As the arm assembly rises the fork assembly will automatically lower to a level position (Figure 25, Item 2) until the preset height is reached.

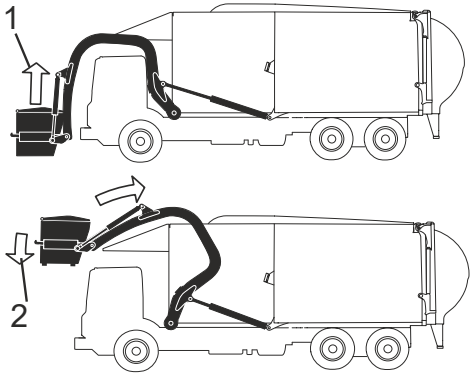


Figure 25

3. Continue to press the hold to run and pull the joystick back to continue to raise the arms until the assembly reaches the arm stops (Figure 26, Item 1).

   During this part of the cycle the Auto-Level feature is disabled and the forks can only be rotated with inputs through the joystick controller.

4. Discharge the load (Figure 26, Item 2).

5. Press the hold to run and push the joystick forward to lower the arms.

   Prior to lowering the arms the forks will automatically rotate to the vertical position to ensure that the container is clear of the hopper (Figure 26, Item 3).

6 Continue to press the hold to run and push the joystick forward to continue lowering the container (Figure 26, Item 4).

   The arms will rotate to a point where the container is at a preset height. The forks will automatically rotate to level the container (Figure 26, Item 5)

7. Continue to press the hold to run and push the joystick forward to continue lowering the container (Figure 26, Item 6).

   The forks will automatically rotate to level the container (Figure 33, Item 7) until the container is at ground level.

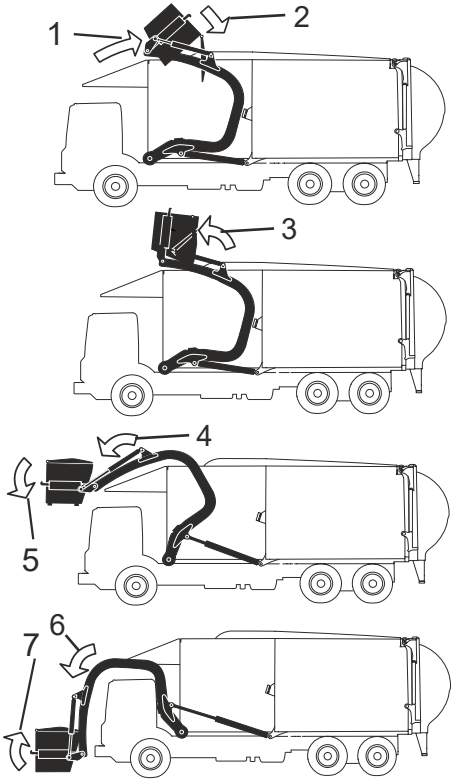


Figure 26

4.6 Tailgate Function

Tailgate functions are controlled by the TAILGATE OPEN and the ACTIVATE button located on the in cab control box and by the TWO HAND control box located on the rear offside of the vehicle body.

The tailgate is opened using the in cab controls.
The tailgate is closed using the external TWO HAND controls.

⚠ WARNING

Be sure all non-operator personnel are at least 6 metres away from all areas of the Packer.

Serious personal injury or death may occur.

⚠ DANGER

Make sure the area above the vehicle is clear of objects and power lines before raising the tailgate.

Serious personal injury or death may occur.

Condition

- Engine speed must be below 1000 rpm

4.6.1 Open Tailgate

On the in cab control box, press and hold the ACTIVATE and the OPEN TAILGATE buttons at the same time to open the tailgate (Figure 27, Item 1).

Release buttons to pause opening of the tailgate.

Press and hold the ACTIVATE and the OPEN TAILGATE buttons to recommence opening of the tailgate.

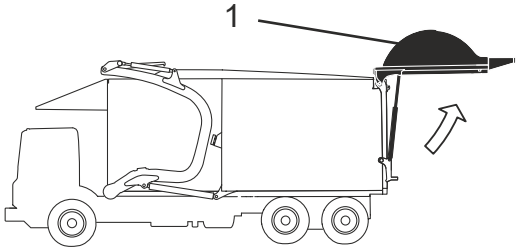


Figure 27

4.6.2 Close Tailgate

⚠ DANGER

When closing the tailgate ensure that the area between the back of the vehicle and the tailgate is clear of any persons before starting the close tailgate procedure.

Serious personal injury or death may occur.

Press and hold BOTH buttons on the external TWO HAND control box to close the tailgate (Figure 28, Item 1).

Release buttons to pause closing of the tailgate.

Press and hold BOTH buttons on the external TWO HAND control box to recommence closing of the tailgate.

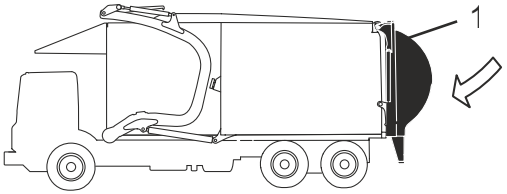


Figure 28

4.7 Top Door Functions

The Top Door functions are used to close off the refuse hopper during travel to keep trash from blowing out of the hopper.

Your vehicle may be equipped with one of two types of Top Door:-

Type 1 - Sliding type.
Type 2 - Hinged type.

⚠ WARNING

Be sure all non-operator personnel are at least 6 meters away from all areas of the Packer.

Serious personal injury or death may occur.

Condition

- Side door indicator light must be off
- Engine speed must be below 1000 rpm.

4.7.1 Sliding Type Top Door

4.7.1.1 Sliding Type - Open Top Door

On the in cab control box press and hold the ACTIVATE button and the TOP DOOR OPEN button at the same time to open the top door (Figure 29, Item 1).

4.7.1.2 Sliding Type - Close Top Door

On the in cab control box press and hold the ACTIVATE button and the TOP DOOR CLOSE button at the same time to close the top door (Figure 29, Item 2).

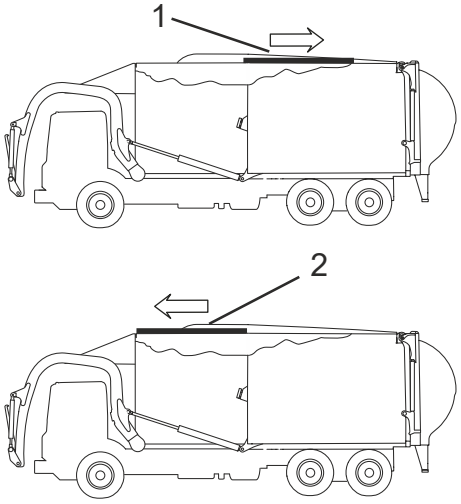


Figure 29

4.7.2 Hinged Type Top Door

⚠ DANGER

Make sure the area above the vehicle is clear of objects and power lines before raising the arms.

Serious personal injury or death may occur.

4.7.2.1 Automatic Opening of the Top Door

The hinged type top door operates automatically when the lift arms are raised to empty a container into the hopper.

Operate the in cab joystick control by pushing down the HOLD TO RUN BUTTON and pulling back on the joy stick at the same time.

The arms will raise. The top door will remain closed during the initial raising of the arms (Figure 30, Item 1).

The arms will stop at a predetermined height depending on the cab type.

Continue pulling back on the joystick whilst pushing down the hold to run button. The top door will open (Figure 30, Item 2)

Continue pulling back on the joystick whilst pushing down the hold to run button. The arms will restart and continue the lift sequence until they reach the arm stops.

The container can now be discharged into the hopper (Figure 30, Item 3).

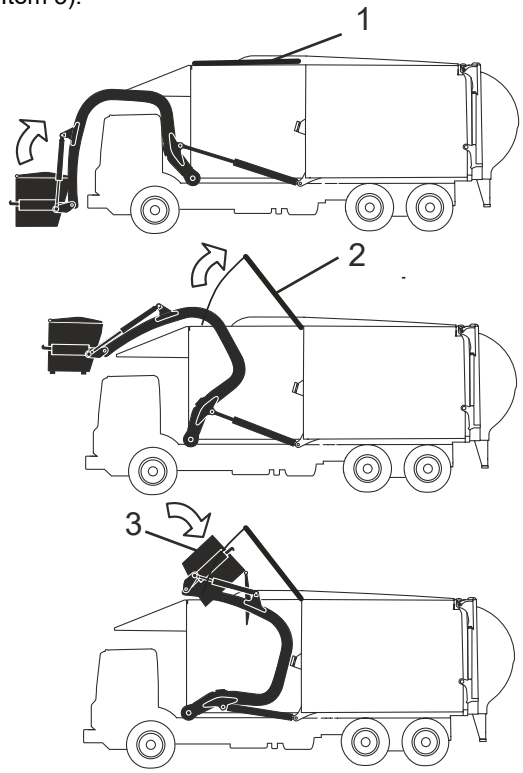


Figure 30

4.7.2.2 Automatic Closing of the Top Door

The hinged type top door operates automatically when the lift arms are lowered.

Operate the in cab joystick control by pushing down the HOLD TO RUN BUTTON and pushing forward on the joy stick at the same time.

The arms will lower.
The top door will remain open during the initial lowering of the arms (Figure 31 Item 1).

The arms will stop at a predetermined height depending on the the cab.

Continue pushing forward on the joystick whilst pushing down the hold to run button.
The top door will close (Figure 31, Item 2)

Continue pushing forward on the joystick whilst pushing down the hold to run button.
The arms will restart and continue the lowering sequence allowing the container to be returned to the ground (Figure 33, Item 3).

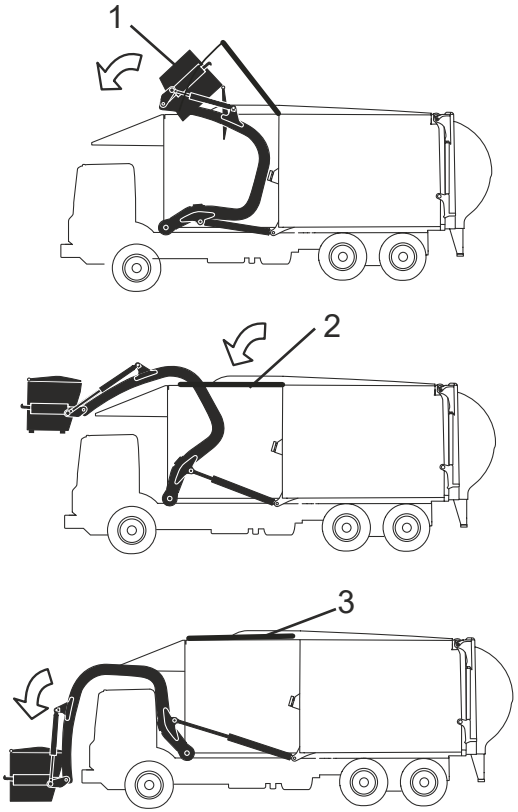


Figure 31

5.0 Operating Procedures

⚠ WARNING

Do not leave the truck unattended until the parking brake has been securely set and all reasonable precautions have been taken to prevent the movement of the truck. It is recommended that the operator chocks the truck wheels anytime he/she is away from the vehicle for an extended period of time.

Failure to comply may result in serious personal injury or death or damage to equipment.

⚠ DANGER

Make sure the area above the vehicle is clear of objects and power lines before raising the arms.

Serious personal injury or death may occur.

⚠ WARNING

Be sure all non-operator personnel are at least 6 meters away from all areas of the Packer.

Serious personal injury or death may occur.

NOTE

Turn the pump ON and idle the truck for a minimum of five minutes before operating the hydraulic functions when the air temperature is 10° C or below.

5.1 Start-up Procedure

Before starting the vehicle, make certain that:

1. Battery switch is ON.
2. Daily checks have been completed and verified.

5.2 Warm-up Procedure

At start-up of the equipment, each morning, it is important to cycle through each of the main hydraulic circuits to be certain each circuit is functioning properly. Cycling through each operation also helps ensure that the hydraulic fluid is up to operating temperature and is present throughout the system.

⚠ CAUTION

If you detect a problem with any control function, it must be repaired immediately. DO NOT operate the Packer with malfunctioning controls.

Damage to property or equipment may occur.

1. Cycle through each of the following operations:
   a. Pack/Eject Functions - Cycle three (3) times.
   b. Tailgate Functions - Cycle one (1) time.
   c. Top Door Functions - Cycle three (3) times.
   d. Fork and Arm Functions - Cycle ten (10) times.
2. After completing the cycle tests, inspect the refuse vehicle for any hydraulic leaks. If the leaks are detected, correct them BEFORE the refuse vehicle is placed into actual operation.

5.3 Travelling Procedure

⚠ WARNING

DO NOT drive the vehicle between sites without first checking that the equipment has been stowed correctly in the driving position.
Ensure that the PUMP is turned OFF to disable the hydraulic functions.
Check that the in cab warning light is extinguished before driving on the highway.
Check the running vehicle height and take note of any height limits on your route.

Failure to comply may cause serious injury and damage to the equipment.

⚠ WARNING

The Packer and chassis should never be overloaded.
Do not exceed the manufacturer's recommended gross vehicle weight.
Do not overload the Packer and chassis. Gross weights and maximum axle weights must comply with UK Construction and Use Regulations.
Failure to comply can cause serious injury.

⚠ DANGER

Always drive defensively. Never exceed posted speeds. Use lower speeds when going around curves, corners, or motorway on/off ramps. You are carrying a high centre of gravity load. Failure to comply can lead to a roll over or other loss of control of the vehicle resulting in serious personal injury or death.

⚠ WARNING

No passenger is allowed in the cab unless a manufacturer's approved passenger seat and seat belt are provided. Serious injury or death can result.

Before beginning travel to the next site, be sure that all hydraulic functions are in their HOME positions. This means that the:

1. Tailgate is fully closed.
2. The forks are in the fully raised position (Figure 32, Item 1).
3. The arms are in the driving position just above the cab (Figure 32, Item 2).

NOTE

The arms MUST be positioned so that the driver's view is not obscured. If the arms are raised too high, when the handbrake is released, the warning light on the control box will illuminate and a buzzer will sound.

Lower the arms to extinguish the light and silence the buzzer.

4. Turn PUMP button OFF to disable hydraulic functions.

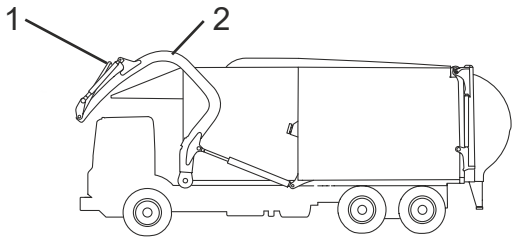


Figure 32

5.4 Refuse Loading Procedure

⚠ DANGER

It is possible a person has gained entry to a container and has become trapped, are sleeping or are unconscious.

Check the container before commencing with a lift and load to ensure that the container can be safely loaded without causing serious injury or death to a third party.

⚠ WARNING

Be sure all non-operator personnel are at least 6 metres away from all areas of the Packer.

Failure to observe may cause serious personal injury or death.

⚠ WARNING

If refuse is spilled on the cab shield, only use a extendable handled rake or broom to remove the refuse. Never climb on the cab shield.

A fall from the cab shield may cause serious personal injury or death.

1. Switch on the pump.
2. Make sure that the pack/eject is in the HOME position.
3. If fitted with a sliding top door make sure that the door is open.
4. Lower the fork and arm assemblies into position to lift the container.
5. Position the vehicle in line with the container, and drive the vehicle forward until the forks are all the way through the container fork pockets (Figure 33, Item 1).
6. Adjust the fork assembly so the container is level.

⚠ CAUTION

Use caution when raising the arm assembly with a container.

⚠ DANGER

Make sure the area above the vehicle is clear of objects and power lines before raising the arm.

Serious personal injury or death may occur.

7. For equipment fitted with SELF LEVELLING activate the SELF LEVEL feature.
8. Raise the arm assembly until the fork assembly is visible at the top of the windshield (Figure 33, Item 2).
9. For equipment NOT fitted with the AUTO-LEVEL feature lower the fork assembly to level the container (Figure 33, Item 3).
10. Continue to raise the arm assembly until arm assembly reaches the arm stops (Figure 33, Item 4).
11. Raise fork assembly to empty container (Figure 33, Item 5).

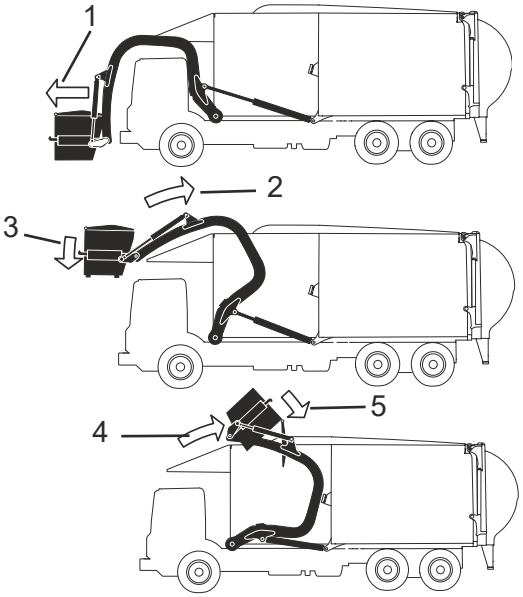


Figure 33

⚠ CAUTION

Do not operate pack and sweep with container in hopper.

Serious damage may result to the Packer.

12. Lower the fork assembly until the container has cleared the hopper and the forks are vertical. (Figure 34, Item 6).

⚠ CAUTION

When lowering the arm assembly check, at all times, that the container is clear of the vehicle structure.

Any collision with the vehicle may cause serious damage.

13. Lower the arm assembly to return the container to the ground taking care to adjust the fork positions to avoid the container colliding with the vehicle structure (Figure 34, Item 7).
14. Adjust the fork assembly so that the container is sitting fully on the ground and the forks are free for extraction (Figure 34, Items 7 and 8).
15. Reverse the vehicle until the forks are clear of the container pockets (Figure 34, Item 9).
16. Place the fork arm assemblies in the travel position (Figure 34, Item 10).
18. Execute an AutoPack function.
19. Prepare the vehicle and equipment to travel to the next site.

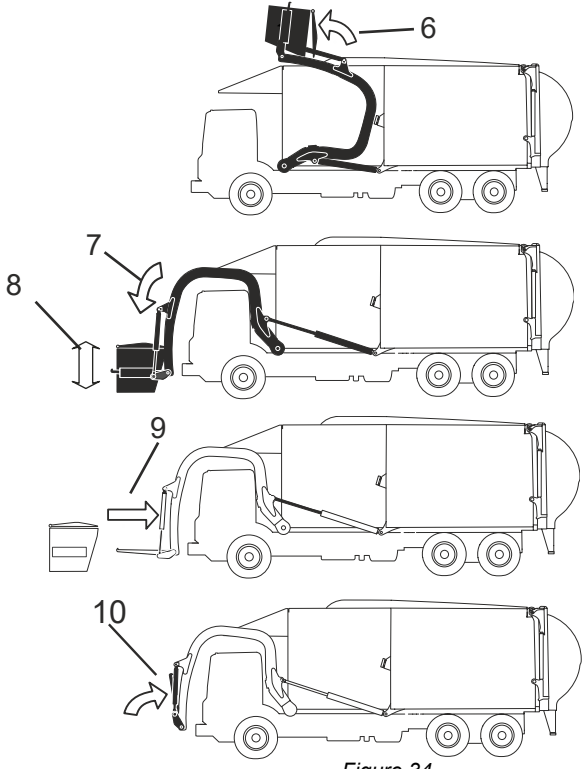


Figure 34

5.5 Refuse Empty Procedure

⚠ WARNING

Be sure all non-operator personnel are at least 6 metres away from all areas of the Packer.

Serious personal injury or death may occur.

⚠ DANGER

Make sure the area above and to the rear of the vehicle is clear of objects and power lines before raising the tailgate.

Serious personal injury or death may occur.

1. Position the rear of the refuse vehicle as appropriate.
2. Verify the fork and arm assemblies are in the travel position.
3. Open the tailgate fully (Figure 35, Item 1).

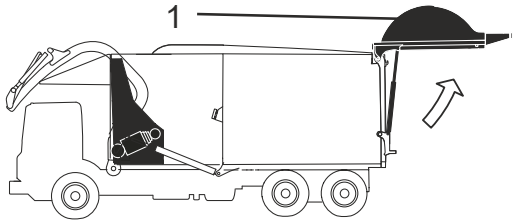


Figure 35

4. Extend the pack/eject to the rear (Figure 36, Item 1) of the body to eject the load.

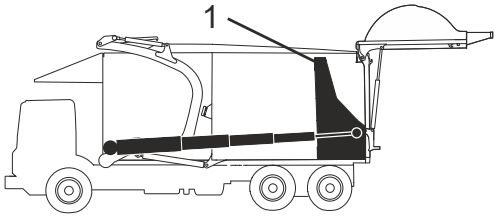


Figure 36

5. Retract the pack/eject to the HOME position.

⚠ WARNING

Never place yourself between the tailgate and the body. Always engage both tailgate props when performing maintenance or inspections in or around the open tailgate area.

Failure to engage both tailgate props may result in serious personal injury or death.

6. Lower the tailgate and prop for maintenance. (See Installing the Standard Tailgate Prop.)
7. Remove the prop from the tailgate. (See Removing the Standard Tailgate Prop.)
8. Inspect and clean the tailgate seal and sealing areas of the body, including around the tailgate props, then fully close the tailgate.

1.0 Preventive Maintenance

The unit must be checked or inspected each day or before each new shift of operation. Report any deficiencies to your Maintenance Department for correction by skilled service personnel.

SAFETY NOTICE

Before entering Packer body or performing maintenance to the vehicle, read and follow HSE Guidance on working in confined spaces.

The LOCKOUT/TAGOUT procedures detailed in section 1.2 of this manual must be followed at all times.

Follow all safety instructions in your Boughton Vehicle Manual.

Shut off vehicle engine, lock cab doors, and keep keys in your pocket before entering body or performing any work to the vehicle.

Place magnetic "DANGER" signs on both cab doors.

Failure to do so can result in serious personal injury or death.

⚠ CAUTION

Correct all identified deficiencies BEFORE operating the Packer. Failure to correct deficiencies may cause damage to equipment.

⚠ DANGER

LOCKOUT/TAGOUT procedures must be followed when working on this equipment including, but not limited to, cylinders being changed or maintained. Failure to heed these instructions/warnings can result in serious personal injury or death.

⚠ WARNING

Do not steam clean or pressure wash the pump or hydraulic hose. Cleaning the pump with a high pressure washer or steam cleaning may damage the pump's seals and allow water to enter the hydraulic system. Cleaning the hydraulic hose with a high pressure washer or steam cleaning will damage the hose's outer covering and steel braid and lead to premature failure. The pump and hydraulic hose should be wiped with a clean lint-free cloth rather than washed.

The vehicle and packer equipment should be washed regularly (recommend washing weekly and more frequently if the type of operation demands). A build up of refuse materials around moving parts can cause damage. In particular pay attention to the hydraulic cylinders and pivot points. Wipe, with a clean cloth, all exposed piston rods.

1.1 Pre-Trip

Perform a pre-trip inspection of the entire refuse vehicle to ensure that the equipment is operating correctly and that the vehicle complies with all legal requirements to be operated on the highway.

2.0 Preventive Maintenance Intervals

Performing preventive maintenance on your refuse vehicle will prolong the life of its equipment, help prevent expensive downtime, and minimize the potential for problems arising on the route.

The following Preventive Maintenance Chart summarizes the requirements to properly maintain your refuse vehicle.

The chart specifies the recommended interval when each item should be performed.

Intervals are listed in calendar and hours-of-use increments. Maintenance should be performed at the increment that occurs first.

The preventive maintenance intervals listed under the **Service** group heading are the maximum days or hours allowed for each maintenance procedure. Continue to repeat the maintenance procedures at the listed intervals.

Some maintenance procedures are listed under both the **Operator** group heading and **Service** group heading.

The Daily Checks under the **Operator** group heading identify procedures that can be performed by either the operator or skilled service personnel.

All intervals listed under the **Service** group heading must be performed by skilled service personnel. Refer to the product Service Manual for description of maintenance procedures.

Maintenance procedures are listed under the system of the refuse vehicle that is affected.

NOTE
If the Packer is operated more hours per day or double-shifted, the maintenance interval must be adjusted accordingly.

The Preventive Maintenance Chart identifies the responsibilities to be performed by both the operator and service personnel.

Legend

R Replace
I Inspect
T Torque
P Perform
L Lubricate
C Clean

	Operator		Service				
	Daily Checks	Daily (10 Hours)	Weekly (50 Hours)	Scheduled PM (150 Hours)	Semi-Annual (1250 Hours)	Annually (2500 Hours)	Bi-Annual (5000 Hours)
Hydraulic System							
Hydraulic Oil Level	I			I			
Hydraulic System and Components	I			I			
Hydraulic Hoses	I			I			
Hydraulic Tubes and Pipes	I			I			
Breather Filter				I	R		
Return Line Filter					R		
Hydraulic Oil Test					P		
HOC Operation Test					P		
Test Main Relief Valve Setting					P		
Change Hydraulic Oil					P		

* Complete all prior maintenance items before proceeding to this hourly service interval.

Legend

R Replace
I Inspect
T Torque
P Perform
L Lubricate
C Clean

	Operator		Service				
	Daily Checks	Daily (10 Hours)	Weekly (50 Hours)	Scheduled PM (150 Hours)	Semi-Annual (1250 Hours)	Annually (2500 Hours)	Bi-Annual (5000 Hours)
Hydraulic System Continued							
Reservoir Drain Plug					I		
Suction Line Strainer					R		
Electrical System							
Lighting System	I			I			
Wire Harness	I			I			
Audible Back Up Alarm	I			I			

* Complete all prior maintenance items before proceeding to this hourly service interval.

Legend

R Replace
I Inspect
T Torque
P Perform
L Lubricate
C Clean

	Operator			Service			
	Daily Checks	Daily (10 Hours)	Weekly (50 Hours)	Scheduled PM (150 Hours)	Semi-Annual (1250 Hours)	Annually (2500 Hours)	Bi-Annual (5000 Hours)
Mechanical System							
Refuse Vehicle Components	I			I			
Tailgate Seal Condition	I			I			
Tailgate Seal Replaced						R	
Tailgate Lock Clearance				I			
Top Door				I			
Ladder Bolts			I				
Pack/Eject Assembly				I			
Pack/Eject Track Clearance				I			
Arm Assembly				I			
Fork Assembly				I			

* Complete all prior maintenance items before proceeding to this hourly service interval.

Legend

R Replace
I Inspect
T Torque
P Perform
L Lubricate
C Clean

	Operator		Service				
	Daily Checks	Daily (10 Hours)	Weekly (50 Hours)	Scheduled PM (150 Hours)	Semi-Annual (1250 Hours)	Annually (2500 Hours)	Bi-Annual (5000 Hours)
Operation							
Refuse Vehicle Controls	I			I			
Remove Trash Behind Pack/Eject	C			C			
Safety Decals	I						
Lubrication							
Daily		P					
Scheduled PM				P			

* Complete all prior maintenance items before proceeding to this hourly service interval.

3.0 Daily Checks

3.1 Hydraulic System

Perform LOCKOUT/TAGOUT before starting any hydraulic system maintenance (see LOCKOUT/TAGOUT Procedure).

3.1.1 Hydraulic Oil Level

- **Daily Checks -** The oil level is checked by the operator or skilled service personnel.

NOTE
Check hydraulic oil level during start-up when the oil temperature is still cold.

Check the hydraulic oil level with all hydraulic cylinders in their fully RETRACTED position.

- **3.1.1.1 Temperature/Level Sight Gauge**

The gauge (Figure 38, Item 1) can be mounted to either side of the hydraulic reservoir. The gauge contains a thermometer which indicates the temperature of the hydraulic oil in the reservoir.

The hydraulic oil must be checked with all the hydraulic cylinders in the fully RETRACTED position. The oil level should be kept to the top of the black line (Full) (Figure 38, Item 3), but don't overfill. If the oil level gets down to the red line (Figure 38, Item 2), Oil must be added.

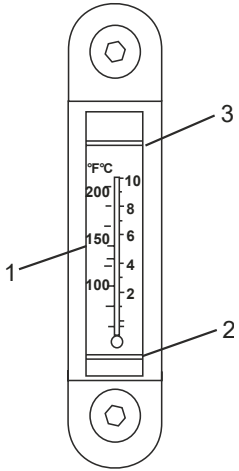


Figure 38

3.1.2 Hydraulic System and Components

- **Daily Checks -** The hydraulic system and components are inspected by the operator or skilled service personnel.

Inspect the hydraulic system and components for leaks and damage. Inspect around all fittings and connections. Look for any fresh puddles or drips under the refuse vehicle. Ensure that all components are securely mounted and that all bolts and nuts are in place and secure. Inspect for cracks or other damage to the mounting brackets.

3.1.3 Hydraulic Hoses, Tubes, and Pipes

- **Daily Checks - The hydraulic hoses, tubes, and pipes are inspected by the operator or skilled service personnel.**

Inspect hydraulic hoses, tubes, and pipes for damage and proper clearance with other components.

The following are examples of hydraulic hose damage to inspect for as shown in (Figure 39):

- Bulging (Item 1)
- Cracks (Item 2)
- Cuts (Item 3)
- Abrasion (Item 4)
- Twisting (Item 5)
- Bending (Item 6)

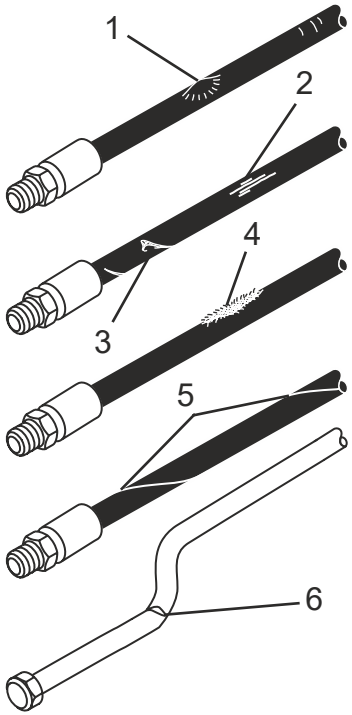


Figure 39

3.2 Electrical System

Perform LOCKOUT/TAGOUT before starting any electrical system maintenance (see LOCKOUT/TAGOUT procedure).

3.2.1 Lighting System

- **Daily Checks -** The lighting system is inspected by the operator or skilled service personnel.

Check to ensure that all exterior lights on the refuse vehicle and chassis are functioning correctly. Replace any burned-out bulbs with the same type.

Where LED lights are fitted any failures will require that the light is replaced.

3.2.2 Warning Systems

- **Daily Checks -** The safety warning system is inspected by the operator or skilled service personnel.

Check to ensure that all warning lights, fitted in the cab, are functioning correctly.

Replace any failed warning lights.

Check to ensure that all warning buzzers/alarms are functioning correctly.

Replace any failed warning buzzers/alarms.

3.2.3 Wire Harnesses

- **Daily Checks -** The wire harnesses are inspected by the operator or skilled service personnel.

Inspect the wiring harnesses for damage and proper clearance with other components.

The following are examples of wire harness damage to inspect for as shown in (Figure 40):

- Cracks (Item 1)
- Cuts (Item 2)
- Abrasion (Item 3)
- Twisting (Item 4)

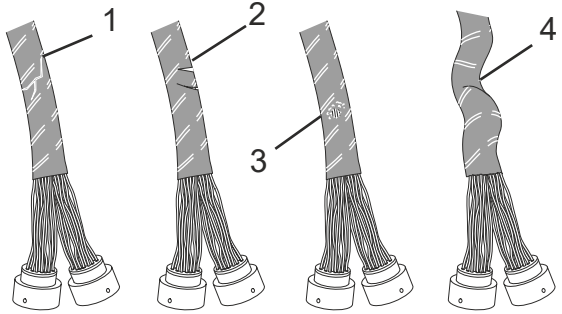


Figure 40

3.3 Mechanical System

Perform LOCKOUT/TAGOUT before starting any mechanical system maintenance (see LOCKOUT/TAGOUT Procedure).

3.3.1 Refuse Vehicle Body and Components

- **Daily Checks -** The refuse vehicle body and components are inspected by the operator or skilled service personnel.

Inspect the body and all components for binding, damage, loose or missing parts.

Where required tighten loose nuts and/or bolts, replace nuts and bolts with damaged threads or fit new items where they are missing.

3.3.2 Tailgate Seal

- **Daily Checks -** The tailgate seal is inspected by the operator or skilled service personnel.

Inspect the tailgate seal for tears, damage, or excessive wear. Ensure that the seal is fully seated in the tailgate channel. Inspect the mounting straps to ensure they are secure.

3.3.3 Body Tie-Down Components

- **Daily Checks -** The body tie-downs are inspected by the operator or skilled service personnel.

Inspect the proximity flag is properly adjusted

Inspect the body tie-downs to ensure they are properly secured and adjusted.

If the body tie-down components are damaged, the tie-down must be repaired before the vehicle can be returned to service.

3.3.4 Ladder Components

- **Daily Checks -** Ladder components are inspected by the operator or skilled service personnel.

⚠ DANGER

DO NOT use ladders unless you are sure that they are secured to the vehicle correctly and show no signs of damage.

Faulty ladders may result in a fall causing serious injury or death.

Inspect ladder components such as bolts, hinges, and latches for loosening, damage, and wear.

If any components on the ladder assembly are loose damaged or worn **DO NOT USE THE LADDER.** The ladder **MUST** be repaired by skilled service personnel, before being used, after any concern has been raised.

3.3.5 Fall Protection Components

- **Daily Checks -** Fall protection components are inspected by the operator or skilled service personnel.

⚠ WARNING

DO NOT rely on faulty fall protection systems to prevent a fall.
Failure of the fall protection system may result in serious injury or death.

Inspect all fall protection cables and anchor points. If cables are frayed or damaged or if the anchor points are damaged or loose **DO NOT USE THE FALL PROTECTION SYSTEM.** Fall protection components **MUST** be repaired or replaced by skilled service personnel, before being used, after any concern has been raised.

3.3.6 Additional Checks

- **Daily Checks -** Additional checks are made by the operator or skilled service personnel.

Check around vehicle to ensure that items such as spray suppression flaps and mudwings, sideguards and rear underrun installations are secure and compliant with the legal requirements for using a vehicle of this type on the highway.

Check tyres for wear and/or damage and ensure that they are filled to the correct pressure*.

Check wheel nut torque*.

*Refer to base vehicle manufacturers documentation

3.4 Operation

⚠ WARNING

Be sure all non-operator personnel are at least 6 metres away from all areas of the Packer.

Serious personal injury or death may occur.

⚠ DANGER

Make sure the area above and to the rear of the vehicle is clear of objects and power lines before raising the tailgate.

Serious personal injury or death may occur.

3.4.1 Refuse Vehicle Controls

- **Daily Checks -** The refuse vehicle controls are checked for proper operation by the operator or skilled service personnel.

Operate all functions to validate they are operational. Verify that all indicator lights and alarms are operational.

A check should be made on all controls:-

1. In cab control panel.
2. In cab joystick.
3. Exterior two handed controller (tailgate close).

3.5 Propping the Tailgate for Maintenance

When performing maintenance procedures that require the tailgate to be open, the following procedure for your type of tailgate prop must be followed to open and prop the tailgate.

⚠ DANGER

Whenever the tailgate is in a raised position, it must be securely propped or blocked so it cannot fall on anyone.

Serious personal injury or death may

⚠ WARNING

Be sure all non-operator personnel are at least 6 metres away from all areas of the Packer.

Serious personal injury or death may

⚠ DANGER

Stand clear when the tailgate is in motion and during the unloading cycle. Do not stand under or cross under the raised tailgate.

Serious personal injury or death may

Condition

- Arms and forks must be in the HOME position

3.5.1 Installing the Standard Tailgate Props

1. Switch on ignition and activate the Packer system.
2. Open the tailgate (Figure 41, Item 1).
3. De-activate the Packer system, turn off the engine ignition and apply the LOCKOUT/TAGOUT procedure before continuing.
4. Pull the tailgate prop rearward and allow it to raise to the up position (Figure 41, Item 2).
5. Repeat 3. for opposite side prop.

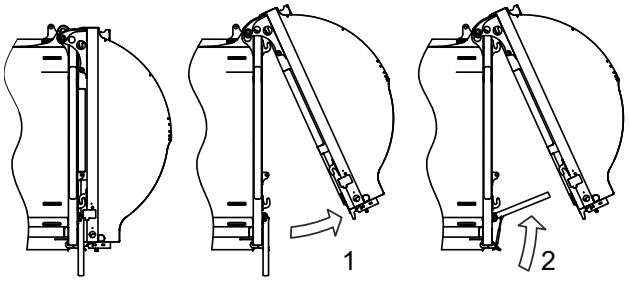


Figure 41

6. Check both props are in the raised position.
7. Switch the engine ignition on and start the engine.

8. Activate the Packer system.

⚠ DANGER

When closing the tailgate ensure that the area between the back of the vehicle and the tailgate is clear of any persons before starting the close tailgate procedure.

Serious personal injury or death may occur.

⚠ CAUTION

Do not POWER DOWN the tailgate against the props.
Damage may occur to the props.

9. Lower the tailgate (Figure 42, Item 1) so that the props engage in the sockets on the tailgate sides (Figure 42, Item 2).

⚠ DANGER

Verify that the tailgate props are properly seated in the pockets off the body compartment.

Serious personal injury or death may occur.

10. Turn off the ignition.

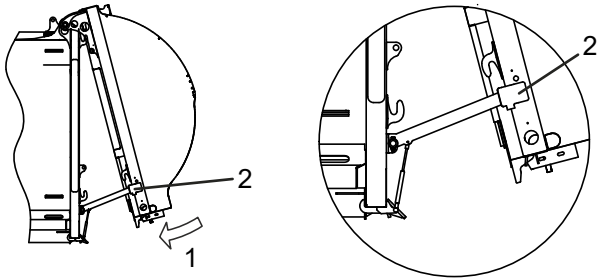


Figure 42

3.5.2 Removing the Standard Tailgate Prop

After completing the maintenance procedures on the body that require the tailgate to be propped, the following procedure must be followed to remove the prop and close the tailgate.

1. Remove LOCKOUT/TAGOUT procedure from the refuse vehicle.
2. Start the engine and activate the Packer.
3. Open the tailgate as required so that the props clear the prop sockets (Figure 43, Item 1).
4. Shut the engine OFF and put the key in your pocket.
5. Keeping clear of the gap between the tailgate and the vehicle body push the prop down to the vertical position. When released the prop should remain in the vertical stowed position (Figure 43, Item 2).

6. Walk around the rear of the tailgate and repeat for opposite prop.
7. Start the engine and activate the Packer.

⚠ DANGER

When closing the tailgate ensure that the area between the back of the vehicle and the tailgate is clear of any persons before starting the close tailgate procedure.

Serious personal injury or death may occur.

3. Using the TWO HAND control box, at the rear of the vehicle, lower the tailgate to the closed position (Figure 43, Item 3).

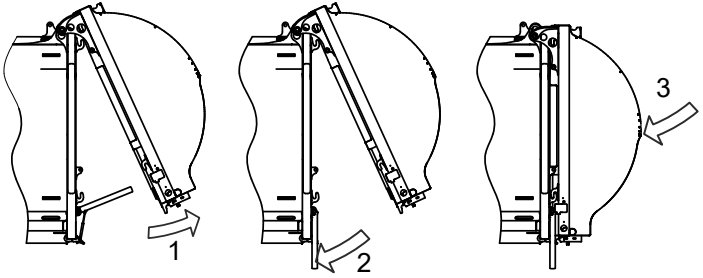


Figure 43

3.6 Canopy Lift Procedure

The cab canopy (Figure 44, Item 1) will need to be raised, during maintenance, if the vehicle cab needs to be tilted.

The cab canopy is raised and lowered using the hydraulic hand pump located on the Packer bulkhead (Figure 44, Item 2).

The cab canopy is locked in the down position by a pin and clevis assembly fitted to each side of the canopy (Figure 44, Item 3).

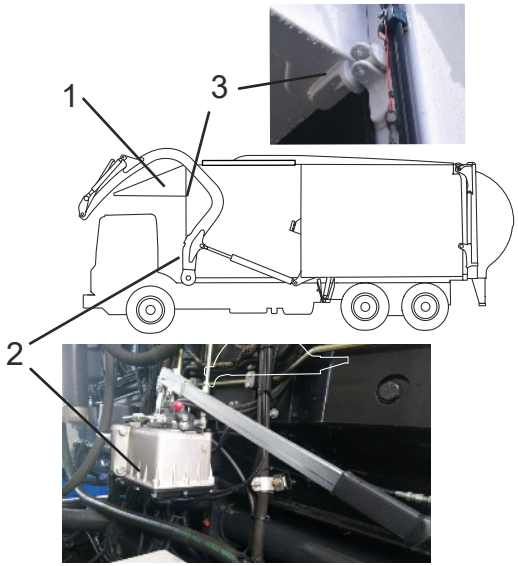


Figure 44

3.6.1 Lifting the Canopy

1. Place vehicle on a flat surface, block truck tyres.
2. For equipment fitted with a hinged type automatic top door disable the automatic door feature by switching the override switch, located on the in cab control panel, to the manual position.
3. Using the keypad raise the arms to the fully back position (Figure 45, Item 1).
4. Using a ladder to gain access remove the clevis pin securing the cab canopy in the down position (Figure 45, Item 2).
5. Position the hydraulic pump direction control to the raise position and pump the handle to raise the canopy (Figure 45, Item 3).

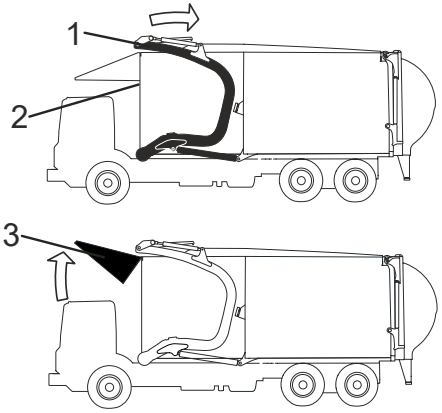


Figure 45

3.6.2 Lowering the Cab Canopy

1. Position the hydraulic pump direction control to the lower position.
2. Pump the hydraulic pump handle to lower the canopy (Figure 46, Item 1).
3. Using a ladder to gain access insert the clevis pin securing the cab canopy in the down position (Figure 46, Item 2).
4. Lower the arms to the driving position (Figure 46, Item 3).
5. For vehicles fitted with an automatic hinged type top door enable the automatic door feature by switching the override switch, located on the in cab control panel, t the auto position.

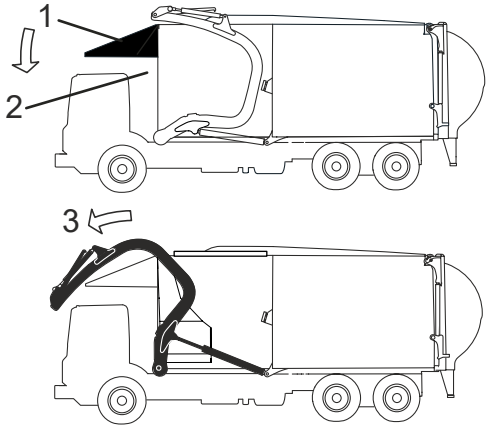


Figure 46

3.7 Refuse Behind the Pack/Eject

- **Daily Checks -** The vehicle is inspected for refuse behind the pack/eject by the operator or skilled service personnel.

When the vehicle is operated on the route, refuse can pass-by the pack/eject. If the trash is not cleaned from behind the pack/eject, the refuse vehicle can be damaged.

NOTE

Packer body must be empty when performing this procedure.

1. Raise the fork assembly fully.
2. Lower the arms to the loading position.
3. While pressing the ARM OVERBODY OVERRIDE button, extend the pack/eject.

⚠ DANGER

LOCKOUT/TAGOUT procedures must be followed when working on this equipment including, but not limited to, cylinders being changed or maintained. Failure to heed these instructions/warnings can result in serious personal injury or death.

4. Apply LOCKOUT/TAGOUT procedure to the refuse vehicle (see LOCKOUT/TAGOUT Procedure).
5. Unlatch the side door handle (Figure 47, Item 1) and open the side door.

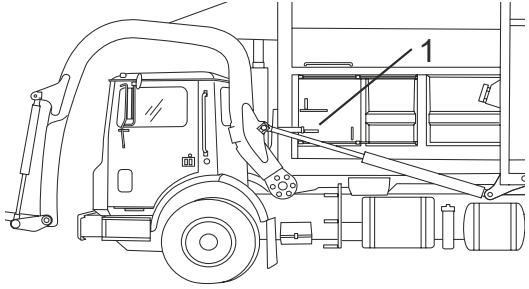


Figure 47

6. Inspect behind the pack/eject for accumulation of refuse.

⚠ CAUTION

Do not damage the pack and sweep cylinder rods when cleaning out refuse.

Never use metal objects or tools to clean out refuse from around the pack and sweep cylinders.

Failure to comply may cause damage to equipment.

7. Remove the refuse from behind the pack/eject using a clean out tool or a plastic shovel.
8. After the refuse is removed, close and secure the side door and fold up the ladder.
9. Remove LOCKOUT/TAGOUT.
10. Retract the Pack/Eject.

3.8 Safety Decals

- **Daily Checks -** A complete walk around of the vehicle to inspect the safety decals should be performed every day before operation. If any of the safety decals are damaged, illegible, or missing, they must be replaced before operation.

For the proper location and part numbers of the safety decals for the refuse vehicle, see SAFETY DECALS. If you are unable to determine the proper safety decal or its placement on the refuse vehicle, call Boughton Engineering Limited for assistance or to order replacement safety decals free of charge.

For information on any of the chassis safety decals, please contact the chassis manufacturer.

4.0 Hydraulic System

4.1 Hydraulic Oil Requirements

The lubrication requirements for your Boughton refuse vehicle are common for hydraulic oils. Hydraulic oils differ from other oils. Hydraulic oils have additives to inhibit water, rust, oxidation, and foaming.

The following table lists the typical hydraulic oil specification.

Hydraulic Oil Specifications	
ISO Grade	32
Viscosity @ 40°C	32
Viscosity @ 100°C, Cst	5.4
Viscosity Index (Typ)	99
Pour Point	-33

Hydraulic oil should contain standard hydraulic oil additives including Anti-Wear, Anti-Rust, Anti-Foam, Anti-Oxidant, and Anti-Corrosion.

Do NOT use Automatic Transmission Fluid (ATF) for this hydraulic system. Call Boughton Engineering Limited for assistance, if required, on +44 (0) 1902 623441

4.2 Hydraulic Oil Reservoir

Hydraulic oil reservoir styles may vary due to the various chassis configurations, and they can be mounted to either side of the chassis frame. The standard reservoir capacity is 18.93 litres. The major components as shown in Figure 48 are as follows:

- Tank mounted breather filter (Item 1).
  - A remote mounted breather filter is optional.
- Two magnetic drain plugs (Item 2).
  - Plugs are located on the bottom of the reservoir.
- Temperature/level sight gauge (Item 3).
  - This can be located on either side of the reservoir.
- Either a ball or gate shut-off valve (Item 4).
  - Make sure that this valve is fully open and not partially closed. A tie wrap (Item 5) must be installed on the shut-off valve to prevent vibration from closing the shut-off valve or inadvertent closing of the valve. Anytime the shut-off valve is closed and reopened, the tie wrap must be replaced.
- Filler Cap (Item 6).

The 100 mesh screen filter (Item 7) inside the reservoir can be cleaned and reused if not damaged. P/N 9630.604419.

Note:

The return line filter assembly (Item 8) is located on the front bulkhead of the packer body.

Use only Element P/N 1233304 for the return line filter.

Replacement canister O-Ring is P/N 1264144.

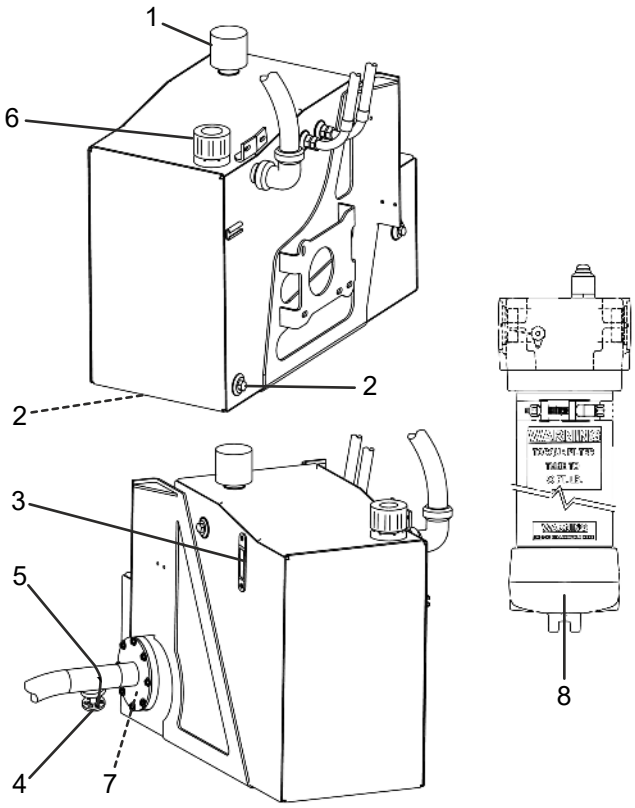


Figure 48

4.3 Adding Hydraulic Oil

Check the oil level with all hydraulic cylinders in their fully RETRACTED positions (see Hydraulic Oil Level).

- Ejector in HOME or RETRACTED position
- Tailgate in DOWN position
- Forks in RAISED position
- Arm in RAISED position
- Top Door in OPEN position

NOTE

When adding hydraulic oil, take every precaution to prevent contaminants from entering the hydraulic system. Cleanliness is extremely important when working with hydraulics.

Always use new hydraulic oil when adding to the system. Old fluid will be contaminated and will adversely affect the performance of the equipment.

Hydraulic fluid can be harmful to the environment. ALWAYS wear protective gloves, when working with hydraulic fluid, and clean up any spillages immediately and dispose of any waste fluid conscientiously.

To add hydraulic oil, open the filler cap (Figure 49, Item 1) and add oil as necessary.

NOTE

If it is necessary to add hydraulic oil often or in large quantities, inspect the hydraulic system for leaks and repair before operating the refuse vehicle.

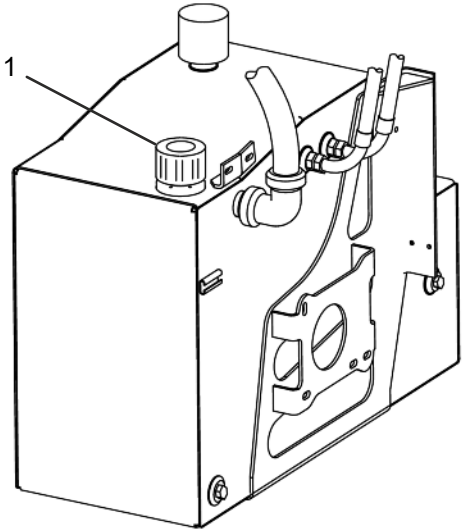


Figure 49

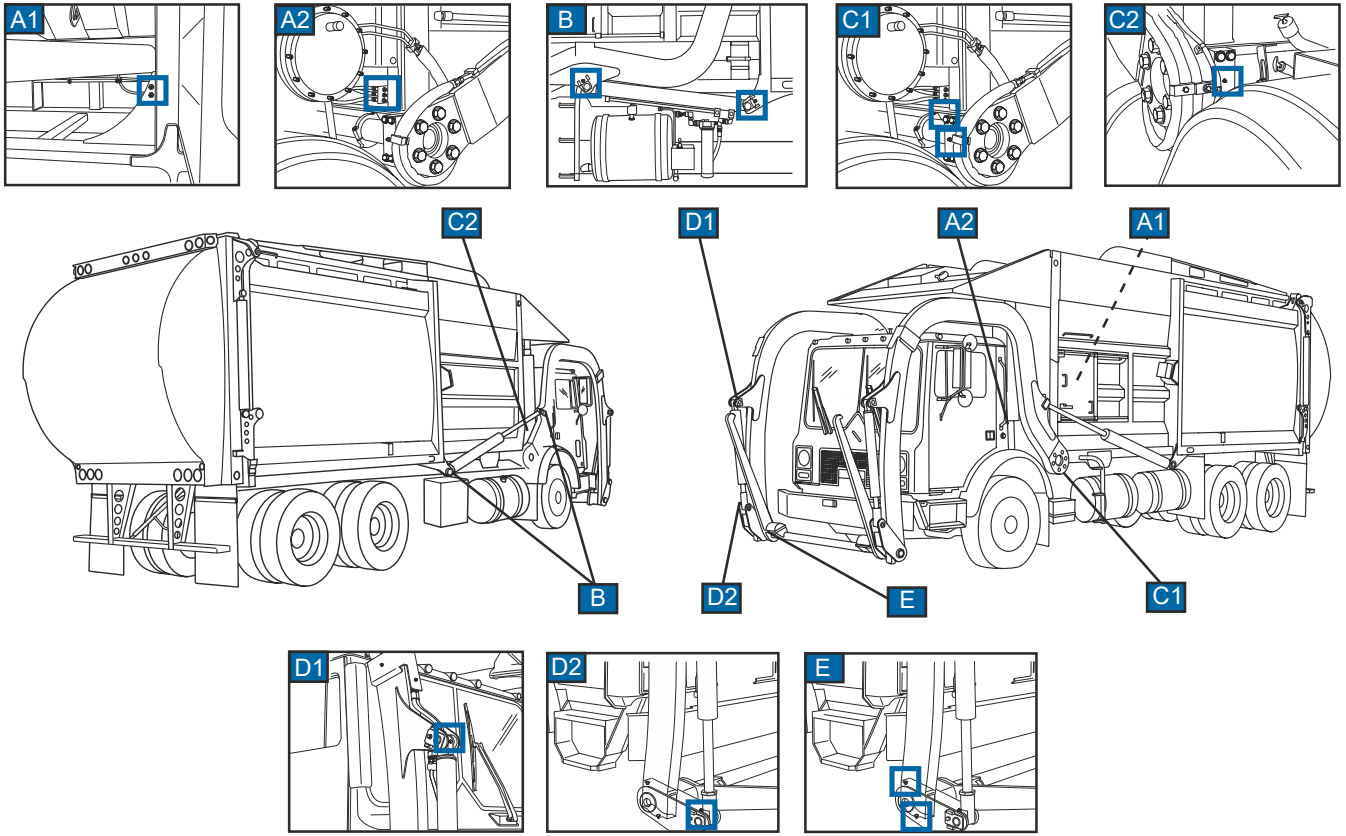
5.0 Lubrication

5.1 Daily Lubrication

Lubricate all the following points with a high quality EP No. 2 lithium grease.

Daily lubrication intervals are based on a 10-hour day. If refuse vehicle is operated more hours per day or double shifted, the maintenance interval must be adjusted accordingly.

Daily Lubrication Points		Lubricate Daily or every 10 hours	
Ref.	**Description**	**No. of Fittings**	**Comments**
A1	Pack/Eject Cylinders - Base End	2	Two Cylinders - One Per Side
A2	Pack/Eject Cylinders - Rod End	2	Two Cylinders - One Per Side
B	Arm Cylinders - Base End	2	Two Cylinders - One Per Side
B	Arm Cylinders - Rod End	2	Two Cylinders - One Per Side
C1	Arm Pillow Blocks	2	Offside
C2	Arm Pillow Blocks	2	Nearside
D1	Fork Cylinders - Base End	2	Two Cylinders - One Per Side
D2	Fork Cylinders - Rod End	2	Two Cylinders - One Per Side
E	Fork Assembly Pivot	4	Two Pivots - Two Fittings Per Side

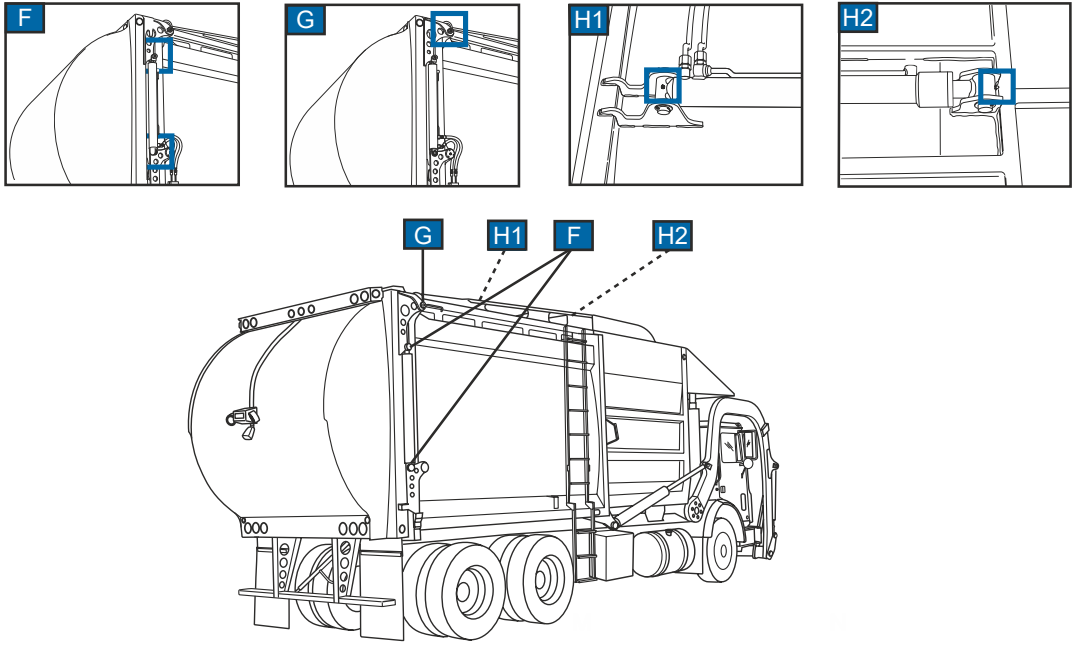


5.2 Scheduled PM Lubrication

Lubricate all the following points with a high quality EP No. 2 lithium grease.

Scheduled PM lubrication intervals are based on 3 weeks or 150 hours. If the refuse vehicle is operated more hours or double shifted, the maintenance interval must be adjusted accordingly.

Lubrication Points		Lubricate every 3 Weeks or every 150 hours	
Ref.	**Description**	**No. of Fittings**	**Comments**
F	Tailgate Cylinder - Base End	2	Two Cylinders - One Per Side
F	Tailgate Cylinder - Rod End	2	Two Cylinders - One Per Side
G	Tailgate Hinge Pin	2	Two Hinge Pins - One Per Side (Atlantic Model Only)
H1	Top Door - Base End	1	
H2	Top Door - Rod End	1	



1.0 Troubleshooting

When a problem or malfunction occurs, follow these steps. The sequence below will help isolate the problem and often permit a quick repair. If further assistance is required, refer to the applicable section of this manual or please call Boughton Engineering Limited Service on +44 (0) 1902 623441.

NOTE

Isolate the problem before taking any remedial actions.

1. Unless further damage will occur, repeat the steps that caused the problem. Refer to the Operation section of this manual to be sure that the correct operating procedures have been followed. Often a simple step in the standard operating procedure has been forgotten.
2. Refer to the troubleshooting chart. It is designed to help you troubleshoot problems at your location, and is organized in a logical sequence. Look under the appropriate equipment section, and for the specific problem within the chart.
3. Perform the checkout procedure and remedial actions listed within the chart to isolate the problem.
4. If your particular problem is not listed, or the remedial actions provided do not resolve the problem, we suggest that you take the vehicle to a service shop, refer to the appropriate service manual, or please call Boughton Engineering Limited Service on +44 (0) 1902 623441.
5. If you have questions or need help, please call Boughton Engineering Limited Service on +44 (0) 1902 623441.

SAFETY NOTICE

Before entering vehicle body or performing maintenance to the vehicle, read and follow HSE Guidance on working in confined spaces.

The LOCKOUT/TAGOUT procedures detailed in section 1.2 of this manual must be followed at all times.

Follow all safety instructions in your Boughton Vehicle Manual.

Shut off vehicle engine, lock cab doors, and keep keys in your pocket before entering body or performing any work to the vehicle.

Place magnetic “DANGER” signs on both cab doors.

Failure to do so can result in serious personal injury or death.

1.1 Troubleshooting Chart

Problem	Probable Cause	a ction
ALL functions not working and the control panel warning light is NOT flashing.	1. BATTERY switch is OFF. 2. IGNITION switch is OFF. 3. One or more E-STOP buttons is DOWN. 4. PUMP switch is OFF. 5. System air pressure is too low. 6. System problem.	1. Turn BATTERY switch ON. 2. Turn IGNITION switch ON. 3. Release all E-STOP buttons. 4. Turn PUMP switch ON. 5. Wait for chassis air system to build pressure above 5.5 bar (80 PSI). 6. Requires workshop service and repair.
ALL functions not working and the control panel warning light IS flashing.	1. Side Door Open. 2. System problem.	1. Close the side door. 2. Requires workshop service and repair.
All HYDRAULIC functions not working and the control panel warning light is NOT flashing.	1. PUMP switch is OFF. 2. No air at coalescing filter. 3. System problem.	1. Turn PUMP switch on. 2. Check proper operation of holdback valve. 3. Requires workshop service and repair.
Joystick Function not working	1. Engine RPM is too HIGH. 2. System air pressure is too LOW. 3. System problem.	1. REDUCE engine speed to below 1000 RPM. 2. Wait for chassis air system to build pressure above 5.5 bar (80 PSI) and check proper operation of holdback valve. 3. Requires shop service and repair.
Arms stop at the top of the cab.	1. Cart Tipper Proximity Switch. 2. Pack/eject is not in HOME position. 3. Top door is not fully OPEN. 4. Missing signal from cart tipper proximity switch. 5. System problem.	1. Check Diagnostic Display. 2. Make sure the ejector is fully retracted. 3. Ensure the top door is completely open. 4. Ensure jumper is inserted in the Cart Tipper proximity harness. Harness located in street side arm. 5. Requires workshop service and repair.

	Probable Cause	a ction
Automatic Pack/Eject functions not working	1. Engine RPM is too HIGH. 2. Tailgate is OPEN. 3. Top door is not fully OPEN. 4. Arms are ABOVE the body. 5. Check pack/eject proximity switches for proper operation. 6. Inclination switch. 7. System problem.	1. REDUCE engine speed to below 1000 RPM. 2. CLOSE tailgate. 3. Fully OPEN top door. 4. LOWER arms below body. 5. Requires workshop service and repair. 6. Check Diagnostic Display. 7. Requires workshop service and repair.
Manual Pack/Eject functions not working	1. Engine RPM is too HIGH. 2. Top door is not fully OPEN. 3. Arms are ABOVE the body. 4. System problem.	1. REDUCE engine speed to below 1000 RPM. 2. Fully OPEN top door. 3. LOWER arms below body. 4. Requires workshop service and repair.
Tailgate functions not working	1. Engine RPM is too HIGH. 2. ACTIVATE switch not pressed. 3. System problem.	1. REDUCE engine speed to below 1000 RPM. 2. Press ACTIVATE switch while pressing TAILGATE switch. 3. Requires workshop service and repair.
Top Door function not working	1. Engine RPM is too HIGH. 2. ACTIVATE switch not pressed. 3. System problem.	1. REDUCE engine speed to below 1000 RPM. 2. Press ACTIVATE switch while pressing TOP DOOR switch. 3. Requires workshop service and repair.
Cannot eject load.	1. Tailgate not fully open. 2. System problem.	1. Completely open tailgate. Check diagnostic Display. 2. Requires workshop service and repair.
Self levelling functions not working	1. Engine RPM is too HIGH. 2. Control switch not pressed to “on”. 3. System problem.	1. REDUCE engine speed to tick-over. 2. Activate system by pressing self levelling on button. 3. Requires workshop service and repair.

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