

OPERATION MANUAL
ISSUED JULY 2022



Failure to follow all instructions and safety precautions in this manual, in the Service Manual, in other manufacturers' manuals and on the safety decals attached to the product could result in serious injury or death to operators or bystanders and/or damage to property.

DO NOT operate this vehicle before you READ and UNDERSTAND this Operation Manual, the Service Manual for this unit, other applicable manufacturers' manuals, and the safety decals on the product.

Each operator of this unit must read and understand all directions in this manual before they first operate this vehicle.

Keep this manual in the cab for new operators and to remind all operators about safe use.



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READ THIS MANUAL!

EVERY PERSON who will OPERATE,
MAINTAIN, REPAIR, OR OTHERWISE WORK
with the Heil unit MUST READ AND
UNDERSTAND this entire Operator's Manual
before starting the engine or activating any
switches or controls. MAKE SURE to read the
Service Manual for the unit BEFORE you do

ALL USERS of this equipment must be trained professionals who understand how the machine operates and know how to avoid the risks associated with driving the vehicle and with picking up, compacting, and dumping refuse in an ever-changing traffic environment.

any maintenance or repair procedures.

If you do not understand an operation or instruction, seek additional help or instruction from a qualified source **BEFORE** you operate the unit.

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PT 1100 HIGH-PERFORMANCE REAR LOADER

OPERATION MANUAL ISSUED JULY 2022 TP1PT11-OM-0722

NOTES:

SECTION 1 INTRODUCTION

PREVIEW

Read this section to learn about:

- The responsibilities of the owner, the operator, and the mechanic
- Warranty information
- Telephone numbers and website URL for parts, technical support, warranty claims, training and manuals
- Identifying the different models
- Identifying the left (street side) of the unit
- The unit serial plate
- · Various parts of the unit

HOW TO USE THIS MANUAL

Product Variance

This manual may cover options not included on your unit. Also, the location and appearance of the controls on your unit may be different than those shown in this manual. Make sure you know the location of the controls and how you operate the controls on your unit before operation.

Manual Sections

This manual is divided into twelve (12) sections.

- 1. Introduction
- 2. Safety Messages and Decals
- 3. Lock-Out/Tag-Out Procedures
- 4. Controls, Switches, and Indicator Lights
- 5. Body and Tailgate Props
- 6. Daily Checklist
- 7. Before Going on Route
- 8. On-Route Operation Procedures
- 9. Landfill/Transfer Station/Recycle Center Procedures
- 10.End of Day Procedures
- 11. Preventive Maintenance Chart
- 12.Lubrication Guide

Terminology

This manual uses terminology that is defined in the **Glossary** which is in Section 1, Introduction.

Directives

When we give directions for using the equipment, we capitalize key words. These words are usually a command followed by a result.

For example, "MOVE the body raise switch to LOWER ...".

Use of **Bold** and CAPITAL Letters

We also put some words in **BOLD AND CAPS** for emphasis, usually related to safety or something of other importance, such as "**MAKE SURE** you close the side doors".

We put some words in just bold for emphasis, such as "All warranty repairs **must** be performed by ...".

Each DANGER, WARNING, and CAUTION notice precedes its applicable text.

TO THE OWNER

This manual is designed to help ensure safe, efficient and proper operation of The Heil Co. d/b/a Heil Environmental ("Heil") PT1100™ Rear Loader refuse collection vehicle (or the unit).

The manual will familiarize you with the unit and will give you proper operating procedures and tips.

For chassis operation and maintenance instructions, see the Chassis Owner's Manual and the PT1100™ Rear Loader Service Manual.

As the owner, you have several responsibilities:

- You must complete and return the warranty registration for the unit to Heil.
- You must make sure that each operator has the proper driver's license.
- You must make sure that the operator does not operate the unit under the influence of drugs or alcohol.
- You must make sure that the unit is properly maintained to meet all local, state and federal requirements.
- You must keep the vehicle maintained and properly adjusted to meet the manufacturer's standards and recommendations.
- You must keep accurate records of daily inspections, breakdowns, malfunctions, maintenance and repairs of the unit.

- You must make sure that repairs are made that may affect the safe operation of the unit before it is made available for operation.
- You must provide adequate lighting on the unit for safe operation under low light or night conditions.
- You must provide adequate training for each operator and mechanic that will operate the unit BEFORE an operator goes on route or BEFORE a mechanic performs maintenance or repair procedures.
- You must determine if an operator or mechanic has difficulties reading or understanding this manual.
 When a person has difficulties reading or understanding this manual, you must provide adequate assistance so that the person does understand the material in this manual.
- You must make sure that each operator uses the equipment on a route as given in the instructions of this manual and other manufacturers' manuals.
- You must provide on-going training for each operator and mechanic that operates the unit.
- You must make sure that this manual stays with the vehicle at all times.

Properly operated and maintained, your PT1100™ Rear Loader unit should give you years of low-cost, trouble free service.

TO THE OPERATOR

A DANGER

Do not operate the unit or perform repair or maintenance procedures on the unit until you read and understand all of the instructions in this manual. Failure to do so may result in injury or death to operators or bystanders.

NOTICE

For CNG units, this Operation Manual should be used in conjunction with any associated CNG System Manufacturer's Operation and Maintenance Manuals. Always read and understand all associated manuals alongside the Heil Parts and Service Manual and Heil Operation Manual.

As the operator of the unit, you have several responsibilities:

- You must have a valid driver's license.
- You must understand and follow all manufacturers' instructions for equipment operation.

- You must observe pertinent laws and regulations.
- Do not use drugs or alcohol while you operate the unit.
- You must read, study and understand all procedures and requirements of this Operator's Manual before you operate the unit for the first time.
- If you do not understand or have difficulty reading this manual, YOU MUST tell the owner or designated person before you operate the unit. DO NOT operate the unit until you understand the procedures and requirements of this manual.
- You must receive proper training before you operate (or service and maintain) the unit. If you have not been trained, you must inform the owner.
- You must perform a daily inspection of the unit before you go on route. Refer to the Daily Checklist.
- You must make sure that all decals and labels are clean and readable.
- You must report to the owner (or the designated person) any and all deficiencies, malfunctions or problems you find during the daily inspection.
- You must read, understand and obey all safety messages and decals that are on the outside or in the cab the unit.
- You must use and follow Lock-Out/Tag-Out
 Procedure 53 in this manual and any that the owner may have, as necessary.

TO THE OPERATOR (CONTINUED)

- Before you start the engine or operate the unit for the first time
 - You must clear the area of other people.
 - You must learn and practice safe use of all controls and indicators before you operate the unit in a collection route environment or before you do repair or maintenance procedures.
- Before each time you start the engine or operate the unit, you must clear the area of other people.
- Before you operate the unit in reverse, you must make sure the area behind the unit is clear of other people, vehicles or other obstructions.
- You must make sure the unit is on hard, stable ground when you unload refuse at the landfill or transfer station.

TO THE MECHANIC

A WARNING

Do not operate the unit or perform repair or maintenance procedures on the unit until you read and understand all of the instructions in this manual. Failure to do so may result in injury or death to operators or bystanders and/or damage to the unit or other property.

WARNING

A unit that needs service or repair can malfunction and create a dangerous condition. A part failure during operation can cause serious injury or death to a person or damage to the unit. Repair or replace any failed or defective part immediately.

NOTICE

If you do not understand a procedure or instruction, tell the owner or the designated person immediately. Do not operate the unit if you do not understand all procedures and instructions in this manual. The owner or designated person can contact your Heil dealer or Heil for additional help. See **Customer Service and Repair Parts Contact Information** 11.

TO THE MECHANIC (CONTINUED)

As the mechanic of the unit, you have several responsibilities:

- You must have a valid driver's license if you operate the unit on a public road.
- You must understand and follow all manufacturers' instructions for equipment operation.
- You must observe pertinent laws and regulations.
- Do not use drugs or alcohol while you service or operate the unit.
- You must read, study and understand all procedures and requirements of this Operation Manual and the Service Manual before you operate the unit for the first time.
- If you do not understand or have difficulty reading this manual or the Service Manual, You must tell the owner or designated person before you operate or service the unit.
- DO NOT operate or service the unit until you understand the procedures and requirements of this manual and the Service Manual.
- You must receive proper training before you operate or service and maintain the unit. If you have not been trained, you must inform the owner.
- You must read, understand and obey all safety messages and decals that are on the outside or in the cab the unit.

- You must use and follow Lock-Out/Tag-Out procedures 53, in this manual and any that the owner may have, as necessary.
- Before you start the engine or operate the unit for the first time:
 - You must clear the area of other people
 - You must learn and practice safe use of all controls and indicators before you operate the unit or before you do repair or maintenance procedures.
- Before you operate the unit in reverse, you must make sure the area behind the unit is clear of other people, vehicles or other obstructions.

A WARNING

A unit that needs service or repair can malfunction and create a dangerous condition. A part failure during operation can cause serious injury or death to a person or damage to the unit. Repair or replace any failed or defective part immediately.

WARRANTY CLAIMS AND INQUIRIES

The HEIL ENVIRONMENTAL INTERNATIONAL WARRANTY STATEMENT is printed on the inside, back cover of this manual. Should a failure occur that is covered by this warranty, contact the nearest Heil dealer for warranty repair unless otherwise authorized by Heil.

For all parts, warranty claims, and inquiries, please give the dealer or service center the unit's model and serial number located on the serial plate. The unit has one serial plate, which is for the body. See **Serial Plate Location** page for the location of the serial plates.

CUSTOMER SERVICE AND REPAIR PARTS CONTACT INFORMATION

Customer Care

Phone: +1 866-275-4345

Tech Services

Phone: +1 866-310-4345

Parts Central

Phone: +1 800-528-5308

4301 Gault Avenue North Ft. Payne, AL 35967 www.heil.com

MODELS

The PT 1100™ is a Rear End Loader (REL) and has one body model, the eject model. See the figure below.

The (packer) blade and slide assembly open the hopper for loading refuse into the hopper, sweep the refuse into the body and compacts the refuse.

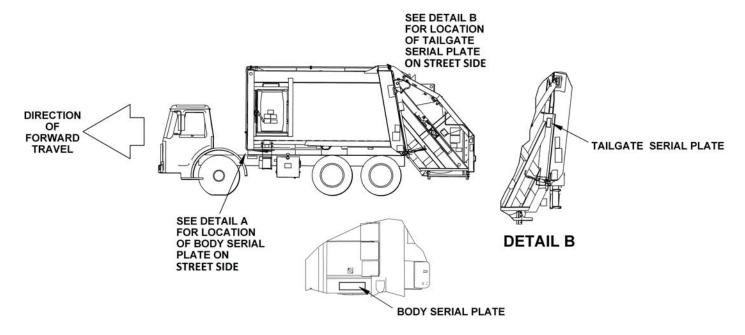
The unit has an eject mode for dumping the refuse from the body. You remove the refuse from the body by raising the tailgate and then operating the ejector panel which pushes the refuse from the body.



Figure 1. PT 1100 Eject Model

SERIAL PLATE LOCATION

You determine the sides of the unit by facing the direction of forward travel. The left side is the "streetside" and the right side is the "curbside". The figure below shows the locations of the serial plates on the street side of the unit's body and the tailgate. See the next page for a description of the information that is on the serial plate.



DETAIL A
Figure 2. Serial Plate Locations

READING THE SERIAL PLATE

The serial plate is the "birth certificate" of the unit. See the figure below.



Information stamped in the boxes on the serial plate indicates:

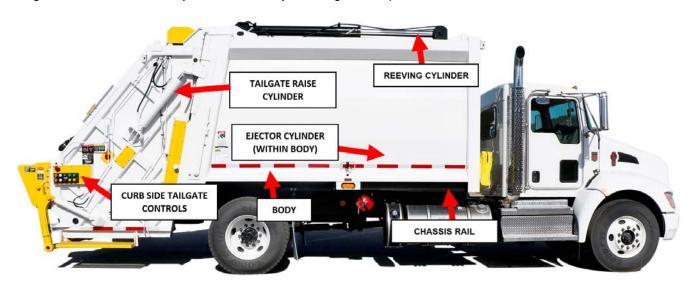
• Unit's unique serial number

Tailgate Serial Plate



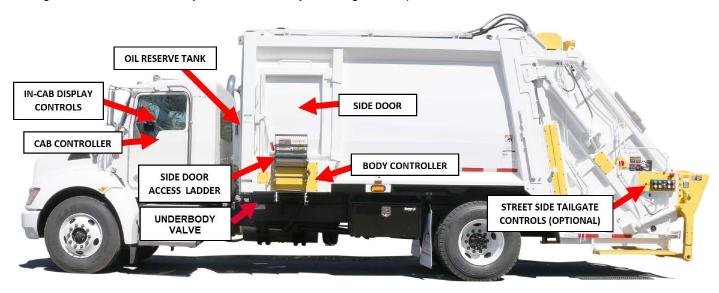
PRODUCT NOMENCLATURE

The figure below shows the major curb side body and tailgate components.



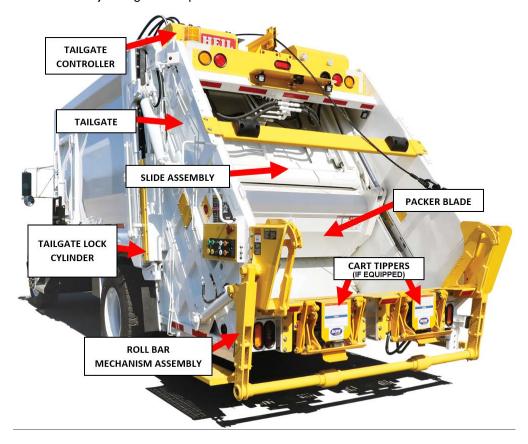
PRODUCT NOMENCLATURE (CONTINUED)

The figure below shows the major street side body and tailgate components.



PRODUCT NOMENCLATURE (CONTINUED)

The figure below shows the major tailgate components.



PRODUCT NOMENCLATURE (CONTINUED)

A DANGER

Make sure the unit is in the Lock-Out/Tag-Out mode before you enter the body. When the unit is not in the Lock-Out/Tag-Out mode and a person is in the body, the packer/ejector panel and/or diverter panels can be operated. Serious injury or death may occur if the packer/ejector panel moves while a person is in the body.

A DANGER

When available, use the side door for entry to the body. When there is no side door, use the front head for entry to the body. Make sure the unit is in the lock-out mode before you enter the body. When the unit is not in the lock-out mode and a person is in the body, the ejector panel, slide assembly or packer blade can be operated. Serious injury or death may occur if the ejector panel, slide assembly or packer blade moves while a person is in the body.

Body – The body stores the compacted refuse until you dump the refuse at the landfill. **DO NOT** enter the body from the hopper. Use the space available at the front head or, if equipped, the side access door.

Cab Controls – The standard control panel in the cab has controls to enable the hydraulic pump, tailgate raise/lower, tailgate lock/unlock and ejector eject/retract; has an indicator light for the pump and an alarm for an open tailgate; and has filter condition indicator lights. See **Cab Controls**, **Switches and Indicator Lights** for the different controls that may be installed in your unit.

Cart Tipper – One or more optional cart tippers can be located on the tailgate assembly. An operator uses a cart tipper to raise and dump a residential refuse container. The controls will be located on the rear, curb side of the unit.

NOTICE

Do not use the ejector panel to pack refuse against a closed tailgate (backpack). Packing refuse against a closed tailgate may result in damage to body or ejector cylinder.

Ejector Panel & Cylinder – The ejector panel and cylinder push the refuse out of the body when the tailgate is OPEN.

PRODUCT NOMENCLATURE (CONTINUED)

Ejector & Tailgate Controls – These controls are located in the cab of the unit and allow an operator to OPEN the tailgate and fully EXTEND the ejector panel, which pushes the refuse out of the unit. The operator then uses the controls to RETRACT the ejector panel and CLOSE the tailgate.

Front Head – The open area at the front of the body. You can see the ejector panel from the cab through the front head. Use this opening to access the body, **ESPECIALLY** when the unit does not have the optional side access door.



Do not enter the hopper unless the unit is in the Lock-Out/Tag-Out mode. When the unit is not in the Lock-Out/Tag-Out mode, the packer/ejector panel can be operated. DEATH or SERIOUS INJURY may occur if the packer/ejector panel moves while a person is in the hopper.

Hopper – The hopper is the refuse loading chamber of the tailgate. NEVER use the hopper as an entrance to the body.

Hopper Sill – A lip on the hopper over which you dump the refuse into the hopper. The lip provides a resting spot for manual loading of residential refuse containers. NEVER climb or stand on the hopper sill.

Hydraulic Oil Tank - The tank is the reservoir for the hydraulic oil which operates all hydraulic cylinders described above.

M WARNING

Operating the unit's controls with a suspended load, such as a raised tailgate or a container on a lift mechanism, will allow the load to move even when the hydraulic pump is OFF.

Hydraulic Pump – The unit's hydraulic pump provides the oil flow for the hydraulic system. It is located either in front of the unit's engine or underneath the unit, powered by the transmission through a Power Take-Off (PTO). With a front-mount pump, the operator turns the pump ON and OFF as needed with the SYSTEM POWER switch located on the in-cab control panel. With a PTO pump, the operator engages the PTO then turns the SYSTEM POWER switch ON to activate the pump. Depending on the pump and PTO combination, hydraulic oil may flow through the system when the pump is off, however, the operator controls are inoperative and the system hydraulic oil pressure is not sufficient to operate the unit's functions.

PRODUCT NOMENCLATURE (CONTINUED)

A DANGER

The packer blade and slide assembly are dangerous. They can cause serious injury or death if a person is inside the hopper. Make sure no one is inside the hopper before you begin a packer function. Put the unit in the lock-out mode if a person is in the hopper.

A DANGER

Stand clear when the ejector panel is in motion. Keep side access door closed when ejector panel is in motion. Failure to obey may result in severe injury or death.

(Packer) Blade – You MOVE the packer blade UP while you move the slide assembly OUT to load refuse into the hopper. You MOVE the packer blade DOWN while you move the slide assembly IN to sweep refuse from the hopper towards the body.

PRODUCT NOMENCLATURE (CONTINUED)

Slide Assembly – You move the slide assembly OUT while you move the packer blade UP to load refuse into the hopper. You move the blade IN while you move the packer blade DOWN to push the refuse into the body.

Slide/Blade Controls – The operator uses these controls to operate the slide assembly and the packer blade to open the hopper to load refuse and to move refuse from the hopper into the body.

A DANGER

A tailgate in motion is dangerous. Serious injury or death may occur if a person is struck by a moving tailgate or becomes trapped between the tailgate and the body. Clear the area near the tailgate of all unnecessary people before you raise or lower the tailgate.

Tailgate – Raise the tailgate at the landfill or transfer station to unload the refuse.

A red light and an alarm inside the cab let the operator know when the tailgate is OPEN (UP). The TAILGATE OPEN red light illuminates (is ON) and the alarm sounds when the tailgate is RAISED. The light is OFF and the alarm stops when the tailgate CLOSED (DOWN).

A DANGER

Always prop a tailgate when you leave it raised for maintenance, service or cleaning procedures. Any part of your body between the unit's body and the tailgate while you prop the tailgate or when the tailgate is propped is dangerous. Serious injury or death may occur if any part of your body is between the tailgate and the body if the tailgate suddenly closes.

Tailgate Props – Always use both tailgate props, one on each side of the unit, when you raise the tailgate for maintenance or service procedures.

Tailgate Raise/Lower Cylinders – You use these cylinders to RAISE the tailgate before you unload the compacted refuse at the landfill. After you unload the refuse, you use the cylinders to LOWER the tailgate.

Tailgate Lock Cylinders – You use these cylinders to LOCK the tailgate using the in-cab controls.

PRODUCT NOMENCLATURE (CONTINUED)

Throttle Advance – The throttle advance is automatically engaged during the tailgate packing cycle. The Operator may use the engine foot feed or throttle advance toggle switch located on the tailgate to raise the engine speed up to 1200-1400 RPM while ejecting the load or raising the tailgate.

GLOSSARY

TERM	DEFINITION
accident	An incident that results in unintended harm
bin	The refuse collection container
blade	The assembly that moves refuse into the body. The blade works with the upper panel to open the hopper, move refuse into the body, compact the refuse and to close the hopper.
body	The complete body assembly or the area of the body where the refuse is stored
cart tipper	A Rear End Loader (REL) option attached to the tailgate that allows an operator to secure a residential refuse container and unload its contents into the hopper
CAUTION	Indicates a hazardous situation which, if not avoided, could result in minor or moderate injury
collapsed position	The fully retracted position of a cylinder
DANGER	Indicates a hazardous situation which, if not avoided, will result in death or serious injury
extend/EXTEND	Make a cylinder rod move out its base. / Command to move the packer panel towards the body
fall-back	Material loaded in the body that drops from its initial compacted position into the hopper
fouling	Damage to the lid(s) of the refuse bins (containers) that interferes with unloading the refuse
front head	The part of the body that allows access to the body from the front of the body. This is the ONLY access to the body when the unit does not have an optional side access door.
fully retracted position	The packer/extend cylinder is fully retracted and the packer panel is all the way to the front of the hopper. May also be referred to as "Home Position" or "Front Head"
harm	An action that causes death, injury or property damage
hazard	A potential source of harm
hopper	The loading chamber of the unit in front of the packer panel where you dump the refuse material

GLOSSARY

TERM	DEFINITION
illuminate	Make a lamp shine light (the lamp is on).
incident	An unintended and undesired event that has the potential to harm
interlock	A safety mechanism that disables a function or action
LATCHED	The side access door is secured closed.
LOAD POSITION	Applicable to Rear End Loaders (RELs), the packer panel is UP and the slide assembly is OUT. This opens the hopper for loading.
LOCK	Command to use the tailgate lock/unlock switch and lock the tailgate lock cylinders
may	You are allowed to do the action, but it is not mandatory. It is understood to be permissive.
must	The action is mandatory.
NOTICE	Alerts you to practices not related to personal injury, such as damage to the unit or other equipment
off/OFF	When a light or lamp does not illuminate / The position of a switch or other control to stop a function
on/ON	When a light or lamp illuminates / The position of a switch or other control to start a function
operator	Any person who uses the unit and its equipment. One who controls the operation of various unit accessories and mechanisms, loads material, performs functions such as operating the loader, cart tipping and packing of wastes or recycled products, and who may also drive the unit along the route during the collection process. The operator may also be the driver.
(packer) blade	The packer assembly that moves refuse into the body. The blade works with the slide to close the hopper, to move refuse into the body and to open the hopper.
packer panel	The packer panel is comprised of the blade and the upper panel. The packer panel moves refuse

GLOSSARY

TERM	DEFINITION
	out of the hopper and compacts it into the body.
PACK POSITION	Applicable to Rear End Loaders (RELs), the packer blade is DOWN and the slide assembly is IN. The operator uses this position, repeated as necessary, to sweep refuse from the hopper and compact the refuse in the body.
PN	Part Number
PTO	Power Takeoff
REL	Rear End Loader
retract/RETRACT	Make a cylinder rod go into its base / Command to move the packer panel towards the hopper
RPM	Revolutions Per Minute
should	The action is advised.
side access door	The optional side access door is located on the street side of the unit. This is the preferred access into the body.
throttle advance	Throttle Advance increases the RPMs of the engine which results in greater flow of hydraulic fluid for operation of the tailgate, ejector and optional container lifting devices. The throttle advance is automatically engaged during the tailgate packing cycle. The Operator may use the engine foot feed to raise the engine speed up to 1200-1400 RPM while ejecting the load or raising the tailgate.
unit	The Heil PT 1100 refuse collection vehicle referred to in this manual.
UNLATCHED	The side access door is not closed or secured.
UNLOCK	Command to use the tailgate lock/unlock switch and unlock the tailgate lock cylinders
WARNING	Indicates a hazardous situation, which if not avoided, could result in death or serious injury

NOTES:

SECTION 2 SAFETY MESSAGES AND DECALS

PREVIEW

Read this section to learn about:

- General safety precautions and safety precautions for the safe operation and maintenance of the unit
- The safety precautions for NOT towing another vehicle or machine
- Safety decals on the unit

PRECAUTIONARY STATEMENTS

Read this entire manual and especially this safety section before you operate the vehicle. Failure to follow these important precautions could result in serious injury, death, or property damage.



This safety alert symbol indicates important safety messages in this manual and in safety decals attached to the equipment. Make sure you read all of these messages and follow the instructions and precautions.

In the general text of the manual and in the safety labels attached to the product, signal words indicate the type and seriousness of risk that you could encounter if you do not follow the precautions. The signal words and their definitions follow:



DANGER indicates a hazardous situation which, if not avoided, WILL result in DEATH or SERIOUS INJURY.

WARNING

WARNING indicates a hazardous situation which, if not avoided, COULD result in DEATH or SERIOUS INJURY.

CAUTION

CAUTION indicates a hazardous situation which, if not avoided, COULD result in MINOR or MODERATE INJURY.

NOTICE

NOTICE addresses practices not related to personal injury, such as property damage or damage to the equipment.

The following pages provide a summary of some of the more important safety precautions that are in this manual. There are additional safety precautions in other sections of this manual that are not contained in this section. You must also read. understand and follow those messages.



A GENERAL SAFETY PRECAUTIONS

- **DO NOT** operate the unit under the influence of alcohol or drugs or when extremely tired or when you are not alert, as this may result in an accident that can cause serious injury or death.
- DO NOT operate the unit unless you have the proper training and vehicle operator license.
- ALWAYS carry and maintain a fire extinguisher and first aid kit in the unit. MAKE SURE you know how to use them.
- CLEAN AS NECESSARY any safety decals that you cannot read at a safe viewing distance from the hazard because of dirt. If any decals are illegible from damage or wear, REPLACE them IMMEDIATELY. Get decals from your Heil dealer or Heil.
- DO NOT use this refuse collection vehicle to TOW another vehicle or equipment. It IS NOT DESIGNED or equipped to tow another vehicle or other equipment. Towing another vehicle or equipment may result in injury or death to the operator or other people or damage to the unit.
- MAKE SURE all individuals are clear of any moving parts, mechanisms or components of the unit before you operate the controls.

- DISENGAGE the PTO or MOVE the PUMP ON switch to OFF so the pump shuts off when you are not using the unit, when you are repairing the unit, when you are working on the unit, or when traveling in the unit for longer than two minutes.
- Engage the PTO or MOVE the PUMP ON switch to ON ONLY when you are on route OR as necessary to perform repairs.
- When the unit is stored or not in use, you MUST do the following:
 - SET all lift cylinders to the collapsed position.
 - o For units with manual transmissions, DISENGAGE the PTO and MOVE the PUMP ON switch to OFF.
 - o For units with automatic transmissions, MOVE the PUMP ON switch to OFF.
 - o **REMOVE** the key from the ignition. This helps prevent tampering by unauthorized persons.
 - o Refer to Lock-Out/Tag-Out Procedure 53.
- You must be attentive at all times while you operate the controls and be ready to stop or reverse the function if necessary.



A BEFORE OPERATING THE EQUIPMENT

- DO NOT operate or service this machine until you are fully trained and have read and understand this entire manual.
- **NEVER** operate the unit UNLESS you are fully knowledgeable of all control functions. See the **Controls, Switches,** and Indicator Lights section of this manual.
- MAKE SURE BEFORE you operate the vehicle or its controls that all individuals are at a safe distance.
- DO NOT operate the unit when it needs service or repair.
- DO A VISUAL CHECK at the beginning of each shift of the unit and run it through several cycles to find fluid leaks, broken, missing or malfunctioning, and excessively worn components (including hoses). See the Daily Checklist section of this manual. If you find leaks, broken, missing or malfunctioning parts, immediately stop and get the condition repaired or serviced.



USE PERSONAL PROTECTIVE EQUIPMENT

- ALWAYS WEAR the proper safety equipment, such as hard hats, safety shoes, protective eye wear, reflective clothing and gloves. Confirm with the owner/operator that you are using proper safety equipment.
- WEAR PROPER EYE PROTECTION and avoid contact with oil if possible whenever you work on or about hydraulic lines or components. **NEVER** check for oil leaks with your bare hands.



BEWARE OF OVERHEAD OBSTRUCTIONS

- KNOW the clearance required for ALL overhead obstructions (such as viaducts and bridges) that you may encounter when you drive the unit. See the decal in the chassis cab for your unit's overall height.
- NEVER drive the unit under any overhead obstruction of unknown height clearance.
- Become familiar with your route. Be aware of all overhead trees and obstructions that could cause problems during refuse collection.
- CHECK the height of the unit after you do any modifications to the chassis suspension. Any chassis suspension modification may change the height of the unit. See Tables 1 and 2.

- LOOK UP AND LIVE. MAKE SURE there is enough clearance between a lowered or raised container and overhead power lines. It is not necessary for the unit or container to touch the electric cable for the electricity to pass through the unit. See Tables 1 and 2.
- STAY IN THE CAB and KEEP AWAY FROM ALL METAL PARTS OF THE UNIT if the unit does touch a power line.
 STAY IN THE UNIT UNTIL HELP ARRIVES.

OVERHEAD CLEARANCES

NOTICE

Tables 1 and 2 is in accordance with OSHA 29CFR 1910.333. (Also refer to ANSI Standard B30.5-2004, 5-3.4.5.) If local rules and laws require more clearance, you must follow them.

Table 1. Overhead Clearances When Operating the Unit

Voltage of Electric Line	Minimum Clearance	
50,000 or less	10 feet (3 m)	
Above 50,000 to 200,000	15 feet (4.6m)	
Above 200,000 to 350,000	20 feet (6.1 m)	
Above 350,000 to 500,000	25 feet (7.6 m)	
Above 500,000 to 750,000	35 feet (10.7 m)	
Above 750,000 to 1,000,000	45 feet (13.7 m)	

Table 2. Overhead Clearances When Driving the Unit

Voltage of Electric Line	Minimum Clearance	
750 or less	4 feet (1.2 m)	
Above 750 to 50,000	6 feet (1.8 m)	
Above 50,000 to 345,000	10 feet (3 m)	
Above 345,000 to 750,000	16 feet (4.9 m)	

Table 2. Overhead Clearances When Driving the Unit

Voltage of Electric Line	Minimum Clearance	
Above 750,000 to 1,000,000	20 feet (6.1 m)	



LOADING REFUSE INTO THE UNIT

- YOU MUST BE ATTENTIVE at all times when you load refuse and be ready to stop or reverse the function in use if necessary.
- ALL PERSONS MUST STAND CLEAR when the tailgate is in motion and during the unloading cycle. MAKE SURE
 no one stands under or crosses under a raised tailgate.
- LOOK UP AND LIVE. Make sure there is enough clearance between a raised container and overhead power lines.
 Refer to Tables 1 and 2.



COMPACTING THE LOAD

- MAKE SURE the side access door is CLOSED when the packer pump is in operation and in motion. The packer pump will not operate if the side door is open.
- DO NOT compact refuse when the unit is in congested traffic. YOU MUST pay attention to driving when you pack onthe-move.



DUMPING THE LOAD

- MAKE SURE the dump area is clear of all personnel.
- ALL PERSONS MUST STAND CLEAR when the tailgate is in motion and during the unloading cycle. MAKE SURE
 no one stands under or crosses under a raised tailgate.
- While you raise the body, be attentive at all times and be ready to stop or reverse the function if necessary.



WHEN WORKING IN OR AROUND THE VEHICLE

• MAKE SURE the unit is in Lock-Out/Tag-Out 53 condition BEFORE you work in or around the unit.

• DO NOT go under the chassis or enter the body area unless the unit is locked-out. To lock-out the unit, stop the engine, apply the brakes and make sure the brakes hold and work properly, chock all wheels, remove the keys from the cab, and insert a lock-out tag on the steering wheel. See the Lock-Out/Tag-Out Procedure 53.



TOWING OF ANY EQUIPMENT

Heil DOES NOT recommend that you tow any kind of equipment with the unit. The unit was NOT DESIGNED nor intended for towing.

DECALS

The following pages show the DANGER, WARNING and CAUTION decals and list the reflective safety materials that are on the vehicle. See the Parts and Service Manual for the location and part numbers of all decals on the unit.

NOTICE

Replace any decal with a new decal if the old decal is lost, destroyed, painted over or cannot be read. When you replace a part that had decals, make sure you install new decals on each new part. Decal part numbers can be found below and in the Parts Manual. You can purchase replacement decals from your **Heil Dealer** or from the **Heil Parts Central**, **+1 800-528-5308**.

REFLECTIVE SAFETY MATERIALS

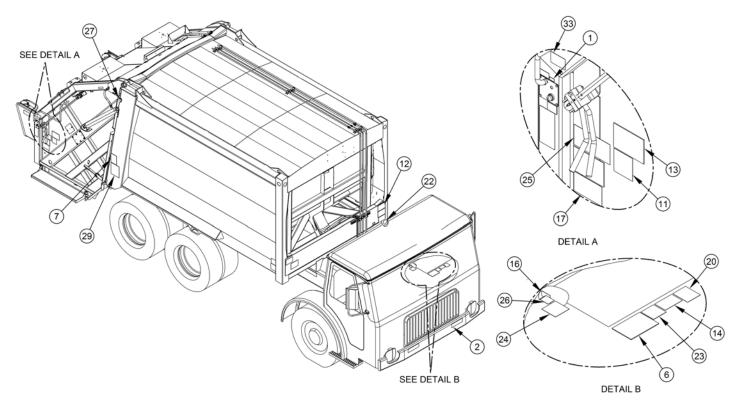
See the Parts and Service Manual for the location and part numbers of the reflective safety materials on the unit.

NOTICE

Replace any safety material with new safety material if the old safety material is lost, destroyed, painted over or cannot be seen. When you replace a part that had safety material on it, make sure you install new safety material on the new replacement part. See the Parts and Service Manual for all part numbers and location of the safety materials.

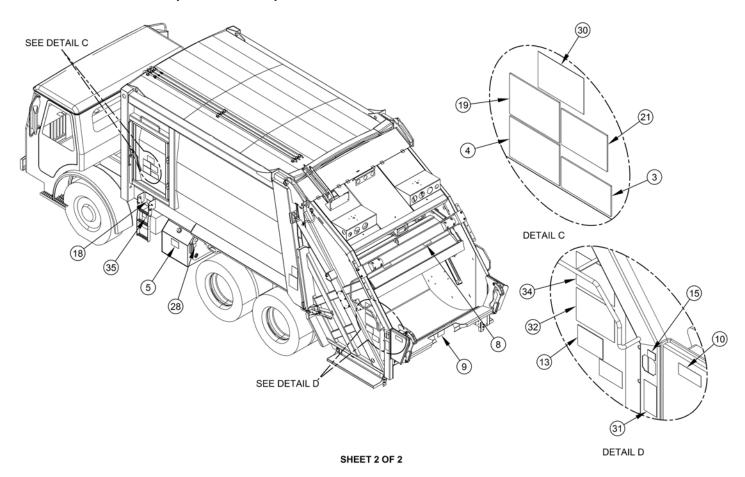
You can purchase replacement decals from your Heil Dealer or from the Heil Parts Central, +1 800-528-5308.

DECAL PLACEMENT



SHEET 1 OF 2

DECAL PLACEMENT (CONTINUED)



DECAL PLACEMENT (CONTINUED)

ITEM	PART NO.	DESCRIPTION	EFF	QTY
1	212-1600	DECAL, Flood Light		1
2	212-1764-E	DECAL, Danger, Under Chassis, Stop Engine		
3	212-1780-E	DECAL, Caution, Side Door		1
4	212-1781-E	DECAL, Caution, Enter Body, Stop Engine		4
5	212-1782-E	DECAL, Hydraulic Oil Only		
6	212-1783-E	DECAL, Warning, Operator's Manual		3
7	212-1801-E	DECAL, Danger, Stand Clear When T/G Raise		
8	212-1802-E	DECAL, Danger, Stand Clear When Packer Panel in Motion		
9	212-1821	DECAL, Danger, Not Designed for Towing		
12	212-1841	DECAL, Safety Requirements, ANSI		
13	212-1899-E	DECAL, Danger, Stay Clear When Container Off the Ground		2
15	212-1903-E	DECAL, Buzzer		2
19	212-1907	DECAL, Danger, Access Door Closed		1
21	212-1911-E	DECAL, Caution, Stand Clear When Panel in Motion		4
22	212-1915-E	DECAL, Information-Heil Replacement Parts		1
23	212-1918-E	DECAL, Safety Instructions, Back-Up Alarm		1
24	212-1968-E	DECAL, Caution, Disengage PTO		
25	212-1969-E	DECAL, Controls, Blade and Slide		1
27	212-2205	DECAL, Fitting, Grease		1
28	212-2275	DECAL, Oil Level		1
29	212-3439	DECAL, Danger, Tailgate Prop Operation		2
31	212-2691-E	DECAL, Warning, Cross or Stand Behind Vehicle		2
34	212-3438	DECAL, Lubrication Guide, PT 1100		1
35	212-2875	DECAL, Warning, Battery Disconnect Switch		
36	212-3064	DECAL, Body Controls		1
-37	212-3291-E	DECAL, Engineered in the U.S.A.		1
-38	212-3551	DECAL Preparing Unit to check Hydraulic Oil Level	_	1

ENGLISH DECAL IMAGES



Figure 3. Danger: Do not enter under, PN 212-1764-E



Figure 4. Caution: Side Access Door, PN 212-1780-E



Figure 5. Warning: Lockout/Tagout, PN 212-1781-E

ENGLISH DECAL IMAGES (CONTINUED)

WARNING Do not operate or service this machine until you have read and fully understand the operations manual supplied with this equipment. Manuals can be obtained from a HEIL CO. Distributor.

Figure 6. Warning: Operations Manual, PN 212-1783-E



Figure 7.Hopper Light, PN 212-1600



Figure 8. Danger: Stand Clear Packer, PN 212-1802-E



Figure 9. Danger: Do not tow, PN 212-1821

ENGLISH DECAL IMAGES (CONTINUED)

NOTICE

PREPARING UNIT TO CHECK HYDRAULIC OIL LEVEL

Before checking oil level or adding oil, make sure oil is warmed up and unit has all cylinders in their collapsed position.

212-3551

10. Notice Decal, PN 212-3551



Figure 11. Grease Fitting, PN 212-2205

ENGLISH DECAL IMAGES (CONTINUED)



Figure 12. Caution: Stand Clear Panel, PN 212-1911-E



Figure 14. Danger, Under Chassis, Stop Engine, PN 212-1764-E



ENGLISH DECAL IMAGES (CONTINUED)

THIS UNIT CONFORMS TO ALL PRESENT AMERICAN NATIONAL STANDARDS
INSTITUTE SAFETY REQUIREMENTS Z245.1 IN EFFECT ON THE DATE OF
MANUFACTURE.

ESTA MAQUINA ESTA DISENADA CONFORME CON LAS NORMAS DE
SEQUIDIAD Z 245.1 DE LA AMERICAN NATIONAL STANDARDS INSTITUTE
EN VIGOR A LA FACHA DE SU MANUFACTURA.
212-1841
THE HEIL CO.

Figure 15. Safety Requirements, ANSI, PN 212-1841



Figure 17. Information, Heil Replacement Parts, ANSI, PN 212-1915-E



Figure 16. Danger: Stand Clear Tailgate, PN 212-1801-E

ENGLISH DECAL IMAGES (CONTINUED)



Figure 18. Danger: Stay clear container, PN 212-1899-E



Figure 20. Flag, Engineered in the U.S.A., PN 212-3291-E



Keep access door closed when ejector panel is in operation and in motion. Failure to do so may result in injury or death.

Figure 19. Danger: Access Door, PN 212-1907-E

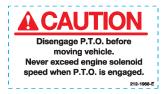


Figure 21. Caution: Disengage P.T.O., PN 212-1968-E

ENGLISH DECAL IMAGES (CONTINUED)



WHENEVER THE VEHICLE IS NOT IN SERVICE AND/OR TO BE LEFT UNATTENDED!

Battery Cables must be securely anchored and not rubbing other equipment. Cable insulation must be free of damage and abrasion. Inspect weekly.

Figure 22. Warning: Battery Disconnect Switch, PN 212-2875

SAFETY INSTRUCTIONS

THIS VEHICLE IS EQUIPPED WITH A BACK-UP ALARM. WHEN BACKING, THE ALARM MUST SOUND THE OPERATOR IS RESPONSIBLE FOR THE SAFE USE OF THIS VEHICLE.

Figure 24. Safety Instructions, Back-Up Alarm, PN 212-1918-E



Figure 23. Warning: Do not cross behind, PN 212-2691-E

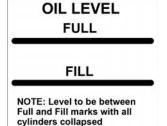


Figure 25. Oil Level, PN 212-2275

212-2275

ENGLISH DECAL IMAGES (CONTINUED)

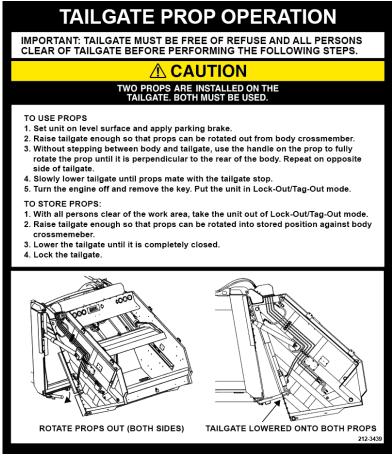


Figure 26. Caution: Tailgate Prop Operation, PN 212-3439

ENGLISH DECAL IMAGES (CONTINUED)

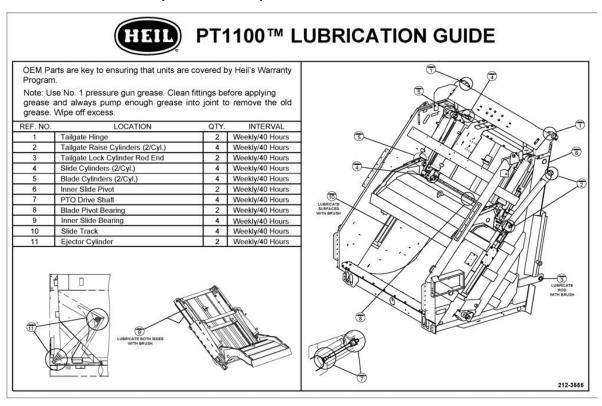


Figure 27. Lubrication Guide, PN 212-3555

DECAL IMAGES (CONTINUED)



Hydraulic oil, gasoline, diesel fuel, and other petroleum products can expose you to chemicals including toluene and benzene, which are known to the State of California to cause cancer and birth defects or other reproductive harm. For more information, go to: www.P65Warnings.ca.gov/petroleum.

212-3548

28. Warning Decal, PN 212-3548

CARE OF DECALS

It is important that the decals are properly cleaned to make sure that they are readable and do not come off the unit. Use the following steps to clean the decals.

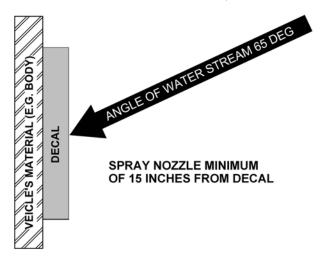
General Instructions

- Wash the decals with a blend of mild car wash detergent and clean water.
- Rinse with clean water.
- Let the vehicle air-dry or dry with a micro-fiber cloth.
- Do not allow fuels to stay in contact with the decal for an extended period of time. Remove the fuel contamination as
 quickly as possible.
- Do not use carnauba-based wax over the decals.
- Do not use a mechanical brush while washing the decals.

Pressure Washer Precautions

- Pressure washing can cause damage to decals. It can cause the edges of the decals to lift and peel the decal away from the unit. Over time, the decal can fade, crack or chip away.
- See the following figures for correct and incorrect methods of pressure washing.
- Use pressure washing only when other cleaning methods are not effective. If you use a pressure washer, use the following precautions.
 - Spray nozzle opening: 40° wide pattern
 - Spray angle: 65° from vehicle's body
 - Distance of nozzle to decal: 15" minimum
 - Water pressure: <= 800 psi
 - o Length of time: not more than 30 sec.
 - o Do not use sharp angles to clean the decals this can lift the decals from the unit.
 - NEVER use a "turbo pressure nozzle".

PRESSURE WASHER TECHNIQUE



RECOMMENDED TECHNIQUE Figure 29. Recommended Technique

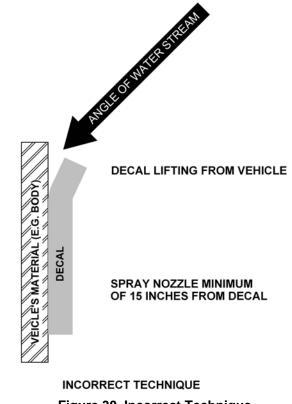


Figure 30. Incorrect Technique

ALTERNATIVE CLEANING PROCEDURE

When normal cleaning procedures do not remove difficult debris from the decals, try the following:

M WARNING

Isopropyl alcohol is flammable and is harmful to eyes and skin. Keep isopropyl alcohol away from heat or open sources of ignition. Flush eyes and skin with water for 15 minutes after contact. Seek immediate medical help.

- Spot clean the decal with Isopropyl Alcohol and a micro-fiber cloth (rag).
- If these methods do not work on a problem area, call a Heil Dealer or Heil Customer Service.

NOTES:

SECTION 3 LOCK-OUT/TAG-OUT PROCEDURE

PREVIEW

Read this section to learn about the proper Lock-Out/Tag-Out procedures.

You MUST Lock-Out/Tag-Out a unit BEFORE:

- You enter the body
- Do maintenance or repair procedures.

LOCK-OUT/TAG-OUT PROCEDURE

NOTICE

Always use your employer's Lock-Out/Tag-Out procedures. If your employer does not have Lock-Out/Tag-Out procedures, use the procedures that follow. Contact your supervisor or Heil Technical Service if you have any questions about Lock-Out/Tag-Out procedures.

Put the unit in a Lock-Out/Tag-Out mode:

- BEFORE you enter the unit's body.
- BEFORE you perform maintenance, repair, or cleaning procedures on the unit.

☑ Follow These Steps:

- 1. APPLY the brakes. MAKE SURE the brakes do not let the unit move and they work properly.
- 2. Chock all wheels.
- 3. **SET the tailgate props** when you raise the tailgate for service, maintenance or cleaning.
- 4. When there are in-cab controls, turn the ignition switch to ON, then:
 - a. Move the switches of the hydraulic controls. This relieves the pressure in the cylinders.
 - b. Turn the ignition switch to OFF.

- 5. When there are no in-cab controls, move the outside control levers to relieve the pressure in the cylinders.
- Put a LOCK-OUT/TAG-OUT tag onto the steering wheel.
- 7. Remove the ignition key from the cab, lock the vehicle, and put the key in a secure location.



Figure 31. Lock-Out/Tag-Out
Tag
(Do Not Operate Tag)

NOTICE

You can order Lock-Out/Tag-Out tags (Part No. 212-1586) through your Heil dealer or through Heil.

NOTES:

SECTION 4 IN-CAB DISPLAY AND CONTROLS

PREVIEW

Read this section to learn about the operation of the in-cab display controls and indicator messages, outside controls, switches and buttons.

NOTICE

The location and appearance of the controls may be different than those shown in this manual. Make sure you know the location of the controls and the how you operate the controls on your unit before you use the vehicle.

This section explains:

- The unit's features and operation specifications
- The in-cab display, controls, switches and buttons
- The in-cab display messages
- The outside controls and how they work

CONTROLS

The unit's standard controls are located on the In-Cab InSight™ Diagnostic Display and on the body. The standard controls in the cab enable the hydraulic pump and the throttle advance. The hydraulic controls are installed on the street side of the body (tailgate and ejector panel controls) and on the curb side of the body (and blade).

The controls for optional equipment are located on the curb side of the body. These controls include cart tippers, reeving mechanism and winch.

IN-CAB DISPLAY

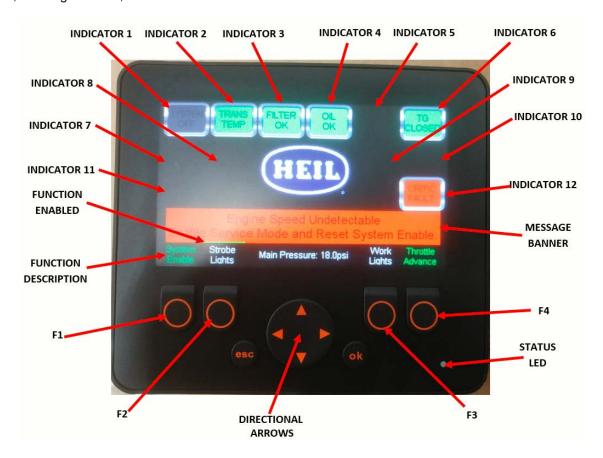
The InSight™ Diagnostic Display shows the Operator important system information including display indicators, status, critical fault messaging and counter information and allows a qualified and authorized Service Technician to see detailed system information and make configuration changes based on option configuration.

Display Screens

- 1. Home Screen
- 2. Display Screen
- 3. Cab Controller Inputs Screen
- 4. Body Controller Inputs Screen
- 5. Tailgate Controller Inputs Screen
- 6. Chassis Variables (J1939) Screen
- 7. Cab Controller Outputs Screen
- 8. Body Controller Outputs Screen
- 9. Tailgate Controller Outputs Screen
- 10. Critical Faults Screen
- 11. System Faults Screen
- 12. Controller Faults Screen
- 13. Password Protected Screens
- 14. Option Config Screen
- 15. Maintenance Screen

HOME SCREEN

Use the image below to identify the locations of the display indicators, function buttons, directional arrow buttons, "esc" and "ok" buttons, message banner, and status LED.



HOME SCREEN (CONTINUED)

Message Banner (Continued)

- C.Communication Failure either intermittent or ongoing, between one or more controllers. Press ESC button to acknowledge. (RED BANNER)
 - 1. "Comms Lost, Multiple Controllers, Restore Comms and, press escape to clear."
 - "Cab Controller Communication Lost, Restore Comms and, press escape to clear."
 - "Body Controller Communication Lost, Restore Comms and, press escape to clear"
 - 4. "Tailgate Controller Communication Lost, Restore Comms and, press escape to clear."

D. Miscellaneous

 Service Mode – system has been placed in service mode (RED BANNER)

"SERVICE MODE!!!"

Tailgate Buzzer – visual indication that the Tailgate Buzzer switch is pressed (BLUE BANNER)

"OPERATOR ALERT"

 Hydraulic Filter Life – remaining filter life is below 5%. (BLACK BANNER)

"Hyd. Oil Filter Life @: ##%"

Hydraulic filter should be changed every 1000 pump hours.

D. Miscellaneous (Continued)

 Hydraulic Oil Life – remaining oil life is below 5% (BLACK BANNER)

"Hyd. Oil Life @: ##%"

Hydraulic oil should be changed every 2000 pump hours.

5. Hydraulic Oil/Ambient Temp – (Optional) displayed as default message (BLACK BANNER)

"Hyd. Oil Temp.: ##° F"

"Ambient Temp.: ##° F"

System OFF – Hydraulic System is turned off (GRAY BANNER)

"System OFF"

HOME SCREEN (CONTINUED)

Message Banner

The Message Banner displays important information about the system status. Below are the potential messages that can be displayed.

A. Critical Faults – result in disabled functions, allowing limited to no operation. (RED BANNER)

Refer to the Heil Service Manual for a full list of possible faults along with each cause, effect, and method of reset.

- "Engine Speed Undetectable, Enable Service Mode and Reset System Enable." J1939 Communication with the Engine have been lost or, the Alternator R stator connection lost. To override and continue operation, enter Service Mode.
- "Side Door Interlock. Close Side Door Reset System Enable." To override and continue operation, enter Service Mode.
- 3. "Hydraulic Temp Shutdown. Oil Temp Exceeds 200° F Reset System Enable." Allow system to cool and reset by cycling system enable switch. To override and continue operation, enter Service Mode.
- "Transmission Temp High w/Clutch Shift PTO engaged, Reset System Enable." Allow system to cool and reset by cycling system enable switch. To override and continue operation, enter Service Mode.

A. Critical Faults (Continued)

- "Pump Shutdown Pressed, Reset Street side Switch, Restart System Enable." Optional Pump Shutdown System. To override and continue operation, enter Service Mode.
- "Pump Shutdown Pressed, Reset Curbside Switch Restart System Enable." Optional Pump Shutdown System. To override and continue operation, enter Service Mode.
- 7. "Low Hydraulic Oil. Fill hydraulic tank to proper level, Reset System Enable" To override and continue operation, enter Service Mode.
- B. Operator Warnings hazardous operating conditions. (RED BANNER)
 - "Vehicle in motion with TG open. Close and secure TG"
 - "Hydraulic Temp Warning Oil Temp Exceeds 180° F."
 - "Vehicle in motion with Throttle Advanced. Verify Transmission Neutral." MPH exceeded zero with throttle advance engaged. Throttle Advance is temporarily disabled. Indication of potential issue with the chassis Neutral signal.

HOME SCREEN (CONTINUED)

Display Indicators (Continued)

- 8. TG Slide/Blade Active (Continued)
 - GREEN, "TIP #1 UP" Tipper UP is commanded
 - YELLOW, "TIP #1 DWN" Tipper DOWN is commanded
 - GREEN, "TIP #2 UP" Tipper UP is commanded
 - YELLOW, "TIP #2 DWN" Tipper DOWN is commanded
 - GREEN, "ROLL BAR" Roll Bar UP is commanded
 - YELLOW, "ROLL BAR" Roll Bar DOWN is commanded
 - GREEN, "CABLE RET" Winch or Reever cable retract is commanded
 - YELLOW, "CABLE EXT" Winch or Reever cable extend is commanded
- Side Door Included with Side Door Pump Shutdown interlock, indicates Side Door Closed or Open.
 - GREEN, "SIDE DOOR CLOSED"
 - · RED, "SIDE DOOR OPEN"
- 10. Unused Unused Indicators will be blank.

- 11.**Pump #2** (Optional) Included with OAI hydraulic pump.
 - GREEN, "PUMP ON" Pump output ON
 - GRAY, "PUMP OFF" Pump output OFF
 - YELLOW, "ERROR" Pump output error, short or open circuit

12. Fault Indicator

- RED, "CRITIC FAULT" Critical Fault
- RED, "CTRL. FAULT" Controller Fault
- RED, "SYS. FAULT" System Fault

Status LED

The Status LED on the bottom-right corner of the display indicates status of the display as described below.

- GREEN, 2Hz Flash Application Running
- GREEN, 5Hz Flash No Run time system loaded
- GREEN, Continuous Application Stopped or No Application Loaded
- RED, 5Hz Flash Application Stopped due to Low Voltage
- RED, 10Hz Flash Application Stopped with error application is stopped
- RED, Continuous Application Stopped with Fatal Error

HOME SCREEN (CONTINUED)

Display Indicators

- 1. System/PTO Indicates PTO or System Status
 - On units with a Clutch Shift PTO:
 - RED, "ERROR" PTO output error.
 - GREEN, "PTO ON" PTO output ON and PTO pressure switch is activated
 - YELLOW, "PTO ON" PTO output ON but PTO pressure switch is not activated
 - GRAY, "PTO OFF" PTO output OFF.

On units without a Clutch Shift PTO:

- GREEN, "SYSTEM ON" Hydraulic System is enabled.
- GRAY, "SYSTEM OFF" Hydraulic System is disabled.
- 2. **Trans Temp** (Optional) Indicates the High Temp Warning is active on the Allison Transmission. Only applies with Clutch shift PTO.
- 3. Filter Bypass
 - GREEN, "FILTER OK" Return Filter is NOT in bypass.
 - RED, "FILTER BYPASS" Return Filter is in bypass.

- 4. **Low Oil** (Optional) Included with Hydraulic Tank Monitoring.
 - GREEN, "OIL OK" Oil Level is Good
 - RED, "LOW OIL" Low Hydraulic Oil
- 5. Tailgate Lock (Optional) Currently Not Used
 - GREEN, "TG LOCKED"
 - RED, "TG UNLOCKED"
- 6. Tailgate Open
 - GREEN. "TG CLOSED"
 - RED, "TG OPEN"
- 7. **Pump #1** (Optional) Included with manifold controlled hydraulic pump.
 - GREEN, "PUMP ON" Pump output ON
 - GRAY, "PUMP OFF" Pump output OFF
 - YELLOW, "ERROR" Pump output error, short or open circuit
- 8. **TG Slide/Blade Active** (Optional) Included on units equipped with Electric Tailgate Valve.
 - GREEN, "SLIDE UP" Slide UP is commanded
 - YELLOW, "SLIDE DWN" Slide DOWN is commanded
 - GREEN, "BLADE IN" Blade IN is commanded
 - YELLOW, "BLADE OUT" Blade OUT is commanded

HOME SCREEN (CONTINUED)

Function Buttons

Each button is assigned multiple functions which change by scrolling the DOWN directional arrow. Button Functions are listed below. The state of functions assigned to F2, F3 and F4 are retained through a power cycle. Function text will be green when function is enabled, white when not.

Other than System Enable, all other functions that you enable will be saved as a custom setup that will reload even after you cycle the power of the unit.

1. F1 Function Button

• System Enable – enables the hydraulic system

2. F2 Function Button

- Strobe Lights turns on all strobes.
- Auto Strobe turns on all strobes with System Enable and Vehicle Speed below 20 MPH.
- Rear Strobe turns on all strobes on the rear of the vehicle.
- Front Strobe turns on all strobes on the front of the vehicle.

3. F3 Function Button

- Work Lights turns on body Work Light #1 and all tailgate Work Lights.
- Auto Work Lt turns on body Work Light #1, tailgate hopper and tailgate side lights with System Enable and Vehicle Speed below 20MPH.

3. F3 Function Button (Continued)

- Inside Hopper turns on tailgate hopper light.
- Outside Hopper turns on tailgate side light.
- Back-Up Assist turns on side body Backup Assist lights.
- Camera Floods turns on tailgate camera lights.

4. F4 Function Button

- Throttle Advance Enables engine throttle advance.
- Option Switch 1 turns on Option Output #1 in the Body Controller, must be enabled in Option Screen
- Option Switch 2 turns on Option Output #2 in the Body Controller, must be enabled in Option Screen

5. Functions Enabled

 This GREEN line above a Function Description indicates the function assigned to that button is enabled. It is necessary to scroll down through the functions in order to identify the enabled function(s).

STANDARD OUTSIDE CONTROLS

The standard unit is equipped with outside curb side push button controls. As an option, the unit may also be equipped with outside street side push button controls. Refer to the information below. Also see **Loading Refuse Manually** in the **On-Route Operation Procedures** section.

A DANGER

Your body or clothing can become caught by the blade while it moves. Serious injury or death may occur if a person is in or near the hopper when the blade and slide assembly move. Clear the area near the hopper of all unnecessary people before you move the blade and slide assembly and keep all parts of your body away from the blade.

TAILGATE Push Button Controls

To start the cycle, PRESS and RELEASE the BLADE IN AND BLADE OUT push buttons. The blade will raise up and slide out. After verifying the pinch point between the packer blade tip and hopper lip is clear, the operator may press and release the BLADE IN push button. The blade down and slide in function will operate in sequence.

Using the SLIDE IN and SLIDE OUT push button will operate these functions individually and should only be used in a condition where the automatic cycle fails to complete as a normal cycle.



Figure 32. Tailgate Push Button Control Panel

The operator must PUSH the button to the DOWN position until the function activates. Operator may PUSH and HOLD the button if the function does not complete automatically. See the figure above.

A DANGER

Your body or clothing can become caught by the blade while it moves. Serious injury or death may occur if a person is in or near the hopper when the blade and slide assembly move. Clear the area near the hopper of all unnecessary people before you move the blade and and keep all parts of your body away from the blade.

STANDARD OUTSIDE CONTROLS (CONTINUED)

A. BLADE IN/OUT Buttons

- PUSH the BLADE IN button to LOWER the blade.
 PUSH the Red System Power button to stop the function.
- PUSH the BLADE OUT button to RAISE the blade.
 PUSH the Red System Power button to stop the function.

B. SLIDE UP/DOWN Buttons

- PUSH the SLIDE UP to MOVE the slide up. PUSH the Red System Power to stop the function.
- PUSH the SLIDE DOWN to MOVE the slide down.
 PUSH the Red System Power button to stop the function.

C.SYSTEM POWER Button (Red)

- PUSH the button IN to stop all functions.
- PULL the button OUT to allow functions to restart.

D. BUZZER Toggle Switch

- PUSH and HOLD to activate the buzzer in the cab when the helper is ready for the unit to move to the next pickup location.
- RELEASE to STOP the buzzer in the cab.
- MAKE SURE you (the helper) are ready for the unit to move.

HOPPER LIGHT Toggle Switch

- PUSH the switch ON to activate the hopper light.
- PUSH the switch OFF to deactivate the hopper light.

NOTICE

Hopper Lights are also automatically energized when the vehicle is placed in reverse gear.



Figure 33. Tailgate Standard Outside Push Button Controls (Red Outlines)

STANDARD OUTSIDE CONTROLS (CONTINUED)

TAILGATE Blade Buttons

- You usually operate these buttons at the same time you operate the slide buttons to:
 - OPEN the hopper to load refuse
 - CLOSE the hopper for the in-transit position
 - o MOVE and COMPACT the refuse in the hopper to the body.

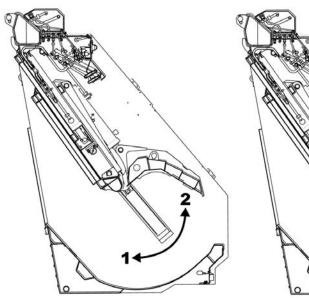


Figure 34. Section View of Initial Packer Blade Movement

Figure 35. Section View of Final Packer Blade Movement

STANDARD OUTSIDE CONTROLS (CONTINUED)

TAILGATE Slide Buttons

- You usually operate these buttons at the same time you operate the blade buttons to:
 - o OPEN the hopper to load refuse
 - o CLOSE the hopper for the in-transit position
 - o MOVE and COMPACT the refuse in the hopper to the body.

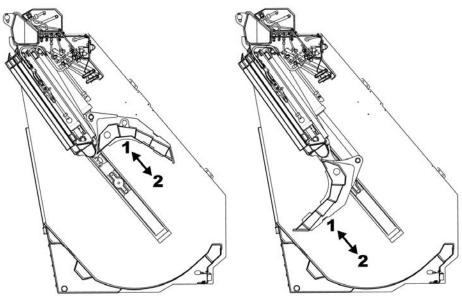


Figure 36. Section View of Initial Slide Movement

Figure 37. Section View of Final Slide Movement

STANDARD OUTSIDE CONTROLS (CONTINUED)

TAILGATE Lever Controls (Continued)

C.BUZZER Toggle Switch

- PUSH the switch ON to activate the buzzer in the cab when the helper is ready for the unit to move to the next pickup location.
- 2. RELEASE the switch to STOP the buzzer in the cab.
- 3. MAKE SURE you (the helper) are ready for the unit to move.

D. HOPPER LIGHT Toggle Switch

- 1. PUSH the switch ON to activate the hopper light.
- 2. PUSH the switch OFF to deactivate the hopper light.

NOTES:

OPTIONAL EQUIPMENT OUTSIDE CONTROLS

The optional outside controls include buttons to operate the optional hydraulic equipments such as:

- Cart Tipper
- Roll Bar
- Winch

The controls for optional equipment are usually located on the curb side of the unit, but may also be located on the street side of the unit. You must become familiar with the optional equipment and their controls that are on your unit. See the figure to the right.



Figure 38. Tailgate Optional Equipment Push Button Controls (Red Outline)

OPTIONAL OUTSIDE CONTROLS (CONTINUED)

A DANGER

Container lifting equipment in motion is dangerous. Serious injury or death may occur if a person is struck by a refuse container or the lifting equipment. Clear the area near the tailgate of all unnecessary people before you use the container lifting equipment.

A. CART TIPPER

One or two optional cart tippers can be installed on the unit. When equipped with push buttons, the push button controls will be located on the tailgate push button control panel. See the figure on the right.

- 1. Bring the refuse container to the cart tipper and secure the container to the cart tipper with the cart tipper lock.
- 2. PRESS the CART TIPPER RAISE button to RAISE the cart tipper. The cart tipper will RAISE and (by continuing to PRESS the button) tip the container, thereby dumping the refuse in the hopper.
- At any time, you can RELEASE the button to STOP the cart lifter movement.
- 4. MAKE SURE the container latch bar is over the cart tipper saddle **BEFORE** you RAISE the container.
- MAKE SURE the cart tipper slider latch EXTENDS and LOCKS the container when you RAISE the container.

- If the latch does not extend, LOWER the container, make sure the container latch bar is over the cart tipper saddle and RAISE the container again. DO NOT continue to RAISE a refuse container when the slider latch does not extend and lock the container.
- 7. When the refuse container is empty, PUSH and HOLD the CART TIPPER LOWER button to LOWER the cart tipper.
- 8. At any time, you can RELEASE the button to STOP the cart lifter movement.
- RELEASE the refuse container from the cart tipper's lock.



Figure 39. Tailgate Optional Tipper Push Button Controls (Red Outline)

OPTIONAL OUTSIDE CONTROLS (CONTINUED)

A DANGER

Container lifting equipment in motion is dangerous. Serious injury or death may occur if a person is struck by a refuse container or the lifting equipment. Clear the area near the tailgate of all unnecessary people before you use the container lifting equipment.

WARNING

A refuse container that is not in good condition with retaining washers in place may not be secured with the latch bar and can suddenly move. Death or serious injury can occur when a person is struck by a moving container that is not properly secured. Make sure the refuse container is properly secured to the latch bar before you raise or lower the container.

B. WINCH

An optional winch will be mounted at the top, center of the tailgate. You use the winch and its hook to secure a commercial refuse bin, pull it to the hopper, tip the bin to empty the refuse into the hopper and lower the bin to the ground. The push controls the RAISE and LOWER operations of the winch.

- 1. PUSH and HOLD the WINCH EXT button to EXTEND and unwind the cable.
- PUSH and HOLD the WINCH RET to the RETRACT and wind the cable.

- 3. RELEASE the button at any time to stop a EXTEND or RETRACT operation or when the winch is at the position you want. Reference the Outside Controls Procedure 1091.
- 4. Attach the latch bar to the refuse bin BEFORE you attach the hook to the refuse container.
- PUSH and HOLD the WINCH RET button to pull the container over the hopper lip, dump the refuse from the container and lower the container to the ground using the WINCH EXT button.

C.ROLL BAR

The optional roll bar mechanism consists of a lift arm on each side of the tailgate connected by a tube. You raise and lower each arm with two cylinders. A single button controls the two cylinders.

- PUSH the button to the LOWER position and HOLD it there to LOWER the roll bar.
- 2. PULL the button to the RAISE position and HOLD it there to RAISE the roll bar.
- RELEASE the button to stop an LOWER or RAISE operation at any time or when the roll bar is at the position you want.
- 4. Attach the latch bar to the refuse bin **BEFORE** you RAISE the refuse container.

OPTIONAL OUTSIDE CONTROLS (CONTINUED)

- MAKE SURE the refuse container is SECURED by the latch bar **BEFORE** you LOWER the refuse container.
- 6. PULL/PUSH the button to RAISE the container over the hopper lip, dump the refuse from the container and lower the container to the ground.



Figure 40. Tailgate Optional Roll Bar Push Button Controls (Red Outline)



Figure 41. Tailgate Optional Winch Push Button Controls (Red Outline)

SECTION 5 BODY AND TAILGATE PROPS

PREVIEW

Read this section to learn about:

- Using the body props
- Using the tailgate props

PROPPING THE BODY

There are no body props as you cannot raise the body of the unit since the unit is an eject model and not a dump model.

PROPPING THE TAILGATE

YOU MUST prop the tailgate when you open it for service or maintenance. Use the instructions that follow and prop the tailgate with either the factory-installed tailgate props or a tailgate prop built specifically for your unit.

Observe and obey the following DANGER and WARNING notices while you prop the tailgate with the factory tailgate props.

A DANGER

A tailgate in motion is dangerous. Serious injury or death may occur if a person is struck by a moving tailgate or becomes trapped between the tailgate and the body. Clear the area near the tailgate of all unnecessary people before you lower the tailgate.

A CAUTION

Two props are installed on the unit. Both props must be used!

Factory Tailgate Props

YOU MUST USE BOTH of the two support props at the rear of each unit whenever you open the tailgate for service or maintenance.

Refer to the figure on the next page and carefully follow the tailgate propping procedures below.

☑ Follow These Steps:

A. How to Use the Tailgate Props

- 1. Set unit on flat, stable ground, apply the parking brake, and chock the wheels.
- 2. Make sure the area around the tailgate is clear of all people.
- 3. UNLOCK the tailgate. Make sure the tailgate unlock flags are down (if equipped).
- 4. Use the tailgate raise function on the in-cab display to RAISE the tailgate enough to RELEASE and ROTATE the props so that you can SECURE each prop on its prop pin on each side of the tailgate.
- 5. LOWER the tailgate until you can SECURE each PROP on its pin.
- 6. Turn OFF the engine and REMOVE the ignition key.
- 7. Put the unit in the Lock-Out/Tag-Out mode. Refer to Lock-Out/Tag-Out Procedure 53.

PROPPING THE TAILGATE (CONTINUED)

How to Store the Tailgate Props

- 1. When you finish using the props, take the unit out of the Lock-Out/Tag-Out mode, insert the ignition key, and start the engine.
- 2. RAISE the tailgate enough so that you can REMOVE each prop bar from its pin, then ROTATE each prop so that you can put the props in the stored position.
- 3. SECURE each prop with a pin.
- 4. LOWER the tailgate until it is completely CLOSED.
- 5. LOCK the tailgate.

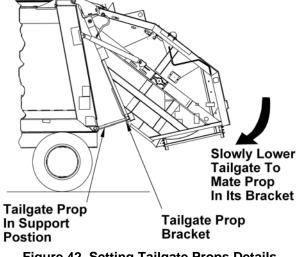


Figure 42. Setting Tailgate Props Details

SECTION 6 DAILY CHECKLIST

DAILY CHECKLIST MAINTENANCE ITEMS

Make sure you perform a daily check of the unit. Make copies of the **Refuse Vehicle Daily Inspection** on the next several pages to have the Operator mark completed items before each route. Many checks in the Daily Checklist are maintenance related, such as checking tire pressures and hoses for wear and damage.

Refer to the Daily Checklist Maintenance Items Chart below for items to check and the required action.

DAILY CHECKLIST MAINTENANCE ITEMS			
Item Required Action			
Low air pressure in tires	Inflate the tire to the correct air pressure given on the tire		
Worn tire	Replace when the wear is greater than allowed by law or before the tread is no longer visible		
Damaged tire	Replace immediately BEFORE going on route.		
Hydraulic pump for leaks	Determine the cause of the leak and repair immediately		
Damaged hydraulic pump	Repair or replace IMMEDIATELY		
Loose or missing hardware for the hydraulic pump	Tighten loose hardware Replace missing hardware immediately		
Damaged decal or decal not readable	Replace decal immediately		
Low level of hydraulic oil	Fill the hydraulic oil tank immediately		
Worn or damaged hoses	Replace immediately		
Leaks at cylinders, hoses or fittings.	Tighten loose connection		
Loose or missing hardware	Tighten loose connections. Replace missing hardware		
Wet fiber guards	Replace hoses/fittings as necessary. Install new fiber guard on new hoses		
Worn or damaged tailgate lock components	Replace worn or damaged components		
Loose or missing tailgate lock hardware	Tighten loose hardware Replace missing hardware		
Damaged tailgate seal	Replace seal		

DAILY CHECKLIST MAINTENANCE ITEMS		
Item	Required Action	
Body structure has loose or missing hardware	Tighten loose hardware Replace missing hardware	
Body structure has cracked weld joints	Repair immediately	
Body mounting brackets have loose hardware, damaged hardware or cracked welds	Tighten loose hardware Replace missing hardware Repair cracked welds	
Air regulator	90 PSI locate it on your unit – generally at front of body	



REFUSE VEHICLE DAILY INSPECTION

Printed Name of Operator:

0:-----

DATE:	/	/	
UNIT NO.			

Enter one of the following codes in the Inspection Results Code column:

Use a $\sqrt{}$ to indicate inspected and no repair, service or adjustment is necessary.

Use an **R** to indicate repair, service or adjustment is necessary. Use an **N** to indicate vehicle not equipped.

FOLLOW ALL APPLICABLE LOCK-OUT / TAG-OUT PROCEDURES

•	mitou mamo	or operator.		
-			 	

I certify with the signature that follows that I performed a complete inspection in accordance with the following check list on the date given above.

Refer to Preventative
Maintenance Chart and
Lubrication Guide for additional
information and requirements.

CHECKS AND INSPECTIONS	INSPECTION RESULTS CODE (√/R/N)
INSPECT PER APPLICABLE MANUFACTURER MANUAL	
Cab/Drive	
Wheels and Tires	
Tractor and Chassis Electrical	
Chassis	
Engine & Transmission & Fluid Levels	
Chassis Lubrication	
REFUSE COLLECTION SYSTEMS AND COMPONENTS	
CAB OUTSIDE AREA	
Check air pressure of tires. Add air if air pressure lower than recommended on any tire before going on route	
Check wear of tire tread. Replace any tire worn below tire manufacturer's recommendation or state requirement before going on route	
Check tires for damage. Replace any damaged tire before going on route	
Inspect pump for leaks	
Inspect pump for damage or loose hardware	
Inspect all decals on cab for damage and readability	

Inspect unit for refuse on or about the engine or exhaust components. Remove all refuse to prevent a fire	
BODY AND CHASSIS CURB SIDE INSPECTION	
Inspect level of hydraulic oil if tank is mounted on curb side. It must be full. Add recommended oil as necessary	
Inspect body structure for damage, loose or missing nuts and bolts and for cracked welds and metal	
Inspect body mounting brackets for cracked welds, missing bolts or nuts or movement	
Inspect decals on curb side body for damage and readability	
Check air pressure of tires. Add air to any tire with air pressure lower than recommended before going on route	
Check wear of tire treads. Replace any tire worn below tire manufacturer's recommendation or state requirement before going on route	
Check tires for damage. Replace any damaged tire before going on route	
Inspect tailgate raise components	
Cylinder, hoses and fittings for leaks	
Hoses for wear and damage	
Cylinder for damage	
Loose or missing mounting hardware	
Inspect tailgate lock components	
Cylinder, hoses and fittings for leaks	

Hoses for wear and damage	
Cylinder for damage	
Loose or missing mounting hardware	
Tailgate is locked	
TAILGATE	
Inspect decals on tailgate and underride bumper for damage and readability	
Inspect tailgate seal for visible damage	
Inspect underride bumper for damage and loose components	
Inspect slide assembly	
Cylinders, hoses and fittings for leaks	
Hoses for wear and damage	
Cylinder for damage	
Loose or missing mounting hardware for hydraulics	
Loose or missing hardware for slide assembly	
Inspect packer blade	
Cylinders, hoses and fittings for leaks	
Hoses for wear and damage	
Cylinder for damage	
Loose or missing mounting hardware for hydraulics	

Loose or missing hardware for packer blade	
BODY AND CHASSIS STREET SIDE INSPECTION	
Tailgate is locked	
Inspect tailgate lock components	
Cylinder, hoses and fittings for leaks	
Hoses for wear and damage	
Cylinder for damage	
Loose or missing mounting hardware	
Inspect tailgate raise components	
Cylinder, hoses and fittings for leaks	
Hoses for wear and damage	
Cylinder for damage	
Loose or missing mounting hardware	
Check air pressure of tires. Add air to any tire with air pressure lower than recommended before going on route	
Check wear of tire treads. Replace any tire worn below tire manufacturer's recommendation or state requirements before going on route	
Check tires for damage. Replace any damaged tire before going on route	
Inspect all decals on street side body for damage and readability	
Inspect body structure for damage, loose or missing nuts and bolts and for cracked welds	

Inspect body mounting brackets for cracked welds, missing bolts or nuts or movement	
Inspect level of hydraulic oil if tank is mounted on streetside. It must be full. Add recommended oil as necessary	
Battery disconnect switch is turned to OFF then:	
Check wiring and battery cables from the battery box to the engine starter for wear and other damage. IMMEDIATELY REPLACE WORN OR DAMAGED WIRING	
Check wiring and cables for loose connections. IMMEDIATELY TIGHTEN LOOSE CONNECTIONS	
OPERATION OF UNIT - Skip this section if the unit will not be operated today	
Close the air tank drain valve	
Turn battery disconnect to ON	
Apply parking brake	
Make sure the starter interlock operates – make sure unit will not start in gear	
Start the engine. Indicator lights and gauges show normal operation of engine	
Make sure the parking brake does not allow the vehicle to move forward or reverse at idle	
Make sure all cab, body and tailgate lights operate	
Make sure the backup alarm operate	
Make sure all people not necessary and any hazards are clear of the area and then:	
Operate the in-cab controls and make sure:	
If equipped, engage the PTO	

MOVE the PUMP ON switch UP – the switch's green light is ON and the PUMP ON light is ON	
MOVE the PUMP ON switch DOWN – the switch's green light is OFF and the PUMP ON light is OFF	
MOVE the PUMP ON switch UP – the switch's green light is ON and the PUMP ON light is ON	
The FILTER CONDITION indicator light is GREEN. If the FILTER CONDITION indicator light is RED, report this to your supervisor immediately. Do not go on route until the hydraulic filter is changed.	
Operate all optional equipment switches and make sure the option operates correctly, such as a light	
Check the operation of all optional lights. Report any light that is ON and should be OFF or is OFF and should be ON	
Operate the standard outside controls located at the tailgate:	
At the same time, PUSH the SLIDE and BLADE levers	
The blade should move DOWN	
The slide should move IN	
At the same time, PULL the SLIDE and BLADE levers	
The blade should move UP	
The slide should move OUT	
Operate each installed optional outside control located at the tailgate:	
Cart Tipper	
PULL the control lever – the cart tipper should RAISE	

PUSH the control lever – the cart tipper should LOWER	
Make sure the cart tipper is at the full LOWER position	
PRESS the Buzzer – the in-cab alarm should sound	
Operate the standard outside controls located at the front, street side of body:	
If the body has refuse, do not operate the controls:	
If the body does not have refuse:	
PUSH the tailgate in cab display controls and RAISE the tailgate sufficiently to set the tailgate props	
The TAILGATE OPEN light and alarm are ON	
Set the tailgate props	
Inspect the tailgate seal for damage	
Inspect the floor, ejector rails and ejector shoes	
Store the tailgate props and RAISE the tailgate completely	
PUSH the ejector in cab controls and FULLY EXTEND the ejector panel	
PUSH the ejector in cab controls and FULLY RETRACT the ejector panel	
CLOSE the tailgate	
The TAILGATE OPEN light and alarm are OFF	
Keep the engine running and continue the inspection	
IN-CAB INSPECTION	
Inspect all in-cab decals for damage and readability	

Make sure the following lights are OFF:	
TAILGATE OPEN	
PUMP INDICATOR light is OFF – if it is ON, MOVE the PUMP ON switch to OFF	
All switches are at their OFF position:	
PUMP ON	
All optional switches	
If equipped, check the operation of each camera	
FINAL INSPECTION	
While you walk completely around the vehicle, look for:	
Fluid leaks	
Cracked or damaged welds and metal	
Loose or missing bolts, nuts and clamps	

SECTION 7 BEFORE GOING ON ROUTE

PREVIEW

Read this section to learn proper procedures for:

- Checking the unit each day
- Starting the unit in cold weather
- Setting the unit up for the route
- Removing power to the unit during periods of not using the unit

BEFORE STARTING A ROUTE

Before you start a route, do the following:

- Perform an inspection of the unit with the Daily Checklist.
- ☐ Check the **Hydraulic Oil Level**.
- ☐ Cycle all **Hydraulic Functions**.
- ☐ Check the "In-transit" Settings 97).

Use the Daily Checklist to Inspect the Unit

It is the operator's responsibility to do a visual inspection of the unit and make sure the unit is in good operating condition before you start a route.

The requirements for the daily checks are given in the **Daily Checklist section**. Make sure you complete the inspections on the checklist and you make all entries, including your signature.

COLD WEATHER WARMUP PROCEDURE

When ambient air temperature is cold (below 0 degrees F), it is necessary to warm up the unit's hydraulic oil before you start your daily route operation or to check the oil level. The hydraulic oil is sufficiently warmed when the temperature is between 120° and 160°F.

A WARNING

Moving parts on the unit are dangerous. Serious injury or death can occur if a person is struck by the equipment. Clear all people from the area before you operate the unit

Follow the steps below to warm up the hydraulic oil.

- 1. START the TRUCK and let the engine idle.
- APPLY the PARKING BRAKE and make sure it holds.
- 3. ENGAGE the HYDRAULIC PUMP for approximately five minutes.
- 4. MAKE SURE the AREA IS CLEAR of all unnecessary people BEFORE you operate the controls.
- OPERATE the PACKER EXTEND and PACKER RETRACT functions through ten (10) cycles while the engine idles. See the Operator's Manual for operation instructions.
- 6. Make sure the oil temperature on the site gauge is between 120° and 160°F. If not, repeat step 5.
- 7. Check for fluid leaks. Repair if necessary.
- 8. The unit is now ready to go on route.

HYDRAULIC OIL TANK WITH SIGHT GAUGE

The hydraulic oil reserve tank is located at the front head of the body. See **Check the Hydraulic Oil Level** so on the next page and the Service Manual for more information, including required hydraulic oil specifications and brands, when and how to check the hydraulic oil level, when and how to change the hydraulic oil filter element, and how to drain and clean the tank.

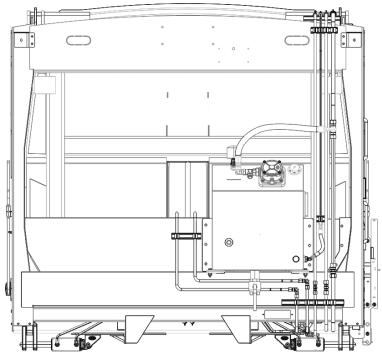


Figure 43. Hydraulic Oil Tank Location on Front Head of Body

PREPARING THE UNIT TO CHECK THE HYDRAULIC OIL LEVEL

Before checking the oil level or adding oil, make sure the oil is warmed up and the unit is in the following position with all cylinders collapsed:

- Truck on level ground
- Tailgate and Body fully down and locked
- Ejector Panel at the front of the body
- Packer Panel in the in-transit position with all cylinders retracted

CHECK HYDRAULIC OIL LEVEL

Check the hydraulic oil level (after warming up the oil) daily or every eight (8) hours, whichever comes first. Fill as necessary.

CYCLE ALL HYDRAULIC FUNCTIONS

☑ Follow These Steps:

- 1. Operate the tailgate functions two or three times each. See **Section 3** for proper operation of controls.
- 2. Put the unit back in the position described above and check the oil level again.

3. Add oil if necessary. Refer to the Service Manual for instructions for filling the oil tank.

Current Heil standard hydraulic oil is **Shell Tellus S2 VX 32**. Please see product TDS and MSDS for more detail information about it. We strongly recommend to use it on Heil products to get best system performance and oil service life. Refer to the Service Manual for other approved hydraulic oils.

NOTICE

Cold weather operation requires special oil considerations. Viscosity should not exceed 7500 SSU at lowest startup temperature. Continuous operation should range between 40–1000 SSU for all temperature ranges.

NOTICE

Contamination is a hydraulic system's worst enemy. DO NOT let dirt enter the system. Use a clean rag and remove dirt or other contamination around any system component before you disconnect or remove it. While you fill the reservoir, filter the oil through a 200 mesh (or finer) screen. NEVER use a cloth to filter the oil.

CYCLE ALL HYDRAULIC FUNCTIONS

Check the operation of all hydraulic controls on the unit. See **Section 4** for proper operation of controls.

A WARNING

Moving equipment can be dangerous to bystanders. Serious injury or death can occur if a person is in the area of operation or is not attentive to the operations. Clear the area of all unnecessary people before you operate the controls.

☑ Perform These Steps:

A DANGER

Your body or clothing can become caught by the packer blade while it moves. Serious injury or death may occur if a person is in or near the hopper when the packer blade and slide assembly move. Clear the area near the hopper of all unnecessary people before you move the packer blade and slide assembly and keep all parts of your body away from the packer blade.

1. Slide/Blade

Use the controls and MOVE the slide/blade through at least one cycle of the start, sweep and pack positions.

A DANGER

A tailgate in motion is dangerous. Serious injury or death may occur if a person is struck by a moving tailgate or becomes trapped between the tailgate and the body. Clear the area near the tailgate of all unnecessary people before you lower the tailgate.

2. Tailgate Raise Cycle

If the body is empty, do a tailgate RAISE and LOWER cycle. DO NOT raise the tailgate with refuse in the body or in the hopper.

A DANGER

Stand clear when the ejector panel is in motion. Keep side access door closed when ejector panel is in motion. Failure to obey may result in severe injury or death.

NOTICE

Do not use the ejector panel to pack refuse against a closed tailgate (backpack). Packing refuse against a closed tailgate may result in damage to body or ejector cylinder.

3. Ejector Panel

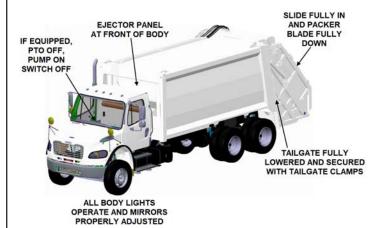
Do not operate the ejector panel if the body has refuse. When the body does not have refuse, UNLOCK and RAISE the tailgate, then do at least one EJECTOR PANEL cycle, which includes a full EXTEND cycle and a full RETRACT cycle.

CHECK THE TRAVELING OR "IN-TRANSIT" POSITION

When you travel to and from the landfill or transfer station, make sure the unit is in the in-transit mode as follows (see the figure to the right):

For all units:

- The tailgate is fully LOWERED and CLOSED. Check the TAILGATE UP light in the cab. It must be OFF.
- The tailgate is locked.
- For a unit with refuse, the blade is up tight against refuse. For a unit with no refuse, the blade is at the START POSITION.
- The ejector panel is at the front of the body.
- If equipped, the PTO is DISENGAGED.
- The PUMP ON switch is OFF.
- You properly ADJUST and CLEAN the mirrors.
- All outside lights turn ON and OFF.
- If equipped, the side access door is CLOSED and LOCKED.



NOTES:

SECTION 8 ON-ROUTE OPERATION PROCEDURES

PREVIEW

Read this section to learn about:

- Setting up the unit for a route
- · Loading refuse
- Packing the load
- Packing on-the-move
- Washout system
- Setting up the unit for the landfill or transfer station

DRIVING TO PICK-UP LOCATIONS

Whenever you drive the unit to and from a route, along the route, to the landfill, etc., make sure the unit is set up as follows:

- The tailgate is fully lowered and CLOSED. Check the TAILGATE UP light in the cab. It must be off.
- The tailgate is locked.
- For a unit with refuse, the blade is up tight against refuse. For a unit with no refuse, the blade is at the START POSITION.
- The ejector panel is at the front of the body.
- If equipped, the PTO is disengaged.
- The PUMP ON switch is OFF.
- You properly ADJUST and CLEAN the mirrors.
- All outside lights turn ON and OFF.
- If equipped, the side access door is CLOSED and LOCKED. Latch bar in stowed position (IF EQUIPPED).

Use of Curb Side Drive

If equipped, drive from the curb-side driver position **ONLY** on the collection route. **DO NOT** use this station during travel to or from a route, landfill or transfer station.

BEFORE LOADING

Before you start to load refuse, make sure the packing mechanism is in the correct position.

 If equipped, the PTO is engaged. The PUMP ON switch is ON.

A DANGER

Stand clear when the ejector panel is in motion. Keep side access door closed when ejector panel is in motion. Failure to obey may result in severe injury or death.

NOTICE

The ejector panel should never be used to "backpack" (operating the ejector extend function with the tailgate closed against trash in a fully or partially loaded unit). This can possibly result in damage to the unit including structural components and cylinder failure. The resulting damage will NOT be covered by warranty.

- 2. The ejector panel should be:
 - For normal route pickup, about three (3) feet from the tailgate.
 - If starting with bulk refuse, the ejector panel should be about six (6) feet from the tailgate.

3. The packing mechanism should in the START POSITION with the slide fully IN and the packer blade fully DOWN. See the figure below.

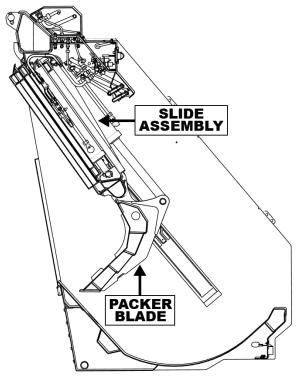


Figure 44. Packing Mechanism Start Position

LOADING REFUSE MANUALLY (CONTINUED)

Use the following procedures at each stop along the route to manually load refuse into the unit. Observe the DANGER and WARNING notices

Refer to Standard Outside Controls 661.

A DANGER

Your body or clothing can become caught by the blade while it moves. Serious injury or death may occur if a person is in or near the hopper when the blade and slide assembly move. Clear the area near the hopper of all unnecessary people before you move the blade and slide assembly and keep all parts of your body away from the blade.

A DANGER

The slide in/out and blade up/down operations can push refuse out of the hopper or break objects. Refuse broken by the blade can cause severe injury or death. Stand clear of the packer panel and to the side of the hopper when operating packing mechanism.

Tailgate Push Button Controls

Move the slide and blade into the START position.
 The start position is blade fully IN and slide fully UP.
 See the image below.

The hopper is now ready to receive refuse.

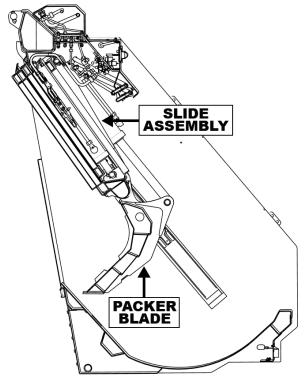


Figure 45. Packing Mechanism Start Position

LOADING REFUSE MANUALLY (CONTINUED)

2. Load the refuse from a container into the hopper and then return the container to the pick-up location.

A DANGER

Do not ride on or in the hopper opening.

- 3. Sweep the refuse from the hopper and pack it into the body.
- 4. PUSH and RELEASE the BLADE OUT push button. The blade will raise up and slide out.
- 5. Verify that the pinch point between the packer blade tip and the hopper lip is clear. PUSH and RELEASE the BLADE IN push button.
 - The Blade Down and Slide In functions will operate in sequence.
- Repeat Steps 2 and 3 as necessary to compact the refuse

A WARNING

Moving equipment can be dangerous. Serious injury or death may occur if a person is in the wrong area or is not attentive to the operations. Clear the area of all unnecessary people before you operate the controls.

7. Leave the blade against the refuse.

8. Each helper must PRESS the buzzer on their side of the tailgate and let the driver know each helper is ready to move to the next location.

A DANGER

Do not ride on or in the hopper opening.

9. Go to the next stop on the route.

LOADING REFUSE WITH A ROLL BAR MECHANISM

An option for Rear End Loaders (RELs), a Roll Bar Mechanism is an assembly that uses a bar to lift, dump and lower a residential refuse bin.

Use the instructions that follow to load refuse from a commercial refuse container into the hopper with a roll bar mechanism.

Observe the DANGER and WARNING notices.

A DANGER

Your body or clothing can become caught by the blade while it moves. Serious injury or death may occur if a person is in or near the hopper when the blade and slide assembly move. Clear the area near the hopper of all unnecessary people before you move the blade and slide assembly and keep all parts of your body away from the blade.

- 1. Move the slide and blade into the START position.
 - PUSH the SLIDE UP and BLADE IN buttons at the same time and then RELEASE the buttons.
 - The slide will move UP and the blade will move DOWN.
 - The hopper is now ready to receive refuse.

- Load the refuse from a container into the hopper. See Figure 44 and Figure 45.
 - Set the refuse container in front of the roll bar until the container touches or nearly touches the roll bar.

A CAUTION

A refuse container that is not in good condition with retaining washers in place may not be secured with the latch bar and can suddenly move. Minor or moderate injury can occur when a person is struck by a moving container that is not properly secured. Make sure the refuse container is properly secured to the latch bar before you raise or lower the container.

- b. Make sure the latch bar secures the container BEFORE you raise the container. See **Using a** Latch Bar.
- c. PUSH and HOLD the ROLL BAR UP button until the roll bar lifts the refuse container lifts over the hopper sill and the refuse empties into the hopper. RELEASE the button.

WARNING

Do not use roll bar to bounce refuse container in order to empty the container. Bouncing the container with the roll bar may disengage or break the container's trunnion bar. Death or serious injury can occur when a person is struck by a moving container that is not properly secured. Make sure the refuse container is properly secured to the latch bar before you raise or lower the container.

LOADING REFUSE WITH A ROLL BAR MECHANISM (CONTINUED)

- d. When the refuse container's cover is not closed because it is overfilled with refuse:
 - Raise the container enough to empty part of the refuse from container into the hopper.
 - PRESS and HOLD the ROLL BAR DOWN button until the container is on the ground.

A DANGER

The slide in/out and blade up/down operations can push refuse out of the hopper or break objects. Refuse broken by the blade can cause severe injury or death. Stand clear of the packer panel and to the side of the hopper when operating packing mechanism.

- Sweep the refuse and compact it into the hopper.
- RAISE the container and finish emptying the container.
- e. After the refuse container is empty of refuse, PUSH and HOLD the ROLL BAR DOWN button until the refuse bin rests firmly on the ground and you can release the latch bar.
- f. RELEASE the container's trunnion bar from the latch bar. See **Using a Latch Bar**.

- e. RELEASE the container from the roll bar mechanism.
- h. MOVE the container to its pick-up location.
- 3. Sweep the refuse from the hopper and pack it into the body.
 - a. PRESS the SLIDE DOWN and BLADE OUT buttons at the same time and then RELEASE the buttons.
 - b. The slide will move OUT and the blade will move UP. STOP the blade UP operation when the blade is at the pinch point with the hopper sill.
 - c. Watch for refuse that is pushed out of the hopper.
 - d. PRESS the SLIDE UP and BLADE IN buttons at the same time and then RELEASE the buttons.
 - e. The slide and blade move and compact the refuse into the body.
- Repeat Steps 1 and 3 as necessary to compact the refuse.

LOADING REFUSE WITH A ROLL BAR MECHANISM (CONTINUED)

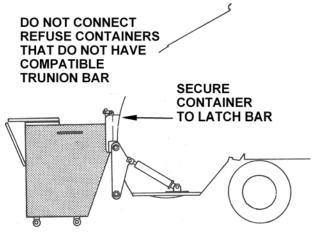


Figure 46. Roll Bar Setup

LOADING REFUSE WITH A ROLL BAR MECHANISM (CONTINUED)

5. Leave the blade against the refuse.

A DANGER

Do not use riding step when vehicle speed is more than 10 MPH or to travel more than 2 tenths (0.2) of a mile. Do not use riding step when vehicle operates in reverse. Always face vehicle when using riding step.

A DANGER

Do not use an arm mechanism or roll bar as a riding step. Obey safety messages and use the riding step for when traveling on the unit. Serious injury or death may occur.

A DANGER

Do not ride on or in the hopper opening. Use riding step and obey all safety messages.

- 6. Each helper must PRESS the buzzer on their side of the tailgate and let the driver know each helper is ready to move to the next location.
- 7. Go to the next stop on the route.

NOTES:

LOADING REFUSE WITH A WINCH

An option for Rear End Loaders (RELs), a winch is a mechanism with a hook and cable that an operator uses to raise, dump and lower a commercial refuse container

The winch hook and cable are not intended for any other purpose than dumping a Type T container into the hopper. The hook and cable should not be used for lifting, dragging, or manipulating containers, appliances, or other large items toward or into the hopper.

Use the instructions that follow to load refuse from a commercial refuse container into the hopper with a winch.

Observe the DANGER and WARNING notices.

A DANGER

Your body or clothing can become caught by the blade while it moves. Serious injury or death may occur if a person is in or near the hopper when the blade and slide assembly move. Clear the area near the hopper of all unnecessary people before you move the blade and slide assembly and keep all parts of your body away from the blade.

A DANGER

Crush or Pinch Hazard.

Lifting or dragging uncontrolled items with hook and cable may cause items to move in a way that can pinch or crush the operator.

Cables from winches and reeving mechanisms are not designed to pull containers from mud or to move the container in any manner whatsoever.

Use winch or reeving cylinder hook and cable for dumping properly restrained ANSI Type T containers only. BOTH of the container trunnion bars must be fully engaged with the tailgate and securely latched into place.

Never use hook and cable for any other purpose.

Failure to comply may injure or kill.

A DANGER

The slide in/out and blade up/down operations can push refuse out of the hopper or break objects. Refuse broken by the blade can cause severe injury or death. Stand clear of the packer panel and to the side of the hopper when operating packing mechanism.

LOADING REFUSE WITH A WINCH (CONTINUED)

- 1. Move the slide and blade into the START position.
 - PUSH the SLIDE UP and BLADE IN buttons at the same time and then RELEASE the buttons.
 - The slide will move UP and the blade will move DOWN.
 - The hopper is now ready to receive refuse.
- 2. Load the refuse from a container into the hopper. See See **Figure 44** and **Figure 45**.
 - Remove the winch's cable hook from the eye on the tailgate.
 - PUSH and HOLD the WINCH EXT button until you have sufficient cable to connect to the refuse bin.

M WARNING

A refuse container that is not in good condition with retaining washers in place may not be secured with the latch bar and can suddenly move. Death or serious injury can occur when a person is struck by a moving container that is not properly secured. Make sure the refuse container is properly secured to the latch bar before you raise or lower the container.

- Make sure the latch bar secures the container BEFORE you raise the container. See Using a Latch Bar.
- d. PUSH and HOLD the WINCH RET button until the refuse container lifts over the hopper sill and the refuse empties into the hopper, then RELEASE the button. If necessary, you can PRESS the Throttle Advance Switch during loading.

When the refuse container's cover is not closed because it is overfilled with refuse:

- (1) Raise the container enough to empty part of the refuse from container into the hopper
- (2) Lower the container to the ground
- (3) Sweep the refuse and compact it into the hopper.
- (4) Raise the container and finish emptying the container.
- e. After the refuse container is empty of refuse, PUSH and HOLD the WINCH EXT button until the refuse bin rests firmly on the ground and there is enough slack in the cable to remove the cable hook from the refuse container.
- f. Remove the cable hook and attach it to the eye on the tailgate.

LOADING REFUSE WITH A WINCH (CONTINUED)

- g. PULL and HOLD the WINCH RET button until the cable tightens and secures the hook in the eye on the tailgate.
- h. RELEASE the container's trunnion bar from the latch bar. See **Using a Latch Bar**.
- i. MOVE the container to its pick-up location.
- Sweep the refuse from the hopper and pack it into the body.
- 3. Sweep the refuse from the hopper and pack it into the body.
 - a. PRESS the SLIDE DOWN and BLADE OUT buttons at the same time and then RELEASE the buttons.
 - b. The slide will move DOWN and the blade will move OUT. STOP the blade OUT operation when the blade is at the pinch point with the hopper sill.
 - c. Watch for refuse that is pushed out of the hopper.
 - d. PRESS the SLIDE UP and BLADE IN buttons at the same time and then RELEASE the buttons.

- The slide and blade move and compact the refuse into the body.
- Repeat Steps 1 and 3 as necessary to compact the refuse.
- 6. Leave the blade against the refuse.

A DANGER

Do not use riding step when vehicle speed is more than 10 MPH or to travel more than 2 tenths (0.2) of a mile. Do not use riding step when vehicle operates in reverse. Always face vehicle when using riding step.

A DANGER

Do not ride on or in the hopper opening. Use riding step and obey all safety messages.

- 7. Each helper must PRESS the buzzer on their side of the tailgate and let the driver know each helper is ready to move to the next location.
- 8. Go to the next stop on the route.

ACHIEVING PAYLOADS

Read this section for advice and tips on how to pack the most efficient loads with your unit.

Payloads in any refuse/waste handling vehicle will vary greatly, depending on the type of material loaded. Dry bulk cardboard and reconstruction/building materials, Styrofoam, foam packing materials, loose plastic, etc. cannot be compressed and packed as effectively as wet, soft, garbage type materials. If dry materials can be mixed with some wet material, more effective payloads can be achieved.

Follow these techniques to attain greater efficiency in packing the load in your unit:

- After you empty the first few bins, the body begins to fill and material can begin to "fall back" into the hopper
- 2. If the route allows, mix some wet bins in with dry bins. This helps compact the dry material more. Wet material also helps lubricate the body, which results in better packing.

LEAVING THE ROUTE FOR THE LANDFILL/ TRANSFER STATION

At the end of the route, or when the unit has a full load, prepare the unit to go to the landfill. See **Driving to Pick-up Locations** and make sure the unit is properly set up for travel.

- The tailgate is fully LOWERED and CLOSED.
 Check the TAILGATE UP light in the cab. It must be OFF.
- The tailgate is locked.
- If equipped with a winch or reeving mechanism, the cable hook is secured in the eye on the tailgate.
- For a unit with refuse, the blade is up tight against refuse. For a unit with no refuse, the blade is at the START POSITION.
- If equipped, the PTO is disengaged.
- The PUMP ON switch is OFF.
- You properly ADJUST and CLEAN the mirrors.
- All outside lights turn ON and OFF.
- The side access door is CLOSED and LOCKED. Latch bar in stowed position (IF EQUIPPED).

SECTION 9 LANDFILL/TRANSFER STATION/ RECYCLE CENTER PROCEDURES

PREVIEW

Read this section to learn about:

- Setup conditions to dump the refuse
- Unloading the refuse
- Using the sump and (optional) washout system
- Preparing the unit to return to route.

OVERVIEW OF LANDFILL/TRANSFER STATION/RECYCLE CENTER PROCEDURES

Use the following information as an overview of the steps to follow when you dump a load of refuse at the landfill.

For each step in this overview, read and follow the detailed instructions that follow the overview:

- 1. Set the unit in position for dumping.
- 2. UNLOCK the tailgate, PRESS and HOLD switch in cab.
- 3. Fully RAISE the tailgate.
- 4. Fully EXTEND the EJECTOR panel.
- 5. Fully LOWER and secure the tailgate.
- 6. Prepare the unit to return to the route.

NOTICE

The location of the controls on your unit may be different than those shown in this manual. Make sure you know your unit's control pattern before you operate the the unit.

A. Setting Up the Unit for Dumping

After you position the unit on firm ground for dumping at the landfill, set it up properly before dumping the refuse.

☑ Follow These Steps:

 Some suspensions allow more movement in the chassis than others. Always stop the unit on the most stable, hard, dry and level surface you can find before you empty the refuse.

NOTICE

Open the valves on the side of the tailgate to empty the sumps in a designated location prior to emptying the body.

- 2. Shift the transmission to NEUTRAL.
- 3. SET the parking brake.
- For a manual transmission, engage the PTO and MOVE the PUMP ON switch to ON. For automatic transmissions, just MOVE the PUMP ON switch to ON.
- 5. If refuse is in the hopper, cycle the blade til the hopper is empty.
- To drain the sump tank, open the valve on either side of the tailgate. Make sure this is done in a designated area for unloading waste water at the transfer station.

B. Raising the Tailgate

If the unit has tailgate lock cylinders. Before raising tailgate, unlock the tailgate lock cylinders with in-cab controls.

A DANGER

A tailgate in motion is dangerous. Serious injury or death may occur if a person is struck by any moving object on the tailgate and/or the body. First, Clear the area near the tailgate.

B. Raising the Tailgate (Continued)

- On the In-Cab Control Panel, PRESS and HOLD the TAILGATE RAISE button while you PRESS the foot feed to maintain the engine speed between between 1200 and 1400 RPM. See the image below.
- 2. HOLD the button until the tailgate is COMPLETELY raised.
- RELEASE the TAILGATE RAISE button and the foot feed THROTTLE ADVANCE.

NOTICE

The TAILGATE UP notification turns ON and the in-cab alarm will sound to indicate the tailgate is open.



Figure 47. In-Cab Control Tailgate and Ejection Controls

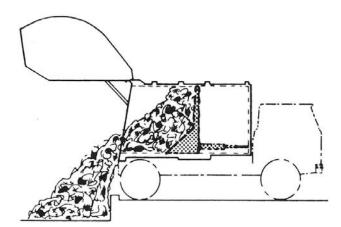
A CAUTION

Do not drive the unit for an extended distance. The unit may become unstable and you may cause damage to the tailgate cylinders.

C. Unloading Refuse

- 1. Extend the Ejector Panel
 - a. PRESS and HOLD the EJECTOR EXTEND button while you PRESS the foot feed to maintain the engine speed between 1200 and 1400 RPM until the ejector panel fully EXTENDS and comes to a complete stop.
 - b. The refuse is now unloaded from the unit.
 - c. RELEASE the EJECT EXTEND button and the foot feed THROTTLE ADVANCE.
- 2. Retract the Ejector Panel
 - a. PRESS and HOLD the EJECTOR RETRACT button until the ejector panel is fully RETRACTED and at the front of the body.
 - b. RELEASE the EJECTOR RETRACT button.

C. Unloading Refuse (Continued)



PUSH EJECTOR SWITCH TO RETRACT AND SETUP EJECTOR PANEL

48. Unloading Refuse

NOTICE

Allow unit to creep forward if space is available to remove all of the refuse. Make sure the front of the chassis is clear of obstacles.

D. Clean and Inspect the Tailgate

A DANGER

Always prop the tailgate when you leave it raised for maintenance, service or cleaning procedures. Any part of your body between the unit's body and the tailgate while you prop the tailgate or when the tailgate is propped is dangerous. Serious injury or death may occur if any part of your body is between the tailgate and the body if the tailgate suddenly closes.

- BEFORE you lower the tailgate, MAKE SURE the area where the tailgate seal mates with the body is CLEAN AND FREE of any refuse and debris.
- DO NOT drive the unit for an extended distance if you must move the vehicle to another area to clean and inspect the tailgate seal.
- DO NOT go under the tailgate to clear refuse, instead, use a broom or pole to clean the tailgate seal.
- Inspect the seal for possible wear or damage and replace if necessary.

E. Lowering the Tailgate

A DANGER

A tailgate in motion is dangerous. Serious injury or death may occur if a person is struck by a moving tailgate or becomes trapped between the tailgate and the body. Clear the area near the tailgate of all unnecessary people before you lower the tailgate.

WARNING

Tailgate will lower under its own weight even when the pump is in the OFF position when controls are operated.

- 1. PUSH and HOLD the TAILGATE LOWER button to LOWER the tailgate.
- HOLD the TAILGATE LOWER button until the tailgate is COMPLETELY down then RELEASE the switch.

NOTICE

The TAILGATE OPEN warning light will go OFF and the alarm will stop when body is FULLY down and the tailgate is completely closed.

F. Locking the Tailgate

Locks are controlled in the cab with the in-cab controller.

- G. Clean and Inspect the Hopper and Packer Panel
 - 1. Put the unit in the Lock-Out/Tag-Out mode, turn the engine OFF and REMOVE the ignition keys.
 - 2. Remove any remaining refuse in the hopper.
 - INSPECT the packer panel and hopper floor for excessive wear or possible damage. If there is excessive wear or other damage, get the damage repaired or parts replaced as soon as possible.
 - 4. Take the unit out of Lock-Out/Tag-Out, then use the ignition keys and start the unit.
 - 5. MOVE the PUMP ON switch to ON.
 - Use the blade and slide controls and do at least one cycle of the blade and slide: STARTING POSITION, OPEN and PACK. If the blade and slide do not operate correctly, report the problem to your supervisor for maintenance action.

H. Remove Refuse from the Engine and Exhaust Areas

IMPORTANT! Inspect unit for refuse on or about the engine or exhaust components. Remove all refuse to prevent a fire.

I. Preparing to Return to Route

See **Driving to Pick-up Locations** and make sure the unit is properly set up for travel.

- The tailgate is fully LOWERED and CLOSED. Check the TAILGATE UP light in the cab. It must be OFF.
- Lock the Tailgate with the in-cab controls.
- For a unit with refuse, the blade is up tight against refuse. For a unit with no refuse, the blade is at the START POSITION.
- If equipped, the PTO is DISENGAGED.
- The PUMP ON switch is OFF.
- You properly ADJUST and CLEAN the mirrors.
- All outside lights turn ON and OFF.
- If equipped, the side access door is CLOSED and LOCKED.

NOTES:

NOTES:

SECTION 10 END OF DAY PROCEDURES

PREVIEW

Read this section to learn about:

- Parking the Unit
- Washout System
- Final Inspection
- Report to Employer/Supervisor
- Ignition Keys

END OF DAY PROCEDURES

Parking the Unit

- 1. Park the unit in the space designated by your employer/supervisor.
- 2. Set the parking brake.

Washout System

If the unit has a washout system and you did not use it at the landfill/transfer station, you should clean the body and hopper, unless your employer has a different policy. If your employer's policy is different from this manual, follow their policy.

Final Inspection

Do a final inspection of the unit:

- 1. Clear the area of all people.
- 2. Start the engine if it is not running.
- 3. Make sure all lights and in-cab control switches operate correctly.
- 4. Put the transmission in reverse while you press the service brake.
- The backup alarm should sound in the cab. If the alarm does not sound in the cab, report this to your employer/supervisor immediately.
- Check the unit for fluid leaks from the hoses, cylinders, valves, pump and fittings. Report any leaks to your employer/supervisor.

- 7. Make sure all cylinders are in their retracted position.
- 8. APPLY the parking brake.
- Put the transmission in neutral and turn the engine OFF.
- 10. Put the unit in the Lock-Out/Tag-Out mode.
- 11. Open the air tank's drain valve.
- 12. Turn the battery disconnect switch to OFF.
- 13. Follow the company policy for locking the cab doors.

Reports to Employer/Supervisor

Complete any reports required by your employer/ supervisor. If you found any problems during the final inspection, prepare the necessary report for the employer/ supervisor.

Ignition Keys

Put the ignition keys in a secure storage area designated by your employer/supervisor. **NOTES:**

SECTION 11 PREVENTIVE MAINTENANCE CHART

BODY PREVENTIVE MAINTENANCE CHART

Preventive maintenance must be performed to ensure the safe and reliable operation of your unit. Use the chart below as a guideline for when essential items should be checked and serviced.

*HOURS OF OPERATION						
COMPONENT/SYSTEM	8	40	200	1000	2000	CHECK/SERVICE
Hydraulic System						Check oil level – add if necessary
		lacktriangle				Check cylinders, pump, hoses, tubes, fittings, and adapters for leaks. Check hoses for cracks, crushes, and cover blisters. Repair or replace if necessary with genuine Heil parts. Any replacement hose should be the same size and pressure rating as listed on the original OEM hose.
						Check Control valve seals for leaks. Repair or replace if necessary.
				Y		Replace filter after first 30 days of operation, then every 6 months or 1000 hours of operation OR when FILTER CONDITION light is RED.
				Y		Replace tank/breather/filter every time you replace filter element.
					Y	Drain, flush, and refill. Change filter element.
Electrical, Battery Cables	Y					Check for proper operation.
		V				Check battery cables from battery to starter for loose cables, rubbing or damage and abrasions to cables. Replace if necessary.

40			*HOURS OF OPERATION					
40	200	1000	2000	CHECK/SERVICE				
Y				Check seals for leaks and operation. Replace if necessary				
Y				Check drive line for smooth operation. Replace as necessary.				
Y				Check set screws for tightness. Tighten as necessary.				
Y				Make sure keys are in place. Replace if necessary.				
	T			Remove the pump's 4 bolt flange about 2 inches from the PTO and apply grease to female pilot of PTO pump flange. Failure to lubricate female pilot of PTO as given may cause damage to the pump shaft.				
			Y	Drain, flush and refill. Change filter element.				
Y				Lubricate as shown on Body Lube Chart.				
			Y	Inspect body undercoating and repair as necessary.				

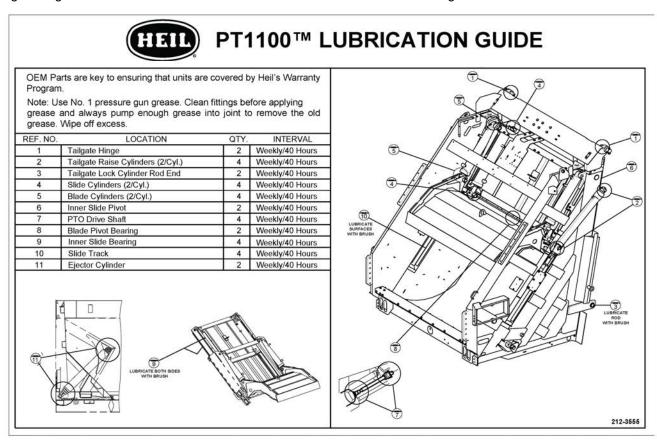
^{*} Daily = 8 hrs. Weekly = 40 hrs. Monthly = 200 hrs. 6 Months = 1000 hrs. Yearly = 2000 hrs.

NOTES:

SECTION 12 LUBRICATION GUIDE

BODY LUBRICATION GUIDE

For slide surfaces, use cloth or brush to coat. Lubricate moveable mechanical parts without fittings every 60 days with non-detergent engine oil. Follow the Lubrication Guide Decal on the unit and the image below.



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HEIL ENVIRONMENTAL INTERNATIONAL WARRANTY STATEMENT

Heil Environmental Industries ("Heil") warrants its solid waste collection equipment to be free from defects in material and workmanship under normal use for a period of six (6) months (1000 hours of operation) from the date of equipment In-Service or during the period of coverage offered by an extended warranty program, when proper service and maintenance as described in its Service Bulletins and Operation Manuals are performed. Heil warranty is not transferable.

This warranty is expressly limited to the repair or replacement of any component or part thereof, of any such unit manufactured by Heil that is proven to Heil's satisfaction to have been defective in material or workmanship. Such components or parts shall be repaired or replaced at Heil's option without cost to the original equipment owner for parts and labor provided such unit is returned to an authorized Heil Distributor for replacement or repair. The repair or replacement must be made during the standard or extended warranty coverage period.

Before any warranty can be allowed on new equipment, a warranty registration form must be on file with Heil's warranty department. Wear items are excluded from warranty coverage.

All OEM service parts sold by Heil have a six (6) month warranty from the date of purchase. The parts warranty covers parts only, providing that factory inspection reveals a defect in material or workmanship. Labor, inbound/Outbound Freight, troubleshooting, etc. is not covered under the parts warranty policy.

HEIL MAKES NO OTHER WARRANTY, EXPRESSED OR IMPLIED, AND MAKES NO WARRANTY OF MERCHANTABILITY OR OF FITNESS FOR ANY PARTICULAR PURPOSE. HEIL DOES NOT ASSUME ANY LIABILITY FOR LOSS OF PROFITS, PRODUCT, TIME OR ANY OTHER DIRECT, INCIDENTAL, OR INDIRECT CONSEQUENTIAL LOSSES, DAMAGES OR DELAYS. ANY IMPROPER USE, OPERATION BEYOND RATED EQUIPMENT/COMPONENT CAPACITY, SUBSTITUTION OF PARTS THAT ARE NOT HEIL APPROVED, OR ANY ALTERATION OR REPAIR BY OTHERS IN SUCH A MANNER AS IN HEIL'S SOLE JUDGMENT AFFECTS THE PRODUCT OPERATION OR INTEGRITY SHALL VOID THE WARRANTY.

Other than the extension of the standard warranty period purchased under a supplemental Heil Extended Warranty Program or specific contract terms & conditions, no employee or representative is authorized to modify this warranty in any way nor shall any other warranties be granted. However, Heil retains the right to modify its warranty program prospectively at any time.

The above warranty supersedes and is in lieu of all other warranties expressed or implied.



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