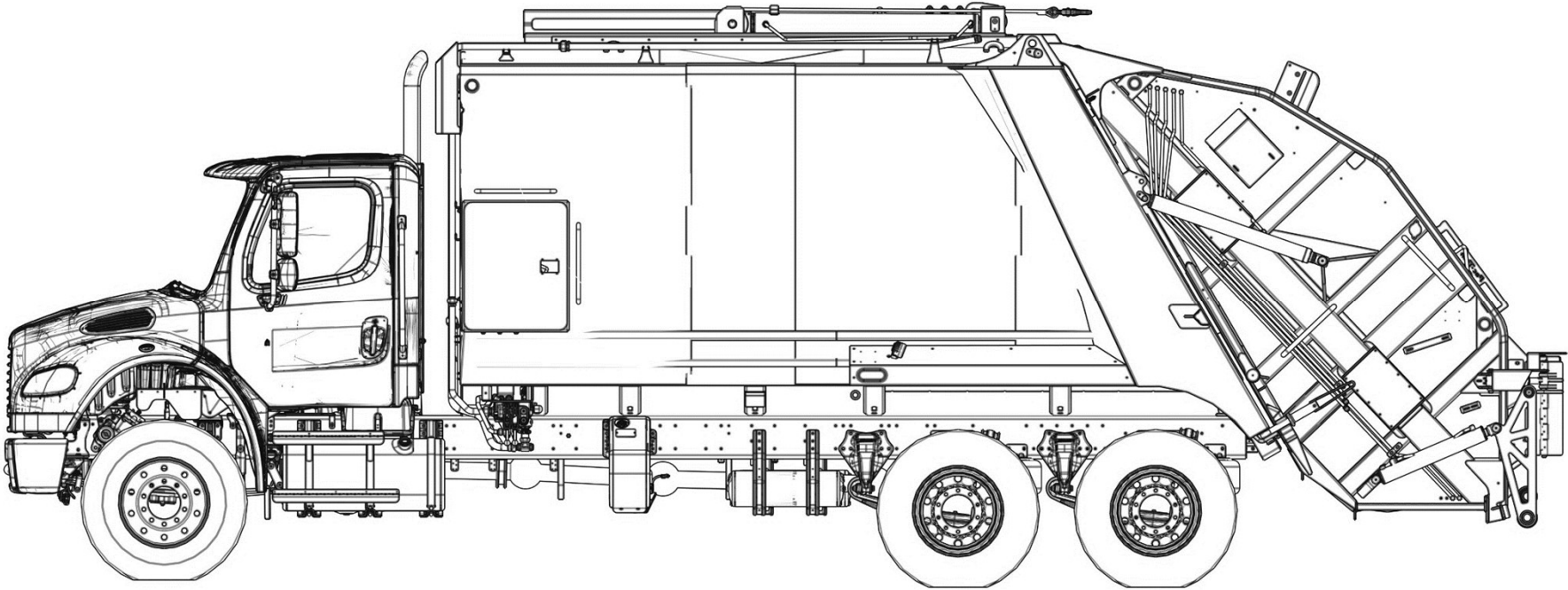


OPERATOR'S MANUAL



20/25,28/31 YD XD Rear Loader

Revision A
9150413

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Disclaimer:

The information presented in this Operator's Manual should be your guide to proper machine operation for this equipment.

If repairs are required, the manufacturer of this equipment must be contacted for proper service information – do not use this manual to repair or service this machine.

All information, photographs, illustrations and/or specifications are current as of the publication date of this manual. The illustrations and photographs are only intended as reference views. Because of Con-Tech Manufacturing's continuous improvement process, specifications, photographs and/or illustrations or any other information contained in this manual are subject to change at any time without notice. Refer to WWW.PTPACKERS.COM for the most up-to-date information for this equipment.

No part of this Operator's Manual may be reproduced by any means – including, but not limited to photocopying, video-taping, mechanical reproduction or other recording without the expressed written consent of Con-Tech Manufacturing, Inc.

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EQUIPMENT INFORMATION PLATE

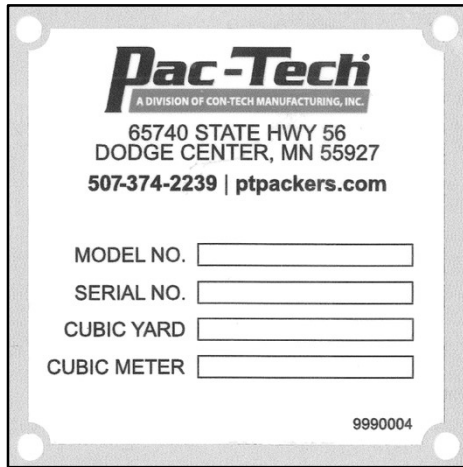
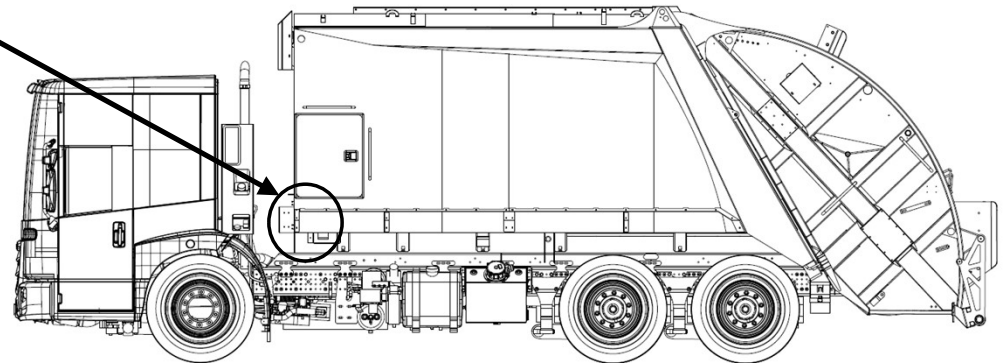


Figure 1

Con-Tech Manufacturing, Inc. provides an equipment identifier placard (Figure 1) when the vehicle is new. This placard is normally located on the front, street-side, lower corner of the body. It contains vehicle model and serial number information. Replacement placards can be ordered from the Con-Tech parts department

For ease of ordering replacement parts, please record this information in this owner's manual for easy reference.

Date of equipment purchase _____
 Con-Tech Branch _____
 Model Number _____
 Body Serial Number _____
 VIN** _____



COMPLETE VEHICLE DOCUMENT DECAL

MIXER BODY MFD. BY CON-TECH MANUFACTURING, INC. DATE OF MANUFACTURE: 05/2020				SERIAL NUMBER: 105HZ2009017			
INCOMPLETE VEHICLE MFD. BY: Peterbilt							
GVWR: 34936 KG		77020 LB		VEHICLE TYPE CLASSIFICATION: TRUCK		VEHICLE ID: 1NFCX7EX6LD652649	
FR. GAWR:	9072 KG	20000 LB	W/	425/65R22.5	TIRES ON	22.5X12.25	RIMS @ 120 PSICOLD 830 KPA
1ST GAWR:	10433 KG	23000 LB	W/	11R22.5	TIRES ON	22.5X8.25	RIMS @ 120 PSICOLD 830 KPA
2ND GAWR:	KG	LB	W/		TIRES ON		RIMS @ PSICOLD KPA
3RD GAWR:	KG	LB	W/		TIRES ON		RIMS @ PSICOLD KPA
4TH GAWR:	KG	LB	W/		TIRES ON		RIMS @ PSICOLD KPA
5TH GAWR:	KG	LB	W/		TIRES ON		RIMS @ PSICOLD KPA
REAR GAWR:	10433 KG	23000 LB	W/	11R22.5	TIRES ON	22.5X8.25	RIMS @ 120 PSICOLD 830 KPA
THIS VEHICLE CONFORMS TO ALL APPLICABLE U.S. FEDERAL MOTOR VEHICLE SAFETY STANDARDS IN EFFECT ON THE DATE OF MANUFACTURE SHOWN ABOVE							

Figure 2

NOTE: Figure is provided for reference only.
Refer to the Complete Vehicle Decal affixed to
your equipment for specific data.

A Complete Vehicle Document decal is affixed inside the cab by Con-Tech Manufacturing, Inc. (Figure 2). This decal documents tire ratings and axle load ratings for the vehicle when it left the Con-Tech production line.

This decal also includes the following information:

- Build Date
- Gross Vehicle Weight
- Tire & Rim Size
- Tire Pressures
- Chassis Manufacturer
- Chassis Build Date
- VIN
- Vehicle Classification

PURPOSE OF THIS MANUAL

This Pac-Tech owner's manual provides operating instructions for the XD Rear Loader, manufactured by Con-Tech Manufacturing, Inc.

The information presented in this manual will be your guide to safe and proper operation of this equipment. **This manual must stay with the equipment at all times and is required to be replaced in the event of loss or damage.** Contact Con-Tech Manufacturing, Inc. at 507-374-2239 for replacement copies of this manual.

WARNING

All personnel that will operate this refuse packer are required to read, understand and heed all safety decals posted on this vehicle as well as all other available safety information and training. Owners and operators must comply with ANSIZ245.1 regulations. Failure to heed this warning may result in serious personal injury or death.

WARNING

All operators of this refuse packer must be properly licensed, certified or trained in accordance with applicable laws and company policies. Lack of training, certification or licensing may lead to unsafe operation and may seriously risk the safety of the operator and/or those around them. If you are uncertain about the operation of this refuse packer, call Con-Tech Manufacturing, Inc @ 507-374-2239 for assistance

SCOPE OF THIS MANUAL

This owner's manual provides valuable information to the equipment operator(s) in the following categories:

- **SAFETY**
- **EQUIPMENT IDENTIFICATION AND CONTROLS**
- **PREVENTATIVE MAINTENANCE**
- **BASIC TROUBLESHOOTING**

NOTE
This Owner's Manual is strictly limited to information pertaining to Safety, Operation, Identification and basic troubleshooting for this equipment. Consult with your OEM for specific information regarding operations of the chassis systems upon which this equipment is mounted

CORPORATE HEADQUARTERS

Con-Tech Manufacturing, Inc., the manufacturer of this equipment, may be contacted at our corporate headquarters. Following is a list of the mailing address, phone number and website.

Con-Tech Manufacturing, Inc
65740 State Highway 56
Dodge Center, MN 55927

Main Telephone: 507-374-2239

Fax: 507-374-1094

Corporate Website: WWW.CTMMIXERS.COM



PARTS AND SERVICE LOCATIONS

For further assistance, Con-Tech Manufacturing, Inc. has six branch locations across the U.S. These branches are able to serve our customers by taking parts orders, receiving service information or for any other general need. We're always here to help!

Minnesota (Dodge Center)	507-374-2229
California (San Bernardino)	909-478-0017
Georgia (Atlanta)	770-229-1773
Ohio (Cleveland)	440-946-3322
Texas (Houston)	832-688-8105
Texas (Dallas)	972-941-8592

SECTION A - SAFETY

THIS ENTIRE MANUAL SHOULD BE READ AND UNDERSTOOD BEFORE ANY ATTEMPT IS MADE TO OPERATE, REPAIR OR MAKE ANY ADJUSTMENTS TO YOUR PAC-TECH REFUSE COLLECTION VEHICLE.

IN ADDITION, ANY PERSONNEL WHO OPERATE, MAINTAIN, OR HAVE ANY OTHER INTERACTIONS WITH THIS REFUSE COLLECTION VEHICLE MUST BE TRAINED AND MUST BE FAMILIAR WITH THE EQUIPMENT.

THIS EQUIPMENT MAY CAUSE HAZARDS UP TO AND INCLUDING, BUT NOT LIMITED TO SERIOUS INJURY OR DEATH IF USED IMPROPERLY.

This manual and any other provided safety and/or service material must be kept in a location that allows for easy access for any personnel that operate or maintain this equipment. Copies of this manual may be obtained at any time by calling Con-Tech Manufacturing, Inc. at 507-374-2239.

PUBLISHED SAFETY INFORMATION IS FOR YOUR OWN PROTECTION.

Persons must not operate this equipment before reading and understanding the contents of this manual.

Please contact Con-Tech Manufacturing, Inc. at any time for further assistance.

Any operators of this equipment that may have a reading or learning disability, dyslexia or other condition inhibiting the full understanding of this manual and other provided safety information, must be assigned a mentor/trainer to read and explain to them the entire contents of this manual as well as all safety guidelines, notices, cautions and warnings posted on decals on the unit. Failure to do so may result in serious injury or death.

Personnel should always refer to their employer's internal safety rules and procedures. Company safety rules and regulations should be followed at all times.

While working on or around this vehicle, Lockout/Tagout procedures must be followed. For additional information about Lockout/Tagout, feel free to contact Con-Tech Manufacturing, Inc at 507-374-2239.

Battery Disconnect

Your refuse collection vehicle may or may not be furnished with a battery disconnect switch (Figure 3). If equipped, the battery disconnect switch may be located near the battery box or in the cab. Consult with your chassis provider for exact location. Disconnecting the battery is required for servicing the vehicle to prevent accidental starting.

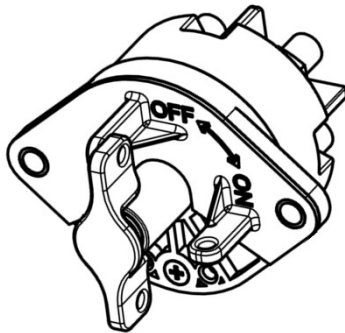


Figure 3

Typical operation of the battery disconnect switch will be to turn the knob or handle to the 'OFF' or 'DISCONNECT' position. Consult with your chassis provider for proper use of the switch. Please note, FIGURE 3 is a representative illustration of a battery disconnect switch. Your switch may be similar or different.

Battery Cable Disconnection

If your vehicle is not equipped with a battery disconnect switch or if the battery disconnect switch is inoperable or faulty, the main battery cables should be disconnected from the batteries prior to performing service. Consult with your chassis provider for proper procedures regarding battery cable removal and reinstallation.

WARNING

If this vehicle is not equipped with a battery disconnect switch, battery cables must be disconnected while servicing the vehicle.
NOTE: Negative battery cable must be disconnected first in order to lessen the chance of electrical sparking. Failure to do so may result in serious injury or death.

Fire Extinguisher

Your refuse collection vehicle may come equipped with a fire extinguisher. This fire extinguisher is rated a B:C type of extinguisher. Refer to NFPA Standards or other qualified agency materials for information on fire extinguisher ratings.

If you are supplying your own extinguisher, please refer to DOT FMCSA regulations 173.309 & 393.95 for complete rating and information about portable fire extinguishers in this type of motor vehicle. Always ensure the fire extinguisher is properly mounted and secured to prevent movement or inadvertent discharge.

Roadside Triangle Kit

Your refuse collection vehicle may come equipped with a roadside triangle kit. If one is not provided, refer to FMCSA regulations for requirements for this kit in a motor vehicle of this type. Always be familiar with the proper use of a roadside triangle kit. If the roadside triangle kit is missing, damaged or otherwise unusable, it must be replaced before operating this vehicle. Always ensure the roadside triangle kit is mounted and secured as to prevent movement.

Reporting Safety Defects

Immediately report any defects that you might suspect could cause accident, injury or death to the National Highway Traffic Safety Administration (NHTSA), the chassis manufacturer and Con-Tech Manufacturing, Inc.

In the event NHTSA receives multiple reports, it may choose to open an investigation and if it is found that a safety condition exists on a certain group of vehicles, it may order a recall and/or remedy campaign on the vehicle group. Note: NHTSA cannot become involved in disputes between the end-user, Con-Tech Manufacturing, Inc., your dealer or the chassis manufacturer.

NHSTA Contact Information:

Administrator, NHSTA
400 Seventh Street S.W.
Washington, D.C. 20590
888-327-4236 (TTY 800-424-9153)
<http://www.safercar.gov>

Safety Notices

One of the primary ways to alert users of this equipment to potential hazards is through the use of safety notices, signs and decals. The following safety notices are utilized at various places on this equipment and throughout published materials provided with this vehicle.

Specific signal words such as DANGER, WARNING, and CAUTION indicate varying degrees of hazards and hazardous situations.

These safety notices, signs and decals must be read, understood and followed at all times. If further information is needed or if you have any questions about specific hazards, contact Con-Tech Manufacturing, Inc. at 507-374-2239.

DANGER

DANGER indicates a hazard or hazardous situation which will result in serious injury or death if not avoided. DANGER is used in the most extreme situations.

WARNING

WARNING indicates a hazard or hazardous situation which may result in serious injury or death if not avoided.

CAUTION

CAUTION indicates a hazard or hazardous situation which may result in property damage

SAFETY NOTICE

OPERATOR INSTRUCTION

Safety

WARNING

This refuse packer was manufactured with a complete set of decals. Any decals that are missing, damaged, mutilated or cannot be read clearly, ne to be replaced immediately. Call Con-Tech Manufacturing, Inc. @507-374-2239 to order replacements.

WARNING

Modifications to this refuse packer are only allowed by permission of the manufacturer. Unauthorized modifications may not comply with safety standards, including applicable ANSI standards. Please contact Con-Tech Manufacturing, Inc. if you require assistance.

WARNING

This product may contain materials with chemicals or byproducts of chemical processes known in the State of California to cause cancer or birth defects or other reproductive harm (California Proposition 65).

WARNING

All operators of this refuse packer must be properly licensed, certified or trained in accordance with applicable laws and company policies. Lack of training, certification or licensing may lead to unsafe operation and may seriously risk the safety of the operator and/or those around them. If you are uncertain about the operation of this refuse packer, call Con-Tech Manufacturing, Inc @ 507-374-2239 for assistance

WARNING

If equipped with optional cameras or object detection systems, care must be taken no to rely on these exclusively for safe operation. Failure to heed this warning may result in serious personal injury or death.

WARNING

Hands and feet must always be kept away from all moving parts. Failure to comply may result in serious personal injury or death.

Safety (cont.)

WARNING

All personnel that will operate this refuse packer are required to read, understand and adhere to all safety decals posted on this vehicle as well as all other available safety information and training. Owners and operators must comply with ANSI Z245.1 regulations. Failure to comply may result in serious personal injury or death.

WARNING

All operators of this equipment must comply with Employee Responsibilities as outlined in ANSI Z245 as well as state, federal and other pertinent transportation regulations (e.g., OSHA, DOT, FMVSS, CMVSS). Failure to comply may result in serious personal injury or death.

DANGER

Use of the 'three-point rule' is required when using any body, frame or chassis mounted ladder. Failure to comply may result in serious personal injury or death.

WARNING

Jewelry, rings, watches, bracelets, etc, must never be worn when working on or around this equipment. These items may come in contact with moving parts of the refuse packer or chassis and cause painful or serious injuries. Serious personal injury or death could occur.

WARNING

All provisions of OSHA 1910.146 'Confined Space and Permit-Required Confined Space' regulations must be read, understood and followed when operating or servicing this vehicle. Also, check all state and local regulations. Failure to comply may result in serious personal injury or death.

Safety (cont.)

WARNING

This refuse packer and associated chassis must never be overloaded. Do not exceed the manufacturer's gross vehicle weight. Weights must also comply with federal, state and local laws. Failure to comply may result in serious personal injury or death

WARNING

If all packer functions need to be stopped in an emergency, push the E-STOP button (red) located at the cab control panel or at a rear control station on the tailgate. Failure to do so may cause serious personal injury or death.

CAUTION

If this equipment is equipped with a battery shut-off device, it must be turned to the OFF/DISCONNECT position when parked overnight, parked in a shop, or taken out of service for a prolonged period. Failure to do so may result in serious personal injury or equipment damage.

WARNING

If chassis is equipped with a standing operator station, use of the stand up position should only be used for refuse collection duties and for distances of 2/10 mile (0.32 km) or less. Failure to adhere to this warning may result in serious injury or death.

Cab Operations

WARNING

No passenger is allowed in the cab of this refuse packer unless a manufacturer approved seatbelt and seat are installed. Serious injury or death can result.

WARNING

Do not operate this refuse packer vehicle from the operators standing position (if equipped) at speeds greater than 20 mph (32 kmh). Attempting to do so may result in serious injury or death.

Cab Operations (cont.)

DANGER

This vehicle may have a high center of gravity load. Always drive defensively while loaded and ensure you follow posted vehicle speed limits at all times. Failure to do so may result in serious personal injury or death.

WARNING

When operating this vehicle on uneven ground including, but not limited to, landfills, use the lowest gear and do not exceed 3 mph (5 kph). Failure to comply may result in serious personal injury or death.

WARNING

When in transit, it must be ensured that the tailgate is closed and secured/locked. An alarm will sound if the tailgate is not closed and secured/locked. If this alarm is sounding, close and secure/lock the tailgate before proceeding. Failure to comply may result in serious personal injury or death, as well as possible damage to equipment

WARNING

Keep access door(s) and panel(s) closed at all times while vehicle is in operation. Do not open any door or access panel unless:

1. Engine is stopped
2. Key is removed from ignition

Hydraulic pressures are relieved

4. OSHA lockout/tagout procedures are followed

Failure to comply may result in serious injury or death

WARNING

Never operate this refuse packer if there is any evidence of hydraulic leakage present. Failure to comply may result in serious personal injury or death.

DANGER

Make sure area above the vehicle is clear of objects and power lines before attempting to raise tailgate. Failure to comply may result in equipment damage as well as serious personal injury or death.

Cab Operations (cont.)

DANGER

In the event the refuse packer or any part of it or the associated chassis comes into contact with a power line, **STAY IN THE TRUCK AND STAY AWAY FROM ALL METAL PARTS OF THE UNIT.** Do NOT attempt to jump clear of the unit until advised so by proper emergency responders. The power company must disconnect power before safe exit can be made. Failure to comply will result in serious personal injury or death.

DANGER

Know the overhead clearances along the pickup route(s). Never attempt to pass under questionable overhead obstacles. If you have a question, **STOP AND EVALUATE!** Failure to comply may result in serious personal injury or death.

Minimum clearances from power lines:

50,000 volts or less	4 feet
50,000-345,000 volts	10 feet
345,000 volts or higher	16 feet

WARNING

The operator of this refuse packer is responsible for remaining attentive while at the controls. Watch mirrors for activity. Never back up this vehicle unless you are completely sure it is safe to do so. Use a spotter when available. Thoroughly understand the complete operation of this refuse packer before attempting to operate it. Failure to comply may result in serious personal injury or death.

Outside Operations

DANGER

Ensure the tailgate is always completely closed before attempting to move this vehicle. Failure to do so may result in serious personal injury or death.

WARNING

Hydraulic systems operate at high temperature. **DO NOT** make physical contact with any hydraulic component. Failure to comply may lead to serious personal injury or death.

Outside Operations (cont.)

WARNING

Do not leave this equipment unattended unless all reasonable measure have been taken to prevent its unintended movement including, but not limited to, setting the park brake. Failure to heed this warning may result in serious personal injury or death as well as damage to the equipment

WARNING

Ensure all non-operator personnel maintain a minimum of 20 ft. (6 meters) distance around the refuse packer while in operation. Serious personal injury or death may occur.

WARNING

Never utilize the windshield guard as a ladder (if equipped). A ladder is provided for the refuse packer body if access is required. Failure to comply may result in serious injury or death.

WARNING

All personnel other than the operator must never walk or stand behind the vehicle while it is attempting to operate in reverse. Serious personal injury or death may occur.

Maintenance

DANGER

Lockout/Tagout procedures are to be followed when servicing or working on this equipment. This work includes, but is not limited to, cylinder replacement or repair. Failure to do so may result in serious personal injury or death.

DANGER

NEVER attempt to free a stuck or broken component on this equipment without applying all lockout/provisions as necessary. In addition, no person shall attempt the same unless authorized and trained in such procedures. Failure to comply may result in serious injury or death.

Maintenance (cont.)

DANGER

Never position yourself under any component that is in the raised position without proper support, securement or bracing of the component. Serious personal injury or death may occur.

WARNING

Entering and exiting of the refuse packer body must only be accomplished through the access door provided. Failure to comply may result in serious personal injury or death.

WARNING

While working on this vehicle, the wheels must be chocked, the park brake must be applied, the keys must be out of the ignition and locked up and all OSHA Lockout/Tagout measure must be applied. Failure to comply may result in serious personal injury or death.

WARNING

Any optional cameras or similar equipment must be kept clean and working at all times. Lenses must be wiped off prior to operating this vehicle. Failure to comply may result in serious personal injury or death

WARNING

All electrical cable, battery cable(s), and other wiring must be inspected daily. Any cuts, nicks, rubbing or improper clearance should be noted and the vehicle should be taken out of service for repairs. Failure to comply may result in serious personal injury or death, as well as severe equipment damage.

WARNING

If work is being done on or anywhere near the tailgate, the tailgate must be supported to prevent unexpected falling of the tailgate. No unauthorized personnel should be in the area of the tailgate while work is being performed. Failure to comply may result in serious personal injury or death.

Maintenance (cont.)

WARNING

All personnel that operate or service this equipment must wear appropriate personal protective equipment. This equipment includes, but is not limited to, safety glasses, hard hats, sturdy gloves, hearing protection, and steel-toed boots. In addition, reflective clothing is recommended for hours of darkness. Failure to comply may result in serious personal injury or death.

WARNING

All proximity sensors/switches must remain operational for safe operation of the refuse packer. Failed switches/sensors must be replaced with OEM components before equipment is returned to service. Failure to comply may lead to serious personal injury or death.

WARNING

This refuse packer is required to be inspected daily. This inspection includes, but is not limited to, proper operation of controls, hydraulic systems, electrical systems, signal lighting system including turn signals, backup lights and alarm(s), taillights and headlamps, as well as safety equipment, work lights and any cameras that the vehicle may be equipped with. The pneumatic system is required to be inspected for leaks. Water and moisture are required to be drained daily from the air system. Failure to comply may result in serious personal injury or death.

DANGER

If any system (electrical, hydraulic, pneumatic) fails to operate for any reason, the truck must be taken offline and a trained and competent technician must repair the problem. If you are not trained to service this equipment, do not attempt to do so. Failure to comply may result in equipment damage as well as serious personal injury or death.

Maintenance (cont.)

CAUTION

If a problem is detected with any function of the refuse packer or chassis, it must be repaired immediately. Never operate equipment with malfunctioning controls. Failure to do so may result in serious personal injury or equipment damage.

CAUTION

Whenever welding is required on the chassis or body, disconnect the battery or batteries. Failure to do so may result in serious personal injury or equipment damage.

CAUTION

Never attempt to use a tailgate or body lift prop unless body is completely empty. Never walk or work under a raised tailgate or body unless props are properly utilized. Failure to do so may result in serious personal injury or equipment damage.

DANGER

Never attempt to use an external source of electrical, pneumatic, or hydraulic power to remedy a malfunctioning system. NEVER use overhead cranes, forklifts, jacks, etc. to move any part of the body. Failure to comply may result in serious personal injury or death.

DANGER

If this vehicle is equipped with auxiliary air-operated suspensions, these must be supported by blocks, jack stands, or equivalent devices while being serviced to prevent unintended movement. Failure to comply may result in serious personal injury or death.

Hydraulic

WARNING

Hydraulic pressures must NEVER be raised above specified settings. Failure to comply may lead to equipment damage, serious personal injury or death.

Hydraulic (cont.)

CAUTION

If a problem is detected with any function of the refuse packer or chassis, it must be repaired immediately. Never operate equipment with malfunctioning controls. Failure to do so may result in serious personal injury or equipment damage.

DANGER

Hydraulic systems are often under HIGH PRESSURE. Care must be taken when servicing this equipment to prevent hydraulic oil from penetrating skin or other human tissues. Never use bare hands to inspect for hydraulic leaks. Always wear heavy leather gloves and validate any potential leaks with wood, cloth, cardboard or other suitable inanimate material. If leaks are validated, system pressures must be relieved and system must be allowed to cool prior to performing any service or repairs to the system. If any injury is sustained as a result of escaping hydraulic or other fluid, seek medical attention IMMEDIATELY. Failure to comply may result in serious personal injury or death.

WARNING

Hydraulic cylinders on this equipment can potentially be holding a load, even if the E-STOP is applied and/or the engine is OFF. Care must be taken when loosening or removing hydraulic fittings to prevent risk of component lowering unexpectedly. All workers and personnel must remain clear of the work area when hydraulic fittings are loosened or removed. OSHA Lockout/Tagout provisions must be applied and component(s) must be blocked or secured to prevent unexpected movement. Failure to comply may lead to serious personal injury or death.

WARNING

Hydraulic hoses, tubing and components must be inspected daily for leaks, cuts, scrapes abrasions or improper clearances from other parts of the equipment. Any defects must be noted and repaired prior to allowing further service of the refuse packer. Failure may lead to serious personal injury or death.

WARNING

Hydraulic systems often operate under high pressure. Personnel that will be involved with service or operation of the refuse packer must be properly trained prior to working on equipment. Proper tools are required to be used at all times during the servicing of this equipment. Call Con-Tech Manufacturing, Inc. at 507-374-2239 if you require assistance. Failure to comply may lead to serious personal injury or death.

WARNING

Hydraulic tubing used on this refuse packer should not be heated with flame for any reason. In addition, this hydraulic tubing should never be air or water quenched to cool it. Either of these practices may cause the piping to lose ductility, thereby subjecting it to premature failure. Please contact Con-Tech Manufacturing at 507-374-2239 if you require assistance or have questions. Failure to comply may lead to serious personal injury or death.

WARNING

Hydraulic tubing on the refuse packers has a specification of SAE J1065. Any replacement tubing must meet this specification. Failure to comply may lead to serious personal injury or death.

WARNING

Hydraulic pressures must be relieved from the system prior to servicing or removal of hydraulic components. Failure to comply may lead to serious personal injury or death.

WARNING

Correct hoses, fittings, adapters, etc. must be used when replacing hoses. Always make sure replacement components meet specifications of the manufacturer. Installation guidelines of the manufacturer must also be followed. Consult Con-Tech Manufacturing Inc. at 507-374-2239 for correct specifications. Failure to comply may lead to serious personal injury or death.

Hydraulic (cont.)

WARNING

All hydraulic hoses have an applicable SAE rating. These rating must be followed if replacement components are installed. Hydraulic hose and fittings must be supplied by the same manufacturer. As a rule, hose from company 'A' and fittings from company 'B' are never to be used together. Failure to comply may lead to serious personal injury or death.

WARNING

Hose 'twist' is not permitted when replacing or installing hydraulic hose. 7° of twist per linear foot can lead to a 95% decrease in hose life. Hose should rest in it's natural resting postion prior to tightening a fitting. Two wrenches should always be utilized. Failure to comply may lead to serious personal injury or death.

WARNING

Hoses typically exhibit a 4% shrink factor when pressurized. When replacing hydraulic hoses, this shrinkage must be factored in. For example, if a hose is required to be 50" long, a 52" hose would be used (50 x 1.04). Failure to comply may lead to serious personal injury or death.

WARNING

Do not use high pressure or steam in any capacity to clean hydraulic lines, fittings, hoses or components. This may lead to damage of any seals that may be present. Warm soapy water should be used to clean these components. Failure to comply may lead to serious personal injury or death.

Hydraulic (cont.)

WARNING

All hydraulic oil must be cleaned from the machine prior to putting back into service after repair. Always clean shop floor or ground thoroughly to prevent slipping. Always wash hands and other tissues thoroughly after servicing vehicle. Failure to comply may lead to serious personal injury or death.

WARNING

Certain cylinders such as tailgate and body cylinders have orifices installed to control rate of flow. The orifices **MUST NOT** be removed for any reason. Replacement cylinders are **REQUIRED** to have the correct orifices in them. Failure to comply may lead to serious personal injury or death.

WARNING

Properly rated hydraulic gauges must be used for testing. Use of gauges or other test equipment that is not rated for this equipment could result in failure. Adequate length hoses must be used to allow technician to stand a safe distance away while testing. Failure to comply may lead to serious personal injury or death.

WARNING

Hydraulic components present on this refuse packer are heavy. Do not attempt to lift, move or remove without proper lifting equipment. Failure to comply may lead to serious personal injury or death.

Safety Decals

Various safety decals and/or placards are located on this equipment. These decals and/or placards provide notice and warning of various hazards found on and around this equipment. All personnel that work in, on and around this equipment are required to read and fully comprehend all decals and/or placards prior to operating or working on this equipment.

NOTE: The decal and/or placard locations shown in this manual may vary depending on ordered options and/or different configurations of equipment.

All decals and/or placards must be kept clean and legible at all times. If any decals and/or placards are missing, torn or otherwise un-readable, replacements must be installed. For replacements, call Con-Tech Manufacturing, Inc. at 507-374-2239. All decals and/or placards on this equipment must be furnished by Con-Tech Manufacturing, Inc.

NOTE: Decal and/or placard location, part numbers, appearance, size and/or other specifications may change without further notice.

QTY.	CT Part Number	Description	Reference #
4	9990062	Decal, Before Entering....	1
1	9990063	Decal, Slide/Sweep Valve Operation	2
1	9990064	Decal, High Center of Gravity	3
1	9990065	Decal, Remove All Fuses	4
1	9990066	Decal, If Supply From Hydraulic...	5
1	9990067	Decal, Electrical Clearance	6
3	9990068	Decal, Do Not Stand Under Tailgate	7
2	9990069	Decal, Do Not Stand Near Pack Panel	8
2	9990070	Decal, Stand Clear Of Machine	9
2	9990071	Decal, Confirm Proper Operation...	10
2	9990018	Decal, Follow OSHA Lockout/Tagout	11
2	9990016	Decal, Read Service Manual.....	12
1	9990074	Decal, Use Pach-Tech Parts	13
1	9990075	Decal, This Unit Is Approximately...	14
3	9990046	Decal, Actual Height	15
2	9990017	Decal, Pack Panel Warning	16
2	9990079	Decal, Use Proper Supports	17
1	9990078	Decal, TG/Eject Valve Operation	18
1	9990077	Decal, Hydraulic Oil Only	19
2	9990076	Decal, Before Connecting Cable...	20
1	9990073	Decal, Hydraulic Oil Recommendation	21
2	9990072	Decal, Tailgate Instruction	22
1	9990080	Decal, Retract All Cylinders	23
2	9990059	Decal, Tipper Operation	24
1	9990081	Decal, Maintenance Points	25
2	9990082	Decal, Do Not Ride Over 10 MPH	26
1	9990084	Decal, Permanent Pump Damage...	27
1	9990015	Decal, No Towing	28
1	9990085	Decal, Fire Extinguisher	29
1	9990019	Decal, PTO Danger	30
2	9990060	Decal, Winch Operation	31
1	9990083	Decal, Never Exceed GVWR	32

Safety Decals

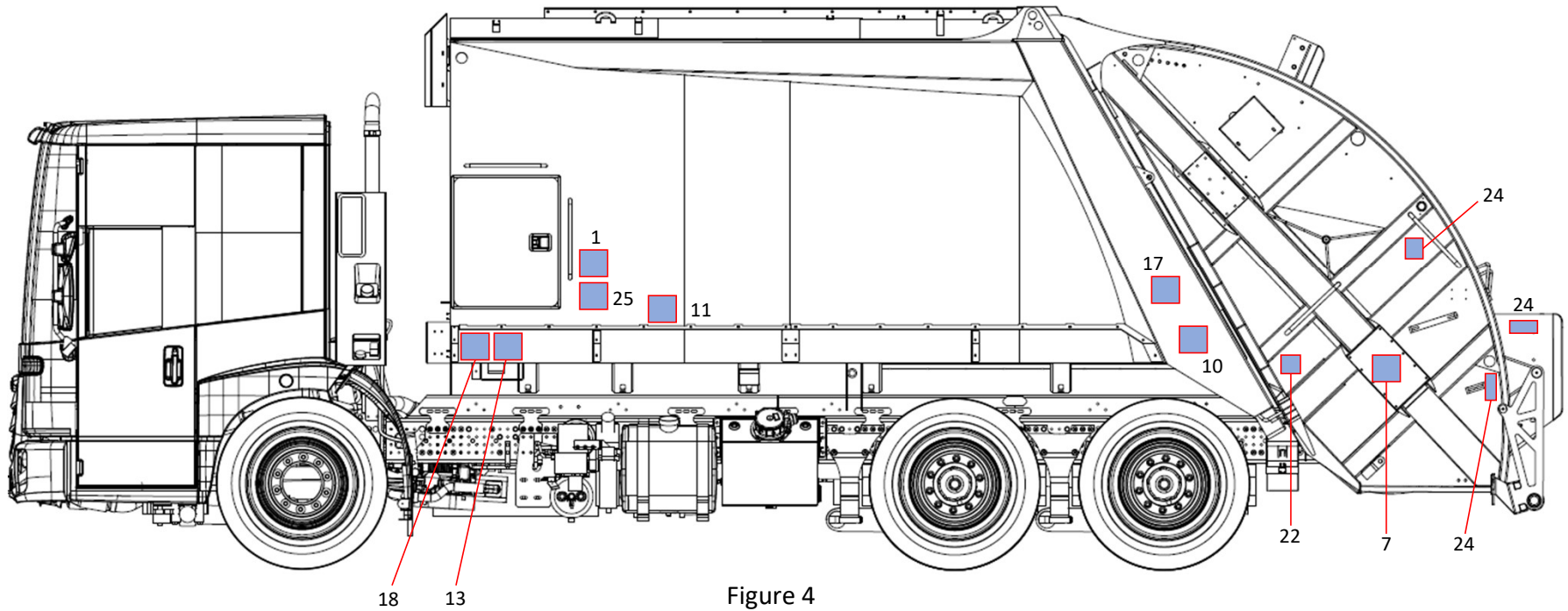


Figure 4

Safety Decals

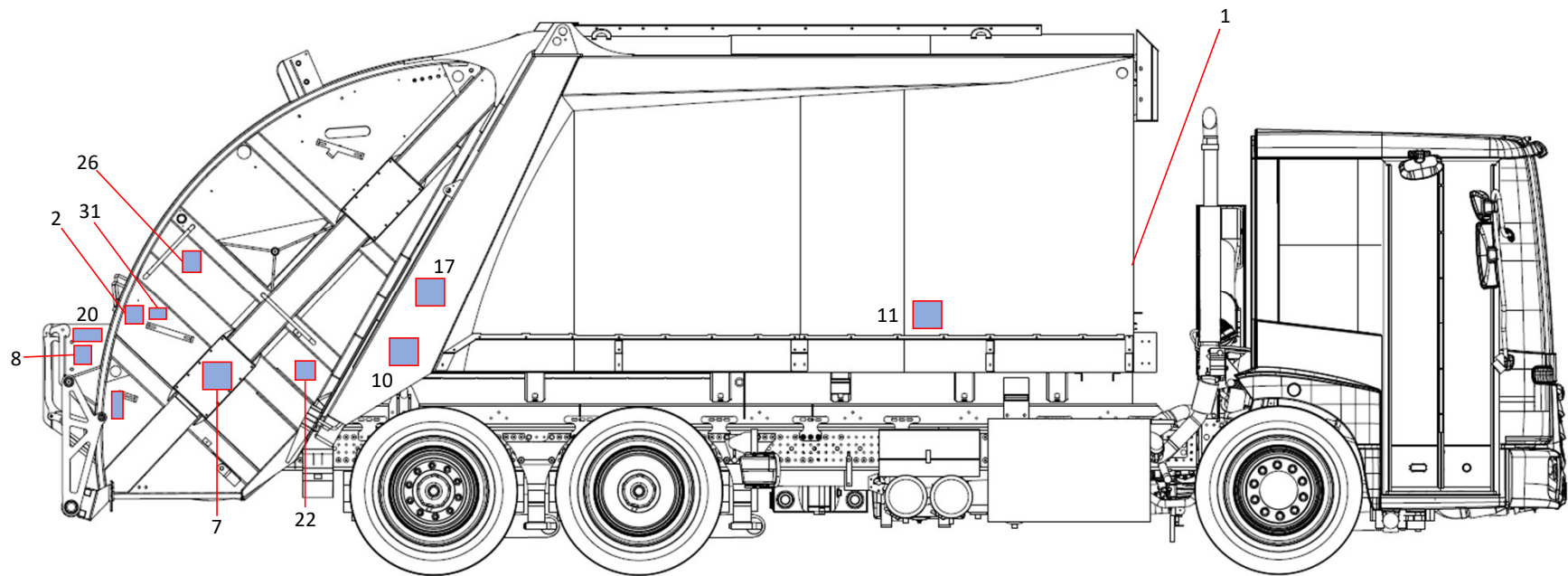


Figure 5

Safety Decals

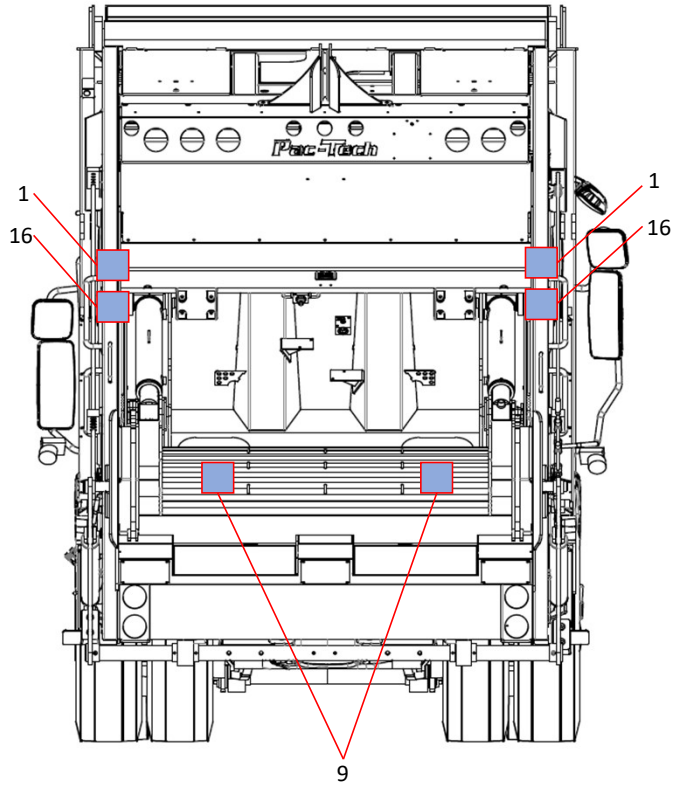


Figure 6

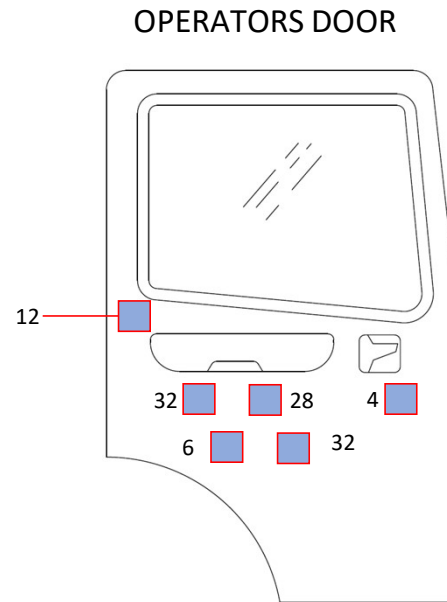


Figure 7

SECTION B – EQUIPMENT IDENTIFICATION AND CONTROLS

This part of the owner's manual will focus on identifying the various parts of the equipment as well as the controls for the refuse packer operation. Equipment pictured and/or described may be optional and may not be present on your refuse packer. Options, locations and specifications of pictured equipment is subject to change without notice.

Always ensure that all operators or other personnel who operate, service or are otherwise around this equipment are familiar with, and have been trained in the proper use of, all refuse packer controls.

Rear Loader Control Components – Control System

Rear loader operation is controlled by a system comprised of two separate components: the in-cab operator's station, and the body-mounted power management module (PMM). See figures 11 & 12. These components function as an input/output system. The operator station sends control commands to the power management module and the PMM turns on power outputs to various functions on the packer. The operator station also provides indicators for several critical functions. See detail on following page.

OPERATOR STATION



Figure 11

POWER MANAGEMENT MODULE



Figure 12

Driver Operator Station Controls – OPERATOR’S STATION

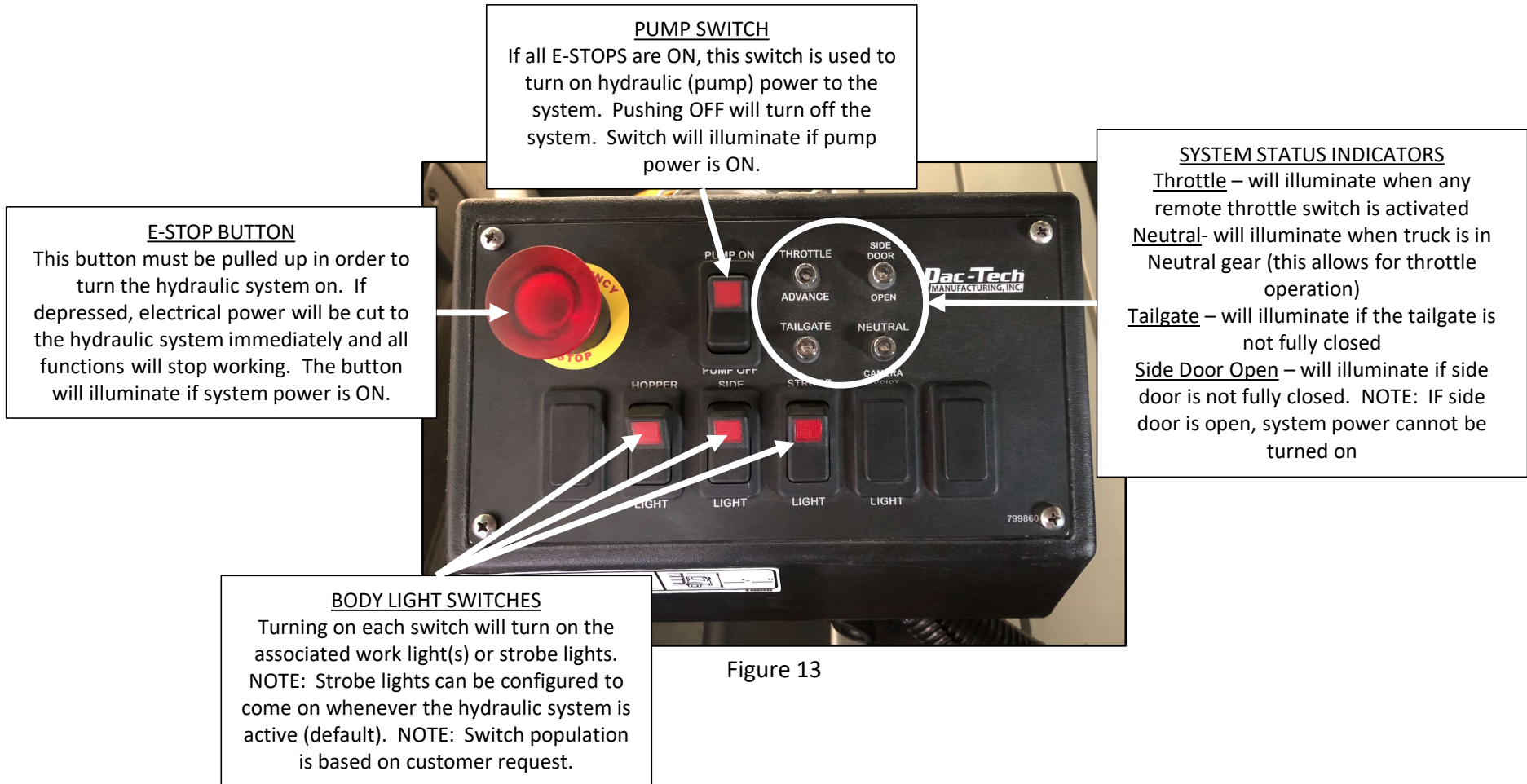


Figure 13

CONTROL SYSTEM - POWER DISTRIBUTION CENTER
FUSES, RELAYS & JUMPERS

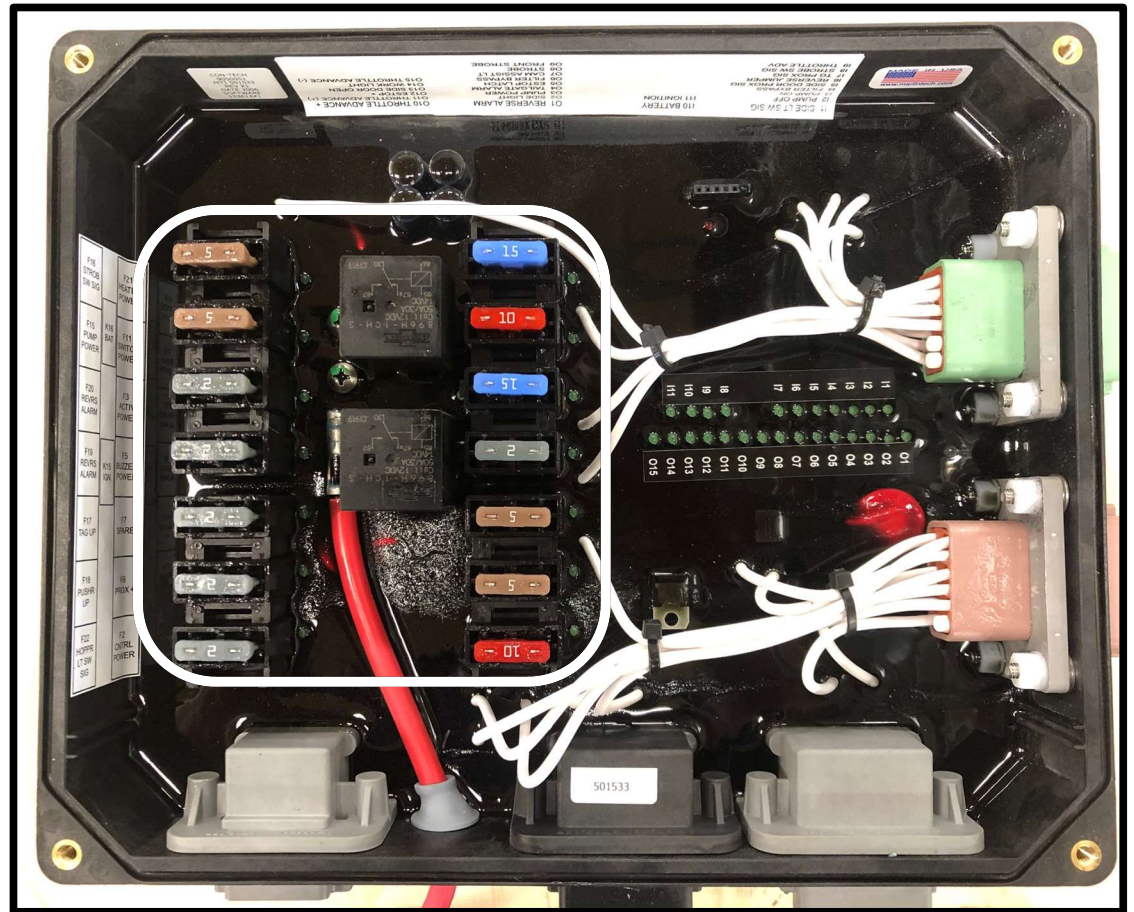
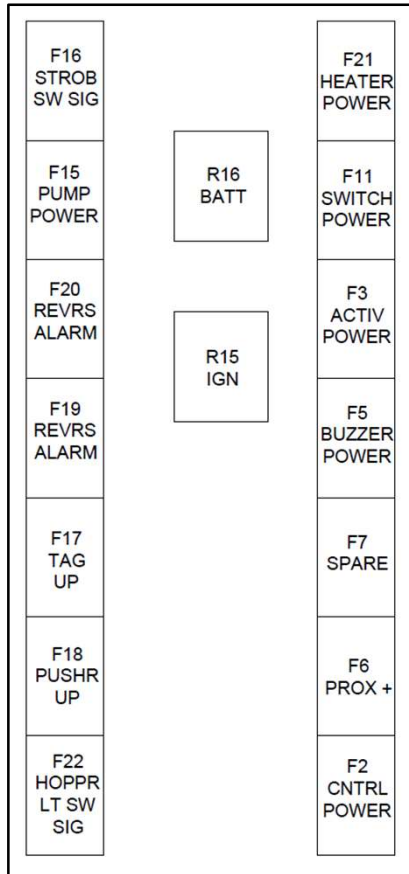


Figure 14

CONTROL SYSTEM - POWER DISTRIBUTION CENTER

INDICATOR LAMPS

There are several indicator lamps in the PDC to help assist in identifying and troubleshooting certain electrical issues. Reference service manual for more information.

I = INPUT

O = OUTPUT

I1	Side Light Switch Signal	O1	Reverse Alarm
I2	Pump Off Signal	O2	Side Light Power
I3	Pump On Signal	O3	Pump Power
I4	Filter Bypass Input	O4	Tailgate Alarm Power
I5	Side Door Prox Signal	O5	E-STOP Power Light
I6	Reverse Signal In	O6	Filter Bypass Indicator
I7	TG Prox Signal	O7	Camera Assist Light Power
I8	Stroble Switch Signal	O8	Rear Strobe Light Power
I9	Throttle Signal In	O9	Front Strobe Light Power
I10	Relay R16 ON	O10	Throttle Power Out
I11	Relay R15 ON	O11	Throttle + Output
		O12	E-STOP Power Out
		O13	Side Door Indicator
		O14	Work Light Power
		O15	Throttle - Output

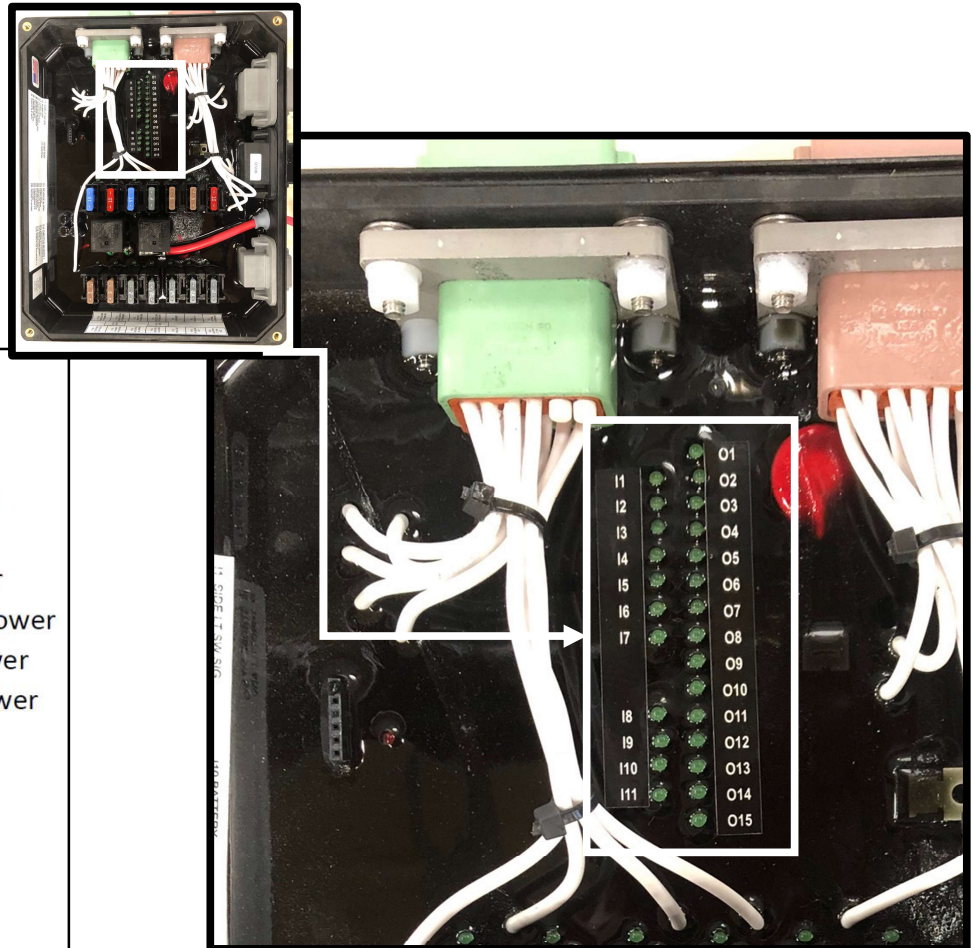


Figure 15

CONTROL SYSTEM - REAR ELECTRICAL CONTROLS

Depending on configuration, the XD rear loader will have single or dual rear control stations. These control stations will house a throttle button and an E-STOP button.

Throttle Button Operation – To ramp engine up, depress button. To drop back to idle, release button. NOTE: Truck must be in neutral for this control to work.

E-STOP Switch Operation – For normal operation, E-STOP button(s) must be in up position. To shut down control system, depress either E-STOP button. NOTE: If E-STOP button(s) are used, pump switch in cab must be turned back on (page 33) to resume operation once E-STOP button(s) are reset.

WARNING

Any scenario in which the E-STOP was used must be analyzed and corrected before resuming normal operation. Failure to adhere to this warning may result in serious personal injury or death

CURB SIDE (Standard)



Figure 16

STREET SIDE (Optional)



Figure 17

CONTROL SYSTEM - EJECTOR & TAILGATE CONTROLS

Located at the front, street-side of the body, are the controls for the ejector and tailgate (Figure 18). In addition, a throttle advance switch is provided. The throttle advance switch must normally be activated when using either the ejector control or the tailgate control.

Ejector Control Operation

1. Engage throttle advance switch; wait for engine to ramp to high-idle speed
2. Push lever to extend ejector cylinder
3. Pull lever to retract ejector cylinder

Tailgate Control Operation

1. Engage throttle advance switch; wait for engine to ramp to high-idle speed
2. Pull lever to raise tailgate
3. Push lever to lower tailgate

WARNING

Area around tailgate must be checked and all persons must remain clear of tailgate area while tailgate is raised or lowered. Failure to adhere to this warning may result in serious personal injury or death

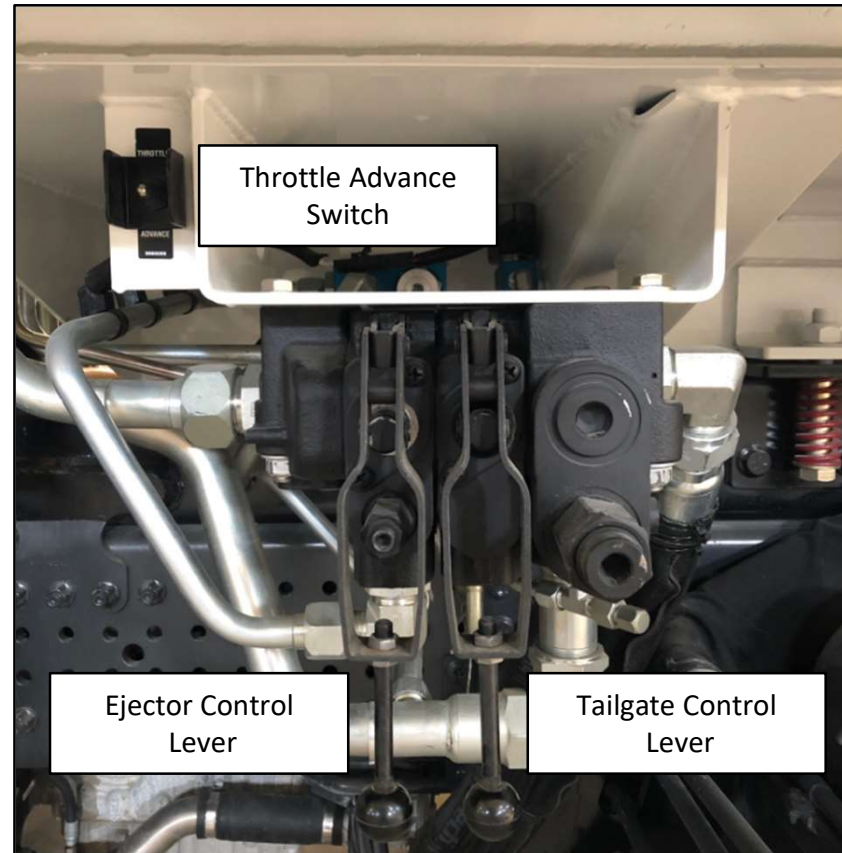


Figure 18

CONTROL SYSTEM - SLIDE & SWEEP CONTROLS

The refuse packer slide and sweep controls are located at the rear curb-side of the tailgate (Figure 21). These controls will have RED nylon handles. The slide and sweep positions are detailed in Figure 19 & 20.



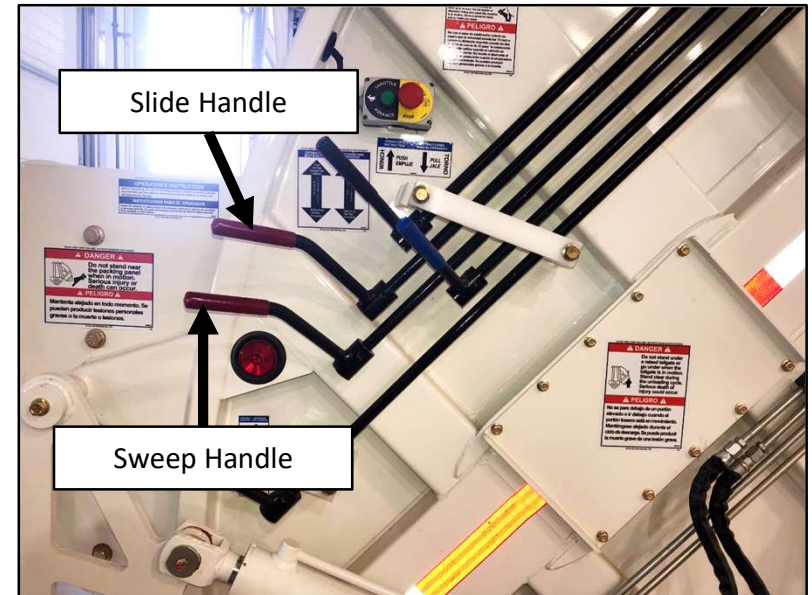
Slide RAISED
Sweep CLOSED

Figure 19



Slide LOWERED
Sweep OPEN

Figure 20



Slide Handle

Sweep Handle

Figure 21

WARNING

Stay clear of hopper as well as slide and sweep panels during operation. Failure to do so may result in serious injury or death.

CONTROL SYSTEM - SLIDE & SWEEP CONTROLS

Normal Operation

1. PUSH both handles simultaneously towards the hopper (inward)
2. Sweep will open; once sweep is fully open, slide panel will lower
3. Once cycle has completed, PULL both handles simultaneously away from the hopper (outward)
4. Sweep will close; once sweep is fully closed, slide panel will raise
5. Pack cycle complete

Single Operation (optional)

Slide Function – Push towards hopper (inward) to lower; pull away from hopper (outward) to raise

Sweep Function – Push towards hopper (inward) to open; pull away from hopper (outward) to close

WARNING

Stay clear of hopper as well as slide and sweep panels during operation. Failure to do so may result in serious injury or death.

WARNING

E-STOP button must be depressed, engine must be shut off, and applicable lockout/tagout provisions must be applied before attempting to enter hopper area. Failure to do so may result in serious injury or death.

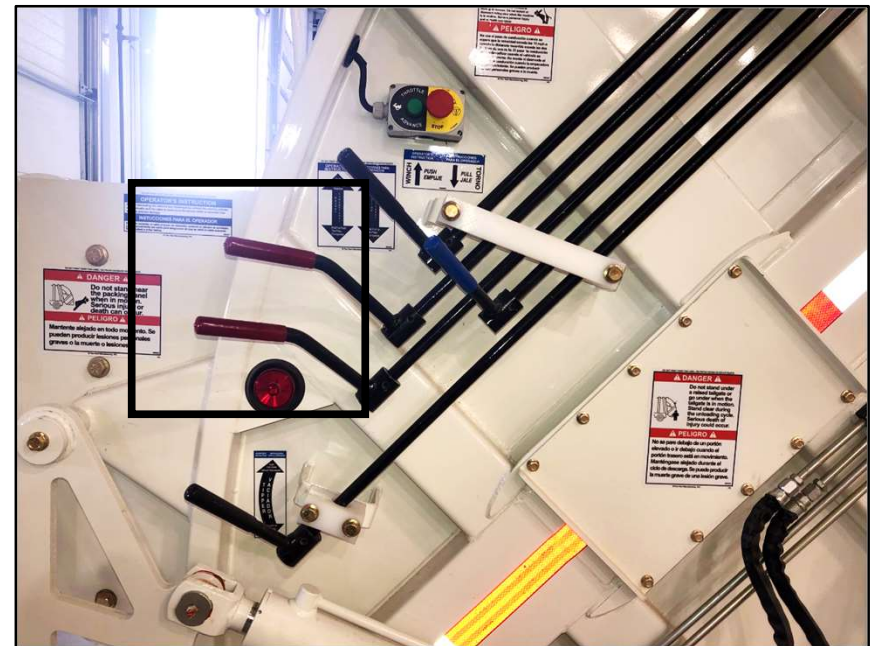


Figure 22

CONTROL SYSTEM - OPTIONAL CONTROLS

Rear loaders often come with additional options such as a winch, reeving cylinder, container tipper bar or cart tipper(s). These items require additional control handles as shown in Figure 23.

Winch/Reeving Cylinder Control

1. Push to retract cable
2. Pull to extend cable

Container Tipper Control

1. Pull to raise tipper bar
2. Push to lower tipper bar

Can Tipper Control

1. Pull to raise can up
2. Push to lower can

WARNING

Anybody operating this equipment must read and understand the full instructions, located later in this manual, pertaining to proper operation of these functions. Failure to do so may result in serious personal injury or death.

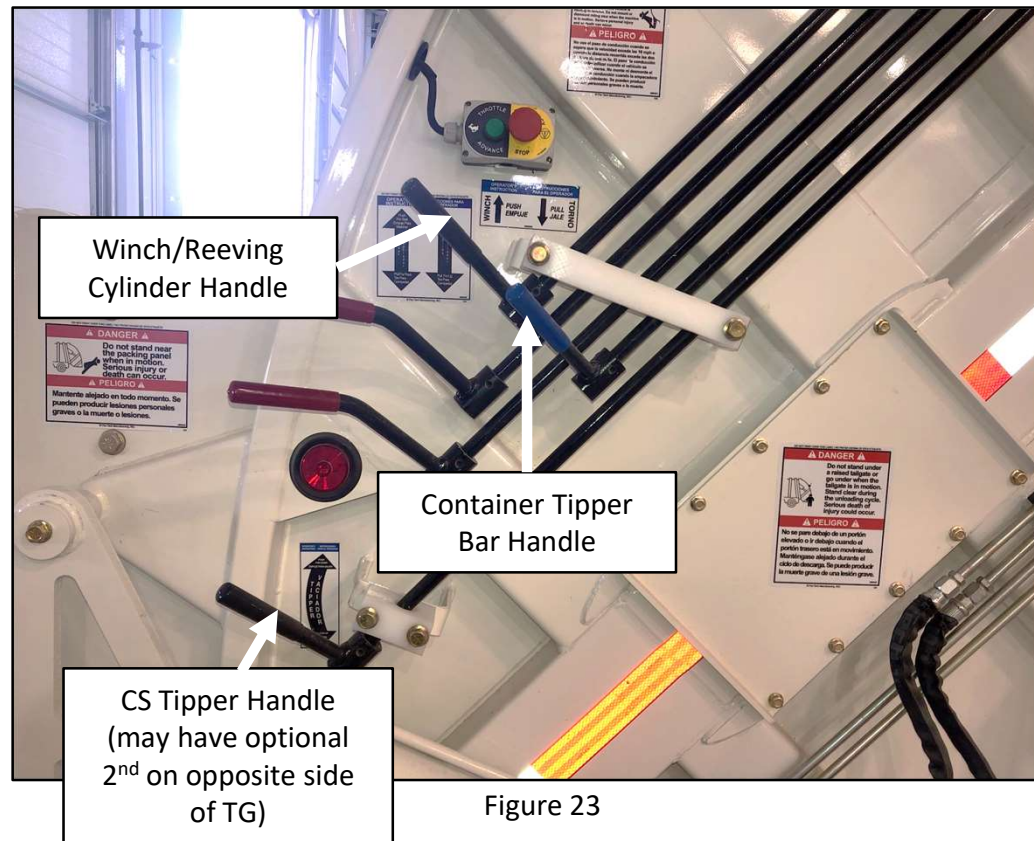


Figure 23

CONTROL SYSTEM - CART TIPPER(S) OPERATION

This refuse packer may be equipped with a single, or with dual cart tippers. These cart tippers are designed to lift specially designed cans into the hopper and dump them with minimal operator strain.

Operation

1. Move can into position. Can should be nearly touching back of tipper (Figure 24)
2. Open can lid
3. Utilizing control handle (Figure 23), slowly move tipper up until it catches the upper lip of the can
4. If tipper does not engage lip, lower tipper and re-position can
5. Once upper lip is engaged, continue raising tipper until the waste is completely emptied out of can (Figure 25)
6. Slowly lower can back to ground and place back on curb
7. Operate slide and sweep as required (Page 39)



Figure 24



Figure 25

WARNING

Stay clear of hopper as well as slide and sweep panels during operation. Failure to do so may result in serious injury or death.

WARNING

E-STOP button must be depressed, engine must be shut off, and applicable lockout/tagout provisions must be applied before attempting to enter hopper area. Failure to do so may result in serious injury or death.

CONTROL SYSTEM - CONTAINER TIPPER BAR OPERATION

This refuse packer may be equipped with a single, or with dual cart tipper. These cart tipper are designed to lift specially designed cans into the hopper and dump them with minimal operator strain.

Operation

1. Ensure slide is raised and sweep is closed
2. Move container into position so that ears make contact with rear of guide bar
3. Engage hydraulic can locks by pushing control handle down until lock ears are fully closed (figure 25)
4. Open lid(s) of container
5. Utilizing control handle (Figure 23), slowly raise container into hopper
6. Run slide and sweep controls as required to keep hopper clear
7. When empty, lower container to ground
8. Release hydraulic locking ears by moving control handle to up position; ensure ears are completely open
9. Move container away from rear of truck

WARNING

Stay clear of hopper as well as slide and sweep panels during operation. Failure to do so may result in serious injury or death.

WARNING

E-STOP button must be depressed, engine must be shut off, and applicable lockout/tagout provisions must be applied before attempting to enter hopper area. Failure to do so may result in serious injury or death.

WARNING

When emptying containers, BOTH latches must always be raised and secured before attempting to raise container into hopper. Failure to do so may result in serious injury or death

SEE PAGE 43 FOR FIGURES
ASSOCIATED WITH THIS
INSTRUCTION

CONTROL SYSTEM - CONTAINER TIPPER BAR OPERATION (cont.)

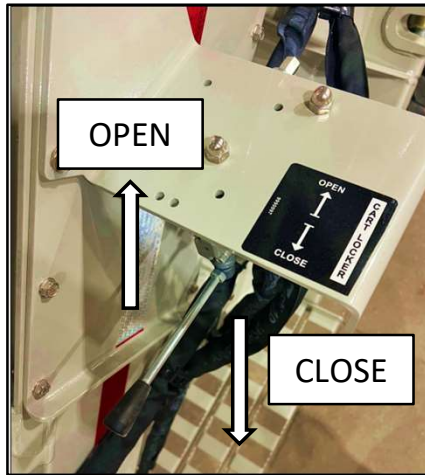


Figure 25; valve operation



Figure 26; cart lock open



Figure 27; cart lock closed



Figure 28; tipper bar lifting can

CONTROL SYSTEM - EMPTYING THE REFUSE PACKER

Once the refuse packer is full, the load will have to be offloaded at either a landfill or a transfer station. The controls for unloading the refuse packer are located at the front valve body. See figure 29

Unloading requires the use of the throttle advance switch as well as control levers.

WARNING

Ensure refuse packer is on stable ground before attempting to unload. Failure to do so may result in serious injury or death.

WARNING

Ensure any and all personnel stay away from the tailgate area while unloading. Failure to do so may result in serious injury or death.

WARNING

Any personnel that are tasked with unloading this refuse packer must read and understand this manual before attempting to do so. Failure to do so may result in serious injury or death.

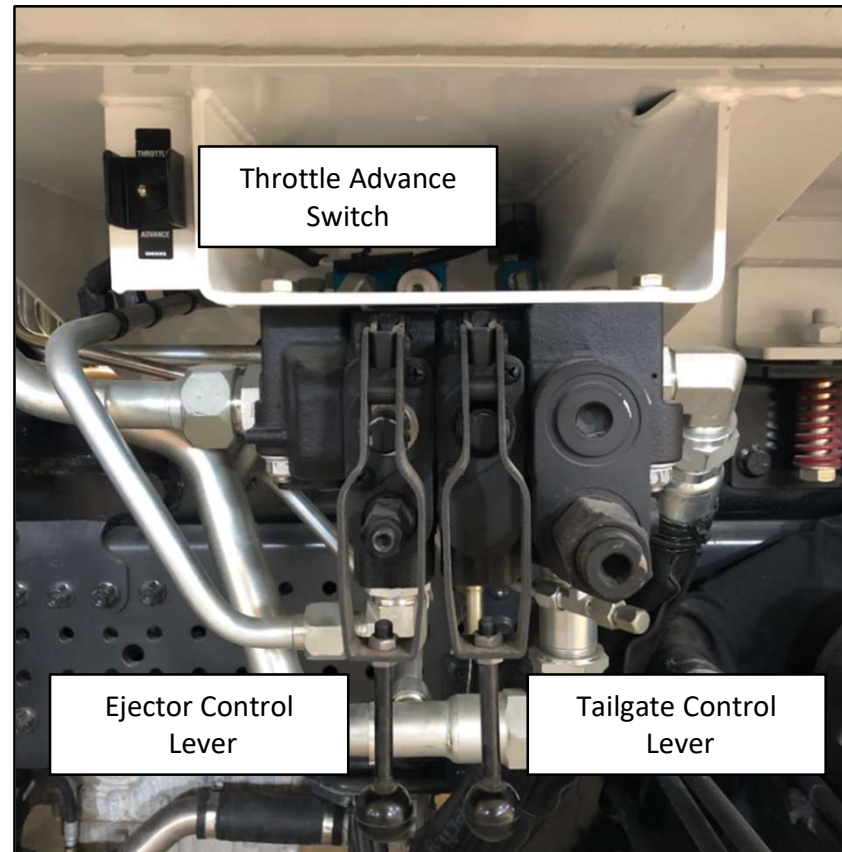


Figure 29

CONTROL SYSTEM - EMPTYING THE REFUSE PACKER (cont.)

Operation

1. Position packer at unloading area
2. Set parking brake
3. Unlock both tailgate turnbuckles and swing completely off to side (Figure 30)
4. At front valve, press and hold remote throttle switch (Figure 31) until engine reaches peak RPM
5. Continue holding throttle switch while pushing tailgate handle IN (Figure 32); continue until tailgate is fully raised



(SS shown, CS same)

Figure 30

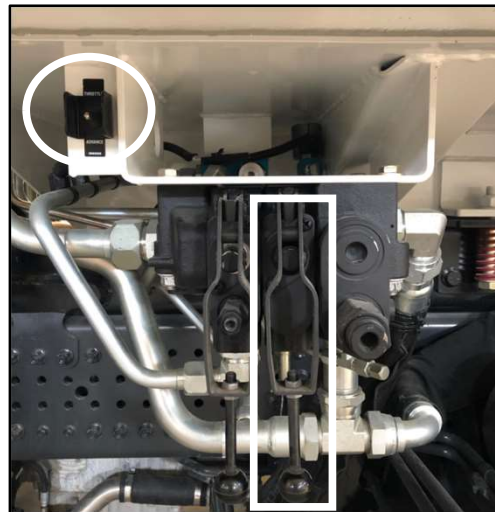


Figure 31

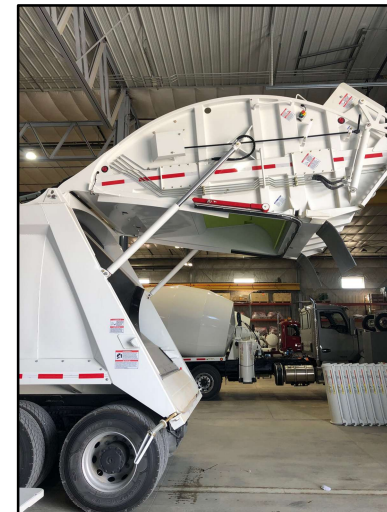


Figure 32

CONTROL SYSTEM - EMPTYING THE REFUSE PACKER (cont.)

Operation (cont.)

6. Continue holding throttle switch while pushing ejector handle IN (Figure 33 & 34); continue until ejector reaches rear of body and all waste is ejected
7. Release throttle advance switch
8. Pull tailgate handle OUT to allow tailgate to lower; continue holding until tailgate is fully closed and alarm turns off

WARNING

Ensure any and all personnel stay away from the tailgate area while unloading. Failure to do so may result in serious injury or death.

9. Leave ejector at rear-most position
10. Lock both tailgate turnbuckles securely (Figure 35)

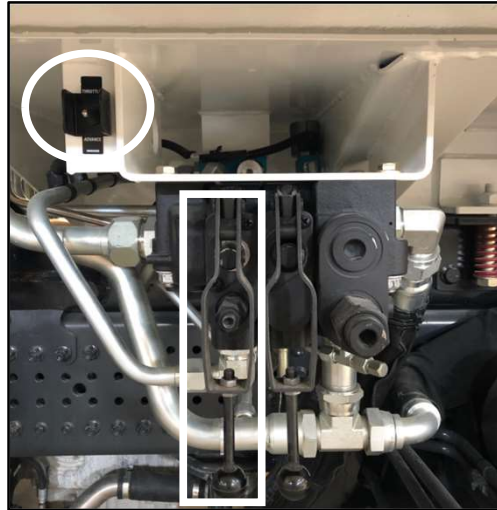


Figure 33



Figure 34



Figure 35

(SS shown, CS same)

SECTION C – PREVENTATIVE MAINTENANCE

This refuse collection vehicle must be inspected daily or before each work shift. This vehicle must be removed from service and repaired should any issues be noted. Items to look for during these inspections include, but are not limited to:

- Hydraulic leaks
- Rubbed or chafing hoses
- Rubbed or chafing electrical wire
- Missing parts
- Loose fasteners or hardware
- Faulty safety equipment
- Missing signs, decals or placards
- Missing or loose guards
- Noisy operation above and beyond normal
- Excessive corrosion
- Worn pins or bushings

WARNING

All identified defects must be repaired by fully qualified service personnel before unit is placed back into service. Failure to adhere to this warning may result in serious personal injury or death

DOT Pre/Post-Trip Inspections

Operators of this vehicle must perform daily pre- and post-trip inspections as required by federal, state and local laws, as well as company policies.

Recommended Preventative Maintenance

Regular preventative maintenance will help to ensure long service life of your Pac-Tech side loader refuse packer. In addition, it may prevent expensive repairs, reduce overall down-time and dramatically lower the chances of an in-service route breakdown.

The following Preventative Maintenance information provides a handy and easy-to-understand reference for all the requirements to properly maintain the refuse collection system. It contains:

- Maintenance Item
- Interval
- Service Type (Lubricate, Inspect, Clean, etc.)
- Fluid Type (if applicable)
- Specifications (as required)

DANGER

Lockout/Tagout procedures are to be followed when servicing or working on this equipment. This work includes, but is not limited to, cylinder replacement or repair. Failure to do so may result in serious personal injury or death.

WARNING

While working on this vehicle, the wheels must be chocked, the park brake must be applied, the keys must be out of the ignition and locked up and all OSHA Lockout/Tagout measure must be applied. Failure to comply may result in serious personal injury or death.

Recommended Preventative Maintenance

DAILY Interval Items

ITEM	ACTION	FREQUENCY	LUBE/TORQUE/SPECIFICATION
Pump Driveshaft	Lube	Daily	NLGI Grade 2 Grease
Slide Cylinder Pins	Lube	Daily	NLGI Grade 2 Grease
Sweep Cylinder Pins	Lube	Daily	NLGI Grade 2 Grease
Sweep Pivot Pins	Lube	Daily	NLGI Grade 2 Grease
Can Tipper (Option)	Lube	Daily	NLGI Grade 2 Grease
Vehicle/Body Lighting	Inspect	Daily	All lighting functional
Wire Harnesses	Inspect	Daily	No rips, tears, exposed wire; no rubbing or chafing
Reverse/TG Alarm	Inspect	Daily	Alarm sounds with TG open or if truck is in reverse
Decals/Placards/Signage	Inspect	Daily	All signs, placards and signage present and legible
Side Door Access Ladder (Option)	Inspect	Daily	No excess hinge wear, no cracking
Proximity Switches	Inspect	Daily	Operation as specified
Hydraulic Oil Level	Inspect	Daily	ISO 46 hydraulic fluid to middle of top sight glass with all cylinders retracted
Hydraulic Hoses	Inspect	Daily	No rubbing, secure, no leaks
Hydraulic Pipes	Inspect	Daily	No rubbing, no impact, no leaks
Hydraulic Fittings	Inspect	Daily	No leaks
Container Lifting Cable	Inspect	Daily	No broken strands, no excess rust or corrosion, hook operates and locks safely
Control Handles/Rods	Inspect	Daily	Handles secure, no binding in controls

Recommended Preventative Maintenance

WEEKLY Interval Items

<u>ITEM</u>	<u>ACTION</u>	<u>FREQUENCY</u>	<u>LUBE/TORQUE/SPECIFICATION</u>
Tailgate Pins	Lube	Weekly	NLGI Grade 2 Grease
Tailgate Cylinder Pins	Lube	Weekly	NLGI Grade 2 Grease
Ejector Cylinder Pins	Lube	Weekly	NLGI Grade 2 Grease
Kick Bar Cylinder Pins (Option)	Lube	Weekly	NLGI Grade 2 Grease
Reeving Cylinder Sheaves (Option)	Lube	Weekly	NLGI Grade 2 Grease
Cable Guide Sheaves (Option)	Lube	Weekly	NLGI Grade 2 Grease
Tailgate Seal	Inspect	Weekly	No excess wear, no tearing; all retainers tight
Slide/Sweep Shoes	Inspect	Weekly	No excessive wear; no waste buildup in tracks
Ejector Shoes	Inspect	Weekly	No excessive wear; ejector not rubbing floor; no excessive waste buildup on rails
Reservoir Breather	Inspect	Weekly	Ensure free of visible debris

Recommended Preventative Maintenance

SEMI ANNUAL (1250 hours) Interval Items

<u>ITEM</u>	<u>ACTION</u>	<u>FREQUENCY</u>	<u>LUBE/TORQUE/SPECIFICATION</u>
Suction Strainer	Clean	Semi Annual or 1250 hrs.	Remove and clean
Return Filter	Change	Semi Annual or 1250 hrs.	New filter and seals*
Hydraulic Oil	Change	Semi Annual or 1250 hrs.	ISO 46 Hydraulic Fluid

*Contact Con-Tech Manufacturing, Inc. for correct part numbers

ANNUAL Interval Items

<u>ITEM</u>	<u>ACTION</u>	<u>FREQUENCY</u>	<u>LUBE/TORQUE/SPECIFICATION</u>
Reservoir Breather	Change	Annually	New assembly

SECTION D – BASIC TROUBLESHOOTING

In the following section, information will be provided to assist in basic troubleshooting if a problem arises while this equipment is on-route. These steps are designed to allow a person, with even limited technical knowledge, to perform basic troubleshooting to determine the source of a particular issue. If the given information does not help to identify the problem, the truck will be required to be taken out of service and the problem identified and repaired by skilled and trained service personnel. For further information, consult the Service Manual for this equipment or call Con-Tech Manufacturing, Inc. at 507-374-2239.

WARNING

Troubleshooting steps listed in this section must never be conducted on any public roadway. Vehicle must be moved to safe location and all applicable Lockout/Tagout provisions must be applied before attempting to diagnose or repair any problem. Failure to comply may lead to serious injury or death.

WARNING

All identified defects must be repaired by fully qualified service personnel before unit is placed back into service. Failure to adhere to this warning may result in serious personal injury or death.

DANGER

Lockout/Tagout procedures are to be followed when servicing or working on this equipment. This work includes, but is not limited to, cylinder replacement or repair. Failure to do so may result in serious personal injury or death.

WARNING

While working on this vehicle, the wheels must be chocked, the park brake must be applied, the keys must be out of the ignition and locked up and all OSHA Lockout/Tagout measure must be applied. Failure to comply may result in serious personal injury or death.

SECTION D – BASIC TROUBLESHOOTING

<u>Issue</u>	<u>Possible Cause(s)</u>	<u>Action Item</u>
Unable to turn system power on	<ol style="list-style-type: none"> 1. Main battery fuse blown 2. Faulty 'On/Off' switch 3. System issue 	<ol style="list-style-type: none"> 1. Check/change main battery harness fuse 2. Replace switch 3. Service personnel required
System power OK; no power to pump	<ol style="list-style-type: none"> 1. Blown Pump Power fuse (#15) 2. Loose connection at PMM 3. E-STOP button(s) depressed 4. Side door proximity switch bad 5. System issue 	<ol style="list-style-type: none"> 1. Check/change fuse #15 at PMM 2. Check all connections at PMM 3. Reset/check all E-STOP buttons 4. Check/replace side door proximity switch 5. Service personnel required
System power OK; pump turning; no functions working	<ol style="list-style-type: none"> 1. Overspeed control stuck or binding 2. N.O. valve coil or cartridge bad 3. VA35 inlet unloader bad or stuck 4. Main relief stuck or bad 	<ol style="list-style-type: none"> 1. Service personnel required 2. Check connection at N.O. valve; service personnel required 3. Service personnel required 4. Service personnel required

SECTION D – BASIC TROUBLESHOOTING

<u>Issue</u>	<u>Possible Cause(s)</u>	<u>Action Item</u>
Throttle advance not working	<ol style="list-style-type: none"> 1. Truck not in neutral 2. Truck in neutral, no neutral signal received 3. Bad TG throttle proximity switch 4. Bad VA35 throttle switch 5. Bad PMM 	<ol style="list-style-type: none"> 1. Put truck in NEUTRAL 2. Check neutral light on control box; if none, service personnel required 3. Check/change TG prox switch 4. Check/change VA35 throttle switch 5. Service personnel required
Side light or camera assist lights not working	<ol style="list-style-type: none"> 1. Bad light 2. Switch in cab not working 3. Vehicle not in NEUTRAL 4. System issue 	<ol style="list-style-type: none"> 1. Replace bad light 2. Check/replace cab switch 3. Place vehicle in NEUTRAL 4. Service personnel required
Hopper or auxiliary lights not working	<ol style="list-style-type: none"> 1. Bad light 2. Switch in cab not working 3. System issue 	<ol style="list-style-type: none"> 1. Replace bad light 2. Check/replace cab switch 3. Service personnel required

SECTION D – BASIC TROUBLESHOOTING

<u>Issue</u>	<u>Possible Cause(s)</u>	<u>Action Item</u>
Load density too low	<ol style="list-style-type: none"> 1. Load density cartridge failed 2. Load density cartridge misadjusted 	<ol style="list-style-type: none"> 1. Service personnel required 2. Service personnel required
Difficult or impossible to push load off	<ol style="list-style-type: none"> 1. Main relief valve failed 2. Main relief valve misadjusted 3. Ejector force limiter valve failed 4. Ejector force limiter valve misadjusted 5. Main valve spool problem 6. System issue 	<ol style="list-style-type: none"> 1. Service personnel required 2. Service personnel required 3. Service personnel required 4. Service personnel required 5. Service personnel required 6. Service personnel required
Slide and sweep do not cycle properly	<ol style="list-style-type: none"> 1. Valve kickouts out of adjustment 	<ol style="list-style-type: none"> 1. Service personnel required

SECTION D – BASIC TROUBLESHOOTING

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Pac-Tech[®]

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