



Safety, Operation, & Maintenance Manual

Truckster XD®

84082 – Truckster XD

Kubota D1105-E4B Diesel Engine Option

Kubota WG972 EFI Gasoline Engine Option

2 Post / 4 Post ROPS Options

2WD / 4WD Options

Standard Driver and Passenger Seat Option

Premium Driver and Passenger Seat Option

Premium Driver and Standard Passenger Seat Option

High-Low Hydraulic System Option

Ribbed / Tread Front Tire Options

Bed and Box Sides Option

No Bed Option



WARNING

Warning: If incorrectly used, this machine can cause severe injury. Those who use and maintain this machine should be trained in its proper use, warned of its dangers, and must read the entire manual before attempting to set up, operate, adjust, or service the machine.

1 CONTENTS

Contents

Introduction

2.1 Important	2
2.2 Product Identification.....	3
2.3 Serial Numbers	3
2.4 Guidelines for the Disposal of Scrap Products.....	4

Safety

3.1 How to Operate Safely	5
---------------------------------	---

Specifications

4.1 Engine Specifications.....	10
4.2 Dimensions and Weights	11
4.3 Vehicle Specification.....	13
4.4 Hydraulic Specification.....	13
4.5 Vibration Level	14
4.6 Noise	15
4.7 Slopes	15
4.8 Recommended Lubricants	15
4.9 Accessories.....	16
4.10 Support Literature	18
4.11 Declaration of Conformity.....	19

Decals

5.1 Safety Decals.....	22
5.2 Instruction Decals.....	24

Controls

6.1 Operator Compartment	30
6.2 Gauge Panel	31
6.3 Right-Side Control Panel.....	33
6.4 Left-Side Control Panel.....	35
6.5 Accelerator Pedal.....	37
6.6 Brake Pedal	37
6.7 Clutch Pedal.....	37
6.8 Center Console	38
6.9 Seat Controls	40

Operation

7.1 Daily Inspection.....	41
7.2 Interlock System.....	41
7.3 Operating Procedure.....	42
7.4 Starting The Engine	43
7.5 To Stop The Engine	43
7.6 To Drive the Vehicle.....	44
7.7 Gear/Engine Speed	45
7.8 Gas Engine Speed Control Option.....	46
7.9 Operation On Slopes.....	47
7.10 Hydraulic Accessory Operation.....	49
7.11 Towing The Vehicle.....	50

Maintenance and Lubrication Charts

8.1 Maintenance Chart.....	51
8.2 Lubrication Chart.....	52
8.3 Fluid Requirements.....	52

Maintenance

9.1 General Precautions	53
9.2 To Do Service On the Vehicle.....	53
9.3 Engine	54
9.4 Engine Oil	54
9.5 Engine Air Filter	55
9.6 Fuel	56
9.7 Fuel System	57
9.8 Battery.....	58
9.9 Charge the battery	59
9.10 Engine Exhaust.....	59
9.11 ROPS.....	59
9.12 Hydraulic Hoses	60
9.13 Hydraulic Fluid	61
9.14 Hydraulic Filter	62
9.15 Radiator	62
9.16 Tires	63
9.17 Wheel Mounting Procedure	63
9.18 Transmission Fluid Level	64
9.19 Electrical System	64
9.20 Suspension Inspection.....	66
9.21 Care and Cleaning	66
9.22 Vehicle Storage.....	67

Adjustments

10.1 General Precautions	68
10.2 Belt Adjustment.....	68
10.3 Parking Brake Adjustment	69
10.4 Steering Toe-In Adjustment	70
10.5 Torque Specification	71

Problem Solving

11.1 General	72
11.2 CAN Bus Connector Locations	73

Proposition 65 Warning

This product contains or release chemicals known to the State of California to cause cancer and birth defects or other reproductive harm.

© 2015, Jacobsen, A Textron Company/Textron Innovations Inc.
"All rights reserved, including the right to reproduce this material
or portions thereof in any form."

2.1 IMPORTANT

The Jacobsen Truckster XD with a Kubota Gasoline or Diesel engine is a self propelled vehicle. The hydraulic systems are for the steering, bed lift and optional remote hydraulics.

If you follow all instructions in this manual, you increase the life of your vehicle and keep its maximum performance. Adjustments and maintenance must always be done by an approved technician.

IMPORTANT: Do the maintenance included in this manual to make sure that the vehicle operates correctly.

This SAFETY, OPERATION AND MAINTENANCE MANUAL is part of the vehicle and must stay with the vehicle always. Suppliers of both original and used vehicles need to keep the documentation that comes with the vehicle.

Compliance with the conditions or operation, service and repair specified by the manufacturer, are understood to be part of the correct use.

ALL operators **MUST** read through this manual and understand the Safety Instructions, controls, lubrication and maintenance procedures.

Make sure that you obey all safety and road traffic regulations.

You must not make any changes to the vehicle that the manufacturer does not approve. This type of change can release the manufacturer from the liability for any damage or injury.

Only if the vehicle manufacturer is no longer in business and there is no successor to the business can you make changes to the vehicle, provided that:

- An engineer in the industrial truck industry, who knows the safety requirements, must design, test and install the changes to the vehicle.
- You must keep a permanent record of the design, tests and installation of the changes.
- You must approve and make applicable changes to the vehicle capacity plate, decals, tags and manuals.
- You must apply a permanent and visible label to the vehicle. The label must provide a description of the changes, when the changes were made and the name and address of the company that designed, tested and made the changes.

When you discard worn parts, know the environmental result and use the systems available in the country where the vehicle is used. When the vehicle is at its end of life, there are guidelines in this manual for the removal of the vehicle from use.

Use only Jacobsen approved parts.

2006/42/EC

The instructions recorded here are the original instructions confirmed by Jacobsen, A Textron Company.

2 INTRODUCTION

2.2 PRODUCT IDENTIFICATION

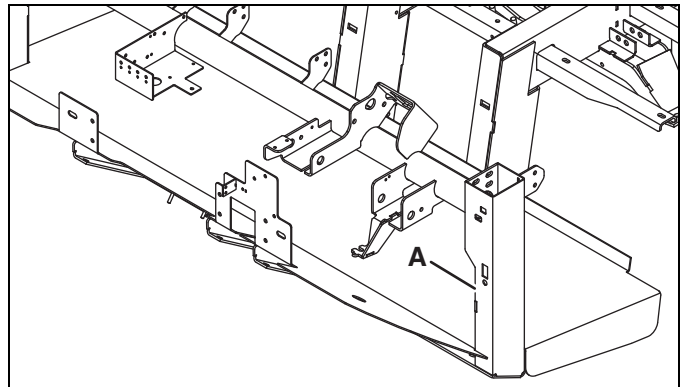
Vehicle Serial number plate

- A Gross weight (lb/kg)
- B Curb weight (Lb/kg)
- C Date code
- D Serial number
- E Rated capacity with operator (lb/kg)
- F Engine Power (HP/kW)

JACOBSEN A Textron Company		PRODUCT OF U.S.A. CHARLOTTE, NC, USA 1-800-848-1636 Jacobsen.com		
MODEL 84082				
DATE CODE C				
SERIAL No. D				
GROSS VEHICLE WEIGHT Lb / kg A		RATED CAPACITY W / OPERATOR Lb / kg A		
CURB WEIGHT Lb / kg B		Power HP / kW B		

Location of Vehicle Serial number plate

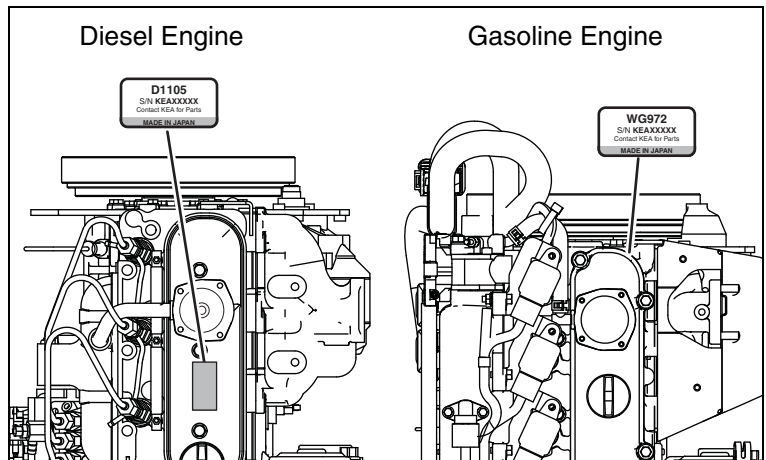
The serial number plate **(A)** is found on the inside of the left side dash support.



Engine Serial Number

The engine serial number is found on the engine valve cover. Label shows the engine group and serial number.

The engine serial number is also found on the engine block.



2.3 SERIAL NUMBERS

Record the vehicle and engine numbers shown below:

Vehicle Number: _____

Engine Number: _____

2.4 GUIDELINES FOR THE DISPOSAL OF SCRAP PRODUCTS

2.4.1 DURING SERVICE LIFE

The used oil, oil filters and engine coolant are hazardous materials. Follow the recommended procedures for their safe removal.

If a fluid leaks, contain the spill to make sure that the leak does not flow into the ground or drainage system. Follow the local laws to make sure that leaks are controlled safely.

The maintenance procedures in this manual make sure that the damage that the vehicle can cause in the local environment is controlled safely.

Take these actions after the vehicle complete its full service life.

2.4.2 END OF SERVICE LIFE

Use these guidelines with applicable Health, Safety and Environmental laws. Always use the approved local waste disposal and agencies for recycled materials.

- Park the vehicle in a location to use all of the necessary lifting equipment.
- Use the correct tools and Personal Protective Equipment (PPE) and take instruction from the technical manuals applicable to the vehicle.
- Remove and keep correctly
 1. Batteries
 2. Fuel
 3. Engine coolant
 4. Oils
- Disassemble the structure of the vehicle and refer to the technical manuals. Give attention to parts that have mechanical pressure or tension applied to the part in the vehicle, including springs.
- Separate items that continue to have service life and returned to storage.
- Separate items that are worn into the material groups and removed according to the agencies for the recycled materials that are available. Common types are as shown:
 - Steel
 - Non ferrous metals
 - Aluminum
 - Brass
 - Copper
 - Plastic Materials
 - Identified
 - Can be recycled
 - Can not be recycled
 - Not Identified
 - Rubber
 - Electrical and Electronic Components
- Add items that can not be easily separated into different materials to the “General discarded materials” area.
- Do not burn the discarded materials

Change the vehicle records to show that the vehicle is not in service and is discarded. Supply this serial number to Jacobsen Warranty Department to close their records.

3 SAFETY

3.1 HOW TO OPERATE SAFELY



WARNING

EQUIPMENT OPERATED INCORRECTLY OR WITHOUT TRAINING CAN BE DANGEROUS.

Know the location and correct operation of controls. Operators without experience must receive instruction from another person that knows the correct operation of the equipment before you operate the vehicle.

Only use parts, accessories and attachments approved by Jacobsen.

3.1.1 SAFE OPERATION

- a Read the Operator's Manual and other training material. If the operator or technician can not read this manual, the owner is responsible to describe this material to the operators and technicians. Manuals in additional languages may be available on the Jacobsen.com or RansomesJacobsen.com websites.
- a Read all of the instructions for this vehicle carefully. Know the controls and the correct operation of the equipment.
- b Children or persons who do not understand these instructions must not use the vehicle. The local regulations can limit the age of the operator.
- c Never use a vehicle near persons, including children or animals.
- d Remember that the operator or owner is responsible for accidents or hazards that occur to other persons or their property.
- e Never allow persons to operate or service the vehicle or its attachments without correct instructions.
- f Do not operate equipment while tired, sick or after you use alcohol or drugs.

3.1.2 PREPARATION

- a When you operate the vehicle, wear correct clothing, slip resistant work shoes or boots, work gloves, hard hat, safety glasses and hearing protection. Long hair, loose clothing or jewelry can be caught in moving parts.
- b Do not operate the equipment with the Interlock System disconnected or the system does not operate correctly. Do not disconnect or prevent the operation of any switch.
- c Never operate equipment that is not in correct order or without decals, guards, shields, deflectors or other protective devices fastened.
- d Inspect the vehicle before you operate the vehicle. Check the tire pressure, engine oil level, the radiator coolant level and the air cleaner indicator. Fuel is flammable. Use caution when you add the fuel to the vehicle.
- e Operate the vehicle in daylight or in good artificial light. Use caution when you operate the vehicle during bad weather. Never operate the vehicle with lightning in the area.
- f Inspect the area to select the accessories and attachments that are needed to correctly and safely do the job. Only use parts, accessories and attachments approved by Jacobsen.
- g Be careful of holes in the terrain and other hazards that are not visible.
- h Inspect the area where the equipment is operated. Remove all objects you can find before you operate. Be careful of obstructions above the ground (low tree limbs, electrical wires) and also underground obstacles (sprinklers, pipes, tree roots). Enter a new area carefully. Look for possible hazards.

3.1.3 OPERATION

- a Never operate the engine without enough ventilation or in an enclosed area. The carbon monoxide in the exhaust fumes can increase to dangerous levels.
- b Never carry more than one passenger. Keep other persons or animals away from the vehicle.
- c Engage the parking brake, press the clutch pedal and put the transmission to neutral before you start the engine. Only start the engine with the operator in the seat. Never start the engine with persons near the vehicle.
- d Keep your legs, arms and body inside the operator compartment while the vehicle is in operation. Keep your hands and feet away from moving parts.
- e Do not use on the slopes greater than the safe slope limit for the equipment.
- f To guard against over turning or loss of control:
 - Operate the vehicle up and down on the face of slopes (vertically), but not across the face (horizontally).
 - Do not start or stop suddenly on slopes.
 - Decrease the speed when you operate on slopes or when you must turn. Use caution when you change direction. Turf condition can change the vehicle stability.
 - Use caution when you operate the vehicle near drop-offs, ditches or embankments.
 - Be careful of holes in the terrain and other hazards that are not visible.
- g When you drive in the reverse direction, look behind you and down to make sure the path is clear. Do not operate the attachments when you drive in the reverse direction.
- h Use caution when you go near corners, trees or other objects that can prevent a clear view.
- i Equipment must meet the current regulations to be driven on the public roads.
- j Before you move across or operate on the paths or roads travel at decreased speed. Look for traffic.
- k Do not release the load in the direction of persons or allow persons near the vehicle while in operation.
- l Do not operate the vehicle with damaged guards or without safety devices in position.
- m Do not change the engine governor setting or over-speed the engine. Never change or tamper with adjusters that are closed with a seal for the engine speed control.
- n Before you leave the operator compartment, for any reason:
 - Disengage all the drives and lower attachments to the ground.
 - Engage the parking brake.
 - Press the clutch pedal and put the transmission in 1st Gear
 - Stop the engine and remove the key.
- o When you hit an object or vehicle starts to cause the vibration that is not normal, inspect the vehicle for damage and make repairs.
- p Decrease the throttle setting before you stop the engine.
- q Do not use this equipment for uses that the vehicle was not made for.

3 SAFETY

3.1.4 ROPS

- a The ROPS is a safety device. Always use the seat belt when you operate the vehicle. Make sure the seat belt can be released quickly in an emergency.
- b Check for clearance before you drive below objects. Do not contact tree branches, electrical wires or other objects with the ROPS.
- c Inspect the ROPS for damage. Keep the ROPS hardware fastened.
- d Do not weld, drill, change or bend the ROPS. Replace a damaged ROPS. Do not try to correct a damaged ROPS.
- e Do not remove the ROPS from the vehicle.
- f Jacobsen must approve any changes to the ROPS.

3.1.5 SAFE HANDLING OF FUELS

- a The fuel and the fuel vapors are flammable. Use caution when you add the fuel to the vehicle. The fuel vapors can cause an explosion.
- b Never use the containers that are not approved to keep or transfer fuel.
- c Never keep the vehicle or fuel containers near an open flame or any device that can cause the ignition of fuel or fuel vapors.
- d Never fill the fuel containers inside a vehicle or on a truck or trailer with a plastic liner. Always put the fuel container on the ground away from your vehicle before you fill the container.
- e Refuel the vehicle before you start the engine. When the engine is in operation or while the engine is hot, never remove the fuel cap or add fuel to the vehicle.
- f Refuel outdoors only and do not smoke when you add fuel. Extinguish all types of ignition.
- g The fuel nozzle must touch the rim of the fuel tank when you add fuel to the vehicle. Do not use a device to lock the fuel nozzle in the open position.
- h Do not over fill the fuel tank. Leave at least 1 inch (2.5 cm) below the filler neck.
- i Always tighten the fuel tank cap and container cap after you add fuel.
- j If the fuel spills on your clothing, change your clothing immediately.

3.1.6 MAINTENANCE AND STORAGE

- a Before you clean, adjust or repair this equipment, engage the parking brake, press the clutch and put the transmission in 1st gear, stop the engine and remove the key.
- b Make sure the vehicle is parked on a solid and level surface.
- c Never work on a vehicle that is lifted only by the jack. Always use the jack stands.
- d Never allow persons to service the vehicle or its attachments without correct instructions.
- e When the vehicle is parked, put into storage or left without an operator, lower the bed unless a positive mechanical lock is used.
- f Do not keep fuel near flames or drain the fuel inside a building.
- g Disconnect the battery before you service the vehicle. Always disconnect the negative battery cable before the positive battery cable. Always connect the positive battery cable before the negative battery cable.
- h Charge the battery in an area with good airflow. The battery can release hydrogen gas that is explosive. To prevent an explosion, keep any device that can cause sparks or flames away from the battery.

- i Disconnect the battery charger from the power supply before you connect or disconnect the battery charger to the battery. Wear protective clothing and use insulated tools when you service the battery.
- j Keep your hands and feet away from parts that move. Do not adjust the vehicle with the engine in operation, unless the adjustment needs the engine in operation.
- k Carefully release the pressure from components with stored energy.
- l To prevent injury from the hot, high pressure oil, never use your hands to check for oil leaks. Use the paper or cardboard to find leaks.
- m The hydraulic fluid pressure can have enough force to enter your skin. If hydraulic fluid has entered your skin, a doctor must remove the hydraulic fluid surgically within a few hours or gangrene can occur.
- n When you service the hydraulic system, make sure the hydraulic fittings, tubes and hoses are tightened to the correct torque. Make sure the hydraulic system is in good condition before you start the engine.
- o Keep the vehicle and the engine clean.
- p Allow the engine to become cool before storage and always remove the ignition key.
- q Keep all nuts, bolts and screws tight to make sure the equipment is in safe condition.
- r Replace worn or damaged parts for safety. Replace damaged or worn decals. Only use parts, accessories and attachments approved by Jacobsen.
- s To decrease the fire hazard, remove materials that burn from the engine, muffler, battery tray and fuel tank area.
- t Disconnect the battery, instrument cluster and controller connectors before you weld on this vehicle.

3.1.7 WHEN YOU PUT THE VEHICLE ON A TRAILER

- a Be careful when you load or unload the vehicle on a trailer. Trailer must be wider than the vehicle and can carry the weight of the vehicle.
- b Use a full-width ramp to load or unload the vehicle on a trailer.
- c Use straps, chains, cables or ropes to fasten the vehicle to the trailer. Both front and rear straps must be sent down and toward sides of trailer.
- d Make sure that all latches are correctly fastened.

3 SAFETY

3.1.8 IMPORTANT SAFETY NOTES



This safety alert symbol gives a warning of possible hazards.

DANGER - Indicates a dangerous condition that WILL cause death or injury unless it is prevented.

WARNING - Indicates a dangerous condition that CAN cause death or injury unless it is prevented.

CAUTION - Indicates a dangerous condition that can cause injury and property damage unless it is prevented. The label can indicate work procedures that are not safe.

NOTICE - Indicates a condition that can cause damage to the property unless it is prevented. The label can indicate work procedures that are not safe.

Some illustrations in this manual show the shields, guards or plates, removed. Do not operate this equipment without these devices correctly fastened in position.



WARNING

The Interlock System on this vehicle prevents the engine to start unless the clutch pedal is fully pressed. If the optional high-low hydraulic system is installed, the high-low switch must be in the OFF position for the engine to start

NEVER operate the vehicle unless the Interlock System operates correctly.



WARNING

1. Before you leave the operator position, for any reason:
 - a. Return the accelerator pedal to Neutral.
 - b. Press the clutch pedal and use the brake pedal to stop the vehicle.
 - c. Disengage all drives.
 - d. Engage the parking brake.
 - e. Put the transmission in 1st gear
 - f. Stop the engine and remove the ignition key.
2. Keep your hands, feet and clothing away from moving parts. Wait for all movement to stop before you clean, adjust or service the vehicle.
3. Keep persons and animals away from the area of operation.
4. Never carry more than one passengers.

If additional information or service is needed, contact your Authorized Jacobsen Dealer. Your Dealer knows the current methods to service this equipment.

4.1 ENGINE SPECIFICATIONS

	Truckster XD with Diesel Engine Option	Truckster XD with Gasoline Engine Option
Make	Kubota	Kubota
Model	D1105-E4B	WG972 EFI
Type	Four cycle, liquid cooled, Diesel	Four cycle, liquid cooled, Gasoline
Number of Cylinders	3	3
Bore and Stroke	3.07 in. (7.8 cm) x 3.09 in. (7.84 cm)	2.93 in. (7.45 cm) x 2.9 in. (7.36 cm)
Total Displacement	68.53 in ³ (1.123 l)	58.7 in ³ (0.962 l)
Combustion System	Indirect Injection	EFI
Intake System	Naturally Aspirated	Naturally Aspirated
Gross Intermittent Power	24.8 hp (18.5 kW) @3000 rpm	32.5 hp (24.2 kW) @3600 rpm
Torque	52.7 ft.Lb. (71.45 Nm) @2200 rpm	51.6 ft.Lb. (69.96 Nm) @2600 rpm
Maximum Speed	3220 ± 50 rpm (No Load)	3600 ± 50 rpm (No Load)
Low Idle	1000 ± 50 rpm (No Load)	1000 ± 50 rpm (No Load)
Rotation	Counter-clockwise viewed at flywheel	Counter-clockwise viewed at flywheel
Fuel	#2 low or ultra-low sulfur Diesel fuel	Unleaded Gasoline, 87 Octane min.
Injection Pump	Bosch MD type mini pump	N/A
Engine Oil (API Class)	SN/CJ-4	SN/CJ-4
Oil Pan Capacity	5.4 quart (5.1 l)	3.6 quart (3.4 l)
Starter	12 Volt, 1.2 kW	12 Volt, 1 kW
Alternator	12 Volt, 60 Amp	12 Volt, 60 Amp
Dry Weight	205 lb. (93 kg)	163 lb. (73.9 kg)
Dimensions (Length x Width x Height)	19.60 x 15.59 x 23.96 in. (49.78 x 39.60 x 60.87 cm)	17.40 x 15.80 x 19.80 in. (44.26 x 40.20 x 50.31 cm)
Spark Plug	N/A	NGK BKR6E (4334556)
Spark Plug Gap	N/A	0.029 to 0.032 in. (0.70 to 0.80 mm)
Spark Plug Torque	N/A	18.1 to 21.6 ft. lb. (24.5 to 29.4 Nm)
Emission Regulation	Tier 4	EPA Phase 3, CARB Tier 3

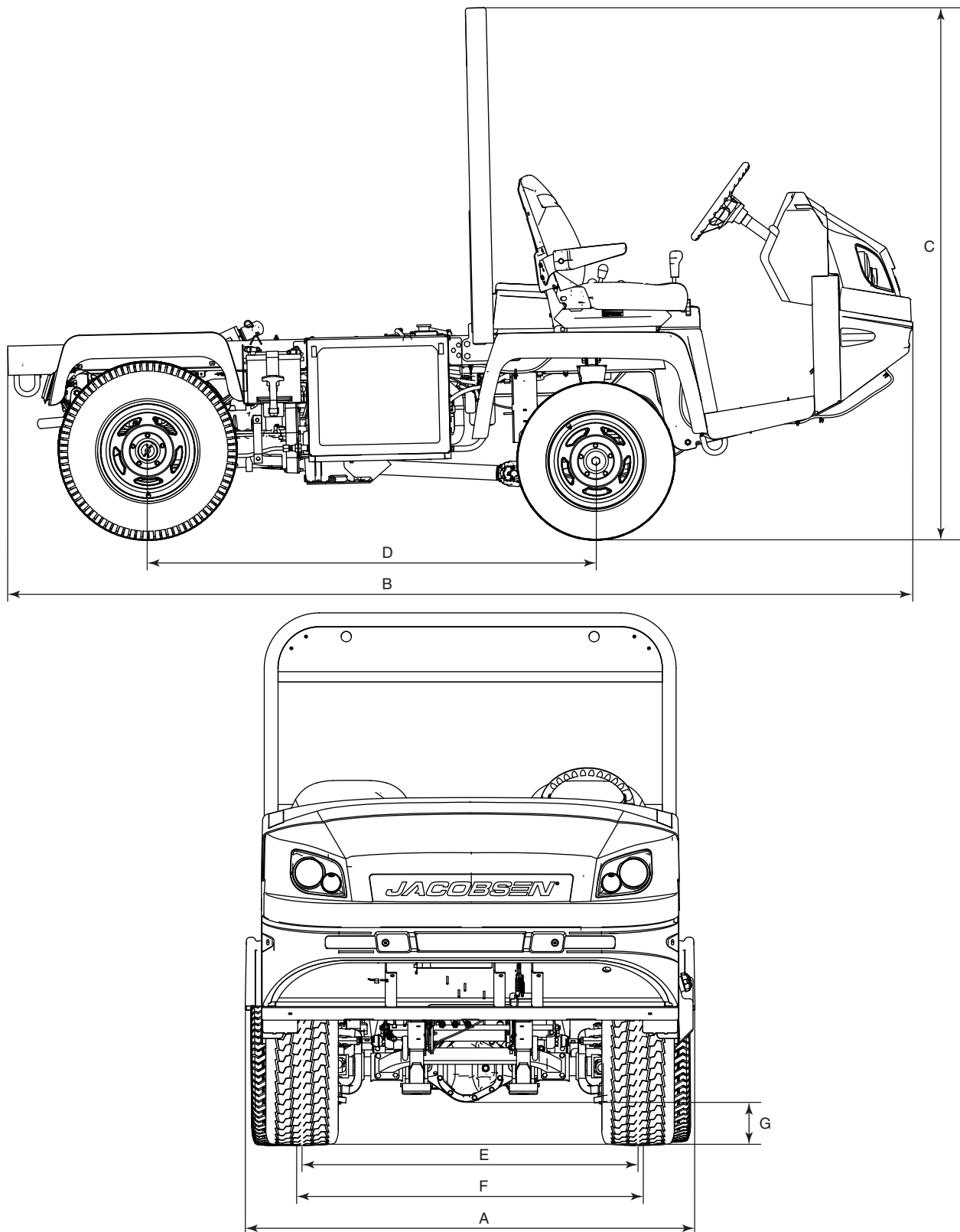
4 SPECIFICATIONS

4.2 DIMENSIONS AND WEIGHTS

	Truckster XD
A - Width	65 inch (165 cm)
B - Length	132 inch (335 cm)
C - Height	78 inch (198 cm)
D - Wheel Base	65 inch (165 cm)
E - Front Wheel Track	49 inch (124 cm)
F - Rear Wheel Track	52 inch (132 cm)
G - Ground Clearance	6.5 inch (16.5 cm)
Weight of 2WD Diesel unit with fuel tank filled (High/Low hydraulics)	2529 lb. (1147 kg)
Weight of 4WD Diesel unit with fuel tank filled (High/Low hydraulics)	2717 lb. (1232 kg)
Weight of 2WD Gasoline unit with fuel tank filled (High/Low hydraulics)	2487 lb. (1128 kg)
Weight of 4WD Gasoline unit with fuel tanks filled (High/Low hydraulics)	2675 lb. (1213 kg)
Weight of Bed with Box Sides	508 lb. (230.4 kg)

Tire Specifications					
Ribbed Front Wheel Option			Treaded Front Wheel Option		
Tire Size	Type	Tire Pressure	Tire Size	Type	Tire Pressure
23 x 10.5-14	Rib Tread 6 Ply	22 psi (1.52 BAR)	23 x 10.5-14	GoTrax 6 Ply	22 psi (1.52 BAR)

Rear Wheel		
Tire Size	Type	Tire Pressure
26 x 12.0-14	Ultra Chevron 6 Ply	25 psi (1.72 BAR)



4 SPECIFICATIONS

4.3 VEHICLE SPECIFICATION

Battery: 12V, 500 CCA, Group BCI 26

Service Brake: 4 Wheel hydraulic disk brakes

Parking Brake: Hand lever actuated disk brakes on rear wheels

Fuel Tank: 7 U.S. Gallons (26.5 l)

Hydraulic Tank: 5 U.S. Gallons (18.9 l) (High-low hydraulic system option Only)

Hydraulic Fluid: 10W30

Hydraulic Filter: 10 Micron, 25 psi (1.72 BAR) crack bypass

High-Low Filter: 10 Micron, 25 psi (1.72 BAR) crack bypass

Hydraulic Cooling: Hydraulic Oil Cooler (High-low hydraulic system option Only)

Steering: Hydrostatic power steering

2WD Traction Drive: Five speed transmission and two speed rear axle.

4WD Traction Drive: Five speed transmission, two speed rear axle and front axle.

Transmission Gear Ratios:

1st Gear	3.652:1
2nd Gear	1.947:1
3rd Gear	1.423:1
4th Gear	1.000:1
5th Gear	0.795:1
Reverse Gear	3.466:1

Rear Axle Gear Ratios:

High Speed	14.2:1
Low Speed	45.0:1
High Speed 4WD Output	2.39:1
Low Speed 4WD Output	7.57:1

Front Axle Gear Ratio:

2WD Option	N/A
4WD Option	4.1:1

4.4 HYDRAULIC SPECIFICATION

Circuit Description	Flow @3200 rpm engine speed US Gallons/Minute (Liters/Minute)	Relief Valve Pressure psi (BAR)
Steering and Lift/Lower	5.58 (21.1392)	Steering - 2175 (150) Lift - 1800 (124)
High-low hydraulic system option	5.00 (18.93) / 9.49 (35.936)	2538 (175)

4.5 VIBRATION LEVEL

The vehicle was tested for hand and arm vibration levels. The operator was in the normal position to drive the vehicle, with two hands on the steering mechanism. The engine was in operation, while the vehicle was not moving.

The Machinery Safety Directive 2006/42/EC
Referenced to Hand/Arm: BS EN ISO 20643:2008

Information Supplied for Physical Agents Directive 2002/44/EC

Truckster XD Hand/Arm Acceleration Level	84082 Truckster XD
	Maximum Left Hand or Right Hand Accelerations m/s^2
	Mean Value of X, Y, Z Aeq
Diesel Engine Option	1.73 ± 0.7
Gasoline Engine Option	0.448 ± 0.7

The vehicle was tested for Whole Body vibration levels. The operator was in the normal position to drive the vehicle, with two hands on the steering mechanism.

The Machinery Safety Directive 2006/42/EC
By compliance to:
Whole Body EN1032:2003

Information Supplied for Physical Agents Directive 2002/44/EC
By reference to:
Whole Body Standards BS EN ISO 2631-1 (1997)

Truckster XD Whole Body Acceleration Level	84082 Truckster XD
	Maximum Seat Pad Accelerations m/s^2
	Mean Value of X, Y, Z Aeq
Diesel Engine Option with Standard Seat	0.56 ± 0.048
Diesel Engine Option with Premium Seat	0.562 ± 0.048
Gasoline Engine Option with Premium Seat	0.649 ± 0.048
Gasoline Engine Option with Premium Seat	1.004 ± 0.048

4 SPECIFICATIONS

4.6 NOISE

The machine was tested for sound pressure (Operator Ear).

The Machinery Safety Directive 2006/42/EC

and Exposure of Workers to the Risks Arising From Physical Agents (Noise) Directive 2003/10/EC

By Compliance to:

The Sound Pressure Standard EN ISO 3746:2010 was used

Measured Sound Pressure Diesel and Gasoline Engine Option 79 dB(A) $\pm$ 1.04 LWA

The machine was tested for sound power (Noise in the Environment).

The Machinery Safety Directive 2006/42/EC

and Noise Emission In The Environment For Use Outdoors Directive 2000/14/EC

By Compliance to:

Sound Pressure Standard EN ISO 3744:2010 was used

Measured Sound Power Diesel Engine Option 100 dB(A) $\pm$ 1.1 LWA

Measured Sound Power Gasoline Engine Option 96 dB(A) $\pm$ 1.1 LWA

4.7 SLOPES

DO NOT USE ON SLOPES GREATER THAN 17.5°.

4.8 RECOMMENDED LUBRICANTS

Engine Oil:

Must meet MIL-L-46152 or API Classification grades SN/CJ-4

Temperature	Viscosity
Above 77° F (25° C)	SAE 30 or SAE 10W-30 or SAE 10W-40
32° to 77° F (0° to 25° C)	SAE 20 or SAE 10W-30 or SAE 10W-40
Below 32° F (0° C)	SAE 10W or SAE 10W-30 or SAE 10W-40

Rear Axle/Standard Hydraulic Reservoir: 2.1 U.S. Gallon (7.95 liter) 10W30

High-low hydraulic system option Tank: 5 U.S. Gallon (18.92 liter) 10W30

Rear Axle Gear Lube: 1.35 Quart (1.28 liter) SAE EP 80W-90

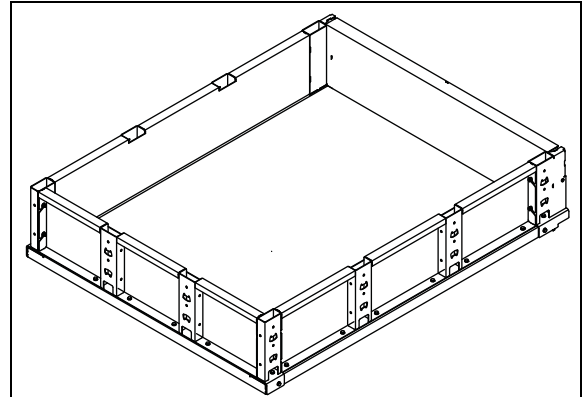
Grease:

NLGI Grade 2-EP Lithium Complex Grease containing Molybdenum Disulfide or equivalent

4.9 ACCESSORIES

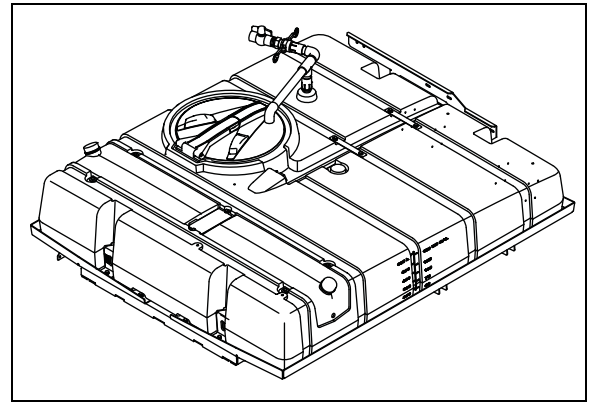
4.9.1 BOXED BED

Product number 4337867



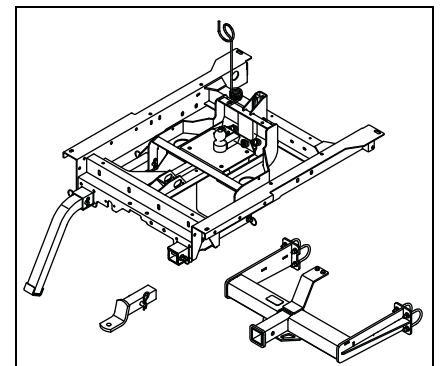
4.9.2 SPRAYER OPTIONS

175 Gallon Tank: 4335126
300 Gallon Tank: 4335127
Raven 203 System: 4319746
Raven 440 System: 4320026
Raven 440 + Sharpshooter System: 4322364
Envisio Pro II + Sharpshooter System: 4322546
15 Foot HD Boom: 4323390
15 Foot Sharpshooter Boom: 4323391
18 Foot HD Boom: 4320589
18 Foot Sharpshooter Boom: 4322360
20 Foot HD Boom: 4320590
20 Foot Sharpshooter Boom: 4322361
Walking Boom: 4323448
Boom Shields: 4323449
Electric Rewind Hose Reel: 4335026
Manual Rewind Hose Reel: 4322126
Foam Marker: 4322369



4.9.3 HITCH OPTIONS

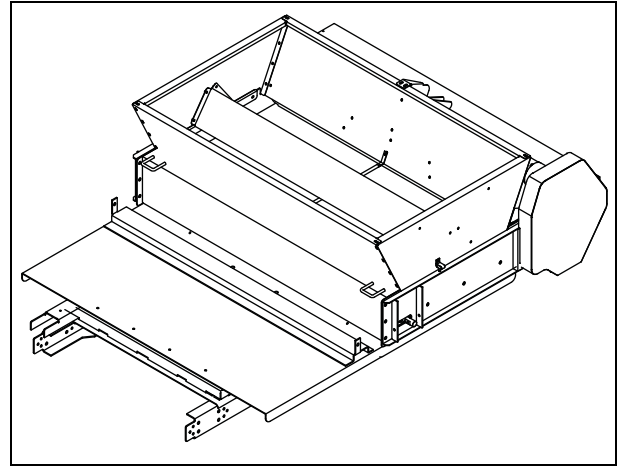
5th Wheel Hitch: TBD
Tow Hitch: 4338307
Drawbar: 4318046
Trailer Brake: 4336850



4 SPECIFICATIONS

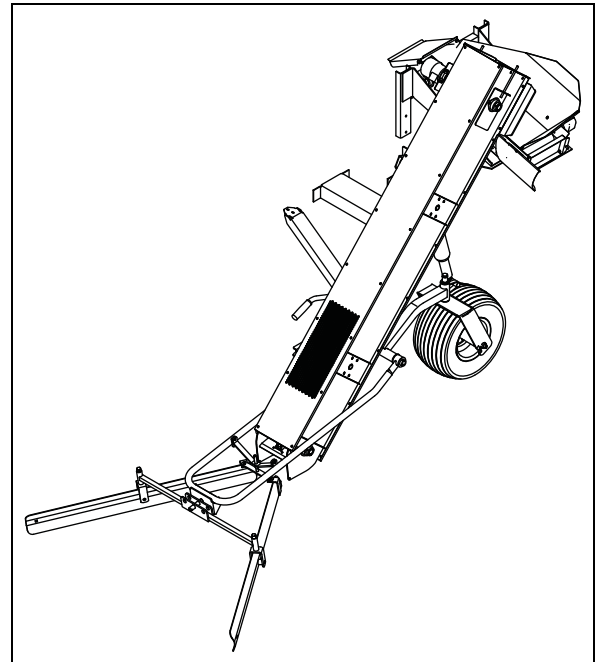
4.9.4 TOP DRESSER 1500

Kit Number 4309575



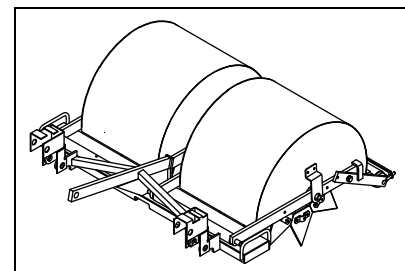
4.9.5 CORE HARVESTER

Kit Number TBD



4.9.6 QUICK AERATOR

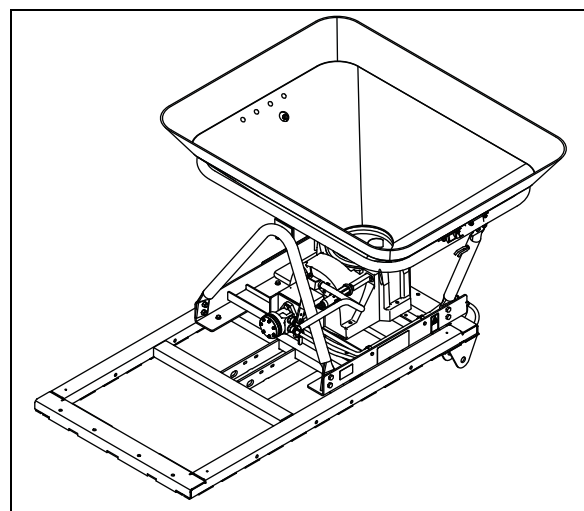
Kit Number 4331778)



4.9.7 VICON SPREADER

Kit Number 4311773

Vicon Adapter 4336048



4.9.8 CAB

Factory Installed: TBD

Dealer Installed: TBD

4.10 SUPPORT LITERATURE

Contact your Jacobsen Dealer for a complete listing of literature available for your vehicle.

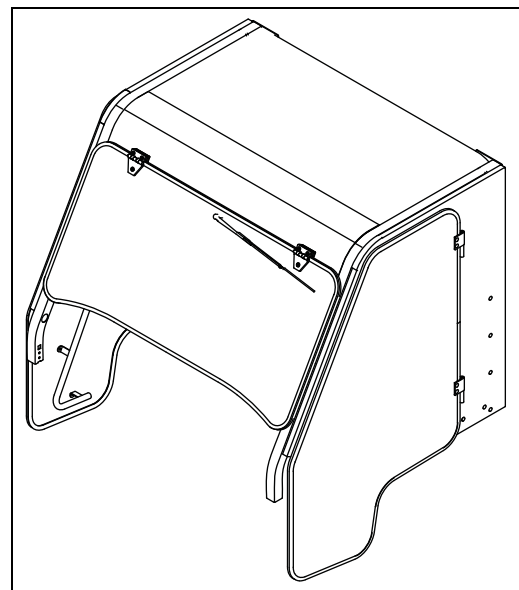
Safety, Operation, & Maintenance Manual: 4330108

Vehicle Parts Manual: 4330107

Diesel Engine Parts Manual: 4304579

Gasoline Engine Parts Manual: 4330165

Service & Repair Manual: TBD



4 SPECIFICATIONS

4.11 DECLARATION OF CONFORMITY

DECLARATION OF CONFORMITY ▪ ДЕКЛАРАЦИЯ ЗА СЪОТВЕТСТВИЕ ▪ PROHLÁŠENÍ O SHODĚ ▪ OVERENSSTEMMELSESESKLÆRING ▪ CONFORMITEITSVERKLARING ▪ VASTAVUSDEKLARATSIOON ▪ VAATIMUSTENMUKAISUUSVAKUUTUS ▪ DECLARATION DE CONFORMITE ▪ KONFORMITÄTSESKLÄRUNG ▪ ΔΗΛΩΣΗ ΣΥΜΜΟΡΦΩΣΗΣ ▪ MEGFELELŐSÉGI NYILATKOZAT ▪ DICHIARAZIONE DI CONFORMITÀ ▪ ATBILSTĪBAS DEKLARĀCIJA ▪ ATITIKTIES DEKLARACIJA ▪ DIKJARAZZJONI TAL-KONFORMITÀ ▪ DEKLARACJA ZGODNOŚCI ▪ DECLARAÇÃO DE CONFORMIDADE ▪ DECLARAȚIE DE CONFORMITATE ▪ VYHLÁSENIE O ZHODE ▪ IZJAVA O SKLADNOSTI ▪ DECLARACIÓN DE CONFORMIDAD ▪ DEKLARATION OM ÖVERENSSTÄMMELSE ▪ SAMRÆMISYFIRLÝSING ▪ KONFORMITETSESKLÆRING ▪ 符合性声明 ▪ SAMRÆMISYFIRLÝSING ▪ 適合宣言 ▪ 적합성 선언서 ▪ UYGUNLUK BEYANI ▪ ДЕКЛАРАЦІЯ ПРО ВІДПОВІДНІСТЬ

Business name and full address of the manufacturer ▪ Търговско име и пълен адрес на производителя ▪ Obchodný jméno a plná adresa výrobce ▪ Producentens firmanavn og fulde adresse ▪ Bedrijfsnaam en volledig adres van de fabrikant ▪ Tootja ärinimi ja täielik aadress ▪ Valmistajan toimintimi ja täydellinen osoite ▪ Nom commercial et adresse complète du fabricant ▪ Firmennamen und vollständige Adresse des Herstellers ▪ Εταιρεία και ταχυδρομική διεύθυνση κατασκευαστή ▪ A gyártó üzleti neve és teljes címe ▪ Ragione sociale e indirizzo completo del fabbricante ▪ Uzņēmuma nosaukums un pilna ražotāja adrese ▪ Verslo pavadinimas ir pilnas gamintojo adresas ▪ Isem kummerċjali u indirizz sħiħ tal-fabbrikant ▪ Nazwa firmy i pełny adres producenta ▪ Nome da empresa e endereço completo do fabricante ▪ Denumirea comercială și adresa completă a producătorului ▪ Obchodný názov a úplná adresa výrobcu ▪ Naziv podjetja in polni naslov proizvajalca ▪ Nombre de la empresa y dirección completa del fabricante ▪ Tillverkarens företagsnamn och kompletta adress ▪ Fyrirtækisheiti og fullt heimilisfang framleiðanda ▪ Firmanavn og full adresse for produsenten ▪ 制造商的商业名称和完整地址 ▪ Nafn fyrirtækis og fullt heimilisfang framleiðanda ▪ 商号およびメーカーの正式住所 ▪ 제조자의 상호명 및 주소 ▪ İmalatçının ticari ünvanı ve açık adresi ▪ Фірмове найменування і повна адреса виробника	Jacobsen, A Textron Company 11524 Wilmar Blvd. Charlotte, NC 28273, USA
Product Code ▪ Код на продукта ▪ Kód výrobku ▪ Produktcode ▪ Productcode ▪ Toote kood ▪ Tuotekoodi ▪ Code produit ▪ Produktcode ▪ Κωδικός προϊόντος ▪ Termékkód ▪ Codice prodotto ▪ Produkta kods ▪ Produktu koda ▪ Kodiçi tal-Prodott ▪ Kod produktu ▪ Código do Produto ▪ Cod produs ▪ Kód výrobku ▪ Oznaka proizvoda ▪ Código de producto ▪ Produktkod ▪ Vörúnumér ▪ Produktkode ▪ 产品代码 ▪ Framleiðslunúmer ▪ 製品コード ▪ 제품 코드 ▪ Ürün Kodu ▪ Код виробу	84082
Machine Name ▪ Наименование на машината ▪ Název stroje ▪ Maskinnavn ▪ Machinenam ▪ Masina nimi ▪ Laitteen nimi ▪ Nom de la machine ▪ Maschinenbezeichnung ▪ Ονομασία μηχανήματος ▪ Gépnév ▪ Denominazione della macchina ▪ Iekārtas nosaukums ▪ Mašinos pavadinimas ▪ Isem tal-Magna ▪ Nazwa urządzenia ▪ Nome da Máquina ▪ Numele echipamentului ▪ Názov stroja ▪ Naziv stroja ▪ Nombre de la máquina ▪ Maskinens namn ▪ Heiti tækis ▪ Maskinnavn ▪ 機器名称 ▪ Nafn vélar ▪ 機械名 ▪ 기기 명칭 ▪ Makine Adı ▪ Назва машины	Truckster XD
Designation ▪ Предназначение ▪ Označení ▪ Betegnelse ▪ Benaming ▪ Nimetus ▪ Tyypimerkintä ▪ Pažymėjimas ▪ Bezeichnung ▪ Χαρακτηρισμός ▪ Megnevezés ▪ Funzione ▪ Arzīmējums ▪ Lithuanian ▪ Denominazzjoni ▪ Oznaczenie ▪ Designação ▪ Specificație ▪ Označenie ▪ Namen stroja ▪ Descripción ▪ Beteckning ▪ Merking ▪ Konstruksjon ▪ 名称 ▪ Útnefning ▪ 用途 ▪ 지정 ▪ Tanımı ▪ Позначення	Dumper, Article 12, Item 18
Serial Number ▪ Сериен номер ▪ Sériové číslo ▪ Seriennummer ▪ Seriennummer ▪ Seerianumber ▪ Valmistusnumero ▪ Numéro de série ▪ Seriennummer ▪ Σειριακός αριθμός ▪ Sorozatszám ▪ Numero di serie ▪ Sērijas numurs ▪ Serijos numeris ▪ Numru Serjali ▪ Numer seryjny ▪ Número de Série ▪ Număr de serie ▪ Sériové číslo ▪ Serijska številka ▪ Número de serie ▪ Seriennummer ▪ Raðnúmer ▪ Seriennummer ▪ 序列号 ▪ Raðnúmer ▪ シリアル番号 ▪ 일련 번호 ▪ Seri Numarası ▪ Сери́йний номер	8408201651-8408203000
Engine ▪ Двигател ▪ Motor ▪ Motor ▪ Motor ▪ Mootor ▪ Mootori ▪ Moteur ▪ Motor ▪ Μηχανή ▪ Modulnév ▪ Motore ▪ Dzinējs ▪ Variklis ▪ Sāhha Netta Installata ▪ Silnik ▪ Motor ▪ Motor ▪ Motor ▪ Motor ▪ Motor ▪ Motor ▪ Motor ▪ Vél ▪ Motor ▪ 发动机 ▪ Afivél ▪ 엔진 ▪ Motor ▪ Двигун	Kubota D1105-E4B Diesel Kubota WG972 EFI
Net Installed Power ▪ Нетна инсталирана мощност ▪ Čistý instalovaný výkon ▪ Installeret nettoeffekt ▪ Netto geïnstalleerd vermogen ▪ Installeeritud netovõimsus ▪ Asennettu nettoteho ▪ Puissance nominale nette ▪ Installierte Nettoleistung ▪ Καθαρή εγκατεστημένη ισχύς ▪ Nettó beépített teljesítmény ▪ Potenza netta installata ▪ Paredzētā tīkla jauda ▪ Grynoji galia ▪ Wisa' tal-Qtugh ▪ Moc zainstalowana netto ▪ Potência instalada ▪ Puterea instalată netă ▪ Čistý inštalovaný výkon ▪ Neto vgrajena moč ▪ Potencia instalada neta ▪ Nettoeffekt ▪ Nettóafli vélar ▪ Netto installer kraft ▪ Nettoppsetningarorka ▪ 搭載する正味出力 ▪ 정미 출력 ▪ Net Kurulu Güç ▪ Корисна встановлена потужність	18.5 kW @ 3000 RPM 24.2 kW @ 3600 RPM
Cutting Width ▪ Широчина на рязане ▪ Šírka řezu ▪ Skærebredde ▪ Maaibreedte ▪ Lõikelaius ▪ Leikkuleveys ▪ Largeur de coupe ▪ Schnittbreite ▪ Μήκος μισιέζος ▪ Vágási szélesség ▪ Larghezza di taglio ▪ Griešanas platum ▪ Pjovimo plotis ▪ Tikkonforma mad-Direttivi ▪ Szerokosc ciecia ▪ Largura de Corte ▪ Lățimea de tăiere ▪ Šírka záberu ▪ Širina reza ▪ Anchura de corte ▪ Klipbredd ▪ Skurðbreidd ▪ Klippebredde ▪ 剪草寬度 ▪ Breidd sláttar ▪ 刈り取り幅 ▪ 절단 폭 ▪ Kesme Genişliği ▪ Ширина ризання	Not Applicable
Conforms to Directives ▪ В съответствие с директивите ▪ Splňuje podmínky směrnic ▪ Er i overensstemmelse med direktiver ▪ Voldoet aan de richtlijnen ▪ Vastab direktiividele ▪ Direktiivien mukainen ▪ Conforme aux directives ▪ Entspricht Richtlinien ▪ Ακολουθήστε πιστά τις Οδηγίες ▪ Megfelel az irányelveknek ▪ Conforme alle Direttive ▪ Atbilst direktīvām ▪ Atitinka direktyvų reikalavimus ▪ Valutazzjoni tal-Konformità ▪ Dyrektywy związane ▪ Cumpre as Directivas ▪ Respectă Directivele ▪ Je v súlade so smernicami ▪ Skladnost z direktivami ▪ Cuple con las Directivas ▪ Uppfyller direktiv ▪ Samræmist tilskipunum ▪ I samsvar med direktiv ▪ 符合指令 ▪ Í samræmi við reglugerðir ▪ 適合指令 ▪ 규정 준수 ▪ Şu Yönergelere Uyumludur ▪ Відповідає директиви	2004/108/EC 2006/42/EC 2000/14/EC, 2005/88/EC 2002/44/EC
Conformity Assessment ▪ Оценка за съответствие ▪ Hodnocení plnění podmínek ▪ Overensstemmelsesvurdering ▪ Conformiteitsbeoordeling ▪ Vastavushindamine ▪ Vaatimustenmukaisuuden arviointi ▪ Evaluation de conformité ▪ Konformitätsbeurteilung ▪ Διαπίστωση Συμμόρφωσης ▪ Megfelelőség-értékelés ▪ Valutazione della conformità ▪ Atbilstības novērtējums ▪ Atitikties įvertinimas ▪ Livell tal-Qawwa tal-Hoss Imkeijel ▪ Ocena zgodności ▪ Avaliação de Conformidade ▪ Evaluarea conformității ▪ Vyhodnotenie zhodnosti ▪ Ocena skladnosti ▪ Evaluación de conformidad ▪ Bedömning av överensstämmelse ▪ Samræmistat ▪ Konformitetsvurdering ▪ 符合性評估 ▪ Samræmistat ▪ 適合性評價 ▪ 적합성 평가 ▪ Uygunluk Değerlendirmesi ▪ Оцінка відповідності	2006/42/EC Annex VIII
Measured Sound Power Level ▪ Измерено ниво на звукова мощност ▪ Naměřený akustický výkon ▪ Målte lydstyrkeniveau ▪ Gemeten geluidsniveau ▪ Mõõdetud helivõimsuse tase ▪ Mitattu äänitehotaso ▪ Niveau de puissance sonore mesuré ▪ Gemessener Schalldruckpegel ▪ Σταθμισμένο επίπεδο ηχητικής ισχύος ▪ Mért hangteljesítményszint ▪ Livello di potenza sonora misurato ▪ Izmērtais skaņas jaudas līmenis ▪ Įsmatuotas garso stiprumo lygis ▪ Livell tal-Qawwa tal-Hoss Iggarantit ▪ Moc akustyczna mierzona ▪ Nivel sonor medido ▪ Nivelul măsurat al puterii acustice ▪ Nameranā hladina akustiského výkonu ▪ Izmerjena raven zvočne moči ▪ Nivel de potencia sonora medido ▪ Uppmätt ljudeffektsnivå ▪ Mælt hljóðafsstig ▪ Målt lydeffektnivå ▪ 测得声功率级 ▪ Mældur hljóðstyrkur ▪ 音出力レベル測定値 ▪ 측정된 음향 파워 레벨 ▪ Ölçülen Ses Gücü Düzeyi ▪ Вимірний рівень звукової потужності	100 dB(A) ± 1.1 LWA 96 dB(A) ± 1.1 LWA
Guaranteed Sound Power Level ▪ Гарантирано ниво на звукова мощност ▪ Garantovaný akustický výkon ▪ Garanteret lydstyrkeniveau ▪ Gegarandeerd geluidsniveau ▪ Garantieeritud helivõimsuse tase ▪ Taattu äänitehotaso ▪ Niveau de puissance sonore garanti ▪ Garantierter Schalldruckpegel ▪ Εγγυημένο επίπεδο ηχητικής ισχύος ▪ Szavatolt hangteljesítményszint ▪ Livello di potenza sonora garantito ▪ Garantėtais skaņas jaudas līmenis ▪ Garantuotas garso stiprumo lygis ▪ Livell tal-Qawwa tal-Hoss Iggarantit ▪ Moc akustyczna gwarantowana ▪ Nivel sonoro garantido ▪ Nivelul garantat al puterii acustice ▪ Garantovanā hladina akustiského výkonu ▪ Zajamčena raven zvočne moči ▪ Nivel de potencia sonora garantizado ▪ Garanterad ljudeffektsnivå ▪ Hljóðafsstig sem ábyrgð er tekin á ▪ Garanter lydeffektnivå ▪ 保证声功率级 ▪ Trygður hljóðstyrkur ▪ 音出力保証レベル ▪ 보장된 음향 파워 레벨 ▪ Garantili Ses Gücü Düzeyi ▪ Гарантований рівень звукової потужності	101 dB(A) LWA 97 dB(A) LWA

Conformity Assessment Procedure (Noise) • Оценка за съответствие на процедурата (Шум) • Postup hodnocení plnění podmínek (hluk) • Procedure for overensstemmelsesvurdering (Støj) • Procedure van de conformiteitsbeoordeling (geluid) • Vastavushindamismenetlus (müra) • Vaatimustenmukaisuuden arviointimenettely (Melu) • Procédure d'évaluation de conformité (bruit) • Konformitätsbeurteilungsverfahren (Geräusch) • Διαδικασία Αξιολόγησης Συμμόρφωσης (Θόρυβος) • Megfelelőség-értékelési eljárás (Zaj) • Procedura di valutazione della conformità (rumore) • Atbilstības novērtējuma procedūra (troksnis) • Atitikties įvertinimo procedūra (garsas) • Procedura tal-Valutazzjoni tal-Konformità (Hoss) • Procedura oceny zgodności (poziom hałas) • Processo de avaliação de conformidade (nível sonoro) • Procedura de evaluare a conformității (zgomot) • Postup vyhodnocovania zhodnosti (hluk) • Postopek za ugotavljanje skladnosti (hrup) • Procedimiento de evaluación de conformidad (ruido) • Procedur för bedömning av överensstämmelse (buller) • Samræmismatsaðferð (hávaði) • Prosedyre for konformitetsvurdering (støj) • 符合性评估程序 (噪声) • Aðgerð fyrir samræmismat (Hávaði) • 適合性評価の手順 (騒音) • 적합성 평가 절차 (소음) • Uygunluk Değerlendirme Prosedürü (Gürültü) • Перламент оцінки відповідності (шум)	2000/14/EC Annex VI, Part 1 EN 12503_2008
UK Notified Body for 2000/14/EC • Нотифициран орган в Обединеното кралство за 2000/14/EO • Úřad certifikovaný podle směrnice č. 2000/14/EC • Det britiske bemyndigede organ for 2001/14/EF • Engels adviesorgaan voor 2000/14/EG • Ühendkuningriigi teavitatud asutus direktiivi 2000/14/EÜ mõistes • Direktiivin 2000/14/EY mukainen ilmoitettu tarkastuslaitos Isossa-Britanniassa • Organisme notifié concernant la directive 2000/14/CE • Britische benannte Stelle für 2000/14/EG • Κοινοποιημένος Οργανισμός Ηνωμένου Βασιλείου για 2000/14/EK • 2000/14/EK – egyesült királyságbeli bejelentett szervezet • Organismo Notificato in GB per 2000/14/CE • 2000/14/EK AK registrētā organizācija • JK notifikuotosis īstaigos 2000/14/EC • Korp Notifikat tar-Renju Unit għal 2000/14/KE • Dopuszczona jednostka badawcza w Wielkiej Brytanii wg 2000/14/WE • Entidade notificada no Reino Unido para 2000/14/CE • Organism notificat în Marea Britanie pentru 2000/14/CE • Notifikovaný orgán Spojeného královstva pre smernicu 2000/14/ES • Britanski priglašeni organ za 2000/14/ES • Cuerpo notificado en el Reino Unido para 2000/14/CE • Anmält organ för 2000/14/EG i Storbritannien • Tilkynntur aðili í Bretlandi fyrir 2000/14/EC • Britisk teknisk for 2000/14/EF • 英国 2000/14/EC 认证机构 • Bretland Upplýsingar fyrir 2000/14/EB • UK (英国) 公認機関、2000/14/EC • 2000/14/EC 에 대한 영국 인증 기관 • 2000/14/EC için BK Onaylı Kuruluş • Британский уполномоченный орган для 2000/14/EC	Number: 1088 Sound Research Laboratories Limited Holbrook House, Little Waldingfield Sudbury, Suffolk CO10 0TH
Operator Ear Noise Level • Оператор на нивото на доловим от ухото шум • Hladina hluku v oblasti uší operátora • Støjniveau i førers ørehøjde • Geluidsniveau oor bestuurder • Műratase operátori kőrvas • Melutaso kőyttőjőn korvan kohdalla • Niveau de bruit à hauteur des oreilles de l'opérateur • Schallpegel am Bedienerohr • Επιπίδο θορύβου σε λειτουργία • A kezelő fülénél mért zajszint • Livello di potenza sonora all'orecchio dell'operatore • Trokšņa līmenis pie operatora auss • Dirbančiojo su mašina patiriama triukšmo lygis • Livell tal-Hoss fil-Widna tal-Operatur • Dopuszczalny poziom hałasu dla operatora • Nível sonoro nos ouvidos do operador • Nivelul zgomotului la urechea operatorului • Hladina hluku pôsobiaci na sluch operátora • Raven hrupa pri užesu upravljavca • Nivel sonoro en el oído del operador • Ljudnivå vid förarens öra • Hávaðastig fyrir stjórnanda • Stöyinnvá ved operatrens øre • 操作員耳旁噪声级 • Hljóðstyrkur fyrir stjórnanda • オペレータが感じる騒音レベル • 사용자 청각 소음 레벨 • Operatör Kulak Gürültü Düzeyi • Рівень шуму, що впливає на оператора	79 dB(a) ± 1.04 Leq (2006/42/EC) 79 dB(a) ± 1.04 Leq (2006/42/EC)
Harmonised standards used • Използвани хармонизирани стандарти • Použité harmonizované normy • Brugte harmoniserede standarder • Gebruikte geharmoniseerde standaards • Kasutatud ühtlustatud standardid • Käytetyt yhdenmukaistetut standardit • Normes harmonisées utilisées • Angewandte harmonisierte Normen • Εναρμονισμένα πρότυπα που χρησιμοποιήθηκαν • Harmonizált szabványok • Standard armonizzati applicati • Izmantotie saskaņotie standarti • Panaudoti suderinti standartai • Standards armonizzati usati • Normy spójne powiązane • Normas armonizadas usadas • Standardele armonizate utilizate • Použité harmonizované normy • Uporabljeni usklajeni standardi • Estándares armonizados utilizados • Harmoniserade standarder som används • 所采用的协调标准 • Samstilltir staðlar notaðir • 整合規格 • 적용되는 조화 표준 • Kullanılan uyumlu standartlar • Використані гармонізовані стандарти	ISO 5349-1, ISO 5349-2_2001 EN 13059_2008 ISO 21299_2009
Technical standards and specifications used • Използвани технически стандарти и спецификации • Použité technické normy a specifikace • Brugte tekniske standarder og specifikationer • Gebruikte technische standaards en specificaties • Kasutatud tehnilised standardid ja spetsifikatsioonid • Käytetyt tekniset standardit ja eritelmät • Spécifications et normes techniques utilisées • Angewandte technische Normen und Spezifikationen • Τεχνικά πρότυπα και προδιαγραφές που χρησιμοποιήθηκαν • Műszaki szabványok és specifikációk • Standard tecnici e specifiche applicati • Izmantotie tehniekie standarti un specifikācijas • Panaudoti techniniai standartai ir techninė informacija • Standards u specifikazzjonijiet technici užati • Normy i specyfikacje techniczne powiązane • Normas técnicas e especificações usadas • Standardele tehnice și specificațiile utilizate • Použité technické normy a špecifikácie • Uporabljeni tehnični standardi in specifikacije • Estándares y especificaciones técnicas utilizadas • Tekniska standarder och specifikationer som används • Samræmdir staðlar sem notaðir eru • Benyttede tekniske standarder og specifikasjoner • 所采用的技术标准 and 规范 • Tæknistaðlar og -kröfur notaðar • 技術規格および仕様書 • 적용되는 기술 표준 및 규격 • Kullanılan teknik standartlar ve şartnameler • Використані технічні стандарти і умови	B56.8 ISO 3691-6_2013 ISO 3691-7_2011 ISO 3691-8_2012
The place and date of the declaration • Место и дата на декларацията • Misto a datum prohlášení • Sted og dato for erklæringen • Plaats en datum van de verklaring • Deklaratsiooni väljastamise koht ja kuupäev • Vakuutuksen paikka ja päivämäärä • Lieu et date de la déclaration • Ort und Datum der Erklärung • Τόπος και ημερομηνία δήλωσης • A nyilatkozat kelte (hely és idő) • Luogo e data della dichiarazione • Deklarācijas vieta un datums • Deklaracijos vieta ir data • Il-post u d-data tad-dikjarazzjoni • Miejsce i data wystawienia deklaracji • Local e data da declaração • Locul și data declarației • Miesto a dátum vyhlásenia • Kraj in datum izjave • Lugar y fecha de la declaración • Plats och datum för deklarationen • Tæknistaðlar og tæknilysingar sem notaðar eru • Benyttede tekniske standarder og specifikasjoner • Staður og dagsetning yfirlýsingar • Sted og dato for erklæringen • 声明的地点与日期 • Staður og dagsetning yfirlýsingarinnar • 宣言場所および日付 • 선언 장소 및 일자 • Beyan yeri ve tarihi • Місце і дата укладення декларації	Jacobsen, A Textron Company 11524 Wilmar Blvd. Charlotte, NC 28273, USA August 3rd, 2015

4 SPECIFICATIONS

Signature of the person empowered to draw up the declaration on behalf of the manufacturer, holds the technical documentation and is authorised to compile the technical file, and who is established in the Community. Подпис на човека, упълномощен да състави декларацията от името на производителя, който поддържа техническата документация и е оторизиран да изготви техническия файл и е регистриран в общността. Podpis osoby oprávněné sestavit prohlášení jménem výrobce, držet technickou dokumentaci a osoby oprávněné sestavit technické soubory a založené v rámci Evropského společenství. Underskrift af personen, der har fuldmagt til at udarbejde erklæringen på vegne af producenten, der er indehaver af dokumentationen og er bemyndiget til at udarbejde den tekniske journal, og som er baseret i nærområdet. Handtekening van de persoon die bevoegd is de verklaring namens de fabrikant te tekenen, de technische documentatie bewaart en bevoegd is om het technische bestand samen te stellen, en die is gevestigd in het Woongebied. Ühenduse registrisse kantud isiku allkiri, kes on volitatud tootja nimel deklaratsiooni koostama, kes omab tehnilist dokumentatsiooni ja kellel on õigus koostada tehniline toimik. Sen henkilöön allekirjoitus, jolla on valmistajan valtuutus vakuutuksen laadintaan, jolla on hallussaan tekniset asiakirjat, joka on valtuutettu laatimaan tekniset asiakirjat ja joka on sijoitautunut yhteisöön. Signature de la personne habilitée à rédiger la déclaration au nom du fabricant, à détenir la documentation technique, à compiler les fichiers techniques et qui est implantée dans la Communauté. Unterschrift der Person, die berechtigt ist, die Erklärung im Namen des Herstellers abzugeben, die die technischen Unterlagen aufbewahrt und berechtigt ist, die technischen Unterlagen zusammenzustellen, und die in der Gemeinschaft niedergelassen ist. Υπογραφή ατόμου εξουσιοδοτημένου για την σύνταξη της δήλωσης εκ μέρους του κατασκευαστή, ο οποίος κατέχει την τεχνική έκθεση και έχει την εξουσιοδότηση να ταξινομήσει τον τεχνικό φάκελο και ο οποίος είναι διορισμένος στην Κοινότητα. A gyártó nevében meghatalmazott személy, akinek jogában áll módosítani a nyilatkozatot, a műszaki dokumentációt őriz, engedélyvel rendelkezik a műszaki fájllétreállításához, és aki a közösségben letelepedett személy. Firma della persona autorizzata a redigere la dichiarazione a nome del fabbricante, in possesso Della documentazione tecnica ed autorizzata a costituire il fascicolo tecnico, che deve essere stabilita nella Comunità. Tās personas paraksts, kura ir pilnvarota deklarācijas sastādīšanai ražotāja vārdā, kurai ir tehniskā dokumentācija, kura ir pilnvarota sagatavot tehnisko reģistru un kura ir apstiprināta Kopienā. Asmuo, kuris yra gana žinomas, kuriam gamintojas suteikė įgaliojimus sudaryti šią deklaraciją, ir kuris ją pasirašė, turi visą techninę informaciją ir yra įgaliojotas sudaryti techninės informacijos dokumentą. Il-firma tal-persuna awtorizzata li tfassal id-dikjarazzjoni f'isem il-fabbrikant, għandha d-dokumentazzjoni teknika u hija awtorizzata li tikkompila l-fajl tekniku u li hija stabbilita fil-Komunità. Podpis osoby upoważnionej do sporządzenia deklaracji w imieniu producenta, przechowującej dokumentację techniczną, upoważnioną do stworzenia dokumentacji technicznej oraz wyznaczonych ds. wspólnotowych. Assinatura da pessoa com poderes para emitir a declaração em nome do fabricante, que possui a documentação técnica, que está autorizada a compilar o processo técnico e que está estabelecida na Comunidade. Semnătura persoanei împuternicite să elaboreze declarația în numele producătorului, care deține documentația tehnică, este autorizată să compileze dosarul tehnic și este stabilită în Comunitate. Podpis osoby poverenej vystavením vyhlásenia v mene výrobcu, ktorá má technickú dokumentáciu a je oprávnená spracovať technické podklady a ktorá je umiestnená v Spoločenstve. Podpis osebe, pooblašene za izdelavo izjave v imenu proizvajalca, ki ima tehnično dokumentacijo in lahko sestavlja spis tehnične dokumentacije, ter ima sedež v Skupnosti. Firma de la persona responsable de la declaración en nombre del fabricante, que posee la documentación técnica y está autorizada para recopilar el archivo técnico y que está establecido en la Comunidad. Underteknas av den som bemyndigad att upprätta deklarationen å tillverkarens vägnar, innehar den tekniska dokumentationen och är bemyndigad att sammanställa den tekniska informationen och som är etablerad i gemenskapen. Undirskrift aðilans sem hefur umboð til að gera yfirlýsinguna fyrir hönd framleiðandans, hefur undir höndum tæknigögnin og hefur leyfi til að taka saman tækniskýrsluna, og er víðurkenndur innan evrópska efnahagssvæðisins. Signaturen til personen som har fullmakt til å utferdige erklæringen på vegne av produsenten, er i besittelse av den tekniske dokumentasjonen, har autorisasjon til å utarbeide den tekniske filen og som har tilhold i EU. 获得授权代表制造商起草声明者的签名，此人保留技术文档并获授权编译技术文件，且在社区中获得认可者。 Undirskrift starfsmanns sem hefur heimild til að rita yfirlýsinguna fyrir hendi framleiðandans, hefur umsjón með tæknigögnum og hefur heimild til að setja saman tæknilega skýrslu og sem er tengdur inn í samfélagið. メーカーを代表して宣言書を起草し、技術文書を保有し技術ファイルを編集する権限を有し、地域において確固たる地位を築いている人物の署名。 제조자를 대신하여 선언서를 작성하도록 위임받은 서명자는 기술 문서를 보유하고 기술 자료 수집의 허가를 받았으며 지역 공동체 내에 속해 있습니다 İmalatçı adına beyanı hazırlama yetkisi olan, teknik dokümantasyonu elinde bulunduran ve teknik dosyayı derleme yetkisine sahip, Topluluk içinde yerleşik kişinin imzası. Підпис особи, що уповноважена власти декларацію від імені виробника, має технічну документацію, уповноважена власти технічний паспорт і має добру репутацію в суспільстві.	2006/42/EC Annex II 1.A.2 Christian D. Clifford Director of Engineering Ransomes Jacobsen Limited West Road, Ransomes Europark, Ipswich, IP3 9TT, England 2006/42/EC Annex II 1.A.10 Derek Mookhoek Vice President of Engineering Jacobsen, A Textron Company 11524 Wilmar Blvd, Charlotte, NC 28273, USA
Certificate Number • Номер на сертификат • Číslo osvědčení • Certifikatnummer • Certificaatnummer • Sertifikaadi number • Hyväksyntänumero • Numéro de certificat • Bescheinigungsnummer • Αριθμός Πιστοποιητικού • Hitelesítési szám • Numero del certificato • Sertifikata numurs • Sertifikato numeris • Numru tač-Certifikat • Numer certyfikatu • Número do Certificado • Număr certificat • Číslo osvedčenia • Številka certifikata • Número de certificado • Certifikatsnummer • Númer skirteinis • Sertifikatnummer • 证书编号 • Skirteinisnúmer • 認証番号 • 인증 번호 • Sertifika Numarası • Номер сертифіката	4330108 Rev A

GB	BE	BG	CH	CN	CY	CZ	DE	DK	EE	ES	FI	FR	GR	HU	IS	IT
United Kingdom	Belgium	Bulgaria	Switzerland	China	Cyprus	Czech Republic	Germany	Denmark	Estonia	Spain	Finland	France	Greece	Hungary	Iceland	Italy
JP	KR	LI	LT	LV	MT	NL	NO	PL	PT	RO	RU	SE	SI	SK	TR	UA
Japan	Korea	Liechtenstein	Lithuania	Latvia	Malta	Netherlands	Norway	Poland	Portugal	Romania	Russia	Sweden	Slovenia	Slovakia	Turkey	Ukrain

5.1 SAFETY DECALS

Understand the purpose of these decals. The decals are important to the safe operation of the vehicle. REPLACE THE DAMAGED DECALS IMMEDIATELY.

DANGER

To prevent injury while you do work on the battery:

1. Connect the negative (BLACK) wire after the positive (RED) wire. Remove the negative (BLACK) wire before the positive (RED) wire.
2. Keep sparks and flames away from the battery. Prevent the contact with the battery acid.

To prevent injury while you attach the jumper cables to the battery:

1. Connect the positive (+) battery terminal of the charged battery to positive battery terminal of drained battery.
2. Connect the negative (-) battery terminal of the charged battery to frame of vehicle with drained battery.



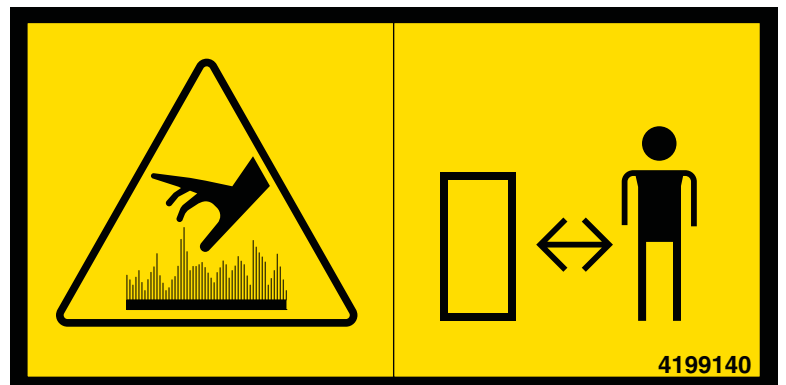
WARNING

The engine coolant is under pressure. To prevent injury, do not remove the radiator cap on a hot radiator.



WARNING

To prevent injury, do not touch the muffler or muffler shield. The muffler temperatures can be more than 150° F (66° C).



WARNING

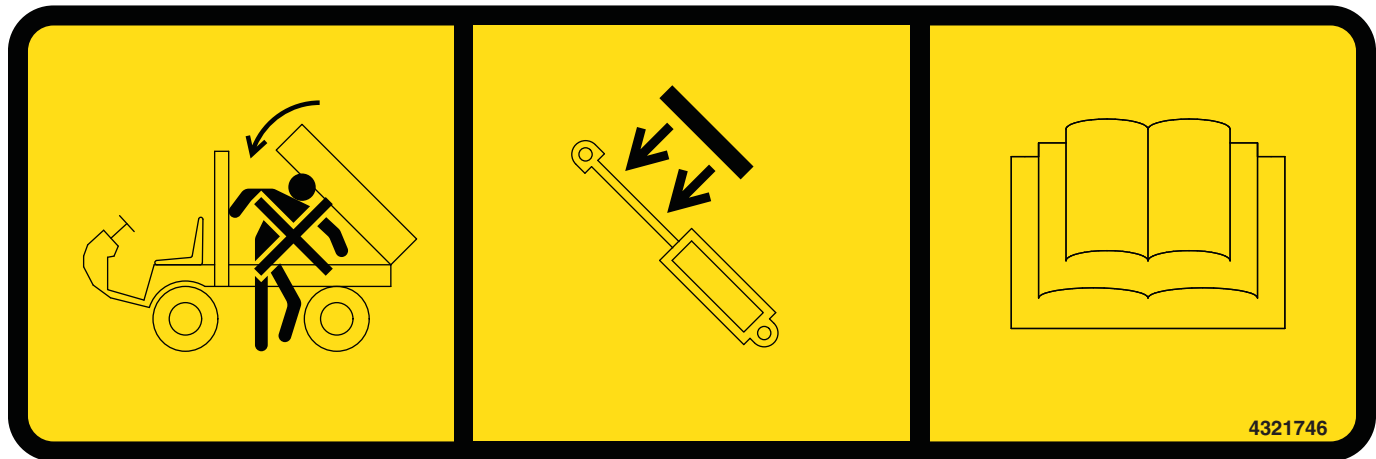
To prevent injury or be thrown from the vehicle, always wear the seat belt when you operate the vehicle. Do not operate the vehicle with passengers in the truck bed.

Do not operate vehicle with more than one passenger. The passenger must be in the seat supplied and must use the seat belt.

Do not carry passengers on your lap



5 DECALS



WARNING

To prevent injury do not do service on the vehicle with the truck bed lifted, unless the cylinder support is installed on the bed cylinder. Read the manual.



NOTICE

DO NOT USE START ASSIST FLUIDS

Start assist fluids in the air intake system can be explosive or cause an engine condition that is not controlled and can cause engine damage.

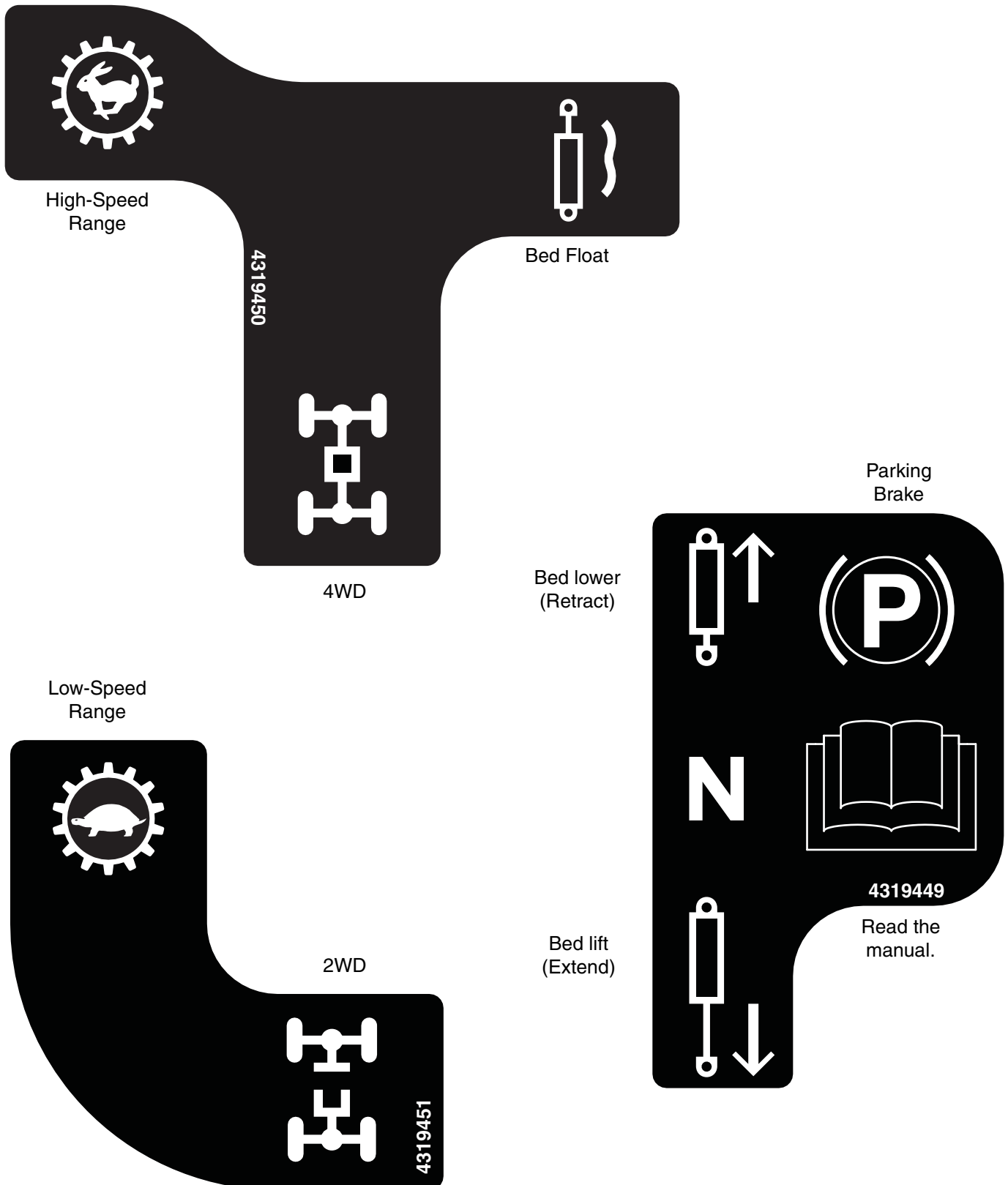


WARNING

To prevent injury when you close the tailgate, use caution to prevent your fingers broken between moving and rigid parts of the truck bed.

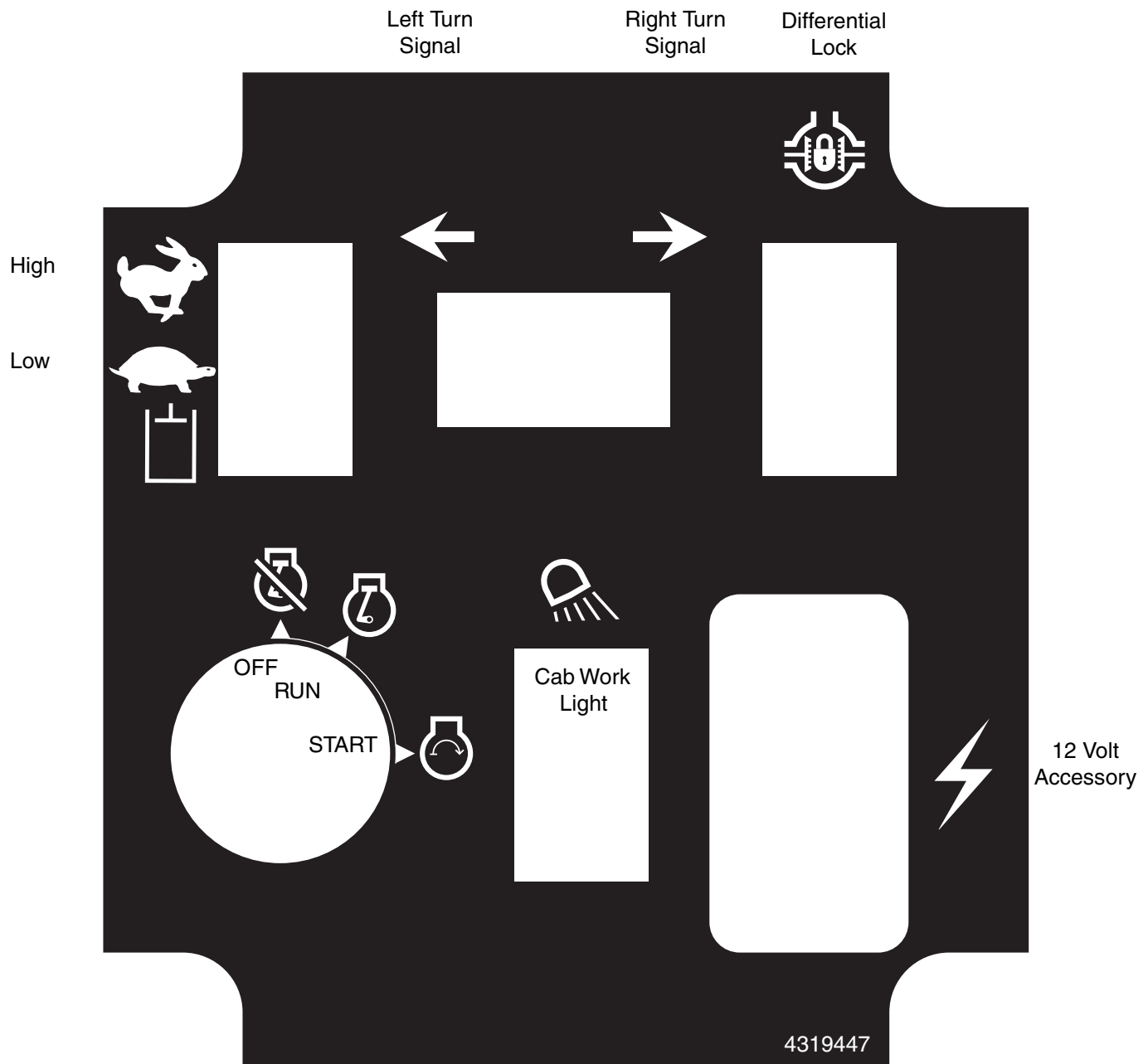
5.2 INSTRUCTION DECALS

Center Console Decals

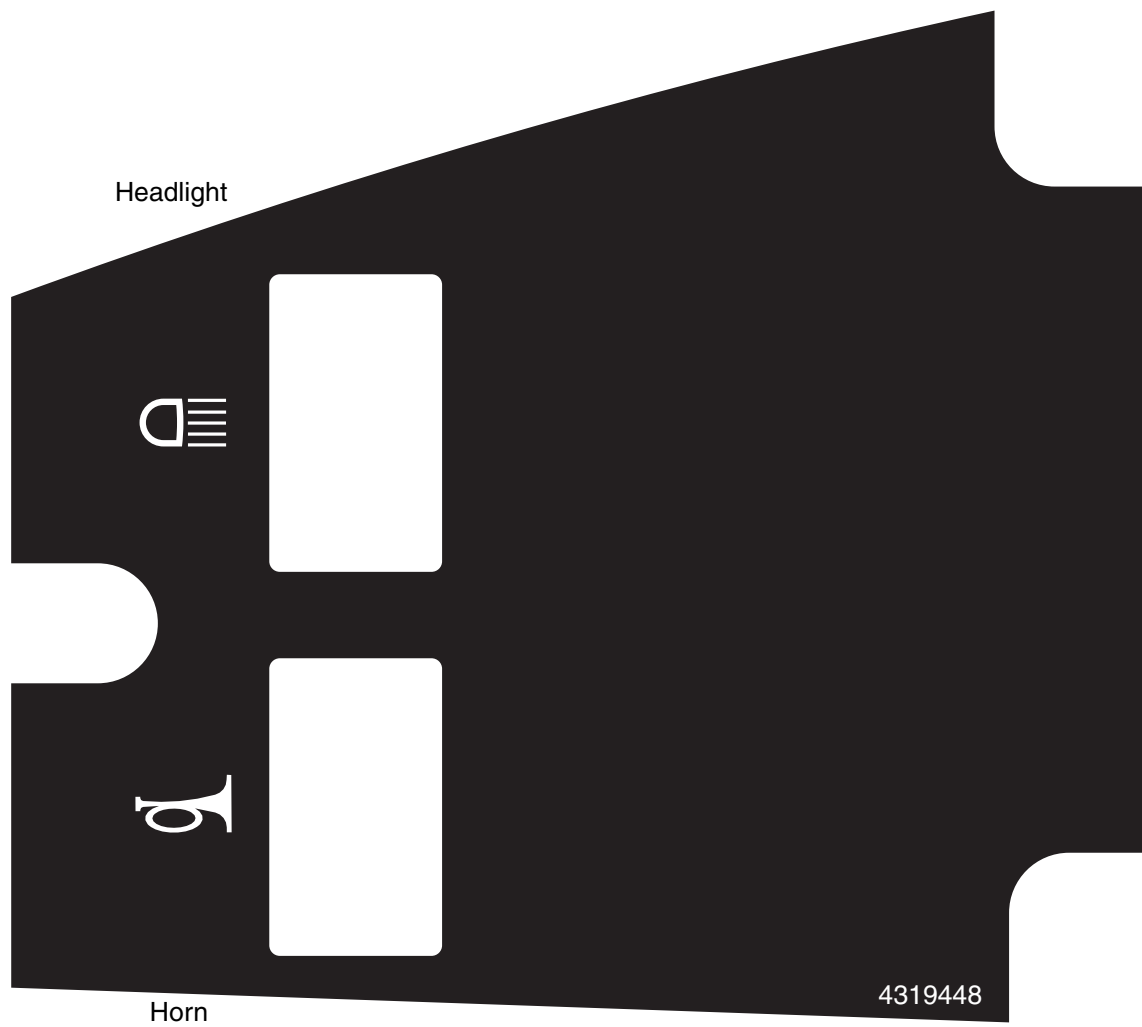


5 DECALS

Right-Side Control Panel

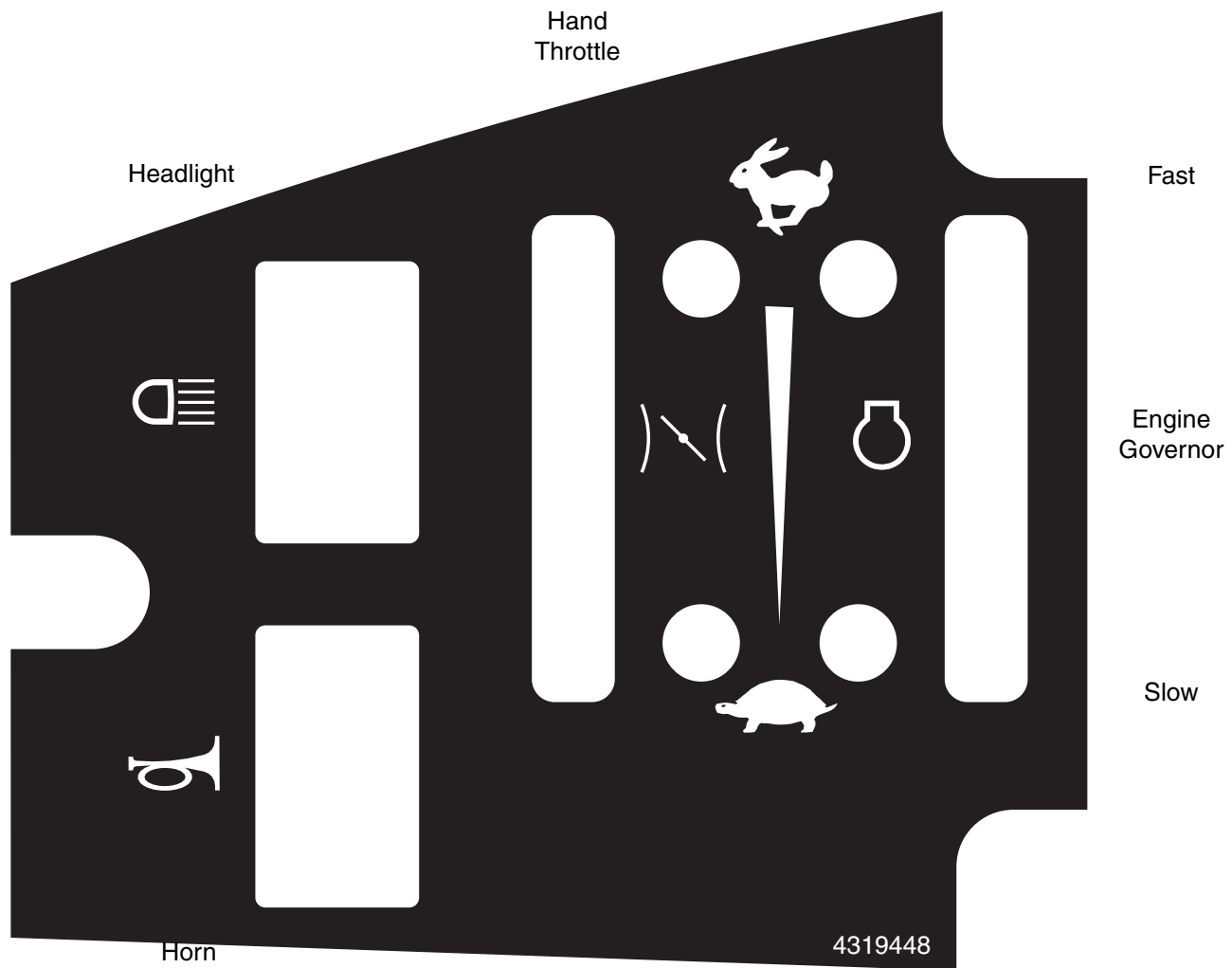


Standard Left-Side Control Panel Decal

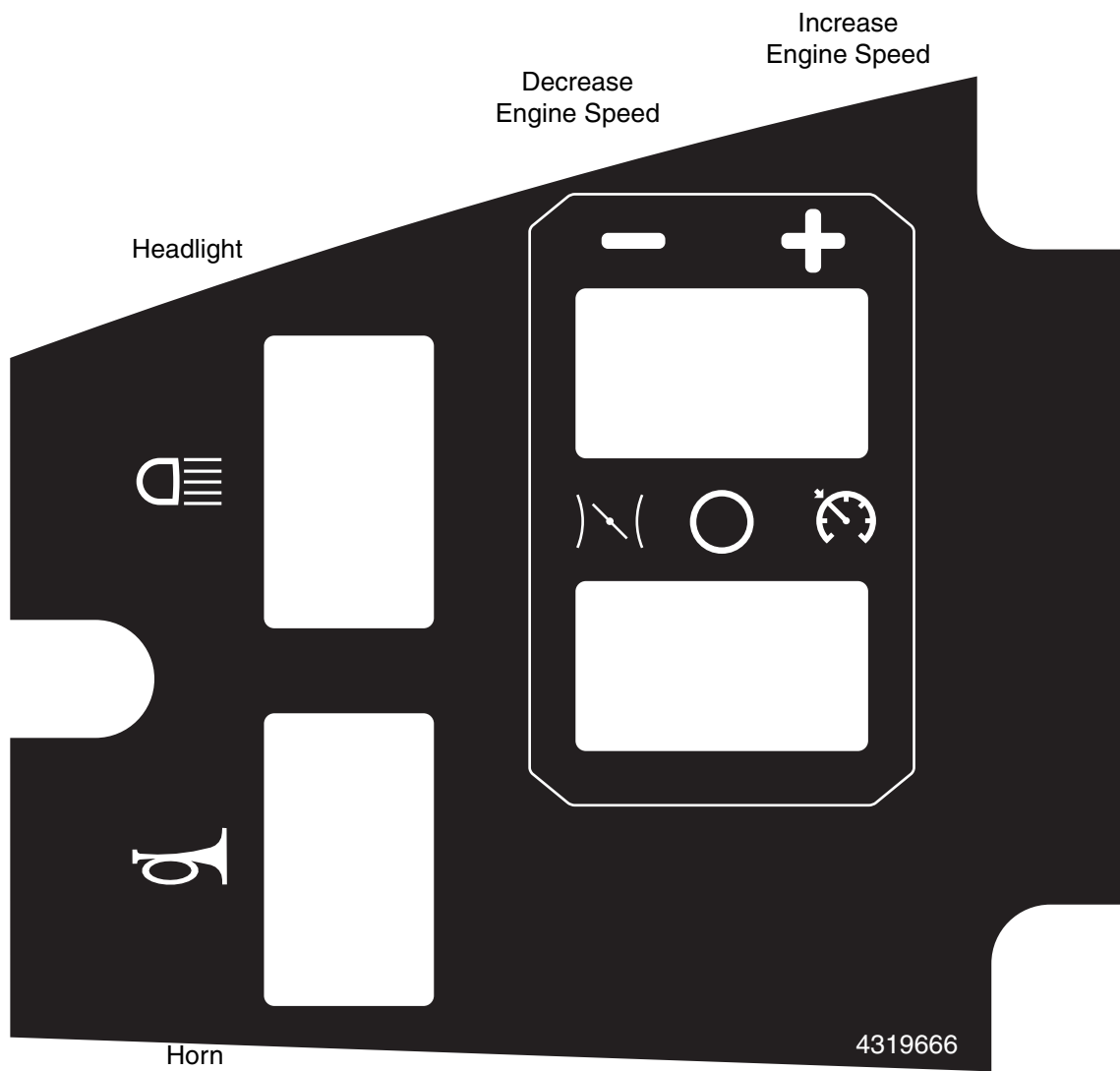


5 DECALS

Diesel Speed Control Option Decal



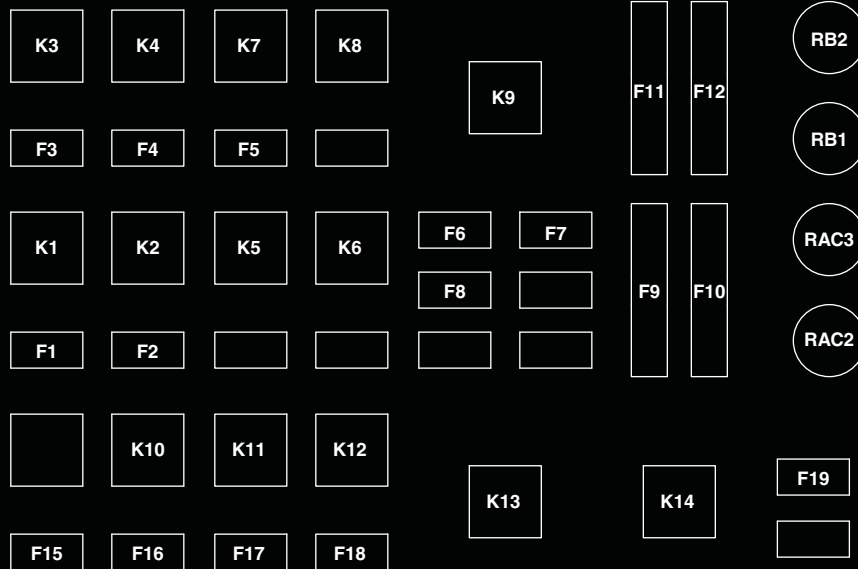
Gasoline Speed Control Option Decal



5 DECALS

Fuse Panel Decals

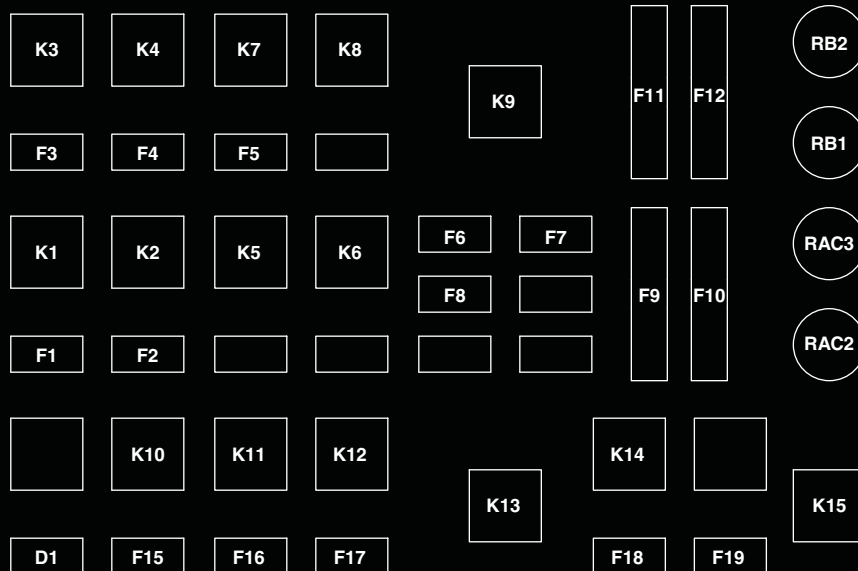
DIESEL FUSE PANEL



F1: RIGHT BRAKE JUMPER 5A
 F2: LEFT BRAKE JUMPER 5A
 F3: LIGHTS 15A
 F4: START INTERLOCK 5A
 F5: ACCESSORY 12V PLUG 10A
 F6: DIFFERENTIAL LOCK 10A
 F7: KEY SWITCHED PWR 10A
 F8: 10A EXTRA FUSE TAP
 F9: RAC2 FUSE 35A
 F10: RAC3 FUSE 35A
 F11: RB1 FUSE 50A
 F12: RB2 FUSE 50A
 F15: FAN FUSE 5A
 F16: STARTFUSE 30A
 F17: FUEL CUT FUSE 5A
 F18: POWER FUSE 30A
 F19: GLOW PLUG FUSE 35A
 K1: RIGHT TURN RELAY
 K2: LEFT TURN RELAY
 K3: LIGHT RELAY
 K4: START INTERLOCK RELAY
 K5: ACCESSORY 2 RELAY
 K6: ACCESSORY 3 RELAY
 K7: ACCESSORY 1 RELAY
 K9: FLASHER RELAY
 K10: START RELAY
 K11: FUEL RELAY
 K12: MAIN POWER RELAY
 K13: RADIATOR FAN RELAY
 K14: GLOW RELAY
 RB1: REMOTE BATTERY POST 1
 RB2: REMOTE BATTERY POST 2
 RAC2: REMOTE ACCESSORY POST 2
 RAC3: REMOTE ACCESSORY POST 3

4322031

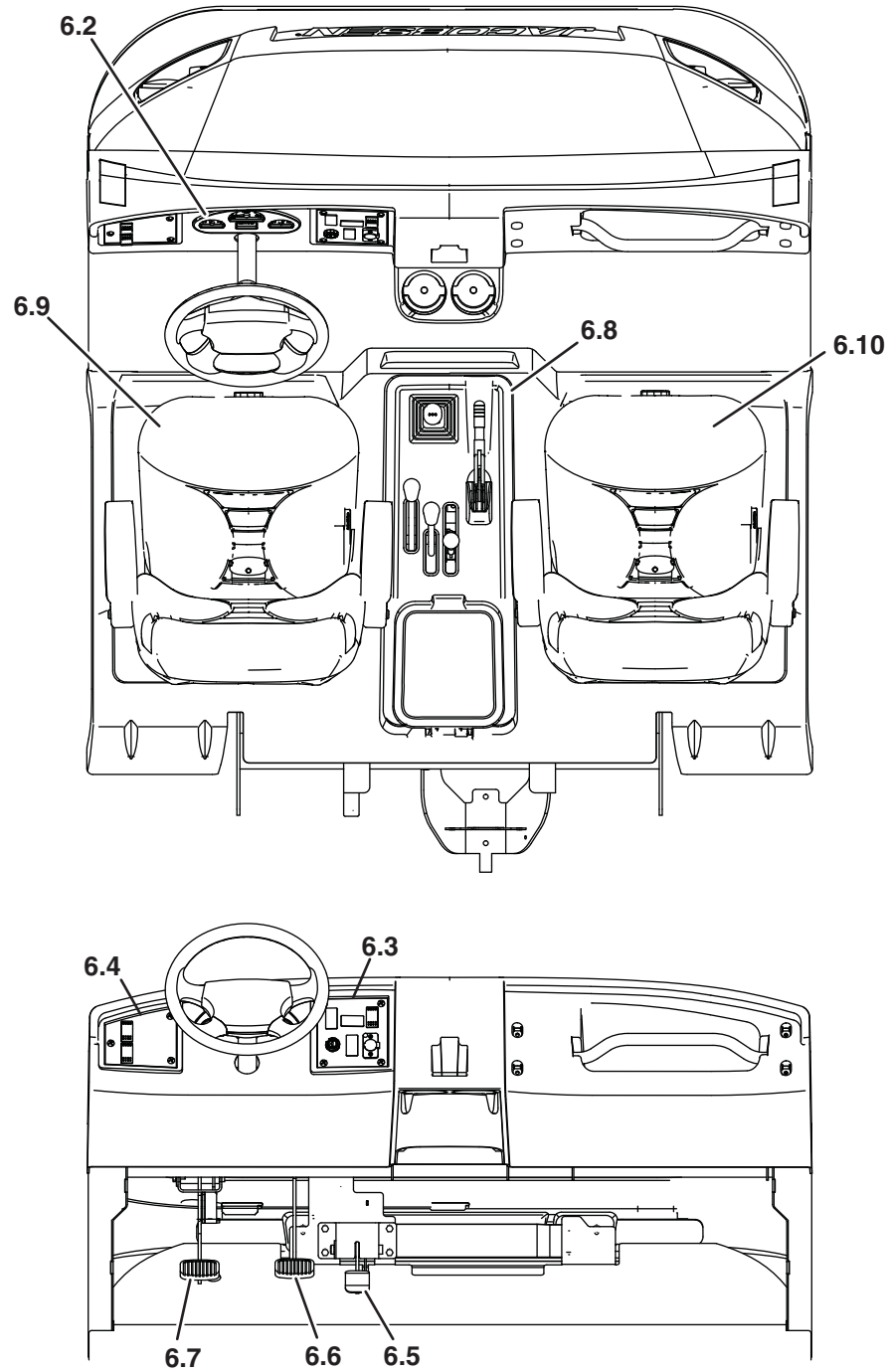
GAS FUSE PANEL



F1: RIGHT BRAKE JUMPER 5A
 F2: LEFT BRAKE JUMPER 5A
 F3: LIGHTS 15A
 F4: START INTERLOCK 5A
 F5: ACCESSORY 12V PLUG 10A
 F6: DIFFERENTIAL LOCK 10A
 F7: KEY SWITCHED PWR 10A
 F8: 10A EXTRA FUSE TAP
 F9: RAC2 35A FUSE
 F10: RAC3 35A FUSE
 F11: RB1 50A FUSE
 F12: RB2 50A FUSE
 F15: KEY POWER 5A
 F16: FAN POWER 30A
 F17: ECU POWER 30A
 F18: FUEL PUMP 10A
 F19: DIFF. LOCK 10A
 D1: START DIODE 3A
 K1: RIGHT TURN RELAY
 K2: LEFT TURN RELAY
 K3: LIGHT POWER RELAY
 K4: START INTERLOCK RELAY
 K5: ACCESSORY 2 RELAY
 K6: ACCESSORY 3 RELAY
 K7: ACCESSORY 1 RELAY
 K9: FLASHER RELAY
 K10: FUEL RELAY
 K11: ETV RELAY
 K12: OEM POWER RELAY
 K13: RADIATOR FAN RELAY
 K14: START RELAY
 K15: ECU POWER RELAY
 RB1: REMOTE BATTERY POST 1
 RB2: REMOTE BATTERY POST 2
 RAC2: REMOTE ACCESSORY POST 2
 RAC3: REMOTE ACCESSORY POST 3

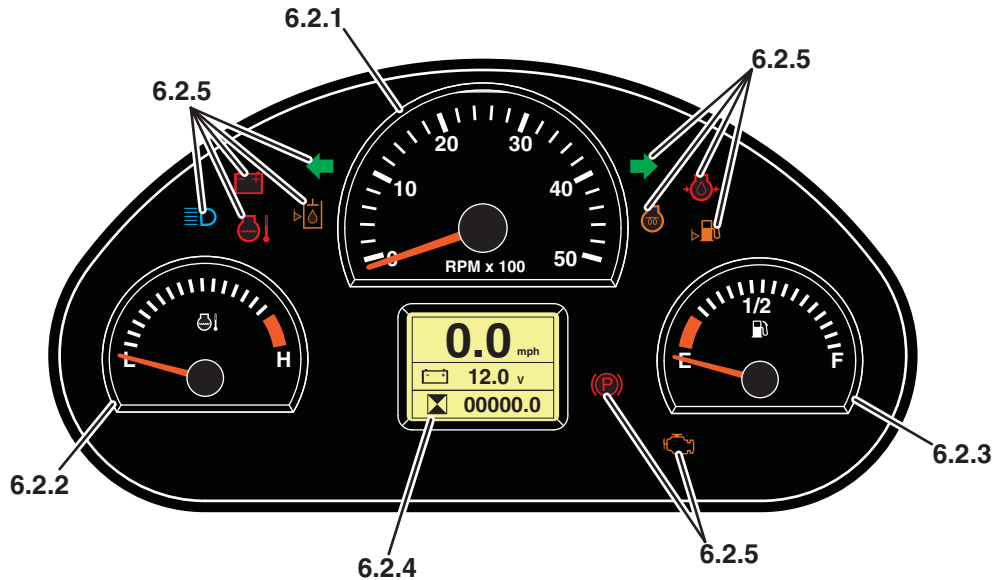
4322027

6.1 OPERATOR COMPARTMENT



6 CONTROLS

6.2 GAUGE PANEL



6.2.1 TACHOMETER

The tachometer shows the engine speed.

6.2.2 ENGINE TEMPERATURE GAUGE

The engine temperature gauge shows the temperature of the engine coolant. When the coolant temperature is more than 230° F (110° C), the temperature warning light will illuminate and an alarm behind the dashboard will activate.

6.2.3 FUEL GAUGE

The fuel gauge shows the level of fuel in the tank. Do not allow the tank to become empty while you operate the vehicle.

6.2.4 LCD SCREEN

The LCD screen shows the vehicle speed, the system voltage and the hour meter.

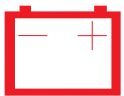
The speed of the vehicle is shown at the top of the LCD screen. The speed is shown in mph or kph.

The system voltage is shown in the center of the LCD screen. Normal system voltage is between 12 and 15 volts. A system voltage less than 12 volts indicates that the alternator does not charge the battery correctly.

The hour meter is shown at the bottom of the LCD screen. When the ignition switch is in the ON position the hour meter is active.

6.2.5 INDICATOR LIGHTS

The instrument cluster has eleven indicator lights to alert the operator to vehicle conditions.



The red battery light indicates that the battery voltage was less than 11.5 volts for one minute. Return the vehicle to the service area. Inspect the battery and the alternator.



The amber hydraulic-level light indicates a low-fluid level in the hydraulic tank. Stop the vehicle immediately. Visually inspect the vehicle for indications of leaks around connections, hoses and hydraulic components. Return the vehicle to the service area for maintenance. The light will only function when the high-low hydraulic system option is installed.

**WARNING**

The hydraulic fluid is under pressure. To prevent injury, do not use your hands to find hydraulic leaks, use paper or cardboard. Allow the hydraulic fluid to become cool before you check the fluid level or you add fluid to the hydraulic tank.



The Red coolant-temperature light indicates that coolant temperature is more than 230° F (110° C). Stop unit immediately. Remove the tree leaves, grass clippings and other objects that can decrease air flow through the radiator screen, oil cooler and the radiator. If the engine continues to run hot, return vehicle to the service area.

**WARNING**

The engine coolant is under pressure. To prevent injury, do not remove the radiator cap on a hot radiator.



The red engine oil-pressure light indicates engine oil pressure is less than 7 psi (0.48 BAR). Immediately stop the engine and inspect oil level in the engine. If the oil-pressure light stays illuminated with the oil at the correct level, stop the engine and tow the vehicle to the service area. NEVER operate the engine with the oil-pressure light illuminated or Engine damage can occur.



The red parking brake light indicates that the parking brake is engaged. Do not press the accelerator pedal with the light illuminated.



The amber glow plug light indicates that the glow plugs are active. Do not turn the ignition switch to the start position until the glow plug light turns off.



The amber check engine light indicates that the gasoline engine controller sensed a problem. Connect the CAN diagnostic tool to identify the problem. The check engine light does not function with the Diesel engine option.



The amber fuel light indicates that the fuel tank is almost empty. Return the vehicle to the service area and fill the tank before you continue to operate the vehicle.



The high beam indicator light does not function with this vehicle.



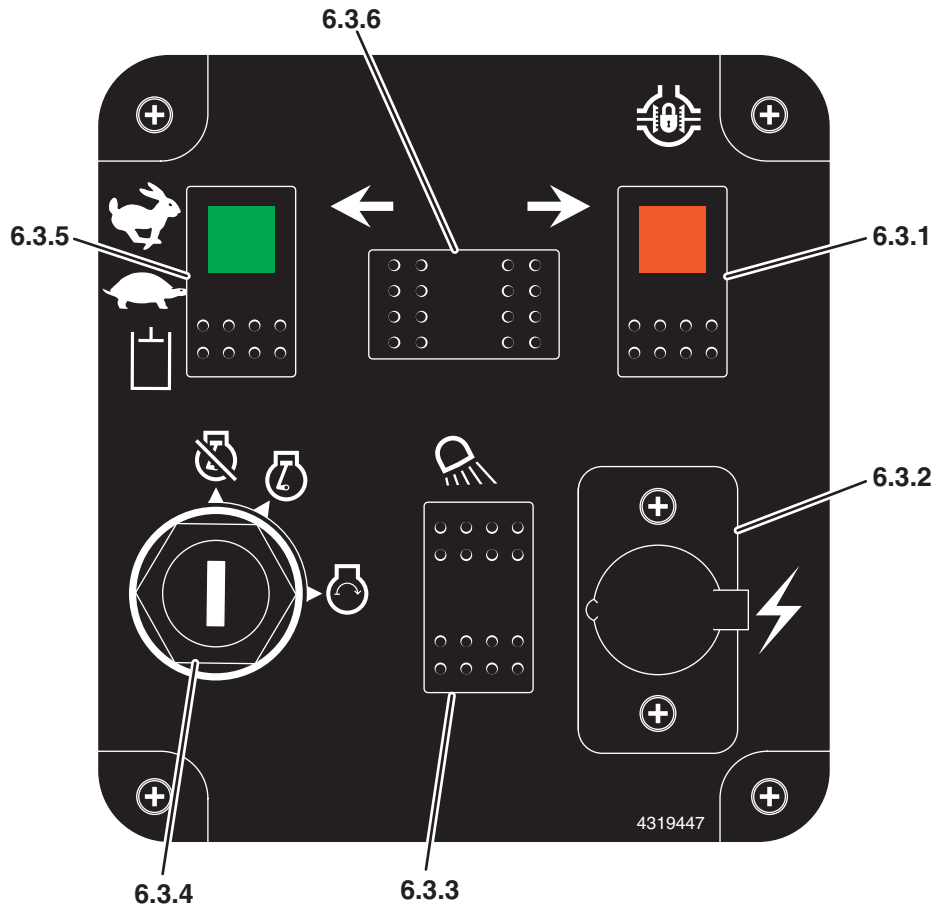
When the optional turn signal kit is installed and the turn signal switch is in the left-turn position, the left-side turn signal light will flash.



When the optional turn signal kit is installed and the turn signal switch is in the right-turn position, the right-side turn signal light will flash.

6 CONTROLS

6.3 RIGHT-SIDE CONTROL PANEL



6.3.1 DIFFERENTIAL LOCK SWITCH

Press and hold the bottom of the switch to engage the differential lock in the rear axle. Do not engage the differential lock with the vehicle moving.

When the differential lock is engaged, the switch light will turn on and both rear wheels will rotate at the same speed. When the vehicle is driven in the forward or reverse direction, the differential lock will improve traction. When the vehicle is turned to the left or right direction, the differential lock can cause the outside-rear wheel to mark the turf.

Release the switch to disengage the differential lock.

6.3.2 12 VOLT ACCESSORY OUTLET

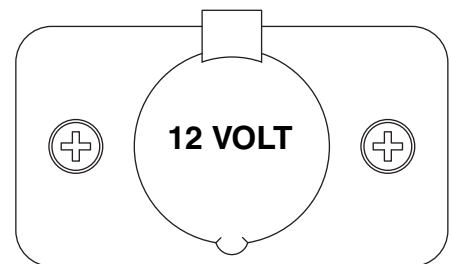
The 12 Volt accessory outlet supplies power to 12 Volt accessories. Only use the 12 Volt outlet with the engine started to prevent a drained battery.



CAUTION

The 12 Volt accessory outlet is protected by a 10-Amp fuse. Do not use attachments with a power rating greater than 120 watts.

To prevent the risk of burns or fire, do not replace the 10-Amp fuse with a fuse with a greater amperage rating.



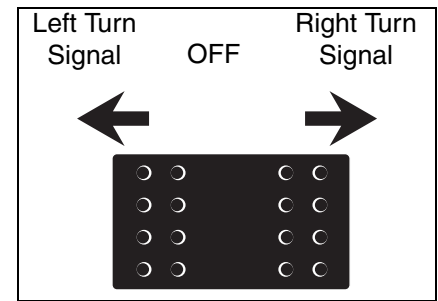
6.3.3 TURN SIGNAL SWITCH

The turn signal switch is part of the optional turn signal accessory.

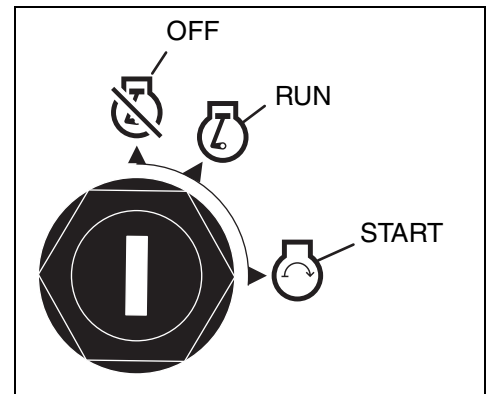
Press the left side of the switch to activate the left turn signal.

Press the right side of the switch to activate the right turn signal.

Return the switch to the center position to turn off the turn signals.

**6.3.4 IGNITION SWITCH**

The ignition switch has three positions, OFF, RUN and START.

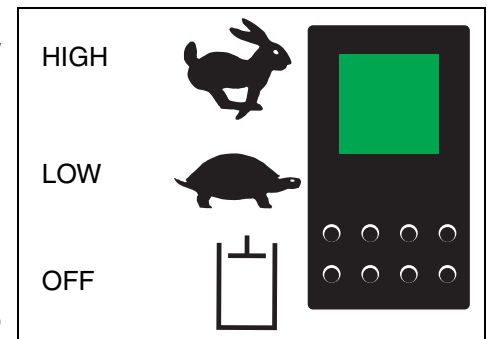
**6.3.5 HIGH-LOW HYDRAULICS SWITCH**

The high-low hydraulic system switch is part of the high-low hydraulic system option. The switch has three positions, OFF, HIGH and LOW. The high-low switch must be in the OFF position to start the engine.

Press the top of the switch to the HIGH position to send the full flow of fluid from the pump to the hydraulic accessory connections.

Put the switch in the LOW (center) position to send a decreased flow of fluid from the pump to the hydraulic accessory connections.

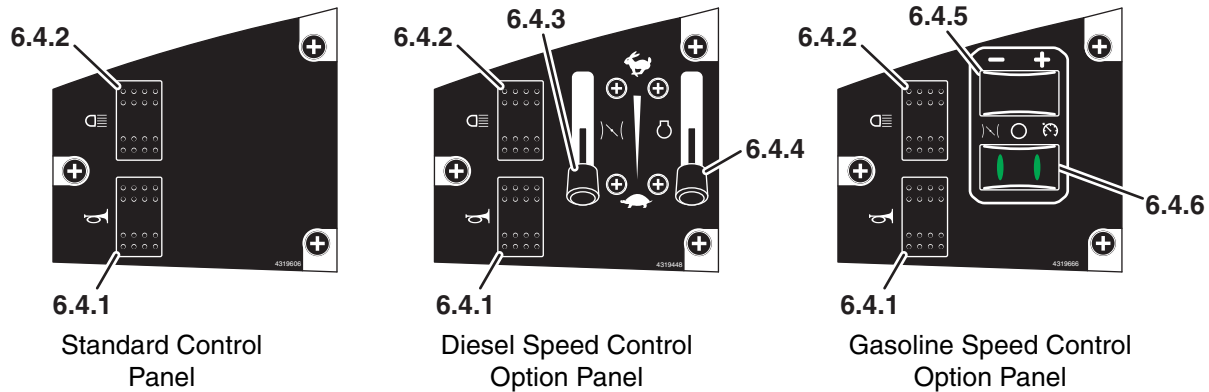
Press the bottom of the switch to the OFF position to stop the flow of fluid to the hydraulic accessory connections

**6.3.6 WORK LIGHT SWITCH**

The work light switch is part of the optional work light accessory.

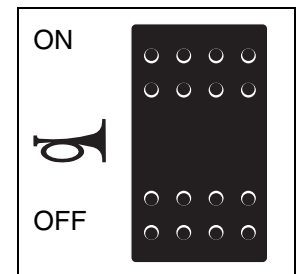
6 CONTROLS

6.4 LEFT-SIDE CONTROL PANEL



6.4.1 HORN SWITCH

Press the top of the switch to use the horn.

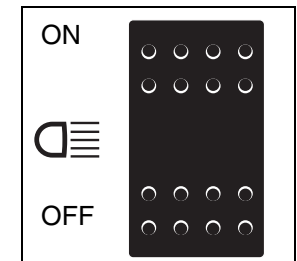


6.4.2 LIGHT SWITCH

The light switch controls the operation of the headlights and tail lights.

Press the top of the switch to turn on the headlights and the tail lights.

Press the bottom of the switch to the turn off the headlights and the tail lights.

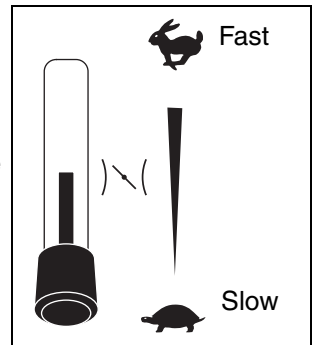


6.4.3 HAND THROTTLE

The hand throttle is part of the optional Diesel speed control accessory.

The hand throttle sets the engine speed for hydraulic accessories. When you move the hand throttle, the accelerator pedal will move.

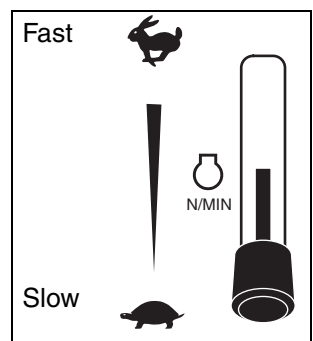
Only use the hand throttle for the operation of remote hydraulic accessories. Do not use the hand throttle to drive the vehicle.

**6.4.4 GOVERNOR CONTROL**

The governor control is part of the optional Diesel speed control accessory.

The governor control decreases the engine governor RPM limits for the operation of the hand and foot throttle.

Push the governor control completely to the top for the maximum engine speed. Pull the lever down to decrease the maximum engine RPM.

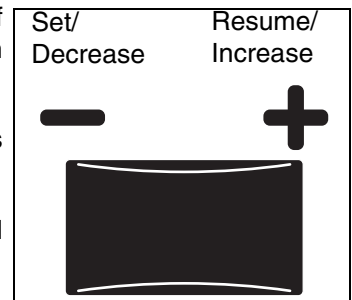
**6.4.5 SET/RESUME SWITCH**

The set/resume switch is part of the gasoline speed control accessory. The operation of the switch depends on the position of the stationary/cruise switch. **See 7.8** for operation of the speed control system.

When the stationary/cruise switch is in the center position, the set/resume switch does not function.

When the stationary/cruise switch is in the cruise control position, the cruise control speed is set, increased or decreased with the set/resume switch.

When the stationary/cruise switch is in the stationary position, the engine speed is set, increased or decreased with the set/resume switch.

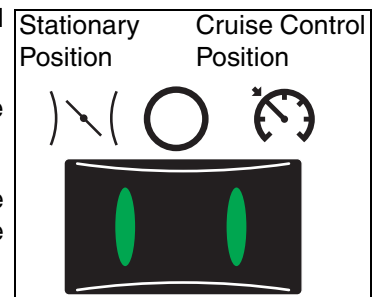
**6.4.6 STATIONARY/CRUISE SWITCH**

The stationary/cruise control switch is part of the optional gasoline speed control accessory. **See 7.8** for operation of the speed control system.

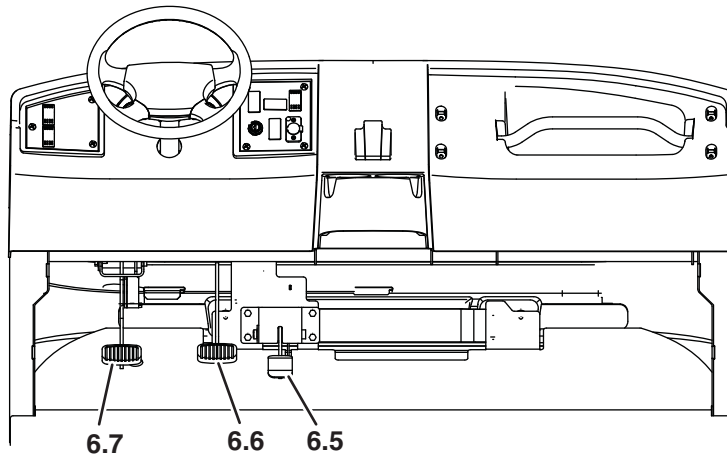
Put the switch in the center position for normal operation of the vehicle. The engine speed is controlled by the accelerator pedal.

Press the right side of the switch to the cruise control position to use the vehicle cruise control. When the cruise control mode is active, the green light on the right side of the switch will illuminate.

Press the left side of the switch to the stationary position to set the engine speed for use with hand held hydraulic accessories. When the stationary mode is active, the green light on the left side of the switch will illuminate.



6 CONTROLS



6.5 ACCELERATOR PEDAL

Push the accelerator pedal down to increase the speed of the vehicle. Release the pedal to decrease the speed of the vehicle.

The Diesel engine option controls the engine speed with a cable connected to the pedal and the engine throttle control. When the hand throttle is moved, the accelerator pedal position will move.

The Gasoline engine option pedal controls the engine speed electronically.

6.6 BRAKE PEDAL

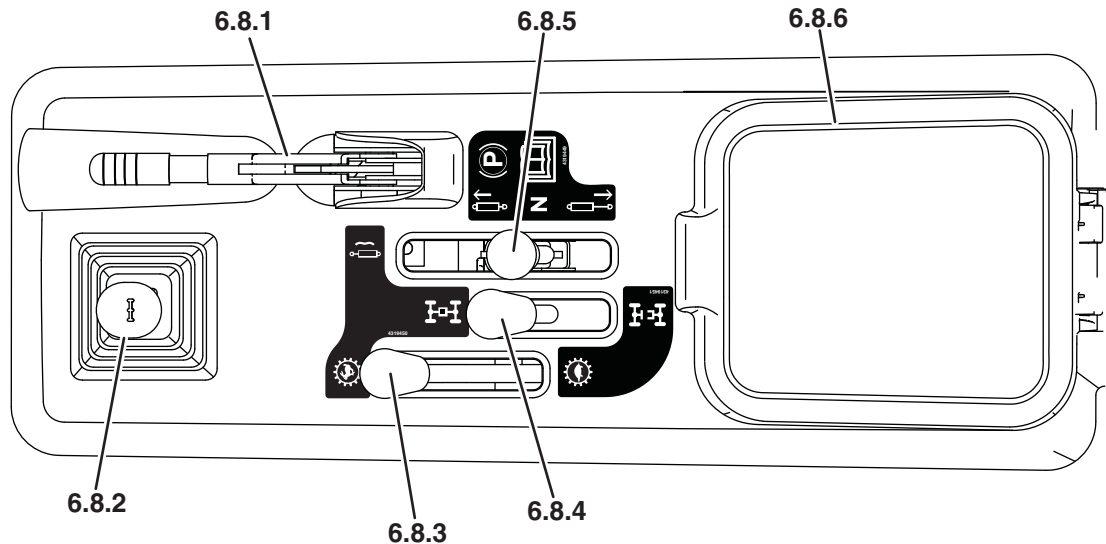
Press the brake pedal to decrease the vehicle speed or stop the vehicle.

If the brakes do not stop the vehicle, the brake system must be adjusted or repaired.

6.7 CLUTCH PEDAL

Press the clutch pedal to disengage the power output from the engine to the transmission. Completely press the clutch pedal to change the transmission gears. Do not change the transmission gears without the clutch pedal pressed.

The clutch pedal has an interlock switch that prevents the engine to start unless the clutch pedal is pressed.

6.8 CENTER CONSOLE**6.8.1 PARKING BRAKE**

Lift the parking brake lever to the vertical position to engage the parking brake. When you use the parking brake, press the clutch pedal, put the transmission in 1st gear and stop the engine.

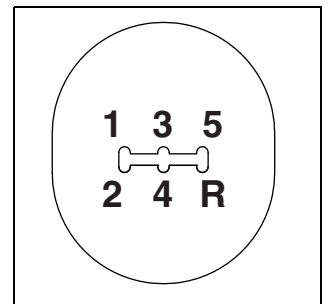
When the parking brake is engaged, the parking brake light on the instrument panel will illuminate. Do not drive the vehicle with the parking brake engaged.

To disengage the parking brake, lower the parking brake lever to the disengaged position.

6.8.2 GEAR SELECTOR

The gear selector is to engage the transmission gears. The Gear selector knob has the gear pattern marked in the top surface.

Completely press the clutch pedal and change the transmission to 1st gear. Slowly release the clutch pedal while you press the accelerator pedal. When you drive forward, always start in 1st gear and change to higher gears as the vehicle speed increases.



6 CONTROLS

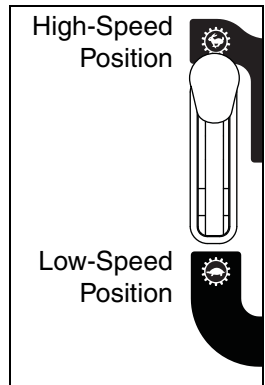
6.8.3 REAR AXLE SPEED LEVER

The rear axle speed lever changes the rear axle to the low-speed or high-speed range. Only change the rear axle speed when the vehicle is stopped.

Move the lever toward the front of the vehicle to the high-speed position for the high-speed range. The high-speed range is 0 to 20.45 mph (0 to 32.91 kph). **See Section 7.7.**

Move the lever toward the back of the vehicle to the low-speed position for the low-speed range. The low-speed range is 0 to 6.45 mph (0 to 10.39 kph). **See Section 7.7.**

If the lever does not move easily, do not force the lever or cable damage can occur. The selector gears are not aligned in the rear axle. Drive the vehicle 1 foot (30 cm) in the forward or reverse direction until the lever moves easily to the needed position.



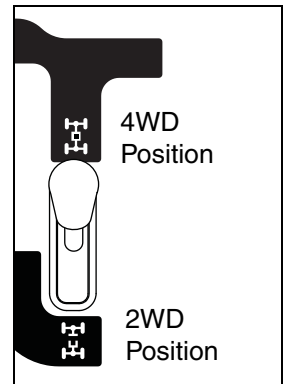
6.8.4 2WD/4WD LEVER

The 2WD/4WD lever engages or disengages the output to the front axle. Only change the lever position when the vehicle is stopped. The 2WD/4WD lever is only on a vehicle with the 4WD option installed.

Move the lever to the 4WD position to engage the 4WD output to the front axle.

Move the lever to the 2WD position to disengage the 4WD output to the front axle.

If the lever does not move easily, do not force the lever or cable damage can occur. The selector gears are not aligned in the rear axle. Drive the vehicle 1 foot (30 cm) in the forward or reverse direction until the lever moves easily to the needed position.



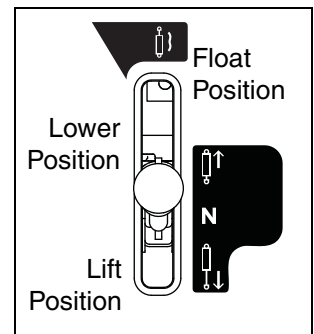
6.8.5 LIFT CONTROL LEVER

The lift control lever lifts and lowers the vehicle bed.

Move the lever to the lift position to extend the bed cylinder and lift the bed. When the bed is lifted, release the lever. When the vehicle is operated for a long period of time, more force can be needed to move the lever to the lift position.

Move the lever to the lower position to retract the bed cylinder and lower the bed. When the bed is lowered, release the lever.

Move the lever to the float position to let the bed cylinder extend or retract as needed for vehicle operation.



6.8.6 STORAGE COMPARTMENT

The storage compartment is provided to hold small tools, work gloves or other equipment.

6.9 SEAT CONTROLS

The Truckster XD has three seat options.

- Standard driver seat and standard passenger seat.
- Premium driver seat and standard passenger seat.
- Premium driver seat and premium passenger seat.

6.9.1 PREMIUM SEAT

The premium seat has two controls to adjust for the operator.



WARNING

To prevent injuries, **DO NOT** adjust the seat while you operate the vehicle. Only adjust the seat with the vehicle stopped and parking brake engaged.

Lift the seat position lever and move the seat backward or forward. Release the lever to set the adjustment. Make sure the seat is locked in position before you operate the vehicle.

Rotate the weight control knob to the correct position for the weight of the operator.

Do not operate the vehicle with the armrests in the lifted position.



6.9.2 STANDARD SEAT

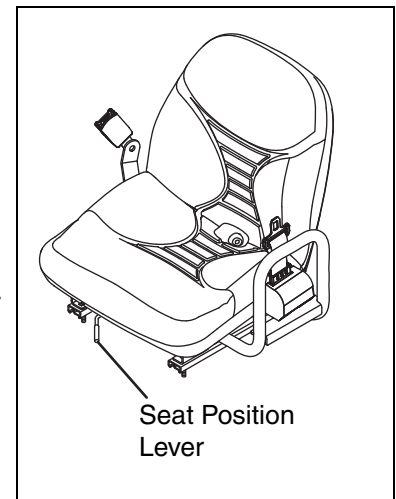
The standard seat has one control to adjust for the operator.



WARNING

To prevent injuries, **DO NOT** adjust the seat while you operate the vehicle. Only adjust the seat with the vehicle stopped and parking brake engaged.

Lift the seat position lever and move the seat backward or forward. Release the lever to set the adjustment. Make sure the seat is locked in position before you operate the vehicle.



7 OPERATION

7.1 DAILY INSPECTION



CAUTION

The inspection must be done each day when the engine is turned off and all fluids are cold. Engage the parking brake, stop the engine and remove the ignition key.

Do a visual inspection of the vehicle. Look for indications of wear or loose hardware. Look for any components that are not included on the vehicle or damaged components. Check for fuel and oil leaks to make sure the connections are tight. Make sure that all hoses and tubes are in good condition.

Check the fuel supply, radiator coolant level, crankcase oil level and air cleaner indicator. When the engine is cold, all fluids must be at the full level mark.

Check the radiator and oil cooler fins for dirt or grass. Clean with compressed air as required before you operate the vehicle.

Check all tires for the correct pressure.

Test the interlock system.

7.2 INTERLOCK SYSTEM

The Interlock System prevents the engine to start unless the clutch pedal is completely pressed. If the optional high-low hydraulic system is installed, the high-low switch must be in the OFF position for the engine to start.



WARNING

Do not operate the equipment with the Interlock System disconnected or the system does not operate correctly. Do not disconnect or prevent the operation of any switch.

Do each of these tests to make sure the Interlock System operates correctly. If any of the tests fail, stop the test and have the system inspected and repaired as shown below:

- The engine does not start during test 1.
- The engine does start during test 2 or test 3.

Refer to the chart below for each test and follow the check (✓) marks across the chart. Turn off the engine between each test.

TEST 1: The test shows the normal engine start procedure. The operator is in the seat, parking brake is engaged, the optional high-low switch must be in the OFF position and the clutch pedal is completely pressed. The engine will start.

TEST 2: The engine must not start if the clutch pedal is not pressed.

TEST 3: The engine must not start if the optional high-low switch is in the LOW position or the HIGH position.

Test	Operator Seated		Clutch Pedal completely pressed		High-Low switch in the OFF position		Engine Starts	
	Yes	No	Yes	No	Yes	No	Yes	No
1	✓		✓		✓		✓	
2	✓			✓	✓			✓
3	✓		✓			✓		✓

7.3 OPERATING PROCEDURE**WARNING**

This vehicle has a Roll Over Protection Structure (ROPS). Always wear the seat belt.

If the vehicle is over turning, hold the steering wheel. Do not try to move off the vehicle or leave the seat.

**CAUTION**

To prevent injury, always wear safety glasses, leather work shoes or boots, a hard hat and ear protection.

1. Always start the engine with the operator in the seat, never while next to the vehicle. Never start the engine with persons near the vehicle.
2. Never operate the engine without enough ventilation or in an enclosed area. The carbon monoxide in the exhaust fumes can increase to dangerous levels.
3. Keep your hands and feet away from moving parts and the accessories. When possible, do not adjust the vehicle with the engine started.
4. Do not operate the vehicle with loose or damaged components. All components must be correctly fastened to the vehicle. Operate when the grass is dry to get the best results.
5. First operate accessories in a test area so that you completely understand the operation of the vehicle and controls.
6. Inspect the area to find the safest procedure for the vehicle. Check the type of terrain and the conditions of the surface. Each condition needs the correct adjustments and precautions.
7. Do not allow persons near the vehicle while in operation. The owner and operator are responsible for injuries caused to persons near the vehicle and any damage to their property.

**CAUTION**

Remove all objects you can find before you operate the vehicle. Carefully enter a new area and always operate at speeds that allow you to control the vehicle safely.

8. Be careful when you operate near to gravel areas (roads, parking areas, cart paths). Stones released from the equipment can cause injuries to persons and cause damage to the equipment.
9. Before you move across or operate on paths or roads, travel at decreased speed. Look for traffic.
10. When you hit an object or vehicle starts to cause vibration that is not normal, inspect the vehicle for damage and make repairs.

**WARNING**

Before you clean, adjust or repair this equipment, engage the parking brake, stop the engine and remove the ignition key.

11. Travel at decreased speed and be careful when you operate on the slopes or near sharp edges.
12. When you drive in the reverse direction, look behind you and down to make sure the path is clear. Use caution when you go near corners, trees or other objects that can prevent a clear view.
13. Never use your hands to clean the accessories. Parts of the accessory can have sharp edges and can cause injuries.
14. Use caution when the vehicle pulls a load. Only use approved hitch points and pull the loads you can safely control. Do not make sharp turns. Use caution when you drive in the reverse direction. When recommended in the accessory manual, use the wheel weights or counterweights.

7 OPERATION

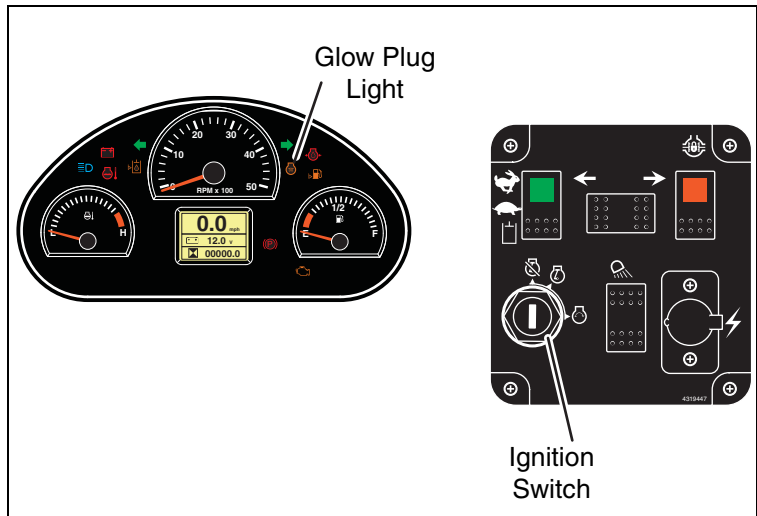
7.4 STARTING THE ENGINE

Start the engine with the operator in the seat, the clutch pedal pressed and the parking brake engaged. Remove your foot from the accelerator pedal. Always wear the seat belt.

Turn the ignition switch to the RUN position. The warning lights on the instrument panel will illuminate for a few seconds. Make sure that the warning lights are illuminated.

Diesel Engine Option: When the glow plug light turns off, immediately turn the ignition switch to the START position. Release the key when the engine starts. Allow 30 seconds between start tries to allow the starter motor to become cool.

Gasoline Engine Option: Turn the ignition switch to the START position. Release the key when the engine starts. Allow 30 seconds between start tries to allow the starter motor to become cool.



NOTICE

Do not hold the ignition switch in the START position for more than 10 seconds.

When the engine starts, all of the warning lights will turn off. Allow the engine to become warm before you operate the vehicle.

7.5 TO STOP THE ENGINE

To stop and park the vehicle in normal conditions:

1. Drive the vehicle to a flat and level area to park the vehicle.
2. Remove your foot from the accelerator pedal, press the clutch pedal and use the brake pedal to stop the vehicle.
3. Engage the parking brake. Put the transmission in first gear.
4. Turn the ignition switch to the OFF position, release the clutch pedal and remove the key before you leave the operator seat.

If an emergency occurs and you must park the vehicle in the area of operation, follow the guidelines set by the grounds manager. If the vehicle is parked on a slope, chock or block the wheels.

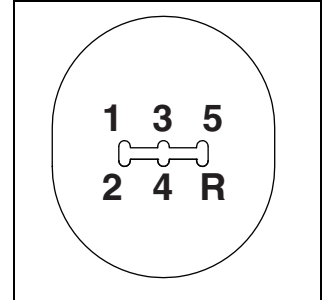
7.6 TO DRIVE THE VEHICLE

Read and follow all safety instructions contained in this manual when you drive the vehicle. When you operate in the reverse direction, look behind you to make sure you have a clear path.

IMPORTANT: Equipment must meet the current regulations to be driven on the public roads.

To drive the vehicle:

1. If the high/low hydraulic system is installed, put the high/low hydraulic system switch in the OFF position to stop the flow of fluid to the hydraulic accessory connectors.
2. Completely lower the vehicle bed before you drive the vehicle.
3. Press the brake pedal and disengage the parking brake.
4. Fully depress the clutch pedal.
5. The gear selector knob has the gear pattern marked in the top surface. Select 1st or Reverse gear, slowly release the clutch pedal while you press the accelerator pedal. When you drive in the forward direction, always start in 1st gear and shift into the higher gears as the vehicle speed increases.



NOTICE

The vehicle will start to move before the clutch pedal is completely released. When the vehicle starts to move, press the accelerator pedal more and release the clutch pedal. To prevent damage to the clutch, do not drive the vehicle with the clutch pedal not completely released.

Do not drive more than 5 to 6 mph (8 to 10 kph) or drive long distances in the reverse direction.

6. When the vehicle has enough speed, release the accelerator pedal while you press the clutch pedal. Change the transmission to the next higher gear and release the clutch pedal while you press the accelerator pedal. When the clutch pedal is pressed, do not press the accelerator pedal.
7. Continue to change the gears until the vehicle moves at the correct speed. **See Section 7.7** for the correct gear and engine speed to get the necessary vehicle speed.
8. When you decrease the vehicle speed, you can change the transmission to a lower gear. Release the accelerator pedal while you press the clutch pedal and change the transmission to the next-lower gear. If the gear selector does not easily change to a lower gear, continue to decrease the vehicle speed before you change gears. **DO NOT** force the gear selector into a lower gear. When the vehicle speed is too high and you change to a lower gear, damage to the transmission can occur.

7 OPERATION

7.7 GEAR/ENGINE SPEED

Use the chart below to select the correct gear and engine speed to get the correct vehicle speed. The values shown are approximate and can change because of changes to the tire pressure or vehicle loads.

Engine Speed	Vehicle Speed in mph (kph)									
	Low-Speed Rear Axle Range					High-Speed Rear Axle Range				
	1st Gear	2nd Gear	3rd Gear	4th Gear	5th Gear	1st Gear	2nd Gear	3rd Gear	4th Gear	5th Gear
1500	0.65 (1.0)	1.22 (2.0)	1.67 (2.7)	2.38 (3.8)	2.99 (4.8)	2.09 (3.36)	3.91 (6.30)	5.35 (8.62)	7.62 (12.26)	9.58 (15.42)
1600	0.70 (1.1)	1.30 (2.1)	1.78 (2.9)	2.54 (4.1)	3.19 (5.1)	2.23 (3.58)	4.17 (6.72)	5.71 (9.19)	8.13 (13.08)	10.22 (16.45)
1700	0.74 (1.2)	1.39 (2.2)	1.90 (3.1)	2.70 (4.3)	3.39 (5.5)	2.36 (3.81)	4.44 (7.14)	6.07 (9.77)	8.64 (13.90)	10.86 (17.48)
1800	0.78 (1.3)	1.47 (2.4)	2.01 (3.2)	2.86 (4.6)	3.59 (5.8)	2.50 (4.03)	4.70 (7.56)	6.43 (10.34)	9.14 (14.72)	11.50 (18.51)
1900	0.83 (1.3)	1.55 (2.5)	2.12 (3.4)	3.01 (4.9)	3.79 (6.1)	2.64 (4.25)	4.96 (7.98)	6.78 (10.92)	9.65 (15.53)	12.14 (19.54)
2000	0.87 (1.4)	1.63 (2.6)	2.23 (3.6)	3.17 (5.1)	3.99 (6.4)	2.78 (4.48)	5.22 (8.40)	7.14 (11.49)	10.16 (16.35)	12.78 (20.57)
2100	0.91 (1.5)	1.71 (2.8)	2.34 (3.8)	3.33 (5.4)	4.19 (6.7)	2.92 (4.70)	5.48 (8.82)	7.50 (12.06)	10.67 (17.17)	13.42 (21.59)
2200	0.96 (1.5)	1.79 (2.9)	2.45 (3.9)	3.49 (5.6)	4.39 (7.1)	3.06 (4.92)	5.74 (9.24)	7.85 (12.64)	11.18 (17.99)	14.06 (22.62)
2300	1.00 (1.6)	1.87 (3.0)	2.56 (4.1)	3.65 (5.9)	4.59 (7.4)	3.20 (5.15)	6.00 (9.66)	8.21 (13.21)	11.68 (18.80)	14.70 (23.65)
2400	1.04 (1.7)	1.96 (3.1)	2.68 (4.3)	3.81 (6.1)	4.79 (7.7)	3.34 (5.37)	6.26 (10.08)	8.57 (13.79)	12.19 (19.62)	15.34 (24.68)
2500	1.09 (1.7)	2.04 (3.3)	2.79 (4.5)	3.97 (6.4)	4.99 (8.0)	3.48 (5.60)	6.52 (10.50)	8.92 (14.36)	12.70 (20.44)	15.97 (25.71)
2600	1.13 (1.8)	2.12 (3.4)	2.90 (4.7)	4.12 (6.6)	5.19 (8.4)	3.62 (5.82)	6.78 (10.92)	9.28 (14.94)	13.21 (21.26)	16.61 (26.74)
2700	1.17 (1.9)	2.20 (3.5)	3.01 (4.8)	4.28 (6.9)	5.39 (8.7)	3.76 (6.04)	7.04 (11.34)	9.64 (15.51)	13.72 (22.07)	17.25 (27.76)
2800	1.22 (2.0)	2.28 (3.7)	3.12 (5.0)	4.44 (7.1)	5.59 (9.0)	3.89 (6.27)	7.31 (11.76)	10.00 (16.09)	14.22 (22.89)	17.89 (28.79)
2900	1.26 (2.0)	2.36 (3.8)	3.23 (5.2)	4.60 (7.4)	5.79 (9.3)	4.03 (6.49)	7.57 (12.18)	10.35 (16.66)	14.73 (23.71)	18.53 (29.82)
3000	1.30 (2.1)	2.44 (3.9)	3.34 (5.4)	4.76 (7.7)	5.99 (9.6)	4.17 (6.72)	7.83 (12.60)	10.71 (17.23)	15.24 (24.53)	19.17 (30.85)
3100	1.35 (2.2)	2.53 (4.1)	3.46 (5.6)	4.92 (7.9)	6.19 (10.0)	4.31 (6.94)	8.09 (13.02)	11.07 (17.81)	15.75 (25.34)	19.81 (31.88)
3200	1.39 (2.2)	2.61 (4.2)	3.57 (5.7)	5.08 (8.2)	6.39 (10.3)	4.45 (7.16)	8.35 (13.44)	11.42 (18.38)	16.26 (26.16)	20.45 (32.91)
3300 (Gas only)	1.43 (2.3)	2.69 (4.3)	3.68 (5.9)	5.24 (8.4)	6.59 (10.6)	4.59 (7.39)	8.61 (13.86)	11.78 (18.96)	16.76 (26.98)	21.09 (33.93)
3400 (Gas only)	1.48 (2.4)	2.77 (4.5)	3.79 (6.1)	5.39 (8.7)	6.79 (10.9)	4.73 (7.61)	8.87 (14.28)	12.14 (19.53)	17.27 (27.79)	21.72 (34.96)
3500 (Gas only)	1.52 (2.4)	2.85 (4.6)	3.90 (6.3)	5.55 (8.9)	6.98 (11.2)	4.87 (7.83)	9.13 (14.70)	12.49 (20.11)	17.78 (28.61)	22.36 (35.99)

7.8 GAS ENGINE SPEED CONTROL OPTION

The gasoline engine speed control option has 3-modes of operation.

Normal Operation Mode:

Put the stationary/cruise switch in the center position for normal operation. The engine speed is controlled with the accelerator pedal.

Cruise Control Mode:

Press the right side of the switch to the cruise control position to use the vehicle cruise control.

When the vehicle at the desired speed, press and hold the left side of the set/resume switch for 1/2 second. The light on the right side of the stationary/cruise switch will illuminate and the vehicle will continue to drive at the current speed. To cancel the cruise control, operate the parking brake, press the brake pedal, press the clutch pedal or move the stationary/cruise switch to the center position.

When the cruise control is active, the vehicle speed is increased or decreased by 0.5 mph (0.8 kph) with the set/resume switch. Press and release the left side of the switch to decrease the vehicle speed. Press and release the right side of the switch to increase the vehicle speed.

If the cruise control was canceled by the parking brake, brake pedal or clutch pedal, press and hold the right side of the switch for 1/2 second to resume the set cruise control speed.

Stationary Mode:

Press the left side of the switch to the stationary position to set the engine speed for use with hydraulic accessories. The parking brake must be engaged and the transmission in Neutral for the stationary mode to operate. Do not drive the vehicle with the switch in the stationary position.

Press the accelerator pedal until the needed RPM is shown on the tachometer. Hold the left side of the set/resume switch for 1/2 second. The light on the left side of the stationary/cruise switch will illuminate and the engine will continue to operate at the current speed. To cancel the stationary mode, operate the parking brake, press the brake pedal, press the clutch pedal or the move the stationary/cruise switch to the center position. The stationary mode will also cancel if vehicle movement is detected.

With the stationary mode active, the engine speed can be increased or decreased by 100 RPM with the set/resume switch. Press and release the left side of the switch to decrease the engine speed. Press and release the right side of the switch to increase the engine speed.

If the stationary mode was canceled by the parking brake, brake pedal, clutch pedal or vehicle movement, press and hold the right side of the switch for 1/2 second to resume the set cruise control speed.

Speed Control Faults:

A fault sensed by the controller are shown by the light on the right side of the stationary/cruise switch. The fault(s) will disable the cruise control and stationary modes until the problem is corrected.

Pedal sensor fault (The A channel and B channel do not match, voltage level too high or too low or pedal is disconnected.)- The light illuminates for 2-seconds, then flashes one time. The pattern will repeat three times.

Axle speed fault (Sensor is open or short. The input is not correct for 200 ms.)- The light illuminates for 2-seconds, then flashes two times. The pattern will repeat three times.

CAN communication fault - The light illuminates for 2-seconds, then flashes three times. The pattern will repeat three times.

7 OPERATION

7.9 OPERATION ON SLOPES

The vehicle is made to have good traction and to have good balance. Operate the vehicle with caution when you drive on a gradient. If you drive on wet grass, the traction and steering control of the vehicle is decreased.

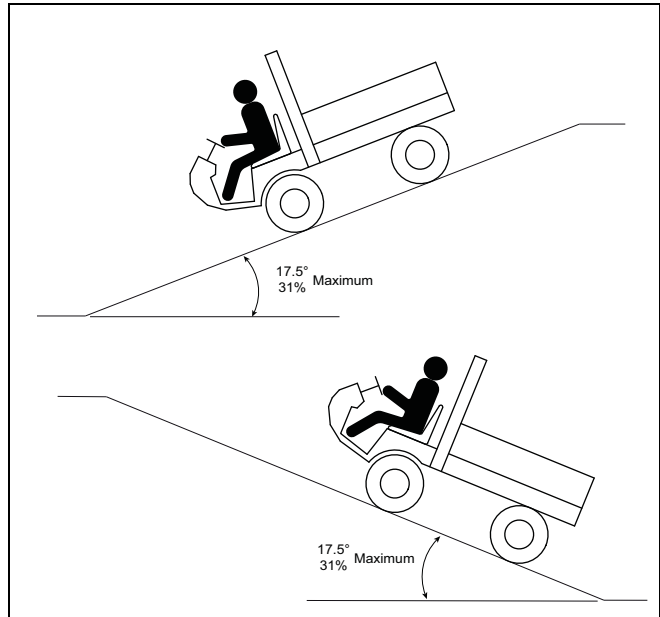


WARNING

To make sure that the vehicle does not turn over, the safest method to drive up and down on the face of slopes (vertically). You must not drive across the face horizontally. Travel at a slow speed and do not make turns that are not necessary. If the vehicle is not operated correctly or turns over, the vehicle can cause injury or death.

Check for hazards on the road that are not visible to the drivers.

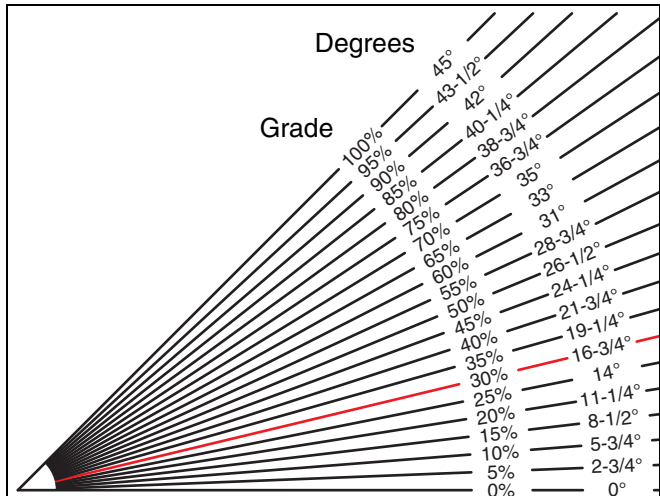
Material that moves inside the vehicle bed can cause an unbalanced load that can tip the vehicle.



CAUTION

Do not operate the vehicle on the slopes greater than 17.5° or a 31% slope.

1. If the vehicle moves to the side or the tires damage the turf, drive the vehicle on a slope with a decreased angle.
2. If the vehicle continues to move to the side and damage the turf, the slope is at an angle that is not safe. Do not continue to drive toward the top of the slope. Carefully drive toward the bottom of the slope.
3. When you drive toward the bottom of a slope with a high angle, lower the accessories to the ground. This procedure makes sure the vehicle does not turn upside down.
4. Correct tire pressure is necessary for maximum traction. **See Section 9.15**



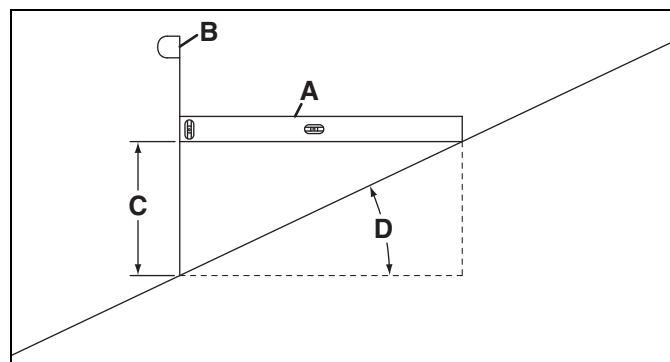
General slope of roadway embankment - 45°
 Steepest Grass Area - 31°
 Slope of the average roof - 19-1/4°
 2nd Class highway maximum grade 4-1/2°
 Toll road or freeway - 1-3/4°

How to calculate a slope:

Tools Required:

Level **(A)**, either 1 yard, or 1 meter long.Tape measure **(B)**.

Use the level **(A)** and position it horizontally to measure the distance **(C)** with tape measure **(B)**. Use the chart to calculate the slope angle or the percentage grade of the slope **(D)**.



Height (C)		Result (D)	
Inches with 1 Yard Level (A)	Millimeters with 1 Meter Level (A)	Slope in Degrees	Slope Grade %
3		4.8	8.3
	100	5.7	10.0
	150	8.5	15
6		9.5	16.7
	200	11.3	20.0
7.5		11.8	20.8
	225	12.7	22.5
9		14	25.0
	275	15.4	27.5
10		15.5	27.8
	300	16.7	30.0
11		17.0	30.6
	325	18.0	32.5
12		18.4	33.3
	350	19.3	35.0
13		19.9	36.1
	375	20.6	37.5
14		21.3	38.9
	400	21.8	40.0
15		22.6	41.7
	425	23.0	42.5
16		24	44.4
	475	25.4	47.5
18		26.6	50.0
20		29.1	55.6
	600	31.0	60.0
25		34.8	69.4
	800	38.7	80.0
30		39.8	83.3
	900	42.0	90
36		45.0	100

7 OPERATION

7.10 HYDRAULIC ACCESSORY OPERATION

The high/low hydraulic system option is required to operate hydraulic accessories. The connectors in the left rear corner of the vehicle is for the operation of hydraulic accessories.

To operate the hand held hydraulic accessories:

1. Park the vehicle, engage the parking brake, stop the engine and remove the key.
2. Remove the red connector cover and connect the pressure hose for the hydraulic accessory.
3. Remove the yellow connector cover and connect to return hose for the hydraulic accessory.
4. Read the hydraulic accessory manual for the correct operation and needed flow rate of the hydraulic accessory. Refer to the chart below for the needed engine speed and high/low switch position.
5. Start the engine and use the accelerator pedal or hand throttle to operate the engine at the needed speed. When you use the hand held hydraulic accessories, do not drive the vehicle.
6. Put the high/low switch in the correct position for the needed flow rate.

To operate the vehicle mounted hydraulic accessories:

1. Park the vehicle, engage the parking brake, stop the engine and remove the key.
2. Remove the red connector cover and connect the pressure hose for the hydraulic accessory.
3. Remove the yellow connector cover and connect to return hose for the hydraulic accessory.
4. Read the hydraulic accessory manual for the correct operation and needed flow rate of the hydraulic accessory. Refer to the chart below for the needed engine speed and high/low switch position.
5. Start the engine and drive the vehicle to the area of operation.
6. Put the high/low switch in the correct position needed for the accessory. When you operate the hydraulic accessory, drive the vehicle at a slow speed and keep other persons away from the vehicle.

Engine Speed	Flow Rate Gallon/Minute (Liter/Minute)		Engine Speed	Flow Rate Gallon/Minute (Liter/Minute)	
	LOW Position	HIGH Position		LOW Position	HIGH Position
1000	2.97 (11.43)	2.97 (11.43)	2300	5.00 (18.93)	6.82 (25.82)
1100	3.26 (12.35)	3.26 (12.35)	2400	5.00 (18.93)	7.12 (26.94)
1200	3.56 (13.47)	3.56 (13.47)	2500	5.00 (18.93)	7.41 (28.06)
1300	3.85 (14.59)	3.85 (14.59)	2600	5.00 (18.93)	7.71 (29.19)
1400	4.15 (15.72)	4.15 (15.72)	2700	5.00 (18.93)	8.01 (30.31)
1500	4.49 (16.84)	4.49 (16.84)	2800	5.00 (18.93)	8.30 (31.43)
1600	4.75 (17.96)	4.75 (17.96)	2900	5.00 (18.93)	8.60 (32.56)
1700	5.00 (18.93)	5.04 (19.08)	3000	5.00 (18.93)	8.90 (33.68)
1800	5.00 (18.93)	5.34 (20.21)	3100	5.00 (18.93)	9.19 (34.80)
1900	5.00 (18.93)	5.63 (21.33)	3200	5.00 (18.93)	9.49 (35.92)
2000	5.00 (18.93)	5.93 (22.45)	3300	5.00 (18.93)	9.79 (37.04)
2100	5.00 (18.93)	6.23 (23.57)	3400	5.00 (18.93)	10.08 (38.17)
2200	5.00 (18.93)	6.52 (24.70)	3500	5.00 (18.93)	10.38 (39.29)

7.11 TOWING THE VEHICLE

If the vehicle has a problem and can not drive to the service area, tow the vehicle at a slow speed for short distances.



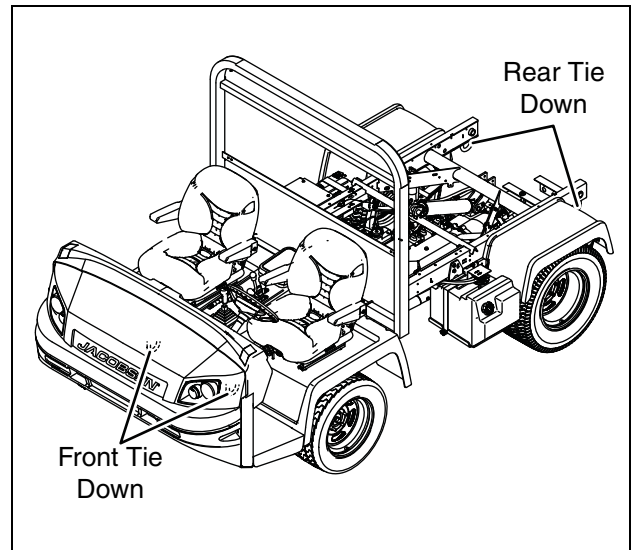
WARNING

When the vehicle is towed, to prevent injury or vehicle damage these guidelines must be followed.

- **Never** accelerate or stop the vehicle suddenly.
- **Never** change the direction of the vehicle quickly or make sharp turns on a slope.
- **Never** tow the vehicle at more than 5 mph (8 kph). When you tow a vehicle at an increased speed can cause a loss of steering control of the vehicle(s).
- When you tow a vehicle, adjust your speed for weather and surface conditions.

To tow the Vehicle:

1. The vehicle has four tie down locations. Connect the tow-line to one of the vehicle tie down locations.
2. Before you tow the vehicle, make sure the accessories are lifted. If the accessories cannot be lifted, remove the accessories from the vehicle.
3. An operator is needed to steer the vehicle and operate the vehicle brakes.
4. Press the brake pedal, put the transmission in neutral and disengage the parking brake.
5. Slowly drive the tow vehicle until the tow-line is pulled tight.
6. When the vehicle is towed, try to keep the tow-line tight. Be careful on slopes or when you turn the vehicle.
7. When the vehicle gets to the service area, engage the parking brake and put the transmission in 1st gear.



To put the vehicle on a trailer:

Be careful when you load or unload the vehicle on the trailer. Fasten the vehicle to the trailer to prevent the vehicle to move on the trailer.

If the trailer is moved on the highway, inflate the tires to the maximum pressure recorded on the tire before you fasten the vehicle to the trailer. Decrease the tire pressure after the vehicle is removed from the trailer.

8 MAINTENANCE AND LUBRICATION CHARTS

8.1 MAINTENANCE CHART

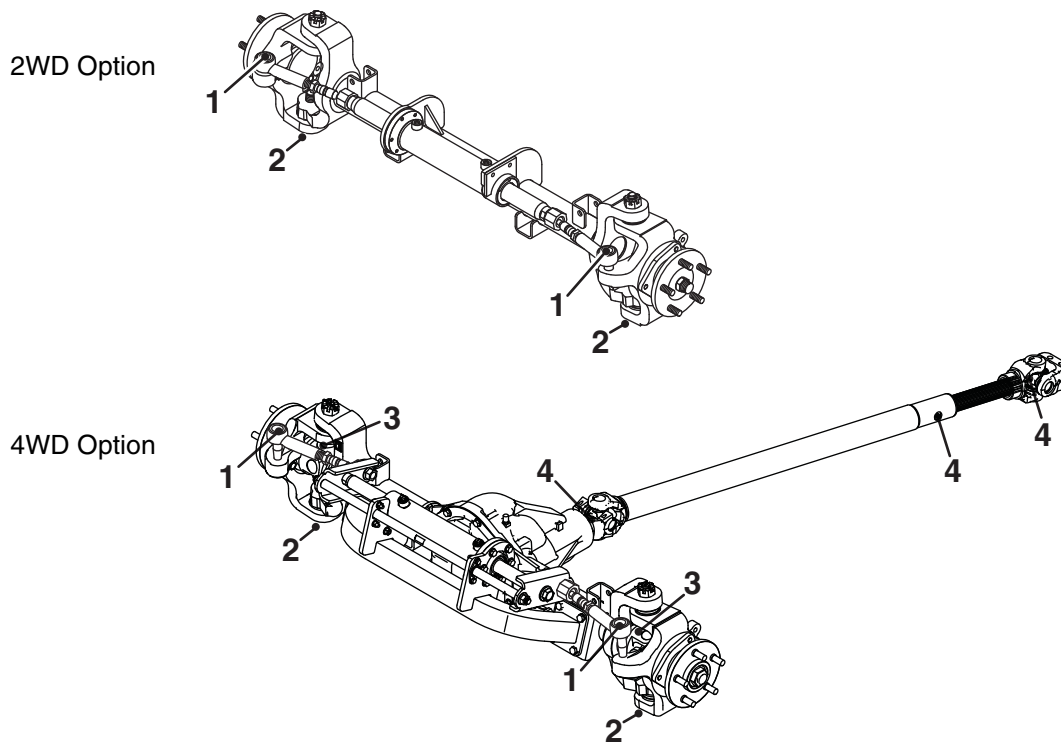
Vehicle Service Interval Chart		
Interval	Item	Section
Each day (10 Hours)	- Check Safety Interlock System - Check engine oil level - Check engine coolant level - Check hydraulic fluid level (High/Low Hydraulic System) - Check tire pressure - Clean radiator, oil cooler and screen - Check air cleaner service indicator	See 7.2 See 9.4 See 9.13 See 9.15 See 9.15 See 9.5
First 50 Hours	- Replace engine oil - Replace engine oil filter - Replace hydraulic oil filter - Check steering system - Check electrical wiring - Check fan belt tension - Lubricate spindles and casters	See 9.4 See 9.4 See 9.14 See 10.5 See 9.19 See 10.2 See 8.2
Each week (50 Hours)	- Check fuel lines and fittings - Inspect parking brake cables - Check for loose components	See 9.6
Each Two weeks (100 Hours)	- Lubricate grease fittings ★ - Check air filter - Check fan belt tension - Replace engine oil and filter - Check transmission fluid level	See 8.2 See 9.5 See 10.2 See 9.4 See 9.18
Each month (250 Hours)	- Inspect hydraulic hoses and tubes - Check engine exhaust system - Check steering system - Check electrical wiring	See 9.12 See 9.10 See 10.5 See 9.19
Each two months (400 Hours)	- Replace fuel filter element - Check ROPS hardware	See 9.7 See 9.11
Each 500 hours	- Replace fan belt - Inspect suspension	See 10.2 See 9.20
Yearly	- Replace air filter element - Replace radiator antifreeze - Replace hydraulic oil and filter - Replace transmission fluid ♦	See 9.5 See 9.15 See 9.13 See 9.18
100 Hour Grease Fittings 1. Tie Rod Ball Joint (2) 2. Lower Ball Joints (2) 3. Upper Ball Joints (2) 4. 4WD Drive Shaft (3)		

★ Because of the environmental conditions or the location manager, lubrication can be necessary less the every 100 hours.

♦ Replace the transmission fluid each year or 600 hours that occurs first.

MAINTENANCE AND LUBRICATION CHARTS 8

8.2 LUBRICATION CHART



8.3 FLUID REQUIREMENTS

Fluid Requirements		
	Quantity	Type
Diesel Engine Oil with Filter	5.4 Quart (5.1 liter)	10W-30 API Classification CJ-4
Gasoline Engine Oil with Filter	3.6 Quart (3.4 liter)	10W-30 API Classification CJ-4
Transmission	1.34 Quart (1.27 liter)	SAE EP 80W-90 Gear Lube
Rear Axle (Standard hydraulic reservoir)	2.7 U.S. Gallon (10.2 liter)	10W-30 API Classification SG, SF/CC 2500546 (5 Gallon (18.9 liter) Pail)
High/Low Hydraulic System	6 U.S. Gallon (22.7 liter)	10W-30 API Classification SG, SF/CC 2500546 (5 Gallon (18.9 liter) Pail)
Radiator Coolant	6.39 Quart (6.05 liter)	50/50 Ethylene Glycol Based Anti-Freeze/ Water
Fuel	7 U.S. Gallon (27.5 liter)	See 9.6

9 MAINTENANCE

9.1 GENERAL PRECAUTIONS

WARNING

Before you clean, adjust or repair this equipment, disengage all drives, lower accessories to the ground, engage the parking brake, stop the engine and remove the key.

Make sure the vehicle is parked on a solid and level surface. Never work on a vehicle that is lifted only by the jack. Always use the jack stands.

A qualified technician must always do adjustments and maintenance. If the correct adjustments can not be made, contact your Jacobsen Dealer.

Inspect the equipment according to the maintenance schedule and keep complete records.

- a Keep the equipment clean.
- b Keep all moving parts correctly adjusted and lubricated.
- c Replace worn or damaged parts before you operate the vehicle.
- d Keep all fluids at the correct level.
- e Keep the shields in position and all hardware tight.
- f Keep the tires correctly inflated.

When you make adjustments or repairs, do not wear jewelry or loose fitting clothing.

Refer to the illustrations in the Parts Manual for the removal and assembly of parts.

When you discard hazardous materials (batteries, lubricants, fuel, anti-freeze), follow your local, state or federal-recommended procedures.

9.2 TO DO SERVICE ON THE VEHICLE

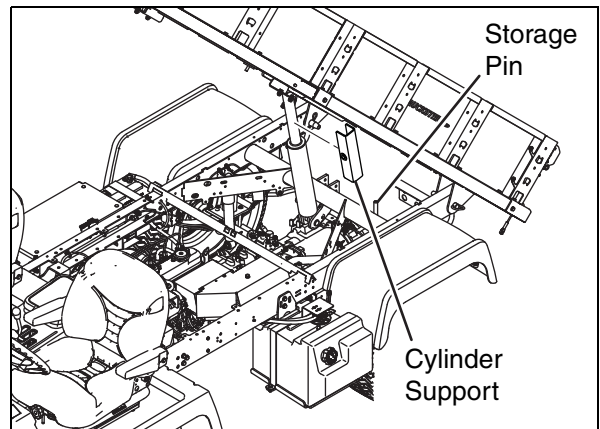
Before you do service on the vehicle, empty any load in the truck bed, sprayer tank or other accessory. The truck bed must be completely lifted and the cylinder support installed before you can service the vehicle.

WARNING

Never do service on the vehicle without the truck bed or accessory lifted and the cylinder support installed on the cylinder rod. When you do service on the vehicle without the cylinder supported, the bed or accessory can accidentally lower and cause injury or death.

To do service on the vehicle:

1. Start the engine.
2. Pull the lift control lever and completely lift the truck bed or accessory.
3. Engage the parking brake, stop the engine and remove the key.
4. When you service the vehicle, you must use the cylinder support to keep the truck bed or accessory lifted. Remove the cylinder support from the storage pin and install the support on the cylinder rod.
5. When the service is completed, remove the cylinder support from the cylinder rod. Put the cylinder support on the storage pin.



9.3 ENGINE

IMPORTANT - The vehicle includes a separate Engine Manual prepared by the engine manufacturer. Read the Engine Manual and know the operation and maintenance of the engine. When you follow the engine manufacturer instructions, you will make sure of the maximum service life of the engine. The replacement engine manuals are available from the engine manufacturer.

The operation and maintenance during the first 50 hours of a new engine can make a difference to the performance and life of the engine.

During the first 50 hours of operation, Jacobsen recommends the following.

- Allow the engine to reach a temperature of at least 140° F (60° C) before operation at full load.
- Check the engine oil level two times each day. Higher than normal oil use can occur during the first 50 hours.
- Change the engine oil and oil filter after the first 50 hours of operation.
- Check the fan belt.
- Refer to the Engine manual for specified maintenance intervals.

If the injection pump, injectors or the fuel system need service, contact your Jacobsen Dealer.

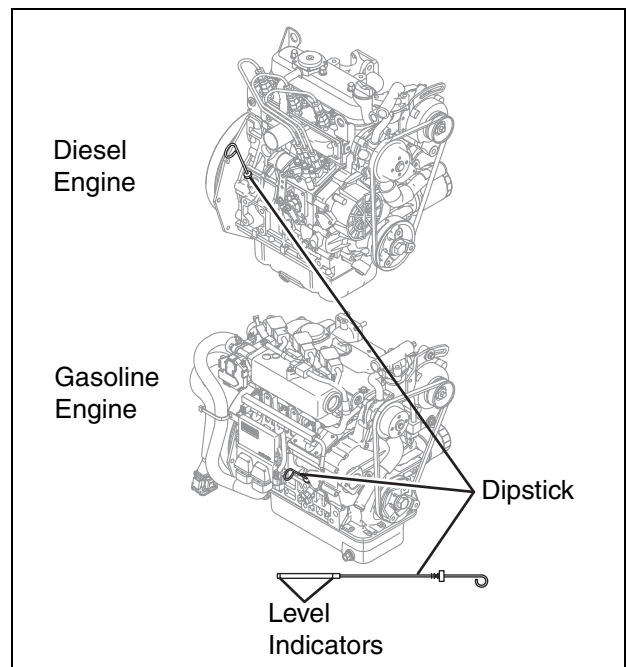
NOTICE

The vehicle operates correctly at the preset governor setting. Do not change the engine governor setting or over speed the engine.

9.4 ENGINE OIL

Check the engine oil level each day before you start the engine or at least five minutes after you stop the engine.

- a Park the vehicle on a level surface.
- b Remove the dipstick, clean the dipstick with a cloth and replace in position.
- c Remove the dipstick and check the oil level. The oil level must be between the two level indicators on the dipstick.



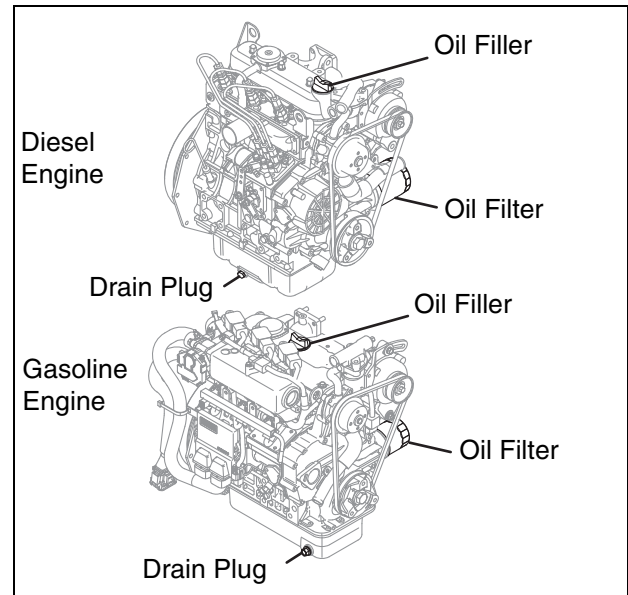
9 MAINTENANCE

Change the engine oil each 100 hours of operation.

- a Start the engine to increase the temperature, then stop the engine.
- b Remove the drain plug from the bottom of the crankcase and clean with a cloth.
- c Drain the engine oil into a container.
- d Replace the drain plug and fill the engine with the correct quantity and grade of oil through the filler.

Replace the engine oil filter when the engine oil is changed.

- a Remove the oil filter.
- b Let the engine oil flow into a container.
- c Clean the filter area.
- d Apply a thin layer of oil to the gasket on new filter. Install the oil filter.
- e Only use your hand to tighten the filter.
- f Start the engine and check around the oil filter gasket for leaks.
- g Stop the engine and check the engine oil level.



CAUTION

The engine oil can damage your skin. Use gloves when you use engine oil. If engine oil touches your skin, clean the area immediately.

Discard used engine oil as shown in local regulations.

9.5 ENGINE AIR FILTER

Check the service indicator each day. If the red band become visible in the window, replace the filter element.

Do not remove the element to inspect or clean. Removal of the filter that is not necessary increases the risk of dust and other particles to enter the engine.

When service is needed, first clean the outside of the filter housing, then remove the old element carefully.

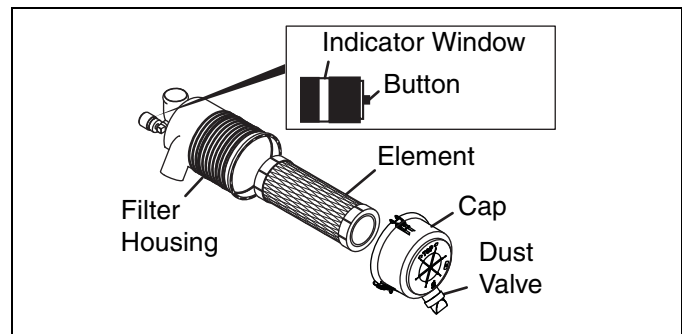
Clean the inside of the filter housing. Make sure dust and other particles do not get into the engine inlet hose.

Inspect the new element. Do not use a damaged element and never use an incorrect element.

Assemble the filter element. Make sure the element seat correctly. Press the button to set the service indicator.

Assemble the cap to the filter housing. Make sure the cap seals around the filter housing. The dust valve on the cap must be at the bottom of the filter. Fasten the cap with the two clips.

Check the air filter hoses for wear or damage. Make sure the hose clamps are tight and hold the hoses in position.



9.6 FUEL

Fuel is flammable. Use caution when you add fuel to the vehicle. Only use an approved container. The spout on the container must fit inside the fuel filler neck. Never use the containers that are not approved to keep or transfer fuel.



WARNING

Refuel the vehicle before you start the engine. When the engine is in operation or while the engine is hot, never remove the fuel cap or add fuel to the vehicle.

Refuel outdoors only and do not smoke when you add fuel.

If the fuel spills, do not try to start the engine, but move the vehicle away from the area. Until fuel vapors are removed, do not allow sparks, open flame or other types of ignition.

Never keep fuel containers near an open flame or any device that can cause the ignition of fuel or fuel vapors.

Always tighten the fuel tank cap and container cap after you add fuel.

Fill the fuel tank to less than 1 inch (2.5 cm) below the filler neck.

Diesel Engine: Use clean, fresh No. 2 ultra low sulfur Diesel fuel with a minimum Cetane Rating of 45. Use of Diesel fuel additives are not recommended.

Gasoline Engine: Do not use premium gasoline or an oil-gasoline mixture. Use clean, fresh, regular unleaded gasoline, 85 octane minimum. When using blended fuel, do not use a blend with more than 10% ethanol. Under no circumstances should you use a blend with methanol. Refer to the engine's operator manual for fuel recommendations when using blended fuel.

Check fuel hoses and clamps every 50 hours. Replace fuel hoses and clamps at first indication of wear or damage.

Keep fuel according to your local, state or federal regulations and instructions from your fuel supplier.

Never allow the tank to become empty. The level of fuel is shown on the gauge panel.

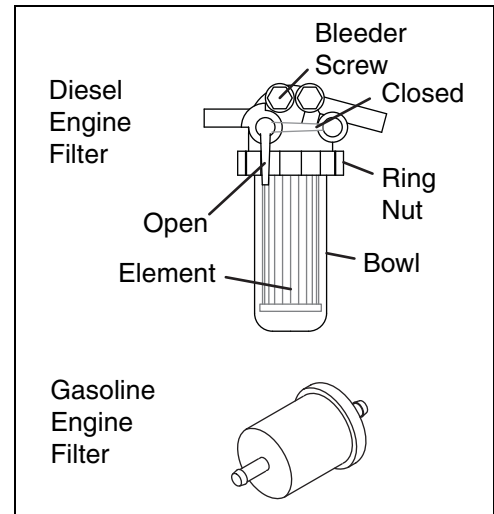
9 MAINTENANCE

9.7 FUEL SYSTEM

Diesel Fuel Filter

Replace the fuel filter every 400 hours.

- Stop the engine.
- Close the valve on the filter. Loosen the bleeder screw to release system pressure.
- Remove the ring nut and the bowl from the fuel filter. Clean any fuel that spills. Remove the filter element.
- Assemble new filter element, bowl and ring nut to the filter base. Tighten the ring nut with your hand.
- Open the filter valve.
- Bleed air from the fuel system.



Gasoline Fuel Filter

Replace the fuel filter every 400 hours

- Stop the engine. Wait for a few minutes for the fuel system pressure to release.
- Remove the hose clamps and hoses from both ends of the filter.
- Assemble hoses and clamps to new filter. Clean up any fuel that spilled.
- Turn the key to the run position and wait for 20 seconds. Start the engine.

How To Bleed The Air From The Diesel Fuel System

After the fuel filter element is replaced or the fuel hoses are replaced, bleed the air from the fuel system.

- Open the bleeder valve on the fuel filter.
- Turn the ignition switch to the RUN position to operate the fuel pump, but do not start the engine. When the bubbles stop, close the fuel filter bleeder valve.
- Open the bleeder valve on the engine injection pump. When the bubbles stop, close the bleeder valve. Turn the key to the OFF position and clean any fuel that flowed from the bleeder valves.
- Attempt to start the engine in 10 second intervals until the engine starts. The engine will remove any air remaining in the fuel system.



CAUTION

The Diesel or Gasoline fuel can damage your skin. Use gloves when you use fuel. If the fuel touches your skin, clean the area immediately.

Do not disconnect fuel hoses, tubes or open plugs on the engine high-pressure fuel system.

Discard used fuel as shown in local regulations.

9.8 BATTERY

Before you service the battery, make sure the ignition switch is in the OFF position and the key is removed.

**CAUTION**

When you service the battery, always use tools with insulation, wear protective glasses and protective clothing.
Discard used batteries as shown in your local regulations.

**WARNING**

The battery contains corrosive acid. Prevent contact with the battery acid.
Always wash your hands after you service a battery.

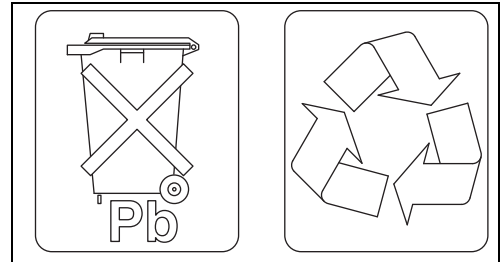
**WARNING**

The battery posts, battery terminals and related accessories contain lead and lead compounds, chemicals known to the State of California to cause cancer and other reproductive harm.

Tighten the battery cables on the battery terminals, To prevent corrosion, apply a layer of silicone dielectric grease to battery terminals and ends of cables. Keep the vent caps and battery terminal covers in position.

Before you do any welding operation on the vehicle, always disconnect the battery cables from the battery and the connectors from the controllers.

Confirm the battery polarity before you connect or disconnect the battery cables.



When you install the battery, always connect the positive (RED) battery cable before the negative (BLACK) battery cable.

When you remove the battery, always disconnect the negative (BLACK) battery cable before the positive (RED) battery cable.

Jump-Starting the Vehicle

- a Before you try to jump-start the vehicle, check the condition of the drained battery.
- b Connect the positive (+) battery terminal of the charged battery to positive battery terminal of the drained battery.
- c Connect the negative (–) battery terminal of the charged battery to frame of vehicle with the drained battery.

**WARNING**

The battery can release hydrogen gas that is explosive. To decrease the risk of an explosion, prevent sparks near the battery. Always connect the negative jumper cable to the frame of the vehicle with the drained battery.

- d When the cables are connected, start the engine on the vehicle with the good battery, then start the vehicle.

9 MAINTENANCE

9.9 CHARGE THE BATTERY



WARNING

Charge the battery in an area with good airflow. The battery can release hydrogen gas that is explosive. To prevent an explosion, keep any device that can cause sparks or flames away from the battery.

When the battery charger is turned on, to prevent injury, stay away from the battery. A battery that is damaged can cause an explosion.

Read the battery charger manual for specified instructions on the operation of the charger.

When possible, remove the battery from the vehicle before you charge the battery. If the battery is not sealed, check and make sure the level of the electrolyte is above the plates in all of the cells.

Make sure the battery charger is turned OFF, then connect the battery charger to the battery terminals as specified in the battery charger manual.

Always turn OFF the battery charger before you disconnect the battery charger from the battery terminals.

9.10 ENGINE EXHAUST



WARNING

The exhaust fumes contain carbon monoxide. The carbon monoxide in the exhaust fumes can increase to dangerous levels. To protect you from carbon monoxide poisoning, inspect the complete exhaust system every month and replace damaged components immediately.

NEVER operate the engine without enough ventilation.

The temperature of the exhaust components can be greater than 300° F (149° C). To prevent the burns, do not touch a hot exhaust system.

The exhaust system has the exhaust manifold, muffler and exhaust pipes.

If you sense a change in the color or sound of the exhaust, stop the engine immediately. Identify the problem and have the system repaired.

Torque all exhaust manifold hardware equally. Tighten or replace the exhaust clamps.

9.11 ROPS

A Roll Over Protective Structure (ROPS) is included with this vehicle. Inspect the ROPS periodically for loose hardware or damage.



CAUTION

Keep the ROPS hardware correctly fastened. Do not do welding operations, drill, change or bend the ROPS. Replace damaged ROPS. Do not try to correct a damaged ROPS.

Every 400 hours, inspect the seat, seat belt, ROPS mounting hardware and ROPS frame for damage. Replace all damaged parts immediately. All replacement parts for the ROPS must be as specified in the Parts Manual.

Check and torque all ROPS hardware every 100 hours.

9.12 HYDRAULIC HOSES



WARNING

To prevent injury from the hot, high pressure oil, never use your hands to check for oil leaks. Use the paper or cardboard to find leaks.

The hydraulic fluid pressure can have enough force to enter your skin. If hydraulic fluid has entered your skin, a doctor must remove the hydraulic fluid surgically within a few hours or gangrene can occur.

Always lower the attachments to the ground, disengage all drives, engage parking brake, stop the engine and remove the key before you inspect or disconnect hydraulic lines or hoses.

Check visible hoses and tubes each day. Look for wet hoses or oil marks. Replace worn or damaged hoses and tubes before you operate the vehicle.

The replacement tube or hoses must be sent in the same path as the original hose. Do not move the clamps, brackets and cable-ties to a new location.

Completely inspect all tubes, hoses and connections every 250 hours.

IMPORTANT: If the hydraulic fluid becomes dirty, damage to the hydraulic system can occur. Before you disconnect any hydraulic component, clean the area around the fittings and the ends of the hoses to prevent dirt to enter the system.

Before you disconnect any hydraulic component, tag or mark the location of each hose then clean the area around the fittings.

To prevent dirt to enter the hydraulic system when you disconnect the component, be prepared to assemble plugs or caps to the ends of hoses and open ports. Clean any hydraulic fluid that spills.

Make sure "O" rings are clean and hose fittings are correctly installed before you tighten.

Prevent the hose to twist. The twisted hoses can cause the hose connections to loosen as the hose moves while you operate the vehicle and can cause oil leaks.

The hydraulic hoses that are twisted or have sharp bends can decrease the oil flow and cause damage to the hoses. The decreased oil flow can cause system problems and increase the temperature of the hydraulic fluid.

9 MAINTENANCE

9.13 HYDRAULIC FLUID

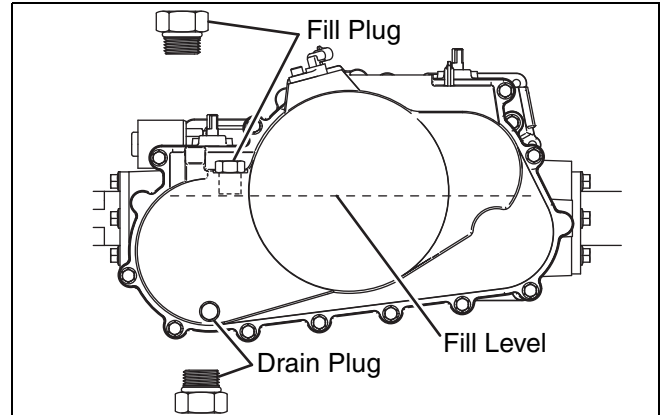
Drain and replace the hydraulic oil if one of the following occur.

- Component failure
- Water or foam is in the hydraulic fluid
- The hydraulic fluid has a rancid odor (indication of high heat)
- When service is indicated by filter service light, or each year, which is the first to occur.

Always replace the hydraulic filter when you replace the hydraulic fluid. Discard used hydraulic fluid as shown in local regulations.

To replace the hydraulic fluid in the rear axle:

- a Clean the area around the rear axle drain plug to prevent dirt to enter the hydraulic system.
- b Put a container that can hold more than 3 U.S. gallons (22.7 liter) below the rear axle. Remove the drain plug from the bottom of the rear axle and allow the hydraulic fluid to drain into the container.
- c After the oil has drained, install the drain plug. Torque the drain plug to 9-14 ft. lb. (12-19 Nm).
- d Remove the fill plug and fill the rear axle with hydraulic fluid to the bottom of the fill port. Install the fill plug.
- e Start the engine and remove the air from the hydraulic system. Operate the steering and bed lift functions for 1 minute to remove the air and to balance the hydraulic fluid level.
- f When the oil-level has balanced and the air is removed, remove the fill plug. Fill the rear axle with hydraulic fluid to the bottom of the fill port. Torque the fill plug to 9-14 ft. lb. (12-19 Nm).



To replace the hydraulic fluid in the high/low hydraulic system:

- a Clean the area around the tank drain plug to prevent dirt to enter the hydraulic system.
- b Put a container that can hold more than 6 U.S. gallons (22.7 liter) below the high/low hydraulic system tank. Remove the drain plug from the bottom of the tank and allow the hydraulic fluid to drain into the container.
- c After the oil has drained, install the drain plug.
- d Remove the tank cap and fill the tank with hydraulic fluid.
- e Start the engine and remove the air from the hydraulic system. Operate the engine for 5 minutes to remove the air and to balance the hydraulic fluid level.
- f When the oil-level has balanced and the air is removed, add hydraulic fluid to one inch (2.5 cm) below the bottom of the filler neck.

9.14 HYDRAULIC FILTER

The standard hydraulic system is protected by one 10 micron filter. The filter is found on the frame rail below the driver's seat.

The optional high/low hydraulic system is protected by a separate 10 micron filter. The filter is found in front of the high/low hydraulic tank.

When you replace the filters, -

- a Fill the new filter with hydraulic fluid and lubricate the filter O-ring with hydraulic fluid before you assemble the new filter. Tighten the filter with your hand.
- b Operate the engine at idle speed for five minutes to remove the air from the hydraulic system. The oil-level light can illuminate and the horn can activate during the five minutes.
- c Stop the engine and check the level of hydraulic fluid in the tank. Add the hydraulic fluid to the Full mark on the dipstick.

9.15 RADIATOR



WARNING

To prevent injury from the hot-engine coolant or steam, never remove the expansion tank cap with the engine in operation. Stop the engine and wait until the radiator is cool. When radiator is cool, use caution to remove the expansion Tank cap.



CAUTION

Do not put cold water into a hot radiator. Do not operate the engine without a correct coolant mixture. Install the radiator cap correctly.

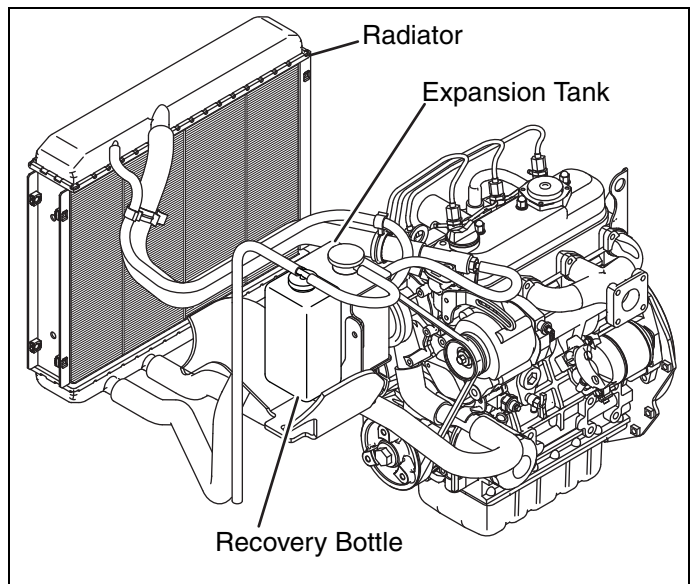
Check coolant level each day. The radiator and expansion tank must be full and the recovery bottle must be at the cold mark.

Drain and fill the cooling system each year. Empty and clean the recovery bottle.

Mix clean water with ethylene glycol anti-freeze for the coldest ambient temperature. Read and follow the instructions on the anti-freeze container and the Engine manual.

Check and tighten the engine fan belt every 100 hours and replace the belt every 500 hours. Replace the clamps and hoses every two years.

Have your Jacobsen Dealer check the cooling system if you need to add coolant more than one time a month or you add more than a quart of coolant at a time.



Keep the radiator and hydraulic oil cooler air passages clean. Use compressed air (maximum of 30 psi (2 BAR)) to clean the fins. Move the hydraulic oil cooler to the service position to clean the radiator and oil cooler.

9 MAINTENANCE

9.16 TIRES

Keep the tires correctly inflated to increase tire life. Inspect the tread wear.

Check the tire pressure each day, while the tires are cool. Use an accurate low-pressure tire gauge.

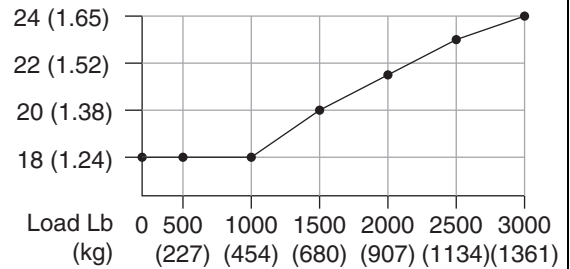
Refer to the graphs for the front and rear tire pressures.



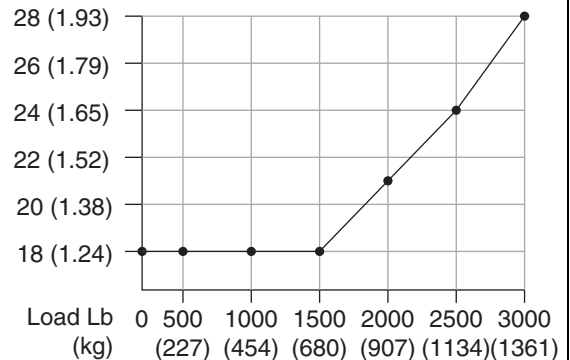
CAUTION

DO NOT try to put a tire on a rim unless you have the correct training, tools and experience. Incorrect mounting can cause an explosion which can cause injury.

Front Tire Pressure
psi (BAR)



Rear Tire Pressure
psi (BAR)



9.17 WHEEL MOUNTING PROCEDURE



WARNING

Make sure the vehicle is parked on a solid and level surface. Never work on a vehicle that is supported only by the jack. Always use jack stands.

If only the front or behind the vehicle is lifted, put the chocks in front of and behind the wheels that are not lifted.

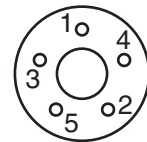
Remove dirt, grease and oil from the stud threads. Do not lubricate threads.

Put the wheel on the hub. Inspect the wheel to make sure of full contact between surface of wheel and hub.

Tighten all hardware with your fingers, then torque hardware in the order shown. When possible, tighten nuts in the top position.

Check and torque hardware each day until torque is kept at 85-95 ft.lb. (115-128Nm).

Wheel Torque
Order



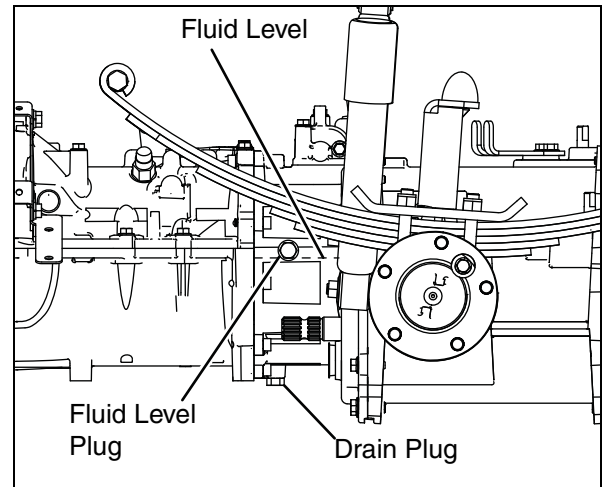
9.18 TRANSMISSION FLUID LEVEL

Check the transmission fluid level each 100 hours.

- Remove fluid level plug from the left side of the transmission adapter on the rear axle.
- The transmission fluid level must at the bottom of the fluid level plug. Add SAE EP 80-90 Gear Lube when necessary.
- Install the fluid level plug.

Drain and replace the transmission fluid each year or 600 hours, that occurs first.

- Clean the area around the transmission drain plug to prevent dirt to enter the transmission.
- Put a container that can hold more than 1 U.S. gallons (3.8 liter) below the transmission and the rear axle. Remove the drain plug from the bottom of the transmission adapter and allow the transmission fluid to drain into the container.
- After the oil has drained, install the drain plug. Torque the drain plug to 9-14 ft. lb. (12-19 Nm).
- Remove the fluid level plug and fill the transmission with SAE EP 80-90 Gear Lube to the bottom of the level plug. Install the level plug. Torque the level plug to 9-14 ft. lb. (12-19 Nm).

**9.19 ELECTRICAL SYSTEM****CAUTION**

Always turn the ignition switch to the off position and remove the negative (BLACK) battery cable before you inspect or service the electrical system.

General precautions to decrease electrical problems are -

- Make sure that all the connections are clean and correctly fastened.
- Check the interlock system and fuses at normal intervals. If the interlock system does not operate correctly and you can not correct the problem, contact an authorized Jacobsen Dealer.
- Keep the wiring harness away from hot surfaces and moving parts.
- Check the battery and the alternator.
- Do not wash or pressure spray around electrical connections and components.

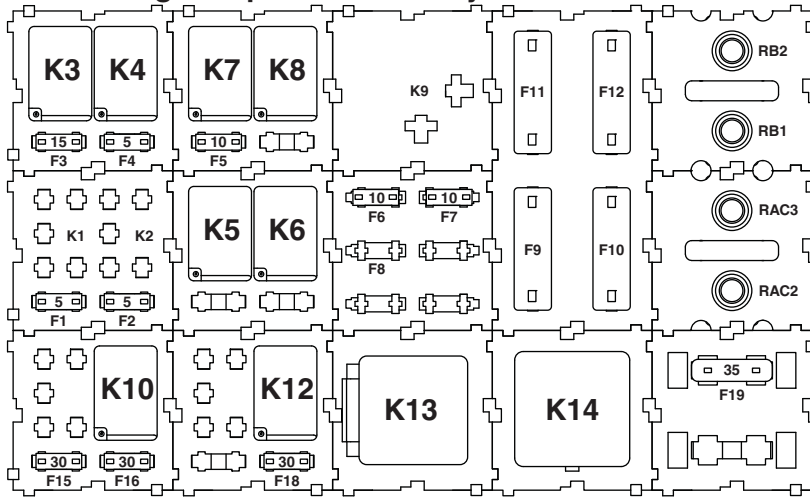
Two in-line fuses are found in the positive battery cable. The 60 amp fuse gives protection for the alternator. The 175 amp fuse gives protection for the vehicle circuits.

Fuses and relays found behind the dashboard are used to protect the vehicle circuits.

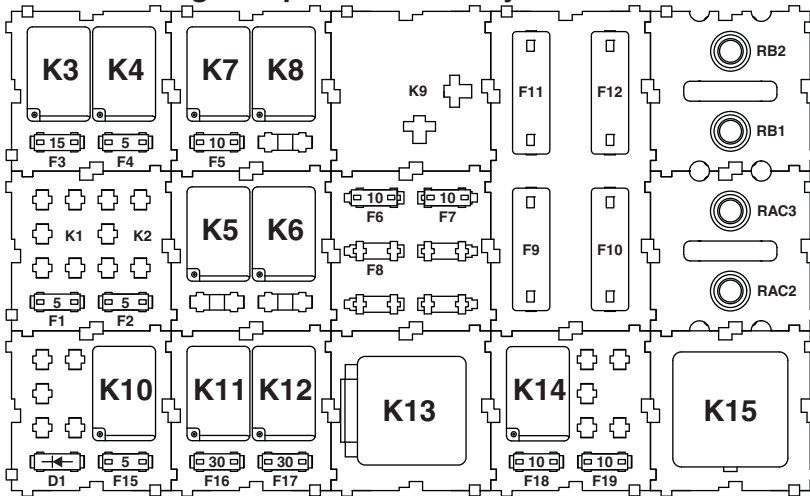
If accessories are installed, additional fuses and relays may be located near the fuse panel.

9 MAINTENANCE

Diesel Engine Option Fuse/Relay Panel



Gasoline Engine Option Fuse/Relay Panel



Diesel Engine Option Relays

- ★ K1 - Right Turn Relay
- ★ K2 - Left Turn Relay
- K3 - Light Relay
- K4 - Start Interlock Relay
- K5 - RAC2 Post Relay
- K6 - RAC3 Post Relay
- K7 - Accessory Relay
- K8 -
- ★ K9 - Flasher Relay
- K10 - Start Relay
- K12 - Main Power Relay
- K13 - Radiator Fan Relay
- K14 - Glow Relay

Gasoline Engine Option Relays

- ★ K1 - Right Turn Relay
- ★ K2 - Left Turn Relay
- K3 - Light Relay
- K4 - Start Interlock Relay
- K5 - RAC2 Post Relay
- K6 - RAC3 Post Relay
- K7 - Accessory Relay
- K8 -
- ★ K9 - Flasher Relay
- K10 - Fuel Relay
- K11 - ETV Relay
- K12 - OEM Relay
- K13 - Radiator Fan Relay
- K14 - Start Relay
- K15 - ECU Power Relay

Diesel Engine Option Fuses

- F1 - 5 Amp Right Brake Jumper Fuse
- F2 - 5 Amp Left Brake Jumper Fuse
- F3 - 15 Amp Lights Fuse
- F4 - 5 Amp Start Interlock Fuse
- F5 - 10 Amp Accessory 12V Plug Fuse
- F6 - 10 Amp Differential Lock Fuse
- F7 - 10 Amp Key Switched Power Fuse
- F8 - Extra Fuse Tap Fuse
- F9 - 35 Amp RAC2 Post Fuse
- F10 - 35 Amp RAC3 Post Fuse
- F11 - 50 Amp RB1 Post Fuse
- F12 - 50 Amp RB2 Post Fuse
- F15 - 30 Amp Radiator Fan Fuse
- F16 - 30 Amp Starter Power Fuse
- F18 - 30 Amp Main Power Fuse
- F19 - 35 Amp Glow Plug Fuse

Gasoline Engine Option Fuses

- F1 - 5 Amp Right Brake Jumper Fuse
- F2 - 5 Amp Left Brake Jumper Fuse
- F3 - 15 Amp Lights Fuse
- F4 - 5 Amp Start Interlock Fuse
- F5 - 10 Amp Accessory 12V Plug Fuse
- F6 - 10 Amp Differential Lock Fuse
- F7 - 10 Amp Key Switched Power Fuse
- F8 - Extra Fuse Tap Fuse
- F9 - 35 Amp RAC2 Fuse
- F10 - 35 Amp RAC3 Fuse
- F11 - 50 Amp RB1 Fuse
- F12 - 50 Amp RB2 Fuse
- F15 - 5 Amp Key Power Fuse
- F16 - 30 Amp Fan Power Fuse
- F17 - 30 Amp ECU Power Fuse
- F18 - 10 Amp Fuel Pump Fuse
- F19 - 10 Amp Differential Lock Fuse

● Remove when Turn Signal Accessory is installed.

★ Included with the Turn Signal Accessory

9.20 SUSPENSION INSPECTION

Inspect the vehicle suspension each 500 hours or when poor ride quality is experienced. Damaged suspension components must be replaced before continued operation of the vehicle.

Inspect the bump stops for the front and rear suspension for damage. Replace damaged bump stops.

Inspect vehicle shocks and springs for proper operation. Inspect suspension hardware. Replace damaged or missing hardware.

9.21 CARE AND CLEANING

Clean the vehicle and accessories after each use. To prevent damage to the engine, do not wash the vehicle with the engine in operation. When possible, clean the vehicle with compressed air.

NOTICE

Do not wash any part of the vehicle that is hot. Do not use high-pressure spray or steam. Use cold water and automotive cleaners.

Use compressed air to clean the engine and the radiator fins. Do not pressure wash engine.

Use clean water to wash your equipment.

NOTICE

To use salt water or drain water is known to cause rust and corrosion of metal parts and can cause damage or failure. This damage is not included by the factory warranty.

Do not spray water at the control panel, ignition switch, controller or other electrical components.

Clean all plastic or rubber parts with a weak soap solution or use commercially available rubber cleaners.

To keep the original high polish of the fiberglass parts, wax with a good grade of one-step cleaner wax.

Repair damaged metal surfaces and use Jacobsen touch-up paint. Apply wax to the equipment for maximum paint protection.



CAUTION

To prevent fire, clean grass clippings and dirt from the attachments, drives, engine and exhaust components.



WARNING

Never use your hands to clean attachments. Use a brush to clean attachments. The attachments can have sharp edges and can cause injuries.

9 MAINTENANCE

9.22 VEHICLE STORAGE

General

- Clean the vehicle and lubricate. Repair and paint damaged or open metal.
- Inspect the vehicle, tighten all hardware, replace worn or damaged components.
- Drain and fill the radiator.
- Clean the tires and keep the vehicle so that the load is not on the tires. If the vehicle is not on the jack stands, check tires at normal intervals and add air when needed.
- Keep the vehicle and all accessories clean, dry and protected from the elements. Never keep the vehicle near an open flame or spark which can cause ignition of the fuel or fuel vapors.

Battery

- Remove, clean and keep the battery in the upright position on a surface that is not metal in a cool dry location. To prevent increased battery discharge, do not keep the battery on a metal surface.
- Check and charge the battery every 60 to 90 days.
- Keep the battery in a cool dry location. To decrease the self discharge rate, the temperature must not be more than 80° F (27° C) or less than 20° F (-7° C).

Engine

- While the engine is warm, remove the drain plug, drain the oil from the crankcase and change the oil filter. Install the drain plug and fill the engine with oil. Torque the drain plugs to 22 ft. Lb. (30 Nm).
- Clean the outside surface of the engine. Paint bare metal or apply a thin layer of rust preventative oil.
- Add a fuel conditioner or biocide to prevent the fuel to become a gel or bacteria in the fuel. See your fuel supplier for instructions. Drain water from water separator.

Accessories

- Completely clean the accessories. Repair and paint any damaged or bare metal surfaces.
- Lubricate all grease fittings and friction points.

After Storage

- Check and install the battery. If necessary, charge the battery.
- Check or service the fuel filter and air cleaner
- Check the radiator coolant level.
- Check the level of engine oil and hydraulic fluid.
- Fill the fuel tank with fuel. Bleed the fuel system.
- Make sure the tires are correctly inflated.
- Start the engine at 1/2 throttle. Allow the engine to become warm and lubricated.



WARNING

Never operate the engine without enough ventilation or in an enclosed area. The carbon monoxide in the exhaust fumes can increase to dangerous levels.

10.1 GENERAL PRECAUTIONS



WARNING

Before you clean, adjust or repair this equipment, disengage all drives, lower accessories to the ground, engage the parking brake, stop the engine and remove the key.

Make sure the vehicle is parked on a solid and level surface. Never work on a vehicle that is lifted only by the jack. Always use the jack stands.

A qualified technician must always do adjustments and maintenance. If the correct adjustments can not be made, contact your Jacobsen Dealer.

Inspect the equipment according to the maintenance schedule and keep complete records.

- a Keep the equipment clean.
- b Keep all moving parts correctly adjusted and lubricated.
- c Replace worn or damaged parts before you operate the vehicle.
- d Keep all fluids at the correct level.
- e Keep the shields in position and all hardware tight.
- f Keep the tires correctly inflated.

When you make the adjustments or repairs, do not wear jewelry or loose fitting clothing.

Refer to the illustrations in the Parts Manual for the removal and assembly of parts.

When you discard hazardous materials (batteries, lubricants, fuel, anti-freeze), follow your local, state or federal-recommended procedures.

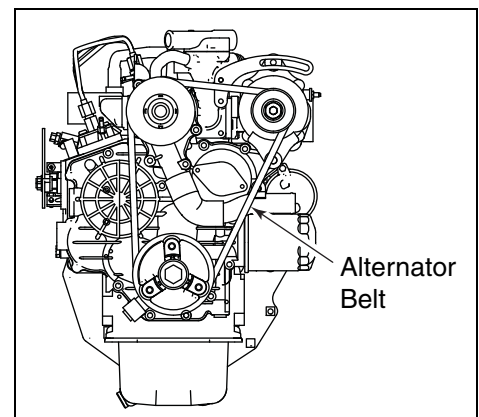
10.2 BELT ADJUSTMENT

Inspect and adjust a new belt after the first ten hours of operation. Check the belt every 100 hours after the first 10 hours.

Alternator Belt

Adjust the alternator position so that the belt moves 1/4 to 5/16 inch (0.6 to 0.8 cm) with a 20 lb. (89 N) push at the center point between pulleys. Refer to the Engine manual.

If the belt tension is not correct, loosen the alternator mounting bolts and adjust the alternator until the correct belt tension is set. Tighten the alternator mounting bolts.



10 ADJUSTMENTS

10.3 PARKING BRAKE ADJUSTMENT

Check the parking brake each week. Check the brake cables, the cable linkage and pivots to make sure the brakes operate correctly. Replace worn or damaged components immediately.

To test the operation of the parking brake -

1. Park the vehicle near the bottom of a hill with a 16.7° (30%) slope. The front of the vehicle must be toward the bottom of the hill. Engage the parking brake, put the transmission in Neutral and stop the engine.



WARNING

Do not disengage the parking brake with the engine stopped.

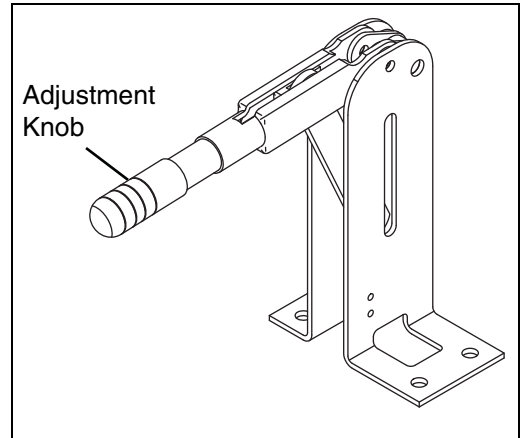
The vehicle must not move with the parking brake engaged. If the vehicle does move, start the engine, drive the vehicle to the bottom of the hill and adjust the parking brake.

2. With the parking brake disengaged, rotate the adjustment knob to the right side 90 degrees. Engage and disengage the parking brake. Repeat this step until a “snap over center” action is reached when you engage the parking brake.

NOTICE

Over adjustment of the parking brake will cause hard lever action, but will not increase the brake performance.

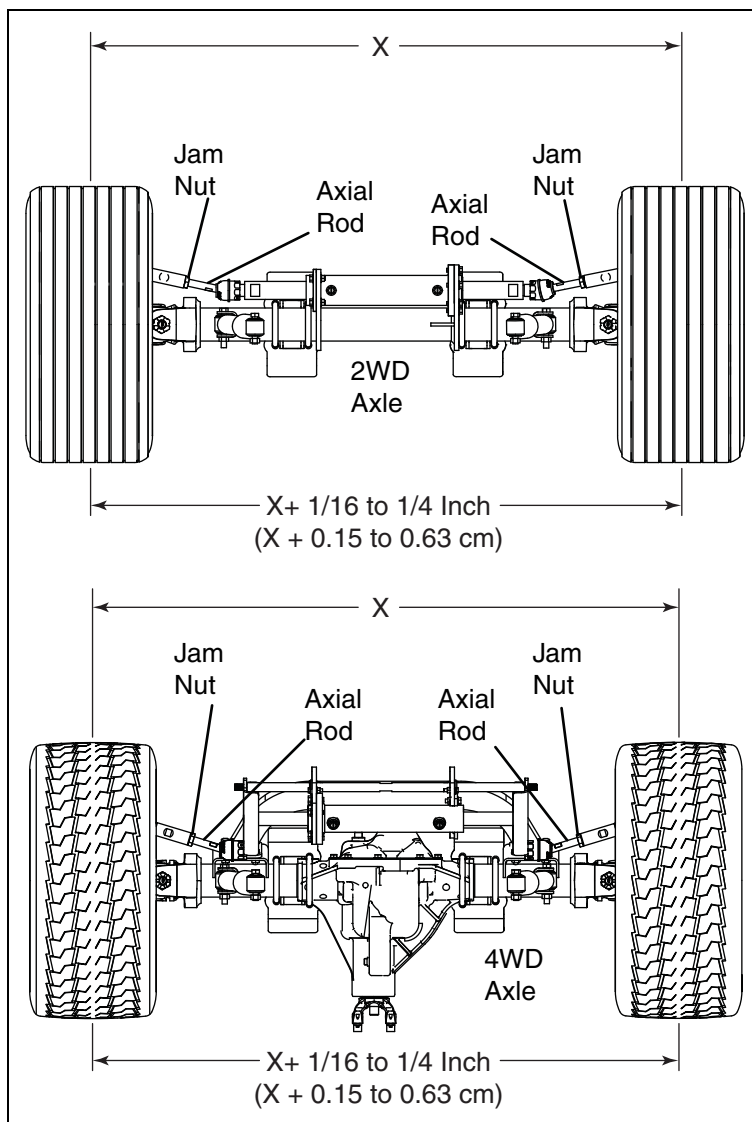
3. Repeat the test on the hill.



10.4 STEERING TOE-IN ADJUSTMENT

Steering Toe-In Adjustment

- Turn the front wheels to the straight position.
- Loosen the jam nuts on both ends of the axial rods.
- Rotate the axial rods to get the correct toe-in. the Toe-in must not be more than +1/4 inch (+ 0.63 cm).
- Tighten the jam nuts.



10 ADJUSTMENTS

10.5 TORQUE SPECIFICATION

NOTICE

The torque values included in these charts are approximate and are for reference only. Use these torque values at your risk. Jacobsen is not responsible for any loss, claim or damage caused by these charts. **Always use caution with torque values.**

Jacobsen uses Grade 5 (Inch) and Grade 8.8 (Metric) Plated bolts, unless a note is given. Always check the marks on the head of the bolts for the bolt grade. For tightening plated bolts, use the value given for lubricated.

SIZE	UNITS					SIZE	UNITS				
		GRADE 5		GRADE 8				GRADE 5		GRADE 8	
		Lubricated	Dry	Lubricated	Dry			Lubri- cated	Dry	Lubri- cated	Dry
#6-32	in-lb (Nm)	—	20 (2.3)	—	—	7/16-14	ft-lb (Nm)	37 (50.1)	50 (67.8)	53 (71.8)	70 (94.9)
#8-32	in-lb (Nm)	—	24 (2.7)	—	30 (3.4)	7/16-20	ft-lb (Nm)	42 (56.9)	55 (74.6)	59 (80.0)	78 (105)
#10-24	in-lb (Nm)	—	35 (4.0)	—	45 (5.1)	1/2-13	ft-lb (Nm)	57 (77.2)	75 (101)	80 (108)	107 (145)
#10-32	in-lb (Nm)	—	40 (4.5)	—	50 (5.7)	1/2-20	ft-lb (Nm)	64 (86.7)	85 (115)	90 (122)	120 (162)
#12-24	in-lb (Nm)	—	50 (5.7)	—	65 (7.3)	9/16-12	ft-lb (Nm)	82 (111)	109 (148)	115 (156)	154 (209)
1/4-20	in-lb (Nm)	75 (8.4)	100 (11.3)	107 (12.1)	143 (16.1)	9/16-18	ft-lb (Nm)	92 (124)	122 (165)	129 (174)	172 (233)
1/4-28	in-lb (Nm)	85 (9.6)	115 (13.0)	120 (13.5)	163 (18.4)	5/8-11	ft-lb (Nm)	113 (153)	151 (204)	159 (215)	211 (286)
5/16-18	in-lb (Nm)	157 (17.7)	210 (23.7)	220 (24.8)	305 (34.4)	5/8-18	ft-lb (Nm)	128 (173)	170 (230)	180 (244)	240 (325)
5/16-24	in-lb (Nm)	173 (19.5)	230 (26.0)	245 (27.6)	325 (36.7)	3/4-10	ft-lb (Nm)	200 (271)	266 (360)	282 (382)	376 (509)
3/8-16	ft-lb (Nm)	23 (31.1)	31 (42.0)	32 (43.3)	44 (59.6)	3/4-16	ft-lb (Nm)	223 (302)	298 404	315 (427)	420 (569)
3/8-24	ft-lb (Nm)	26 (35.2)	35 (47.4)	37 (50.1)	50 (67.8)	7/8-14	ft-lb (Nm)	355 (481)	473 (641)	500 (678)	668 (905)
SIZE	UNITS									Non Critical Fasteners into Aluminum	
		Lubricated	Dry	Lubricated	Dry	Lubricated	Dry	Lubricated	Dry		
M4	Nm (in-lb)	—	—	—	—	—	—	3.83 (34)	5.11 (45)	2.0 (18)	
M5	Nm (in-lb)	1.80 (16)	2.40 (21)	4.63 (41)	6.18 (54)	6.63 (59)	8.84 (78)	7.75 (68)	10.3 (910)	4.0 (35)	
M6	Nm (in-lb)	3.05 (27)	4.07 (36)	7.87 (69)	10.5 (93)	11.3 (102)	15.0 (133)	13.2 (117)	17.6 (156)	6.8 (60)	
M8	Nm (in-lb)	7.41 (65)	9.98 (88)	19.1 (69)	25.5 (226)	27.3 (241)	36.5 (323)	32.0 (283)	42.6 (377)	17.0 (150)	
M10	Nm (ft-lb)	14.7 (11)	19.6 (14)	37.8 (29)	50.5 (37)	54.1 (40)	72.2 (53)	63.3 (46)	84.4 (62)	33.9 (25)	
M12	Nm (ft-lb)	25.6 (19)	34.1 (25)	66.0 (48)	88.0 (65)	94.5 (70)	125 (92)	110 (81)	147 (108)	61.0 (45)	
M14	Nm (ft-lb)	40.8 (30)	54.3 (40)	105 (77)	140 (103)	150 (110)	200 (147)	175 (129)	234 (172)	94.9 (70)	

11.1 GENERAL

The problem solution chart lists basic problems that can occur during start and operation of the vehicle. For complete information about the hydraulic and electrical systems, contact your Jacobsen Dealer.

Symptoms	Possible Causes	Action
Engine will not start.	1. Clutch pedal not pressed. 2. Glow plug has not timed out. (Diesel Engine Option) 3. Battery low on charge or defective. 4. Fuel tank empty or dirty. 5. Fuse blown. 6. Relay(s) defective.	1. Check Interlock System and start-up procedure. 2. Reset ignition switch and allow glow plug to time out before cranking engine. 3. Inspect condition of battery and battery connections. 4. Fill with fresh fuel. Change fuel filter. Bleed fuel lines. 5. Replace fuse. 6. Test and replace relay.
Engine hard to start or runs poorly.	1. Fuel level low, fuel or fuel filter dirty. 2. Air cleaner dirty. 3. Injectors, fuel pump. 4. Engine problem.	1. Fill with fresh fuel. Change fuel filter. Bleed fuel lines. 2. Inspect and replace air filter. 3. Consult engine manual. 4. Consult engine manual.
Engine stops.	1. Fuel tank empty.	1. Fill with fresh fuel and bleed fuel lines.
Engine overheating.	1. Coolant level low. 2. Air intake restricted. 3. Water pump belt broken or loose.	1. Inspect and add coolant. 2. Clean air intake at radiator. 3. Tighten or replace belt. See engine manual.
Battery not holding charge. Battery light on.	1. Loose or corroded battery terminals. 2. Low electrolyte. 3. Alternator belt loose or broken. 4. Charging system defective.	1. Inspect and clean terminals. 2. Refill to correct level. 3. Tighten or replace belt. See engine manual. 4. See engine manual.

11 PROBLEM SOLVING

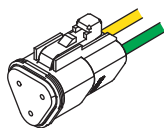
11.2 CAN BUS CONNECTOR LOCATIONS

The Diesel engine has a three pin vehicle CAN bus connector found to the left of the fuse/relay panel.

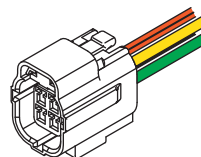
The Gasoline engine is monitored and controlled by the engine controller found on the right side of the engine. The two CAN bus connectors are found to the left side of the fuse/relay panel. The four pin connector is for the Kubota Engine Controller (ECU) CAN bus connector. The three pin connector is for the vehicle's CAN bus connector. A second four pin ECU CAN bus controller can be found above the gasoline engine controller.

NOTICE

For factory help or replacement of the Kubota Engine Controller, give the engine model and serial number found on a plate on the rear corner of the engine valve cover.



Vehicle CAN Bus Connector



ECU CAN Bus Connector

World Class Quality, Performance And Support

Equipment from Jacobsen is built to exacting standards ensured by ISO 9001 and ISO 14001 registration at all of our manufacturing locations.

A worldwide dealer network and factory trained technicians backed by Genuine Jacobsen Parts provide reliable, high-quality product support.



When Performance Matters.™

CUSHMAN JACOBSEN RANSOMES

Jacobsen, A Textron Company
11108 Quality Drive, Charlotte, NC 28273
www.Jacobsen.com
800-848-1636