WARNING

IMPROPER OPERATION OF THIS VEHICLE CAN CAUSE INJURY OR DEATH.

BEFORE STARTING THE ENGINE, DO THE FOLLOWING:

1. READ THIS OPERATOR'S MANUAL.
2. READ ALL THE SAFETY DECALS ON THE VEHICLE.
3. CLEAR THE AREA OF OTHER PERSONS.

LEARN AND PRACTICE SAFE USE OF VEHICLE CONTROLS IN A SAFE, CLEAR AREA BEFORE YOU OPERATE THIS VEHICLE ON A WORK SITE.

It is your responsibility to observe applicable laws and regulations and to follow manufacturer’s instructions on vehicle operation and maintenance.

CALIFORNIA

Proposition 65 Warning

Diesel engine exhaust and some of its constituents are known to the State of California to cause cancer, birth defects, and other reproductive harm.
# Table Of Contents

**Introduction**
The Manual ..................................... 2
Replacement Parts .......................... 2
Reports ............................................ 2
Disclaimer ....................................... 2

**Safety Practices**
Signal Words ................................... 3
New or Additional Operators ........... 4
Personal Considerations ................. 4
Operational Considerations ............. 7
Equipment Considerations ............ 11

**Operation**
Controls ......................................... 12
Instruments/Indicators ................... 19
Optional Controls .......................... 22
Walk - Around Inspection .............. 24
Normal Starting ............................ 24
Cold Starting .............................. 25
Jump Starting .................................... 27
Operating ...................................... 28
Stabil-TRAK™ System Test ................ 34
Using The Capacity Chart ............. 38
Fork Ratings ................................. 45
How To Pick, Carry & Place a Load .... 47
Elevating Personnel ....................... 47
Using Other Attachments ............... 49
Shut - Off ..................................... 50
Towing and Tie Down ..................... 50

**General Maintenance**
Routine Equipment Checklist ........... 51
Warning Decal Locations ............... 52
Maint. Schedule and Checklist ......... 53
1. Lubrication Points ..................... 57
2. Air Cleaner and Restriction Indicator.. 58
3. Engine Cooling System ............. 61
4. Engine Oil and Filter ............... 63
5. Engine Fuel System .................. 65
6. Engine Fan Belt Check ............. 69
7. Hydraulic Oil and Filter .......... 70
8. Transmission Oil and Filter ....... 73
9. Axle Oil ................................. 75
10. Wheel End Oil ......................... 76
11. Wheels and Tires ..................... 78
12. Battery(s) ................................ 79
13. Fuse/Circuit Breaker Replacement .81
14. Boom Chains & Wear Pads ....... 84
15. Emergency Boom Lowering ....... 90

**Specifications**
Fluid and Lubricant Capacities ....... 97
Tires .............................................. 98
Engine ......................................... 99
Weights ......................................... 99
Machine Dimensions .................. 100
Electrical System ......................... 100
Stability Tipping Limits ............. 101
Introduction

The Manual

This Owner's/Operator's Manual provides the information you need to correctly operate and maintain this vehicle.

**IMPORTANT!**

Before you operate this vehicle, read this manual completely and carefully so you will understand the safety instructions and the operation of the controls and safety equipment. You must comply with all **Danger, Warning,** and **Caution** notices. They are for your benefit.

All reference to the right side, left side, front, or rear are given from the operator's seat looking in a forward direction. Sky Trak International, Inc. is hereinafter referred to as **Sky Trak.**

Replacement Parts

For your easy reference when ordering replacement parts or making service inquiries on this machine, record its model and serial numbers on the back cover of the manual. The numbers are stamped on the serial number plate which is located on the front of the machine's frame tilt cylinder tower.

**IMPORTANT!**

The replacement of any part on this product by anything other than a **Sky Trak** authorized replacement part may adversely affect the performance, durability, or safety of this product and will void the warranty. **Sky Trak** assumes no liability for unauthorized replacement parts which adversely affect the performance, durability or safety of this product.

Reports

**IMPORTANT!**

A Warranty Registration form must be filled out by the **Sky Trak** distributor, signed by the purchaser, and returned to **Sky Trak** once the product is sold and/or put into service. This report activates the warranty period, assuring that your claims during the warranty period will be honored and processed expeditiously. To guarantee you full warranty service, make sure your distributor has returned the business reply card of this form to **Sky Trak.**

Disclaimer

**Sky Trak** reserves the right to make changes on and to add improvements upon its products at any time without public notice or obligation. **Sky Trak** also reserves the right to discontinue manufacturing any product at its discretion at any time.
Safety Practices

The information in this manual does not replace any safety rules and laws used in your area. Before operating this telescopic handler, learn the rules and laws for your area. Make sure the vehicle has the correct equipment according to these rules and laws.

Your safety and the safety of others in the work area depend significantly upon your knowledge and understanding of all correct operating practices and procedures for this vehicle.

Signal Words

This symbol means “Attention! Become Alert! Your Safety Is Involved!” The symbol is used with the following signal words to attract your attention to safety messages found on safety decals and throughout this manual. The message that follows the symbol contains important information about Safety. To avoid possible death or injury, carefully read and follow the messages! Be sure to fully understand the potential causes of death or injury.

Signal Word:
Is a distinctive word on safety decals and throughout this manual that alerts the viewer to the existence and relative degree of the hazard.

Danger

The signal word "Danger" means an extremely hazardous situation exists on or near the vehicle which would result in high probability of death or serious injury if proper precautions are not taken.

Warning

The signal word “Warning” means a hazard exists on or near the vehicle which can result in serious injury or death if the proper precautions are not taken.

Caution

The signal word “Caution” is a reminder of safety practices or directs attention to unsafe practices on or near the vehicle which could result in personal injury if the proper precautions are not taken.
New or Additional Operators

At the time of original purchase, the purchaser of this vehicle was instructed by the seller on its safe and correct use. If this vehicle is to be used by an employee or is loaned, rented or sold to someone other than the purchaser, make certain that the new operator reads and understands the Operator’s Manual and the Rough Terrain Forklift Safety Manual that are provided with the vehicle before operating the vehicle.

In addition, make sure that the new operator has completed a walk-around inspection of the vehicle, is familiar with all decals and safety equipment on the vehicle, and has demonstrated the correct use of all controls.

Personal Considerations

1. Seat Belt
   
   **Always** adjust the seat and fasten the seat belt securely before you start the engine.

2. Clothing and Safety Gear
   
   **DO NOT** wear loose clothing or jewelry that can get caught on controls or moving parts. Wear the protective clothing and personal safety gear issued or called for by job conditions.

3. Dismounting

   **WARNING**

   MACHINE ROLL AWAY can cause death or serious injury.

   **ALWAYS** engage parking brake before dismounting.

   **DO NOT** get off the vehicle until you:
   - place the travel select lever in (N) Neutral,
   - engage the emergency brake switch,
   - lower the boom,
   - ground the carriage,
   - turn engine off,
   - unbuckle the seat belt, and
   - exit the vehicle using the hand holds.
4. Chemical Hazards

A. Exhaust Fumes
   Fumes from the engine exhaust can cause injury or death. If operating in an enclosed area, provide good ventilation to replace hazardous exhaust fumes with fresh air.

B. Explosive Fuel
   Engine fuel is flammable and can cause a fire and/or an explosion. Avoid danger by keeping sparks, open flames and smoking materials away from vehicle and fuel during refueling or fuel system servicing. Know where fire extinguishers are kept on the work site and how to use them.

C. Hydraulic Fluid
   - DO NOT attempt to repair or tighten any hydraulic hoses or fittings while the engine is running or when the hydraulic system is under pressure. Fluid in the hydraulic system is under enough pressure that it can penetrate the skin causing serious injury or death.
   - HOT HYDRAULIC FLUID WILL CAUSE SEVERE BURNS. Wait for fluid to cool down before disconnecting lines.

   • DO NOT use your hand to check for leaks. Use a piece of cardboard or paper to search for leaks. Wear gloves to protect hands from spraying fluid.
   • Hydraulic fluid can cause permanent eye injury. Wear appropriate eye protection and stop engine and relieve pressure before disconnecting lines.
   • If anyone is injured by or if any hydraulic fluid is injected into the skin, obtain medical attention immediately or gangrene may result.

D. Battery
   The following WARNING is intended to supplement and does not replace the warnings and information provided on the battery by the battery manufacturer.
When jump starting the vehicle, carefully follow instructions found under “Jump Starting” later in this manual.

Keep sparks, flames, and lit cigarettes away from battery at all times. Lead acid batteries generate explosive gases. Severe chemical burns can result from improper handling of battery electrolyte. Wear safety glasses and proper protective gear when handling batteries to prevent electrolyte from coming in contact with eyes, skin or clothing.

**Battery Electrolyte First Aid**

- **External Contact** — Flush with water.
- **Eyes** — Flush with water for at least 15 minutes and get medical attention immediately!
- **Internal Contact** — Drink large quantities of water. Follow with Milk of Magnesia, beaten egg or vegetable oil. Get medical attention immediately!

*IMPORTANT:* In case of internal contact, **DO NOT** give fluids that would induce vomiting!

5. **Moving Parts Hazard**

*WARNING*

**MOVING PARTS can cut off fingers or hands.**

Keep hands clear of fans and belts while engine is running.

5. **Moving Parts Hazard**

*WARNING*

**MOVING PARTS can cut off fingers or hands.**

Keep hands clear of fans and belts while engine is running.

6. **Lowering Boom or Falling Load Hazard**

**WARNING**

**MOVING PARTS can cut off fingers or hands.**

Keep hands clear of fans and belts while engine is running.

5. **Moving Parts Hazard**

*WARNING*

**MOVING PARTS can cut off fingers or hands.**

Keep hands clear of fans and belts while engine is running.

6. **Lowering Boom or Falling Load Hazard**

**WARNING**

**MOVING PARTS can cut off fingers or hands.**

Keep hands clear of fans and belts while engine is running.

5. **Moving Parts Hazard**

*WARNING*

**MOVING PARTS can cut off fingers or hands.**

Keep hands clear of fans and belts while engine is running.

6. **Lowering Boom or Falling Load Hazard**

**WARNING**

**MOVING PARTS can cut off fingers or hands.**

Keep hands clear of fans and belts while engine is running.

5. **Moving Parts Hazard**

*WARNING*

**MOVING PARTS can cut off fingers or hands.**

Keep hands clear of fans and belts while engine is running.

6. **Lowering Boom or Falling Load Hazard**

**WARNING**

**MOVING PARTS can cut off fingers or hands.**

Keep hands clear of fans and belts while engine is running.

5. **Moving Parts Hazard**

*WARNING*

**MOVING PARTS can cut off fingers or hands.**

Keep hands clear of fans and belts while engine is running.

6. **Lowering Boom or Falling Load Hazard**

**WARNING**

**MOVING PARTS can cut off fingers or hands.**

Keep hands clear of fans and belts while engine is running.

5. **Moving Parts Hazard**

*WARNING*

**MOVING PARTS can cut off fingers or hands.**

Keep hands clear of fans and belts while engine is running.

6. **Lowering Boom or Falling Load Hazard**

**WARNING**

**MOVING PARTS can cut off fingers or hands.**

Keep hands clear of fans and belts while engine is running.

5. **Moving Parts Hazard**

*WARNING*

**MOVING PARTS can cut off fingers or hands.**

Keep hands clear of fans and belts while engine is running.

6. **Lowering Boom or Falling Load Hazard**

**WARNING**

**MOVING PARTS can cut off fingers or hands.**

Keep hands clear of fans and belts while engine is running.

5. **Moving Parts Hazard**

*WARNING*

**MOVING PARTS can cut off fingers or hands.**

Keep hands clear of fans and belts while engine is running.

6. **Lowering Boom or Falling Load Hazard**

**WARNING**

**MOVING PARTS can cut off fingers or hands.**

Keep hands clear of fans and belts while engine is running.

5. **Moving Parts Hazard**

*WARNING*

**MOVING PARTS can cut off fingers or hands.**

Keep hands clear of fans and belts while engine is running.

6. **Lowering Boom or Falling Load Hazard**

**WARNING**

**MOVING PARTS can cut off fingers or hands.**

Keep hands clear of fans and belts while engine is running.

5. **Moving Parts Hazard**

*WARNING*

**MOVING PARTS can cut off fingers or hands.**

Keep hands clear of fans and belts while engine is running.

6. **Lowering Boom or Falling Load Hazard**

**WARNING**

**MOVING PARTS can cut off fingers or hands.**

Keep hands clear of fans and belts while engine is running.
Operational Considerations

1. Preparation and Prevention

Prevent accidents when you move the vehicle around the work site. Know the rules for movement of people and vehicles on the work site. Follow the instructions of signals and signs.

DO NOT operate the vehicle unless:

• all four tires are correctly filled with hydrofill,
• all safety equipment is in proper working condition,
• all covers and shields are in place, and
• all safety and instructional decals are in place and readable.

(Replace all missing, illegible, or damaged decals.)

2. Clearances

Always check clearances carefully before driving under electrical lines, bridges, etc.

3. Underground Hazards

Know the location of all underground hazards before operating the vehicle in a new work area. Electrical cables, gas pipes, water pipes, sewers, or other underground objects can cause injury or death. Contact your local underground utility service or diggers' hotline to mark all underground hazards.

Know the location and function of all vehicle controls. Make sure all persons are away from the vehicle and that the Travel Select Lever is in the "N" (Neutral) position with the emergency brake switch engaged before starting the engine.

Holes, obstructions, debris and other work area hazards can cause injury or death. Always walk around and look for these and other hazards before operating the vehicle in a new work area.
4. Electrocution Hazard

**DANGER**

CONTACT WITH ELECTRIC POWER LINES can result in electrocution.
- Never operate this machine within 10 feet of electric power lines.
- Notify the power company to de-energize the lines before operating forklift.

**NEVER** operate this vehicle in an area in which overhead power lines, overhead or underground cables, or power sources exist without first requesting that the appropriate power company or utility company de-energize the lines or take other suitable precautions.

5. Lifting Personnel

**WARNING**

CARRYING PERSONNEL can result in death or serious injury.
- Only Use an Approved Work Platform.
- Only **Lift** or **Lower** personnel when using a work platform.
- Never move machine with personnel on the work platform.

Use **only** an approved work platform for lifting and lowering personnel. **NEVER** transport personnel in a work platform for even the shortest distance.

Serious injury or death can occur if these rules are not obeyed. Riders can fall and be crushed or run over. Avoid accidents. For other specific precautions, see "Elevating Personnel" later in this manual.
6. Tip Over Hazard

**DANGER**

MACHINE TIPOVER can result in death or serious injury.
- Level machine before raising boom.
- Lower raised boom before traveling.
- Operate only with hydrofill in all 4 tires.
- Consult capacity chart for load limits.

DO NOT exceed the rated lift capacity of the vehicle, as structural damage and unstable vehicle conditions will result.

If proper operating procedures are not followed, this vehicle will tip over. If a vehicle ever becomes unstable and starts to tip over,
- BRACE YOURSELF and STAY WITH THE VEHICLE.
- KEEP SEAT BELT FASTENED,
- HOLD ON FIRMLY and
- LEAN AWAY FROM THE POINT OF IMPACT.

Indecision and trying to escape from a tipping vehicle can result in death or injury.

ALWAYS make sure that all four tires have been properly filled with hydrofill by a qualified tire service center.

Traveling with the boom raised is dangerous and can cause tipover. Keep the load as low as possible. Travel with extreme caution and at the slowest possible speed.

Driving across a slope is dangerous, as unexpected changes in the slope can cause tipover. Ascend or descend slopes slowly and with caution.

Keep the vehicle under control at all times.
Avoid jerky turns, starts, or stops. Reduce operating speed on rough ground and slopes.

Frame tilting with the boom raised above horizontal is dangerous. Always use the frame tilt to level the vehicle before raising the boom above horizontal, with or without a load. If the vehicle cannot be leveled using the frame tilt, reposition the vehicle.
7. **Slopes**

**DO NOT** park the vehicle on an incline and leave it unattended.

- Driving across a slope is dangerous, as unexpected changes in the slope can cause tipover. Ascend or descend slopes **slowly** and with **caution**.
- Ascend or descend slopes with the heavy end of the vehicle pointing up the slope.

**NOTE**: The rear of the vehicle is normally considered the heavy end unless the carriage is fully loaded. In this case the front of the vehicle is now the heavy end.

- Unloaded vehicles should be operated on all slopes with the carriage pointing down the slope.
- On all slopes, the load must be tilted back and raised only as far as necessary to clear the ground.
- When operating on a downhill slope, reduce travel speed and downshift to a low gear to permit compression braking by the engine and aid the application of the service brakes.

**DO NOT** remove or unpin the rear stabilizer cylinder from the vehicle, as unstable vehicle conditions will result.

**ALWAYS** be sure the Stabil-TRAK system is functioning properly when operating the vehicle. Refer to “Stabil-TRAK System Test” later in this manual for proper system function.
8. **Falling Load Hazard**

**DO NOT** exceed the total rated load capacity of the specific type fork being used. Each fork is stamped with a maximum load capacity. If capacity is exceeded, forks may break. See "Fork Ratings" later in this manual.

**DO NOT** downshift at a high ground speed. You may drop the load off of the forks due to a sudden slowing.

9. **Visual Obstruction**

Dust, smoke, fog, etc. can decrease vision and cause an accident. Always stop or slow the vehicle until the obstruction clears and the work area is visible again.

10. **Ventilation**

Sparks from the electrical system and engine exhaust can cause an explosion. **DO NOT** operate this vehicle in an area with flammable dust or vapors, unless good ventilation has removed the hazard.

Carbon monoxide fumes from the engine exhaust can also cause suffocation in an enclosed area. Good ventilation is very important when operating this vehicle.

---

### Equipment Considerations

**ALWAYS** make sure that all four tires have been properly filled with hydrofill by a qualified tire service center. Improper hydrofill can cause instability which can result in tipover.

---

### Warning

**DO NOT** modify or repair (welding, drilling, etc.) any part of this vehicle. Modifications can weaken the structure creating a hazard that can cause injury or death.
Operation

Controls

Ignition Switch (See Figure 1)

Using the ignition switch key, the switch may be turned clockwise from the OFF position to the RUN and START positions. The START position is spring-loaded to return to the RUN position and must be manually held in place for normal starting.

Off position — The entire electrical system is shut down.

Run position — All controls and indicators are operable.

Start position — Engages starter to crank the engine when the emergency brake switch is engaged and the transmission is in neutral.

Accelerator Pedal (See Figure 1)

Pressing down the accelerator pedal increases travel speed of the vehicle. The pedal is spring-loaded to return to idle speed.

Service Brake Pedal (See Figure 1)

Pressing down the brake pedal applies the wet disc service brakes located in the axle wheel ends. It also activates and locks the rear axle lock system when boom angles are greater than 40°, as long as the pedal is depressed.

Steering Wheel (See Figure 1)

Turning the steering wheel to the left or right steers the vehicle in the corresponding direction. Any one of three steering modes are selectable. Refer to "Steering Select Switch."
DANGER
MACHINE TIPOVER can result in death or serious injury.

- Level machine before raising boom.
- Lower raised boom before traveling.
- Operate only with hydrofill in all 4 tires.
- Consult capacity chart for load limits.

SAFETY INSTRUCTIONS
Read operator's manual before operating.
Fasten seat belt.
Allow no riders.
Use an approved work platform to lift or lower personnel.

WARNING
MACHINE ROLL AWAY can cause death or serious injury.

ALWAYS engage parking brake before dismounting.

CONTACT WITH ELECTRIC POWER LINES can result in electrocution.
Never operate this machine within 10 feet of electric power lines.
Notify the power company to de-energize the lines before operating forklift.

Emergency Brake Switch (See Figure 2)
The emergency brake switch has two positions:

- Engaged ............... lift red switch cover then push switch up
- Disengaged ............ lower red switch cover

The emergency brake must be ENGAGED to permit engine starting. Operator should use caution when engaging the emergency brake while vehicle is moving, because the stop will be abrupt and operator may be jolted forward unexpectedly. The emergency brake may be used to stop in an emergency situation. With boom angles greater than 40°, this switch activates and locks the Stabil-TRAK system.

Travel Select Lever (See Figure 2)
The travel select lever has three positions to select direction of travel:

- F = Forward ........ all the way up
- N = Neutral ........ center position
- R = Reverse ........ all the way down

When the travel select lever is shifted into REVERSE, the back-up alarm will automatically sound.

NOTE: The travel select lever must be in NEUTRAL to permit engine starting and when boom angles are greater than 40°, shifting into NEUTRAL locks the Stabil-TRAK system.

Steering Select Switch (See Figure 2)
This switch has three positions:

- Four Wheel Steer .... up position
- Two Wheel Steer ..... center position
- Crab Steer ............... down position

Refer to Steering under "Operating" for detailed information.
Range Select Lever (See Figure 2)
The range select lever has three positions to select the gear range:
1 = Low .............. all the way down
2 = Medium .......... center position
3 = High .............. all the way up
Use first gear for highest torque and pulling power. Use third gear for highest ground speed.

Boom Control Lever (See Figure 3)
The boom control lever is a joystick with variable motion from the center to control the boom functions:

- Boom Raise ....... move lever backward
- Boom Lower ....... move lever forward
- Boom Extend ...... move lever to the right
- Boom Retract ...... move lever to the left

Two boom functions can be accomplished at the same time by moving the lever into the proper quadrant. For example: moving the lever forward and to the left will lower and retract the boom simultaneously.
The speed of boom movement depends on the amount of lever movement in the corresponding direction. The overall speed of movement depends directly upon the speed of the engine.
Attachment and Frame Tilt Control Lever
(See Figure 3)

The attachment and frame tilt control is a joystick with four perpendicular motions from the center to control two attachment functions and two frame tilt functions:

- Frame Tilt Left ............... move lever to the left
- Frame Tilt Right ............. move lever to the right
- Attachment Tilt Down .... move lever forward
- Attachment Tilt Up .......... move lever backward

The attachment is self leveling and will retain any set angle throughout boom raising, lowering, retracting or extending operations.

Outrigger Control Switches (std. 10042 only)
(See Figure 4)

The left and right outrigger control switches raise or lower the corresponding outriggers.

- Raise Left Outrigger .......... lift switch up
- Lower Left Outrigger .......... push switch down
- Raise Right Outrigger ........ lift switch up
- Lower Right Outrigger ........ push switch down

Figure 4
IMPORTANT! Outrigger equipped vehicles can be used with the outriggers in either the raised or lowered position. The operator must operate the vehicle within the limits specified on the appropriate capacity chart for the outrigger position.

Procedure for Lowering of Outriggers

Secure and proper outrigger placement is critical for stability of the vehicle. Avoid holes or drop-offs and soft or excessively uneven terrain. Lower outriggers just far enough until the front of the vehicle starts to raise and maintain a level position. Use the following procedure to assure that both outriggers have been lowered securely.

IMPORTANT: For optimum vehicle stability, never lower the outriggers to the point at which the tires come completely off the ground.

1. Before locating the vehicle at the lift point, observe that the landing area for the outriggers is free of loose material or debris and that the terrain appears to be solid and free of holes.
2. Position the vehicle at the lift point and level the vehicle to zero degrees (0°). If the vehicle cannot be leveled, reposition the vehicle.
3. Lower the right outrigger until the right front tire just starts to raise and maintains this position.
4. Lower the left outrigger until the left front tire just starts to raise and again maintains this position.
5. Frame tilt the vehicle back to level (0°) if necessary.

Horn Button (Figure 2)

Pressing the momentary-contact horn button sounds the vehicle horn.

Circulation Fan (Enclosed Cab Only) (Not Pictured)

The circulation fan is only operable when the ignition switch in is the RUN position. The fan switch is located at the base of the fan mount.

Sliding Windows (Enclosed Cab Only) (Not Pictured)

The sliding windows are latched with a combination slide bar and squeeze actuated latch.
Rear Window Control (Enclosed Cab Only)  
(See Figure 5)
Loosen the knob and slide the pivot arm in the slot to open the rear window. Tighten the knob to secure. Reverse the procedure to close the window.

NOTE: The rear window can be used as an emergency exit if necessary. Unscrew the knob from the stud, raise the pivot arm over the stud, and push the window out.

Door Latches (Enclosed Cab Only)  
(Not Pictured)
There are two door latches. The outside latch is a key lockable pull to release type. The inside latch is a push to release type.

Windshield Washer/Wiper Control  
(Enclosed Cab Only)  
(Not Pictured)
Turn the knob counterclockwise to operate the wipers at low speed; turn the knob clockwise to operate the wipers at high speed. Pressing the knob activates the windshield washer for as long as it is held in. The windshield washer fluid tank is located to the rear of the right console (early models) or it is the front tank next to the seat support (later models).

Roof Washer/Wiper Control  
(Enclosed Cab Only)  
(Not Pictured)
Turn the knob clockwise to operate the wiper. Pressing the knob activates the roof washer for as long as it is held in. The washer fluid tank is the rear tank located next to the seat support.
Cab Heater (Enclosed Cab Only)
(See Figure 6)

The cab heater fan is only operable when the ignition switch is in the RUN position. The heater fan switch is located on the left side of the seat base (Figure 6). The switch has three positions: OFF, LO, and HI.

**NOTE:** During warm weather operation, close the heater line shut-off valve, located in the heater hose connection at the engine. (Valve is located below engine alternator.)

Seat Belt (See Figure 6)

The seat belt has a slide on each strap that is used to tighten and loosen the strap on each side of the buckle. To shorten, pull bottom of loop toward buckle. To lengthen, hold slide strap, pull slide toward buckle and readjust buckle on loop. Buckle the two straps together to fasten. Lift the buckle latch or press the center button to unfasten the seat belt.

Operator's Seat Adjustment (See Figure 6)

The position and suspension of the operator's seat can be adjusted.

**Suspension** — Turn the knob on the front of the seat to adjust suspension stiffness for operator weight.

**Height** — Height adjustment is achieved by grasping the bottom of the seat and raising upward into one of the three detent positions. Once the seat has reached the highest detent position, it can be lowered by raising the seat all the way and lowering it fully. The seat can then be raised, one detent at a time to the desired height.

**Forward/Backward** — Release the lever on the left side of the seat and slide seat forward or backward to suit.
Instruments/Indicators

Stabil-TRAK Light
(See Figure 7)

The Stabil-TRAK light will come ON when the system has been activated. The rear axle will lock when one or more of the following conditions exist with the boom above a 40° angle.

- Emergency brake switch engaged
- Travel select lever in (N) Neutral
- Service brake pedal depressed

With the boom above a 40° angle and traveling in a forward or reverse drive gear, the Stabil-TRAK Light will go OFF. In this condition the rear axle is unlocked and is allowed to pivot, but will respond slowly to changes in terrain.

ALWAYS be sure the Stabil-TRAK system is functioning properly when operating vehicle. Refer to “Understanding the Stabil-TRAK System” later in this manual for a detailed explanation of this system.

Danger

Vehicle tipover can result in death or serious injury.
Traveling with the boom raised is dangerous and can cause vehicle tipover. Keep the load as low as possible. Travel with extreme caution and at the slowest possible speed.
Warning Lights (See Figure 7)
There are four warning lights in a cluster between the hourmeter and fuel gauge. When the ignition switch is turned to the RUN position the Engine Oil Pressure and Alternator Charge indicators will light up. This is a normal condition. While the engine is running, all lights should be OFF. However, if any of the lights turn ON an abnormal condition exists. These conditions are:

- **Engine Water Temperature Light**
  Indicates high engine coolant temperature.

- **Engine Oil Pressure Light**
  Indicates low engine oil pressure.

- **Alternator Charging Light**
  Indicates alternator is not charging.

- **Transmission/Hydraulic Oil Temperature Light**
  Indicates high transmission or hydraulic oil temperature.

---

Warning Light Bulb Test Button (See Figure 7)
Directly to the right of the instrument cluster is a warning light bulb test button. With ignition switch in the RUN position and engine OFF, depress this button to test all warning lights. If any of the lights are burnt out, replace the bulb(s) immediately.

---

Fuel Gauge (See Figure 7)
Indicates the quantity of fuel in the fuel tank. Capacity of the fuel tank is 35 gallons (132.5 ltr), total of 33.5 (126.8 ltr) usable gallons.

---

Hourmeter (See Figure 7)
Indicates the total elapsed hours of operation.

---

Rear View Mirrors (Not Pictured)
Two rear view mirrors are provided to aid the operator’s rear vision. A rectangular flat lens mirror is mounted on the upper left of the cab. A convex lens mirror is mounted on the right side of the frame. Both mirrors are adjustable to obtain the best rear view by the operator.
Frame Level Indicator (See Figure 8)

The indicator is mounted on the top inside of the Operator’s Protective Structure (cab). This is a bubble type indicator which allows the operator to tell if the vehicle has been positioned in a level condition. Always frame tilt the vehicle either right or left until the indicator reads zero degrees (0°). If zero cannot be achieved, then reposition the vehicle until it is level before placing the load.

**NOTE:** Maximum frame tilt is 10° in either direction.

Boom Angle Indicator (See Figure 9)

The boom angle indicator is a plumb arrow with angular graduations from minus 10° to plus 80°. It is located on the left side of the boom and is visible from the operator’s position. Use this indicator to determine the boom angle when reading the capacity chart (see "Using The Capacity Chart").
Optional Controls

Light Switch (See Figure 10)

A three-position push-pull switch controls the lights of the optional light package.

- Switch In = Lights OFF.
- Switch Halfway Out = Headlights and Taillights.
- Switch Fully Out = Headlights, Taillights, Rear Work Lights and Boom Work Light.

Directional Signals (See Figure 11)

Push the lever to the left and down to signal a left turn; to the right and up for a right turn. The signals are NOT self-canceling; the lever must be moved to the center OFF position after the indicated turn is negotiated.

To operate the emergency flashers, push or lift up the slide control. To cancel the flashers, engage the directional lever momentarily.
 Auxiliary Attachment Control Lever  
(See Figure 12)

The auxiliary attachment control lever controls the functions of an optional attachment that is mounted to the vehicle and requires a hydraulic supply for operation. Some of the optional attachments that require auxiliary hydraulics are: Side Tilt Carriage, Auger, and Swing Carriage.

When the control lever is moved to the right it will provide hydraulic system pressure through the female disconnect coupling for the auxiliary attachment. Hydraulic fluid will return to the tank through the male disconnect coupling.

When the control lever is moved to the left it will provide hydraulic system pressure to the male disconnect coupling for the auxiliary attachment. Hydraulic fluid will return to the tank through the female disconnect coupling.

The control lever will provide the following typical functions for each specific attachment if they are connected properly. Operation will be reversed if incorrectly connected. We recommend reversing the disconnect couplings on the hoses that are supplied with the attachment if operation is reversed.

**Side Tilt Carriage Operation:**
- Lever right ....... tilt right
- Lever left ........ tilt left

**Auger Operation:**
- Lever right ....... auger dig
- Lever left ........ auger retract

**Swing Carriage:**
- Lever right ....... swing right
- Lever left ........ swing left
**Walk-Around Inspection**

1. Check the air cleaner restriction indicator for required service.
2. Check and add engine oil if required.
3. Check cooling system overflow bottle for coolant. Add coolant if required and remove debris or other foreign material from the radiator as necessary.
4. Check hydraulic oil level sight gauge and add oil if required.
5. Walk around the vehicle and check for leakage, damaged or missing parts, proper tire inflation and hydrofill. Make necessary repairs before operating.
6. Check the condition of the rims, check for bent flanges and/or bead mounting areas. On three piece rims, check the retaining ring on the backside of the rim for wear or improper fit. Replace any damaged parts before using the vehicle.

**Normal Starting**

1. Using hand holds, enter the cab and adjust the operator’s seat for comfortable operation.
2. Adjust mirrors to obtain best rear view from operator position.
3. Fasten seat belt.
4. Check that the emergency brake switch is engaged.
5. Place the travel select lever in (N) Neutral.
6. Turn ignition switch to START position (fully clockwise) to crank engine. Release key when engine starts. If engine fails to start on first try, wait until engine and starter come to a complete stop before cranking engine again.

**WARNING**

**DO NOT** start the engine unless you are in the seat with the seat belt fastened around you. Serious injury or death could result if the belt is not securely fastened.

**IMPORTANT:** **DO NOT** crank starting motor continuously for more than 15 seconds. This will avoid starter motor overheating.
7. After engine starts, run engine at partial throttle for 30 to 60 seconds before operating vehicle. Return to idle before using travel or range select levers.

8. Disengage emergency brake switch before you start operating.

Cold Starting

The engine on this vehicle is not normally equipped with a cold starting aid. Cold starting aids such as mechanical or electrical ether metering equipment or block heaters are recommended when temperatures are below 10° F (-12° C). *(Temperature ranges will vary when using different oil weights. Consult the engine manufacturer's manual for other variables.)*

At temperatures below 10° F (-12° C), operate the engine at moderate speeds for 5 minutes before loads are applied.

1. Using hand holds, enter the cab and adjust the operator's seat for comfortable operation.

2. Fasten seat belt.

3. Check that the emergency brake switch is engaged.

4. Place the travel select lever in (N) Neutral.

5. Depress the accelerator pedal to half speed.

6. If using starting fluid with mechanical or electrical metering equipment:

   Turn the ignition switch to the START position to engage the starter motor and inject metered amounts of starting fluid.

   As the engine starts, stop injection of starting fluid and release the ignition key to the RUN position. Release the accelerator pedal to give a smooth idle speed.

**Warning**

**DO NOT** start the engine unless you are in the seat with the seat belt fastened around you. Serious injury or death could result if the belt is not securely fastened.
If using starting fluid without metering equipment:

**Warning**

NEVER use starting fluid near an open flame, or with electric preheater or flame air heater equipment. Serious injury or death could result from explosion.

DO NOT breathe starting fluid fumes. Serious injury or death could result from toxic fumes.

DO NOT use excessive amounts of starting fluid when starting an engine. Serious injury or death could result from a backfire of flame which could ignite the starting fluid canister and cause an explosion.

**IMPORTANT:** It is recommended that two people are present when attempting to start the engine without metered starting fluid equipment. One to operate the ignition switch the other to spray the fluid. Avoid soaking the air cleaner element with ether. This is extremely important because a backfire of flame can completely destroy both the primary and secondary air cleaner elements and other possible engine damage may occur.

Turn the ignition switch to the START position to engage the starter motor. After the engine has started to crank, not before, the other person can spray starting fluid into the air cleaner intake.

As the engine starts, stop spraying starting fluid and release the ignition key to the RUN position. Release the accelerator pedal to give a smooth idle speed.

**IMPORTANT:** Never spray excessive amounts of ether! Too much ether will wash oil off cylinder bores and cause severe engine damage.

7. The engine oil pressure warning light should turn OFF within 5 seconds after the engine has started. If the light remains ON, turn engine OFF immediately and check oil level or change type of oil being used to a lighter weight oil. Consult engine manufacturer's manual for other oils that can be used.
Jump Starting

Jump starting at the battery or battery replacement is required when the battery is discharged to the point where the battery will not crank the starter.

1. The booster battery must be a 12 volt type. The vehicle used for jump starting must have a negative ground electrical system. To jump start the telescopic handler, proceed as follows.
2. Connect the positive (+) jumper cable to the positive (+) post of the discharged battery.
3. Connect the other end of the same jumper cable to the positive (+) post of the booster battery.
4. Connect one end of the second jumper cable to the negative (-) post of the booster battery.
5. Make the final jumper cable connection to the furthest ground point away from the discharged battery.
6. Follow the steps in "Normal Starting".
7. Remove the jumper cables in the reverse order of their connection (i.e. negative cable ground connection first, etc.)

Warning

NEVER jump start the vehicle directly to the starter or starter solenoid. Serious injury or death could result from the vehicle moving forward or backward and running over the person jump starting the vehicle.

Warning

To avoid personal injury when jump starting with another vehicle, be certain that the vehicles are not touching. Never jump start a frozen battery as it will explode. Keep sparks, flames and lighted smoking materials away from the battery. Lead acid batteries generate explosive gases when charging. Wear safety glasses when working near batteries.
Understanding the Stabil-TRAK™ System

The following describes the three basic modes of the Stabil-TRAK system.

Free Pivot Mode
With the boom below 40°, the Stabil-TRAK system is in the free pivot mode and the rear axle is allowed to pivot freely.

The frame tilt functions normally, with or without the outriggers down.

Locked Mode
With the boom above 40°, the Stabil-TRAK system is in the locked mode and the rear axle is locked so it is rigid with the frame. This mode is activated by one or more of the following functions:

- Engaging the Emergency Brake Switch
- Placing Travel Select Lever in NEUTRAL
- Depressing and holding the Service Brake Pedal

The frame tilt functions slower than normal in this mode, with or without the outriggers down.

Final Positioning Mode
With the boom above 40° and vehicle traveling the Stabil-TRAK system is in the final positioning mode. In this mode the rear axle is unlocked and is allowed to pivot, but will respond SLOWLY to changes in terrain. The frame tilt functions normally in this mode.
It is important that you regularly check that this system is functioning properly. Refer to the test procedure later in this manual for proper system function.

Starting Travel
1. Enter operator cab, fasten seat belt, start engine and disengage emergency brake switch.
2. Move range select lever to the desired gear (1, 2 or 3).
3. Move travel select lever to forward (F) or reverse (R) as needed.
4. Use accelerator pedal to control ground speed.
5. Avoid operating in too high a gear when moving a heavy load as this may cause excessive “lugging”. This occurs when the engine will not respond to a throttle increase. Use a lower gear when moving a heavy load; a higher gear when moving a light load. Selecting the correct gear ratio will save fuel and prolong engine life.

**IMPORTANT:** Check warning lights frequently during operation. Any abnormal indications or vehicle malfunction should be corrected as soon as possible.

Changing Travel Direction
1. Stop the vehicle.
2. Move travel select lever to opposite direction, (R) reverse or (F) forward.

Shifting Gears
1. Shifting to next higher gear may be done at any engine speed while the vehicle is in motion.
2. When downshifting, do not over-rev the engine. Allow vehicle to slow before shifting to next lower gear.

Stopping Travel
1. Apply service brakes and downshift to lower gear as necessary to slow the vehicle until it comes to a complete stop.
2. Move travel select lever to (N) Neutral for longer stops and engage the emergency brake switch.
Steaming

The vehicle can be operated in three steering modes as selected at the steering select switch on the instrument panel: four wheel steer, two wheel steer and crab steer.

NOTE: DO NOT change steer select switch unless all tires are in the straight ahead position. If tires are not "straight ahead", steering may become out-of-phase, making it necessary to perform the four wheel steer indexing procedure which follows.

1. Four Wheel Steer Indexing
   A. With steer select in four wheel steer, turn steering wheel full right.
   B. With steer select in two wheel steer, turn steering wheel full right.
   C. With steer select in four wheel steer, turn steering wheel full left.
   D. With steer select in two wheel steer, turn steering wheel full left.
   E. Switch to four wheel steer mode and then return front wheels to straight ahead position.
   F. Vehicle should now be properly indexed in four wheel steer mode. If the wheels are still out-of-phase, repeat this procedure one more time.

2. Four Wheel Steering (See Figure 13)

WARNING

NEVER use the four wheel steer mode when traveling at high speed. Rapid turning in this mode will cause tipover. Use only the two wheel steer mode at high speeds and slow vehicle when turning.

Figure 13

The front wheels will steer in the direction that the steering wheel is turned; the rear wheels will steer in the opposite direction. This mode allows an extremely short turning radius. It also enables the rear wheels to follow the tracking of front wheels which is an advantage in mud or sand conditions.
3. **Two Wheel Steering** (See Figure 14)
   The front wheels will steer in the direction that the steering wheel is turned. The rear wheels will remain in the fixed forward position. This mode is used for on-highway travel or at higher speeds.

4. **Crab Steering** (See Figure 15)
   All wheels will steer in same direction. This mode permits the operator to move the vehicle sideways toward the landing point of the load. This is especially helpful in tight quarters on a job, where there is not enough space to move a conventional telescopic handler back and forth several times in order to line up at the exact spot in front of the loading location.
Caution

The forks extend beyond the end of the carriage. The operator must be aware of the maximum sweep of the forks when turning and allow for adequate clearance between the forks, personnel and other objects (See Figure 16).

Leveling Frame

When placing a load while on a slope, use the frame tilt control lever to keep the load level. The operator should observe the frame level indicator to assure that the load is level at all times.

Danger

Frame tilting with the boom raised above horizontal can cause tipover resulting in death or serious injury. Always use the frame tilt to level the vehicle before raising the boom above horizontal. If the vehicle cannot be leveled using the frame tilt, reposition the vehicle.

Quick Attach (See Figure 17)

This vehicle is equipped with a quick attach system for easy attachment changing.

Quick Attach Removal

1. Park the vehicle on level ground.
2. Place travel select lever in (N) Neutral and engage the emergency brake switch.
3. Extend the boom about 10 feet and tilt the carriage backward.
6. Return to the operator’s compartment, lower the attachment to the ground in a level position, and push the attachment tilt lever forward. This will rotate the quick attach link back away from the attachment.

7. Lower, then retract the boom until the boom hook pins have disconnected from the attachment.

Quick Attach Reconnect

1. Be sure that you are performing this procedure on level ground. Position the vehicle directly behind the attachment to be mounted.

2. Push the attachment tilt control lever forward to rotate the quick attach link back.

3. Extend the boom approximately 10 feet and drive the vehicle forward until the boom hook pins are below and between the two hooks on the attachment.

4. Raise the boom until the boom hook pins have seated fully in the hooks on the attachment.

5. Pull the attachment tilt control lever backward until the front of the attachment starts to raise. The quick attach link should be tight up against the rear of the attachment and the holes in the link and the attachment should be aligned.

4. Exit the vehicle using the hand holds.

**NOTE:** Before removing a carriage type attachment, spread the forks out on the carriage shaft. This will give the carriage adequate support to stand alone when it is removed from the boom.

5. Raise the quick attach pin lock lever and pull out the pin at the bottom of the quick attach link.
6. Place travel select lever in (N) Neutral, engage emergency brake switch and exit the telescopic handler using the hand holds.

7. Lift lever. Insert the quick attach pin completely through the attachment and quick attach link. Be sure that the quick attach lock lever has lowered and seated itself into the groove in the quick attach pin.

8. Return to the operator’s compartment, fasten seat belt and resume operation.

### Stabil-TRAK™ System Test

It is important for the operator to know that the Stabil-TRAK system is active and functioning properly.

### Danger

Vehicle tipover can result in death or serious injury. Always operate vehicle with rear stabilizer cylinder in place and functioning properly. DO NOT use the vehicle if the Stabil-TRAK system is not functioning properly.

To test the function of the Stabil-TRAK system, read the Stabil-TRAK system test instructions below and follow steps 1 thru 9 of the Stabil-TRAK system test procedure.

#### Stabil-TRAK™ System Test Instructions

- Test the Stabil-TRAK system with the vehicle on a level surface.
- Remove any attachment from the quick attach before performing the test.
- Perform the test with the boom fully retracted. DO NOT extend the boom at any time during the test.
• DO NOT raise the boom above 60° for steps 3 thru 6.
• DO NOT raise the boom above 45° for steps 7 thru 9.
• Test vehicles with outriggers in the RAISED position.
• Follow steps 1 thru 9 of the Stabil-TRAK system test procedure exactly as written.

**IMPORTANT:** If the Stabil-TRAK light goes OFF and the front left tire lowers to the ground at any time during steps 4 thru 7, the test was not performed properly or the Stabil-TRAK system is not functioning properly. Carefully repeat the steps starting with step 1. If the Stabil-TRAK light goes OFF and the front left tire lowers to the ground consistently during steps 4 thru 7, the Stabil-TRAK system is not functioning properly and the test should be stopped immediately. DO NOT use the vehicle if the Stabil-TRAK system is not functioning properly. Contact your local Sky Trak International Distributor immediately to repair the system.

**Warning**

DO NOT operate this vehicle unless you are in the seat with the seat belt fastened around you. Serious injury or death could result if the belt is not securely fastened.

**Stabil-TRAK™ System Test Procedure**

1. Fasten seat belt and place the vehicle on a level surface with 0° frame tilt angle, no load on the forks, boom fully retracted and horizontal. Check to be sure the Stabil-TRAK light is OFF.

2. Locate an eight inch wood or concrete block in front of the left front tire and drive the vehicle up on the block. Frame tilt the vehicle back to 0°.

3. With the service brake pedal depressed, the emergency brake switch OFF, move the travel select lever to the (N) neutral position and raise the boom to exactly 60°. The Stabil-TRAK light should come ON when the boom angle is at about 40° and remain ON.
**IMPORTANT:** Perform procedures 4 thru 9 with the engine rpm at idle.

4. With the service brake pedal depressed, move the travel select lever to the (R) reverse position. Ease your foot off the service brake pedal and increase engine RPM slightly if necessary just enough to back the vehicle off of the block, while keeping the service brake pedal partially depressed so that the Stabil-TRAK light remains ON. The rear axle should remain locked while backing off of the block and the front left tire should remain off the ground.

5. While keeping the service brake pedal depressed, move the travel select lever to the (N) neutral position and take your foot off of the service brake pedal. The rear axle should remain locked, the Stabil-TRAK light should remain ON, and the front left tire should remain off the ground.

6. With the travel select lever in the (N) neutral position, engage the emergency brake switch and move the travel select lever to the (F) forward position. The rear axle should remain locked, the Stabil-TRAK light should remain ON, and the front left tire should remain off the ground.

7. With the emergency brake switch ON, move the travel select lever to the (N) neutral position, and lower the boom to exactly 45°. Frame tilt the vehicle no more than 5° to the left and then no more than 5° to the right. The vehicle should frame tilt slowly to the left and then to the right. The Stabil-TRAK light should remain ON, and the left front tire should remain off the ground. The front left tire should not raise or lower when frame tilting. Leave the vehicle frame tilted to the right 1° to 2°.

8. Depress the service brake pedal. Disengage the emergency brake switch and move the travel select lever to the (R) reverse position. Release the service brake pedal to deactivate the Stabil-TRAK system and the Stabil-TRAK light should go OFF. The left front tire should return to the ground while the vehicle travels in reverse. Depress the service brake pedal to stop the vehicle.
9. With the service brake pedal depressed, boom angle at exactly 45°, move the range select lever to (3) third and the travel select lever to (F) forward. Release the service brake pedal to deactivate the Stabil-TRAK system and the Stabil-TRAK light should go OFF. Slowly drive the vehicle forward against the block to stop the vehicle from moving forward. With the front left tire against the block, frame tilt the vehicle no more than 5° in both directions while checking that the front tires remain on the ground. It is normal for the left front tire to raise slightly when frame tilting to the left and for the right front tire to raise slightly when frame tilting to the right, but the tires should immediately lower when the frame tilt function is stopped. The tires should not come completely off the ground during this step. Frame tilt the vehicle back to zero. Depress the service brake pedal, shift the travel select lever to (N) neutral and lower the boom.

If steps 1 thru 9 prove positive, the Stabil-TRAK system is functioning properly and the vehicle can be returned to service. If any of these steps indicate that the Stabil-TRAK system is not functioning properly, contact your local Authorized Sky Trak International Distributor immediately to repair the system.
Using The Capacity Chart

The capacity chart is located on the right side wall of the operator's compartment. The chart is provided to assist the operator in determining how far in front, how high and at what angle a specific load weight can be safely handled with this vehicle.

This vehicle is equipped with two major indicators that will assist the operator in determining how to accurately use the capacity chart. These components are the boom extend letters and the boom angle indicator.

As the boom is extended, boom extend letters will appear on the left side of the boom visible to the operator. The letters are graduated in four foot increments. These letters indicate the point of boom extension and correspond to the capacity chart. For example, when the letter “A” first appears, the boom is at the point of boom extension corresponding to the arc of line “A” throughout the entire capacity chart (Figure 18, 18A, and 18B).

The boom angle indicator located on the left side of the boom indicates the angle of the boom as shown in the capacity chart.

To accurately use the capacity chart, the operator must first determine the following three things:

1. Weight of the load being lifted.
2. The height of the structure where load is to be placed.
3. Distance where the load will ultimately be placed in front of the vehicle.

Warning

DO NOT exceed rated capacities. Any attempt to lift or carry loads in excess of those shown on the capacity chart in the operator's compartment may cause vehicle tipover, loss of load or structural damage which could result in death or serious injury.

Reading the chart —

EXAMPLE:

1. The operator has placed the load onto the forks, fully retracted the boom, positioned the vehicle perpendicular to the structure and leveled the vehicle.
2. The operator then determines that:
   - The load weight is 4000 pounds (1810 kg).
   - The height of the structure the load is to be placed upon is 26 feet (7.9 meters) from ground level.
   - The distance where the load will ultimately be placed in front of the vehicle is 17 feet (5.2 meters) from the front of the front tires.

3. After applying the height of the structure and the distance of load placement away from the vehicle to the capacity chart (Figure 18), the operator knows that it will be safe to place the load if the boom extend letter “D” has appeared and the boom angle indicator reading does not go below approximately 40°. This condition is however, a maximum limit for this weight, height and distance away from the vehicle. The operator should move the vehicle closer to the structure to assure that the vehicle will not exceed the maximum limits for placing the load.
Figure 18A

Figure 18B

10042

17.5 – 25 12 PLY TIRES
at 51 psi (352 kPa)

17.5 R25 TWO STAR RADIALS
at 73 psi (503 kPa)

Hydrofill per operators manual

Load Ratings per ASME B56.6b — 1998
**SWING CARRIAGE ATTACHMENT ON 8042**

13.00 – 24 12 PLY TIRES at 70 psi (482 kPa)
13.00 R 24 ONE STAR RADIALS at 80 psi (551 kPa)
15.5 – 25 12 PLY TIRES at 58 psi (400 kPa)
17.5 – 25 12 PLY TIRES at 51 psi (352 kPa)

Hydrotill per operators manual
Load Ratings per ASME B56.6b-1998

**LOAD CENTER**
24 in (610 mm)
SWING CARRIAGE ATTACHMENT ON 10042

17.5 – 25 12 PLY TIRES
at 51 psi (352 kPa)

17.5 R 25 TWO STAR RADIALS
at 73 psi (503 kPa)

Hydrofill per operators manual

Load Ratings per ASME B56.6b-1998

LOAD CENTER
24 in (610 mm)
15' (4,5 m) Truss Boom on 10042

OUTRIGGERS DOWN

2000 lbs 910 kg

OUTRIGGERS UP

2000 lbs 910 kg

17.5 – 25 12 PLY TIRES at 51 psi (352 kPa)

17.5R25 TWO STAR RADIALS at 73 psi (503 kPa)

Hydrofill per operators manual

Load Ratings per ASME B56.6b-1998

DANGER

SWINGING LOADS can cause MACHINE TIPOVER which can cause death or serious injury.
Always close hitch, use two slings and travel with extreme caution at the slowest possible speed.

OH0762
Fork Ratings

All forks that can be used on this vehicle are marked with a maximum load capacity rating. This rating can be found stamped on the left edge of the fork just below the fork pivot shaft (See Figure 19). This rating is listed in U.S. pounds and based upon a 24" (610 mm) load center. For metric equivalents see table below.

This rating specifies the maximum load capacity that the individual fork can safely carry at a maximum load center of 24" (610 mm) (See Figure 19). Since forks are always used in multiples, the total load rating of any combination of forks will be the sum of their rated capacities.

<table>
<thead>
<tr>
<th>INDIVIDUAL FORK RATING EQUIVALENTS</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>24 INCH LOAD CENTER</strong></td>
</tr>
<tr>
<td>1900 lbs.</td>
</tr>
<tr>
<td>3000 lbs.</td>
</tr>
<tr>
<td>4000 lbs.</td>
</tr>
<tr>
<td>5000 lbs.</td>
</tr>
</tbody>
</table>
The maximum load capacity for the model 8042 is 8000 lbs. (3630 kg) and the maximum load capacity for the model 10042 is 10,000 lbs. (4540 kg). Forks used on these vehicles should have total load ratings which equal or exceed 8000 to 10,000 lbs (3630 to 4540 kg). When the load rating of the vehicle differs from the load capacity rating of the forks, the lower value becomes the overall load capacity. See WARNING this page.

Warning

DO NOT exceed the total rated load capacity of the specific type fork being used. Forks can break causing loss of load and possible death or serious injury to the operator or other personnel in the area. If the total rated load capacity of the forks exceeds the capacity of the vehicle, the vehicle capacity governs.
How To Pick, Carry & Place A Load

To pick up a load, tilt carriage forward so that forks hang freely on the fork shaft. Move the forks inward or outward on the fork shaft so that they are aligned with the openings in the pallet. Tilt the carriage back and extend the boom slowly so that the forks slide into the openings in the pallet. Raise the boom so that the load is lifted.

To carry a load, position the boom so that the load is as low as possible and the travel area is visible to the operator.

Before placing a load, determine whether the outriggers are to be in the raised or lowered position for model 10042 only. Then use the capacity chart to determine safe boom extension range for the applicable load. To place a load, align the forks at the level the load is to be placed and then extend the boom slowly until the load is just above the area where it is to be placed. Lower the boom until the pallet rests in position and the forks are free to retract. Retract the forks slowly from under the load.

Elevating Personnel

If this vehicle must be used to elevate personnel, use only an approved work platform. When using a work platform, the following precautions must be taken:

**Warning**

Use an approved work platform to lift or lower personnel. NEVER move the vehicle with the work platform in a raised position or with personnel on board.

**Preparation and Setup**

1. Make sure that the work platform is securely attached to the quick attach or forks. Follow the platform manufacturer’s instructions.

2. Make sure that the platform, carriage and forks are secured to prevent them from pivoting from side to side.

3. Ensure that the vehicle has a firm footing and is level.

4. Place the travel select lever in (N) Neutral.

5. Engage the emergency brake switch. Blocking of the vehicle wheels is also recommended.

6. Level the platform in both the side to side and front to back directions before use.
Lifting Personnel

**Warning**

NEVER tilt platform forward or rearward when elevated with personnel aboard. Serious injury or death could result.

**Danger**

NEVER operate this or any equipment in an area in which overhead power lines, overhead or underground cables, or power sources exist without first requesting that the appropriate power company or utility company de-energize the lines or take other suitable precautions.

1. Make sure there are no overhead obstructions or electrical wires above platform before lifting.

2. If the platform is not equipped with controls, a trained telescopic handler operator must operate the controls from the operator’s compartment. Using extreme caution, lift and lower personnel smoothly and only at their request. The operator should always alert personnel on the platform and in the work area before moving it up or down.

3. If the platform is equipped with controls, the platform operator must alert other personnel on the platform and in the work area before moving it up or down. Follow the platform manufacturer’s instructions regarding use of the controls.

4. Always lower the platform to the travel position (approximately one foot above ground level) before moving the vehicle.

**IMPORTANT:** Make sure that required restraining means such as railings, chains, cable, body belts with lanyards, etc. are in place and properly used. Never use railings, planks, ladders, etc. on the platform for the purpose of achieving additional reach or height.

In case of engine failure and subsequent loss of power for controls, refer to emergency boom lowering procedure (under General Maintenance in this manual).

**Capacity Limitation**

The combined mass (weight in pounds) of the platform, load and personnel shall not exceed one-third of the capacity of the related load center position indicated on the capacity chart, located on the right side wall of the operator’s compartment. Refer also to “Using the Capacity Chart.”
Using Other Attachments

Numerous attachments, some marketed by Sky Trak and some sold by third party sources, are available for this vehicle. The general rule is that any attachment used on this vehicle must be intended for the function of lifting only. This vehicle is not designed to PULL, TOW or DRAG other objects. DO NOT use attachments that perform these functions with this vehicle.

Some Sky Trak attachments are supplied with a capacity chart that is to be affixed to the vehicle near the original capacity chart (Figure 20 - #4) for operator reference. Third party sources may or may not supply capacity charts with their attachments. Capacity ratings for these type attachments should be obtained from the third party source.

Sky Trak makes no representations or warranties, express or implied, as to the design, manufacture or fitness for use with this vehicle of any third party source attachments. This vehicle is not intended to be used and should not be used with any attachment that would alter the center of gravity stability of this vehicle. Sky Trak assumes no liability for any third party attachment that would alter the center of gravity stability.

Following is a list of some of the attachments that are available through Sky Trak for this vehicle model:

- 48", 60" and 72" Carriage
- 1-1/4 Cubic Yard Bucket
- Auger Unit with Drive and Extensions
- Windrow Broom

The standard capacity chart for this vehicle (Figures 18, 18A & 18B) are applicable for all of the above listed attachments. The attachments listed below are supplied with their own capacity charts.

- 48", 60" and 72" Sidetilt Carriage
- 52" and 72" Swing Carriage
- 12' and 15' Truss Boom

Hydraulically actuated attachments also have a maximum hydraulic pressure rating. Make sure that the maximum hydraulic pressure of the attachment is equal to or slightly greater than 3000 psi, which is the maximum hydraulic pressure of this vehicles auxiliary hydraulics.

IMPORTANT: If the maximum pressure of the vehicle exceeds the pressure rating of the attachment, the attachment’s hydraulic components could burst. If the maximum pressure of the vehicle is much lower than the pressure rating of the attachment, the attachment may not work properly.
Towing and Tie Down

If the vehicle becomes disabled and cannot be moved under engine power, the vehicle can be towed a short distance (50 to 100 feet) by another piece of equipment, which is designed for towing. However, when considering towing the vehicle longer distances (such as site to site), the vehicle should be loaded onto a trailer for transport.

Short Distance Towing —

Short distance towing should only be attempted when the vehicle becomes disabled and would create a potentially hazardous situation such as on a roadway or in an unsafe area on the work site. Prepare the vehicle for towing as follows:

- Detach the front and rear drive shafts from the axles and tie the drive shafts up to the vehicle.

The vehicle can now be towed or pushed out of the way.

**IMPORTANT:** Without engine power, the vehicle will not have service brakes for stopping. Steering will also be extremely difficult. **Tow or push the vehicle at a very slow speed!**

Tie Down —

This vehicle is equipped with tie down holes in the frame on the front and rear ends for transport tie down.

---

Shut-Off

1. Park the vehicle on level ground.

**Warning**

To prevent personal injury or death, be certain to lower the boom, shut off the engine, and engage the emergency brake switch before exiting the vehicle.

2. Place travel select lever in (N) Neutral and engage the emergency brake switch.
3. Lower the boom and ground the carriage.
4. Turn ignition key to OFF position and remove key.

---

1. Park the vehicle on level ground.

2. Place travel select lever in (N) Neutral and engage the emergency brake switch.
3. Lower the boom and ground the carriage.
4. Turn ignition key to OFF position and remove key.

---
General Maintenance

This section of the manual contains a routine equipment checklist and a maintenance schedule and checklist with references to pertinent procedures and instructions. To prevent problems before they occur, follow the schedule.

NOTE: The Lubrication and Maintenance Decal found inside the right rear engine door contains a general maintenance schedule that should be followed to maintain this vehicle in good operating condition. The same schedule is presented in this manual, except it contains a more detailed account of how to perform these specific maintenance operations.

Warning

DO NOT perform service or maintenance on the vehicle with the engine running. Contact with moving parts can cause serious injury or death.

Routine Equipment Checklist

Inspect the following equipment daily:

Safety Belt
Check for frayed or cut webbing, damaged buckles, or loose mounting brackets.

Safety Surfaces
Keep all non-skid surfaces clean. Replace safety treads if worn, damaged or missing.

Warning Decals
Check condition of all decals (Figure 20). Replace if missing, damaged or illegible.

Covers
Keep all protective covers in place.

Emergency Brake
Check operation. Have unit repaired immediately if required.

Quick Attach
Make sure that the quick attach pin secures the attachment and that the release lever is seated in the pin groove.

Engine
Check cleanliness. Remove all dirt or debris, and all flammable materials before running engine.

Tires
Check tire pressure and hydrofill. Add air and/or hydrofill if required per "Specifications."
Warning Decal Locations

1. CARRYING PERSONNEL WARNING
2. BOOM EXTEND LETTERS
3. BOOM ANGLE INDICATOR
4. CAPACITY CHART
5. EXPLOSIVE GASES WARNING
6. STABILIZER TIPOVER DANGER
7. MOVING PARTS WARNING

LEFT CONSOLE OVERLAY
8. MACHINE ROLLAWAY WARNING
9. SAFETY INSTRUCTIONS

RIGHT CONSOLE OVERLAY
10. TIPOVER DANGER
11. ELECTROCUTION DANGER

Figure 20
# Maintenance Schedule and Checklist

### Daily or 10 Hour Intervals

<table>
<thead>
<tr>
<th>Description</th>
<th>Check</th>
<th>Change</th>
<th>Clean</th>
<th>Reference Paragraph</th>
</tr>
</thead>
<tbody>
<tr>
<td>Air Cleaner Restriction Indicator (Air Filter Elements)</td>
<td>X</td>
<td></td>
<td></td>
<td>2A</td>
</tr>
<tr>
<td>Air Cleaner Vacuator Valve</td>
<td></td>
<td>X</td>
<td></td>
<td>2A</td>
</tr>
<tr>
<td>Engine Coolant Level</td>
<td>X</td>
<td></td>
<td></td>
<td>3A</td>
</tr>
<tr>
<td>Engine Oil Level</td>
<td>X</td>
<td></td>
<td></td>
<td>4A</td>
</tr>
<tr>
<td>Hydraulic Oil Level and Leaks in System</td>
<td>X</td>
<td></td>
<td></td>
<td>7B</td>
</tr>
<tr>
<td>Tire Pressure/Hydrofill and Wear</td>
<td>X</td>
<td></td>
<td></td>
<td>11A &amp; B</td>
</tr>
<tr>
<td>Drain Fuel Water Separator</td>
<td>X</td>
<td></td>
<td></td>
<td>5C</td>
</tr>
</tbody>
</table>

### At First 50 Hours of Use

<table>
<thead>
<tr>
<th>Description</th>
<th>Check</th>
<th>Change</th>
<th>Clean</th>
<th>Reference Paragraph</th>
</tr>
</thead>
<tbody>
<tr>
<td>Hydraulic Oil Filter</td>
<td></td>
<td>X</td>
<td></td>
<td>7C</td>
</tr>
<tr>
<td>Wheel Lug Nuts</td>
<td>X</td>
<td></td>
<td></td>
<td>11C</td>
</tr>
<tr>
<td>Boom Chain Tension</td>
<td>X</td>
<td></td>
<td></td>
<td>14A</td>
</tr>
</tbody>
</table>
### 50 Hour Intervals

<table>
<thead>
<tr>
<th>Item</th>
<th>Check</th>
<th>Change</th>
<th>Lube</th>
<th>Reference Paragraph</th>
</tr>
</thead>
<tbody>
<tr>
<td>Transmission Oil Level</td>
<td>X</td>
<td></td>
<td></td>
<td>8A</td>
</tr>
<tr>
<td>Boom Wear Pads</td>
<td>X</td>
<td></td>
<td></td>
<td>14D</td>
</tr>
<tr>
<td>Carriage Pivot Pin</td>
<td></td>
<td></td>
<td>X</td>
<td>1</td>
</tr>
<tr>
<td>Fork Tilt Cylinder Pins</td>
<td></td>
<td></td>
<td>X</td>
<td>1</td>
</tr>
<tr>
<td>Outrigger Pins</td>
<td></td>
<td></td>
<td>X</td>
<td>1</td>
</tr>
<tr>
<td>Boom Attachments</td>
<td></td>
<td></td>
<td>X</td>
<td>1</td>
</tr>
<tr>
<td>Extend Chain Sheave Pin</td>
<td></td>
<td></td>
<td>X</td>
<td>1</td>
</tr>
</tbody>
</table>

### 250 Hour Intervals

<table>
<thead>
<tr>
<th>Item</th>
<th>Check</th>
<th>Change</th>
<th>Lube</th>
<th>Reference Paragraph</th>
</tr>
</thead>
<tbody>
<tr>
<td>Transmission Oil Level</td>
<td>X</td>
<td></td>
<td></td>
<td>8A</td>
</tr>
<tr>
<td>Boom Wear Pads</td>
<td>X</td>
<td></td>
<td></td>
<td>14D</td>
</tr>
<tr>
<td>Axle Oil Level</td>
<td>X</td>
<td></td>
<td></td>
<td>9A</td>
</tr>
<tr>
<td>Air Intake Hoses</td>
<td>X</td>
<td></td>
<td></td>
<td>2C</td>
</tr>
<tr>
<td>Hydraulic Cylinder Pins</td>
<td></td>
<td></td>
<td>X</td>
<td>1</td>
</tr>
<tr>
<td>Drive Shaft Slip Joints</td>
<td></td>
<td></td>
<td>X</td>
<td>1</td>
</tr>
<tr>
<td>Boom Pivot Pin</td>
<td>X</td>
<td></td>
<td></td>
<td>1</td>
</tr>
<tr>
<td>Carriage Pivot Pin</td>
<td>X</td>
<td></td>
<td></td>
<td>1</td>
</tr>
<tr>
<td>Fork Tilt Cylinder Pins</td>
<td></td>
<td></td>
<td>X</td>
<td>1</td>
</tr>
<tr>
<td>Axle Pivot Pins</td>
<td>X</td>
<td></td>
<td></td>
<td>1</td>
</tr>
<tr>
<td>Extend Chain Sheave Pin</td>
<td></td>
<td></td>
<td>X</td>
<td>1</td>
</tr>
</tbody>
</table>

*continued on next page*
### 250 Hour Intervals (continued)

<table>
<thead>
<tr>
<th>Item</th>
<th>Check</th>
<th>Change</th>
<th>Lube</th>
<th>Reference Paragraph</th>
</tr>
</thead>
<tbody>
<tr>
<td>Axle Steer Knuckles</td>
<td></td>
<td></td>
<td>X</td>
<td>1</td>
</tr>
<tr>
<td>Axle Tie Rod Ball Joints</td>
<td></td>
<td></td>
<td>X</td>
<td>1</td>
</tr>
<tr>
<td>Axle Steer Cylinder Ball Joints</td>
<td></td>
<td></td>
<td>X</td>
<td>1</td>
</tr>
<tr>
<td>Outrigger Pins</td>
<td></td>
<td></td>
<td>X</td>
<td>1</td>
</tr>
<tr>
<td>Boom Attachments</td>
<td></td>
<td></td>
<td>X</td>
<td>1</td>
</tr>
<tr>
<td>Engine Oil and Filter</td>
<td></td>
<td></td>
<td>X</td>
<td>4B</td>
</tr>
<tr>
<td>Drain or Change Fuel Filters</td>
<td></td>
<td></td>
<td>X</td>
<td>5C</td>
</tr>
<tr>
<td>Axle Wheel End</td>
<td></td>
<td></td>
<td>X</td>
<td>10B</td>
</tr>
</tbody>
</table>

### 1,000 Hours or Annually

<table>
<thead>
<tr>
<th>Item</th>
<th>Check</th>
<th>Change</th>
<th>Lube</th>
<th>Reference Paragraph</th>
</tr>
</thead>
<tbody>
<tr>
<td>Boom Wear Pads</td>
<td>X</td>
<td></td>
<td></td>
<td>14D</td>
</tr>
<tr>
<td>Air Intake Hoses</td>
<td>X</td>
<td></td>
<td></td>
<td>2C</td>
</tr>
<tr>
<td>Fan Belt Wear</td>
<td>X</td>
<td></td>
<td></td>
<td>6</td>
</tr>
<tr>
<td>Boom Chain Tension</td>
<td>X</td>
<td></td>
<td></td>
<td>14A</td>
</tr>
<tr>
<td>Hydraulic Cylinder Pins</td>
<td></td>
<td></td>
<td>X</td>
<td>1</td>
</tr>
<tr>
<td>Drive Shaft Slip Joints</td>
<td></td>
<td></td>
<td>X</td>
<td>1</td>
</tr>
<tr>
<td>Boom Pivot Pin</td>
<td></td>
<td></td>
<td>X</td>
<td>1</td>
</tr>
<tr>
<td>Carriage Pivot Pin</td>
<td></td>
<td></td>
<td>X</td>
<td>1</td>
</tr>
</tbody>
</table>

continued on next page
### 1,000 Hours or Annually (continued)

<table>
<thead>
<tr>
<th>Item</th>
<th>Check</th>
<th>Change</th>
<th>Lube</th>
<th>Reference Paragraph</th>
</tr>
</thead>
<tbody>
<tr>
<td>Fork Tilt Cylinder Pins</td>
<td></td>
<td>X</td>
<td>1</td>
<td></td>
</tr>
<tr>
<td>Extend Chain Sheave Pin</td>
<td></td>
<td>X</td>
<td>1</td>
<td></td>
</tr>
<tr>
<td>Axle Pivot Pins</td>
<td></td>
<td>X</td>
<td>1</td>
<td></td>
</tr>
<tr>
<td>Axle Steer Knuckles</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Axle Tie Rod Ball Joints</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Axle Steer Cylinder Ball Joints</td>
<td></td>
<td>X</td>
<td>1</td>
<td></td>
</tr>
<tr>
<td>Outrigger Pins</td>
<td></td>
<td>X</td>
<td>1</td>
<td></td>
</tr>
<tr>
<td>Boom Attachments</td>
<td></td>
<td>X</td>
<td>1</td>
<td></td>
</tr>
<tr>
<td>Extend Chains</td>
<td></td>
<td>X</td>
<td>14C</td>
<td></td>
</tr>
<tr>
<td>Engine Oil and Filter</td>
<td></td>
<td>X</td>
<td>4B</td>
<td></td>
</tr>
<tr>
<td>Drain or Change Fuel Filters</td>
<td></td>
<td>X</td>
<td>5C</td>
<td></td>
</tr>
<tr>
<td>Axle Oil</td>
<td></td>
<td>X</td>
<td>9B</td>
<td></td>
</tr>
<tr>
<td>Transmission Oil and Filter</td>
<td></td>
<td>X</td>
<td>8B &amp; 8C</td>
<td></td>
</tr>
<tr>
<td>Primary Air Filter Element</td>
<td></td>
<td>X</td>
<td>2B</td>
<td></td>
</tr>
<tr>
<td>Hydraulic Oil and Filter</td>
<td></td>
<td>X</td>
<td>7C</td>
<td></td>
</tr>
<tr>
<td>Engine Coolant</td>
<td></td>
<td>X</td>
<td>3B</td>
<td></td>
</tr>
<tr>
<td>Fuel Pre-Filter</td>
<td></td>
<td>X</td>
<td>5C</td>
<td></td>
</tr>
</tbody>
</table>
1. Lubrication Points

Lubricate the following grease fittings using Multi-Purpose Grease (MPG) every 50 hour interval (Figure 21):

- A. Carriage pivot pin ...................... (2 points)
- B. Fork tilt cylinder pins .................. (2 points)
- C. Outrigger pins .......................... (10 points)
- D. Boom attachments ................... (All points)
- E. Extend Chain Sheave Pin .......... (1 point)

Lubricate the following grease fittings using Multi-Purpose Grease (MPG) every 250 hour interval (Figures 21 & 22):

- F. Hydraulic cylinder pins ............. (12 points)
- G. Drive shaft slip joints ................. (3 points)
- H. Boom pivot pin ....................... (2 points)
- J. Axle pivot pins ....................... (2 points)
- K. Axle steer knuckles .................... (8 points)
- L. Axle tie rod ball joints ............... (4 points)
- M. Axle steer cylinder ball joints ..... (8 points)

**NOTE:** Shorten the lubrication interval on all axle and drive shaft lube points, all outrigger pins, and lower tilt, hoist, and stabilizer cylinder pins when operating in wet or muddy conditions.
2. Air Cleaner & Restriction Indicator

A. Filter Check (Daily or 10 Hour Intervals)

1. Ground the carriage, place the travel select lever in Neutral (N), engage the emergency brake switch and shut off the engine.

2. Unlock and open the left rear engine access door to access air cleaner restriction indicator (Figure 23). Check indicator. If red band has appeared, filter must be cleaned or replaced.

**NOTE:** Depress button on top of indicator to reset indicator after servicing element.

3. Remove dust from vacuator valve (Figure 24) by squeezing bottom of vacuator to allow loose particles to fall out. Replace elements, if required, as described in paragraph 2B.

**IMPORTANT:** Only remove canister cover to service the elements as restriction indicator indicates or during scheduled maintenance intervals. Excessive access to check or clean an element can lead to premature element failure and increase the possibility of dirt entering the engine.
Careful cleaning or washing, if done correctly, can extend the life of an element. But you must realize that each time an element is cleaned the dirt holding capacity is reduced and the risk of dirt reaching the clean side of the filter is increased. Filters should never be washed more than six times or retained for more than one year’s service, whichever comes first.

If you wash an element, it is recommended that you use a non-sudsing detergent that dissolves combustion residues without damaging the filter media. One such detergent that is specifically formulated for this purpose is FM 1400. This cleaner contains biodegradable synthetic detergents and is environmentally safe. It is marketed by Filter Service Corp., 2105 W. Apache, Farmington, New Mexico, 87401, Telephone (505) 326-1127.

**Inner Safety Element**

An inner safety element should never be washed or reused. **Always install a new element.** Replace safety elements after every third primary element change. DO NOT remove a safety element until you have thoroughly cleaned the inside of the air cleaner canister. This will prevent dirt, which could damage the engine, from entering the induction manifold.

---

**B. Element: Change or Clean**

(As Restriction Indicator Indicates or Every 1000 Hour Interval)

**Outer Primary Element**

All air cleaner manufacturers agree that attempting to clean or wash an element increases the chance for element damage. It is highly recommended that you consider the value of cleaning an element against the risks which could lead to engine damage. Adopt the policy that all elements should be replaced with new and not cleaned.
To change elements:

1. Loosen cover wing nut and remove cover from air cleaner canister (Figure 25).
2. Remove wing nut and primary element. Inspect element for damage. Damaged elements should not be cleaned or reused.
3. Thoroughly clean the interior of the air filter canister and vacuator valve.
4. If replacing safety element at this time (Figure 26), remove wing nut and carefully slide safety element out. Always discard this element and replace with a new element and secure with wing nut.
5. Install the new primary element and secure with wing nut.
6. Position canister cover in place and secure with cover wing nut.

Carefully follow these procedures to clean an element:

1. Remove loose particles from the filter with compressed air (maximum 30 psi [206 kPa]) or water hose (maximum 40 psi [275 kPa] without nozzle). Rotate and apply pressure from the inside of the element.
2. Soak filter in a non-sudsing detergent (such as FM 1400) for at least 15 minutes. Never soak more than 24 hours.
3. Swish filter around in the solution to remove loosened dirt particles.
4. Rinse the filter from the inside out with a gentle stream of water to remove all dirt and suds (less than 40 psi [275 kPa], no nozzle). If the inside of the element has been contaminated with dirty water from the soaking, rinse from both sides.
5. Dry the filter before re-using. Circulate warm air at less than 160° F (71° C). DO NOT use a light bulb to dry the filter.
6. Inspect for holes or tears by looking through the filter toward a bright light. Check for damaged gaskets or metal parts. DO NOT re-use damaged filters.
C. Air Intake System - Inspection (250 Hour Intervals)
Inspect the intake piping for cracked hoses, loose clamps, or punctures which can allow dirt or debris to enter the combustion chamber. If dirt or debris is allowed to enter the combustion chamber, it can severely damage the engine. If necessary tighten or replace parts to prevent air intake system leakage.

3. Engine Cooling System

A. Level Check (Daily or 10 Hour Intervals)
1. Level the vehicle, ground the carriage, place the travel select lever in Neutral (N), engage the emergency brake switch and shut off the engine.

2. Unlock and open the right rear engine access door. Check level of coolant in overflow bottle (Figure 27). When coolant is hot, bottle should be 1/2 to 3/4 full. When coolant is cool, bottle should be 1/4 to 1/2 full. Add coolant as required through the overflow bottle (50/50 mixture of ethylene glycol and water). Close and lock access door.
B. **Drain and Flush Radiator** (1000 Hours or Annually)

**Warning**

NEVER remove the radiator cap while the cooling system is hot. The system is under pressure and hot coolant can cause severe burns or eye injury. Wear protective clothing and safety glasses. Always turn the cap slowly to the first stop and allow the pressure to escape before removing the cap completely.

1. Open rear radiator door. Remove radiator cap and open petcock at bottom center of radiator (Figure 28).

   **NOTE:** Attach a hose to the petcock to allow draining directly into a container.

2. Allow coolant to drain from the radiator and detach line from bottom of coolant overflow bottle and drain bottle.

3. Flush system with clean water and drain again.

   **NOTE:** On vehicles equipped with a cab heater option, a shut off valve is installed at the engine inlet. Disconnect hose from shut off valve to drain the heater.
4. Remove dipstick and check mark on dipstick (Figure 30). Oil should be within the cross-hatched area.

5. Fill radiator completely with 50/50 mixture of ethylene glycol and water. Total System Capacity is 4 gallons (15.1 ltr). Add coolant to overflow bottle until bottle is about 1/2 to 3/4 full [approximately 2 qts. (1.9 ltr)]. This "overfilling" will compensate for any air in the cooling system.

6. Clean dirt and debris from radiator fins and core, if required.

7. Start engine and run vehicle to normal operating temperature. Allow engine to cool to ambient temperature. Check radiator coolant level and top off completely. Replace radiator cap. Overflow bottle should be 1/4 to 1/2 full. If it is not, add coolant to overflow bottle. Close and lock all access doors.

---

4. Engine Oil and Filter

A. **Level Check** (Daily or 10 Hour Intervals)

1. Level the vehicle, ground the carriage, place the travel select lever in Neutral (N), engage the emergency brake switch and shut off the engine.

2. Unlock and open right rear engine access door.

---

<table>
<thead>
<tr>
<th>Engine Oil Type</th>
<th>Ambient Temperature</th>
</tr>
</thead>
<tbody>
<tr>
<td>10W30</td>
<td>Below 23° F (-5° C)</td>
</tr>
<tr>
<td>15W40</td>
<td>Above 23° F (-5° C)</td>
</tr>
</tbody>
</table>
B. Oil and Filter Change (250 Hour Intervals)

**IMPORTANT:** The use of quality engine oil combined with appropriate oil and filter change intervals are critical factors in maintaining engine performance and durability. The use of multi-viscosity, 15W40, oil is recommended for most climates. Low viscosity, 10W30, oil may be used at colder temperatures. However, continuous use of low viscosity oil may decrease engine life due to wear.

1. Operate engine until warm (approximately 5 minutes).
2. Level the vehicle, ground the carriage, place the travel select lever in Neutral (N), engage the emergency brake switch and shut off the engine.
3. Place receptacle under engine oil pan drain.
4. Remove drain plug from engine oil pan.
5. Allow oil to drain completely into a receptacle. Transfer the oil to a container with a cover and label the container as used oil. Dispose of the used oil at an approved recycling facility.
6. Unlock and open the left engine access door. Remove oil filter (Figure 29). A strap or chain filter wrench may be required.
7. Clean filter sealing surface.

**NOTE:** The filter o-ring may stick to the filter head. Make sure the old o-ring is removed before installing the new filter.

8. Apply a thin coat of clean engine oil to seal on new filter.
9. Install the new filter and hand tighten 1/2 turn after initial contact.
10. Clean and re-install oil pan drain plug.
11. Remove oil fill cap (Figure 27) and add 15W40 or 10W30 motor oil that is equal to API, CD or CE specifications. (Reference engine manufacturer’s manual for recommended oil types to be used in various temperature limits.) DO NOT over fill. Engine oil capacity with filter change is 11.6 qts. (11 ltr).
12. Clear all personnel from area. Start engine and run for several minutes.
13. Stop engine. Let the oil drain back for a few minutes. Check oil level on dipstick (Figure 30) and check for leaks at filter and drain plug. Retighten filter or drain plug if necessary.
14. Add oil to bring oil level up to the FULL mark in the crosshatched area. Replace dipstick and oil fill cap. Close and lock access door.
5. Engine Fuel System

A. Fuel Types

When operating at temperatures above 32° F (0° C) use standard #2 diesel fuel.

When operating at temperatures below 32° F (0° C) use a blend of No. 1 diesel and No. 2 diesel fuels, most commonly known as "winterized" No. 2 diesel fuel. Use ASTM No. 2 diesel fuel with a minimum Cetane number of 40. No. 2 diesel fuel gives the best economy and performance under most operating conditions. Fuels with Cetane numbers higher than 40 may be needed in high altitudes or extremely low ambient temperatures to prevent misfires and excessive smoke.

Warning

Engine fuel is flammable and can cause a fire or an explosion. Keep sparks and open flames away from the vehicle and do not use smoking materials during refueling or servicing of the fuel system.

B. Fuel Tank (Daily Before Operation)

Check fuel supply daily before operation. Open fuel fill access door with key (Figure 31). Remove fill cap on tank and fill as required. Replace cap and lock access door. Tank capacity is 35 gals. (132.5 ltr), total of 33 (124.9 ltr) usable gals.

C. Fuel System Service

1. Drain water from fuel water separator daily or 10 hour intervals. Unlock and open the right rear engine access door. Loosen drain valve on under side of the water separator (Figure 32 or 32A) and allow all water to drain into a glass until clear fuel is visible. Tighten drain valve after draining. Close and lock access door.
2. **Change fuel filter elements as needed every 250 - (500 maximum) hours of operation.** Fuel filter changes must be more often with water evidence or contaminated fuel. Unlock and open the right rear engine access door. Clean the area around the fuel filter head. Remove the pre-filter and fuel filter cannisters (Figure 32). **For S/N 1604 thru 9908** the engine is equipped with a single fuel filter/water separator cannister (Figure 32A). Discard the filter cannisters and sealing rings. Clean the sealing surfaces of the filter head. Fill the new cannisters with clean No. 2 Diesel Fuel and lubricate the sealing rings with clean lubricating oil. Install the filters by hand tightening only. **DO NOT** over tighten. Close and lock access door.

**NOTE:** Mechanical over-tightening may distort the threads or damage the sealing rings.

Controlled venting is provided at the injection pump through the fuel drain manifold. Small amounts of air introduced by changing the filter elements will be vented automatically as long as the elements were filled with fuel prior to installation.

**NOTE:** Marginal fuel cleanliness conditions will require fuel system service more often. Loss of engine power is often caused by dirty fuel filters.
3. Replace fuel pre-filter every 1000 hours or annually. Unlock and open the right rear access door. Replace the fuel pre-filter that is installed in the fuel line (Figure 32 or 32A).

D. Bleeding Fuel System

Manual venting of the fuel system is required if the fuel filter is not filled prior to installation, the injection pump is replaced, the high pressure fuel lines are loosened or replaced, the fuel tank has run completely empty, or it is the initial engine start up after an extended period of no engine operation.

**Warning**

Do not bleed a hot engine as this can cause fuel to spill, creating a danger of fire.

**IMPORTANT:** DO NOT start the engine until the injection pump has been filled and primed as serious damage can be caused to the pump due to lack of lubrication.
Remove air from the fuel system as follows:

**NOTE:** *More than one person will be required to perform this procedure.*

1. To vent the low pressure lines and fuel filters, open the vent screw (Figure 33 or 33A). Operate the hand plunger on the lift pump, until the fuel flowing from the fitting is free of air. Tighten the vent screw and torque it to 6 lb-ft (8 Nm).

2. To vent the high pressure fuel lines, loosen one fitting at a time at the injectors (Figure 34). Turn the ignition key to the START position and crank the engine for a maximum of 15 seconds or until fuel, free from air, comes from the injector fitting. Tighten the fitting. Repeat procedure for each fitting until engine starts and runs smoothly. With engine running, visually check for any leaks. Turn ignition switch OFF.

---

**Caution**

When using the starting motor to vent the system, DO NOT energize starter solenoid or crank the engine for more than 15 seconds at a time; wait two minutes between engagements.

**Warning**

Fuel will spray when venting high pressure fuel lines. Keep clear of spraying fuel. The pressure of the fuel in the high pressure lines is sufficient to penetrate the skin and cause serious bodily injury. Wear protective clothing and safety glasses.
6. Engine Fan Belt Check  
(1000 Hour Intervals)

Check fan belt condition as follows:

1. Ground the carriage, place travel select lever in Neutral (N), engage emergency brake switch and shut off the engine.
2. Unlock and open the left rear engine access door.
3. Remove the fan belt (Figure 35) by carefully lifting the tensioner with a 1/2 inch square drive installed in square hole in tensioner bracket.
4. Inspect fan belt. Replace cracked or frayed belt. Transverse (across belt width) cracks are acceptable. Longitudinal (along belt length) cracks are not acceptable.
5. Check tensioner bearing. Spin the bearing and check that there are no rough spots detected under hand pressure.
6. Check the fan hub bearing. Spin the fan and check for wobble or excessive play. Maximum end play should be 0.006 in. (0.15 mm).
7. To install the fan belt, first position the belt over the grooved pulleys and then, while holding up the tensioner, slide the belt over the water pump pulley.
8. Close and lock access door.
7. Hydraulic Oil and Filter

A. Hydraulic System Oil

Hydraulic system oil can be either a hydraulic oil meeting the requirements of ISO Grade 46 or a 10W motor oil meeting the requirements of U.S. Ordinance Specification MIL-L-2104C. See table on this page.

B. Level Check

(Daily or 10 Hour Intervals)

1. Be sure all cylinders are fully retracted and oil is at room temperature.

2. Level the vehicle, ground the carriage, place travel select lever in (N) Neutral, engage the emergency brake switch and shut off the engine.

3. Check level of hydraulic oil in tank at the sight gauge on the back side of the hydraulic tank (Figure 36).

4. The oil level should be visible in the gauge window. If it is not, remove the reservoir cap and add ISO-46 or MIL-L-2104C oil (see table on this page). The hydraulic oil level should be within 1/2 inch of the upper mark on the sight gauge.

5. Install reservoir cap.

---

### Table: Hydraulic Oil and Filter

| ISO Grade 46 Hydraulic Oil | MIL-L-2104C 10W Motor Oil *
|---------------------------|----------------------------------
| Gulf Harmony 46 AW        | Castrol Deusol CRD               |
| Amoco Rykon 46            | Esso Essolube D-3HP              |
| Mobil DTE-25              | Esso Essolube XD-3               |
| Arco Duro AW S-215        | Castrol Agricastrol HDD          |
| Shell Tullus 46           | Shell Rimula CT                  |
| Benz Petraulic 46-7C      | Shell Rimula X                   |
| Sun Sunvis 821 WR         | Shell Rimula TX                  |
| Chevron AW 46             | * 5W20 Motor Oil may be substituted for -30° F to 70° F (-34 to 21° C) only. |
| Texaco Rando HD 46        | Citgo Pacemaker XD-46            |

---

![Figure 36](OH0390)

- HYDRAULIC OIL FILL
- HYDRAULIC OIL TANK SIGHT GAUGE
- CAPSCREWS
- HYDRAULIC/FUEL TANK COVER
C. Oil Change

Change hydraulic oil filter after the first 50 hours of operation and every 1000 hours thereafter.

Replace hydraulic oil annually or as required.

Oil must be cool before changing.

Other than the annual interval, the hydraulic oil must be changed when a hydraulic component has contaminated the system.

1. Level the vehicle, ground the carriage, place travel select lever in (N) Neutral, engage the emergency brake switch and shut off the engine.

2. Remove the four capscrews that fasten the tank cover to the hydraulic/fuel tank and remove the tank cover (Figure 36). Clean area around filter head. Unscrew the nuts (Figure 37) that secure the filter head to the hydraulic tank.

3. Remove the filter head, element and gasket from the tank.

4. Pull the element off of the filter head and discard the element.

5. Clean filter head sealing surfaces.

6. If hydraulic oil is to be changed, retract all cylinders, place a receptacle under the reservoir drain plug. Remove magnetic drain plug and allow oil to drain into receptacle. Clean loose particles from plug. Transfer the oil to a container with a cover and label the container as used oil. Dispose of the oil at an approved recycling facility.

7. Re-install magnetic drain plug into reservoir.

8. Push new filter element fully onto the filter head until it seats against the washer. Re-install filter head assembly and gasket into the tank and secure with the nuts removed earlier.
9. Remove reservoir cap and fill the reservoir with ISO-46 or MIL-L-2104C Oil (see table on page 70) until the oil level is filled to the minimum oil level as described in section 7B. Reservoir capacity is 30.3 gals. (114.7 ltr).

10. Disconnect the wire from the fuel shutoff solenoid on the engine.

11. Remove air bleeder plug (Figure 37A) from the main hydraulic pump and connect an SAE #4 str. thd. o-ring connector and a hose (approx. 10 feet required) to this port to route oil to a catch container under the cab.

12. Position catch container under the inlet pressure port (labeled IN) on the secondary control valve (Figure 37B).

13. Loosen, but do not remove, the hydraulic line connection to the inlet port at the control valve (this fitting may be an elbow or a tee).

14. Prime the pump by cranking the engine until the air bleeder in the pump closes and stops flow of oil to the catch container AND oil is dripping from the loosened hydraulic line.

15. Tighten the hydraulic connection, replace the bleeder plug and reconnect the wire to the fuel shutoff solenoid.

16. Run the vehicle and operate all hydraulic functions and then check for leaks.

17. Re-install the tank cover.

---

Caution

If the main hydraulic pump ever loses it's prime, serious damage to the pump and/or the entire hydraulic system may occur. The pump must be reprimed.

Use the following procedure whenever the pump requires that it be reprimed. This procedure must be accomplished before starting the engine.

10. Disconnect the wire from the fuel shutoff solenoid on the engine.

11. Remove air bleeder plug (Figure 37A) from the main hydraulic pump and connect an SAE #4 str. thd. o-ring connector and a hose (approx. 10 feet required) to this port to route oil to a catch container under the cab.
8. Transmission Oil and Filter

A. Level Check (50 Hour Intervals)
1. Level the vehicle, ground the carriage, place travel select lever in (N) Neutral and engage the emergency brake switch.
2. Check oil level with engine running at idle and oil at normal operating temperature.
3. Remove transmission dipstick through access hole in transmission cover (Figure 38) and check reading.
4. Add MIL-L-2104C Oil (see table on this page) to transmission as required to bring up to full mark. Transmission capacity is 4 gallons (15.1 ltr).

B. Filter Change (1000 hour Intervals or Annually)
1. Level the vehicle, ground the carriage, place travel select lever in (N) Neutral, and engage the emergency brake switch and shut off the engine.
2. Remove the transmission cover from the top of the frame.

<table>
<thead>
<tr>
<th>MIL-L-2104C 10W Motor Oil *</th>
</tr>
</thead>
<tbody>
<tr>
<td>Castrol Deusol CRD</td>
</tr>
<tr>
<td>Esso Essolube D-3HP</td>
</tr>
<tr>
<td>Esso Essolube XD-3</td>
</tr>
<tr>
<td>Castrol Agricastrol HDD</td>
</tr>
<tr>
<td>Shell Rimula CT</td>
</tr>
<tr>
<td>Shell Rimula X</td>
</tr>
<tr>
<td>Shell Rimula TX</td>
</tr>
<tr>
<td>* 5W20 Motor Oil may be substituted for -30° F to 70° F (-34 to 21° C) only.</td>
</tr>
</tbody>
</table>
3. Place a small pan or receptacle under the transmission filter (Figure 39) to catch fluid when the filter is removed.

4. Remove the old filter element with a strap or chain wrench. Discard element.

5. Apply a thin film of clean MIL-L-2104C Oil (see table on page 73) to the new element gasket.

6. Turn new element onto transmission fitting. Tighten element to 20 - 25 lb-ft (27 - 34 Nm) torque.

7. Remove and discard drained fluid. Transfer the oil to a container with a cover and label the container as used oil. Dispose of the used oil at an approved recycling facility.

8. Check transmission level and add MIL-L-2104C Oil (see table on page 73) as required following procedures in paragraph 8A.

9. Install transmission cover on frame.

C. Oil Change (1000 Hour Intervals or Annually)

1. Level the vehicle, ground the carriage, place travel select lever in (N) Neutral, engage the emergency brake switch and shut off engine.

2. Place a funnel with flexible drain under the transmission sump housing (Figure 40) and a receptacle to catch fluid.

3. Remove sump drain plug from front face of long drop case and allow the transmission to drain completely. Transfer the oil to a container with a cover and label the container as used oil. Dis-
pose of the used oil at an approved recycling facility.

4. Remove sump plug/screen with gasket (Figure 41) from converter housing and discard gasket.

5. Clean sump drain plug and sump plug/screen thoroughly with a standard solvent.

6. Install new filter element by following procedures in paragraph 8B, but DO NOT start engine at this time.

7. Install cleaned plug/screen with new gasket into converter housing.

8. Install cleaned sump drain plug into long drop case. Remove and discard old fluid in receptacle.

9. Fill transmission to the LOW mark on the dipstick. Check transmission level and add MIL-L-2104C oil as required following procedures in paragraph 8A.

### 9. Axle Oil

#### A. Level Check (250 Hour Intervals)

1. Level the vehicle, ground the carriage, place travel select lever in (N) Neutral, engage the emergency brake switch and shut off engine.
2. Clean area around axle fill/level plug, remove plug (Figure 42) from axle housing and check oil level. Add 80W90 gear oil as required to bring the oil level up even with the plug hole (for temperatures below -15° F (-26° C) 75W gear oil can be used).

3. Reinstall plug.

B. Oil Change (1000 Hour Intervals)

1. Level the vehicle, ground the carriage, place travel select lever in (N) Neutral, engage the emergency brake switch and shut off engine.

2. Clean area around axle fill/level plug and drain plug.

3. Place receptacle under the axle housing drain plug. Remove fill/level plug and drain plug from axle housing.

4. Allow oil to drain completely.

5. Clean and reinstall drain plug.

6. Fill axle to level plug hole with 80W90 gear oil (for temperatures below -15° F (-26° C) 75W gear oil can be used). Axle capacity is 18 qts. (17 ltr).

7. Install fill/level plug.

10. Wheel End Oil

**Warning**

**DO NOT** perform service or maintenance on the vehicle with the engine running. Contact with moving parts can cause serious injury or death.

---

**Figure 42**

AXLE FILL/LEVEL PLUG

**Figure 43**

AXLE DRAIN PLUG

VENT PLUG

MAGNETIC WHEEL END DRAIN PLUG
A. Level Check

1. Be sure that arrow on the wheel end housing (Figure 43) is pointing down. Level the vehicle, ground the carriage, place the travel select lever in (N) Neutral, engage the emergency brake switch and shut off engine.

2. Clean the area around the magnetic drain plug and remove the plug and check fluid level. Add recommended oil listed in table on this page, as required, to bring level up even with the plug hole.

3. Clean and install drain plug.

B. Oil Change (250 Hour Intervals)

1. Be sure that the drain plug on the wheel end housing (Figure 43) is down. Level the vehicle, ground the carriage, place the travel select lever in (N) Neutral, engage the emergency brake switch and shut off the engine.

2. Clean the areas around the magnetic drain plug and vent plug.

3. Remove vent plug.

4. Remove the drain plug and allow the fluid to drain.

5. Move the vehicle so the arrow on the wheel end housing is pointing down (Figure 43).

6. Fill the wheel end with recommended oil listed in table on this page to the level of the drain plug. Capacity of wheel end is approximately 54 ozs. (1,6 ltr).

7. Clean and install drain plug and vent plug. Drain and fill three remaining wheel ends using the same procedure.

**IMPORTANT:** All wheel ends are factory filled with oil that contains friction modifier. DO NOT add additional friction modifier to factory filled wheel ends. The addition of friction modifier to a factory fill will dilute the properties of the oil and could cause loss of braking ability. If a noisy brake condition exists after a fresh fill of oil add 6 ozs. (0,18 ltr) of friction modifier per wheel end. NEVER add more than 6 ozs. (0,18 ltr) of friction modifier to any wheel end as too much modifier could cause loss of braking ability. Brake noise is not harmful to the operation of the wheel end brakes and any oil type may result in a certain amount of noise, especially during hard braking conditions.

<table>
<thead>
<tr>
<th>OIL BRAND</th>
<th>NAME AND DESCRIPTION</th>
</tr>
</thead>
<tbody>
<tr>
<td>*AMOCO Oil Company</td>
<td>AMOCO 1000 Fluid P/N 8522045 (2.5 gal.)</td>
</tr>
<tr>
<td>J.I. CASE</td>
<td>HY-TRAN TCH</td>
</tr>
<tr>
<td>JOHN DEERE</td>
<td>J20</td>
</tr>
<tr>
<td>FORD-NEW HOLLAND</td>
<td>M2C-134</td>
</tr>
<tr>
<td>MOBIL FLUID</td>
<td>424</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>FRICTION MODIFIER BRAND</th>
<th>PART NUMBER</th>
</tr>
</thead>
<tbody>
<tr>
<td>*Sky Trak International</td>
<td>8522043 (32 oz.)</td>
</tr>
<tr>
<td>Ford</td>
<td>C8AZ19B546A (4 oz.)</td>
</tr>
</tbody>
</table>

* = Recommended Oil
11. Wheels and Tires

A. Air Pressure / Hydrofill Check
   (Daily or 10 Hour Intervals)

**IMPORTANT:** Before checking air pressure be sure to position the valve stem at the top of the wheel to prevent loss of hydrofill. To check hydrofill level, position valve so that it is nearly, but not quite, at the top of the wheel. Depress valve stem. Hydrofill should escape. If hydrofill does not escape from the valve, see "Filling with Hydrofill".

Clean the area around the valve stems and check air pressure at all four tires:

<table>
<thead>
<tr>
<th>Size</th>
<th>psi Air Pressure</th>
</tr>
</thead>
<tbody>
<tr>
<td>13.00 - 24, 12 PLY (min.)</td>
<td>70 psi (482 kPa)</td>
</tr>
<tr>
<td>13.00 R24, RADIAL</td>
<td>80 psi (551 kPa)</td>
</tr>
<tr>
<td>15.5 - 25, 12 PLY (min.)</td>
<td>58 psi (400 kPa)</td>
</tr>
<tr>
<td>17.5 - 25, 12 PLY (min.)</td>
<td>51 psi (352 kPa)</td>
</tr>
<tr>
<td>17.5 R25, RADIAL</td>
<td>73 psi (503 kPa)</td>
</tr>
</tbody>
</table>

---

**Warning**

Improper hydrofill can cause instability which can result in tipover. ALWAYS make sure that all four tires have been properly filled with hydrofill by a qualified tire service center.

B. Filling with Hydrofill

Hydrofill is a mixture of water and calcium chloride and provides the vehicle with additional weight for stability. All hydrofill service to tires should be performed by a qualified tire service center. Hydrofill must be refilled after any tire repair. Refer to the "Specifications" section for details of the hydrofill content required for each tire size. **Sky Trak** assumes no liability for damage or injury incurred while operating without proper hydrofill in all four tires.

C. Replacing Tires

**Warning**

Mis-Matched tire sizes or mixing of tire types (Radial and Bias ply) may compromise vehicle stability and may result in vehicle tipover.
The chart on page 78 depicts the minimum size and ply ratings (star rating for radial tires) that should be used on this vehicle. Make sure the replacement tire is of the same size and ply rating (star rating for radial tires) as all other tires. Higher ply (star for radial) rated tires can be used on this vehicle, but only when all four tires have the same ply rating.

D. **Wheel Lug Nuts** (Torque At First 50 Hours Only)

Clean the area around all wheel lug nuts. Check and torque wheel lug nuts to 450 - 500 lb-ft (610 - 678 Nm) using the torque sequence (Figure 44).

![Figure 44](image)

1. Level the vehicle, ground the carriage, place the travel select lever in (N) Neutral, engage the emergency brake switch and shut off the engine.

![Figure 45](image)

2. Unlock the battery cover and lower or remove the cover (Figure 45) to gain access to the batteries.

3. The battery(s) in this vehicle are maintenance free type batteries. They are shipped in the vehicle filled with electrolyte and charged.

4. Replace battery(s) that have cracked, melted, or damaged cases. Check terminals for corrosion.

12. **Battery(s) (250 Hour Intervals)**

**Warning**

Lead-acid batteries produce flammable and explosive gases. To avoid personal injury when checking, testing or charging battery(s):

- **DO NOT** use smoking materials near battery(s).
- Keep arcs, sparks and flames away from batteries.
- Provide ventilation and wear safety glasses.

1. Level the vehicle, ground the carriage, place the travel select lever in (N) Neutral, engage the emergency brake switch and shut off the engine.

2. Unlock the battery cover and lower or remove the cover (Figure 45) to gain access to the batteries.

3. The battery(s) in this vehicle are maintenance free type batteries. They are shipped in the vehicle filled with electrolyte and charged.

4. Replace battery(s) that have cracked, melted, or damaged cases. Check terminals for corrosion.
Warning

Fluid in electric storage batteries contains sulfuric acid which is POISON and can cause SEVERE CHEMICAL BURNS. Avoid all contact of fluid with eyes, skin, or clothing. Use proper protective gear when handling batteries. DO NOT tip any battery beyond a 45° angle in any direction. If contact does occur, follow the First Aid suggestions below.

Battery Electrolyte First Aid:

- External Contact — Flush with water.

- Eyes — Flush with water for at least 15 minutes and get medical attention immediately!

- Internal Contact — Drink large quantities of water. Follow with Milk of Magnesia, beaten egg or vegetable oil. Get medical attention immediately!

**IMPORTANT:** In case of internal contact, **DO NOT** give fluids that would induce vomiting!

5. Battery Charging —

Under normal conditions the engine alternator will have no problem keeping the battery charged. The only condition in which the battery may cause a problem is when it has been completely discharged for an extended period of time. Under these conditions the alternator may be unable to recharge the battery(s). A battery charger will be required for recharging.

Before using a charger, an attempt can be made to recharge the battery(s) using the engine alternator by first jump starting the vehicle and letting the engine run. See "Jump Starting" instructions earlier in this manual.

Warning

**DO NOT** charge a frozen battery, it may explode and cause injury. Let the battery thaw out before putting on a charger.

Charging rates between 3 and 50 amperes are satisfactory if excessive gassing or spewing of electrolyte does not occur or the battery does not feel excessively hot [over 125°F (52°C)]. If spewing or gassing occurs or the temperature exceeds 125°F, the charging rate must be reduced or temporarily stopped to permit cooling.
13. Fuse/Circuit Breaker Replacement

The fuses/circuit breaker in this vehicle protect the entire electrical system. The fuses will blow or the breaker will trip if there is a shorted or grounded wire in the applicable circuit. The breaker will automatically reset once it cools. The fuses will have to be replaced if they blow. If the breaker trips or the fuses continually blow, check the system for shorts, grounds or defective electrical components.

**IMPORTANT:** Be sure to shut off the engine and disconnect the negative battery cable before using an ohmmeter to check the resistance of the electrical system.

Under normal operating conditions a breaker should never need replacement. However, if the breaker does not automatically reset, the breaker is defective and replacement is required. The fuses/breaker are located inside the right console (Figure 46A & 46B). Note that you will require a #T-27 TORX driver to remove the side console access panel.

**IMPORTANT:** Each circuit breaker has a long terminal and a short terminal. The short terminal is labeled “BAT.” and the long terminal is labeled “AUX.” (Figure 46). Connect the wires from battery to “BAT.” terminal and connect the wires to the auxiliary component to “AUX.” If the wires are connected to the wrong terminals and the circuit breaker trips because of a short or grounded wire in the circuit, the contacts in the circuit breaker will melt together and the circuit breaker will not protect the circuit because it cannot open.

![Figure 46](image_url)
The following circuit breakers are used (Figure 46A).

<table>
<thead>
<tr>
<th>Index</th>
<th>Size</th>
<th>Circuit Protected</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>6 amp</td>
<td>Enclosed Cab Windshield Washer/Wiper Switch and Circulation Fan (Optional - This breaker will not be found on vehicles with an open cab)</td>
</tr>
<tr>
<td>2</td>
<td>10 amp</td>
<td>Rear Stabilizer Solenoids and Model 10042 with Outriggers</td>
</tr>
<tr>
<td>3</td>
<td>6 amp</td>
<td>Steering Select Valve, Fork Tilt Valve</td>
</tr>
<tr>
<td>4</td>
<td>10 amp</td>
<td>Horn and Back-up Alarm (Optional - Cab Heater Fan)</td>
</tr>
<tr>
<td>5</td>
<td>6 amp</td>
<td>Instrument Panel, Emergency Brake Solenoid Switch, Stabilizer Cylinder Switches</td>
</tr>
<tr>
<td>6</td>
<td>40 amp</td>
<td>Ignition Switch Feed for entire Electrical System</td>
</tr>
<tr>
<td>7</td>
<td>20 amp</td>
<td>(Optional - Lighting Package)</td>
</tr>
</tbody>
</table>

**Figure 46A**

For vehicles with circuit breakers only.
The following fuses/circuit breaker are used (Figure 46B).

<table>
<thead>
<tr>
<th>Index</th>
<th>Size</th>
<th>Circuit Protected</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>7.5 amp (Fuse)</td>
<td>Outrigger Switches</td>
</tr>
<tr>
<td>2</td>
<td>10 amp (Fuse)</td>
<td>Enclosed Cab Windshield Washer/Wiper Switch and Circulation Fan (Optional this fuse will not be found on vehicles with an open cab)</td>
</tr>
<tr>
<td>3</td>
<td>7.5 amp (Fuse)</td>
<td>Stabil-TRAK Solenoids, Relays and Proximity Switch</td>
</tr>
<tr>
<td>4</td>
<td>7.5 amp (Fuse)</td>
<td>Steering Select Circuit and Stabilizer Lock Relay</td>
</tr>
<tr>
<td>5</td>
<td>10 amp (Fuse)</td>
<td>Horn and Back-up Alarm (Optional - Cab Heater Fan)</td>
</tr>
<tr>
<td>6</td>
<td>7.5 amp (Fuse)</td>
<td>Warning Lights, Park Brake Switch, Fuel Gauge and Hourmeter</td>
</tr>
<tr>
<td>7</td>
<td>20 amp (Fuse)</td>
<td>(Optional - Lighting Package)</td>
</tr>
<tr>
<td>8</td>
<td>40 amp (Breaker)</td>
<td>Ignition Switch Feed For Entire Electrical System</td>
</tr>
</tbody>
</table>

Figure 46B
14. Boom Chain and Wear Pads

A. Top Boom Chain Tension Check (First 50 Hours Only, Then 1000 Hour Intervals Thereafter)

Check the boom chain tension by measuring the top boom chain sag.

1. Raise the boom to a horizontal (level) position. Fully extend the boom, then retract it 2" (50,8 mm) (one inch per section).

2. Measure the sag in the top boom chains between the bottom of the chains and the top of the intermediate boom at their closest point (Figure 47). Acceptable boom chain sag is between 1-1/2" (38,1 mm) and 2-1/2" (63,5 mm). If the measurement is less than 1-1/2" (38,1 mm), the boom chains need to be adjusted. Follow procedures in paragraph 14B to adjust.

B. Top Boom Chain Tension Adjustment (As Required)

NOTE: If your vehicle is equipped with outriggers, remove the spacer plate from the extend cylinder before proceeding (Figure 47A).
1. Retract the boom completely to check the position of the inner boom. If your vehicle has outriggers remove the carriage or raise the boom far enough so the carriage will clear the outriggers when boom is fully retracted. The inner boom section should extend between 4-1/2" (114.3 mm) to 5-1/2" (139.7 mm) beyond the end of the intermediate boom section (Figure 48). If the measurement is not between 4-1/2" (114.3 mm) and 5-1/2" (139.7 mm), the boom may require more extensive adjustment and/or repair. Contact your authorized Sky Trak distributor.
2. If the distance measured in Step 1 is 5" (127 mm) or more, but less than 5-1/2" (139.7 mm);
   a. Tighten the locknut (Figure 49) located on the bottom of the outer boom.
   b. Cycle the boom in and out, then, with the boom horizontal (level), fully extend the boom and retract 2" (50.8 mm) (one inch per section).
   c. Measure the chain sag. Acceptable boom chain sag is between 1-1/2" (38.1 mm) and 2-1/2" (63.5 mm). If the chain sag is less than 1-1/2" (38.1 mm), repeat Steps “a” through “c”.

3. If the distance measured in Step 1 is less than 5" (127 mm) but greater than 4-1/2" (114.3 mm). To check the 8-1/2" (216 mm) alternate dimension as shown in Figure 50 the rear cover has to be removed. To adjust proceed as follows;
   a. Remove the rear cover from the outer boom and adjust the top extend boom chains.

---

**Figure 49**

- **RETRACT CHAIN LOCKNUT**
- **EXTEND CYLINDER**

OA0512
b. Tighten the locknuts (Figure 51) for each chain. Be sure each locknut is tightened equally so that each chain maintains the same tension. Equal chain tension can be checked by the position of the yoke on the outer boom (Figure 52). The front of the yoke should be parallel with the front edge of the boom.
c. Cycle the boom in and out, then, with the boom horizontal (level), fully extend the boom and retract 2" (50.8 mm) (one inch per section).

d. Measure the chain sag. Acceptable boom chain sag is between 1-1/2" (38.1 mm) and 2-1/2" (63.5 mm). If the chain sag is less than 1-1/2" (38.1 mm), repeat Steps “a” through “d”.

e. Replace the rear outer boom cover.

f. Replace spacer plate on vehicles equipped with outriggers (Figure 47A).

C. Chain Lubrication (1000 Hour Intervals)
With the boom fully extended, apply a heavy-duty, rust inhibiting lubricant ("LPS-3" or "LUBRIPLATE" chain and cable fluid or equivalent) to the extend chains.

D. Wear Pad Check (50 Hour Intervals)
Visually inspect boom wear pads between the boom sections at the rear and front of the boom for excessive wear at every 50 hour interval.
The average expected life of boom pads can vary depending upon vehicle use, weight of loads, operating conditions, and the location of boom pads inside the boom.
If the vehicle is used continuously or the weights of the loads are at or near maximum capacity, or if you are operating in very dusty or dirty conditions, the boom pads will wear much faster. The pads that are under the most stress from the weight of the load will also wear faster than other pads. For example the lower pads at the front of the boom are under far more stress than the pads attached to the top, rear or sides of the boom. Consequently the lower pads will require service more often.

E. Wear Pad Replacement
(As Wear Pad Indicators Indicate)

Each boom pad is manufactured with a convenient wear pad indicator. This is the angled cut at each end of all wear pads (Figure 53). The total thickness of a new wear pad is .625" (15,9 mm). The angled cut will provide a total wear thickness of .25" (6,4 mm). This will leave approximately .375" (9,5 mm) of total unused material.

The pads must never be worn past the angled cut indicator because the metal pad insert that holds the pads in place will begin to wear into the boom pad sliding surfaces. If pads are worn past this point it will cause gouging on boom plate surfaces. This will result in premature wear of any new wear pads installed if the surfaces are not ground smooth again.

Replacement of boom wear pads must be performed by an authorized Sky Trak distributor when the wear pads indicate.

**IMPORTANT:** The boom has been factory lubricated for proper wear pad break-in and will normally not require further lubrication. However, after replacing any wear pad(s) or after prolonged periods of inoperation, light lubricating with a heavy-duty, rust inhibiting lubricant ("LPS-3" or "LUBRIPLATE" chain and cable fluid or equivalent) of the boom wear surfaces is recommended to keep the wear pads and boom wear surfaces lubricated properly. Light lubricating of the boom wear surfaces is also recommended in salt air climates or when the vehicle is to be put in storage to prevent rusting.

![Figure 53](SC0030)
15. Emergency Boom Lowering

This section discusses emergency boom lowering procedures:

Section "A" In case of loss of engine power or hydraulic pump failure.
Section "B" In case of hydraulic line failure.

IMPORTANT: The following instructions are intended to serve as a guideline only. Many different factors may play an important role in this procedure. It is impossible to cover each and every combination that may be encountered. Consult your local Sky Trak Distributor or the Sky Trak Service Department if you are unsure about any part of this procedure or for any specific instructions for your particular situation.

A. In Case of Loss of Engine Power or Hydraulic Pump Failure:

In any event, the vehicle should be secured until the situation has been properly evaluated. Secure the vehicle by following the procedures below.

1. Clear the area around the vehicle of all personnel.
2. Block all four wheels.
3. Section off a large area under the boom with string or tape to restrict any personnel from entering this potentially dangerous area.

Warning

DO NOT get under a raised boom unless the boom is blocked up. Always block the boom before doing any servicing which requires the boom to be up.
IMPORTANT: In the event of total loss of engine power or hydraulic pump failure with an elevated load, the situation must be properly evaluated and dealt with on an individual basis. Contact your local Sky Trak distributor or the Sky Trak service department at (800) 439-8959 for specific instructions for your particular situation.

4. Temporarily block up or support the outer boom so it cannot be lowered.

5. If the load is in a position where it can be removed safely, completely remove the load from the carriage and/or attachment, otherwise leave the load in place.

6. Place a tag on both the ignition switch and steering wheel stating that the vehicle should not be operated. If you do not have a tag, tape over the ignition switch.

B. In Case of Hydraulic Line Failure:

<table>
<thead>
<tr>
<th>Warning</th>
</tr>
</thead>
<tbody>
<tr>
<td>In the event of a hydraulic line failure in any of the boom control circuits, extreme CAUTION must be taken when attempting to lower an elevated boom. Hydraulic oil under high pressure will escape through the fault in the line which may result in the boom lowering at a rapid rate. DO NOT perform this procedure unless you are absolutely sure of what you are doing. Consult your local Sky Trak Distributor or the Sky Trak Service Department before proceeding if you are uncertain about any of the following procedures.</td>
</tr>
</tbody>
</table>
If line failure is in the Raise or Lower lines

1. Block or support the boom so it cannot be lowered.

**IMPORTANT:** Remove the load completely from the forks and/or attachment by using whatever additional equipment may be required for your particular situation.

2. If the boom has been extended, retract the boom before proceeding. Boom retraction can be performed by operating the boom retract control lever in the normal fashion.

3. If the vehicle is not in a potentially hazardous location, and the boom does not need to be lowered immediately. Shut off the engine, find the line that failed and replace that line. After the failure is fixed, remove the blocking, lower the boom, check the oil level and add as necessary. Start the engine and bleed the air from the system, then recheck the oil level. The vehicle can now be put back into service.

4. If the vehicle is in a potentially hazardous location that would require the boom to be lowered immediately and if the line failure is in the boom raise line, (if in the lowering line, continue with step 5) the boom must be lowered by following this procedure:

   a. Locate the fault in the line and use a container to catch any oil that escapes. Transfer the oil to a container with a cover and label the container as used oil. Dispose of the used oil at an approved recycling center.

   b. (Using two people to perform this procedure will make boom lowering much easier). Remove the blocking from under the boom. At the base end of each hoist cylinder, locate the counterbalance valve cartridges (Figure 54). Loosen the retainer nut and control the rate of boom lowering by turning the adjusting screw on each cartridge simultaneously into the cartridge very slowly (clockwise). Hydraulic oil from inside the hoist cylinders will escape through the fault in the line.

   **Warning**

   Wear protective clothing and proper eye protection when working with or around hydraulic oil. Wait for hydraulic oil to cool before attempting to repair the failure. Hot hydraulic oil can cause severe burns and other serious injury.
**IMPORTANT:** By turning the counterbalance cartridge adjusting screws in to make the valve inoperative, the pressure settings of the cartridge have been altered and the valve has lost its load holding ability. **DO NOT** attempt to reset these cartridges. By attempting to reset these cartridges it will more than likely result in erratic (extreme bouncing or racking at ends of cylinder stroke) lowering action, which may cause damage to other components. Remove and discard both cartridges and replace with new parts.

---

**Warning**

Wear protective clothing and proper eye protection when working with or around hydraulic oil. Wait for hydraulic oil to cool before attempting to repair the failure. Hot hydraulic oil can cause severe burns and other serious injury.

---

5. If the vehicle is in a potentially hazardous location that would require the boom to be lowered immediately and if the line failure is in the boom lowering line, the boom must be lowered by following the next 4 steps.

---

a. (Using two people to perform this procedure will make boom lowering much easier) At the base end of each hoist cylinder, locate the counterbalance valve cartridges (Figure 54). Loosen the retainer nut on each cartridge and turn the adjusting screws in (clockwise) until they bottom out. Doing this will render each counterbalance valve inoperative.
IMPORTANT: By turning the counterbalance cartridge adjusting screws in to make the valve inoperative, the pressure settings of the cartridge have been altered and the valve has lost its load holding ability. **DO NOT** attempt to reset these cartridges. By attempting to reset these cartridges it will more than likely result in erratic (extreme bouncing or racking at ends of cylinder stroke) lowering action, which may cause damage to other components. Remove and discard both cartridges and replace with new parts.

b. Locate the fault in the line and use a container to catch any oil that escapes. Transfer the oil to a container with a cover and label the container as used oil. Dispose of the used oil at an approved recycling center.

c. Remove the blocking from under the boom. Clear the area around the vehicle of all personnel and return to the operator's cab.

d. With the engine OFF, move the boom control lever forward to lower the boom. Oil will escape through the fault in the line.

6. Replace the failed hydraulic line. Check the oil level and add as necessary. Bleed the air from the system and then recheck the oil level.

If line failure is in the Extend or Retract lines

**Warning**

DO **NOT** get under a raised boom unless the boom is blocked up. Always block the boom before doing any servicing which requires the boom to be up.

**IMPORTANT:** If the boom has been extended, you must first remove the load from the forks and/or attachment before you attempt to lower the boom.

1. Temporarily block or support the boom so it cannot be lowered.

**IMPORTANT:** Remove the load completely from the forks and/or attachment by using whatever additional equipment may be required for your particular situation.

2. If the vehicle is not in a potentially hazardous location, and the boom does not need to be retracted immediately. Shut off the engine, find the line that failed and replace that line. After the failure is fixed, remove the blocking, retract and lower the boom, recheck the oil level and add as necessary. Start the engine and bleed the air from the system, then recheck the oil level. The vehicle can now be put back into service.
3. If the vehicle is in a potentially hazardous location that would require the boom to be retracted immediately. Shut off the engine and refer to Figure 55 to identify the failed hose. Use step "a" if the failure is in the retract line or step "b" if the failure is in the extend line. If the failure is in either the extend or retract tubes (Figure 55) contact your local Sky Trak distributor for repair parts or contact the Sky Trak service department for specific instructions.

RETRACT LINE (Figure 55)

a. Locate the failed retract hose and remove the hose. In the same area locate the extend hose and remove it from the circuit. Replace the failed retract hose with the extend hose. Place a container under the extend port on the cylinder to catch any oil that will escape during boom retraction. Return to the operators cab, start the engine and slowly retract the boom. Stop the engine.

Transfer the oil to a container with a cover and label the container as used oil. Dispose of the used oil at an approved recycling center.

Reassemble a new extend line. After the failure is fixed, remove the blocking, retract and lower the boom, check the oil level and add as necessary. Start the engine and bleed the air from the system, then recheck the oil level. The vehicle can now be put back into service.
EXTEND LINE (Figure 56)

b. Place a container under the failure in the extend line to catch any oil that will escape during boom retraction. Return to the operators cab, start the engine and **slowly** retract the boom. Stop the engine.

Transfer the oil to a container with a cover and label the container as used oil. Dispose of the used oil at an approved recycling center.

Replace the failed extend line. After the failure is fixed, remove the blocking, retract and lower the boom, check the oil level and add as necessary. Start the engine and bleed the air from the system, then recheck the oil level. The vehicle can now be put back into service.
## Fluid and Lubricant Capacities

### ENGINE CRANKCASE OIL
Capacity with filter change
- Cummins Turbo .......................................... 11.6 qts. (11 ltr)
- Cummins Aftercooled Turbo ....................... 11.6 qts. (11 ltr)
Filter ............................................................... 1.5 qts. (1.4 ltr)
Type of Oil - Below 23° F (-5° C) ......................... 10W30
Above 23° F (-5° C) ................................ 15W40
equal to API, CD or CE specs.

### FUEL TANK
Capacity .................................................. 35.5 gals. (134.4 ltr)
Usable ..................................................... 33.5 gals. (126.8 ltr)
Type of Fuel above 32° F (0° C) ......................... Standard #2 Diesel
Type of Fuel below 32° F (0° C) ....................... Winterized #2 Diesel

### COOLING SYSTEM
Capacity - System (w/o heater) ...................... 4 gals. (15.1 ltr)
Capacity - Overflow Bottle ................................. 3 qts. (2.8 ltr)
Type of Fluid ............................................ 50/50 ethylene glycol and water

### HYDRAULIC SYSTEM
Capacity - System w/o Outriggers .......... 53 gals. (200.6 ltr)
Capacity - System w/Outriggers ...................... 59.5 gals. (225.2 ltr)
Capacity - Reservoir ................................... 30.3 gals. (114.7 ltr)
Type of Oil ........................................ MIL-L-2104C, 10W or ISO Grade 46
(see table on page 70)

### TRANSMISSION
Capacity with filter change .................. 4 gals. (15.1 ltr)
Type of Fluid ........................................ MIL-L-2104C, 10W
(see table on page 73)
Filter ......................................................... 1.5 qts. (1.4 ltr)

### AXLES
Differential Housing Capacity ....................... 18 qts. (17 ltr)
Type of Lubricant - Above -15° F (-26° C) ... 80W 90 Gear Oil
Below -15° F (-26° C) ......................... 75W Gear
Wheel End Capacity - each (front) ............... 54 ozs. (1.6 ltr)
Wheel End Capacity - each (rear) ............... 54 ozs. (1.6 ltr)
(see table on page 77)
**Tires**

**AIR PRESSURES**

**MODEL 8042**
- 13.00 - 24, 12 ply ........................................ 70 psi (482 kPa)
- 13.00 R24, Radial (One Star) ......................... 80 psi (551 kPa)
- 15.5 - 25, 12 ply ........................................ 58 psi (400 kPa)
- 17.5 - 25, 12 ply ........................................ 51 psi (352 kPa)

**MODEL 10042**
- 17.5 - 25, 12 ply ........................................ 51 psi (352 kPa)
- 17.5 R25, Radial (Two Star) .......................... 73 psi (503 kPa)

**HYDROFILL MIXTURE**

**MODEL 8042**
- 13.00 - 24, 12 ply ...................... 164 lbs. (74,4 kg) Calcium Chloride to 33 gals. (124,9 ltr) of Water (each tire)
  Total Hydrofill weight (each tire) .......... 438 lbs. (198,7 kg)
- 13.00 R24, Radial .......................... 164 lbs. (74,4 kg) Calcium Chloride to 33 gals. (124,9 ltr) of Water (each tire)
  Total Hydrofill weight (each tire) .......... 438 lbs. (198,7 kg)
- 15.5 - 25, 12 ply .......................... 187 lbs. (85,8 kg) Calcium Chloride to 37 gals. (140 ltr) of Water (each tire)
  Total Hydrofill weight (each tire) .......... 500 lbs. (226,8 kg)

**MODEL 10042**
- 17.5 - 25, 12 ply ...................... 243 lbs. (110,2 kg) Calcium Chloride to 48 gals. (181,7 ltr) of Water (each tire)
  Total Hydrofill weight (each tire) .......... 643 lbs. (291,7 kg)
- 17.5 R25, Radial .......................... 243 lbs. (110,2 kg) Calcium Chloride to 48 gals. (181,7 ltr) of Water (each tire)
  Total Hydrofill weight (each tire) .......... 643 lbs. (291,7 kg)

**NOTE:** Tires (bias or radial) are not to be filled with water only.

**NOTE:** For other types of ballast used with these tires consult the factory.

**WHEEL NUT TORQUE** .......... 450 - 500 lb-ft (610 - 680 Nm)

**MAXIMUM GROUND PRESSURE** (w/full load)

**MODEL 8042**
- 13.00 - 24 or R24 Size Tires ..................... 105 psi (723 kPa)
- 15.5 - 25 Size Tires ............................. 74 psi (510 kPa)
- 17.5 - 25 Size Tires ............................. 66 psi (455 kPa)

**MODEL 10042**
- 17.5 - 25 or R25 Size Tires ..................... 74 psi (510 kPa)
MINIMUM WEIGHT OF EACH TIRE AND WHEEL ASSEMBLY WITH BALLAST

**MODEL 8042**
13.00 - 24, 12 ply ........................................ 704 lbs. (319 kg)
13.00 - 24, 14 ply ........................................ 716 lbs. (325 kg)
13.00 R24, Radial (One Star) ............................ 740 lbs. (336 kg)
15.5 - 25, 12 ply ........................................... 839 lbs. (381 kg)

**MODEL 10042**
17.5 - 25, 12 ply ........................................... 1003 lbs. (455 kg)
17.5 R25, Radial (Two Star) ............................ 1159 lbs. (526 kg)

IMPORTANT: If any other type of ballast is added, the total weight of the tire and wheel assembly, including ballast **Must Not Be Less Than** the minimum assembly weight listed above.

### Engine

**MODEL 8042**
Make and Model . Cummins 4BT3.9 Turbo Charged Diesel
Horsepower (S/N 1605 & Before) ........ 100 hp @ 2500 rpm
Horsepower (S/N 1606 & After) ........... 110 hp @ 2500 rpm
Low Engine Idle ........................................... 1050± 50 rpm

**MODEL 10042**
Make and Model ........... Cummins 4BTA3.9 Turbo Charged Aftercooled Diesel
Horsepower ........................................... 116 hp @ 2500 rpm
Low Engine Idle ........................................... 1050± 50 rpm

### Weights

**MODEL 8042 BASIC VEHICLE**
*Approximate Curb Weight ........... 23,840 lbs (10823 kg)
Shipping Weight ............................ 23,630 lbs (10719 kg)
*With open cab, 13.00 - 24 hydrofilled tires and full fuel tank
OPERATING LOAD .......................... 8,000 lbs (3629 kg)

**MODEL 10042 BASIC VEHICLE**
*Approximate Curb Weight ........... 26,930 lbs (12215 kg)
Shipping Weight ............................ 26,720 lbs (12120 kg)
*With open cab, 17.5 - 25 hydrofilled tires and full fuel tank
OPERATING LOAD .......................... 10,000 lbs (4536 kg)
**Machine Dimensions**

**MODEL 8042 With 13.00 - 24 Tires**
- Length (less forks) ................. 221.3" (5621 mm)
- Width ........................................ 96.4" (2448 mm)
- Height ........................................ 100.5" (2553 mm)
- Wheelbase .................................. 119.5" (3035 mm)
- Ground Clearance ....................... 16.3" (412 mm)
- Tread ........................................ 81.8" (2077 mm)
- Turning Clearance Radius .............. 14' 8" (4.5 m)
- Max. Reach from Front Tires to 24" load center .......... 26' 8" (8,1 m)

**MODEL 10042 With 17.5 - 25**
- Length (less forks) ................. 239.3" (6078 mm)
- Width ........................................ 102.0" (2590 mm)
- Height ........................................ 101.5" (2578 mm)
- Wheelbase .................................. 119.5" (3035 mm)
- Ground Clearance ....................... 16.8" (427 mm)
- Tread ........................................ 84.3" (2141 mm)
- Turning Clearance Radius .............. 15' 0" (4.6 m)
- Max. Reach from Front Tires to 24" load center .......... 26' 6" (8,0 m)

**Electrical System**

**RATING.** ........................................ 12 VDC Negative Ground

**NUMBER & TYPE OF BATTERIES.** ..........................
- S/N 0001-5234 ............................... Two - Maintenance Free
- S/N 5235-9908 ............................... One - Maintenance Free

**FUSE/CIRCUIT BREAKER RATINGS**

- Rear Stabilizer Solenoids ..................... 7.5 amp
- Steering Select Switch and Valve ............ 7.5 amp
- Horn and Back-up Alarm (Optional - Heater Fan) ...... 10 amp
- Warning lights, Emergency Brake Solenoid Switch, Fuel Gauge and Hourmeter ..................... 7.5 amp
- Ignition Switch Feed for entire Electrical System ...... 40 amp
  (Optional - Enclosed Cab) ....................... 10 amp
  (Optional - Lighting Package) ................... 20 amp

**REPLACEMENT BULBS**

- Headlights/Worklights
  - Replacement Bulbs - Hobbs ..................... #73214
  - Replacement Bulbs - Speaker .................. #4830830
  - Warning Light Bulbs .......................... Qty. 4 (GE 161)
  - Brake Light/Turn Signal - Rear .................. #1157
  - Turn Signal - Front ........................... #1156
Stability Tipping Limits

This telescopic handler has been shown to meet or exceed ASME, and FEM stability limits in highly structured and controlled test situations. These stability tipping limits are extremes and are not intended to be achieved during normal work site operation. The following is provided only as information to the operator of this vehicle and in no way should be used as a guideline for operating this vehicle. For safe operation, follow the instructions as provided on the preceding pages of this manual.

Position 1
Longitudinal stability "stacking"
(with rated load)

7% GRADE (4°)
Position 2
Longitudinal stability "traveling"
(with no more than rated load)

Position 3
Lateral stability "stacking" with rated load
(with frame tilted 4°)
Position 4
Lateral stability "traveling"
(with no load)

Position 5
Lateral stability "stacking"
(with no load)

50% GRADE (27°)

10% GRADE (6°)
Notes

(OR, on this page, affix second copy of attachment
capacity chart if supplied with attachment)
To: JLG, Gradall, Lull and Sky Trak product owner:

If you now own, but ARE NOT the original purchaser of the product covered by this manual, we would like to know who you are. For the purpose of receiving safety-related bulletins, it is very important to keep JLG Industries, Inc. updated with the current ownership of all JLG products. JLG maintains owner information for each JLG product and uses this information in cases where owner notification is necessary.

Please use this form to provide JLG with updated information with regard to the current ownership of JLG Products. Please return completed form to the JLG Product Safety & Reliability Department via facsimile (717) 485-6573 or mail to address as specified on the back of this form.

Thank you,
Product Safety & Reliability Department
JLG Industries, Inc.
1 JLG Drive
McConnellsburg, PA 17233-9533
Telephone: (717) 485-5161
Fax: (717) 485-6573

NOTE: Leased or rented units should not be included on this form.

Mfg. Model: ____________________________________________

Serial Number: _________________________________________

Previous Owner: _________________________________________

Address: ______________________________________________

City: __________________________ State: ________________

Zip: ________________ Telephone: ( _______ ) _________________________

Date Of Transfer: ______________________________________

Current Owner: _________________________________________

Address: ______________________________________________

City: __________________________ State: ________________

Zip: ________________ Telephone: ( _______ ) _________________________

Who in your organization should we notify?

Name: ________________________________________________

Title: __________________________________________________
REPLACEMENT MANUALS

If the owner/operator or safety manuals that were originally shipped with your vehicle are lost, stolen or need replacement, contact your local distributor for replacement manuals.

If for any reason your distributor cannot supply the manuals you need; write, call or send a fax to the following address for ordering information.

OmniQuip Parts Worldwide
600 South Park St.
Port Washington, WI 53074
(888) 872-5123  Parts Fax: (800) 539-8933

Be sure to include the following information:
1. Type of manual requested (owner/operator or safety)
2. Vehicle Name
3. Model and Serial Number