

# *Operator's Manual*

**Airtrax**

Omni-Directional Technology  
Changing the way vehicles move

---

## **SIDEWINDER™** **Omni-Directional™ Lift Truck**



**ATX-3000**

**Part No. 32025000**

---

---

LIFT TRUCK MODEL \_\_\_\_\_ SERIAL NUMBER \_\_\_\_\_

**Explanation of Lift Truck Serial Number**

Sample Serial Number: **A303M04W000014**

The first 4 digits (**A303**) are the model code, which tells the Service Department which bill of material (BOM) was used on the lift truck build and identifies the proper replacement part for that particular lift truck.

The next 3 digits (**M04**) indicate the month and year of production. In this sample: Dec 2004

A = Jan, B = Feb, C = Mar, D = Apr, E = May, F = Jun, G = Jul, H = Aug, J = Sep, K = Oct, L = Nov, M = Dec

The next designator (**W**) is the production location: W = Warminster, B = Bridgeview, M = Mulheim, F = Flemington

The last 6 digits (**000014**) indicate the sequential number of the unit built. In this sample: 14th unit built

**REGISTERED TRADEMARKS**

Airtrax™

Omni-Directional™

**SIDEWINDER™**

---

---

## TO OWNERS, USERS, AND OPERATORS:

The safe and efficient operation of a lift truck requires skill and alertness on the part of the operator. To develop the skill required, the operator must:

- Receive training in the proper operation of this lift truck.
- Understand the capabilities and limitations of the lift truck.
- Become familiar with the construction of the lift truck, and see that it is maintained in good condition.
- Read and understand the warnings and operating procedures in this manual.

In addition, a qualified person, experienced in lift truck operation, must guide a new operator through several driving and load handling operations before the new operator attempts to operate the lift truck alone.

It is the responsibility of the employer to make sure that the operator can see, hear, and has the physical and mental ability to operate the equipment safely.

Various laws and regulations require the employer to train lift truck operators. These laws and regulations include:

- Occupational Safety and Health Act (USA)
- Canada Material Handling Regulations

**NOTE:** A comprehensive operator training program is available from Airtrax™. For further details, contact your dealer for Airtrax™ lift trucks.

This OPERATING MANUAL contains information necessary for the operation and maintenance of a basic lift truck. Optional equipment is sometimes installed that can change some operating characteristics described in this manual. Make sure the necessary instructions are available and understood before operating the lift truck.

Some of the components and systems described in this Operator's Manual will not be installed on your unit.

If you have a question about any item described, contact your dealer for Airtrax™ lift trucks.

Additional information that describes the safe operation and use of lift trucks is available from the following sources:

- Employment safety and health standards or regulations (Examples: Occupational Safety and Health Standards (USA), Canada Material Handling Regulations)
- Safety codes and standards (Example: American National Standards Institute, ANSI/ASME B56.1, Safety Standard For Low-lift And High-lift Trucks)
- Publications from government safety agencies, government insurers, private insurers, and private organizations (Example: Accident Prevention Manual For Industrial Operations, from the National Safety Council)

- Guide for Users of Industrial Lift Trucks describes lift truck safety, good maintenance practices, and training programs. Available from your dealer for Airtrax™ lift trucks.

**NOTE:** Airtrax™ lift trucks are not intended for use on public roads.

**NOTE:** The following symbols and words indicate safety information in this manual:



### **WARNING**

**Indicates a condition that can cause death or injury!**



### **CAUTION**

**Indicates a condition that can cause property damage!**

**TABLE OF CONTENTS**

**Foreword**

To Owners, Users, and Operators: . . . . . i

**Model Description**

General. . . . . 1  
     Omni-Directional™ Technology . . . . . 1  
     Major Components (Left-Side) . . . . . 2  
     Major Components (Right-Side) . . . . . 4  
 Operator Protection Equipment . . . . . 6  
 Nameplate . . . . . 7  
 Safety Labels . . . . . 7  
     Nameplate and Labels . . . . . 7  
     Warning and Safety Labels . . . . . 8  
     Operator Labels . . . . . 10  
 Seat Assembly . . . . . 12  
 Instruments and Indicators . . . . . 14

Switches. . . . . 26  
 Controls . . . . . 28  
 Auxiliary Lights. . . . . 30  
 Technical Data . . . . . 32  
     General Information . . . . . 32  
     Dimensions. . . . . 33  
     Performance . . . . . 34  
     Weight. . . . . 35  
     Chassis. . . . . 35  
     Battery . . . . . 36  
     Control . . . . . 37  
     Hydraulic System . . . . . 37

**Operating Procedures**

General . . . . . 39  
 Know Your Lift Truck . . . . . 40  
 Operator Precautions. . . . . 43

## TABLE OF CONTENTS


**Airtrax**

Operating Procedures . . . . .	47	Hydraulic Oil Filter . . . . .	71
Load Handling . . . . .	49	Approved Hydraulic Oils . . . . .	72
Safe Operations . . . . .	55	Battery . . . . .	75
Shutdown Procedures . . . . .	57	Battery Maintenance . . . . .	77
Fork Adjustment . . . . .	57	Changing the Battery . . . . .	77
Maintenance Schedule . . . . .	58	Cleaning the Battery . . . . .	79
Before Operation Inspection . . . . .	58	Adding Approved or Distilled Water . . . . .	80
During Operation Inspection . . . . .	60	Charging the Battery . . . . .	80
After Operation Inspection . . . . .	60	Storing the Battery . . . . .	82
Diagnostics . . . . .	62	Dash Displays, Indicator Lights, and Horn . . . . .	83
Fault Codes . . . . .	62	Covers/Floor Plates . . . . .	84
<b>Maintenance Procedures</b>		Rear Cover . . . . .	84
General . . . . .	67	Battery Cover . . . . .	84
Safe Maintenance Procedures . . . . .	67	Left- and Right-Hand Side Covers . . . . .	84
Hydraulic System . . . . .	69	Front Bulkhead Cover . . . . .	85
General . . . . .	69	Floor Plates . . . . .	85
Lift System . . . . .	69	Storing the Lift Truck . . . . .	86
Tilt System . . . . .	69	Short-Term Storage . . . . .	86
Auxiliary Functions . . . . .	70	Long-Term Storage . . . . .	87
Hydraulic Oil Tank . . . . .	70	Moving a Disabled Lift Truck . . . . .	88

## WARNING

Airtrax

A **WARNING** label with this information must be on the lift truck.

 **WARNING**  
PERICOLOSO PER IL PERSONALE OPERANTE LA  
MATERIALE IN CASI DI INCORRETTA UTILIZZO

1. **KNOW YOUR TRUCK** - Do not operate this truck unless you have been trained and authorized to do so. Read all warnings and instructions on truck and in operator's manual, or obtain them from plant Safety Director or the local Airtrax representative.

2. **CHECK YOUR TRUCK** - Check truck daily before use. If found to be in need of repair or in any way unsafe, report this immediately to the proper authority. The truck should not be used until restored to safe operating condition.

3. **PROTECT YOURSELF** - Do not operate truck without an overhead guard, load backrest extension and buckled seat belt, unless conditions prevent their use. Use special care if operation without these features is required. Keep inside. Operate truck only from designated operating position. Never place any part of your body into the mast structure, between the mast and the truck or outside the truck.

4. **PROTECT OTHERS** - Do not carry passengers. Do not allow anyone to stand or pass under load or lifting mechanism. Watch tail swing when steering. Do not move truck if anyone is between truck and nearby stationary object.

5. **DRIVE CAREFULLY** - Observe applicable traffic regulations. Yield right of way to pedestrians. Slow down and sound horn at cross aisles and wherever vision is obstructed.

**AVOID SUDDEN MOVEMENT.** Start, stop, travel, steer and brake smoothly. Avoid bumps, holes, and loose material. Always look in direction of travel. Travel with load or lifting mechanism as low as possible and tilted back. Keep a clear view, and if load interferes with visibility, travel with tilting mechanism trailing (except when climbing ramps). **USE SPECIAL CARE WHEN OPERATING ON RAMPs.** Travel slowly and do not angle or turn. When truck is loaded, travel with load uphill. When truck is empty, travel with lifting mechanism downhill. Never enter a trailer unless its wheels are chocked.

6. **NEVER OVERLOAD** - Do not overload truck. Check capacity plate for load weight and load center information.

7. **KNOW YOUR LOAD** - Do not handle loads which are taller than the load backrest or load backrest extension unless load is secured so that no part of it could fall backward. **STABILIZE YOUR LOAD.** Do not handle unstable or loosely stacked loads. Use special care when handling long, high or wide loads to avoid losing the load, striking bystanders or tipping the truck.

**CENTER YOUR LOAD.** Space forks as far apart as load allows. Before lifting, be sure loads centered and against load backrest. Use attachments for intended purpose only.

8. **LOOK OVERHEAD** - Elevate forks or other lifting mechanism only to pick up or stack a load. Lift and lower smoothly with mast vertical or tilted slightly back - **NEVER FORWARD.**

Watch out for obstructions, especially overhead.

9. **MINIMUM TILT** - Operate tilting mechanism slowly and smoothly. Do not tilt forward when elevated except to pick up or deposit a load. When stacking use only enough backward tilt to stabilize load.

10. **TURN CAREFULLY** - Side tip-over can occur **EVEN WHEN UNLOADED** Slow down before turning.

11. **DON'T JUMP** - If your truck begins to tip over, **DON'T JUMP.** Hold armsrests tightly, brace feet, lean forward and away from tip. Stay in the seat to avoid being trapped between the truck and ground.

12. **USE WORK PLATFORM** - Do not tilt personnel except on a securely attached specially designed work platform. **USE EXTREME CARE WHEN LIFTING PERSONNEL.** Place mast in vertical position, leave joystick in neutral and apply parking brake. Lift and lower smoothly. Be available to operate controls as long as personnel are on the work platform. Never transport personnel on forks or work platform.

13. **SHUT DOWN COMPLETELY** - Before getting off truck, release joystick to neutral, fully lower lifting mechanism, set parking brake. When leaving truck unattended, shut off power and disconnect battery connector. Chock wheels if truck is parked on an incline.

40117

This Page Intentionally Left Blank



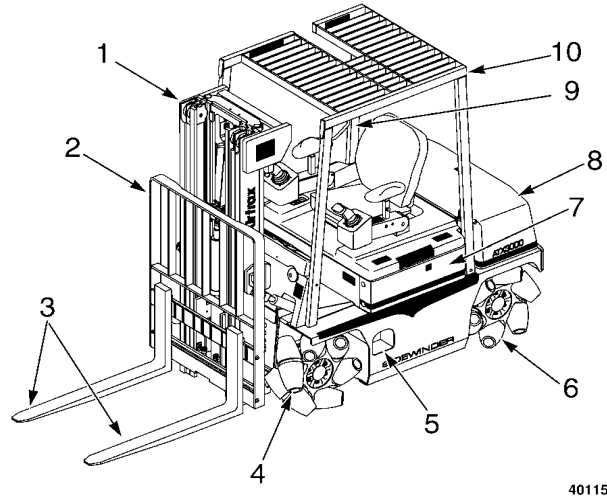
## GENERAL

The **SIDEWINDER™ ATX-3000** provides unprecedented maneuverability in even the most limited spaces. New Omni-Directional™ Technology allows the **SIDEWINDER™ ATX-3000** to travel in all directions making it the ideal vehicle to work within tight spaces where turns are not possible and where exceptional inching capability is required. The **SIDEWINDER™ ATX-3000** features a 48 volt AC power system control technology, variable lift speed, variable travel speeds (up to 6.0 mph), excellent visibility, ergonomic joystick controls, and maximized operator comfort. Increase storage density by placing heavier loads higher in the rack, reducing aisle width, and decreasing space between pallets.

### Omni-Directional™ Technology

The patented design of the four independently driven wheels enable the Omni-Directional™ Capabilities. The **SIDEWINDER™** features both Omni-Directional™ Tech-

nology and a 4-wheel drive system. This unique combination provides the **SIDEWINDER™** with superior traction and braking. Each wheel consists of a high strength, steel hub with 12 specially designed polyurethane coated rollers. The rollers rotate freely, providing Omni-Directional™ Movement of the vehicle, based on the speed and direction of each wheel. Designed to overcome obstacles, the **SIDEWINDER™ ATX-3000** can power through pot-holes and climb over obstacles in its way that are up to 3-inches high. Dual joystick controls provide the operator with command of all vehicle functions. The **SIDEWINDER™ ATX-3000** can rotate 360° in its own footprint by the simple twist of the traction control joystick. This joystick controls movement in all directions. A second joystick controls all of the hydraulic movements including: lift, lower, tilt, and auxiliary functions. The driver never has to remove his hands from the joysticks to perform any movements. The two joysticks provide the operator with the ultimate in control and mobility of the **SIDEWINDER™ ATX-3000**.



40115

FIGURE 1: MAJOR COMPONENTS (LEFT-SIDE)

1. Mast
2. Carriage
3. Forks
4. Omni-Directional™ Wheel Assembly
5. Step
6. Omni-Directional™ Wheel Assembly
7. Left Side Cover
8. Rear Cover
9. Grab Handle
10. Overhead Guard

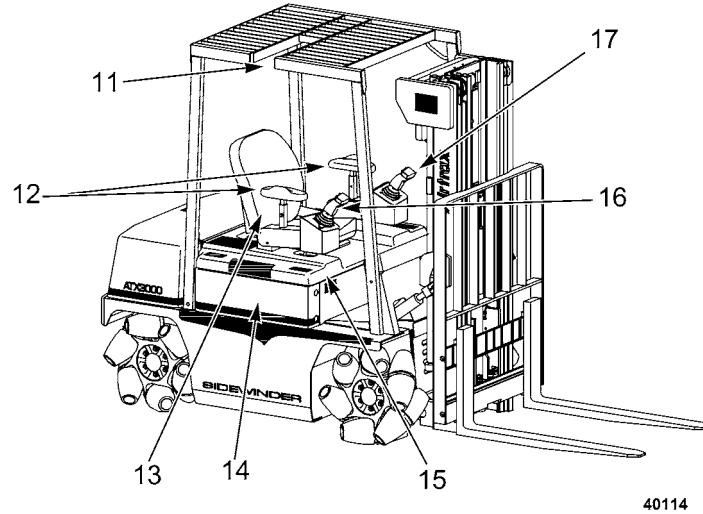


FIGURE 2: MAJOR COMPONENTS (RIGHT-SIDE)

11. Battery Hoist Slot

12. Arm Rests

13. Seats

14. Right Side Cover

15. Battery Cover

16. Traction Control Joystick

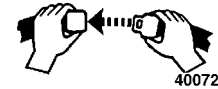
17. Hydraulic Control Joystick

## OPERATOR PROTECTION EQUIPMENT

The operator compartment is intended to offer reasonable protection to the operator from falling objects, but cannot protect against every possible falling object. Therefore, it must not be considered a substitute for good judgment and care when handling loads. Do not remove the overhead guard.



The seat belt provides a restraint to help the operator keep the head and torso substantially within the confines of the lift truck frame and operator compartment if a tip-over occurs. This restraint system is intended to reduce the risk of the head and torso being trapped between the lift truck and the ground, but it cannot protect the operator against all possible injuries in a tip-over. Always fasten the seat belt.



## NAMEPLATE

The rated capacity for the lift truck, as it is equipped, must be shown on the nameplate. If the lift truck nameplate already has a rating for special load handling equipment, it will be shown. If the lift truck nameplate does not show the rated capacity, or if the lift truck equipment does not match that shown on the nameplate, the lift truck must not be operated until the correct rated capacity is known.

### WARNING

**DO NOT add to or modify the lift truck. Any change to the lift truck or its equipment can change the lifting capacity. The lift truck must be rated as equipped and the nameplate must show the correct capacity rating.**

## SAFETY LABELS

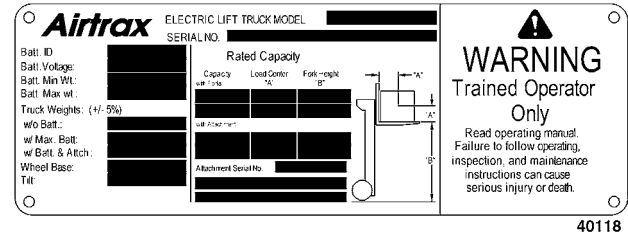
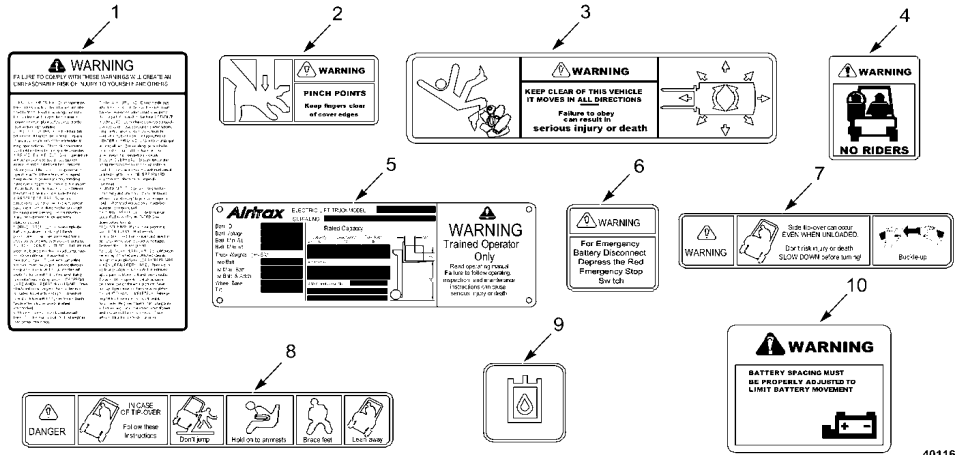


FIGURE 3: NAMEPLATE AND LABELS

Safety labels are installed on the lift truck to give information about possible hazards. It is important that all safety labels are installed on the lift truck and can be read.



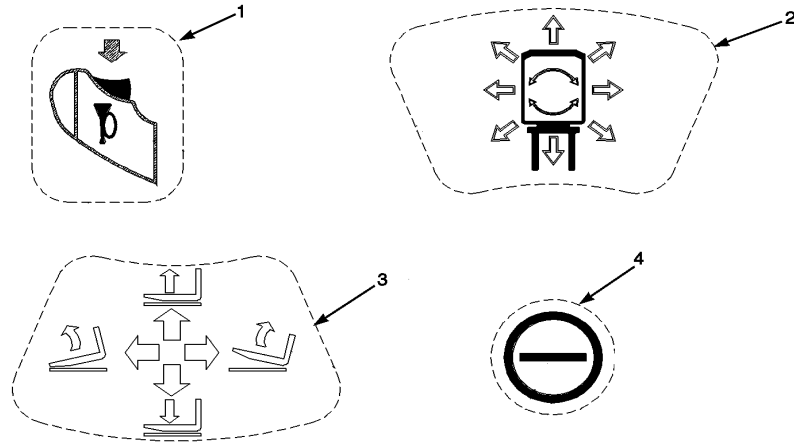
40116

FIGURE 4: WARNING AND SAFETY LABELS



- |                                    |                            |
|------------------------------------|----------------------------|
| 1. OPERATION WARNING LABEL         | 6. EMERGENCY STOP SWITCH   |
| 2. PINCH POINTS                    | 7. TIP-OVER and BUCKLE-UP  |
| 3. VEHICLE MOVES IN ALL DIRECTIONS | 8. GENERAL DRIVING         |
| 4. NO RIDERS                       | 9. HYDRAULIC FILL LOCATION |
| 5. NAMEPLATE                       | 10. BATTERY MOVEMENT       |

SEE THE PARTS MANUAL FOR LABEL PART NUMBER AND LOCATION

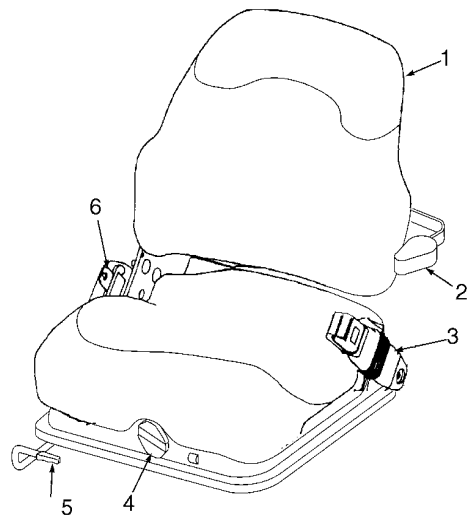


40326

FIGURE 5: OPERATOR LABELS

- |                            |                             |
|----------------------------|-----------------------------|
| 1. HORN LABEL              | 3. HYDRAULIC JOYSTICK LABEL |
| 2. TRACTION JOYSTICK LABEL | 4. EMERGENCY CUT-OUT LABEL  |

SEE THE PARTS MANUAL FOR LABEL PART NUMBER AND LOCATION

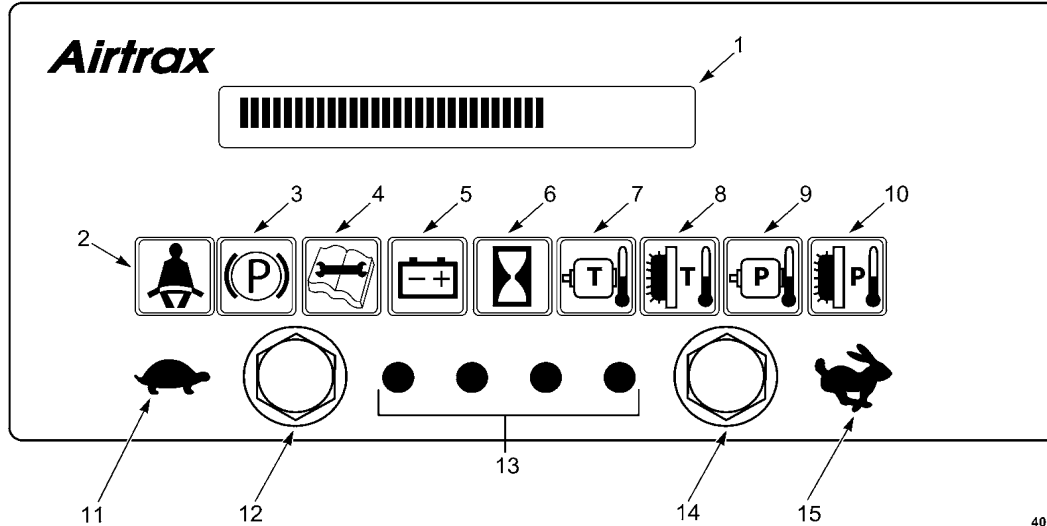


40159

FIGURE 6: SEAT ASSEMBLY

Table 1: SEAT ASSEMBLY

ITEM NO.	ITEM	FUNCTION
1	Seat Assembly	
2	Seat Back Tilt Lever	Used to adjust seat for operator's comfort.
3	Seat Belt	Secures operator in seat.
4	Weight Adjustment	Must be adjusted to operator's weight to activate key switch.
5	Forward and Back Seat Adjustment	Used to adjust seat for operator's comfort.
6	Seat Belt	Secures operator in seat.




40155

FIGURE 7: INSTRUMENTS AND INDICATORS



**⚠ WARNING**

If any of the instruments, joysticks, or switches do not operate as described in the following tables, report the problem immediately. **DO NOT** operate the lift truck until the problem is corrected.

Table 2: INSTRUMENTS AND INDICATORS

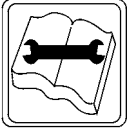
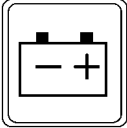
ITEM NO.	ITEM	FUNCTION
1	 <p>LCD Indicator</p>	Shows battery charge, hours, and fault indication.

**Table 2: INSTRUMENTS AND INDICATORS (Continued)**

ITEM NO.	ITEM	FUNCTION
2	 <p>Red Seat Belt Icon</p>	After 10 seconds times out with key.
3	 <p>Red Brakes On Icon</p>	Buzzer brakes off, key off.




**Table 2: INSTRUMENTS AND INDICATORS (Continued)**

ITEM NO.	ITEM	FUNCTION
4	 <p>40126</p> <p>Red Diagnostics Icon</p>	Refer to maintenance.
5	 <p>40127</p> <p>Red Battery Icon</p>	20% battery charge at lift cut-out.

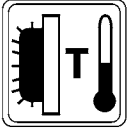
**Table 2: INSTRUMENTS AND INDICATORS (Continued)**

ITEM NO.	ITEM	FUNCTION
6	<div data-bbox="332 370 457 501" data-label="Image"> </div> <p data-bbox="407 501 457 517">40136</p> <p data-bbox="204 533 453 561">Red Hour Meter Icon</p>	For traction and hydraulic motors.


**Table 2: INSTRUMENTS AND INDICATORS (Continued)**

ITEM NO.	ITEM	FUNCTION
7	<div data-bbox="334 421 461 566" style="text-align: center;">  <p data-bbox="407 551 461 566">40128</p> </div> <p data-bbox="204 583 589 641">Red Drive Motor Over-Temperature Icon</p>	Warns when drive motor overheats.



**Table 2: INSTRUMENTS AND INDICATORS (Continued)**

ITEM NO.	ITEM	FUNCTION
8	 <p>40129</p> <p>Red Drive Motor Controller Over-Temperature Icon</p>	Warns when drive motor controller overheats.

**Table 2: INSTRUMENTS AND INDICATORS (Continued)**

ITEM NO.	ITEM	FUNCTION
9	 <p>40130</p> <p>Red Hydraulic Pump Motor Over-Temperature Icon</p>	Warns when hydraulic pump motor overheats.

**Table 2: INSTRUMENTS AND INDICATORS (Continued)**

ITEM NO.	ITEM	FUNCTION
10	 <p>40131</p> <p>Red Hydraulic Pump Motor Controller Over-Temperature Icon</p>	Warns when hydraulic pump motor controller overheats.
11	 <p>40135</p> <p>Slow Icon</p>	Shows which way to toggle for going slower.

**Table 2: INSTRUMENTS AND INDICATORS (Continued)**

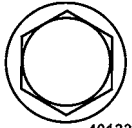

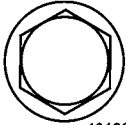

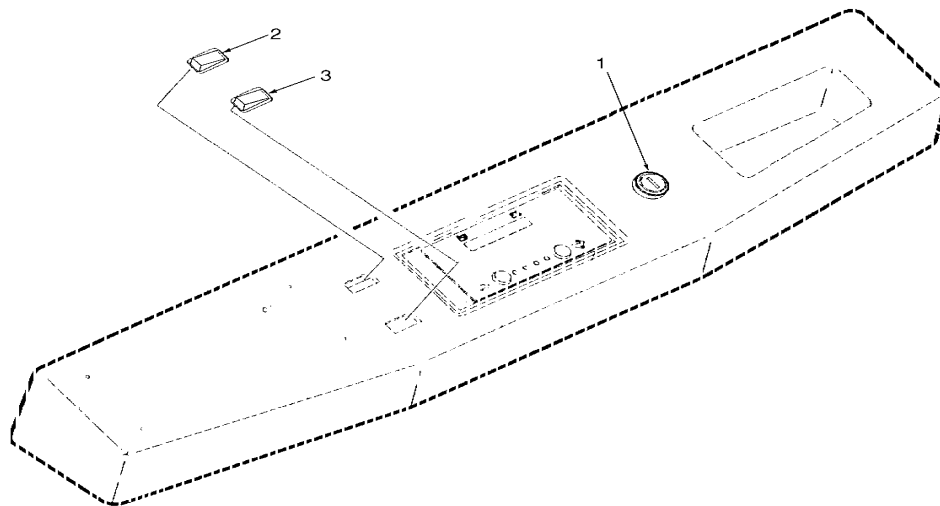
ITEM NO.	ITEM	FUNCTION
12	 <p style="text-align: center;">40133</p> <p>Speed Toggle</p>	Toggles speed slower.
13	 <p style="text-align: center;">40134</p> <p>Performance Indicator</p>	Lights indicate performance modes: Creep, Slow, Normal, and Fast. Lift truck defaults to Slow speed on start-up.

Table 2: INSTRUMENTS AND INDICATORS (Continued)		
ITEM NO.	ITEM	FUNCTION
14	 <p>40133</p> <p>Speed Toggle</p>	Toggles speed faster.
15	 <p>40132</p> <p>Fast Icon</p>	Shows which way to toggle for going faster.



---

This Page Intentionally Left Blank

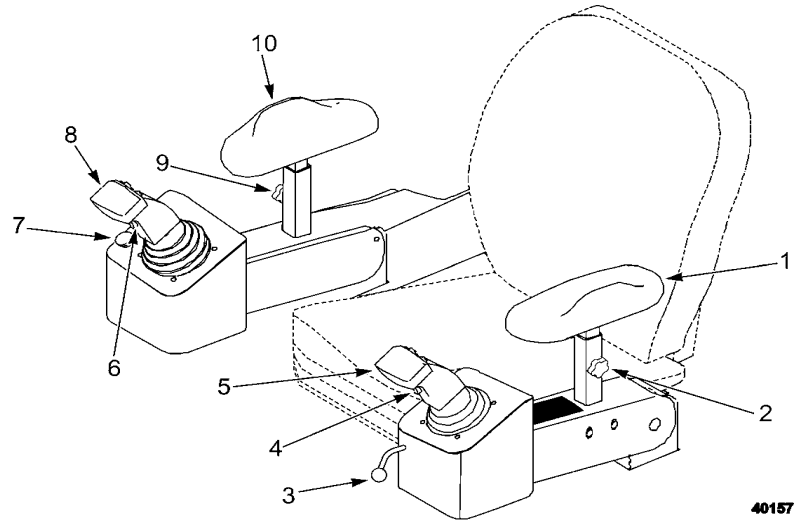


40158

FIGURE 8: SWITCHES

TABLE 3: SWITCHES

ITEM NO.	ITEM	FUNCTION
1	Key Switch	Used to turn <b>SIDEWINDER™ ATX-3000</b> ON and OFF.
2	Strobe Light Switch	Activates strobe light.
3	Work Lights Switch	Activates work lights.

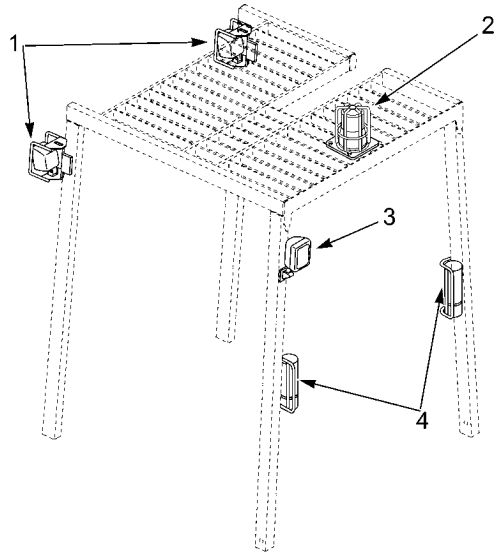


40157

FIGURE 9: CONTROLS

**Table 4: CONTROLS**

ITEM NO.	ITEM	FUNCTION
1	Left Armrest Assembly	Holds operator's hips secure in event of tip over.
2	Left Armrest Adjustment Knob	Used to adjust armrest to preferred height.
3	Armrest Release Lever	Used to raise armrest for entry to seat.
4	Auxiliary Function Switch	Overrides lift and tilt functions to enable auxiliary functions.
5	Hydraulic Control Joystick	Enables lift, tilt, and auxiliary functions of mast.
6	Horn Button	Activates horn.
7	Emergency Stop Button	Shuts down all systems.
8	Traction Control Joystick	Enables Omni-Directional™ Movement of lift truck.
9	Right Armrest Adjustment Knob	Used to adjust armrest to preferred height.
10	Right Armrest Assembly	Holds operator's hips secure in event of tip over.



40156

FIGURE 10: AUXILIARY LIGHTS

**Table 5: AUXILIARY LIGHTS**

<b>ITEM NO.</b>	<b>ITEM</b>	<b>FUNCTION</b>
1	Front Work Lights	Activates lights in forward position.
2	Strobe Light	Activates flashing strobe light.
3	Rear Work Light	Activates lights in rear position.
4	Stop, Tail, and Back-up Lights	Activates multi-functional rear lights.

<b>Table 6: Technical Data</b>			
<b>General Information</b>			
1	Manufacturer		Airtrax
2	Model	Manufacturer's Designation	ATX-3000
3	Load Capacity	lbs (kg)	3000 (1361)
4	Load Center	Fork Face Load CG - in (mm)	24 (610)
5	Power	Electric	48 Volt
6	Operator Type		Rider Counterbalanced
7	Tire Type	Omni-Directional	Cushion
8	Wheels (x=driven)	Front/Rear	2x/2x



**Table 6: Technical Data (Continued)**

**Dimensions**

9	Upright	Maximum Fork Height, Full Capacity - in. (mm)	202 (5131)
10		Lift Height (Standard) - in. (mm)	127.5 (3238.5)
11		Free Lift (Standard) - in. (mm)	5 (127)
12	Fork Carriage	Standard - in. (mm)	37 (940)
13	Forks	Standard Fork Length/Width/Thickness - in. (mm)	42/4/1.6 (1067/102/41)
14	Tilt	B/F deg.	5/5
15	Head Length	Length to Face of Forks - in. (mm)	84 (2134)
16	Width	Overall - in. (mm)	47 (1194)
17	Height	Standard Mast - in. (mm)	83 (2108)
18		Overhead Guard - in. (mm)	79.2 (2012)

<b>Table 6: Technical Data (Continued)</b>			
<b>Dimensions (Continued)</b>			
19	Turning Radius	Minimum Inside/Outside - in. (mm)	0/69 (0/1753)
20	Load Distance	Center of Wheel to Fork Face - in. (mm)	19.5 (495)
21	Equal Aisle Width	With 42 Wide x 48 Long Pallet - in. (mm)	79 (2007)
22	Right Angle Stacking	With 42 Wide x 48 Long Pallet - in. (mm)	133 (3378)
<b>Performance</b>			
23	Stability	Comply with ANSI	Yes
24	Speeds	Travel - Empty/Loaded - mph (km/h)	6.2/6.0 (10.0/9.7)
25		Lift - Empty/Loaded - ft/min (m/s)	93/63 (.47/.32)
26		Lowering - Empty/Loaded - ft/min (m/s)	70/95 (.36/.48)
27		Tilt - Empty/Loaded - 10 Deg sec.	6

**Table 6: Technical Data (Continued)**

**Weight**

28	Total Weight	Standard Truck Weight w/out Battery - lb/kg	7031 (3189)
29	Axle Weight	Static- Front/Rear w/Rated Load - lb/kg	10,820/1385 (4908/628)

**Chassis**

30	Wheelbase	Distance Front Axle to Rear Axle - in. (mm)	52 (1321)
31	Track Width	Center of Wheels - in. (mm)	34.5 (876)
32	Ground Clearance	Lowest Point - in. (mm)	3 (76)
33		Empty at Center of Wheel Base - in. (mm)	4 (102)
34	Grade Clearance	%	16
35	Brakes	Service/Parking – Control Type	Hand/Auto
36		Service/Parking – Operation	4-Wheel Electro - Mech.

**Table 6: Technical Data (Continued)****Chassis (Continued)**

37	Battery	Type	Lead Acid
<b>Battery</b>			
38	Battery 48 V	Ampere Hours – Max. - amp/hr	660
39		Minimum Weight - lb/kg	2000 (907)
40	Battery Dimension	Width - in. (mm)	38.1 – 38.7 (968 - 983)
41		Length - in. (mm)	21 (533)
42		Height - in. (mm)	22.6 – 25.6 (574 - 650)
43	Battery Compartment	Width - in. (mm)	39 (991)
44		Length - in. (mm)	21.5 (546)
45		Height - in. (mm)	26.5 (673)

**Table 6: Technical Data (Continued)**

<b>Control</b>			
46	Operator Control	Joystick – Traction, Direction, Horn, Brakes	Left Hand Standard
47	Electric Control	Traction Motor Super Drives - vdc/vac	Transistor
48	Operator Control	Joystick – Hydraulic Functions	Right Hand Standard
49	Electric Control	Hydraulic Pump Motor Super Drive - vdc/vac	Transistor
50		Motor Speed	Infinitely Variable
51	Electric Motors	Traction & Pump A/C Motors Cont. Rating - hp (kw)	5 (3.7)
<b>Hydraulic System</b>			
52	Hydraulic System	System Relief Pressure - psi (bar)	2800 (193)
53		Reservoir Capacity - gal (liters)	7 (26.5)
54		Hydraulic Control Type – (Lift and Tilt Std.)	Proportional Electro - Hyd.

---

This Page Intentionally Left Blank

---

## GENERAL

Prior to operating this lift truck, carefully read and understand these operating instructions.

- You must be trained and qualified in the operation of this lift truck. Read the operator's manual provided with this lift truck. If the manual is missing, another one should be ordered from your Airtrax™ dealer. Prior to attempting to operate or doing service maintenance on this lift truck, carefully read and understand these operating procedures.

**NOTE:** Throughout this manual, the terms right, left, front and rear are used. These terms relate to the viewpoint of the operator while seated in the lift truck.

- This lift truck meets all applicable mandatory requirements and safety standards for powered industrial lift trucks at the time of manufacture.
- No additions, omissions, or modifications should be made that will affect compliance to the previously stated requirements or in any way minimize the effectiveness of the safety devices.

## KNOW YOUR LIFT TRUCK

Make sure the lift truck is in proper operating condition. Be sure all safety devices, such as the overhead guard and the load backrest are in place and properly secured. Visually inspect the entire lift truck for any damage that may have occurred during shipment.

### WARNING

**Keep clear of the vehicle. It moves in all directions. Failure to obey can result in serious injury or death.**



40120

The Omni-Directional™ Wheels used on the **SIDEWINDER™ ATX-3000** lift truck replace the standard wheels used on other lift trucks and allow for travel in any direction.

Operate the lift truck only in areas that have been approved for lift truck operation. Only the designated type of approved lift trucks may be used in areas classified as hazardous by the authority having jurisdiction. Areas classified as hazardous must be identified by signs to show the type of approved lift truck required for operation in the area. Modifications or poor maintenance can result in the lift truck being unsuitable for operation in areas classified as hazardous.

### WARNING

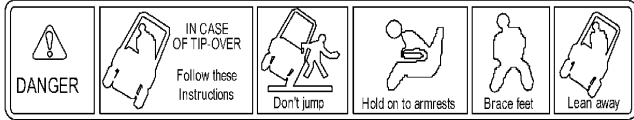
**In case of tip-over follow these instructions:**

- **Do not jump - Stay on lift truck.**
- **Hold firmly to arm rests - brace feet - lean away from impact.**



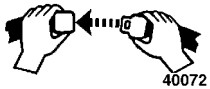
## OPERATING PROCEDURES

**Airtrax**



40119

The operator must be aware that the lift truck can tip over. There is a great risk that the operator or someone else can be killed or injured if trapped or hit by the lift truck as it tips over. The risk of injury can be reduced if the operator stays on the lift truck. If the lift truck tips over do not jump off.

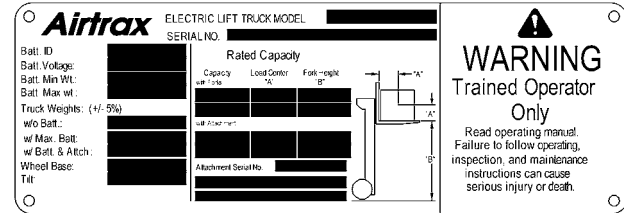


40072

The **SEAT BELT** provides a means to help the operator keep the head and torso substantially within the confines of the lift truck frame and overhead

guard if a tip-over occurs. This protection system is intended to reduce the risk of the head and torso being trapped between the lift truck and the ground, but it cannot protect the operator against all possible injury in a tip-over.

The Airtrax™ lift truck has a lift mechanism and forks on the front to engage the load. The lift mechanism lifts the load so that it can be moved and stacked.



40118

Familiarize yourself with the information outlined on the nameplate. The nameplate is located on the left side of the dash. Information on this nameplate is as follows:

- 1. Serial Number** - This is an identification number assigned to this particular lift truck and should be used when ordering service parts or when requesting information from your Airtrax™ lift truck dealer. Refer to back of front cover for details on the serial number.

2. **Model Code** - The model code for this lift truck is **SIDEWINDER™ ATX-3000**.
- a. **SIDEWINDER™** represents the brand name
  - b. **ATX** is the model designator
  - c. **3000** is the capacity rating.
3. **Truck Weights** - This is the approximate weight of the lift truck without a load on the forks. This weight plus the weight of the load to be moved must be considered when operating on raised floors, elevators, etc.

4. **Capacity Rating** - This rating shows the maximum load capacity of this lift truck with relation to load centers and fork height (see diagram on nameplate). Personal injury and damage to the lift truck could occur if the capacity rating is exceeded.

Safety and informational labels are located in conspicuous locations on the lift truck and should be strictly followed. Refer to the Parts Manual for part number and location for all labels. The description of these labels is also shown in the **Safety Labels** section of this manual.

## OPERATOR PRECAUTIONS

The following precautions have been prepared for your safety and the safety of your fellow workers. Read and understand this information before operating the lift truck.

- Many people make the mistake of thinking that operating a lift truck is the same as driving an automobile. This is not true. It is true that some lift truck operating procedures are as simple and obvious as driving the family automobile (e.g., Look where you are going, start and stop smoothly, etc.). But a lift truck is a special machine designed to do a much different job than an automobile. Because of the close areas in which a lift truck operates and other operating characteristics, every operator must receive additional training, even if they have a license to drive an automobile.
- **AUTHORIZED AND TRAINED OPERATOR ONLY:** This means the operator must be trained to drive the **SIDEWINDER™ ATX-3000** lift truck and it means that the operator must thoroughly understand the pro-

cedures for **SIDEWINDER™ ATX-3000** lift truck operation. It also means that a qualified person experienced in **SIDEWINDER™ ATX-3000** lift truck operation must guide the operator through several driving and load handling operations before the operator attempts to operate the **SIDEWINDER™ ATX-3000** lift truck alone. A basic education in proper driving and load handling techniques is absolutely necessary to prepare the new operator for proper defensive driving and to expect the unexpected.



### WARNING

**Report damage or faulty operation immediately. Do not operate a lift truck that needs repair. If repairs are required, install a tag in the operator's area stating DO NOT OPERATE and remove the key from the key switch.**

1. Observe and comply with instructions concerning floor loading. Know the weight of your truck and the load combined. Lift truck weight information is located on the nameplate.

**⚠ WARNING**

Use special care and caution when traveling without a load as **THE RISK OF OVERTURNING IS GREATER** when cornering and at high speed.

2. A lift truck is less stable when the forks are raised, with or without a load. Most operators can understand the need to be careful when handling loads. Some operators do not realize that a tip-over can occur with an empty lift truck because similar dynamic forces are present. In fact, the lift truck will actually tip to the side easier when empty, than when loaded with the load lowered. Rearward tilt, off-center loads, and uneven ground will aggravate these conditions.



40077

**⚠ WARNING**

**NEVER** put hands, arms, head, or legs through the mast or near the carriage or lift chain.



40121

3. This warning applies not only to the operator but also a helper. A helper must not be near the load or lift mechanism while the operator is attempting to handle a load. The lift mechanism has moving parts with close clearances that can cause serious injury.

4. Never allow anyone to ride on your lift truck and never allow anyone other than a qualified professional to operate your lift truck.
5. Do not remove the overhead guard or load backrest unless specifically authorized.
6. Airtrax™ lift trucks are not intended for use on public roads.



40139

**⚠ WARNING**

**Verify the nameplate is correct if any attachment has been installed.**

7. When attachments are used, extra care should be taken in securing, positioning, and transporting the load. Operate lift trucks equipped with attachments as partially loaded lift trucks, and verify that the operating instructions are available and understood before operating the attachment.



8. Elevate (load or lifting mechanism) only to pick up or stack a load. Watch out for obstructions, especially overhead. Check your clearances.

9. Verify the pins that keep the forks in position are engaged so that the forks cannot move.

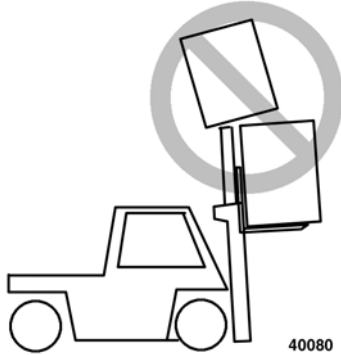
10. Watch that your load does not exceed the capacity rating of the lift truck. The lift truck capacity is posted on the nameplate that is attached to the lift truck at the factory.



**⚠ WARNING**

**Do not handle a load if any loose part of it is above the load backrest or any part of the load is likely to fall.**

11. Do not handle unstable or loosely stacked loads. Loads, such as bundles of lumber or empty containers can fall backwards onto the lift truck if they extend past the top of the carriage and mast.



12. Do not start or operate this lift truck or any of its functions or attachments if you are not in the operator's seat. This is the designated operator's position for this Airtrax™ lift truck.

**⚠ WARNING**

**This lift truck is designed and intended for handling materials. A lift truck is not designed to lift people.**



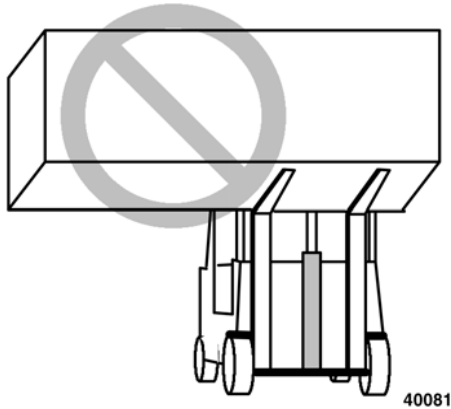
13. Do not use a lift truck to lift people unless no other practical option (scaffolds, elevated work platforms, aerial baskets, etc.) to perform the needed work is determined.

a. If a lift truck is used to elevate a worker, a safety platform must be attached to the forks and carriage. It must have a solid floor with a surface to prevent

the feet of the worker from slipping, hand rail, toe board, and a screen or shield at least 2 meters high between the people on the platform and the lift mechanism.

b. Before anyone is allowed in the platform, lift and lower the mast slowly with the platform in place to verify the mast functions properly. Apply the parking brake. Do not travel with people in the platform. The operator must remain at the controls. Watch for overhead obstructions.

14. Position each fork the same distance from the center of the carriage. This action will help center the load on the carriage. Set the forks as far apart as possible for maximum support of the load. Center the weight of the load between the forks.



15. If the weight of the load is not centered between the forks, the load can fall off the forks when you turn a corner or hit a bump. An off-center load will increase the possibility of the lift truck tipping over to the side.

## OPERATING PROCEDURES

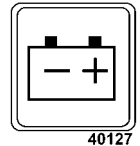
### WARNING



Extreme care should be taken when accessing the battery as the cover has several pinch points. Failure to comply may result in injury to personnel.

### WARNING

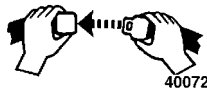
Be careful not to short out battery terminal. Do not smoke or use open flame near batteries. Batteries may explode from spark. Remove all jewelry and exercise care with tools. If jewelry or tools contact battery terminals or a positive electrical circuit, a direct short may result in instant heating of tools, damage to equipment, and injury or death to personnel.



1. Apply power to the lift truck by connecting the battery plug to the lift truck receptacle. Be sure the plug is fully inserted and locked into place so that there is enough pressure at the contact mating surfaces. Close and latch battery cover assembly.
2. Walk to the entry side of the lift truck. If the left arm rest assembly is in the lowered position, then raise the left arm rest assembly by pushing the release lever to the right and lifting the arm rest assembly to a locked 90° position.
3. Mount the lift truck using the side step and grab handle.

**⚠ WARNING**

**Seat belt must be fastened before operating this lift truck. Failure to comply may result in injury or death.**



**NOTE:** A pressure switch is located in the seat cushion and the operator must sit on the seat to energize the electrical circuit.

4. Adjust the seat assembly as needed. See **Seat Assembly** section in this manual for detailed instructions on seat controls.

**NOTE:** The left arm rest assembly must be in the locked down position to operate this lift truck.

5. Move the left arm rest to the locked position by pulling the release lever to the right with the left hand, lower the arm rest assembly, press firmly on arm rest, and push the lever to the left. Confirm the left arm rest is locked by applying upward pressure to the release lever.
6. Adjust both arm rests as needed.
7. Make sure the traction control joystick and hydraulic control joystick are in the neutral position before operating the lift truck.
8. Turn the key switch to the ON position and observe the LCD dash display and LED indicator lights for proper operation. Wait on the battery level indicator to appear before



moving the joysticks. If the joysticks are moved before the battery level indicator appears, then a fault code will occur. If a fault code is present then cycle the key switch to the OFF position and back to the ON position.

9. Raise the forks slightly off the floor. Travel with the lifting mechanism low and where possible, tilted back. Do not elevate any load except during stacking.

10. Frequent reading of the LCD dash display and LED indicator lights should be a habit.

11. Adjust lift truck to the desired speed. There are four speed settings located on the instrument panel and identified by turtle and rabbit symbols. For further description of the speed settings, refer to **Instruments and Indicators** section of this manual.

12. Move the traction control joystick in the direction that you want to travel.

13. The operator can change the direction of travel while the lift truck is moving by moving the traction control joystick in the desired direction of travel.

14. When leaving the lift truck unattended, lower the lifting mechanism, ensure the parking brakes icon is on to confirm that the brakes are applied, turn the key switch to the OFF position, and remove the key. Chock the wheels if the lift truck is parked on a slope.

### Load Handling



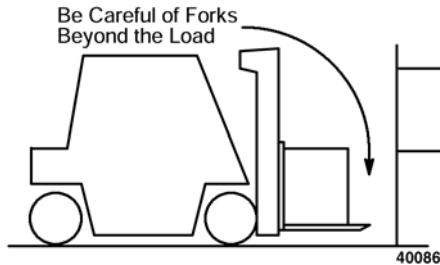
#### **WARNING**

**Allow no one under or near load or lifting mechanism. Failure to comply may result in injury or death.**

**NOTE:** These load handling instructions are intended as guidelines and are in no way supposed to replace training. You must be trained and qualified in the operation of this lift truck.

1. Approach the load carefully. Verify that the truck is perpendicular to the load. Raise the forks to the proper height for engaging the load.

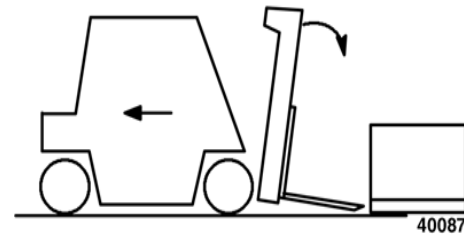
2. Move forward slowly until the forks are in position under the load. The forks must support at least two-thirds (2/3) of the length of the load.



that the forks do not extend past the load so that loads or equipment behind the load being lifted are not damaged. Lift the load a small distance from the floor to verify the lift truck has the capacity to lift the load. If the forks are longer than the load, move the forks under the load so that the tips of the forks do not extend beyond the load. Lift the load from the surface. Back out a few inches, then lower the

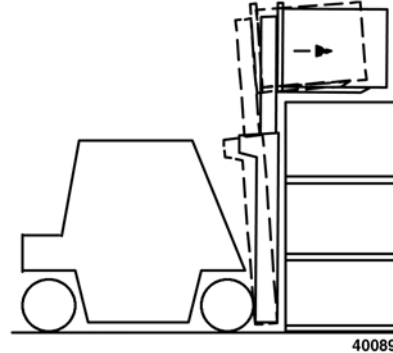
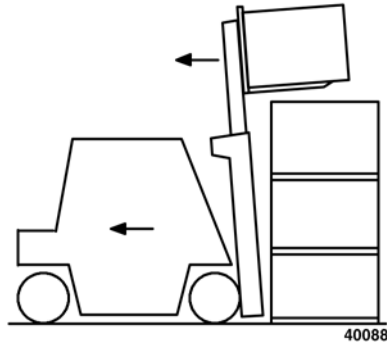
load onto the surface, and inch forward to engage the load against the carriage. Tilt the mast backward just far enough to lift the load from the surface.

3. When a load is put on the floor, tilt the mast forward to a vertical position and lower the load. Tilt the mast forward to permit smooth removal of the forks. Carefully move the lift truck backward to remove the forks from under the load.



4. If the load is being removed from a stack, slowly move the lift truck away from the stack. When the load is clear of the stack, lower the load for traveling. Always travel with the load as low as conditions allow and tilted back.

5. Lowering speed is controlled by the position of the hydraulic control joystick. Lower slowly and smoothly. Slowly return the control lever to the neutral position so that the load is not dropped or that the lift truck is not tipped over due to the rapid stop of the load.



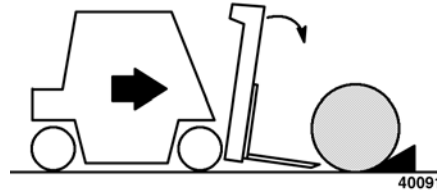
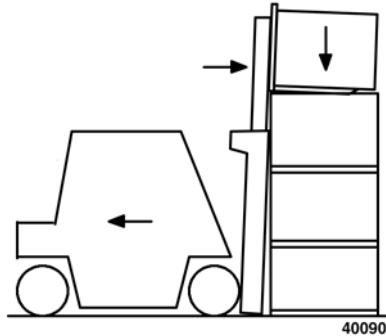
Do not raise the load to a point below where the load is to be placed and jog the load up into position. This operation uses added energy. Be careful not to damage or move adjacent loads.

6. To put the load on a stack, align the lift truck with the stack. Raise the load higher than the point where it will be placed.

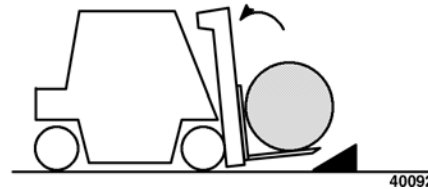
**⚠ WARNING**

**Move carefully and smoothly when the load is raised over a stack. When the load is raised, the center of gravity of the lift truck and the load is much higher. The lift truck can tip over when the load is raised.**

7. Move forward slowly. When the load is in position, lower the load onto the stack. Lower the forks just enough to remove them from under the load. Do not lower the forks so that they will drag on the surface under the load. Carefully move the lift truck backward to remove the forks from under the load. Lower the forks when traveling.



8. When lifting round objects, use a block behind the object. Tilt the mast forward so that the forks can slide along the floor under the object to be lifted. Tilt the mast fully backward to help keep the load on the forks.



**NOTE:** Not every load can be lifted using only the forks of a lift truck. Some loads will require a special attachment.

9. When travelling with the load lowered, keep the load against the carriage and the mast tilted fully backward. This will help keep the load on the forks and give good forward and side stability.

10. Travel with the lift mechanism raised only enough to clear the ground or obstacles.

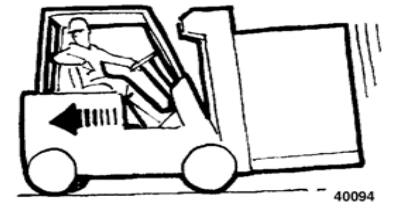


When the mast, carriage, or load is in a raised position, the stability of the lift truck is reduced. This is also critical when the lift truck is not carrying a load. The ability of the lift truck to resist side tipping can be less on a lift truck without a load than it is on a lift truck with a load in the lowered (travel) position. Therefore, a lift truck without a load is more likely to tip sideways, especially in a turn, than a lift truck with a load carried in the lowered position.

**⚠ WARNING**

**It can be necessary to travel (for short distances or when maneuvering) with the container raised for improved visibility. Do not raise the container higher than necessary to see under it. Special care must be exercised during these operations. Particular attention is required for wind and uneven travel surfaces that can reduce the stability of the lift truck while the container is raised.**

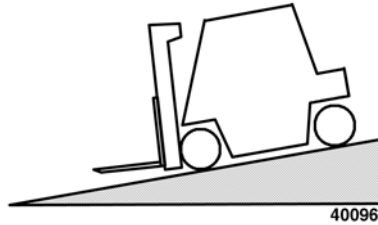
11. For better visibility with large loads, travel in reverse, sideways, or at an angle with the load trailing, but always keep a proper look-out in the direction of travel. Normally, direction of travel



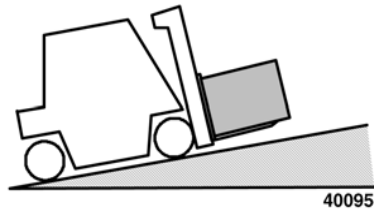
is determined by the best visibility available to the operator. If the lift truck must travel in a direction where visibility is obstructed, a look-out helper can be required.

12. Operate an unloaded lift truck on all grades with the lifting mechanism facing downhill.

**⚠ WARNING**  
**Never drive sideways or at an angle on a slope, incline, or hill. Do not turn on a slope and always operate the lift truck with the load uphill.**

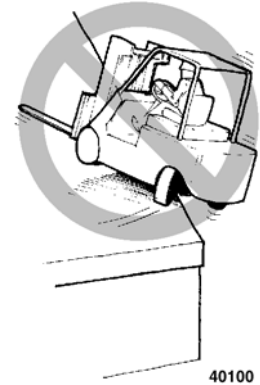


13. On sloping surfaces, higher than 5 percent (a 5 foot rise or drop in 100 feet of travel), always operate the lift truck with the load facing uphill.



**⚠ WARNING**  
**Maintain a safe distance from the edge of docks, ramps, platforms, and other similar working surfaces.**

14. Extra care should be given while working on docks, platforms, and ramps as the Omni-Directional™ Technology of the lift truck allows turning and moving in all directions. Maintain a safe distance from the edge of docks, ramps, or platforms.



Do not push freight cars while on a raised dock or platform. Do not use the lift truck for opening or closing freight doors.

15. Before entering trucks or trailers, be certain the brakes on the truck or trailer are applied and wheel chocks are in place. If trailers are not coupled to a tractor, supports may be needed to prevent upending or corner dipping. Check the flooring of trucks, trailers, and railroad cars for breaks and weakness before driving onto them.

16. Before driving over a dock board or bridge plate, be certain that it is properly secured. Drive carefully and slowly across the dock board or bridge plate and never exceed its rated capacity.



17. Start, stop, travel, steer, and brake smoothly. Slow down for turns and on uneven or slippery surfaces. Sudden movements can cause the lift truck to lose its load or tip over.

18. Operate the lift truck under all conditions at a speed that will permit it to be brought to a stop in a safe manner.

### Safe Operations

1. Observe all traffic regulations, including authorized plant speed limits. Under normal traffic conditions, keep to the right. Maintain a safe distance from the lift truck ahead (approximately three lift truck lengths), and keep the lift truck under control at all times.



2. The operator is responsible to make pedestrians aware that the lift truck travels in all directions. Watch out for pedestrians at all times. Use extra care at cross-aisles, doorways, and other locations where pedestrians can step into the path of travel of the lift truck.

3. Slow down when approaching blind intersections or turns and sound the horn. This is done to warn pedestrians

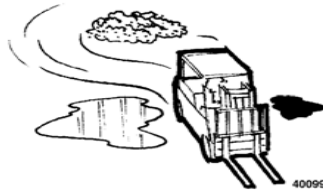
that there is a vehicle in the area and to be alert for possible danger.

4. On sloping surfaces, higher than 5 percent (a 5 foot rise or drop in 100 feet of travel), operate a loaded lift truck with the load facing uphill. Do not turn on a slope. For stability reasons, a lift truck must not be driven across a slope.

5. Under all travel conditions, operate the lift truck at a speed that will permit it to be brought to a stop in a safe manner.

6. Avoid fast starts. Sudden movement can cause the lift truck to tip. People can be hurt or killed and material can be damaged.

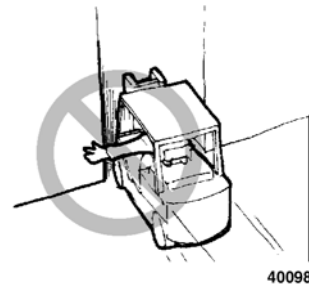
7. Avoid bumps, holes, slick spots, and loose materials that can cause the lift truck to swerve or tip. If unavoidable, slow down as the lift truck stability and steering may be adversely



affected. Always make sure you pick the smoothest route for your lift truck.

8. Look in the direction of travel and keep a clear view of the path of travel.

9. Watch for obstruction, especially overhead. Check clearances.



10. Anytime the lift truck is moving, keep hands, feet, and other parts of your body inside the operator's compartment. Parts of your body outside the lift truck can be injured when passing obstructions.

11. Do not push or pull any load with the lift truck.



12. Do not attempt to lift anything that could fall on the operator or a bystander.

13. The Airtrax™ lift truck is equipped with an overhead guard that will stop most items. However, the overhead guard will not provide protection to the operator from all falling objects.



### Shutdown Procedures

When leaving the lift truck unattended, the lifting mechanism must be fully lowered, controls neutralized, power shutoff, and the key removed. Chock the wheels if the lift truck is parked on an incline.

### Fork Adjustment

1. Adjust the forks on the fork carriage. Forks should be spaced as far apart as the load being moved will allow. Both forks should always be the same distance from the center of the fork carriage.
2. Check for the presence and condition of the studs at each end of the carriage upper fork clip slide. If the studs are damaged or missing, they should be repaired or replaced before the forks are adjusted.
3. To adjust the forks, raise them a few inches off the floor. Lift up on the keeper pin and slide the forks along the carriage by pushing them away from you. Do not pull the forks toward you. When the forks are set to the desired position, make sure the keeper pin is down in a slot on the top of the fork carriage plate.

---

## MAINTENANCE SCHEDULE

Follow this recommended maintenance schedule to maintain your lift truck for dependable and economical operation.

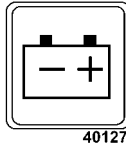
Before each shift or every 8 hours, it is the responsibility of the operator to carry out the following checks and inspections before beginning lift truck operation. Do not operate the lift truck if it is in need of repair. If the lift truck is in an unsafe condition, remove the key and report the condition to the proper authority. If the lift truck becomes unsafe in any way while you are operating the lift truck, STOP operating the lift truck, remove the key, and report the condition to the proper authority immediately.

### Before Operation Inspection

1. Make sure the overhead guard, load backrest, seat belts, and all other safety devices are installed.
2. Make certain all capacity, safety, and informational plates or decals are attached. This lift truck is not considered safe to use without a legible, properly filled out capacity nameplate. Contact Airtrax™ or your local Airtrax™ dealer if the nameplate is missing or not legible. Refer to the Parts Manual for part number and location for all labels. The description of these labels is also shown in the **Safety Labels** section of this manual.
3. Inspect the lift truck for any damage that may have occurred during the previous shift.
4. Inspect the lift truck for any signs of external leaking of the battery or hydraulic system.

**⚠ WARNING**

Be careful not to short out battery terminals. Do not smoke or use open flame near batteries. Batteries may explode from spark. Remove all jewelry and exercise care with tools. If jewelry or tools contact battery terminals or a positive electrical circuit, a direct short may result in instant heating of tools, damage to equipment, and injury or death to personnel.



40127

**⚠ WARNING**



40121

**Extreme care should be taken when accessing the battery as the cover has several pinch points. Failure to comply may result in injury to personnel.**

5. Be sure the battery fits in its compartment, and check the connectors to make sure they are free of damage and connected properly.

6. Check battery water level and add approved or distilled water as needed.
7. Check the charge in the battery.
8. Check the hydraulic hoses for chaffing, cuts, or reinforcement showing through the outside of the hose.
9. Check for excess slack or mis-tracking on the sheaves.
10. Make sure the chains are not damaged or kinked.
11. Make sure the stops and finger guards are in place.
12. Check to make sure the cover latches are adjusted (if necessary) and properly fastened.
13. Inspect the condition of all four Omni-Directional™ Wheel assemblies. Check for damaged or worn rollers.
14. Inspect the forks. Make sure they are properly attached and the locking clips are locked in their proper position.

15. Operate the hydraulic control joystick through the hoist, tilt, and auxiliary (if equipped) function. Make certain the mast operates properly and no unusual noises are heard.
16. Operate the traction control joystick through all movements to confirm proper steering. Return the traction control joystick to the neutral position to check brake operation.
17. Test the horn, lights (if equipped), and all other accessories. Make sure they are properly mounted and in good working order.
18. Operate the lift truck and make certain the LCD dash display and all LED indicator lights are functioning properly.
19. Make sure that any unusual noises are investigated immediately.

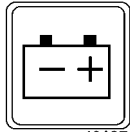
### **During Operation Inspection**

1. Observe the LCD dash display and LED indicator lights frequently with special regard to the condition of the battery charge.

2. Periodically observe ground/floor that the lift truck has just passed over for signs of possible leaks.
3. While operating, monitor the lift truck for any unusual noise or conditions in the performance of the lift truck. Report any defects immediately to the proper authority.
4. Periodically turn the lift truck in both directions and observe condition of the ride. If any problems are noted, stop the lift truck and inspect all four Omni-Directional™ Wheel assemblies for defects. Report any defects immediately to the proper authority.

### **After Operation Inspection**

1. Inspect the lift truck for any damage that may have occurred during your shift. Report any damage to the proper authority immediately.
2. Inspect the lift truck for any signs of external leaking of the battery or hydraulic system.

 **WARNING**

40127

Be careful not to short out battery terminals. Do not smoke or use open flame near batteries. Batteries may explode from spark. Remove all jewelry and exercise care with tools. If jewelry or tools contact battery terminals or a positive electrical circuit, a direct short may result in instant heating of tools, damage to equipment, and injury or death to personnel.

 **WARNING**

40121

Extreme care should be taken when accessing the battery as the cover has several pinch points. Failure to comply may result in injury to personnel.

3. Check the charge in the battery. If battery charging is needed, refer to **Charging the Battery** section of this manual.

**NOTE:** When leaving the lift truck unattended, the lifting mechanism must be fully lowered, controls neutralized, power shutoff, and the key removed. Chock the wheels if the lift truck is parked on an incline.

**DIAGNOSTICS**

The Airtrax™ lift truck is equipped with diagnostic capabilities to monitor and self-diagnose the systems of the lift truck.

**NOTE:** If an over-temperature error is observed, shut down the lift truck immediately and allow the lift truck to cool. If a

low DC buss fault code appears, it could be a low or bad battery. Stop the lift truck and charge or change the battery as needed.

**NOTE:** If any other fault codes appear, record the fault code and report to the maintenance authority.

**TABLE 1: FAULT CODES**

<b>Value</b>	<b>Fault/Problem</b>	<b>Location</b>	<b>Action</b>
00	No Error	N/A	N/A
01	Drive Maximum Heatsink Temp Reached (Shut-down)	AC Super Drive	Error
02	Drive DC Buss Too High (Shut-down)	AC Super Drive	Error
03	Drive DC Buss Too Low (Shut-down)	AC Super Drive	Error
04	Drive Power-Up Charge Circuit Error	AC Super Drive	Error

**TABLE 1: FAULT CODES**

<b>Value</b>	<b>Fault/Problem</b>	<b>Location</b>	<b>Action</b>
05	Drive Too Many Communication Errors	AC Super Drive	Error
06	Motor Maximum Temperature Reached (Shut-down)	Motor	Error
07	Motor Feedback Sensor Error	Motor	Error
08	Drive	AC Super Drive	
09	Motor	Motor	
10	Drive Over Current or Short Circuit on Power Stage	AC Super Drive	Error
11	Drive Commands from CANION are Contradictory	AC Super Drive	Error
12	N/A	N/A	N/A
13	N/A	N/A	N/A
14	N/A	N/A	N/A

**TABLE 1: FAULT CODES**

<b>Value</b>	<b>Fault/Problem</b>	<b>Location</b>	<b>Action</b>
15	Drive Maximum Current Limited Due to Over Temperature	AC Super Drive	Warning
16	Motor Maximum Current Limited Due to Over Temperature	Motor	Warning
17	Drive Heatsink Temperature Sensor Open	AC Super Drive	Warning
18	Drive Heatsink Temperature Sensor Short Circuit	AC Super Drive	Warning
19	Motor Temperature Sensor Open	Motor	Warning
20	Motor Temperature Sensor Short Circuit	Motor	Warning
21	Drive Parameter Checksum Error	AC Super Drive	Warning
22	Drive Speed Command out of Range	AC Super Drive	Warning
23	Drive Output Offset Calibration Error (Initialization Check)	AC Super Drive	Warning
24	Drive Temperature < -20 degree C	AC Super Drive	Warning



**TABLE 1: FAULT CODES**

<b>Value</b>	<b>Fault/Problem</b>	<b>Location</b>	<b>Action</b>
25	N/A	N/A	N/A
26	N/A	N/A	N/A
27	N/A	N/A	N/A
28	N/A	N/A	N/A
29	N/A	N/A	N/A
30	CANOpen PDO Watchdog Timeout	ACSD / VMC20	Error
31	Right Joystick Values out of Range	----	Error
32	Left Joystick Values out of Range	----	Error
33	N/A	N/A	N/A
34	N/A	N/A	N/A

**TABLE 1: FAULT CODES**

<b>Value</b>	<b>Fault/Problem</b>	<b>Location</b>	<b>Action</b>
35	Parameter Checksum Error	----	----
36	CANOpen Cyclic Over Run	----	----
37	Low DC Buss Voltage	----	----
38	General Warning	ACSD / VMC20	Warning
39	General Error	ACSD / VMC20	Error
40	CANOpen SDO Watchdog Timeout	ACSD / VMC20	Warning
41	CANOpen Communication Initialization Failed	ACSD / VMC20	Error
42	CANOpen No Initial SDO Response	VMC20	Error
43	CANOpen Emergency Exception Message	VMC20	Error
44	N/A	N/A	N/A

---

## **GENERAL**

### **Safe Maintenance Procedures**

This lift truck meets all applicable mandatory requirements for powered lift trucks at the time of manufacture. This lift truck is also equipped with certain safety devices as standard equipment. For example, all high lift trucks are furnished with a load backrest and high lift rider trucks with an operator's overhead guard.

No additions, omissions, or modifications should be made that will affect compliance to the previously stated requirements or in any way minimize the effectiveness of the safety devices.

The following instructions have been prepared for your safety and the safety of your fellow workers during maintenance operations and should be strictly followed. Read and understand the maintenance procedures before attempting

to repair the lift truck. When in doubt of any maintenance procedure, contact your local Airtrax™ lift truck dealer.

Safety and informational decals are located in conspicuous locations on this lift truck and should be strictly followed. When operating various models of lift trucks, it is wise to check the capacity plate of each lift truck before operation.

The following instructions have been prepared for your safety and the safety of your fellow workers during maintenance operations and should be strictly adhered to. Carefully read and understand each one. Read the maintenance procedures before attempting to repair your lift truck. When in doubt of any maintenance procedure, contact your local Airtrax™ dealer.

- Powered lift trucks may become hazardous if adequate maintenance is neglected. Therefore, adequate maintenance facilities, personnel, and procedures should be provided.

- Only qualified and authorized personnel should be permitted to maintain, repair, adjust, and inspect the lift truck.
- The work area should be properly ventilated. Keep the shop clean and the floor dry.
- Avoid fire hazards and have fire protection equipment present. Do not use an open flame to check level or for leakage of electrolyte. Do not use open pans of fuel or flammable cleaning fluids for cleaning parts.
- Raise the lift truck only if it is on a solid level floor. Use solid one-piece blocks or other positive lift truck positioning devices to support the lift truck. Chock the wheels to prevent movement of the lift truck.
- Disconnect the battery. Attach a DO NOT OPERATE tag to the traction control handle.
- Before removing any component from the lift truck, make certain that the lifting mechanism (hoist) and slings are of the proper capacity and in good condition.
- When working on the hydraulic system, make sure the power is turned off and the hydraulic pressure is relieved in the hoses and tubes.
- Brakes, steering mechanisms, control mechanisms, warning devices, lights, guards, and safety devices should be inspected regularly and maintained in a proper operating condition.
- All parts of the lifting mechanisms should be regularly inspected and maintained in a correct operating condition.
- All hydraulic systems should be regularly inspected and maintained. Lift cylinders, valves, and other similar parts should be checked to assure that “drift” has not developed to the extent that it would create a hazard.
- Special lift trucks or devices designed and approved for hazardous area operation should receive special attention to ensure that maintenance preserves the original, approved safe operating features.
- The customer or user should not perform any modifications and/or additions that affect capacity and safe lift truck operation without the manufacturer's prior written approval. Capacity, operation, and maintenance instruction plates, tags, or decals must be changed accordingly.

- Capacity, operation, and maintenance instruction plates, tags and decals should be maintained in legible condition.
- The lift truck should be kept in a clean condition to minimize fire hazards and facilitate detection of loose or defective parts.
- Checking the performance of the lift truck or attachments should be conducted in an authorized, safe area.
- Always use recommended Airtrax™ replacement parts to be certain that they are interchangeable with the original parts and are of a quality equal to that provided in the original equipment.

## **HYDRAULIC SYSTEM**

### **General**

The hydraulic system of the lift truck provides independent control circuits of the lift, tilt, and auxiliary functions.

### **Lift System**

The hydraulic lift system provides the lifting and lowering function for the mast. The system consists of an electric motor, hydraulic pump, a hydraulic control joystick control handle, and the mast assembly.

### **Tilt System**

The hydraulic tilt system provides the tilting function of the mast. The system is supplied with hydraulic oil from the lift pump and is controlled by the hydraulic control joystick control handle. Two paired, double acting hydraulic cylinders, secured between the truck frame and the mast assembly, provide the tilt action of the mast.

The forward and backward tilt angle of the mast assembly depends on the type of mast assembly fitted to the lift truck, and is factory set to comply with safety regulations.

The tilt cylinders furnished with the lift truck must not be changed in any way to alter the tilt angles and, if replaced, must maintain the correct tilt as applicable to the mast assembly furnished with the lift truck.

### **Auxiliary Functions**

These lift trucks can also be furnished with a third and/or fourth auxiliary function. These auxiliary functions are also controlled using the hydraulic control joystick control handle. The third function is used for extend and retract operations and requires the use of an additional hydraulic cylinder to perform this function. The fourth function is used for side-shift, swing, or rotating, as required by the end user.

### **Hydraulic Oil Tank**

The hydraulic oil tank is located in a compartment adjacent to the operator on the left-hand frame of the lift truck. The tank supplies hydraulic oil for the lift pump, which directs the hydraulic oil to the mast assembly and the other components of the lift truck.

The hydraulic oil to the lift pump passes through a suction strainer located below the hydraulic pump and motor. The hydraulic oil supplied by the hydraulic control joystick returns to the hydraulic oil tank through a hydraulic filter. The filter is a 10-micron screw-on type oil filter.

**NOTE:** With lift truck hydraulic oil at room temperature, check level and top off if necessary.

The hydraulic oil level is checked using a bayonet type dipstick gauge fitted to the breather cap. Wipe the dipstick clean using a lint free cloth. Replace and remove the dip-

stick to check the hydraulic oil level. BE SURE the load forks are fully lowered before checking the hydraulic level.

The hydraulic oil tank has a capacity of 6 gallons. The hydraulic oil level should be maintained at the full mark on dipstick. Use the recommended hydraulic oil as listed in the **Approved Hydraulic Oils** table.

ALWAYS use the specified hydraulic oil when replacing or adding oil to the tank.

ALWAYS observe absolute cleanliness when filling the hydraulic oil tank or working on the hydraulic system.

NEVER add hydraulic oil directly from the manufacturer's container. Always filter the hydraulic oil through a 10-micron filtration system prior to adding to the hydraulic oil tank.

### **Hydraulic Oil Filter**

The hydraulic oil filter should be changed every 2400 hours under normal operating conditions. To service the hydraulic oil filter, release the battery cover latch, lift battery cover to 90° position, and remove the left-hand side cover. The hydraulic oil filter is a spin-on filter with a 10-micron rating. When replacing the hydraulic oil filter, tighten the filter hand tight. Replace the side cover, lower the battery cover, and make sure latch is secure.

<b>APPROVED HYDRAULIC OILS</b>			
Part Number Bulk Hydraulic Oil	32020301	32020302	32020303
<b>Application</b>	<b>Normal Ambient Air Operation</b>	<b>Cold Storage Ambient Air Operation</b>	<b>Arctic Ambient Air Operation</b>
Ambient Air Operation Temperature Range	32° F to 110° F (0° C to 43° C)	-25° F to 32° F (-32° C to 0° C)	60° F to 0° F (16° C to -18° C)
Hydraulic Oil Operation Temperature Range	18° F to 148° F (-8° C to 64° C)	-12° F to 113° F (-24° C to 45° C)	-55° F to 65° F (-48° C to 18° C)
Viscosity SSU Operating Minimum Temperature	5000 @ 18° F (-8° C)	5000 @ -12° F (-24° C)	5000 @ -55° F (-48° C)
Viscosity SSU Operating Maximum Temperature	80 @ 148° F (64° C)	75 @ 113° F (45° C)	115 @ 65° F (18° C)
Viscosity Range SSU @ 100° F (38° C)	193 - 235	97 - 115	72 - 83



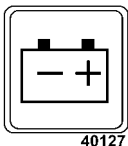
<b>APPROVED HYDRAULIC OILS</b>			
ASTM Viscosity Grade No.	S - 215	S - 105	S - 75
Viscosity Index (REF)	92 Minimum	110 Minimum	200 Minimum
ISO Viscosity Grade	46	22	
Pour Temperature	-20° F (-29° C)	-50° F (-46° C)	-75° F (-59° C)
Flash Temperature	395° F (202° C)	295° F (146° C)	
API Gravity	30	31	33
ASTM D943	Must Pass		
ASTM D665 Rust Test	Must Pass 3		
Demulsibility D1401	0 Minutes		
Anti-wear Additive	Yes	Yes	Yes
Mil-Spec. Mil-H-5606			Yes

<b>APPROVED HYDRAULIC OILS</b>			
<b>APPROVED SOURCES</b>	<b>PRODUCT NAME</b>	<b>PRODUCT NAME</b>	<b>PRODUCT NAME</b>
Exxon (Preferred)	Nuto H 46		UNIVIS J 43
Mobil	DTE 25	DTE 15	AERO-HFA
Shell	TELLUS 46		AEROSHELL Fluid 4
Valvoline (Ashland)	Anti-Wear # 20	Anti-Wear # 10	
Pennzoil	Pennzoil AW 46	Pennzoil AW 22	
Phillips Petroleum	Magnus A-215		
Gulf	Harmony 48 AW		
Chevron Oil Company	Chevron AW 46	Chevron AW MV	Aviation Fluid A
ARCO	DURO AW 46		
AMOCO	AMOVIS AW 21	RYKON # 11	

## BATTERY

### WARNING

Always disconnect the battery from the truck when doing any maintenance or repair work on the truck.



### WARNING

Wear rubber apron, gloves, boots, and gloves, when handling, checking, filling, charging, or replacing batteries.

### WARNING

Keep open flames away from batteries. Do not check electrolyte level with a cigarette lighter or a match. **USE A FLASHLIGHT OR A PERMANENT LIGHT.** Do not smoke or create sparks.

### WARNING

Be sure water is readily available in case electrolyte accidentally splashes on your skin or clothing. Extreme care should be taken in flushing electrolyte from the eyes. Use plain water only and obtain medical attention immediately.

### WARNING

Apply a strong neutralizer, such as baking soda when acid is spilled on the floor and clean up promptly.

### WARNING

Always lift the batteries with mechanical equipment, such as a hoist, crane, or lift truck. Move batteries horizontally with power tracks, conveyors, or rollers. Make sure that hoist hooks, spreader bars, and other tools are of ample strength and properly installed. Cover the top of the battery with a rubber mat or other insulating material to prevent external short circuits from chains or cables falling on top of the batteries.

 **WARNING**

Make sure that charging plugs and receptacle are properly locked and all other connections tight, secure, and free from friction.

 **WARNING**

Allow only authorized personnel (qualified by training and experience) in the battery room.

 **WARNING**

Never lay any metal tools, such as wrenches or other material on top of an open battery.

 **WARNING**

Check batteries for cracks or leaks. If leaks are found, notify maintenance.

 **WARNING**

When batteries are disposed of as scrap at the end of useful life, they should be sent to an authorized recycling center or salvage dealer.

 **WARNING**

Familiarize yourself as completely as possible with batteries and the proper rules for their charging, handling, and maintenance.

 **CAUTION**

Keep vent plugs in the cells at all times, except when taking hydrometer readings, adjusting specific gravity and electrolyte levels.

**NOTE:** Your company, industry, and government safety regulations should be reviewed to help reduce accidents and damage to equipment.

### Battery Maintenance

Battery maintenance must include a good battery charger, a clean battery, keeping the electrolyte at the correct level, and keeping a record of the battery.

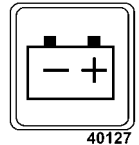
1. Keep batteries clean and free of acid spills.
2. Do not over-discharge. Excessive discharge shortens battery life.
3. Do not overcharge. Overcharging produces corrosion of positive grids and excessive gassing, which loosens the active material of the plates.
4. Charge the batteries in a well ventilated area to remove the explosive gasses and acid fumes.
5. Maintain electrolyte at the proper level. If low, add approved or distilled water. Before changing, make sure the tops of the plates are covered. After charge, fill to the recommended level. Do not add acid.

6. Keep batteries from freezing.
7. Keep batteries in a charged status.
8. Do not charge a battery with a charger that has an ampere/hour rating higher than that of the battery. This will give too high a charging current and cause excessive heating. Charging with a lower ampere/hour charger will cause no harm, but may require longer than eight hours to fully charge.

### Changing the Battery

#### **WARNING**

**Be careful not to short out battery terminals. Do not smoke or use open flame near batteries. Batteries may explode from spark. Remove all jewelry and exercise care with tools. If jewelry or tools contact battery terminals or a positive electrical circuit, a direct short may result in**



instant heating of tools, damage to equipment, and injury or death to personnel.

 **CAUTION**

**Always use a spreader bar and slings that lift vertically on the lifting eyes of the battery. DO NOT use a chain or sling without a spreader bar or you will damage the battery.**

1. Position the lift truck so that an approved lifting device can be used to remove battery.
2. Unlatch and lift the battery cover assembly. Make sure the battery cover is secured in the upright position.
3. Remove lift truck battery cables from the battery and position them out of the way so the battery can be removed.

 **CAUTION**

**Make sure the lifting device is correctly positioned on the battery and has clearance in the battery lift slot located in the overhead guard.**

4. Apply the lifting device to battery.
5. Carefully lift the battery from the lift truck and place in designated cleaning or charging area.
6. Make sure that the battery compartment is clean and dry.
7. Apply the lifting device to replacement battery.

 **CAUTION**

**Make sure the lifting device is correctly positioned on the battery and has clearance in the battery lift slot located in the overhead guard.**

**NOTE:** Use the correct blocks or spacers to hold the battery in position in the lift truck.

8. Carefully lift and position the replacement battery in the battery compartment.
9. Lower the replacement battery into the battery compartment, making sure all framework and cables are clear of the battery while being lowered.
10. Remove the lifting device and move the lifting device clear of the lift truck.
11. Install lift truck battery cable to the replacement battery. Be sure the plug is fully inserted and locked into place.

**WARNING**



**Extreme care should be taken when accessing the battery as the cover has several pinch points. Failure to comply may result in injury to personnel.**

12. Carefully lower the battery cover assembly and secure the latch.

13. Confirm that the LCD dash display is working and battery charge is sufficient. For proper operating steps, refer to **Operating Procedures**.

**Cleaning the Battery**



**CAUTION**

**Do not clean the battery with steam or hot water. Do not use a high-pressure hose. Remove any electrolyte from the battery compartment to prevent corrosion. If there is electrolyte on top of the battery, apply a solution of bicarbonate of soda. Mix a solution containing 0.5kg (1.1 lb.) of soda for every four liters (0.88 gal.) of water. Apply the solution, and then flush the solution from the battery using clean water. Wash the battery and the battery compartment as needed.**

Keep the battery compartment clean and dry. Use a clean cloth to wash the battery with water. Dry with compressed air.

Six months between cleaning is the maximum recommended interval.

**NOTE:** If the top of the battery is wet from electrolyte, check to see if the electrolyte level is too high or the battery charger is not operating correctly.

### Adding Approved or Distilled Water

Some water is lost from the electrolyte of each cell during the charge and discharge cycle when the battery is in service. Check the electrolyte level daily. Some service persons check some of the cells daily so that all of the cells are checked each week. If the level of the electrolyte goes below the level of the top of the separators for the plates, the cell can be damaged.

**NOTE:** Keeping the electrolyte level within the correct limits is the most important item of battery maintenance. Always use approved or distilled water. If you add approved or distilled water, wait five minutes before measuring the specific

gravity with a hydrometer. Do not add approved or distilled water to a cell during the charging cycle. The electrolyte can flow out of the cell through the fill hole. Refer to the instructions from the manufacturer of your battery for the proper operating level of the electrolyte.

### Charging the Battery



#### **WARNING**

**Always connect the positive cable to the positive terminal and connect the negative cable to the negative terminal. Any other connection will cause injury and damage.**



#### **WARNING**

**Always charge the battery at the end of the work period (shift). Never let the specific gravity reach a level less than the limits shown in the manual.**



 **WARNING**

**Always de-energize the charger before you connect or disconnect the charger from the battery.**

 **WARNING**

**Batteries produce explosive hydrogen gas when charging. Always open the battery cover or hood and provide good ventilation when charging.**

 **CAUTION**

**A battery should always be recharged immediately following a complete discharge. Never allow it to remain in a discharged condition, since permanent damage may result.**

**NOTE:** All of the vent caps must be in position when the battery is in service. If the vent caps are not installed, the electrolyte will leak, causing corrosion of the battery case and in the battery compartment.

**NOTE:** Many customers have battery chargers that can follow a program to automatically charge the battery according to the recommendations of the battery manufacturer. Use the recommendations of the battery manufacturer for charging the battery. Use only battery chargers approved by the battery manufacturer or dealer.

1. During charging, the voltage increases slowly. When the battery is fully charged, the voltage level is constant.
2. Remove the vent cap and look in the opening. If you see bubbles in the electrolyte, the battery is either fully charged or in the final stage of charging.
3. The specific gravity reading is constant and within the limits of a charged battery. If the temperature increases after the battery is charged, the specific gravity will decrease a small amount.
4. Constant meter indications on the charger will indicate the end of the charging cycle.

5. When you are sure the charger is off, disconnect the battery from the charger. Before connecting the battery lead to the lift truck receptacle, make sure the lift truck controls are in neutral and that the connector is firmly in place.

**Storing the Battery**



**CAUTION**

**Batteries should be placed on a wooden pallet and stored in a dry, moderately cool area. Lead acid batteries will slowly “self-discharge” over a period of time due to their chemical make-up. This “self-discharge” is due to a chemical reaction. That chemical reaction can be accelerated by heat resulting in a more rapid “self-discharge”.**

The following steps should be followed when placing a battery in storage or when not in operation for more than 30 days.



**CAUTION**

**Keep vent plugs in the cells at all times, except when taking hydrometer readings, adjusting specific gravity and electrolyte levels, troubleshooting, or reassembling a repaired cell.**

1. Give an equalizing charge prior to placing new batteries in storage. Used batteries are to be fully charged and allowed to balance for approximately three more hours.
2. Neutralize and clean the battery using a solution of 16 ounces of baking soda to one (1) gallon of water.
3. Store the battery in a cool, dry location.
4. Check each cell in the battery at least once every 30 days and boost charge when the specific gravity falls below 1.240.
5. Protect the battery from ambient contamination.

6. If a greasy film forms on the top of a battery, it is acid and must be neutralized using the solution described above.
7. Battery chargers should be disconnected from the AC power source when not in use.

## **DASH DISPLAYS, INDICATOR LIGHTS, AND HORN**

Check all dash displays, indicator lights, and horn for correct operation. Frequent reading of the dash display and indicator lights should be a habit.

If any dash display, indicator light, or horn is found to be inoperative, report to maintenance.

---

## COVERS/FLOOR PLATES

### Rear Cover

The rear cover is secured to the rear frame using four captive screws and washers. To remove the rear cover, loosen the four captive screws and remove the rear cover from the four cover brackets on the rear frame.

To install the rear cover, align the rear cover and captive screws with the clip-on receptacles of the rear cover brackets and tighten the captive screws.

### Battery Cover

The battery cover is an assembly that contains the cover, seat assembly, traction control joystick, and hydraulic control stick. The cover is held in the closed position using a latch assembly. Opening the latch assembly will allow the battery cover to be raised to service the battery.

**NOTE:** Lift the battery cover from the right-hand side of the lift truck. Use the right-hand armrest assembly to lift the battery cover. Do not use the plastic cover to lift the assembly.

To raise the battery cover, actuate the latch with the left hand and use the right hand to lift the cover. When the battery cover is open, it is held in the raised position with two gas springs.

### Left- and Right-Hand Side Covers

To remove the left- and right-hand side covers, raise the battery cover to the 90° upright and locked position. Remove the four captive screws. The side covers can then be removed from the retaining brackets on the frame.

To install the side covers, align them with the retaining brackets on the frame and then install the front bulkhead cover and four captive screws. Lower and secure the battery cover.

### Front Bulkhead Cover

Remove the left- and right-hand side covers.

Remove the front bulkhead cover by loosening the four captive screws retaining the cover to the lift truck.

To install the front bulkhead cover, align the cover with the left- and right-hand side covers and install the four captive screws.

Install the left- and right-hand side covers.



#### **CAUTION**

**Make certain to secure the cover before removing either of the gas springs.**

To replace the gas springs, use a screwdriver and a pair of pliers to remove the rings retaining the gas spring at either end of the spring.

To replace the latch assembly, open the latch assembly and raise the battery cover. Remove the two hex nuts and lockwashers retaining the latch assembly to the battery cover frame weldment. Install a new latch assembly using the lockwashers and hex nuts.

### Floor Plates

The floor plate is in two sections. To remove the floor plate sections, remove the four capscrews retaining the front cover to the frame and the cowl. Tip the front of the front floor plate section toward the rear of the lift truck and remove it from the lift truck.

Remove the rear floor plate section by sliding it forward from under the bulkhead cover.

The floor plates can be installed by reversing the remove procedure.

---

## STORING THE LIFT TRUCK

The following storage procedures are for conditions and temperatures above 0° C (32° F). Adjust these procedures for local conditions and any changes in conditions during storage. The preparations necessary for storage are also determined from the following conditions:

- Short-term storage is from 1 to 6 months. Long-term storage is over 6 months.
- Storage Location. A lift truck stored indoors will not require as much external protection as a lift truck stored outdoors.
- Remove the battery for both short-term and long-term storage. Refer to **Storing the Battery**.

### Short-Term Storage

Do the following steps to prepare the lift truck for storage from 1 to 6 months:

1. Check hydraulic oil levels. Fill the hydraulic oil tank to the proper level.
2. Fully lower the forks or carriage. Tilt the mast forward until the tips of the forks touch the ground. Coat any exposed portion of all cylinder rods with fresh high grade SAE 30 or SAE 40 weight engine oil.
3. Check that all switches and accessories are in the OFF position.
4. If the lift truck must be left on an incline, put chocks on the down hill side of the wheels so that the lift truck cannot move.
5. Clean the lift truck and drive train compartments to prevent corrosion.
6. If the lift truck is not stored in a shelter, put a cover over the lift truck to prevent damage from the weather. In wet conditions, a cover will not prevent corrosion to a lift truck that is in storage outside of a dry storage area.

**Long-Term Storage**

Do the following steps to prepare the lift truck for storage for 6 months or longer:

1. Complete all short-term storage procedures.
2. For safety and increased usable floor area, remove the forks and tag them with the lift truck serial number.
3. Complications can arise as a result of improper handling of the lift trucks during periods of storage. The main areas of concern are electric motors, hydraulic components and electric truck batteries. Electric lift trucks should be stored without batteries.
4. Prior to operating the lift truck, make a visual inspection for leaks or signs of deterioration. Check the fluid level in the hydraulic tank. Take corrective action if necessary.
5. Electric drive motors must be exercised to keep them free of rust and contamination caused by condensation built up over periods of inactivity. Connect the lift truck to an external battery source and operate the lift truck once a month for at least five minutes. This exercise will also permit other components to expel any accumulated moisture.
6. All hydraulic cylinders should be cycled once a month to keep the seals active and to coat the interior walls with hydraulic oil. Connect the lift truck to an external battery source and actuate each cylinder in both directions until it reaches the stops. With the power on, actuate the hydraulic control joystick to relieve hydraulic pressure.

## MOVING A DISABLED LIFT TRUCK

### WARNING

The **SIDEWINDER™ ATX-3000** parking brakes will be set and steering will be disabled in the event of an electrical system failure. In order to move the disabled lift truck, another lift truck with sufficient load capability must be used to lift and move the disabled lift truck to an area where electrical troubleshooting and repair can be performed.





