



# AC Series 6 Forklift Operator's Manual



**Manuals for the Bendi Series 6**

Manual Number	Manual Name
F-897	Operator's Manual
F-855	Parts Manual
F-857	Maintenance Manual



# **DANGER**

**DO NOT** operate or perform any maintenance tasks on this equipment until you have completed the following:

- 1. Receive proper training to operate this equipment safely.**
- 2. Read and understand the operator's manual.**
- 3. Be thoroughly trained on inspection and repair procedures.**

**Failure to comply with this warning may result in serious injury or possibly death.**





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# Chapter 1

## Introduction

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### DANGER

- **You MUST read through this entire manual and have a thorough understanding of all safety precautions BEFORE performing ANY inspection or operation, including the procedures listed in this chapter.**
- **Failure to comply with this warning could result in serious injury or death.**

## Vehicle Description

The Bendi AC Series 6 forklifts are an articulated counterbalance stacking forklift, ride on controlled, fitted with forks (or other devices) on which the load, palletized or not, is put into a cantilever position in relation to the front wheels.

The mast and load are able to rotate 90° in relation to the rear of the forklift, thus allowing operation in narrow aisles while maintaining the general purpose ability of a counterbalance.

### The Bendi AC forklift also offers:

- Four-wheel configuration - Dual rear wheel drive; dual front wheel actuated steering.

- High efficiency - Field oriented motor controller that enables smooth low speed control including zero speed position hold. Controller includes thermal protection based on motor and controller temperature.
- Control lever operation for load functions - Utilizing a three-function hydraulic control valve. A fourth (4th) function hydraulic valve is available for an approved Class II attachment.
- 48 volt DC battery with emergency disconnect button, latching battery cover with drive interlock, plus side access compartment with slide strips or optional rollers.
- Duplex, triplex or quadplex high visibility mast configurations.
- Lift capacity from 3,000 lbs./1,361 kg. up to 5,500 lbs./2,495 kg. at 24"/600 mm load center.
- Ergonomically designed operator compartment - includes sit-down operator position, adjustable operator's seat, tilt/telescoping steering wheel, thumb operated directional control switch, arm rest and operator supply tray.

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- Safety interlocks - Key switch activation and operator seat safety switch, plus an electrical lockout requiring the directional control switch to be in the “NEUTRAL” (center) position before power can be restored.

Noise and vibration levels for electric forklifts are below the required threshold of ISO 3691-1 requirements.

## Receiving

Before shipping from Landoll Company, LLC, each Bendi AC Series 6 forklift is inspected to make sure the forklift you receive is in impeccable condition and compliments your order.

### We do recommend that you:

- Inspect the forklift for any signs of physical damage during shipment. Note any apparent damage on the bill of lading, and request the delivery agent sign it. Report the damage to your distributor and the shipping company.
- Verify that the forklift configuration and options match your purchase order. Report any discrepancies to your distributor.

## Items Furnished With Your Forklift

Standard Bendi AC Series 6 forklifts are shipped from the factory with:

- A copy of the Bendi AC Series 6 Operator's Manual (this manual) containing an ***“Operator Daily Pre-Shift Inspection Checklist”*** on page 6-2.
- A Bendi AC Series 6 Parts Manual.
- Battery disconnect handle.
- A set of keys.

## Items Required

When the forklift is received, a battery approved for use in the forklift must be installed. The battery must be replenished using a battery charger at certain intervals. No additional items are required to operate the forklift.





## WARNING

- This forklift is equipped with Battery Discharge Indicator (BDI). The first battery install on this forklift **MUST** have a fully charged battery and **MUST** be discharged to lift interrupt/lift lockout. Replace battery with a fully charged battery, then the BDI should read accurately.
- Installing a non-fully charged battery will prevent the BDI from reading accurately.
- The BDI is only accurate when used with standard, flooded lead-acid batteries. Use of other battery technologies, fast chargers or opportunity chargers can cause it to read inaccurately.

### IMPORTANT

Operating the forklift with an overly discharged battery can damage electrical components and may not be covered by warranty.

## Tools & Test Equipment

In general, no special tools or test equipment beyond those found in a well-equipped service center are required for general maintenance.

## Preparing the Forklift

1. Check the hydraulic oil level. See ***“Check Hydraulic Oil” on page 3-16.***

2. Check the fluid level in the brake master cylinder reservoir. See ***“Check the Brake Fluid Level” on page 3-7.***
3. Check the condition of the battery. See ***“Battery Inspection” on page 4-2.***

## Inspecting the Forklift

### IMPORTANT

Upon receiving the forklift, use the **“Operator’s Daily Checklist”** on page 6-2 to verify and monitor that your forklift is in proper working order.

Before releasing the forklift for use, prepare a log book or log sheet for each forklift at your site. List all services, repairs and adjustments performed. Record equipment or operational problems, the date service repair is performed along with hour meter reading. Permanent logs serve as a checklist to show maintenance and repair history.

With the forklift key switch set to “OFF” and the direction control switch set to “NEUTRAL”, perform a walk-around inspection.

Always pay strict attention to all **CAUTION, WARNING** and **DANGER** decals affixed to the forklift and thoroughly read Chapter 2 (Safety) of this manual. Check for obvious damage that would require more detailed inspection.

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If you notice or suspect a problem, immediately report it to your supervisor, record it in the forklift log book and have it checked and/or repaired before operating the forklift.

Many problems can be spotted by visual inspection of the forklift including oil leaks, damaged tires, cracks in welds on forks, damaged covers, etc.

Dirt, grease, oil and debris can mask some problems. If possible, the forklift should be washed on a regular basis.

To remove stubborn grease buildup, a grease-dissolving solvent may be needed. Make sure the solvent is not harmful to painted surfaces.

After spot cleaning, lubricate all unprotected grease fittings and metal-to-metal surfaces located outside the forklift. See

***“Lubrication Specifications” on page 1-6.***



## DANGER

- **Grease solvents are often toxic and may be flammable. Use only in accordance with the solvent manufacturer’s recommendations supplied with the solvent.**
- **Use only in a well-ventilated area and DO NOT breathe vapors.**
- **Wear protective goggles, aprons and gloves. Avoid contact with skin, eyes and clothes.**
- **Keep away from heat and flame. DO NOT smoke when using solvents or in the area where solvents are stored.**
- **Failure to follow these guidelines could result in serious injury or death.**

## Storage/Shipping Forklift Storage

For long-term storage, the forklift battery should be removed and stored where it can be periodically checked and recharged monthly. In general, batteries that are fully charged with the electrolyte at the proper level may be stored for up to one year. Batteries should be stored in a cool, dry, well-ventilated area, covered with a non-conductive material (such as plywood) to protect them from dirt, moisture, etc.

**WARNING**

- **DO NOT drape flexible plastic sheeting over batteries as it might trap explosive gases underneath.**
- **For batteries stored for more than one year, consult the manufacturer.**

Consult the battery documentation or the manufacturer for storage method and routine inspection required during the temporary storage interval.

Over long periods of time hard polyurethane tires can develop flat spots that may not return to normal when the forklift is returned to operation, rendering the tires defective.

For this reason, when being stored, the forklift should be raised with the tires at least 2" (51 mm) off the floor and the frame set on large wooden blocks.

The forklift should be stored indoors within a temperature range of +35° F (2° C) to +115° F (46° C). Areas of high humidity should be avoided when possible.

If the forklift must be stored outside, it must be covered securely with a tarpaulin. Continued exposure to sunlight will cause deterioration of rubber tires, gaskets, hoses, etc.

## Towing the Forklift

If the forklift needs service and cannot be repaired at that location it may be towed to a more suitable location.

When attaching a towing vehicle to the lift forklift, a removable pin has been provided on the rear bottom side of the counterweight.

*See Figure 1-1*

**WARNING**

**NEVER connect towing equipment to the mast**

With no power to the forklift the steering system will be very difficult to operate.

With the park brake released, the forklift may roll.



### CAUTION

- **Have the parking brake applied when hooking up the tow chain.**
- **DO NOT make sharp turns when towing the forklift. The towed forklift will be difficult to steer.**
- **Forks must be empty.**
- **Failure to reset the park brake will result in an unsafe condition.**
- **Towing vehicle must have a pull and braking capacity greater than 8,000 lbs.**
- **Always tow the forklift in the reverse direction.**

4. The operators of the towing vehicle and the disabled forklift should maintain verbal communication and visual contact while performing the towing operation.



**Figure 1-1: Tow Pin**

1. The key switch must be in the OFF position.
2. There should be no load on the forks and no higher than 12 inches off the ground.
3. Firmly attach the tow device from the towing vehicle to the tow pin on the forklift being towed.



### WARNING

- **USE EXTREME CAUTION and keep the towed vehicle at a slow, manageable speed.**
- **Keep the towing speed below 2 mph.**

## Lubrication Specifications

Name	Lubrication	Notes
Hydraulic System	*Conoco Powerflow HE (ISO grade 46) filtered to ISO 4406 cleanliness code 15/13/11 or equivalent grade oil filtered to 15/13/11.	Drain, flush, and refill
Brake System	DOT 3 Brake Fluid	Fill
Steer Wheel Bearings	Alvania Grease No.2	Clean and re-grease
Steering Knob	Light weight oil	Lightly oil
Battery Rollers (optional)	SAE 30W oil	Clean and re-oil
Gear Case	Mobilube SHC-630 only	Drain, flush, and refill
Grease Fittings	Molybdenum EP Chassis Grease	Clean and re-grease
Mast Rails	Molybdenum EP Chassis Grease	Clean and re-grease
Mast Chains	SAE 40W oil or Bowman Heavy Load Red Grease	Clean and re-oil
General Lubrication	SAE 20 Lubricating Oil	Clean and re-oil

**\* Failure to refill with oil that meets ISO 4406 cleanliness code 15/13/11 may void the warranty. Typical “NEW” oil DOES NOT meet this specification. Contact Landoll Company, LLC or your lubricant supplier for recommendation.**

Technical Specifications

MODEL	B30 AC	B40 AC	B40 DR	B40 HL	B40 VAC	B55 AC	B50 DR	B50 HL
Capacity @ 24” Load Centers	3,000 lbs. (1,361 Kg)	4,000 lbs. (1,814 Kg)	3,000 lbs. (1,361 Kg)	4,000 lbs. (1,814 Kg)	4,000 lbs. (1,814 Kg)	5,500 lbs. (2,495 Kg)	3,000 lbs. (1,361 Kg)	5,000 lbs. (2,268 Kg)
Power Source	Battery, Electric 48V	Battery, Electric 48V	Battery, Electric 48V	Battery, Electric 48V	Battery, Electric 48V	Battery, Electric 48V	Battery, Electric 48V	Battery, Electric 48V
Total Weight w/ Battery	12,800 lbs. (5,806 Kg)	13,770 lbs. (46 Kg)	17,620 lbs. (7,992 Kg)	17,120 lbs. (7,765 Kg)	13,770 lbs. (6,259 Kg)	16,950 lbs. (7,688 Kg)	18,850 lbs. (8,550 Kg)	18,350 lbs. (8,323 Kg)
Travel Speed	6.5 mph 10.5 kph	6.5 mph 10.5 kph	6.5 mph 10.5 kph	6.5 mph 10.5 kph	6.5 mph 10.5 kph	6.5 mph 10.5 kph	6.5 mph 10.5 kph	6.5 mph 10.5 kph
	7 mph 11.3 kph	7 mph 11.3 kph	7 mph 11.3 kph	7 mph 11.3 kph	7 mph 11.3 kph	7 mph 11.3 kph	7 mph 11.3 kph	7 mph 11.3 kph
Lift Speed	90 fpm 27.4 mpm	90 fpm 27.4 mpm	80 fpm 24.4 mpm	90 fpm 27.4 mpm	90 fpm 27.4 mpm	90 fpm 27.4 mpm	80 fpm 24.4 mpm	90 fpm 27.4 mpm
	110 fpm 33.5 mpm	110 fpm 33.5 mpm	90 fpm 27.4 mpm	100 fpm 30.5 mpm	100 fpm 30.5 mpm	110 fpm 33.5 mpm	90 fpm 27.4 mpm	100 fpm 33.4 mpm
Lower Speed	100 fpm 30.5 mpm	100 fpm 30.5 mpm	100 fpm 30.5 mpm	100 fpm 30.5 mpm	100 fpm 30.5 mpm	100 fpm 30.5 mpm	100 fpm 30.5 mpm	100 fpm 30.5 mpm
	90 fpm 27.4 mpm	90 fpm 27.4 mpm	90 fpm 27.4 mpm	90 fpm 27.4 mpm	90 fpm 27.4 mpm	90 fpm 27.4 mpm	90 fpm 27.4 mpm	90 fpm 27.4 mpm
Mast Tilt Up to 293”  Higher than 294”	3° FWD 3° RWD  2° FWD 1° RWD	3° FWD 3° RWD  2° FWD 1° RWD	Carriage Tilt 3° FWD 4° RWD	Carriage Tilt 0° FWD 3° RWD	1° FWD 2° RWD	3° FWD 3° RWD  2° FWD 1° RWD	Carriage Tilt 3° FWD 4° RWD	Carriage Tilt 0° FWD 3° RWD
Fork Tilt	N/A	N/A	3° FWD 4° BACK	0° FWD 3° BACK	N/A	N/A	3° FWD 4° BACK	0° FWD 3° BACK
Standard Forks	42 x 4 x 1.5	42 x 4 x 1.5	40 x 4 x 1.5	40 x 4 x 1.5	40 x 4 x 1.5	42 x 4 x 1.5	40 x 4 x 1.5	40 x 4 x 1.5

Technical Specifications

MODEL	B30 AC	B40 AC	B40 DR	B40 HL	B40 VAC	B55 AC	B50 DR	B50 HL
Traction Motor Rating	5.5 kW Each	5.5 kW Each	5.5 kW Each	5.5 kW Each	5.5 kW Each	7.5 kW Each	7.5 kW Each	7.5 kW Each
Pump Motor Rating	20 kW	21 kW	20 kW	21 kW	20 kW	20 kW	20 kW	21 kW
Battery Recommended 48V	Min 2,550 Max 3,100 680 A-HR	Min 2,550 Max 3,100 680 A-HR	Min 3,250 Max 3,400 850 A-HR	Min 3,500 Max 4,000 935 A-HR	Min 3,500 Max 4,000 935 A-HR	Min 3,500 Max 4,000 935 A-HR	Min 3,500 Max 4,000 935 A-HR	Min 3,500 Max 4,000 935 A-HR
Grade-ability	15%	15%	15%	15%	15%	15%	15%	15%
Wheel								
Front	14x5	14x5	14x5	14x5	14x5	14x8	14x5	14x5
Rear	18x7	18x7	18x7	18x7	18x7	18x9	18x9	18x9
Control Type								
Traction	AC	AC	AC	AC	AC	AC	AC	AC
Hydraulic	AC	AC	AC	AC	AC	AC	AC	AC





### Getting Started

**This chapter on Safety must be carefully read, understood and adhered to strictly by all operators and service personnel operating the Bendi AC Series 6 forklift.**

**DO NOT use this forklift until you have thoroughly read this manual. Failure to comply could cause risk of serious injury or death to yourself and others.**

### Operator Training



#### **DANGER**

**Every forklift operator must be trained in accordance to the rules provided by appropriate legislation. Employers must ensure that each powered industrial forklift operator is competent to operate a powered industrial forklift safely, as demonstrated by the successful completion of a relevant training course.**



#### **DANGER**

**Operating a powered industrial forklift without the proper training can cause serious injury or death.**

This chapter will address important operator level safety information regarding the operation and maintenance of the forklift.

#### **To develop the skills required:**

1. Receive training and certification, pursuant to (OSHA 1910.178, Rev 2006) or appropriate national legislation, in the proper operation of this forklift.
2. Understand the capabilities and limitations of the forklift.
3. Become familiar with the construction of the forklift and see that it is maintained in good operating condition daily.
4. Read and understand the warnings and operating procedures in this manual.

#### **IMPORTANT**

**This forklift has been designed for optimal safety of the operator. Please follow the safety guidelines listed and adhere to all Caution, Warning and Danger notes found within this manual.**

\* Landoll and Bendi are trademarks of the Landoll Company, LLC. All other brand and product names are the trademarks of their respective holders.

## SAFETY

All Landoll forklifts meet or exceed legal standards, ASME B56.1 - Part III, Safety for Powered Industrial or Commercial Trucks and certain industrial models are FMRC approved by meeting or exceeding requirements of FMRC Class 7820, ANSI/UL-583 standard for Battery Powered Industrial Trucks, Type "E".

The electrical system complies with UL-583 requirements for Type "E" Electrical Battery-Powered, Industrial Truck construction.

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# Bendi Forklift Safety Statements

The safety statements contained in this manual relate to the operation and maintenance of the forklift

## Understanding Safety Statements

Various types of safety information throughout this manual and on the product decals attached to the vehicle can be found on the following pages. This section explains their meaning.

**The Safety Alert Symbols mean personnel and property SAFETY IS INVOLVED!**

**Pay special attention to these safety statements as you read through this manual.**

### NOTICE

**Special notices that include helpful hints. Read and understand thoroughly.**



### CAUTION

**Proceed with caution. Failure to heed caution may cause injury to person and/or damage product.**



### WARNING

**Proceed with caution. Failure to heed warning will cause injury to person and or damage to product**



### DANGER

**Proceed with extreme caution. Failure to heed notice will cause injury or death to the person and/or damage product.**

# Site Supervision

Supervision is an essential element in the safe operation of powered industrial forklifts.

The site supervisor must check that the Operator's Manual is in the seat compartment on the forklift at all times. Operators must be trained on the use, maintenance and safety aspects of the Bendi AC Series 6 forklifts under the supervision of a trained and experienced operator.

Familiarization and driving practice with a new forklift must be arranged in a safe area, away from other forklifts, obstacles and people. The training program must be applied to all new operators, regardless of previous experience.

Operator performance must be evaluated to ensure he/she has the proper skills and knowledge to operate the forklift. Operators must be retrained when new equipment is introduced, existing equipment is modified, operating conditions change or an operator's performance is determined unsatisfactory.

The forklift must be inspected daily for problems or damage risking the safety of the operator and any people in the work area, or possible damage to the forklift and the load being moved. When forklifts are used on a round-the-clock basis, they must be inspected at the beginning of each shift by the person who will be operating the forklift on that shift.

Any problems that are detected must be reported immediately to the supervisor. The forklift must be taken out of operation until all repairs have been made and the forklift has been reinspected for safety.

## Terminology and Illustrations Used

Whenever front, rear, right and left are mentioned throughout this manual, it is from the viewpoint of being seated in the operator's seat looking toward the forks.

This manual references many illustrations to follow the procedures and help you locate components on the forklift.

You will note that each illustration has an identifying figure number below.

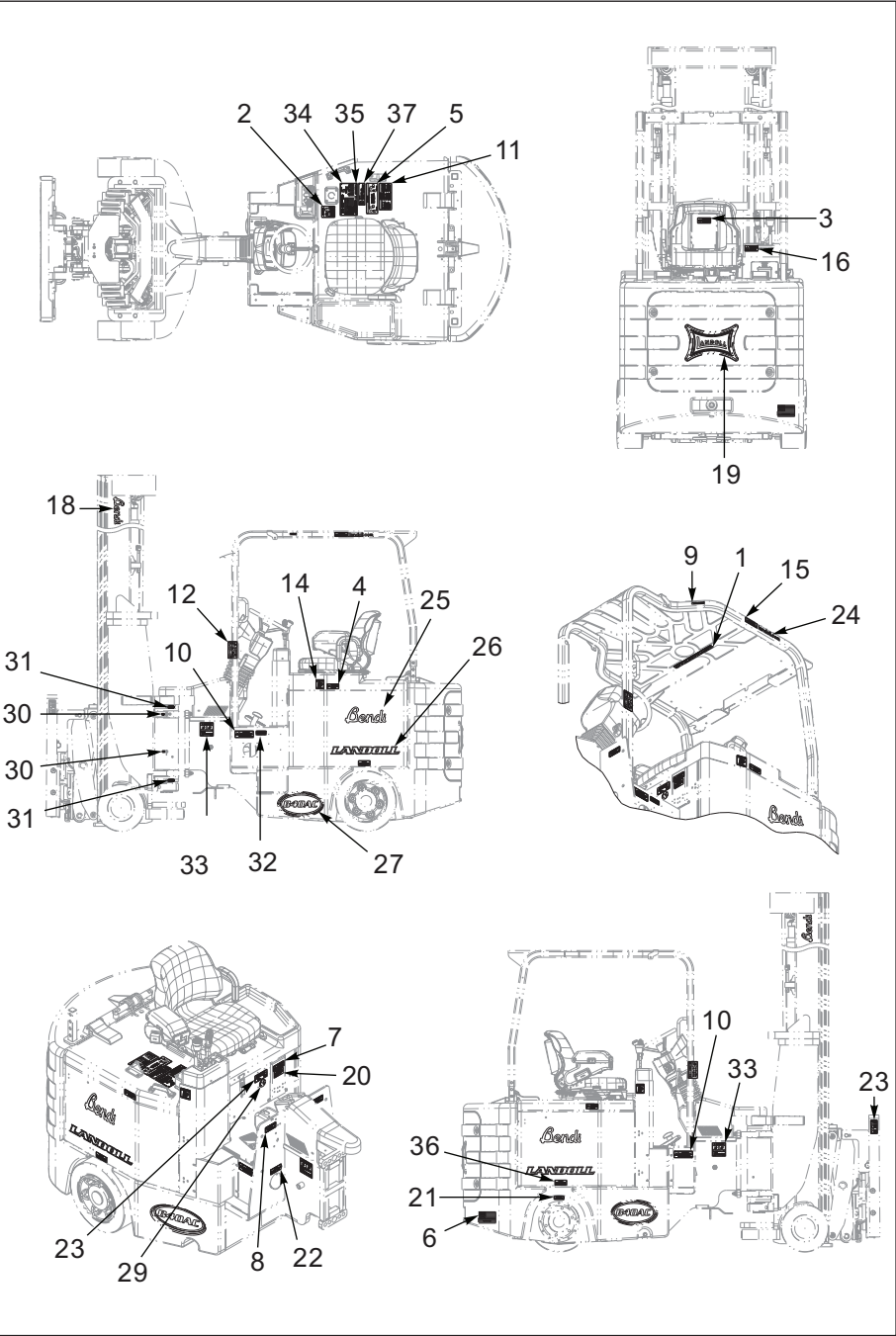
## Decals

The location and type of each product decal on the forklift are listed and illustrated on page 2-4 through 2-6.

Keep your forklift decals legible. Replace damaged decals.

### NOTICE

**NO modifications or additions may be made to this forklift without prior written permission from Landoll Company, LLC.**



**Figure 2-1: Decal Locations**

1	Danger Rollover Decal
2	Overload Warning Decal
3	Before Operating Decal
4	Cover Open Warning Decal
5	Proper Vehicle Loading Decal
6	Made in USA Flag Decal
7	Battery Warning Decal
8	Side Shift Caution Decal
9	Overhead Guard Decal
10	Tire Replacement Decal
11	Operator Warning Decal
12	OHG Pinch Point Decal
13	Rotation Indicator Decal***
14	No Rider Decal
15	Do Not Remove Guard Decal
16	Apply Park Brake Decal
17	No-Slip Tape**
18	Drexel Yellow Bendi 8 Decal
19	Landoll Yellow Bow-Tie Decal

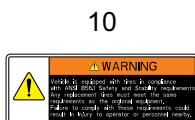
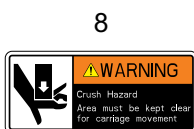
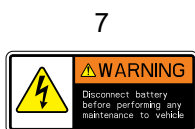
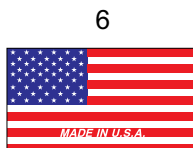
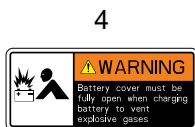
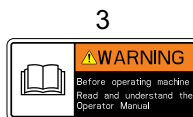
20	Battery Lead Warning Decal
21	Brevini Oil Spec Decal
22	Ser 4 Hyd Filter Decal
23	Fork Hazard Warning Decal
24	Landoll.com Gray Decal
25	Bendi (Black)
26	Landoll (Outline)
27	
28	Forklift Patents Decal
29	2" CE Mark Decal
30	Air Bleed Decal
31	Actuator Grease Interval*
32	ISO 46 Decal
33	Danger Pinching Point Decal
34	Data Plate
36	Gearbox Oil Change Decal
37	Type E UL Classified Decal

\*May not be found on all models as greasing these actuators is no longer required, per Service Memo # TSM00075 REV 1 09-25-2018. For more information contact Landoll Corp Warranty Department at 800-446-5175

\*\*Applies to the following models: B30-6/45-180D AC, B40-6/50-180D AC, B40 VNA-6/50-180D AC

\*\*\*Applies to the following models: B55 -6/56/180D AC, B30-6/45-180D AC, B40-6/50-180D AC

\*\*\*\*Refer to parts manual for proper color per various model specifications. For more information contact Landoll Corp Warranty Department at 800-446-5175



### Figure 2-2: Decals (1 of 2)

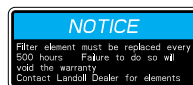
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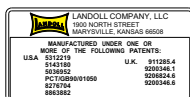
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*Bendi*

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*LANDOLL*

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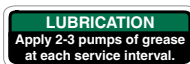
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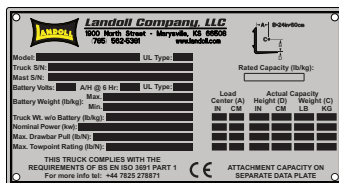
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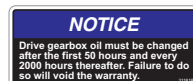
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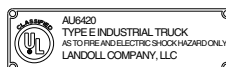


Figure 2-3: Decals (2 of 2)

# Operator Safety



## **WARNING**

- **Set directional control switch to “NEUTRAL” position before turning the key switch to “ON”.**
  - **To avoid personal injury when operating the forklift, be extremely cautious that NO body part (feet, arms, legs, fingers) or clothing are outside the operator’s compartment. They may be caught by aisle supports, other forklifts or any obstacle in the area.**
  - **Know the location of all pinch points (with a risk of crushing or shearing), as indicated by the WARNING and DANGER labels on the forklift.**
  - **Be cautious when there are other people or fixed objects in the working area.**
  - **Be cautious when the load reduces visibility.**
  - **Ensure that people stand clear of the rear swing area before making turns.**
- Be careful at cross aisles, doorways and other intersecting locations where people may step into the path of the forklifts travel.
  - Perform a Daily Inspection, per this manual, of the forklift at the start of each work shift.
  - Make sure all access/service panels, doors and covers are installed, closed and latched tight. DO NOT operate the forklift with panels, doors and covers removed, opened or unlatched.
  - Keep the forklift clean and in good working order. If problems are detected, the forklift must be taken out of operation until all repairs have been made and the forklift has been reinspected for safety.
  - Always start, stop, change direction, travel and brake smoothly so as not to shift the load and/or overturn the forklift.
  - DO NOT indulge in stunt driving or horseplay.
  - Drive carefully and slowly onto dock boards and bridge plates. DO NOT exceed the rated capacity of the dock boards or bridge plates and ensure dock boards or bridge plates are properly secured, with anchors or with devices that will prevent slipping.
  - Dock boards must have substantial contact with both the dock and the carrier, preventing them from rocking or sliding.
- The operator is responsible for observing all safety instructions and regulations in his/her daily work routine, related to the use of this forklift.



- Maintain a safe distance from the edge of ramps, platforms and other similar working surfaces.

When leaving the operator's compartment the forks must be lowered to the floor, the mast must be placed in a vertical position, all controls must be in a "NEUTRAL" position and the key switch must be set to the "OFF" position with the parking brake set. Forklift wheels must be blocked if the forklift is parked on an incline.

### NOTICE

The forklift is considered unattended when the operator is 25 feet (7.6 m) or more away from the forklift, even when the forklift is still in his/her view, or whenever the operator leaves the forklift and it is not in view.

## Tipping

See *"Tipping" on page 5-11*



### DANGER

Forklift tip-over can cause serious injury or death to the operator or others in the area. Every operator must be thoroughly familiar with the tipping hazards listed in this section and must always avoid any operation of the forklift which is likely to result in tipping.

If a tip-over occurs, the operator should follow the guidelines shown here:



**DO NOT JUMP!**



**Brace feet and hold onto the steering wheel tightly.**



**Lean away from the tip.**

### Speed



#### WARNING

Careless driving, such as fast starts or abrupt braking, excessive speed at turns or through cross aisles, sudden stops or hard turns at high speeds can all lead to serious personal injury and damage to the forklift and load. Always drive with safety as the number one goal.

## Battery Safety

Packaged with every battery are specific instructions for battery safety, care and use, and a Material Safety Data Sheet (MSDS). Read these documents thoroughly before performing any service to the battery.

For more information see ***“Battery”*** on page 4-1



#### DANGER

**BATTERY FUMES ARE  
EXPLOSIVE!**



#### WARNING

- Forklift batteries give off explosive gases during use and charging.
- This gas remains in the cells long after charging is complete.
- Always assume the battery is emitting hydrogen and employ proper safety requirements.
- Keep battery vent plugs firmly in place at all times, except when adding water or taking hydrometer readings.
- Keep all flame and sparks away from battery and charging area at all times.
  - i.e. Lit cigarettes, striking a welding arc, etc.



#### WARNING

- The battery is very heavy. Be sure to replace and tighten any battery restraints.
- Failure to comply could result in an unbalance condition or the battery could slide out of the forklift causing electrical shorts or acid to spill; or it could cause the forklift to tip.

**CAUTION**

- Follow the battery manufacturer's instructions concerning maintenance and repair.
- Only qualified and experienced personnel should perform maintenance and repair on batteries.
- Keep the battery clean. Foreign matter in the electrolyte will result in poor battery performance.
- Use caution when changing battery connectors to ensure that the polarity is not reversed.

**CAUTION**

- Consult the charger manufacturer's manual for operation and maintenance.
- Consult the label on the battery for information on cell-type, ampere-hour capacity, charge rate and normal full-charge voltage.
- Make certain the charger being used matches the voltage and amperage of the forklift battery. Voltage is listed on the forklift data plate.
- Charge the forklift battery in a designated area with adequate ventilation.
- Before connecting or disconnecting batteries to the charger, make sure the charger is "OFF". Making connections while the charger is "ON" could result in serious injury to the operator and damage could occur to the charger with sparks or electrical spikes.

## Charging Safety

**DANGER**

- Shorting battery terminals can release enormous amounts of energy, causing sparks, flame or heating nearby components to dangerous temperatures.
- When the battery is charging it releases hydrogen, a highly explosive gas, which can be ignited by a spark.

**WARNING**

- Wear protective clothing, rubber apron, boots, gloves and full-face shield when performing any maintenance on the battery.
- Batteries contain sulfuric acid which can cause severe skin and eye burns.
- Avoid sulfuric acid contact with eyes, skin, clothing or the floor.
- Should electrolyte be spilled on the skin, rinse promptly with clean water and soap.
- If electrolyte contacts eyes, flush immediately with clean water.
- **If the eyes have been affected, OBTAIN MEDICAL ATTENTION IMMEDIATELY.**
- A baking soda solution (one pound to one gallon of water) will neutralize acid spilled on clothing, floor or other surfaces.
  - Apply solution until bubbling stops and rinse with clean water.

# Hydraulic System

**DANGER**

- Hydraulic oil can be under very high pressure.
- A pinhole leak is not easily seen and if it pierces the skin, it can cause injury and possible death.
- Any fluid injected into the skin under high pressure should be considered a medical emergency despite a normal appearance of the skin.
- **Medical attention should be administered immediately.**

**WARNING**

- Relieve all pressure from the hydraulic system before attempting to service it.
- Make sure all hydraulic lines are tight before starting the system.

## Service Repair



### WARNING

**Always disconnect the battery before performing any forklift maintenance and be sure to wear protective clothing and safety glasses when working with battery acid or the battery in general.**

Maintenance and repair should **ONLY** be performed by qualified and experienced personnel.

Refer to Maintenance Manual (P/N F-857) for information on repair and service.



### WARNING

**Personnel injury and property damage could occur if there is an attempt to do service work without proper training or equipment.**

## Available Options

### Fork Positioner

Forklifts using automatic fork positioner require additional **SAFETY** attention.



### WARNING

- Pay strict attention to all safety labels affixed to the fork positioner and backrest.
- **NEVER** reach through the backrest or between the fork positioner mechanism.
- The top of the load must not extend above the top of the backrest.
- The load must never exceed the capacity of the fork positioner as stated on the data plate affixed within the operator's compartment.

## Fire Extinguisher

If equipped, a dry-powder based fire extinguisher is mounted, using a quick-release bracket, to the overhead guard. Dry-powder extinguishers help fight Class B and C type fires (oil, gas, grease, electrical, etc).

Fire extinguishers must be inspected monthly and the results recorded on the inspection tag attached to each extinguisher.

The extinguisher should be checked to see that:

- It is not damaged.
- The discharge outlet is not blocked.
- It is fully charged.
- The seal is not broken.
- The instruction pamphlet is clearly visible.

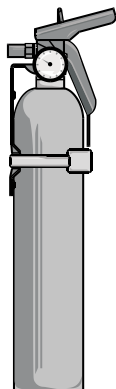


### CAUTION

**Dry-powder extinguishers are shipped fully charged. DO NOT experiment with the extinguisher. Even a small amount of discharge could cause it to slowly lose the rest of its pressure, rendering the extinguisher useless.**

## In case of a fire!

- Have everyone evacuate the area immediately.
- Call the fire department, no matter what the size of the fire. Emergency telephone numbers should be posted at each telephone.
- Always use the extinguisher correctly, according to the directions on the label. Professionals should handle large fires.
- Be ready to leave the area in the event the fire cannot be controlled immediately.



**Figure 2-4: Fire Extinguisher**

## Additional Publications

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

- Employment safety and health standards or regulations e.g., Occupational Safety and Health Administration (USA), Canada Material Handling Regulations.
- Safety codes and standards e.g., American National Standard, ANSI B56.1 Safety Standard for Lift Trucks
- ISO 3691-1 Industrial Trucks - Safety Requirements and Verification.
- Publications from government safety agencies, government insurers, private insurers and private organizations e.g., Accident Prevention Manual for Industrial Operations from the National Safety Council.
- Operator Safety Training Course - describes forklift safety, good maintenance practices, and training programs. Training is available from a Landoll dealer for Bendi Forklifts.

# Chapter 3

## Vehicle Familiarity

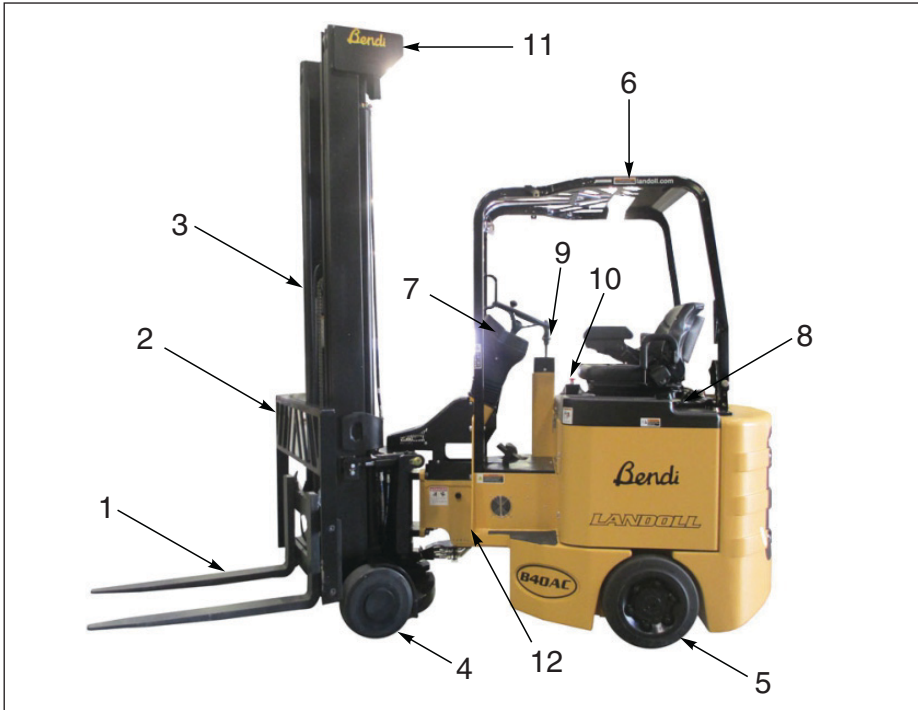
### Overview

This chapter will provide you with general information about the forklift including:

- Forklift Identification
- Information about the different Forklift Systems

### Forklift Identification

The following illustration will help you locate components on your Bendi AC Series 6 forklift. [See Figure 3-1.](#)



**Figure 3-1: Forklift Components**

- |                      |                           |
|----------------------|---------------------------|
| 1. Forks             | 7. Steering Column        |
| 2. Load Backrest     | 8. Battery Cover          |
| 3. Mast              | 9. Mast Control Levers    |
| 4. Load/Steer Wheels | 10. Emergency Stop Button |
| 5. Drive Wheels      | 11. Mast Serial Number    |
| 6. Overhead Guard    | 12. Frame Serial Number   |

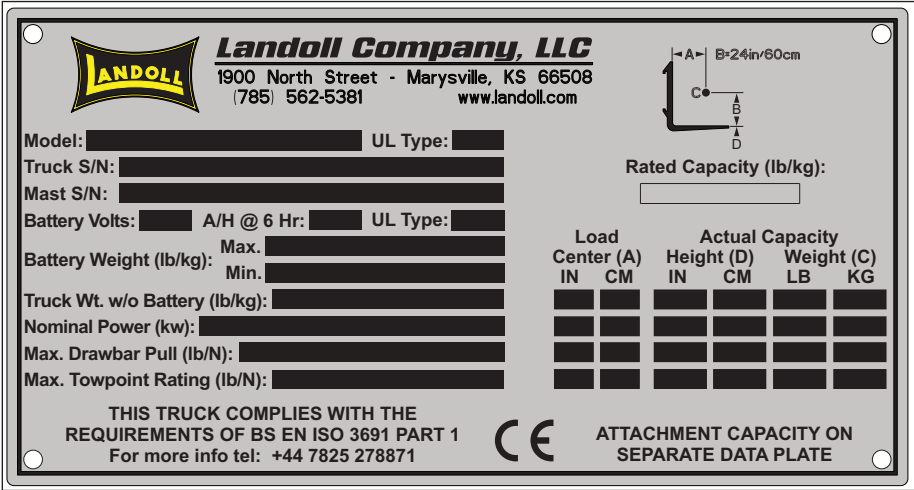


Figure 3-2: Data Plate

Data Plate

The data plate lists the rated capacity, serial number and other important vehicle characteristics. It is located on the battery cover, directly to the right of the operator’s seat.

The following list explains the items that appear on the data plate: [See Figure 3-2.](#)

- **Model** - The model number of the forklift (e.g. B40AC)
- **Truck S/N** - Serial Number of the forklift.
- **Mast S/N** - Mast Serial Number.
- **UL Type** - This designation assigned by the Underwriter’s Laboratory (UL) Standard 583 describes the forklifts overall design of the electrical components.
  - Type “E” offers safeguards against an inherent risk of fire and electrical shock.
- **Type “ES”** offers additional safeguards to prevent emission of hazardous sparks and limits surface temperatures.
- **Type “EE”** meets all of the requirements of Type “E” and “ES” units, while having its electric motors and all other electric equipment completely enclosed.
- **Rated Capacity** - The rated capacity is stated with the forks at various fork heights. As you lift the load higher, the rated capacity of the forklift decreases.
- **Actual Capacity (Height)** - The rated fork height stated in inches and centimeters. This is the distance between the ground and the top edge of the forks.
- **Truck Wt. w/o Battery** - The actual weight of the forklift as built without the battery installed; stated in pounds and kilograms.



- **Battery Weight (Min)** - The battery must weigh at least this much for the forklift to operate properly; stated in pounds and kilograms.
- **Battery Weight (Max)** - The battery must not exceed the weight stated here for the forklift to operate properly; shown in pounds and kilograms.
- **Battery Volts** - Indicated volts that the battery puts out to operate the forklift electrical components.
- **Battery UL Type**- This is the rating for the battery itself as designated by Underwriter’s Laboratory (UL) Standard 583. This describes the construction of the battery and enclosure with respect to the risk of fire, electric shock and explosion.
- **Horizontal Load Center** - The horizontal load center is equal to 1/2 the length of the rated load when the weight is evenly distributed.
- **Vertical Load Center** - The vertical load center is equal to 1/2 the height of the rated load when the weight is evenly distributed.

Series Serial Number Code

The following information will help decode the Bendi AC Series 6 serial number.

BaaAC-ww-yymms-xxxxx:

aa	30 = 3000lb. rated capacity 40 = 4000lb. rated capacity
ww	ww frame width(37in.)
yy	last 2 digits - year of manufacture (ex. “19” = 2019)
mm	month of manufacture
s	component series; A
xxxxx	frame number



CAUTION

The frame number is located on the left front side of the frame. You need to compare the frame number listed on the data plate with the frame number before you operate the forklift. *See Figure 3-1.*



CAUTION

The mast serial number is located on the left top side of the mast. You need to compare the mast serial number listed on the data plate with the mast serial number before you operate the forklift.

# Forklift Overview

Before operating any new forklift, it is imperative that you familiarize yourself with the basic parts and systems of the vehicle.

One of the most important facts you need to know about any forklift is its rated capacity (how much weight it can safely lift). This weight is listed as the 'rated capacity' on the data plate. See "Knowing the Rated Capacity" on [page 5-9](#).

The rated capacity varies for each load depending on:

- Where the horizontal and vertical load centers are.
- The height you plan to lift the load.
- Attachments used.

## Frame

The frame is constructed from multiple steel parts welded together to form the basic structure (body) of the forklift and provide adequate counterbalance to offset the weight of the load.

## Major Structural Points

### Rust Or Corrosion

Check the truck frame, side and floor panels for rust and corrosion. Clean rusty or corroded areas and repaint, if applicable. Apply a thin coat of oil to any bare metal surface.

#### NOTE

*Immediately pull truck from operation and repair if frame cracks are found.*

## Overhead Guard

Check the overhead guard and make sure that it is firmly attached to the truck and that all fasteners are secured. The overhead guard is adjustable to accommodate various operators and operating restrictions (low ceilings, door openings, etc.).

## Electrical Static Discharge (ESD) Straps

The ESD Strap is installed on the back side of the front axle. This strap will drain all static electricity build-up that may occur on the Bendi AC forklift. The ESD Strap should be in fair condition, bolted securely to the body and touching the ground.

Replace if missing to ensure proper truck operation.



**Figure 3-3: ESD Straps**

## Brake System

The rear drive wheels are equipped with hydraulically-actuated disk brakes. The brake pedal activates a master cylinder to apply hydraulic pressure to brake pads, forcing the pads to contact the brake rotor.

The system is a dedicated system using standard DOT 3 brake fluid.

## Brake Pedal



### **CAUTION**

**The operator should always use their right foot for braking. DO NOT steer with brakes applied.**

The brake pedal is located on the floor, to the left of the accelerator pedal. *See Figure 3-6*

**Operation** - Press the brake pedal with right foot to activate the brakes.

### **Checking function:**

1. With the key switch set to “ON”, drive forward slowly and then steadily apply the brake pedal.
2. The forklift should stop smoothly without noticeable vibration.

Any problems with the brake system must be repaired immediately. **DO NOT** use the forklift until proper maintenance has been performed.

## Braking by Plugging

The Bendi AC is designed for “plugging,” therefore, the service brake pedal should only be used in an emergency situation.

To “brake by plugging”:

1. Release the accelerator pedal.
2. Change direction with the directional control switch.
3. Press the accelerator pedal again, the motor will come to a smooth stop and then reverse direction.

**This process is automatic. DO NOT press the brake pedal.**

## Parking Brake

The parking brake is located to the right of the steering column.

1. Pull the brake lever toward you to set it.
2. Push it away from you (straight up) to release it.

## VEHICLE FAMILIARITY

You cannot drive the forklift while the park brake is engaged. The electric traction controller will not allow the forklift to move until the parking brake is released.

As the lever is pulled back to apply the brake, the drive and pump motors shut down and the directional control electrically resets to "NEUTRAL", preventing further movement of the forklift.

To continue, the operator must first set the direction control switch to "NEUTRAL", release the parking brake, then set the control switch to the desired direction of travel.



**Figure 3-4: Parking Brake**

### Checking function:

1. While in the operator's seat, set the parking brake.
2. Put the gear into forward or reverse and step on the accelerator slightly.

3. The parking brake should hold the forklift in place



### CAUTION

**This test will cause the drive wheel to lock. DO NOT test the parking brake at high speed. Check parking brake at creep speed only.**

### Return to Neutral check:

1. Sit in the operator's seat and turn the key switch to "ON".
2. Put the directional switch in the forward position and drive forward at a very slow speed.
3. While forklift is creeping forward, pull the Parking Brake lever down.
4. The parking brake should immediately engage, bringing the forklift to an abrupt stop.
5. Release the parking brake and press the accelerator pedal again.
6. The forklift should not move since the directional control switch should have been reset.
7. Return the directional control switch to neutral, then forward again and press the accelerator.
8. Fork lift should again function normally.

If any problems are found with the operation of the park brake, immediately pull the forklift from operation and repair. **DO NOT USE FORKLIFT.**

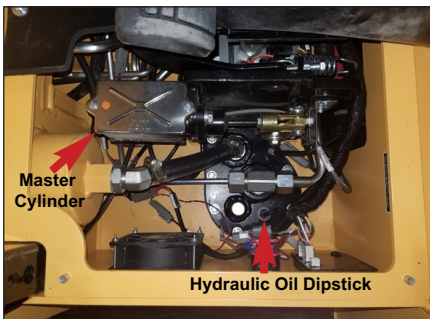
## Check the Brake Fluid Level

The master cylinder is located below the operator's compartment floor plate.

1. Clean dirt and debris from the floor plate using a broom or vacuum.
2. Carefully pull back the rubber mat that covers the floor plate.
3. Remove the left floor plate.
4. Clean the reservoir cap to avoid fluid contamination, then remove the filler cap and rubber gasket.
5. Additional fluid is needed when the fluid level is below the FULL line stamped inside the master cylinder housing body.
6. Add fluid, DOT 3 brake fluid, as needed. **DO NOT OVERFILL.**
7. Reinstall the reservoir filler cap and rubber gasket; tighten only enough to provide a leak proof seal.

### IMPORTANT

**Do not over tighten. This could damage the seal.**



**Figure 3-5: Master Cylinder**

## Electrical System

The electrical system includes the battery and four transistorized controllers. Also included in the electrical system are switches/hand controls, solenoid contractors, safety interlocks, power cables, fuses and electrical harness. The standard electrical system complies with UL-583 requirements for Type "E" Electrical Battery-Powered, Industrial Truck construction.

The Bendi AC is also available equipped with the necessary modification to meet the requirements of Type "EE" constructions. Refer to forklift data plate for forklift UL Type.

The following paragraphs give more detail about the various components that make up the electrical system

## Traction

Dual traction controllers are used, each having a maximum rating of 350 amps. Controllers provide full time dual rear wheel drive with steer position sensing to independently control the speed of each rear drive wheel during varying degrees of turn. Inside wheel reversing occurs at full turn, which also reduces the outside turning radius. Motor draws and operating temperatures are greatly reduced, while speed control, longer motor life, lower operating temperatures, increased motor torque and longer running times are greatly improved.

The full speed range from 0 to 100% is controlled through the controller with maximum efficiency. Starting on a ramp is also accomplished without rollback with positive and smooth acceleration control.

### Steering

The steering system shares oil with the main hydraulic system. A single pump that is controlled through the AC pump motor controller generates steering flow and pressure. Oil is diverted from the main control valve to the steering control unit based on demand from the operator. As the steering wheel is turned, the on-demand oil is sent to the steering actuator at the front of the forklift causing the forklift to turn.

### Check Steering:

1. Sit in the operator's seat and set the key switch to ON.
2. While applying the service brake, release the parking brake and set the direction control lever to forward or reverse. The power steering pump motor should start running.
3. If the motor does not start, first check that the parking brake is released.
4. While moving forward or backward slowly, verify that the truck turns left and right with relatively smooth, easy motion.
5. While moving, turn the steering wheel completely to the right until it stops.

6. While moving slowly, turn the steering wheel completely to the left (counterclockwise) while counting the number of full revolutions. The steering wheel must complete approximately seven to nine revolutions,  $\pm 1/2$  revolution, lock to lock.
7. Next, turn the steering wheel completely to the right (clockwise) while counting the number of revolutions. The steering wheel must complete approximately seven to nine revolutions,  $\pm 1/2$  revolution, lock to lock.
8. Set the directional switch to neutral, without touching the steering wheel, and check that the steering pump turns off.

### Accelerator Pedal

The accelerator pedal is located on the floor.

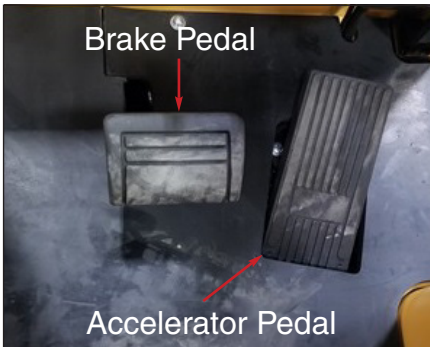
Pressing the pedal starts the forklift moving in the direction selected. The more the accelerator is pressed, the faster the forklift moves. Releasing the pedal brings the vehicle to a smooth stop.

Travel speed varies according to the weight of the load.

### Checking function:

1. With the key switch set to "ON",
2. Move the directional control switch, located on top of the lift control lever, forward and gradually push on the accelerator pedal.

- Truck should begin to move forward.



**Figure 3-6: Accelerator and Brake Pedals**

3. Let up on the accelerator pedal and the forklift should come to a controlled stop.
4. Move the directional control switch backwards and gradually press on the accelerator pedal.
  - Truck should move in reverse.
  - Backup alarm should sound when directional control switch is pulled back.
5. Return directional control switch to neutral.

If any problems are detected, remove the forklift from operation immediately until it is repaired.

## Steering Column

### Key Switch

The key switch is located to the right of the steering column beside the dash display.

- Insert the key and rotate clockwise to operate the truck.
- All load controls and the accelerator should be in "NEUTRAL" (i.e. not depressed) before starting.
- **DO NOT** depress the accelerator during starting.



**Figure 3-7: Key Switch**

## Steering Wheel and Tilt Clamp



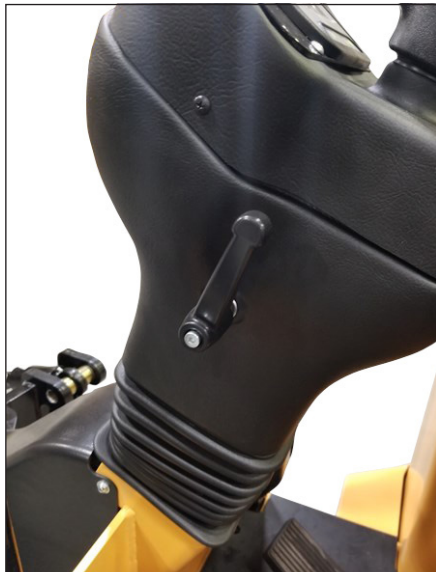
### CAUTION

Only adjusting the steering column when the forklift is stationary.

The steering wheel, is equipped with a steering knob, which should be held firmly with the left hand at all times while driving. The steering column tilt and height are adjustable:



1. Loosen the tilt clamp lever (counterclockwise).
2. Adjust the angle and height of the steering column.
3. Tighten the tilt lever.
4. Rock the column gently forward and back to ensure the clamp is tight.



**Figure 3-8: Steering Wheel Tilt Control**

### Checking function:

Before operating the truck adjust the steer column to a comfortable position and tighten the lever to ensure the steer column stays locked in place during operation.

## Dash

### Operator Switches

Three on/off rocker switches are installed on the lower part of the dash behind the steering wheel.

*See Figure 3-9.*

- **LEFT switch** - headlights.
- **CENTER switch** - factory or user supplied accessories.
- **RIGHT switch** - speed mode - toggles between fast and slow.
  - Slow mode used for training and in confined spaces.
  - Speeds can be adjusted by an authorized technician.

### Dash Display

The dash display directly behind the steering wheel. The following items are shown on the dash instrument.

*See Figure 3-9.*

- **BDI (Battery Discharge Indicator)** - The BDI shows the remaining battery capacity. "Battery Low Lift Lockout" will display in message window when the battery condition is too low to support mast function.



## NOTICE

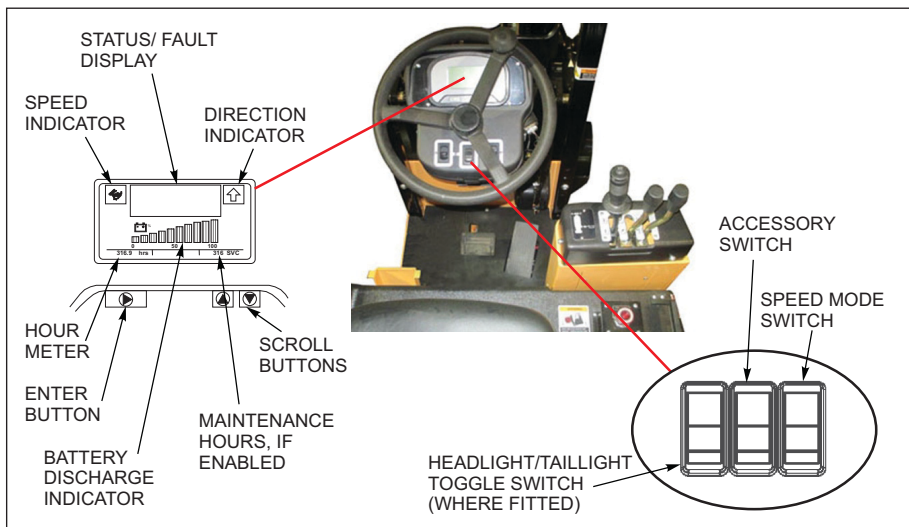
**The lift pump motor will shut down, thus disabling the lift function when 15% of the battery is remaining**

- **Hour Meter** - The hour meter displays the accumulated hours that the forklift has been used.
  - Hours accumulate when the forklift is on and operator is in the seat.
- **Status/Fault Display Window** - The status/fault display window shows fault messages from controllers and status of controllers if problems occur.
- **Direction Indicator** - The direction indicator displays the status of the directional control switch.

- **Speed Indicator** - The speed indicator displays the speed mode that the forklift is in.
- **Scroll and Enter Buttons** - The scroll and enter buttons are used to enter information into system through display.
  - These are used by an authorized technician only.
- **Maintenance Hours** - If enabled, the forklift hours that preventative maintenance is required is shown in this field.
  - This must be enabled and set by an authorized technician only.

### Daily Inspection:

Inspect the dash display for errors or faults and ensure that the display reads normal. Check the BDI and hour meter to ensure everything looks normal.



**Figure 3-9: Dash Panel**

# Tires and Wheels



## WARNING

- Treaded drive tires must be replaced when the tread depth is less than 0.0625" (1.6 mm) at the deepest point.
- It is recommended to replace worn tires in pairs.

The forklift is equipped with tires of a size and hardness that provide the necessary traction and still maintain a proper shape to minimize tipping. To maintain stability and maximum reliability, you must always replace tires with the type originally supplied.

## Inspection

The condition of the tires are to be checked along with the accessible lug nuts torqued at the beginning of each shift.

1. Inspect the tires for chunking (or chipping), embedded foreign material (wire, rocks, glass, metal, etc.), cuts, gouges, undercutting or uneven wear.
2. Remove any objects that will cause damage.
3. Remove any wire strapping or other material that is wrapped around the inside of the wheel. Make sure drive wheel nuts are tight. Tighten the lug nuts in a cross pattern to the correct torque value, 225 ft/lbs (300 Nm).

## NOTICE

Continued operation with damaged tires may result in failures of other components. This is considered abuse and is not covered under warranty.

## Chunking (Chipping) or Embedded Objects

Chunking is caused by repeatedly running over objects on a littered floor which can chip away or produce deep cuts to the rubber surface of the tire.

Embedded objects, such as glass, metal chips, or nails left in a tire, as well as forklift overloading cause the same effect.

Sharp, rapid turns at quick speeds, "jack-rabbit" starts and stops and other such bad driving habits can cause flat spots and similar damage.

1. Remove any embedded foreign material from the tire as soon as it is noticed. Also remove torn pieces of tread.
2. To avoid overloading, always center the payload on the truck to equalize the load on all tires. Do not carry the load on the end of the forks. Also avoid fast cornering which can cause an overload effect.
3. If tires are chunked bad enough to produce a bouncy ride, replace them immediately.

## **Undercutting and Uneven Wear**

Undercutting is caused by continuous overloads, sharp turns, operating on slopes, a faulty steer axle, transporting loads with a high center of gravity or transporting off-center loads.

Uneven tire wear is usually a result of mechanical defects, such as poorly adjusted brakes, misaligned wheels (misaligned steer axle) or faulty drive axle.

1. Undercutting causes the rubber to bulge out over the edge of the steel bank, cutting the rubber just above the base band.
2. Check that the tires remain centered on the wheel to prevent splitting of the base band and tread separation.
3. Correct such defects as soon as possible.

## **Flat-spotting**

Flat-spotting occurs when:

- The truck has been sitting idle for some time after heavy use and is usually caused by tires overheating.
- The truck has standing loads (e.g. loads left on the forks overnight).
- Locking the brakes while traveling in either direction on grades (slopes), with or without a load, causing excessive skidding.

Polyurethane tires are extremely susceptible to this type of abuse.

1. Avoid excessive heat. Where possible, avoid hot metal or operation for long periods in hot oven rooms. Excessive heat will break-down the tire structure.
2. Avoid standing loads. Solid tires will flat-spot when loads are left standing overnight. In extreme cases, flat spot develops and the tire bounces with every rotation.
3. If the tires are flat-spotted enough to produce a bouncy ride, replace them.
4. Do not indulge in stunt driving or horseplay.
5. Avoid excessive hard braking, especially on grades.

## **To Extend Tire Life**

A few simple measures can help increase tire life, reduce maintenance (downtime) and cost of operation.

1. Inspect tires regularly and remove embedded objects immediately.
2. Check that the tires remain centered on the wheel.
3. Keep runways clean and maintain floors in good repair, free from breaks, ruts, cracks and debris.
4. Avoid excessive heat, overloading and standing loads.
5. Regularly check axle alignment and steering.
6. Avoid sharp turns and quick starts and stops.

7. Avoid oil, grease, gasoline and acid. Wipe these compounds off as soon as possible. Do not allow hydraulic oil to drip onto the tires.

## Emergency Stop

The emergency interrupt is located to the right of the operators seat.

*See Figure 3-1.*

Activate the emergency interrupt by pushing the red button down to disconnect all power from the forklift. To reset, pull button up.

### Use this button:

- In case of fire, smoke or overheating.
- In case an accident occurs.
- In case of a short circuit or other electrical malfunction. (i.e. Pump motor is on continuously.)

## Directional Control Switch

The directional control switch is located on top of the lift lever.

*See Figure 3-10.*

1. Rock the directional switch forward to put the truck in forward operation.
2. Press on the accelerator pedal to check.
3. Repeat for the reverse direction by rocking the direction switch backwards.

The static return to “OFF” (SRO) is a built in safety feature to prevent accidental truck movement. To check the SRO:

1. Get in the operator’s seat, drive the truck forward and then come to a stop. Leave the directional control switch in the forward position and turn the key switch to the “OFF” position.
2. Turn key switch back to the “ON” position and press on the accelerator pedal. The truck should not move.
3. Cycle the directional switch to neutral and then back to forward. The truck should now operate correctly.
4. Next, drive the truck forward and come to a stop leaving the directional control switch in the forward position.
5. Lift yourself out of the seat for three seconds. Sit back down and then press on the accelerator pedal. The truck should not move without cycling the directional switch back through neutral.

## Horn

The horn button is located on the front side of the lift lever. Make certain the horn sounds when the button is pushed.



**Figure 3-10: Horn Button**

## Hydraulic System

The system uses a single pump to generate pressure and flow to meet the needs of both the steering system and the mast system. Only the amount of oil needed by the steering system is provided to the steering system. The amount of oil diverted to the steering system is based on operator input, allowing the excess oil to return to tank at a lower pressure, reducing the demands on the battery.

The hydraulic pump motor is speed controlled to provide adequate steering response and is enabled through the selection of the forklift direction. Additional pump flow is provided linearly with the actuation of the lift function. Actuation of both the tilt and side shift functions provide step increases in pump flow to meet the demands of the function while ensuring adequate flow to the steering system.

System cooling uses convection and conduction of heat from the reservoir, hydraulic tubing and cylinders to maintain a safe operating temperature below 175°F (79.4°C).

A steel mesh suction filter, within the hydraulic reservoir, plus an easily accessible in-line filter (10 micron rating) with a contamination level of ISO 2943 or better, is used for oil filtration at the return. A high pressure unit filters all oil exiting the pump.

## Hydraulic Cylinders and Valves

Check these components for damage, drift and leakage. Refer to Landoll Company, LLC and other vendor service information for specifications.

# Hydraulic Hoses, Tubing and Fittings

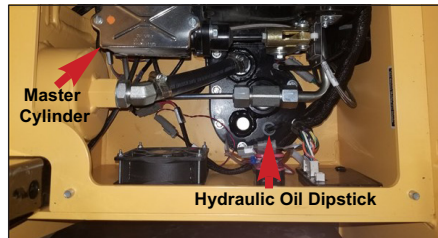
Check underneath the forklift for evidence of fluid leaks. Look for hydraulic hose cracks, hardening and other signs of damage or wear. Look for leaks, especially at couplings and fittings. Make sure clamps and fittings are tight. If damage, wear or leaks are found, have a qualified technician repair all discrepancies immediately and check the hydraulic fluid level. DO NOT operate the forklift until service is complete.



## DANGER

- **Pinhole leaks in hydraulic lines can be hard to detect.**
- **Hydraulic pressure can be under high pressure that can puncture skin and cause serious injury.**
- **Use a piece of paper or a rag to check for hydraulic leaks.**
- **Refer to other safety warnings in *“Hydraulic System”* on page 2-12.**

# Check Hydraulic Oil



**Figure 3-11: Reservoir Location**

1. Tilt the mast back and lower it completely.
2. Remove the left floor plate.
3. Clean the area around the dipstick, then pull out the dipstick out and wipe clean. Reinsert and then remove the dipstick again to check the oil level.
  - If the oil level is at the FULL line or between the FULL and ADD lines, the level is correct and no oil is needed.
  - If the oil is at or below the ADD line, You will need to add oil to bring it up to the FULL line.

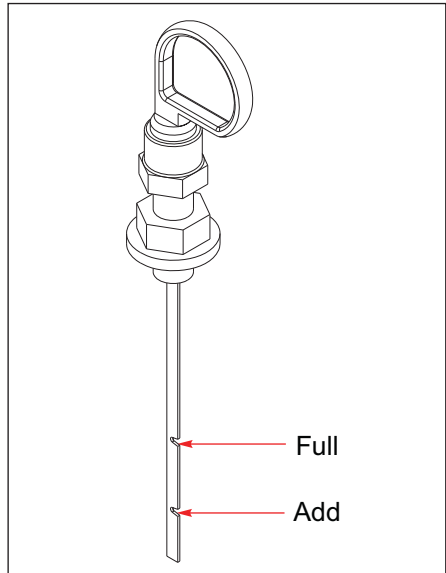
**CAUTION**

- Do not allow hydraulic fluid level to drop significantly or allow the reservoir to run dry. This will introduce air into the system and cause damage to hydraulic system components.
- Prevent dirt and other foreign matter from entering the hydraulic system; clean filler cap before checking oil level.

**IMPORTANT**

The oil level indicated on the dipstick is most accurate when the oil is at operation temperature; 130-200 degrees F (53-93 degrees C).

- Add recommended oil if the level is low. See *[“Lubrication Specifications” on page 1-7.](#)*
  - **Do not overfill.** Having the level above the FULL line does not allow enough area for expansion when the oil heats up during normal operation.
4. If the fluid appears very dirty or dark in color, check the trucks maintenance log for last fluid and filter change; change accordingly.
  5. Install dipstick, making sure it is seated.



**Figure 3-12: Oil Level on Dipstick**

## Mast Controls

For information about mast operation see *[“Mast Operation” on page 3-21.](#)*

Mast positioning is achieved by operating the hydraulic control valve via the three hydraulic control levers. Hydraulic pressure is provided by a vane pump driven by a single AC electric motor.

The pump operates continuously, ensuring enough oil for the steer circuit. Operation of lift, tilt and side shift cause an increase in pump speed of operation is somewhat slower.

- **Lift, Tilt and Shift** - Lift, tilt and shift movements of the mast and lift carriage are accomplished using the three levers (joysticks) located on the operator's side panel. Each lever provides independent movement and each is marked with a graphic icon to represent the function it controls. *See Figure 3-18*

A 4th function hydraulic valve is available for an approved Class II optional attachment.

## Mast Assemblies

Various mast assembly configurations (duplex, triplex or quadplex) can be installed on the forklift to provide both collapsed and extended heights suitable for most customer requirements.

The lifting capacity of the mast also varies depending on the forklift and its application. Load capacities are determined at 24" (609.6mm) centers, centered on the mast and include all attachments on the carriage.

Check the data plate in the operator's compartment for the maximum lifting capabilities based on the particular forklift and mast combination. *See Figure 3-2.*

The forklifts are counterweighted to compensate for all positions of the maximum allowed load.

Masts are engineered to distribute thrust loads evenly between the rollers and rails. Masts move as a unit, providing maximum strength and endurance for the rated load and consists of up to three pairs of channels or rails (steel beams) rolling one within the other on steel rollers.

The outer rails provide guidance and support for the middle rails, which in turn guide and support the inner rails. The forklift forks are mounted on a carriage assembly that runs on rollers within the inner rails. *See Figure 3-13.*

A primary cylinder is supported by the inner rails and hydraulically controlled. As the primary cylinder rod extends, a sheave and chain assembly lift the fork/carriage upward at twice the distance covered by the cylinder rod.

This first stage of carriage lift is called free lift. It is the distance of lift available without increasing the overall height of the mast assembly. *See Figure 3-14.*

A secondary cylinder, attached to the outer rails, lifts the middle and inner rails progressively via chains, rollers and sheaves. The inner rails are raised at twice the rate of extension of the secondary cylinder piston.

This upward lift continues until the secondary cylinders are fully extended. *See Figure 3-15.*

The hydraulic fluid used to lift the primary cylinder is applied sequentially to the secondary cylinder.

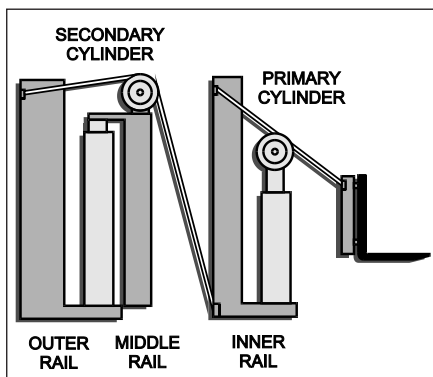


When the primary cylinder reaches full extension, the secondary cylinder begins to extend.

The differences in weights being supported by the cylinders, along with the differences in cylinder diameters, ensure that the primary cylinder will be fully extended before the secondary cylinder can begin to move.

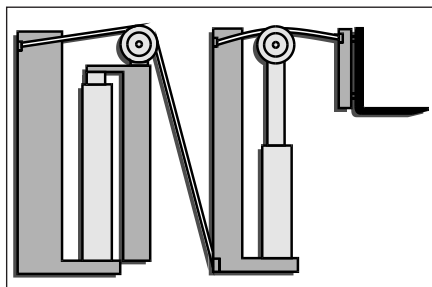
Consequently, when the mast is raised, it moves through two phases:

- **Free lift** - in which only the carriage assembly moves, up to the maximum height allowed by the inner rails. *See Figure 3-14.*
- **Rail extension** - in which both the middle and inner rails move, carrying the carriage upward. *See Figure 3-15.*

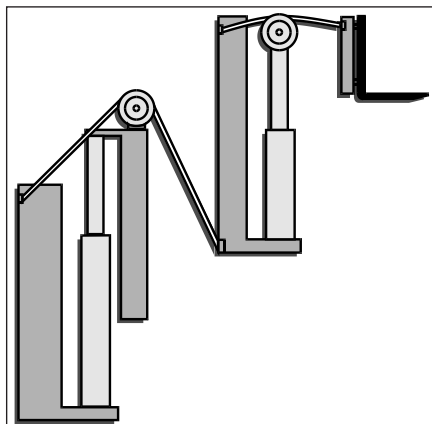


**Figure 3-13: Mast in Collapsed Position**

Downward movement of the mast is accomplished by releasing the hydraulic fluid from the cylinders back into the reservoir.



**Figure 3-14: Mast in Free Lift Position**



**Figure 3-15: Mast Fully Extended**

The weight of the rails and carriage provides enough pressure to force the fluid from the cylinders. When the secondary cylinder piston is fully contracted, the primary cylinder begins to collapse, forcing its fluid back to the reservoir.

The mast is supported by trunnions, which allow it to tilt fore and aft. The amount of tilt is controlled by two short hydraulic cylinders mounted between the bottom of the mast and the pivot arm.

# VEHICLE FAMILIARITY

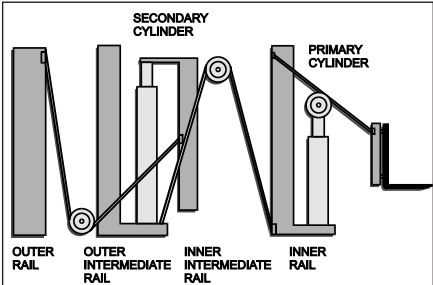
A mast indicator gauge (pointer) is located on both sides of the mast to indicate when the carriage/forks are perfectly level with the floor.

*See Figure 3-20*

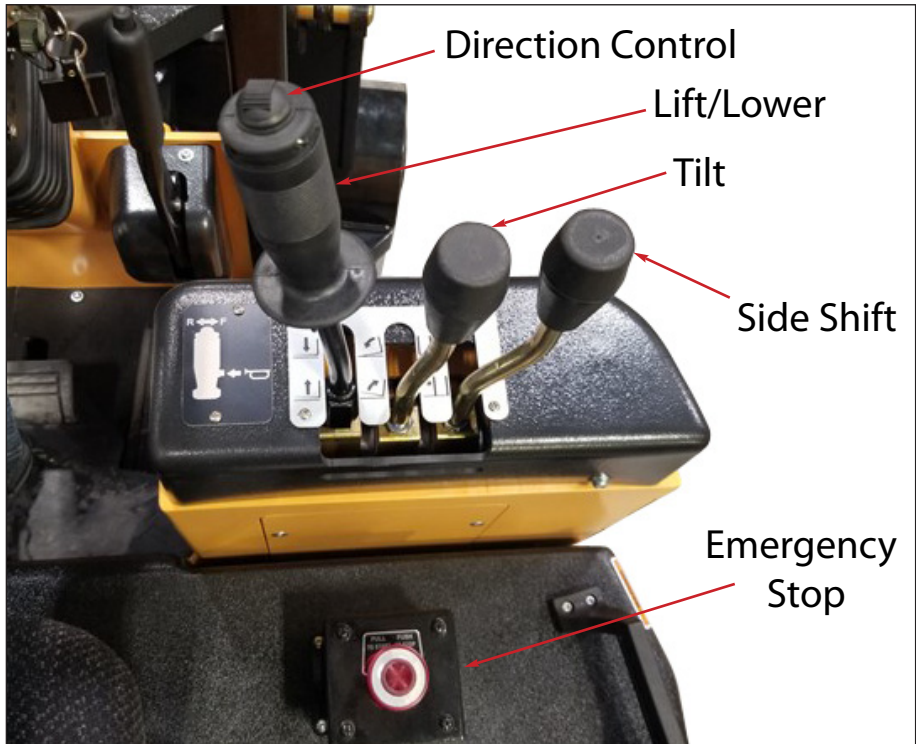
As an option, forklifts may be equipped with quadplex masts which utilize four sets of rails, referred to as Outer, Outer Intermediate, Middle, and Inner rails. *See Figure 3-15.*

The primary cylinder and carriage operate the same as a triplex (three-rail) mast. When the secondary cylinders extend, they lift the middle rails.

Through an intricate system of chains and sheaves, the rising middle rails pull up the outer intermediate rails at half the middle rail speed, and push up the inner rails at twice the middle rail speed.



**Figure 3-16: Quadplex Mast in Collapsed Position**

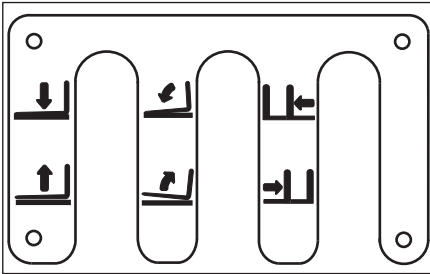


**Figure 3-17: Operator Control Levers**

# Mast Operation

Each mast operation is controlled by individual control levers - LIFT, TILT and SHIFT (B30, B40, and B40VNA). The B40HL, B50HL, B40DR & B50DR has lift and side shift levers. Practice using each lever, as explained below, until comfortable with the operation of the mast.

Practice each function, as explained below, until comfortable with the operation of the mast.



**Figure 3-18: Lift, Tilt & Shift Placard**

## Lift Lever

The first lever (closest to the operator).

### Operation

1. Slowly pull the LIFT lever back to raise the mast. Lift the mast only one or two feet for practice.
2. Push the LIFT lever forward to lower the mast forks.

- The hydraulic motor should start running as soon as the control is moved out of the neutral position and stop as soon as the control returns to the neutral position.
3. Check that the primary mast cylinder extends fully and that the lift carriage rises to the top of the inner rails before the secondary cylinders begin to move.
  4. When the lift carriage reaches the top of the inner rails the secondary cylinders and middle rails begin lifting. Check to make sure the rails travel smoothly and that there is no chatter or visible binding.



### WARNING

**Make sure there is sufficient room above to raise the mast safely and keep all people clear.**

5. With the mast fully extended, begin lowering the mast by pushing the lever forward.
  - The motor should not run at all when lowering the mast.
  - The secondary cylinders and middle rails fully lower first, followed by the primary cylinder and the lift carriage. Check for smooth travel with no chattering or visible binding.
  - If there is noticeable chatter or binding, immediately notify a supervisor or service personnel.

**DO NOT attempt to operate the forklift until the problem is corrected.**

### Tilt Lever

The second (middle) is the tilt lever.

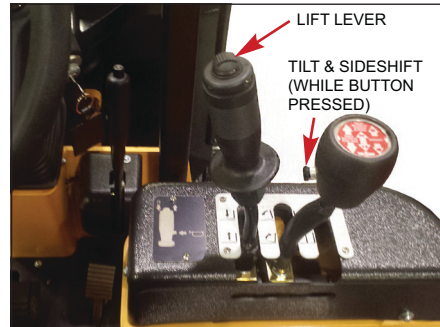
- A visual indicator is provided so the number of degrees the mast is tilted can be easily determined.

#### Operation

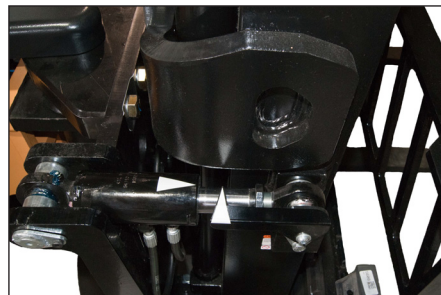
1. Pull the TILT lever back to tilt the mast back. Rear tilt is 3° maximum. (B30, B40, B40VNA and B55)
2. Push the TILT lever forward to move the mast forward, or to return the forks to their horizontal position as indicated by the tilt level indicator mounted on the right and left sides of the mast.
3. To activate tilt on the B40HL, B50HL, B40DR, and B50DR push the button on the front of the side shift lever.
4. Practice tilting the mast slowly by “feathering” in the desired direction. Feathering is the process of moving the lever very slowly in the desired direction to accurately move the load into position.

### Checking operation:

Move the tilt mechanism forward and back, tilting the mast to both extents, watching for racking. Racking occurs when the tilt cylinder strokes are uneven (One cylinder bottoms before the other). The mast rails then twist, eventually causing them to crack and separate.



**Figure 3-19: Lift, Tilt and Sideshift B40HL, B50HL, B40DR & B50DR Only**



**Figure 3-20: Tilt Level Indicator**

1. To check for racking find a reasonably level floor area to park the truck on and center the mast on the truck.
2. Raise the mast about 36" (914 mm) from the floor and tilt the mast full forward and rearward several times watching for twisting at the ends of the stroke.

3. If there is any twisting or racking, both tilt cylinder rods must be readjusted. Remove the truck from operation immediately and repair.



### CAUTION

**If the above scenario is left unattended serious damage to the mast assembly or the tilt cylinders can occur causing extensive repair/downtime.**



### WARNING

- The mast should only be tilted at the floor level or at the load level in the rack when depositing or picking up a load.
- At any other time, forward tilting could cause the forklift to tip forward or cause the load to slide off the forks causing serious injury to personnel in the area.

## Operation

1. Make sure the area to the right of the forklift is clear.
2. Push the SHIFT lever forward to shift the mast to the right.
3. Pull the SHIFT lever back to shift the mast to the left.

When thoroughly familiar with all of the control movements of the mast levers, practice depositing and retrieving a load under the supervision of an experienced instructor or operator.



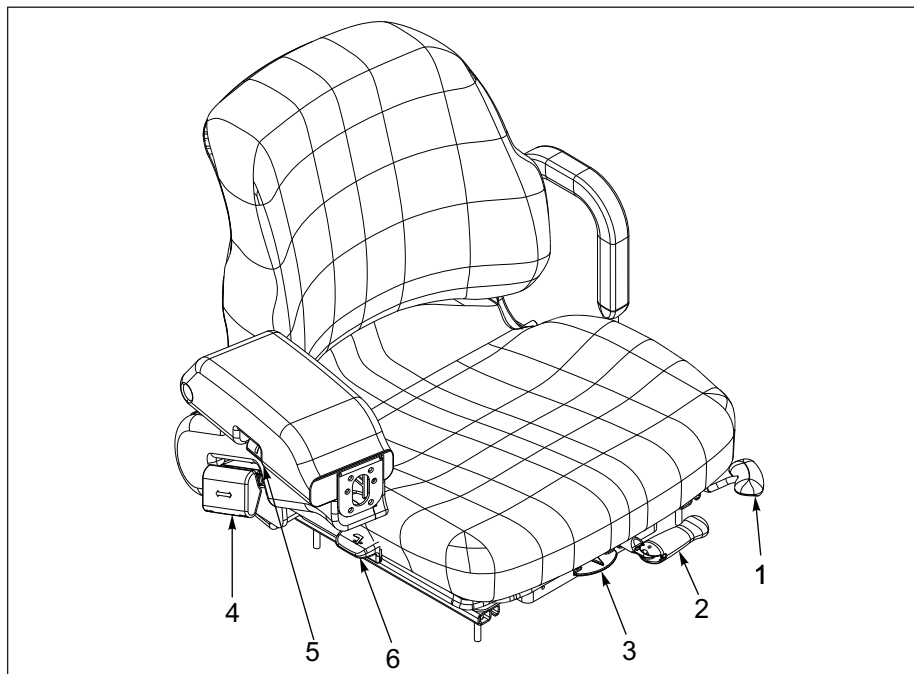
### WARNING

- Avoid jerky movements of the mast, especially when the load is raised. This could tip the forklift or allow the load to slip from the forks, causing serious injury and/or damage.

## Side Shift Lever

The third lever is the side shift lever (B30, B40, and B40VNA).

- Side shift is a standard function on Bendi AC forklifts.
- On the B40HL, side shift is performed by the right control lever.



**Figure 3-21: Seat Adjustments**

## Seat

### Seat Adjustments

There are six levers on the seat, three in the front and three on the right side (armrest). [See Figure 3-21.](#)

1. Pull up on lever to move the seat forward or backward to accommodate different operators height.
2. Turn the handle to adjust the firmness of the seat.



### CAUTION

- If the seat is not locked, it could slide forward in a sudden stop or crash, which could cause injury to the operator.
- Adjust the operator's seat only when the truck is NOT moving.

**NOTICE**

- **Do not force handle beyond its normal stopping point.**
- **Over-tightening the adjustment past its maximum range of travel will cause damage to the seat and will be considered operator abuse and not covered under warranty.**

3. Pull up on lever to swivel the seat. It can be moved 5° to the left position and 5° or 10° to the right position.
  - A gauge showing the adjusted level is located to the right of the adjustment hand wheel.
4. Pull up on lever to adjust the position of the armrest to best accommodate the operator.
5. Pull up on lever to lift the armrest up, toward the back of the forklift.
6. Pull up on lever to adjust the position of the back of the seat.

This procedure checks the physical mechanics (actuation) of the operator's seat switch only.

1. Start the forklift and release the parking brake.
2. Turn key switch on.
3. Set the direction control lever to FORWARD and slowly apply acceleration. As the forklift begins to slowly move raise off of the seat just enough to disengage the switch located under the seat cushion.
  - There is a few second delay programmed into the switch to avoid inadvertent shutdown.
4. **The forklift will not come to an immediate STOP.** You should lose forward direction (or reverse). The forklift may coast unless the brakes are applied.
5. If the forklift fails to come to a stop, take the forklift out of operation for repairs immediately.

## Seat Switch

The seat switch is internal to the seat located between the cushion and the bottom plate. *See Figure 3-22*

The seat switch tells the hydraulic controller when the operator is present in the seat. Traction operations will shut down if the seat switch opens.

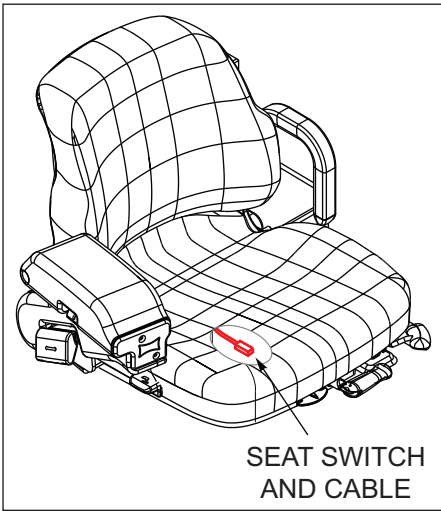


Figure 3-22: Seat Switch

## Seat Belt

The operator's seat belt must always be worn when driving this forklift.



### WARNING

**A twisted belt can potentially cause serious injury. In a crash or a tip-over, the full width of the belt is required to absorb the impact forces.**

1. Sit up straight in the operator's seat.
2. Pull the belt across lap.
  - **DO NOT** let the belt twist.
  - The belt may lock if pulled across too quickly or stopped too soon. If this happens, let the belt go back slightly to unlock it. Then pull the belt across more slowly.

3. Push the latch plate into the buckle until it clicks. Pull up on the latch plate to make sure it is secure.
4. The lap part of the belt must be worn low and snug on the hips, just touching the thighs.

## NOTICE

**Make sure the release button on the buckle is set so the seat belt can be unbuckled in an emergency.**

## Forks

## Rated Capacity and Load Center

The rated capacity of each fork must be at least half of the rated capacity stated on the data plate. The load center of each fork must match the load center stated on the data plate. If the values do not match, replace the fork with one that has the correct characteristics.



## Fork Inspection



### WARNING

- **Never operate a forklift if you suspect the forks are damaged.**
- **Report fork damage to your supervisor immediately.**
- **NEVER use forks repaired by welding.**
- **Always replace both forks.**
- **Switching forks from one truck to another can be dangerous if the capacity of the forks is not known.**
- **Failure to follow this recommendation can cause serious injury or death.**

It is recommended to use only Landoll Company, LLC replacement parts.

1. Check the top clip retaining pin and fork heel for signs of cracks and wear.
2. Check the positioning lock on each fork to make sure it functions properly. If any problems are noted, repair or replace the fork.



### DANGER

**If you find any defect in the forks or mounting components, take the forklift out of operation until the fork is repaired or replaced. Failure to follow this guideline can cause the load to fall resulting in serious injury or death.**

## Fork Marking

If the fork marking is not clearly legible, it should be remarked by the fork manufacturer in accordance with paragraph 7.25.2 (ASME B56.1-2000).

## Available Options

### EE Series (Electrical Enclosure)

EE series or Electrical Enclosure forklifts are used in hazardous environments requiring protection from sparks, commonly produced by various electrical motors, contactors, switching devices, relays, etc. EE forklifts enclose all electrical components using specially designed covers and/or insulated metallic-seal enclosures to insulate sparks from the operating environment.

### Cold Storage (Freezer Package)

The cold storage package includes treatment of electrical connections to inhibit corrosion. Harness connections are also sealed against moisture.

### Lights and Alarms

Various light and alarm option packages are available as follows:

- **Audible backup alarm** - Sounds (beeps or talking) when the forklift is placed in reverse to alert all personnel in the area.
- **Rear LED strobe light** - Includes 180° blackout for operator protection and is available with red, amber or blue lens.

- **Headlights** - Two LED lights with guards can be mounted on the mast or the overhead guard on the front, rear or both.
- **Stop/tail lights** - Two LED light sets can be mounted to the back of the forklift or the overhead guard.
- **Strobe light** - Flashing backup strobe.

### Inspecting

1. Turn the lights on using the button on the dash display.
2. Check the integrity and operation of all the lights.

# Chapter 4

## Battery



### DANGER

- Prior to inspecting or servicing the battery, **ALL** safety precautions **MUST** be read and understood.
- Wear appropriate personal protection equipment (PPE).
- Refer to **Battery Safety** on page 2-10.

Packaged with every battery are specific instructions for battery care and a Material Safety Data Sheet (MSDS). Read these documents thoroughly before performing any service to the battery.

### NOTICE

Proper battery maintenance is the responsibility of the end user or service provider. Improper battery maintenance is considered abuse and may affect the warranty status of the forklift.

The information provided in this manual is only intended as a guide for battery care. For further information on the safe operation of batteries, refer to the applicable battery manufacturer's manual.

A 48 volt lead-acid battery provides drive power, as well as power for the hydraulic system, and power for lights and other auxiliary equipment.

For maintenance, the operator's seat compartments cover, a hinged side cover, overhead guard cutout and slide strips allow easy battery removal from the right side. As an option, rollers can be provided for additional battery maneuverability.

The battery is very heavy and if restraints are not replaced after maintenance the battery could slide out of the forklift causing electrical shorts and/or spilling of acid and could cause the forklift to tip.



### CAUTION

- Make sure you don't pinch any body parts when you close and latch the battery cover.
- When you plug in the charger, make sure you connect it to the cable that goes to the battery **NOT** the truck.
- Only add distilled water to the battery cells. Overfilling battery cells is dangerous and any spillage must be neutralized and cleaned up immediately.
- Never remove the charging connectors by pulling on the lead. This could result in damage to the insulation inside the connector.

## BATTERY

- Never use or charge a battery that has a damaged connector and/or defective insulation. Repair or replace the connector.

### Battery Inspection

When inspecting the battery, the following should be checked:

1. Battery is clean and in good condition, with no corrosion or missing vent caps.
2. Battery charge.
  - For information on charging the battery see ***“Charging the Battery”*** on page 4-5.
3. Battery fluid level.

### Check Fluid Level

Check the level in all battery cells. If the level is below the top of the battery plates, add distilled water to bring the level above the plates.

1. Remove each vent cap and check electrolyte levels. Ambient temperature should be +77°F (+25°C) to get a proper reading.
  - In cold weather the battery may look dry.
2. DO NOT add water until an accurate charge level is obtained; cold weather can affect the level.
  - **If water must be added, use only distilled water.**

- **Do not overfill the battery.** There must be enough room to provide space for expansion as the battery heats up during normal operation
3. Replace the vent caps. They must be secured in place during charging.



### DANGER

- **Neutralize acid spills immediately with Bicarbonate of Soda (common baking soda).**
- **If acid contacts the skin or eyes, wash with water immediately and seek medical attention at once.**
- **DO NOT smoke, use open flame, create arcs or sparks near the battery.**
- **Consult the label on your battery for information on cell-type, ampere-hour capacity, charge rate and normal full-charge voltage. At the end of the charge, DOT NOT allow a charge current to exceed 1.5 amps per 100 amp-hours capacity.**

# Checking Specific Gravity

## Using a Hydrometer

As the battery discharges the specific gravity of the electrolyte lowers. A hydrometer allows you to check the specific gravity of the cells, thus the charge state of the battery.

To use a hydrometer:

1. Remove a cap from one or two of the cells. Gently squeeze (compress) the bulb of the hydrometer.
2. Insert the tube of the hydrometer into the cell electrolyte.
3. Slowly release the bulb to allow fluid to draw into the hydrometer.
  - Enough fluid must enter the hydrometer to allow the float to move freely.
  - The specific gravity of the electrolyte is read off the scale of the float where it emerges from the fluid.

### NOTE

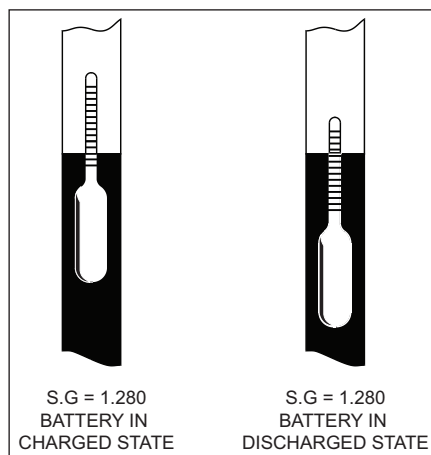
*It is a good practice to select a different cell each time a measurement is taken and to test more than one cell.*

4. If the specific gravity of the battery is less than the manufactures specification at 80% discharge, you must charge the battery.

### NOTE

*When returning the electrolyte to the battery, ensure that the fluid is returned to the cell from which it was taken.*

*Be careful not to splash the electrolyte.*



**Figure 4-1: Hydrometer**

Temp °F	Correction	Temp	Correction	Temp °F	Correction
39-41	-0.012	82-84	+0.002	25-127	+0.016
42-44	-0.011	85-87	+0.003	128-130	+0.017
45-47	-0.010	88-91	+0.004	131-133	+0.018
48-50	-0.009	92-94	+0.005	134-136	+0.019
51-53	-0.008	95-97	+0.006	137-139	+0.020
54-56	-0.007	98-100	+0.007	140-142	+0.021
57-60	-0.006	101-103	+0.008	143-145	+0.022
61-63	-0.005	104-106	+0.009	146-148	+0.023
64-66	-0.004	107-109	+0.010	149-151	+0.024
67-69	-0.003	110-112	+0.011	152-154	+0.025
70-72	-0.002	113-115	+0.012	155-157	+0.026
73-75	-0.001	116-118	+0.013	158-160	+0.027
76-78	0	119-121	+0.014		
79-81	+0.001	122-124	+0.015		

**Figure 4-2: Specific Gravity Corrections for Electrolyte**

## Removing the Battery

Replacing the battery requires a lift and support apparatus capable of supporting the weight of the battery. Check the data plate for battery information.

The battery is used as part of the forklift's counterweight. A different size or weight battery could cause the forklift to become unstable and tip. Use a battery that meets the weight and size specifications shown on the data plate. ***"Data Plate" on page 3-2***

**To remove the battery from the forklift:**

1. Return the forklift to the designated charging area.

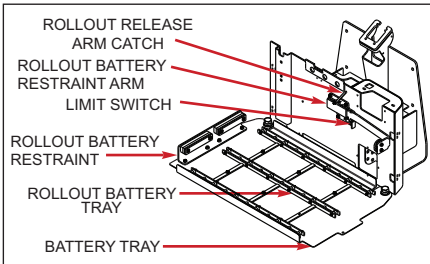
2. Set the key switch to "OFF" and remove the key.
3. Place blocks in front of and behind all wheels.
4. Disconnect the battery cable and lay the battery cable across the battery.
5. Remove battery restraint and lift the battery out of the battery compartment using a hoist that is rated for more than the weight of the battery.

If the battery has been shipped with electrolyte installed, check the specific gravity of the electrolyte using a hydrometer to determine if a charge is needed. If the reading is between 1.280 and 1.290, the battery is fully charged. If the reading is near 1.150, the battery must be charged as described in ***"Charging the Battery" on page 4-5***.

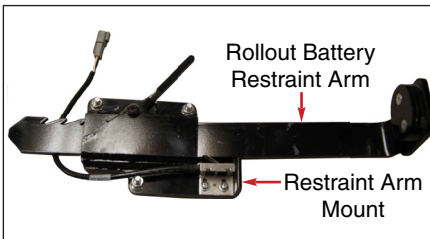
## Battery Roll-out and Restraint System

The Bendi AC forklift may have an optional battery roll-out tray.

The battery restraint arm must be in place and securely locked when the battery is installed. A safety switch will not allow the forklift to move unless the restraint is in place.



**Figure 4-3: Battery roll-out Tray**



**Figure 4-4: Battery Restraint Arm**

## Roll-out Battery Removal

1. Remove the safety restraint arm.
2. Position battery roll-out stand next to the forklift and align the stand with the path of the battery.
3. Roll the battery onto the stand.

## Roll-out Battery Installation

1. Check to be sure the key is "OFF".
2. If using a roll-out stand, position the battery stand next to the forklift. Align stand with battery compartment. Battery roller stand should be at the same height as the battery compartment.
3. Push battery into the forklift's battery compartment or lower if using a hoist.
4. Install the battery restraint, or the forklift will not operate.
5. Connect the battery.

## Charging the Battery

- Ordinarily, the charge should take about 3 to 5 hours to complete.
- Charge the battery using a constant current charger set to 5% of the six-hour battery capacity. For example, 50 amps for a 1,000 AH (ampere-hour) battery.
- Amp-hour information can be found on the data plate.



**Figure 4-5: Battery Connection**

**DO NOT** charge the battery at a finish current which exceeds the rating on the battery nameplate. Consult the label on your battery for information on cell-type, ampere-hour capacity, charge rate and normal full charge voltage. At the end of the charge, **DO NOT** allow a charge current to exceed 1.5 amp per 100 amp-hours capacity.

## Charging Procedure

1. Park the truck in the charging bay and remove the key.
2. Unlatch and raise the battery cover (seat base).
3. Make sure top of battery is clean and dry.
4. Pull the connector attached to the battery leads from the connector attached to the truck.
5. Check the charger cable and plug for frayed insulation and broken connectors.
6. Connect the charger cable to the battery cable.
7. Follow charger manufacturer's instructions to charge battery.
8. Disconnect the charger cable and reconnect the connector attached to the battery lead to the connector attached to the forklift.
9. Check the electrolyte levels and top off with distilled water as necessary.
10. Lower the seat base and secure with pins.

*For more information refer to  
**"Battery Safety" on page 2-10***



# Chapter 5

## Operating

### Overview



#### DANGER

- All operators must be competent to operate a powered industrial forklift safely, as demonstrated by successful completion of a relevant training course in compliance with all applicable state and federal regulations.
- Operating a powered industrial forklift without the proper training can cause serious injury or death.

This section discusses all concepts that must be thoroughly understood to operate the forklift safely.

- **Operating Instructions – Basic procedures** - Basic procedures such as getting on and off the forklift, driving position, starting and traveling, turning, stopping and parking are discussed.
- **Operating Instructions – Handling a load** - Describes the procedures necessary to load and unload the forklift, traveling with a load, what to do in case of a tip over as well as going up and down an incline.



#### DANGER

Read the Operator's Manual and all forklift decals before using the forklift. Failure to do so can cause serious injury or death.

- **Understanding stability** - Identifies the stability triangle and how to use it to help prevent the Bendi AC forklift from tipping over.
- **Knowing the rated capacity** - Understanding the rated capacity and its relationship to lift the load, load center and use of attachments is discussed.
- **Understanding workplace conditions** - An awareness of potential workplace hazards is essential to avoiding accidents. Changing workplace conditions such as pedestrian traffic and potential hazards such as potholes, overhead obstructions and areas with low visibility should be considered along with proficiency in correctly loading and unloading items transported using the forklift. Always adjust and use mirrors and lights to improve visibility. Clean, adjust and check functionality daily.

**Working in Hazardous Environments** - Examine the unique hazards associated with working in potentially explosive and flammable areas and how to handle the related chemical hazards to ensure maximum safety.

# Principles of Forklift Operation

The leading cause of accidents involving forklifts are due to the lack of understanding of how the forklift operates, especially when it comes to stability.

If you don't understand the concepts of stability you may tip the forklift over, which can cause serious injury or death.



## DANGER

- **According to legislation, employers must make training available to ensure that operators are competent to safely operate the type of forklift that is to be used in the workplace.**
- **Failure to receive proper operator training can cause serious injury or death.**

# Basic Operating Procedures



## DANGER

- **Review and understand all safety precautions and procedures outlined in Chapter 2.**
- **Check all systems before operating this vehicle.**
- **Report unsafe conditions, and correct them before operating the vehicle.**
- **DO NOT operate the vehicle unless trained and authorized to do so.**



## WARNING

- **The guidelines here are to give additional information relating to this specific forklift. This information is additional to that given in structured operator training.**
  - **IT SHOULD NEVER BE USED INSTEAD OF OPERATOR TRAINING.**
- Before you operate any forklift, get used to the controls and indicators. Practice going forward, backward, turning, stopping and parking without a load on the forklift.
  - After you become familiar with the forklift's operation, learn how to load and unload the forklift.

- As the forklift operator, you are responsible for observing all speed restrictions and safely traveling in accordance with aisle and work area conditions.
- You are responsible for observing all instructions and safety regulations during your daily work routine related to the use of this forklift.
- It is your responsibility to thoroughly read and understand this Operator's Manual.
- Under normal driving conditions, speed must be chosen according to the situation, such as surface conditions, visibility, people working in the area, moving and fixed objects in the area, cross aisles, etc. Where visibility is restricted, always travel at very slow speed and ask for a helper to guide you through the area.

## Getting On and Off the Forklift

- Always maintain a three-point contact when getting on and off the forklift.
- Use the steps and hand holds provided for this purpose.

## Driving Position



### DANGER

- **Only Operate the vehicle from the operator's seat with the seat belt fastened.**
- **DO NOT place any part of your body outside the vehicle.**
- **DO NOT carry passengers.**
- **Failure to follow these guidelines can result in serious injury or death.**



### DANGER

- **Remain in your seat with the seatbelt fastened while the forklift is moving. Your seatbelt will help you remain inside of the forklift should it tip over.**
- **NEVER jump from the forklift if it begins to tip. The forklift may tip on you causing serious injury or death.**

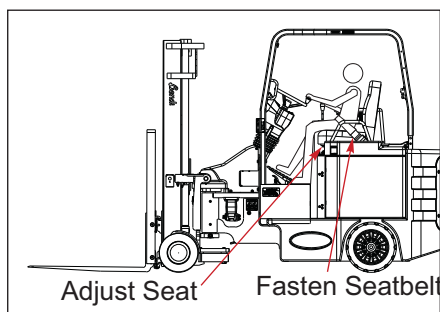
## Proper Seating Position and Travel Procedure

1. Adjust the operator's seat for comfortable operation of the forklift controls. You must be correctly seated with all body parts inside the compartment.
2. Fasten your seat belt.
3. Sit in the operator's seat and face in the forward direction.

## OPERATING

- Failure to follow this procedure will result in traction not being enabled.
4. Set the direction control switch to "NEUTRAL".
  5. Turn the key switch to the "ON/RUN" position.
  6. Raise the forks off the ground and tilt the mast back. According to ANSI B56.1, travel with the forks as low to the ground as possible.

**This is the recommended traveling position.**



**Figure 5-1: Proper Seating Position**

### NOTICE

Driving with the mast in traveling position improves operator visibility and improves the stability of the forklift by reducing the possibility of personal injury or damage to the load if it were to slip from the forks.

7. Hold the steering wheel firmly with your left hand.
8. Set the direction of travel.

9. Gently press the accelerator pedal as required to achieve a safe operating speed.



### WARNING

**Look in the direction of travel before beginning to drive the forklift. Failure to look in the direction of traveling can cause serious injury or death.**

## Turning and Intersections



### DANGER

- A lateral tip-over can occur if your forklift is improperly operated.
- Slow down before turning!
- Failure to slow down can cause serious injury or death.



### CAUTION

- **DO NOT** turn the steering wheel to its full rotation and hold it there for long periods of time. This unnecessary pressure build up applies excessive pressure to the steering components, cause excessive noise, and may result in a blown pump motor fuse.

## When you reach an intersection:

- **Slow down!** Even if the forklift is not carrying a load it can tip-over if you turn at a high rate of speed.
- **Sound the horn** as you reach the intersection to warn pedestrians and other equipment operators that you are approaching the intersection.
- Always follow the rules of the road and yield to other equipment operators and pedestrians as required.

## Stopping



### DANGER

- **When you stop, stay inside the operator's compartment until the forklift comes to a complete stop.**
- **DO NOT** apply brakes abruptly with the load raised or tilted forward; this could cause the load to dislodge from the forks.



### CAUTION

Always use your left foot for braking.  
**DO NOT** ride the brakes.

To slow down, release the accelerator pedal. The forklift will automatically slow to a stop. The Bendi AC Series 6 forklift will also "brake by plugging" if you change direction with the direction control switch. The forklift will come to a smooth stop and then reverse direction. This process is automatic, **DO NOT** press the brake pedal.

For an emergency stop, release the accelerator and press hard on the foot brake pedal with your right foot.

## Stopping Distance

Stopping distance changes with the incline and quality of the road surface.

### To make sure you come to a safe stop:

- Reduce speed.
- Allow adequate distance between your forklift and any other vehicle, object or person.

## Parking



### DANGER

- **When you exit the vehicle, place all controls in "NEUTRAL".**
- **Set the parking brake.**
- **If you leave the forklift unattended, fully lower the mast, turn the key switch "OFF" and remove the key.**

Before you park the vehicle ensure:

- The parked forklift will not cause an obstruction or safety hazard.
- The forklift is clear of fire exits, fire equipment and stairways.
- The forklift is not to be left unattended on an incline. If the forklift is inoperative and you must leave it parked on an incline, securely block the wheels and remove the key.
- Make sure all accessories are turned “OFF” (lights, etc.) before you turn the key switch to the “OFF” position.

Faults

Diagnostics

If system fault occurs, diagnostic information can be obtained in either of two ways:

1. Reading the warning message on the display
2. Observing the fault codes issued by the status LED lights on the controllers located inside the back compartment of the forklift. The rear cover needs to be removed access these lights.
  - See below for a summary of LED display formats.

Display	Status
Neither LED illuminated	Controller is not powered on; or vehicle has dead battery; or severe damage.
Yellow LED flashing	Controller is operating normally.
Yellow and red LEDs both on solid	Controller is in Flash program mode.
Red LED on solid	Watchdog failure or not software loaded. Cycle key to restart, and if necessary load software.
Red LED and yellow LED flashing alternately	Controller has detected a fault. 2-digit code flashed by yellow LED identified the specific fault; one or two flashes by red LED indicate whether first or second code digit will follow.

For trouble shooting information, see the fault code chart in the maintenance manual.

# Understanding Stability



## DANGER

**Ensure the load is centered on the forks and seated against the backrest. Failure to do so can cause the load to fall or the forklift to tip over, resulting in serious injury or death.**

Understanding the principles of stability of the forklift are essential to decreasing the likelihood of a tip over.

## Basic Principles

The concepts concerning stability are actually quite simple. Unlike an automobile, which has four points of suspension, forklifts operate on a three-point suspension.

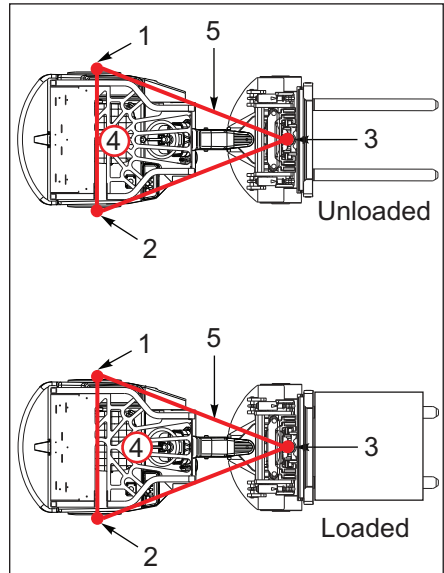
Two of the suspension points are on the rear axle (item 1 and item 2). The third suspension point is the center point of the front axle (item 3). The center of gravity is an imaginary point at which all of the forklift's weight is concentrated (item 4). *See Figure 5-2.*

Imagine a triangle is drawn between the three suspension points (item 5). This triangle is commonly called the stability triangle.

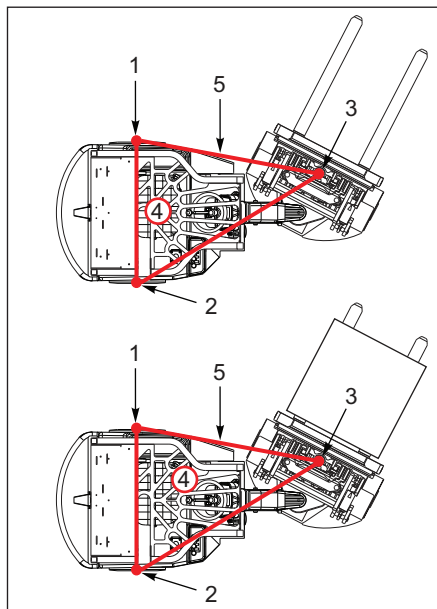
Since the center of gravity is an imaginary point, it will shift for various reasons that we will explore in a moment.

## IMPORTANT

*The crucial thing to remember is, as long as the center of gravity of the forklift remains within the border of the stability triangle, the forklift will not tip. If the center of gravity shifts so it falls outside of the border of the stability triangle, the forklift will tip around the fulcrum.*



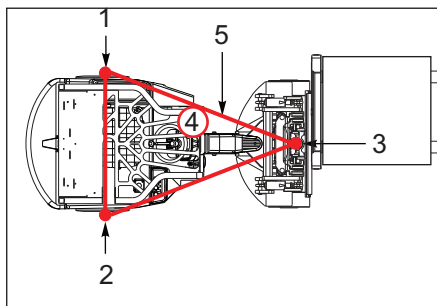
**Figure 5-2: Stability Triangle**



**Figure 5-3: Stability Triangle, 90°**

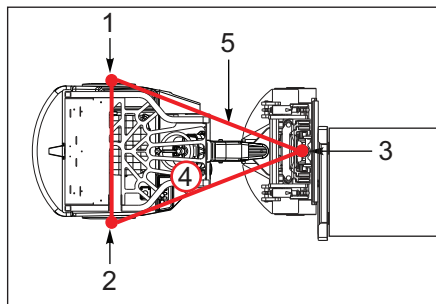
**The forklift is most vulnerable in three conditions:**

1. When the forks are loaded, the load is shifted to the left, and the forks are straight ahead, the center of gravity moves to a point along the axis between points 1 and 3 (center of gravity item 4). *See Figure 5-4.*



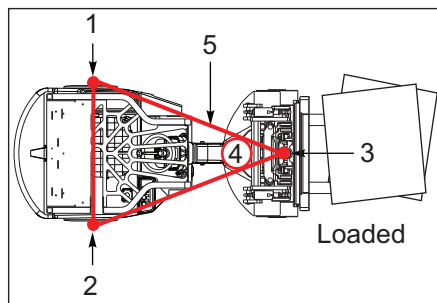
**Figure 5-4: Stability - Side Shift Left**

2. When the forks are loaded and the load is shifted to the right, the center of gravity moves to a point along an axis between points 1 and 2 (center of gravity item 4). *See Figure 5-5.*



**Figure 5-5: Stability - Side Shift Right**

3. When the forks are loaded and the load is too heavy or not properly distributed, the center of gravity moves forward to a point along the axis between points 1 and 2, or 1 and 3, depending on the way the load is situated. *See Figure 5-6.*



**Figure 5-6: Uneven/Heavy Load**

**The center of gravity will also shift if:**

- The load exceeds the rated capacity listed on the data plate.



- The load exceeds the load center dimensions listed on the data plate.
- You **DO NOT** seat the forks fully into the pallet, called “tip loading”.
- You take a corner too fast, with the forklift unloaded or loaded.
- You drive with the load raised.
- The load is not distributed properly (always keep the heavier items near the load backrest).
- You drive across a slope.

You drive on a slope with the load facing downhill.

## Tilting Considerations

The amount of forward and rearward tilt that can be safely used is governed by the application.

When traveling with the forklift loaded, tilt the mast rearward while keeping the load low. This will help stabilize loads with an uneven weight distribution.

When loading at high elevations, tilt the load back far enough to seat it against the load backrest or forks.

When unloading at high elevations, only use enough tilt to place the load onto the rack or stack.

## Knowing the Rated Capacity



### DANGER

**NEVER** load the forklift beyond its rated capacity. Loads beyond the rated capacity can cause axles to break, forklift to tip over or cause loads to fall, causing serious injury or death. See data plate for rated capacity and load center information.  
*See Figure 3-2.*

The rated capacity varies for each load depending on:

- Where the horizontal and vertical load centers are located.
- The height you plan to lift the load.
- Attachments used.

## Counterweight



### DANGER

**NEVER** let anyone stand on the back of the forklift to add counterweight. They can fall off the forklift or the forklift can tip backwards, causing serious injury or death.

The battery, frame plates and bottom plate serve as counterweights and allow the forklift to travel with heavy loads.

## OPERATING

When the forklift lifts a heavy load, the counterweights keep the center of gravity inside the stability triangle and prevent it from tipping over.

## Determining the Load Weight

**In addition to the rated capacity you must determine the weight of the load before you attempt to lift it:**

- Weight is listed on pallet wrapper.
- Weight is listed on Bill of Lading.
- Weight is determined by multiplying the weight of each small container or part by the number of small containers or parts on a pallet. Each small container should be marked with its weight.

**When in doubt, ask your supervisor.**

## Load Center



### DANGER

**Ensure the horizontal/vertical load centers DO NOT exceed the maximum load centers listed on the data plate. Failure to do so can cause the forklift to tip, causing serious injury or death.**

1. The horizontal load center is equal to one-half the length of the load when the weight is evenly distributed.

For example, an evenly distributed load that is 48 in. long has a horizontal load center of 24 in.

The further the load center is from the fulcrum, the less stable the forklift becomes. Make sure your load is flush against the rear of the forks and that unevenly distributed loads are loaded with the heaviest end of the load closest to the front wheels.

2. The vertical load center is equal to one-half the height of the load when the weight is evenly distributed. For example, an evenly distributed load that is 48 in. high has a vertical load center of 24 in. Make sure that you **DO NOT** pick up a load that is higher than twice the vertical load center.



### WARNING

- **The battery size and load capacity for the forklift is synchronized. When ordering a Bendi AC Series 6 forklift, weight plates will be added or subtracted to match the usage requirements.**
- **DO NOT alter the battery size without contacting your Landoll dealer and have the proper counter balance weight plates installed.**
- **Ignoring this warning will cause the forklift to be unstable and may cause the forklift to tip.**

# Maximum Fork Lift Height



## DANGER

**The load capacity of your forklift decreases the higher you raise the forks. Refer to the rated capacity at the heights listed on the data plate. Failure to observe these guidelines can cause your forklift to tip over causing serious injury or death.**

The maximum fork height is the highest position the forklift can lift a load, measured from the floor to the forks when they are raised in their highest position.

The higher the forks are raised, the less stable the forklift becomes.

# Tipping



## DANGER

**Forklift tip-over can cause serious injury or death to the operator or others in the area. Every operator must be thoroughly familiar with the tipping hazards listed in this section and must always avoid any operation of the forklift which is likely to result in tipping.**

See ***“Tipping” on page 2-9*** for more safety information.

The following conditions can cause a forklift to tip over:

- A load exceeding the stated load centers.
- Tip Loading.
- A load that is too heavy.
- Taking a corner too fast.
- Driving with the load raised.
- A load that is not distributed properly (keep the heavier items near the load backrest).
- Driving across a slope.
- Driving on a slope with the load facing downhill.
- Using a battery that weighs less than or more than the weight range listed on the data plate.

If there is a sense of the forklift tipping over, follow these instructions:

- 1. DON'T JUMP!**
- 2.** Hold on to the steering wheel.
- 3.** Brace feet.
- 4.** Lean away from the direction the forklift is tipping.

The most likely causes of a tip-over are listed in this section. However, the operator must use good judgment based on proper training and experience to determine turning sharpness and speed for the load being handled and the operating surface or road condition.

A forklift can tip longitudinally (tipping over the front or rear wheels) or laterally (tipping either to the left or right).

All forklifts that elevate and tilt loads are subject to the risk of tipping over, especially when accelerating or when applying the brakes abruptly.

Transporting loads off-center also increases the risk of tip-over.

## Longitudinal Tipping

**The forklift can tip forward or backwards when:**

- The forklift is overloaded.
- The mast is tilted forward excessively, with or without a load.
- The load is raised and brakes are applied while the forklift is traveling forward or backward.
- The load is raised and the forklift is accelerated while it is traveling forward or backward.
- The forklift is driven forward down a steep incline with a load.

## Lateral Tipping

**The forklift can tip over sideways when:**

- The forklift is turned sharply while traveling rapidly in either direction, with or without a load. An unloaded forklift can tip easier than a loaded forklift (with the load lowered).
- The load is raised and the forklift is being turned while traveling in either direction.
- The load is raised and the forklift is being turned and accelerated or braked while traveling forward or backward.

- The forklift is turned while traveling on a ramp or other inclined surface.
- A load heavier than the rated capacity is lifted while the mast is turned to the right or left.

Tipping over in these conditions is made more likely by overloading, excessive mast tilt or off-center positioning of the load.

Soft tires can also reduce stability. The forklift is equipped with tires of a size and hardness that will provide the necessary traction and maintain a proper shape to minimize tipping. Always replace tires with the type originally supplied by the manufacturer.

## Lateral or Longitudinal Tipping

**The forklift can tip in any direction when:**

- Driving over objects on the floor or ground.
- Driving off the edge of a paved surface.
- Driving into a pothole in a paved surface.
- Driving off the edge of a loading dock, or off the edge of a loading ramp. (It is important to avoid driving too close to the edge of a dock or ramp).

When loading or unloading a highway truck or trailer, make sure the highway truck can not move away from a dock while loading is in process. Make sure the highway truck or trailer has its brakes applied, key switch turned off, and if on an incline, has the wheels blocked.

Tipping can also occur if the forklift collides with another forklift or other vehicle, or if the mast runs into an overhead obstruction.



**Figure 5-7: Deep Reach**

## Bendi Deep Reach (optional)

The Bendi models B40AC-DR and B50AC-DR will stack loads two deep in aisles as narrow as 96" (2.4 M) has a basic starting capacity of 2,500 lbs. (1,136 kg) at 24" (600 mm) load center and has lift heights available to 35'5" (10.80 M).

The reach from face to mast is 52" (1,321 mm) and the integral pantograph reach stroke is 41" (1,041 mm) The B40AC-DR / B50AC-DR has a 33" (838 mm) wide tilting and side shifting fork carriage.

The Bendi Deep Reach (DR) uses an interlock system to keep the lift truck load positioned in such a way to maintain stability. The interlock system senses the position of the pantograph and the angle of the front end to reduce the opportunity of the truck becoming unstable caused by the extended load center caused by the pantograph.

If the truck is turned past the critical angle, then the pantograph is locked out, if the pantograph is extended away from the retracted position, then the Bendi cannot turn past the critical angle. While operating, if you are unable to extend the pantograph, you have turned the front end too far. Turn back towards the center to allow the interlock to enable the pantograph function.

To avoid permanent damage to the pantograph, only use the pantograph to extend to the second pallet position.

## Setting the Forks



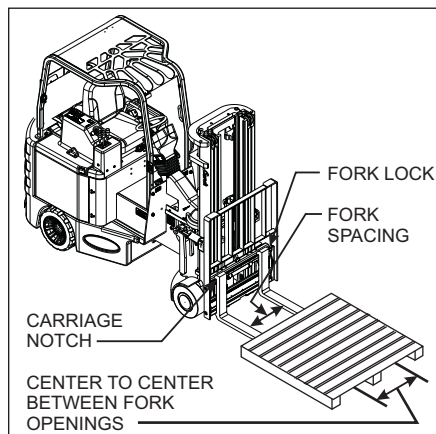
### CAUTION

**The forks must be set equal distance from the center of the fork carriage. Setting them too far to the left or right could cause a load to unbalance and tip the forklift.**

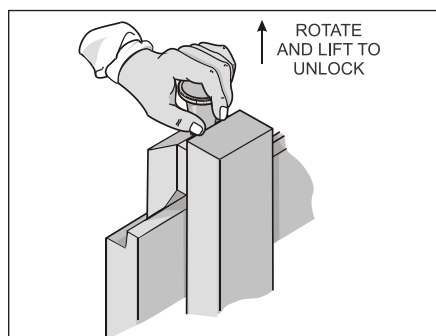
## OPERATING

Before getting on the forklift make sure the spacing between the forks is properly set.

1. Measure the center to center between the fork openings on the pallet. *See Figure 5-8.*
2. Lift the fork locks up.
3. Move the forks until the center to center spacing is equal to the center to center distance of the pallet. Make sure the forks are seated in a carriage notch and equal distance from the ends of the carriage.
4. Press the fork locks down to ensure locking.



**Figure 5-8: Centering the Forks**



**Figure 5-9: Setting the Forks**

## Fork Positioner

If equipped, you can set the fork position using the left (side shift) lever.



**Figure 5-10: Fork Positioner**

1. Press the button on the right side of the lever.
2. Push the lever forward to move the forks closer together.
3. Pull the lever back to move the forks further apart.



### WARNING

**NEVER** pull a fork toward you as this places your hands in a possible pinch position, which could cause serious injury. Always push the fork away from your body.

## Retrieving a Load

The following illustrations show standard 40 in. x 48 in. (102 cm x 122 cm) (W x L) pallets loaded on a rack with 96 in. (244 cm) beams.

The arrow labeled with an 'S' shows the direction to turn the steering wheel.



## DANGER

If the forks or load jam or catch during a stacking operation, do not attempt to free them by reaching through the mast. Failure to follow this guideline can cause serious injury or death.



## WARNING

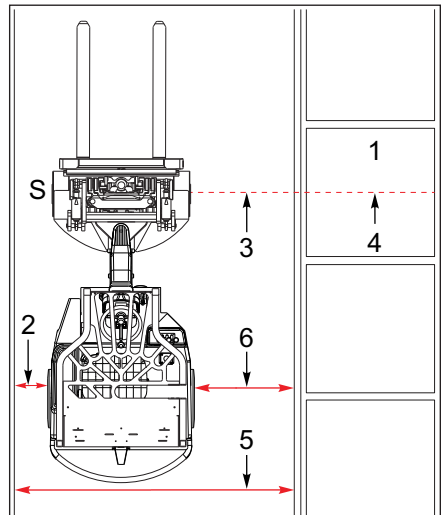
Lowering the mast improves operator visibility, and improves the stability of the forklift by reducing the possibility of personal injury or damage to the load if it were to slip from the forks.

Follow these steps to retrieve a load:

- **For steps 1-5** See Figure 5-11.

1. Approach the side of the aisle that is opposite the load (item 1).
  - Actual minimum aisle width, (item 5), will vary based upon application.
2. For narrow aisles, straighten out the forklift so it is 8 in. (203 mm), (item 2), from the edge of the aisle opposite the load. For wider aisles, straighten out the forklift so it is 36 in. to 48 in. (91 cm - 122 cm), (item 6), from the side of the aisle where the load is located.
3. Center the forks using the side shift lever.

4. Drive forward until the front edge of the load wheels, (item 3), are aligned with the center of the pallet (item 4).
5. Lift the forks to the required height, and then level the forks using the tilt lever.
6. Stop the forklift and turn the forks 90° using the steering wheel to align them with the load. See Figure 5-12.



**Figure 5-11: Setup - Load Pickup**

## NOTICE

**When turning the steering wheel with the forklift stopped, DO NOT apply the foot brake or hand brake.**

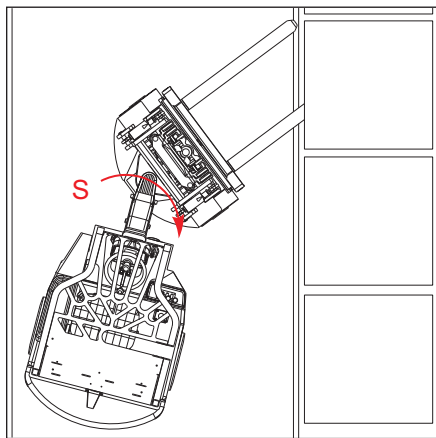
7. Straighten out the forks using the steering wheel as the forks are driven into the load so the forks enter the load in a straight line. See Figure 5-13..

## OPERATING

8. Turn the steering wheel to keep the forks straight as they are fully inserted into the load and lift, tilt, and side shift as required to stabilize and pickup the load.

**See Figure 5-14.**

9. Only raise the load high enough to clear the rack or the load backrest may catch on the rack.

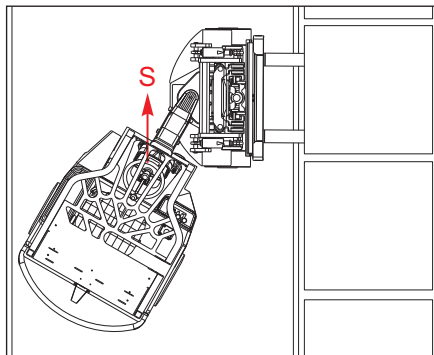


**Figure 5-12: Align the Forks**

***If using the Deep Reach option to retrieve a load from the second pallet position***

- Turn the steering wheel and drive forward until the face of the front tires are within 1" of the rack. Side shift the forks to center them in the pallet. Depress the pantograph button on the sideshift lever to reach the forks into the second pallet position. Once inserted, tilt the forks back and lift slightly.

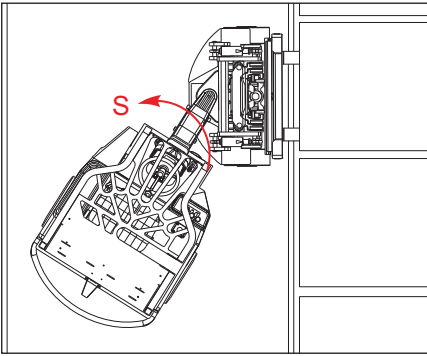
- To pull the pallet out the second position, depress the pantograph button on the sideshift lever and pull back on the lever. Continue to pull back until the pallet has stopped in the retracted position. Shift into reverse and slowly back away from the stack while turning the steering wheel to keep the forks straight.



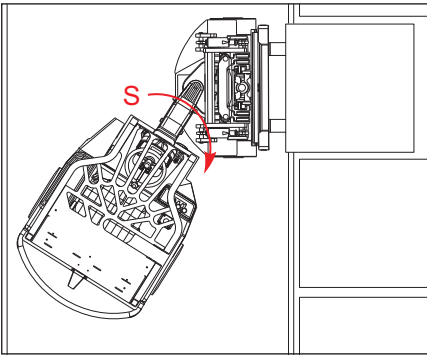
**Figure 5-13: Positioning the Forks**

10. Shift into reverse and slowly back away from the stack while turning the steering wheel to keep the forks straight. **See Figure 5-15.**
11. There may be need to side shift while backing out the load to clear the rack.  
If there's still not enough clearance, drive forward and try the removal process again. To get more clearance, don't start turning the forks until having backed out 8 in. to 16 in. (203 cm - 406 cm).



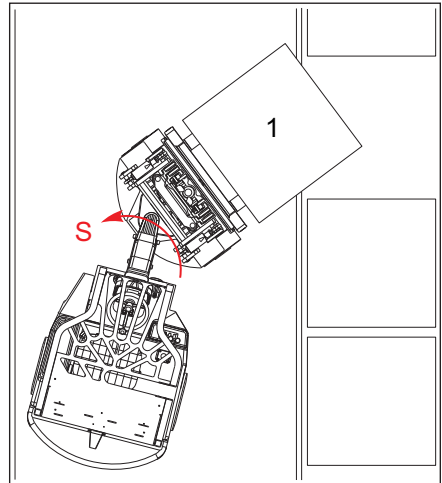


**Figure 5-14: Inserting the Forks into the Load**



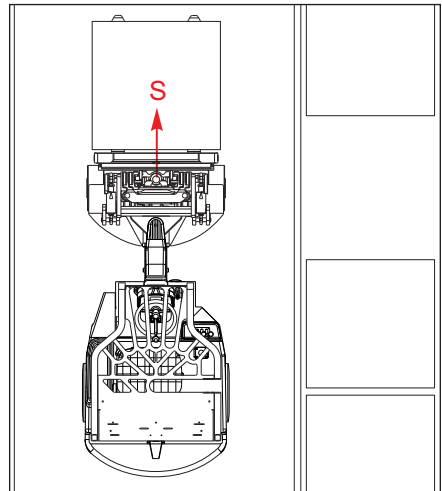
**Figure 5-15: Centering Forks in the Pallet**

12. When the front right hand corner of the load (item 1) **See Figure 5-16.**, clears the rack, stop backing and turn the steering wheel clockwise to straighten out the forks so they are parallel with the body of the forklift. **See Figure 5-17.**
13. Lower the forks until they are 4 in. to 6 in. (102 cm - 152 cm) off the ground and slowly drive the forklift to the next location observing the safety rules previously stated.



**Figure 5-16: Retrieving the Load**

- Make sure the load is not wider than the width of the gangways or aisles, especially if backing a bulky load down an incline.



**Figure 5-17: Normal Travel Position**

## Transporting a Load

Follow these guidelines when transporting a load:

## OPERATING

- **DO NOT** travel with excess speed.
- Use the horn to warn others of danger.
- Make sure the load is seated firmly against the load backrest.
- Tilt the mast back.
- Lower the load so the forks are 4 to 6 inches (102 to 152 mm) off the ground.
- Be alert to overhead obstructions such as low doorways, racking and pipes. Make sure to know the raised and lowered heights of the mast.

## Traveling on Inclines

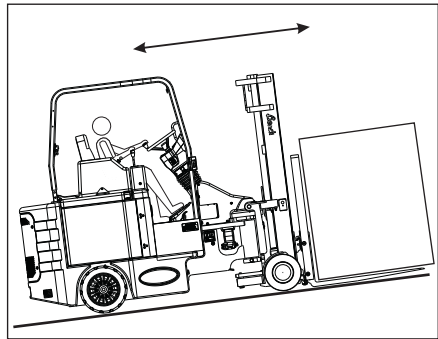


### WARNING

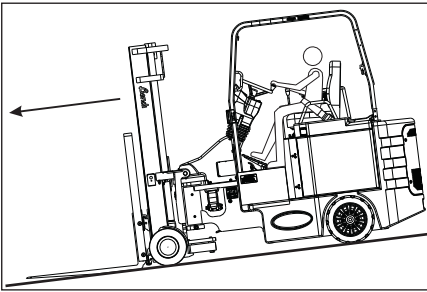
- **Use extra caution when operating on ramps.**
- **Travel slowly and do not turn.**
- **Travel with load uphill.**
- **Travel with empty forks downhill.**
- **Failure to follow these guidelines can cause serious injury or death.**

When traveling up or down an incline:

- Make sure the gradient is 12% or less with a load and 15% or less if not carrying a load.
- Always keep the load pointed uphill. **See Figure 5-18.** Travel with the forks facing uphill, whether going up or down an incline. The forklift must back down an incline when carrying a load. If vision is obscured, arrange for a 'Banks-man' to help guide.
- If not carrying a load, travel with the forks facing uphill when going up the incline, and face the forks downhill when traveling down an incline. **See Figure 5-19.**
- NEVER travel across a grade. This can cause the forklift to tip-over laterally and can cause serious injury or death.
- Use the foot brake to maintain control before the forklift builds up momentum.
- Raise the forks as necessary to avoid damaging the forks or load as the road surface changes grade at the top or bottom of an incline. Lower the forks to 4 to 6 inches (102 - 152 mm) off the ground when clearing the incline.



**Figure 5-18: Traveling With Load on Incline**



**Figure 5-19: Traveling Down an Incline Unloaded**

## Unloading The Forklift

The following illustrations show standard 40 in. (102 cm) x 48 in. (122 cm) (W x L) pallets loaded on a rack with 96 in. (244 cm) beams. The arrow labeled with an 'S' shows the direction that the steering wheel must be turned.

Actual minimum aisle width may vary based upon application (item 5). [See Figure 5-20.](#)



### DANGER

- If the forks or load jam or catch during a stacking operation **DO NOT** attempt to free them by reaching through the mast. Failure to follow this guideline can cause serious injury or death.



### DANGER

- When lowering the forks to the “no load” position, make sure not to lower the forks too far. If the forks are lowered too far beyond the “no load” position, damage of the mast, rack, or other containers on the stack can occur.
- **DO NOT** attempt to withdraw the forks until they have been lowered to a “no load” position.

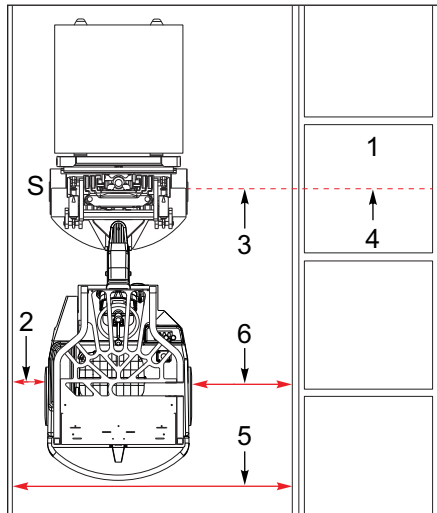
**FAILURE TO FOLLOW THIS GUIDELINE CAN CAUSE THE LOAD TO FALL OFF THE STACK CAUSING SERIOUS INJURY OR DEATH.**

### Follow these steps to store a load:

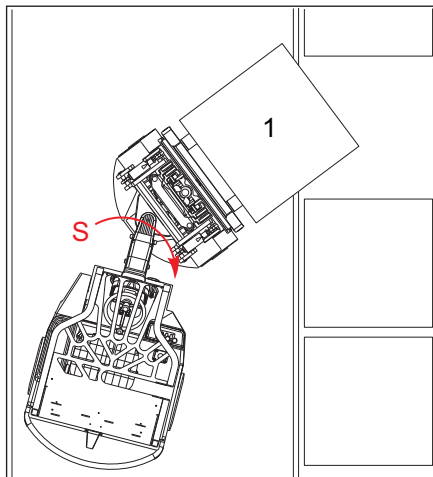
1. Approach the side of the aisle that is opposite the area where the forklift will be unloaded (item 1). [See Figure 5-20.](#)
2. For narrow aisles, straighten out the forklift so it is 6 in. to 8 in. (152 mm to 203 mm), (item 2) [See Figure 5-20.](#), from the edge of the aisle opposite the drop off point. For wide aisles, straighten out the forklift so it is 36 in. to 48 in. (91 cm to 122 cm) (item 6), from the side of the aisle where the load is located.
3. Center the load using the side shift lever.

## OPERATING

4. Drive forward until the front edge of the load wheels, (item 3), are aligned with the center of the rack opening (item 4).
5. Lift the load to the proper height.
6. Stop the forklift and turn the load 90° (turn the steering wheel clockwise) so it points in the direction to be dropped off. *See Figure 5-21.*



**Figure 5-20: Setup - Delivering a Load**



**Figure 5-21: Load Drop-Off**

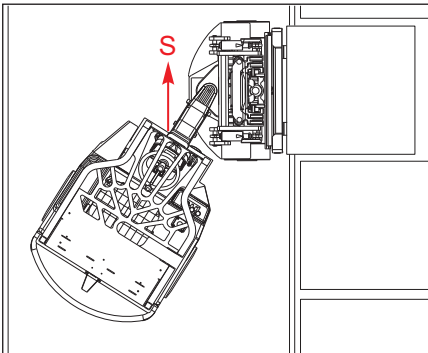
### NOTICE

**When turning the steering wheel with the forklift stopped, DO NOT apply the foot brake or hand brake.**

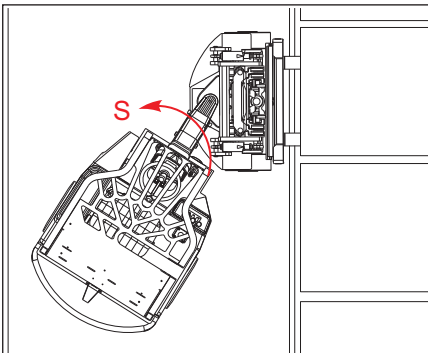
7. Drive forward and straighten out the load using the steering wheel so it is square over the stack. *See Figure 5-22.*
8. Turn the steering wheel to keep the load straight as it is driven into the opening. *See Figure 5-23.*

***If using the Deep Reach option to store a load to the second pallet position:***

- Turn the steering wheel and drive forward until the face of the front tires are within 1" of the rack. Use sideshift to center the pallet. Depress the pantograph button on the sideshift lever to extend the pallet into the second position.
  - Perform steps 9 and 10
  - Retract the pantograph from the pallet. Once retracted, back the forklift out of the pallet position.
9. Position the load directly over the rack beams and tilt the mast into its vertical position.



**Figure 5-22: Straighten the Load for Drop-Off**

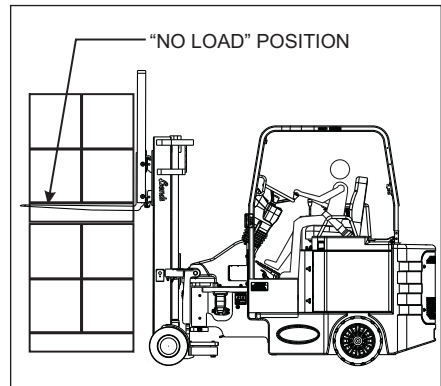


**Figure 5-23: Inserting the Load**

10. Lower the forks until the load sits firmly on the rack. Continue to lower the forks until they no longer support the load ('no load' position). *See Figure 5-24.*

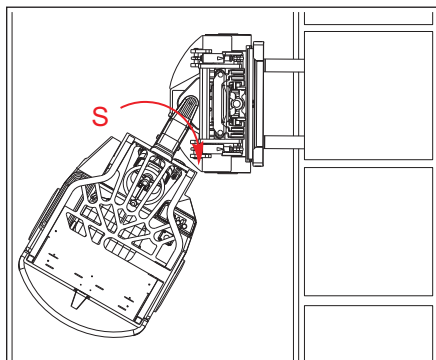
## NOTICE

**DO NOT tilt the mast back until the forks clear the pallet.**

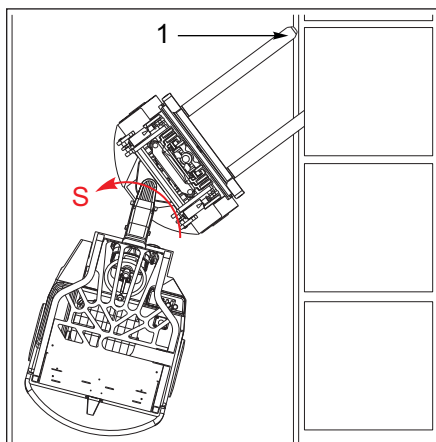


**Figure 5-24: No-Load Position**

11. Shift into reverse and slowly back out of the load as the steering wheel is turned to keep the forks straight. *See Figure 5-25.*
12. When the front fork (item 1) *See Figure 5-26.*, clears the rack, stop backing and turn the steering wheel to straighten out the forks so they are parallel with the body of the forklift.
13. Lower the forks until they are 4 in. to 6 in. (102 mm to 152 mm) off the ground and slowly drive the forklift to the next location observing the safety rules previously stated.



**Figure 5-25: Backing Away from the Load**



**Figure 5-26: Removing the Forks**

## Dock Boards and Forklifts

Dock boards are designed and maintained so that one end contacts the dock (or loading platform) and the other end contacts the transport vehicle. When you load or unload the transport vehicle, the dock board must be locked in place to prevent it from rocking or sliding. Dock boards have a high friction surface designed to reduce the possibility of people or forklifts slipping.

Hand holds or other effective means are provided on portable dock boards to permit safe handling.

Where possible, fork loops or lugs are provided for handling with fork forklifts.

**Special rules should be followed if your workplace uses portable dock boards on loading docks:**

- NEVER exceed the carrying capacity marked on portable or powered dock boards.
- Portable dock boards must be secured in position using anchors or other devices that prevent slipping.
- Before you load or unload a forklift or trailer, make sure it does not move unintentionally by setting the brakes and blocking the wheels.
- In addition to setting the brakes and blocking the wheels, if a trailer is not coupled to a tractor, make sure that all four corners are supported to prevent upending or corner dipping.

- Maintain a safe distance from the edge of ramps, platforms, or other similar working surfaces.

## Attachments



### DANGER

**NEVER modify your Bendi AC Series 6 forklift in any manner. Only options and attachments approved by Landoll Company, LLC may be installed on the forklift. Other modifications will void the warranty and can cause serious injury or death.**

Attachments to the forks may affect the load center. When the factory, dealer or distributor installs attachments approved by Landoll, an additional or new data plate is attached to the forklift. The new plate identifies the type of attachment, the changes in the load centers, and the rated capacity. It is illegal to use attachments for which revised capacities are not available.

## Workplace Conditions



### DANGER

- Workplace situations may constantly change. Check your area before beginning work. If in doubt, check with your supervisor.
- Failure to observe workplace conditions can lead to serious injury or death.

In addition to stability, be aware of special situations in your workplace to avoid forklift accidents.

**If you work in the same area each day, there could still be changes that would effect your safety, such as:**

- Contractors doing maintenance.
- Wet areas.
- Overhead repair work.

**Be on the defensive for anything that might present a hazard. Other situations that could present special operating conditions include:**

- Potholes.
- Pedestrian traffic.
- Very narrow aisle ways.
- Overhead obstructions.
- Poor lighting making it hard to see hazards.
- Wet, oily or uneven terrain.
- Other equipment or vehicles operating in the area.

### IMPORTANT

**DO NOT block the following items with your forklift or materials you are moving:**

- Electrical panels.
- Fire exits.
- Emergency stop buttons.
- Emergency medical stations.
- Aisle ways.

## Atmospheric/Electrical

Special atmospheric conditions are explosive and/or flammable. For example, if gasoline or kerosene is stored in the area, the vapors they produce can be flammable and explosive. Make sure the forklift meets the criteria for your workplace.

The standard Bendi AC Series 6 forklift meets the criteria for Type “E” as described in UL 583.

## Working in Hazardous Environments



### DANGER

- **Some atmospheric conditions encountered in the workplace are extremely explosive and/or flammable.**
- **Make sure your forklift is designated with the model type appropriate for your workplace.**
- **If labeled as a Type “EE” forklift, you will be able to operate this forklift in “EE” environments.**
- **Using the wrong type of forklift can cause an explosion or fire resulting in a serious injury or death.**



## **Chemical Hazards**

You should know the chemical characteristics of the substances you are moving. In case of an accident you would handle stable, reactive or flammable substances differently. For example, if you puncture a drum that contains flammable material, you need to exit the forklift immediately and contact the proper authorities.

## OPERATING

[illegible]

# Chapter 6

## Daily Inspection

### Inspections Overview

Both daily and scheduled maintenance procedures are designed to extend the operating life of the forklift and prevent major problems causing costly downtime.

The Daily Operator's Inspection Checklist provided lists routine inspections, adjustments and lubrication necessary to keep your Bendi AC Series 6 forklift operating safely. Information to perform each inspection can be found in this manual and is referenced on the checklist.

### Maintenance Schedule

A detailed and rigorous full inspection maintenance schedule must be followed and is explained in the Bendi AC Series 6 Forklift Maintenance Manual" (P/N F-857).

#### NOTICE

**Failure to maintain the forklift in accordance with recommended guidelines will be considered abuse and may affect the warranty status of the forklift.**

#### IMPORTANT

Read and comply with all applicable SAFETY precautions explained in **"Getting Started" on page 2-1.**

**Recommended service inspections are based on normal operating conditions. If the forklift is subject to severe or above normal operating conditions, extreme temperatures, excessive dust/wet environments or if the forklift is around corrosive materials, service must be performed more often.**

### Daily Checklist

Daily pre-shift inspection is an OSHA requirement.

Report any defect immediately to your supervisor.

You are responsible for the daily inspection of your forklift:

- Photocopy the "Operator's Daily Checklist" on the following page or use the form supplied by your supervisor.
- A full page version of the checklist can be found in the Maintenance Manual.
- Inspect the forklift and fill out the form
- Report defects and return the form to your supervisor

## DAILY INSPECTION

### Operator Daily Pre-Shift Inspection Checklist

Daily pre-shift inspections are an OSHA requirement. It is important that these inspections are documented.

Date	Inspector	Shift	Truck Number	Model Number

Location	Hour Meter	Hyd Oil Added	Battery Water Added	Brake Fluid Added

Operational Checks	Description	OK	Page #
Tires	Check for damage and debris		(SEE PAGE 3-12)
ESD (static) Straps (2)	Check condition		(SEE PAGE 3-4)
Forks, Retaining Pins & Heal	Check Condition		(SEE PAGE 3-26)
Overhead Guard	Check for damage and cracks		(SEE PAGE 3-4)
Hydraulic Cylinders & Hoses	Check for damage and fluid leaks		(SEE PAGE 3-15)
Hydraulic Oil	Check level		(SEE PAGE 3-16)
Battery	Check water level		(SEE PAGE 4-2)
	Check charge		(SEE PAGE 4-3)
Battery Restraint (if installed)	Securely fastened		(SEE PAGE 4-5)
Brake Fluid	Check level		(SEE PAGE 3-7)
Safety Warning Decals	Attached and legible		(SEE PAGE 2-3)
Operators Manual	Present and legible		Back of Seat
Data Plate	Attached and legible		(SEE PAGE 3-2)
Seat Adjustments	Check function of all levers		(SEE PAGE 3-24)
Seat Belt, Buckle & Retractor	Check condition and operation		(SEE PAGE 3-26)
Electrical	Check wires and connectors		(SEE PAGE 3-7)
Key Switch (turn power on)	Listen for unusual noises		(SEE PAGE 3-9)
Dash Display	Check hour meter, BDI and fault codes		(SEE PAGE 3-10)
Parking Brake	Check operation		(SEE PAGE 3-5)
Horn	Check function		(SEE PAGE 3-14)
Accelerator Pedal	Check operation		(SEE PAGE 3-8)
Directional Control	Check forward and reverse operation		(SEE PAGE 3-14)
Backup Alarm	Check operation		(SEE PAGE 3-28)
Service Brake	Check operation		(SEE PAGE 3-5)
Seat Switch	Check operation		(SEE PAGE 3-25)

Operational Checks	Description	OK	Page #
Lights	Check Switch and operation		(SEE PAGE 3-28)
Mast Controls	Check Lift/Lower Controls		(SEE PAGE 3-21)
	Check Tilt Controls		(SEE PAGE 3-22)
	Check Side-Shift Controls		(SEE PAGE 3-23)
Steering	Check operation		(SEE PAGE 3-8)

During daily inspection, be sure to check the overall condition of the forklift (i.e. body damage, paint, battery cover, seat condition, etc). Also check under and round the forklift for any signs of fluid leaks. Make a note of any conditions that are out of the ordinary and report them to your supervisor immediately.

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## DAILY INSPECTION

NOTES:

**Document Control Revision Log:**

Date	Revision	Improvement(s) Description and Comments
01/24/2019	F-897-0119	Update Layout



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# Intertek

Equipment from Landoll Company, LLC is built to exacting standards ensured by ISO 9001 registration at all Landoll manufacturing facilities.

## **Bendi AC Series 6**

### **Operator's Manual**

Re-Order Part Number F-897-0119

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