

**INSTALLATION, MAINTENANCE
AND SERVICE MANUAL
SDN, SLN, SLJ AND SPN**

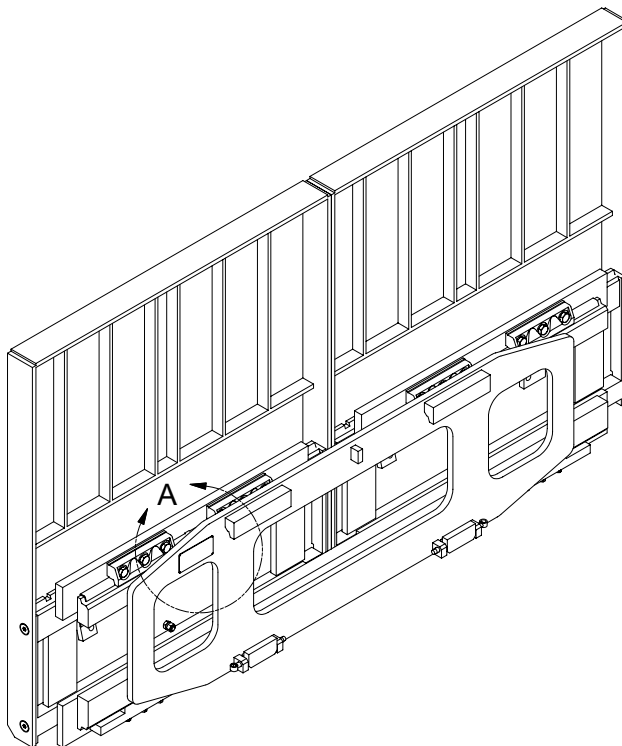
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SECTION 1

NAMEPLATE LOCATION

NOTE: When you receive your attachment, locate the Long Reach nameplate (upper left corner on the body) and record the information to the blank nameplate tag with the date received in the space provided on the bottom of this page. If the name plate is missing, look for the serial number stamped directly into the metal at the original location and consult factory.



Date Received:

- -

A Division of Allied Systems Company					
MODEL NO.:					
SERIAL NO.:					
MAXIMUM HYD. PRESS.:		PSI		WEIGHT: LBS	
CAPACITY:		LBS @		inch LC	
SEE TRUCK NAMEPLATE FOR COMBINED TRUCK & ATTACHMENT NET CAPACITY					
HOR. CG:	inches	VERT. CG:	inches	LOST LOAD /AET:	inches
CG AND AET SPECIFICATIONS ARE APPROXIMATE					
Manufactured By Allied Systems Company • 21433 Oregon Street, Sherwood, OR 97140 USA www.alliedsystems.com 2500005 RC					

SECTION 2

SAFETY SUMMARY

2.1 General Information

Safety is Everyone's Responsibility

Whether you are new on the job or a seasoned veteran, these safety tips may prevent injury to you, to others, or to the materials you are handling. Always be alert, watch out for others, and follow these suggestions:

Attachments Handle Material - Not People.

Safety starts with common sense.
**GOOD JUDGEMENT, PROPERLY MAINTAINED
EQUIPMENT, CAREFUL OPERATION, AND
PROPERLY TRAINED OPERATORS.**

1. **Check** your equipment before you operate it.
2. **Check** to make sure the attachment on your truck is the same as on the truck capacity plate.
3. **Check** for hydraulic leaks and cracked hoses or fittings.
4. **Check** the hydraulic oil level in the lift truck hydraulic reservoir.
5. **Check** for physical damage to the attachment. If anything looks wrong, unusual or different, report it before using the attachment.
6. **When** removing / installing dismountable attachments always keep hands and feet free from dangerous positions or pinch points. Never leave a dismounted attachment in a dangerous position.
7. **Check** to make sure that the dismountable attachment is properly secured to the truck carriage before using the lift truck and attachment.
8. **Never** stand on top of material being raised, lowered, or transported. (Figure 2-1)

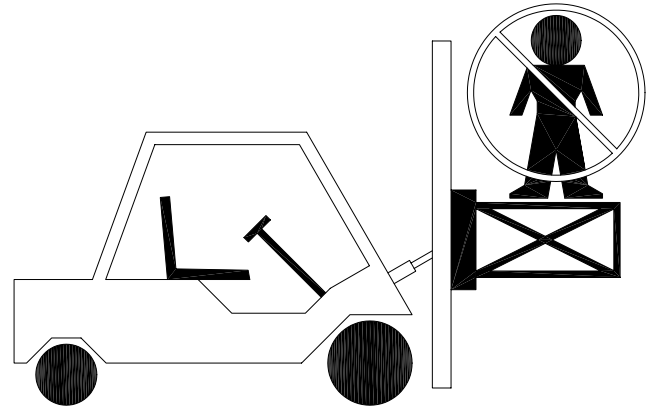


Figure 2-1

9. **Never** use the attachment or its load to support a man carrying device.

10. **Never** position an attachment or load over people. (Figure 2-2)

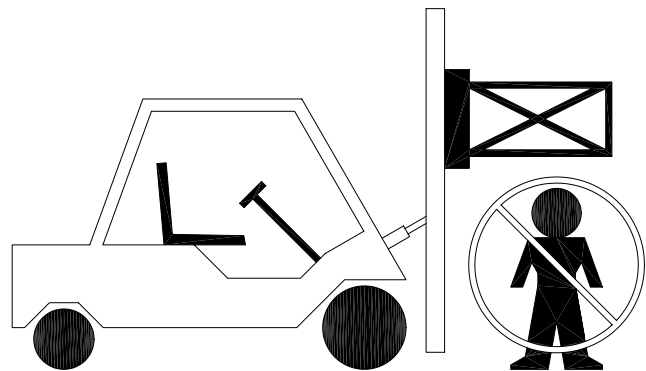


Figure 2-2

11. **Never** leave an attachment or load in an elevated position.

12. **Never** reach through the mast of the truck. Keep all parts of the body within the driver's compartment.

13. **Never** leave a lift truck unattended without lowering the load to the floor, setting the brake, and turning the truck off.

14. **Always** operate an attachment from the operator's seat, never while standing next to the lift truck.

15. **Never** stand in front of or beside an attachment that is being operated. Never allow another person to approach an attachment that is being operated. (Figure 2-3)

16. **Do not** allow riders on the truck at any time.

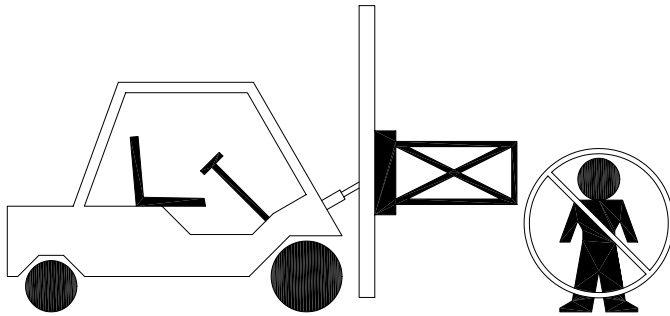


Figure 2-3

17. **Always** use reverse when carrying a load that impedes full vision.

18. **Watch** for pedestrians when transporting. Sudden stops can dislodge all or part of a load.

2.2 Load Handling

1. **All** operators must be trained and qualified.

2. **Never** overload the attachment. Refer to the attachment nameplate for the rated capacity of the attachment. Refer to the nameplate of the truck for the net working capacity of the truck and attachment. Observe the lower of the two capacities. The attachment capacity is the structural rating of the attachment and should not be exceeded. Net working capacity is the truck manufacturer's rating of the truck/attachment combination.

3. **Never** use a load to support or move another object. Doing so can easily exceed the holding capacity of the attachment, causing loss of the load.

4. **Never** lift, lower, side shift, pivot, rotate, or tilt loads while traveling. Repositioning loads while traveling affects the stability of the truck and may impede vision or clearances.

5. **Never** speed or race a lift truck. High speed adversely af-

fects the stability and steering of the lift truck.

6. **Do not** use an attachment to open or close boxcar doors. Doing so can severely damage the attachment and cause loss of warranty. Damage to clamp arms may result in product damage.

7. **Do not** carry loose items or unsupported loads on top of a clamped load.

8. **Never** allow anyone under a load or under the carriage.

9. **Never** use chains, cables, or other devices in conjunction with an attachment for load handling.

10. **Never** clamp loads other than what the attachment was designed to handle.

11. **Travel** slowly around corners. Sound horn on blind corners. Be careful of tail swing and overhead clearances. Watch in all directions. Avoid sudden stops.

12. **Do not** exceed the specified maximum operating pressure or flow for the attachment. To do so can severely damage the attachment and cause loss of warranty.

2.3 Load Positioning

1. **Always** operate an attachment from the driver's seat.

2. **Always** lower the attachment if you need to leave the lift truck. Remember a lift truck supporting a load requires your full attention.

3. **Never** use the attachment or its load to support or move other loads or equipment.

4. **Always** carry loads as close to the floor as possible, consistent with the surface being traversed. Scraping or bumping the floor surface with the load or the attachment can severely damage the attachment and cause product damage. The mast should be tilted back.

5. **Always** keep the load positioned as close as possible to the horizontal center of the lift truck.

6. **Always** back down ramps or inclines. Driving forward down a ramp or incline with a clamped load will lessen the stability of the truck. (Figure 2-4)

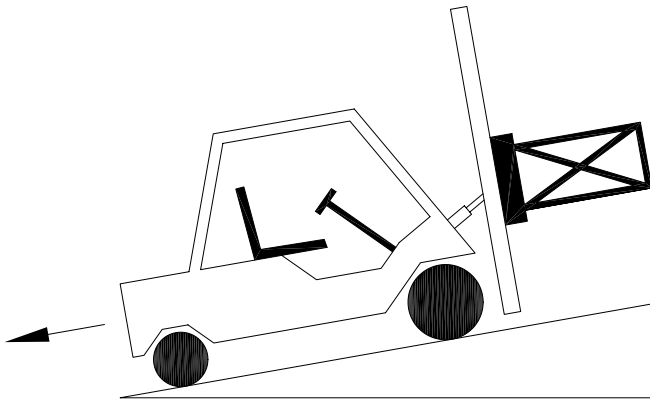


Figure 2-4

7. **Do not** cross dock boards or dock levelers with the attachment or carriage fully lowered. Ramming the front or rear of the attachment against a dock board can cause severe damage.

8. **Always** check loads to be handled. If they are broken, unbalanced, loose, or too heavy, advise a supervisor or properly correct the situation prior to handling.

9. **Limit** lift truck movement to a minimum when high stacking. Limit sideshift movement to a minimum when high stacking.

10. **Always** be observant when high stacking. Look for poorly stacked loads, overhead obstacles, broken cartons, or damaged products in the stack.

11. **Always** carry cylindrically shaped loads in the vertical position, not the horizontal.

12. **Always** clamp loads with the contact pads, if applicable, not the arm or arm base.

13. **Never** rotate a load that is off center to the center-line of rotation. Severe damage to the rotator could result.

14. **Always** check the attachment for proper fit and engagement of the truck carriage.

2.4 Operator's Controls

1. For clarity, the direction of arm movement is shown on the control handle. To move the arms in the direction shown, pull the handle towards the operator. To move the arms in the opposite direction, the push the handle away from the operator.

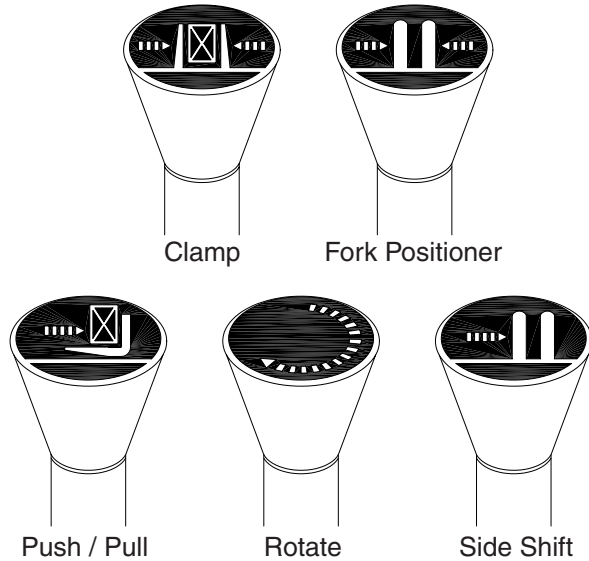


Figure 2-5

Note: OSHA or state regulations may require the installation of backrests. We suggest that you check your application against those requirements.

SECTION 3

INSTALLATION PROCEDURE

3.1 Truck Requirements

Long Reach attachments have been designed to operate within specific limits. Operating pressures above the stipulated maximum may cause structural damage to the attachment and may result in loss of warranty. Hydraulic flow less than the recommended rates, or the use of small I.D. hoses may reduce operating speed. Higher flow can result in excessive heat buildup, erratic operation and damage to the truck / attachment hydraulic system.

NOTE: it is the responsibility of the dealer and / or the user either to furnish and install the required valving to meet the recommended hydraulic pressures and flow or to arrange installation of the required valving at the truck factory or at Long Reach.

3.2 Carriage

1. The truck carriage must conform to the American National Standard (ASME) dimensions shown in ASME B56.11.4-1992, reaffirmed 2000.

2. Make sure the truck carriage is clean, conforms to ASME recommendations, and the notches are not damaged.

NOTE: the model description, found on your shipped invoice, will state the following truck requirements: flow (gpm), psi, and min. truck carriage width.

3.3 Hydraulics

1. The truck hydraulic system must supply to the attachment hydraulic oil that meets the specifications required to operate the attachment properly.

2. When the truck hydraulic system pressures exceed this maximum, a relief valve is recommended in the attachment auxiliary system of the truck or on the attachment.

3. Consult the truck factory and / or Long Reach for guidance.

3.4 Attachment Installation

1. Prior to connecting the truck hydraulic system to the attachment, the system **must** be purged through the filtration system. This will eliminate any contamination that might exist in the auxiliary hydraulic system of the truck.



WARNING

THE CAPACITY OF THE TRUCK AND ATTACHMENT COMBINATION MAY BE LESS THAN THE CAPACITY SHOWN ON THE ATTACHMENT ALONE. CONSULT TRUCK NAMEPLATE!

2. Purging can be accomplished by installing a jumper line and operating each hydraulic function (clamp, rotate and side shift if equipped) in each direction for a minimum of 30 seconds. (Figure 3-1)

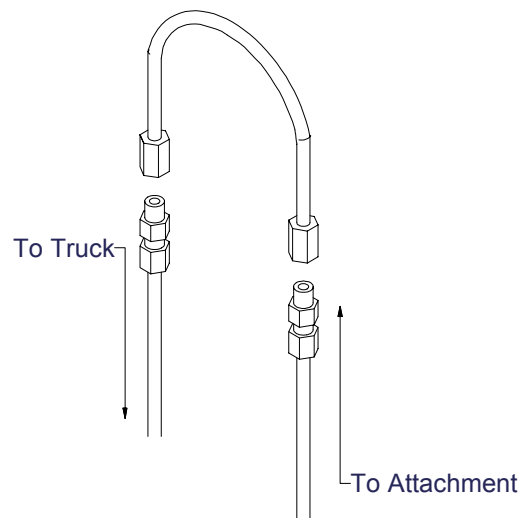


Figure 3-1, Jumper Line

3. Remove the lower bolt-on hooks and, if applicable, make a note of any factory installed shims. Shims are used to create clearance between the hook and carriage.

4. Center the truck behind the attachment and drive toward the attachment with the mast tilted forward approximately 4 degrees.

5. Line up the locking lug (under the mid plate, if applicable) with the appropriate notch on the truck's carriage. Check that the bronze side shifting wear strips are in the proper place, if applicable.

6. Make sure roller assembly is in place making contact with lower carriage bar.

7. Slowly raise the truck carriage completely to engage the top hooks with the truck carriage. Tilt carriage back until the unit is against the carriage bottom fork bar (0 degrees).

8. Inspect for proper engagement of the locking lug in the corresponding notch of the truck's carriage. Inspect any wear strips, if applicable, to insure they are properly aligned in the top hooks.

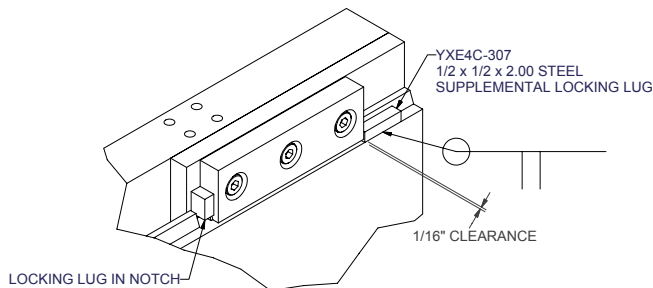


Figure 3-2, Locking Lug

9. Weld on the supplemental locking lug that is supplied with the attachment, (two pieces of 1/2 x 1/2 x 2.00 steel included with the attachment) with either E-6011 or E-6013 Welding Rod, or equivalent, on each side of the truck carriage. (Figure 3-2)

10. Install the bolt-on lower hooks. Inspect clearance to the carriage on lower hooks. Adjust the lower hooks for a maximum clearance of **3/32"** (see Figure 3-3). Tighten the bolts to **40-50 ft-lbs**.

11. Apply grease to bronze top hooks through fittings and spread on entire slide area of mid plate.

12. Check all fittings, connections and bolts for any interference.

3.5 Hydraulic Connections

1. Install the lines from the truck's hydraulics to the hydraulics of the attachment.

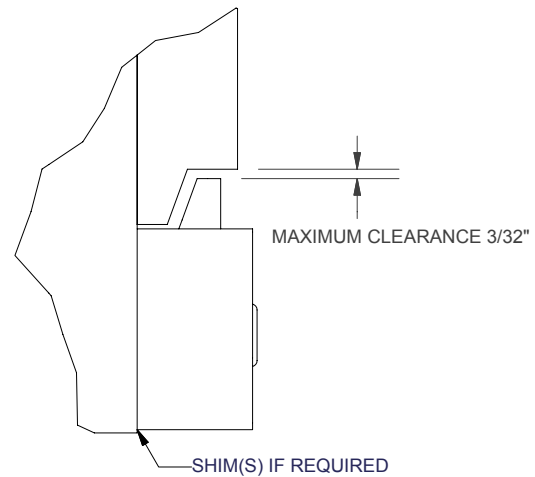


Figure 3-3, Lower Hook Clearance

2. Inspect installation to ensure hoses are not kinked or pinched between the truck carriage and attachment.

3. Operate the attachment continuously for several minutes to determine that all hydraulic connections are secure with no leaks.

4. With the mast in the vertical position, open the attachment arms fully. After this procedure, check that the truck's hydraulic reservoir oil level is at the recommended level.

5. Before placing the attachment in operation check the following:

- Inspect all hoses and fittings for leaks and routing clearance. Be sure to include clearance of jumper hoses to the mast.
- Check the valve and cylinder for leaks.
- Check cotter pins at each end of the cylinder for security.

6. After completing the installation, operate the attachment without a load for several cycles to remove any air in the hydraulic system. Test the attachment with a load to make sure the attachment operates correctly.



WARNING

ANY ALTERATIONS TO THE ORIGINAL ATTACHMENT MAY AFFECT PERFORMANCE OR SAFETY AND RESULT IN LOSS OF WARRANTY.

SECTION 4

SERVICE PROCEDURE

4.1 Attachment Removal

1. Position the attachment arms to the width of the unit's body.



WARNING

BEFORE DISCONNECTING ANY HYDRAULIC CONNECTIONS BE SURE TO TURN OFF THE TRUCKS POWER AND ACTIVATE THE TRUCKS HYDRAULIC FUNCTIONS IN BOTH DIRECTIONS TO BLEED OFF THE HYDRAULIC PRESSURE.

2. Disconnect the hydraulic connection for the attachment positioning at the cylinders
3. Disconnect the side shift connections.
4. Slightly raise the truck carriage to allow the removal of the bottom mounting hooks.
5. Position the attachment on the edge of a pallet. Lower the attachment so that the lower carriage bar misses the pallet when lowered. Tilt the mast forward to allow the carriage to disengage from the upper mounting hooks and back away. If lowering onto a floor, blocks of wood can be placed under the body of the attachment to raise the rear.
6. To reinstall, follow the installation procedure in this manual.



WARNING

WHEN HYDRAULIC SERVICING HAS BEEN PERFORMED, BEFORE RETURNING ATTACHMENT TO SERVICE BE SURE TO ACTIVATE THE HYDRAULIC FUNCTIONS SEVERAL TIMES TO BLEED OUT TRAPPED AIR IN THE SYSTEM.

4.2 Cylinder Removal

1. Disconnect the hydraulic connections.
2. Remove the cylinder rod end cotter pin and clevis pin.



WARNING

BEFORE DISCONNECTING ANY HYDRAULIC CONNECTIONS BE SURE TO TURN OFF THE TRUCKS POWER AND ACTIVATE THE TRUCKS HYDRAULIC FUNCTIONS IN BOTH DIRECTION TO BLEED OFF THE HYDRAULIC PRESSURE.

3. Remove cotter pin and clevis pin at the base end of the cylinder.

4.3 Cylinder Installation

1. Install the clevis pin and cotter pin into the base end of the cylinder.
2. Attach the hydraulic connections to the cylinder.
3. Extend the cylinder until the rod end hole lines up with the mounting hole. Install the clevis pin and cotter pin into the rod end of the cylinder.
4. Turn on the trucks power and activate the positioning cylinders several times to bleed out trapped air.

