

I-CAR ADVANTAGE Online™

Technical Information For The Collision Industry

LIFT SAFETY

An early issue of the I-CAR Advantage asks, "Does a Shop Need a Lift?" That article focused on the different types of lifting equipment and how to consider which type would be right for your repair facility. Most repair facilities use some type of lift. This article will focus on the safe use of lifting equipment.

The prospect of a falling vehicle is much too heavy to take lightly. Lack of training, operator error, being in a hurry, and neglected maintenance will cause lift-related accidents. Lift accidents result in serious consequences.

OWNER RESPONSIBILITIES

Owners must provide technicians with proper training before authorizing them to operate lifting equipment. If the owner does not feel comfortable delivering the training the lift manufacturer or lift service company may be employed. If a facility uses more than one type of lift, separate training must be delivered for each type. Technicians must know the maximum weight capacities, how the controls operate, proper vehicle spotting methods, lift safety features, rules for safe lifting, and good housekeeping procedures.

There are excellent materials available to assist in training delivery. The owner's manual for each lift contains safety and operating instructions for each lift and it must be carefully reviewed by anyone before they operate the lift. The Automotive Lift Institute (ALI) provides a variety of safety materials related to automotive lifts. These materials are included with lifts conforming to the

American National Standard governing lift Construction, Testing and Validation. The materials include the generic safety manual "Lifting it Right" and the Operation Inspection and Maintenance standard "ANSI/ALI ALOIM" manuals. Also available from ALI is a training video and a competency test for lift operators. These materials contain important information and provide checklists and verification forms that can be included in a facility's lift safety, inspection, and maintenance programs. All training must be properly documented, per ANSI/ALI ALOIM, and retained for future reference.

Owners should also ensure that all of the necessary safety labels and instruction postings are attached to the lift or located near the controls (see Figure 1). These materials include illustrated warning labels, and the ALI wall poster "Safety Tips." These materials serve to reinforce safe lifting procedures. Worn, unreadable, or lost labels and instruction postings should be replaced immediately. For frame-engaging lifts, a copy of the ALI/LP "Vehicle Lifting Points – Quick Reference Guide" should be kept nearby. This manual provides vehicle maker specified lifting points for passenger cars, vans, and light trucks. Each annual publication covers the most recent 20 years of domestic and imported vehicles.

TECHNICIAN RESPONSIBILITIES

Technicians should maintain a constant awareness of the many hazards involved with lifting vehicles. Many preventive measures can be taken to minimize the chance of lift-related accidents. Be aware of what



Figure 1—These warning labels serve as visual reminders for using caution when operating automotive lifts.

is going on in the area at all times and do not allow unqualified persons to enter the lifting area. This is especially important for customers who are likely unaware of the facility's hazards.

Wear the appropriate personal protective equipment. Falling objects or debris is one of the hazards of working under elevated vehicles. Safety glasses should always be worn to protect your eyes when doing overhead work. A hard hat or bump cap may also be considered for protecting your head from the vehicle underbody.

The maximum weight capacity for the lift should never be exceeded. The rated capacity should be located on the lift in an easily seen location and kept in good condition (see Figure 2). Always use the proper designated vehicle lifting points. If you aren't sure, consult the vehicle service information or refer to the ALI "Vehicle Lifting Points – Quick Reference Guide," to identify the correct lifting points for each vehicle. Check the lifting points and the lift adapters for damage or corrosion that may affect the support of the vehicle, and for wet, oily, or slick surfaces that may cause slippage.

Ensure that the vehicle is properly centered and balanced on the lift. Position the vehicle so that its center of gravity lies well within the area bounded by the supporting points of contact between the lift and the vehicle. If the center of gravity is not located well within this area, the vehicle will be subject to tipping. If the vehicle tips, it can slide off the lift. Do not rely on swing arm restraints to stop a vehicle from sliding off a lift. Their purpose is merely to maintain the position of unloaded swing arms. Observe all aspects of the vehicle when determining the center of gravity. Remove items located inside the vehicle that may affect the normal center of gravity. Before fully raising a vehicle to working position, raise it a short distance off the ground, gently rock it to verify that it is sufficiently stabilized (see Figure 3), and double-check that all supports are contacting the proper lifting points. Lower the vehicle to the ground and reposition if necessary. It is good practice to position high reach vehicle support stands under the vehicle to add stability, especially when lifting long wheelbase vehicles (long

bed vans, pick ups or limousines) or short wheelbase vehicles (sports cars or super economy cars).

Take the necessary precautions while the vehicle is up on the lift. Ensure that the lift locking devices (latches) properly engage. Audible "clicks" as the vehicle is being raised indicate safe stopping points. When the desired height is reached, slowly lower the lift so the lift rests on the locking devices. Secondary support as described above may be necessary if the vehicle is not raised high enough for the locking devices to engage or if the lift is not equipped with this type of device (such as with older air/oil in-ground lifts).

Also, take into account heavy parts that will be added or removed while the vehicle is on the lift. Use high reach vehicle support stands to help stabilize the vehicle for jobs that involve considerable displacement of weight or that shake the vehicle. Never lower vehicles onto vehicle support stands. If this is done, the stands may push the vehicle off the lift. Always adjust the stands to securely contact the vehicle after the lift is raised to the desired height. If a vehicle shows signs of falling, get out of the way and warn others immediately. Do not try to stabilize a falling vehicle!

When using drive-on lifts, make sure the wheels are properly chocked. Improper chocking is a common cause of many lift-related accidents. Make sure the lift front and rear stops are working properly and use the proper chocks provided with the lift. Wood blocks, bricks, or concrete blocks are not acceptable substitutes for chocks, contact pads, extenders, or any other type of vehicle support. Only use equipment provided by the lift manufacturer (see Figure 4).

When lowering the vehicle, make sure the area is clear of people, tools, and equipment. This includes toolboxes and oil drain pans that may catch under a vehicle and cause it to fall. Some types of lifts (parallelogram style) move fore and aft when being raised and lowered. Be sure that the space that the lift is moving into is completely clear. Be aware of the moving parts of the lift and ensure that these are clear also.

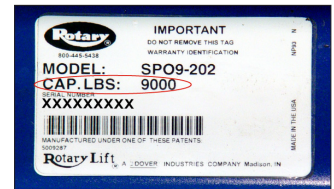


Figure 2—This identification label includes the maximum weight capacity for the lift.

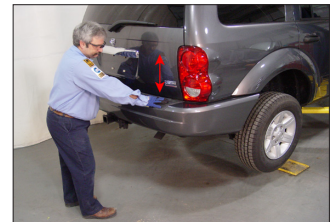


Figure 3—This technician is gently rocking the vehicle to verify that it is stabilized.



Figure 4—These auxiliary adapters, provided by the lift manufacturer, are specifically designed for the lift.

Do not try fixing or altering a lift. If the lift is not working properly, do not use it. Report problems to your supervisor and inform others not to use it until it has been repaired. Only trained professionals are qualified and authorized to repair or modify automotive lifts. This includes overriding safety devices. Do not override the lift controls by using blocks or wires to hold the control open to save time when raising or lowering your lift. Automotive lifts are designed for lifting vehicles. They should not be used as a jack. Using the lift for unintended purposes could result in personal injury or damage to equipment.

It is important to use the same amount of caution when using service jacks, frame racks, or any other type of equipment that raises and supports vehicles (see Figure 5). Although they may not raise the vehicle as high as other types of lifts, the potential for failure exists. If the vehicle is not properly stabilized, the vehicle may cause personal injury or damage to the vehicle, tools, or equipment. Always chock the wheels and use the appropriate vehicle support stands to properly support the vehicle before getting underneath or working around the raised vehicle.

CERTIFICATION AND MAINTENANCE

Owners purchasing a new lift should make sure it is ALI/ETL certified (see Figure 6). ALI/ETL certification is a program accredited by ANSI and sponsored by the ALI that requires independent third party testing for automotive lifts. The testing is witnessed by a nationally recognized testing laboratory and ensures that the lift meets or exceeds the American National Standard governing lift design and construction. This certification is also recognized in Canada. Canada's Ministry of Labor requires in the Province of Ontario that lifts be certified when acquired and that they be inspected annually in accordance with ANSI/ALI standards.

The lift manufacturer's guidelines should be followed for inspection and scheduled maintenance procedures. Daily, weekly, monthly, semi-annual, and annual inspections are commonly required to ensure

that the lift is properly maintained and the potential for lift failure is reduced. Technicians should be properly trained to inspect the lift every day before it is used. This includes, but is not limited to, checking cables, sheaves, lift pads, and adapters for damage or wear. Examine lift arms, welds, and castings for bends, cracks, or breaks. When inspecting surface-mounted lifts, check anchor bolts for tightness and torque specifications. Also inspect the floor around the anchor bolts for cracks. Cracks in the concrete floor around the mounting bolts may require replacement of that particular floor section or the lift to be moved to another location. The technician should stop using the lift and inform a supervisor if problems are identified or suspected. The owner must have the lift repaired before it is put back in use. The appropriate lock out/tag out procedures per OSHA 1910.147 should be observed to ensure that the lift is not used or energized before repairs are made.

Worn or damaged parts should be replaced only with parts supplied by the lift manufacturer. Parts availability may be another consideration when purchasing a new lift.

Owners must schedule the maintenance procedures recommended by the lift manufacturer. Qualified in-house technicians formally trained for this task may perform some basic maintenance procedures. The lift manufacturer or maintenance contractor should be consulted for training the appropriate technician. More comprehensive inspections, scheduled maintenance, and repairs should only be done by qualified lift service companies.

CONCLUSION

Before rushing to get a vehicle off the floor, consider for a moment what may happen if that vehicle were to fall. Personal injury and damage to the vehicle or the lift itself can be minimized if the proper precautions are taken. This article touches on some important safety concerns but is only intended as a reminder for automotive service facilities to be aware of the potential dangers involved in using automotive lifts. Always follow lift manufacturer specific recommendations and refer to ALI publications for general guidance.



Figure 5—It is also necessary to ensure that the vehicle is properly stabilized when using other types of lifting equipment such as this bench rack.



Figure 6—This label indicates that the lift is ALI/ETL certified.