



Report of Materials and Equipment Acceptance Division

NYC Department of Buildings
280 Broadway, New York, NY 10007
Robert D. LiMandri, Acting Commissioner
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Pursuant to Administrative Code Section 27-131, the following equipment or material has been found acceptable for use subject to the terms and conditions contained herein.

MEA 179-08-E

Manufacturer: Autoquip Corporation
1058 W. Industrial Avenue
P.O. Box 1058
Guthrie, OK 73044

Trade Name(s): American Custom Lifts Phantompark

Product: Subterranean 2-level automobile parking lift
MEA Index #90-10 – Car Lifts

Pertinent Code Section(s): 27-990, 27-991 and RS 18-3

Prescribed Test(s): Load Test & Computations signed and sealed by
Seymour Warren Gage, New York State P.E.,
License #31662

Laboratory: Seymour W. Gage, New York State P.E.,
License #31662 (NY)

Test Report(s): Dated March 24, 2008, the product has two support platforms, each intended to support one passenger automobile when the lift is in the lowered position. The upper platform was load tested with 14,080 lbs. test weights in the lowered position, and the lower platform was load tested with 17,816 lbs. test weights in the raised position. No discernable deflection of platforms or support structural elements was observed when the full load of 1,896 lbs. was on the product.

Description: Models **96PHS70**, **108PHS70** and **120PHS70** are 2-level subterranean parking systems, manufactured by Autoquip Corporation and distributed by American Custom Lifts utilizing a single scissors lifting system with four (4) heavy duty, high-capacity hydraulic cylinders per machine. The system is sized so as to provide parking or storage of two full size vehicles in a vertically-stacked configuration with the lift lowered. The system will lower one vehicle into a below ground pit or vault area for safe parking or long-term storage. Another vehicle may then be driven onto and parked on the upper platform of the parking system at grade level. In order to retrieve the lower car from the pit area, the upper car must be removed from the upper platform. The lift is operated from a wall-mounted pushbutton control unit with key lockout, and the lower car may be brought up to grade level. The car from the lower platform can then be driven off the lift at either level. In applications where there are not adequate ceiling clearances to allow the upper platform to raise the height required for floor to floor travel, the upper platform can be designed to stop at the upper floor and the support structure from the lower platform lowers with the lift.

This subterranean parking system is designed to be compatible with the needs of single-family residences and multi-family dwellings. The design features include flat, oversized vehicle platforms that are easy to park on and that can accommodate passenger vehicles and sport utility vehicles. There are no trip hazards and the systems are perfectly flush to the garage floor surface. All lifting devices, structural members, and hydraulic components are completely below the upper floor and out of the way of the operator.

Hydraulic Power and Controls

Each parking system is powered by a remote-located hydraulic power unit system that is sized to each installation. The standard power units require a 220V, single-phase and draws 28 full load amps and must be connected to a standard commercial grade power fused disconnect with 60 amp breaker (provided by others). For safety, operator switches are placed within full line-of-sight of the lift system, but not so close as to put the operator in a location where he can place feet or hands on or under the lift during operation. Switch locations are site specific.

“Up” Operation

When the “UP” button is pressed and all interlocks are closed and all safety circuits unbroken, the coil of the motor starter will close the line contacts of permitting the electric power to be applied to the motor. The rotating motor shaft is mechanically coupled to a positive displacement gear pump. This pump will rotate, assuming proper motor rotation direction, and it draws oil from the reservoir. The oil is pressurized, causing flow through the check valve, and forces it out to the cylinders through a high pressure hose. The hydraulic cylinder is attached to structural members of the lift causing the scissor mechanism of the legs to open as the cylinder rods extend. The lift will continue to move upward as long as the motor is running. When the lift deck reaches the upper level, the adjustable hydraulic Up-Stop Valve, located in the base of the lift, closes and blocks further flow of oil to the cylinders from the power unit. When the motor stops, the hydraulic oil in the system is held in place by the spring loaded check valve that has returned to its seat, thereby blocking the backflow through the control valve. The platform will maintain its position at the upper floor level.

“Down” Operation

Pressing the “DOWN” push-button applies control power to the down solenoid coil which causes the core plunger to move outward, allowing the down valve to open and the pressure-compensated down speed regulator to regulate the degree of the valve opening. This is dictated by the weight of the load placed on the lift. The lift will come to a stop when it reaches the lower floor level. At this point, there is no pressure remaining in the hydraulic system and flow through the down valve ceases, though the valve remains open. The motor does not operate during downward travel.

Emergency Stop

Press the red emergency stop button to stop all travel of the lift at any time. After the emergency stop button has been reset, any level button may be pressed to continue travel. The emergency stop button will interrupt all electrical control functions when it is activated. Movement of the lift will cease, regardless of its direction.

Safety Design

The subterranean parking system is designed and installed with extensive safety considerations for each application. These systems should only be operated by persons familiar with safety guidelines in the operator’s manual. The lift will stop and hold at any level when either the operator control is released, or if the machine is electrically stopped by a limit switch, safety interlock or photo beam. An adjustable hydraulic up-stop valve will be mounted and plumbed in the pressure system and stops the lift at full travel point. Additional electric level status switches will signal the control system to operate with peripheral safety control devices.

The single scissors design and the hydraulic cylinders provide stability for both platforms. The system cannot inadvertently drop due to power failure, hydraulic failure, operator error, or minor seismic event. Each hydraulic cylinder is equipped with a mechanical velocity-fuse that prevents rapid loss of hydraulic pressure.

Maintenance locks are fitted to each system. When moved into place by a service technician, the lift is supported by locks and cannot be lowered below a fixed level that is safe for the technician to work under the lift. Hydraulic components can be removed or serviced safely without the risk of system collapse or failure.

Lower Platform

The lower platform is configured so as to recess flush with the upper level concrete floor for drive-on and drive-off when fully raised. The surface is a flat steel platform with steel beveled toe guards on all four sides. Beveled toe guards are welded around the perimeter of the deck at an inward slant of approximately 30 degrees from vertical to protect toes during operation as the canopy deck descends past the edge of the garage floor into home position. The platform is designed to accommodate a vehicle parked on the platform weighing up to 7,000 lbs. The platforms will accommodate full-size cars and extended length SUVs and light trucks. The gap between the platform edges and the floor of the finished garage floor at grade level will be determined by the contractor/installer of the concrete floor surface. A gap of one inch is recommended and is shown on site specific approval drawings.

Upper Platform Support Structure

The upper platform is held in place by four vertical posts extending from the lower platform to the upper platform. The posts heights will determine the amount of ceiling clearance that is required for the lift in its raised position and typically match the floor to floor travel required.

Optional Drainage Slope

The upper platform may be sloped from front to back for the purpose of providing drainage and aligning with upper floor elevation. This is a configured dimension and must be specified when the lift is ordered. Metal shim spacers may also be provided that shim between the front vertical posts and the upper platform. Lower platforms are not sloped.

Models: 96/108/120PHS70

In this family, there are three models all structurally alike, but each with a different vertical travel capability, in accordance with the chart below:

Individual Model No.	Travel Distance
96PHS70	96"
108PHS70	108"
120PHS70	120"

Dimensions: The sizes and capacity of this version of the parking system will be as follows:

Lower platform size range:	96"-120" wide x 196"-222" long
Upper platform size range:	96"-120" wide x 196"-222" long
Platform-to-platform clearance:	60" minimum to 112" maximum (may be custom-configured)
Upper platform parked vehicle capacity:	7,000 lbs.
Lower platform lifting vehicle capacity	7,000 lbs.
Pit dimensions(based on minimum platform size:	98" wide x 198" long
Minimum pit depth at lower level:	18" minimum pit depth

Painting Coating: The subterranean parking system is coated with industrial grade machinery gray enamel paint.

Lifting Speed: Time to raise the lift through a 120 inches vertical stroke takes approximately 107 seconds. This rate can be adjusted within prescribed safety limits and may vary due to system configuration, temperature or other factors.

Lifting Weight Limits: The hydraulic system relief for each lift application is factory set to prevent the machines from lifting a weight that will exceed the design limits of the machines or the specific installation.

Terms and Conditions: The above-described automobile 2-level parking lifts are accepted, for indoor and outdoor use, with the following conditions:

Indoor Use

1. Installation of the lift shall be in sprinklered garages, which also have side wall sprinklers to protect the lower vehicle parked on the lift. The side wall sprinklers shall be protected from mechanical injury. The sprinkler pipe sizes shall be adequate to supply the additional side wall sprinklers.
2. Plans shall be filed and approved by the New York City Department of Buildings for the alteration of the existing sprinklers. Hydrostatic tests of the sprinkler system components shall be witnessed and approved by the Fire Department and Department of Buildings.
3. The floor loads shall be re-calculated for the adequacy for the additional weight of the lift and the cars, and filed with the Buildings Department by a structural Professional Engineer.
4. The indoor use shall be limited to garages with a minimum of 7' 0" ceiling height plus adequate distance for sprinkler coverage. Each device shall also require a pit below the garage floor with a maximum depth of 14' 6". The pit area shall be sprinklered as well.
5. In garages that do not have pre-existing sprinklers, the sprinkler system shall be designed for "High Piles Storage".

Outdoor Use

1. The car lift shall only be used in attended open parking lots.
2. The requirements of Section 27-4080 of the Administrative Code shall be complied with.
3. Each proposed installation of the car lifts shall be filed with the Department of Buildings to determine whether it complies with the Zoning Resolution and whether the soil conditions are adequate. Each unit shall have suitable anchorage of its structural members and integral base plates into concrete footings, the strength, size, and depth of which shall be based on an assumed weight of 6,000 lbs. for each car.
4. Where the property is located in or about residentially-zoned districts, this device shall not be located at the first row of cars or within 20 feet of the property line, whichever distance is greater.

For Both Indoor and Outdoor Use

1. All regulations of Department of Consumer Affairs shall be complied with.
2. Each proposed installation of the car lifts shall be filed with the Department of Buildings to determine whether it complies with the Zoning Resolution.

3. The lifts shall not be used to park or store any vans, trucks, recreational vehicles or any other type of vehicle other than passenger cars capable of seating up to 6 persons and weighing a maximum of 7,000 lbs. each car.
4. Drawings and specifications shall be filed with Department of Buildings – Elevator Division for each site.

All shipments and deliveries of such equipment shall be provided with a metal tag, suitably placed, certifying that the equipment shipped or delivered is equivalent to that tested and accepted for use, as provided in Section 27-131 of the New York City Building Code.

Note: In accordance with Section 27-131(d), all materials tested and accepted for use shall be subject to periodic retesting as determined by the Commissioner; and any material which upon retesting is found not to comply with Code requirements or the requirements set forth in the approval of the Commissioner shall cease to be acceptable for the use intended. During the period for such retesting, the Commissioner may require the use of such material to be restricted or discontinued if necessary to secure safety.

Final Acceptance August 28, 2008
Examined By Donald [Signature]