CITY OF NEW YORK
DEPARTMENT OF BUILDINGS

Pursuant to Administrative Code Section 27-131, the following equipment or material has been found acceptable for use in accordance with the Report of Materials and Equipment Acceptance (MEA) Division.

Patricia J. Lancaster, A.I.A., Commissioner

MEA 260-03-E
Report of Materials and Equipment Acceptance Division

Manufacturer – SpaceMaker Manufacturing (proprietary Limited 231 Wadeville Road, Wadeville, Johannesburg, 1422 South Africa).

Trade Name(s) - Park Plus SpaceMaker Triple Parking Lift.

Product - TP500 Electro hydraulic, drive on platform type, three level automobile stacking device.

Pertinent Code Sections –Section 27-990, 27-991 and Reference Standard RS18.3.

Test(s) - Load Tests and computations sealed by: Seymour Warren Gage, New York State PE License No. 31662.

Laboratory – Seymour Warren Gage, New York State PE License No. 31662.

Test Report(s) - Computations and tests witnessed by Seymour Gage P.E., State of New York, Lic. No. 31662, letter dated August 3, 2003. For model TP500, a three-level lift with two lifting platforms, the top and center platforms were load tested simultaneously. The top platform was load tested with a load of 14,026 lbs., and the center platform was load tested with a total of 14,026 lbs., for a total vertical system load of 28, 052 lbs. 1102 lb. Horizontal loads were applied simultaneously to each of the 2 raised platforms. All loading and deflection were as expected.

Description - The Park Plus SpaceMaker Triple automobile stacking device, Model TP500, a three (3) level car stacker device for parking two automobiles one above each other and above the third automobile on the ground. The device consists of two large and two smaller support columns, two movable platform assemblies carried by two cradles and four hydraulic cylinders and power unit.

The top platform will lift one automobile 155" (13') high above the ground level, the bottom platform will lift a second automobile 80" (6') high above ground level, while leaving space below to park a third automobile under the bottom platform at ground level.

The minimum ceiling height in order to install the device indoor would be 272" (22.67').

The larger columns are 258" (21.5') high whilst the smaller columns are 114" (9.5') high and combined have a total lifting capacity of 28,000 lbs.

The columns are fabricated out of 4130 steel.

The two platforms are fabricated out of integral bent steel sides and solid non-perforated 9 gauge (.1495") checkered steel plate floors all welded to lateral bent steel section support ribs at 3" intervals. The two larger columns are bolted together at the top by means of a steel section tie beam, which is also braced back down to the leg based at ground level by means of a steel round hollow section brace.

The entire assembly will weigh approximately 7,730 lbs., comes pre-welded and will be assembled in the field with A307 bolts, except for certain critical bolts which are A235 (high tensile – 120,000psi).

The stacker is operated by hydraulics. The rods to the hydraulic cylinders are chrome plated to prevent rusting. The hydraulic system, which raises and lowers the platform consists of a power rack comprising an electric motor which via a coupling and housing will drive a hydraulic pump and a valve set which contains a relief valve, a check valve, a flow control valve, and a solenoid operated lowering valve.

The solenoid operated valve, will either allow hydraulic oil flow to the cylinders or away from cylinders. During the operation of a specific platform, either the pump motor will be energized only for upward movement, or the solenoid valve will be operated only for lowering of the platform. The electrical operation of the stacker will be via push buttons, namely for the raising and lowering of a specific platform.

An interlock will also be installed via a limited switch to prevent the operation of the bottom platform in the event that the top platform is in the lowered position. A second interlock will be incorporated in the system so as not to allow the lowering of the top platform in the event that the second platform is in the raised condition. Limit switches will also ensure that no un-dedicated platform can move until the dedicated platform is in a fully raised position, or fully lowered position. The interlocks will render the offending platform inoperative and only the dedicated platform will be able to move.

A manually operated emergency pump is provided in case of electrical failure to allow lowering of the platform without electrical power.

The stacker device is also equipped with some mechanical safety locking system. The "posi-lock" double suspension system holds the full weight of the automobile on each platform in the locked position regardless of hydraulic or electric operation.

The other safety features include integral wheel chocks which secure the automobile wheels on each platform.

The entire parking list will have an acrylic polyurethane twin pack corrosion resistant hard wearing gloss paint finish.

Recommendation - That the above Model TP500, be accepted for indoor and outdoor use also with the following conditions:

For 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 Department of Buildings for the alteration of the existing sprinklers system and tie-in of the additional 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 recalculated for the additional weight of the lift and the cars, and filed with the Buildings Department by a structural Professional Engineer for adequacy.

4. The indoor use shall be limited to garages with a minimum of 22'0" ceiling height plus adequate distance for sprinkler coverage.

5. Garages that do not have pre-existing sprinklers, the sprinklers system shall be designed for "High Piled Storage".

For 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 use of the car lift shall be submitted to 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 use of the car lifts shall be submitted to 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 5,500 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 those tested and accepted for use, as provided for in Section 27-131 of the Building Code.

Final Acceptance October 29, 2003

Examined By