A SUCCESSFUL APPLICATION DEPENDS UPON THE PERCEPTION OF AN ERGONOMIC LIFTING PROBLEM TO WHICH ALUM-A-LIFT OFFERS A VIALBE SOLUTION, AND THE IMPORTANCE ATTACHED TO THE SOLUTION BY A DECISION MAKER
Company introduction

Equip-Test Group is the exclusive Eastern European partner of Alum-A-Lift Inc. - a specialist since 20 years in design and production of lifts for special applications. These lifting solutions are used by a wide range of global companies in a multitude of industries, e.g. electronics, semiconductor, packaging, food processing, pharmaceutical, solar, automotive, military, aerospace and the IT field.

Apart from initial consulting, we from Equip-Test Group offer a full range of spare parts ex-stock as well as competent after-sales support and maintenance services!

Whether your products need to be lifted, rotated, pushed or pulled, just contact us and we will provide you the best and most suitable solution to your requirements – and this to a fair and competitive price.

Your Equip-Test Team!
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This guide will describe the process starting with the perception of an ergonomic lifting problem and carry it through, step-by-step, to the provision of a viable solution.

1. The Object: Describe it.
   How much does it weigh? (Lb or Kg)
   What are its dimensions? (In or mm)
   Side-to-side
   Front-to-back
   Height
   Does it have any special features?

2. Where is the lift to find it (Source)?
   On the floor
   On a pallet
   On a shelf
   On a machine
   In a carton
   Elsewhere: Please describe!

3. What is the destination (Target)?
   Pallet
   Work bench
   Machine
   Carton
   Conveyor
   Rack or shelving
   Hopper
   Other: Please describe!

4. Special Conditions
   Floor conditions
   Obstacles
   Narrow aisles/doorways
   Overhead obstacles
   Cleanroom-class
   Ramps
   Lack of crawl space

5. Functional Requirements:
   In addition to lifting and lowering (Basic) and moving, what do you want to do with the object(s)?
   Basic (Lift or Lower)
   Translate
   Forwards or Backwards (Lateral Axis)
   Sideways (Longitudinal Axis)

5a. Lift or Lower
   Lowest Height to a Reference (e.g. Floor)
   Highest Height
   To Specific Elevation(s) Between Extremes

5b. Translate

5c. Rotate
   Insert Full
   Withdraw Defined
   Slide Vertical
   Roll Side
   Push Front
   Pull Horizontal

5d. Clamp or Capture

5e. Combinations
Having defined what is to be handled, what is to be done with the object and what the conditions are, the next steps are to specify the lift model and to configure it.

1. **The load and the moment** produced by the load are used to select the lift family. The standard used is the moment at 304,8 mm (12") forward of the lift’s carriage. Thus, a 100 lb load with the load center at 304, 8 mm (12") produces a moment of 1200 in-lb.

2. **FAMILIES**: (Not listed are “Specials”) *(see Page 7-11)*

<table>
<thead>
<tr>
<th>Model</th>
<th>Load (Lbs)</th>
<th>Kgs</th>
</tr>
</thead>
<tbody>
<tr>
<td>L100</td>
<td>100</td>
<td>45, 36</td>
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<tr>
<td>L150</td>
<td>150</td>
<td>68, 04</td>
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<td>A800</td>
<td>800</td>
<td>362, 87</td>
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<tr>
<td>A1000</td>
<td>1000</td>
<td>453, 59</td>
</tr>
<tr>
<td>A2000</td>
<td>2000</td>
<td>907, 18</td>
</tr>
</tbody>
</table>

*(see Page 7-11)*

3. **The width of the lift** will depend upon such variables as the width of the object to be straddled (D) allowing clearance for inward turned casters. The lift’s width may also depend upon constraints such as doorways, machine uprights or cart widths. Lateral stability calculations may affect width as well.

*(see Page Top-Left)*

4. **The leg profile** may depend upon crawl space available for the lift’s forward projecting legs. Without any crawl space, there are two options: A counterbalanced lift without any legs; or, it may be possible to turn the lift 90° and parallel park it for side movement of the load.

*(see Page 9 Down and Page 10)*

5. **Caster diameter (F)** should be the largest practical subject to constraints. Curves have been developed, relating push force to wheel diameter on different floors. Large wheels are used for carpeted or rough floors. Many configurations will be shown later in this guide.

*(see Page 7 Top-Left and Page 12)*

6. **Leg length (G)** depends upon space, maneuverability and, most important, stability. The usual criterion is recovery from a 10° tilt with maximum load at the highest position. At times, recovery from a 12° or 15° tilt is required.

*(see Page 7 Top-Left)*

7. **Mast length (B)** is determined by defining the lowest and highest load levels, taking the difference to determine the required excursion. For models A150 through to A250, add 355,6 mm (14") to the excursion (for the carriage and clearances).

*(see Page 7 Top-Left)*

**Example (Ctd)** For B350, add 482,6 mm (19”). For A800, add 609,6 mm (24”). For example, for an A150, if a platform is to travel from floor level to 1473,2 mm (58”), adding 355,6 mm (14") results in a 1828,8 mm (72") long mast. If the maximum height is 1574,8 mm (62”), the next standard length will be 2133,6 mm (84”). Special mast lengths may be specified as well. At times the maximum mast length and the resulting lift height (A), will be constrained by overhead obstacles. In such instances, a telescoping mast may be specified.
For Loads to 100 lb

Lift - Smart

For Loads up to 75 Kg

Light - Weight Lifts

For Loads up to 100 Kg

Alum - a - Lift and Build - Smart Series

Model A150  Model A200  Model A250
Special mast lengths may be specified

Model B350

Model B350-CS
continuous side plate for
heavy duty

The Gorilla Lift Family

With continuous side plates - Loads for 400 Kg

Standard 24V system for high torque
Super Gorilla Lifts

Fitted with a powered drive train, runs on raised floors to handle tooling used in wafer fabrication in class 100 cr.

Used when forward projecting legs may not be used.

Middle weight range
Used when forward projecting legs may not be used

Heavy duty range - ballast usually required (As an alternative to specifying counterbalanced lifts, determine if lifts with forward projecting legs may be used by parallel parking and transferring load on and off sideways. Conventional lifts may not require ballast.)

Telescoping lifts

Compound mast sections for high elevations when height constraints such as doorways are present
Examples of Products developed from Engineering Projects

Variable platforms
Multi-Tiered Short Stroke Computers to and from burn-in racks

Universal mount
Class 100 Clean-room to Accept a Variety of End Effects

Joystick controls
Class 100 Clean-room, Telescoping mast, with Powered Drive, to run on raised Tile Floors, with outriggers and 800 lbs of ballast

Casters

Braking casters are usually used at rear positions

Larger wheels make for ease of pushing and maneuvering

Wheel diameters determine leg profiles; crawl space may limit leg profile

Low profile for limited crawl space
LIFT STABILITY: TILT CALCULATION

10°

RIGHTING MOMENT
(50kg)(406mm) =
(25kg)(512mm) =
(CM)(536mm) =
33100 kg-mm

TIPPING MOMENT
(11kg)(85mm) +
(102kg)(291mm) =
30617 kg-mm

RIGHTING MOMENT
(50kg)(182mm) +
(26kg)(205mm) +
(CM)(230mm) =
14225 kg-mm

TIPPING MOMENT
(11kg)(16mm) +
(102kg)(34mm) =
3644 kg-mm

LIFT IS STABLE. NO COUNTERMASS REQUIRED.

APPROXIMATE SYSTEM WEIGHT
86kg WITHOUT LOAD
188kg WITH 102kg LOAD

97.5% MALE
2.5% FEMALE

Ø4.0 [Ø102]
14.5 [369]
30.0 [762]
70.5 [1791]
18.0 [457]

3.4 [85]
11.5 [291]

7.2 [182]
8.1 [206]
9.0 [230]
-0.6 [16]
-1.3 [34]
ATE - Test Fixture Lifts

- **Model B350**
  - ATE Wrist
  - Handling 125 Kg Test Fixtures

- **Model A1500**
  - Special Modified ATE Flat, HW
  - Handling Test Fixtures up to 500 Kg

- **Model A250**
  - ATE Flat, LW
  - Handling Test Fixtures up to 65 Kg

- **Model C150**
  - ATE Flat, LW
  - Handling Test Fixtures up to 35 Kg
Server / Computer Handling Lifts

- **Model A250**
  - ESD UHMW Platform
  - Handling Servers up to 75 Kg

- **Model L150**
  - ESD UHMW Platform
  - Flip Stops
  - Handling 50 Kg Magazines

- **Model L200**
  - Multiple Platforms
  - Lifting up to four 10 Kg Laptop

- **Model A800**
  - Width Adjustable Arms
  - Redundant Suction Heads, Powered Trunion
  - Handling Chassis up to 180 Kg
Television and Monitor Handling Lifts

Lifting TV from production line into a Lab
Up to 50 Kg

Model B350

Lifting Monitors inside of boxes
Up to 80 Kg

Electronics / Telecommunications
Electronics Assembly Lifts

- **Model A800**
  - Adjustable Width, Heavy Duty Forkset
  - Embedded Rollers
  - Handling Racks up to 250 Kg

- **Model A250**
  - Fork Set
  - Handling Scales Weighing up to 80 Kg

- **Model A250**
  - Wide Straddle Fork Set
  - Handling 50 Kg Scanners

- **Model A800**
  - Roller Deck
  - Handling Components weighing up to 225 Kg
Amplifier Handling

Model A800
Roller Deck
Manual Leveling
Handling Components up to 100 Kg

Model A250
Removable Roller Deck
Handling MRU Assemblies weighing up to 75 Kg

Model B350
Boom Mounted Suction Head
Redundant Vacuum System
Handling 70 Kg Chassis

Model B350
Boom Mounted Suction Head
Redundant Vacuum System
Handling 70 Kg Chassis
Magazine / Rack Handling Lifts

- Model Super Gorilla
  Lifting Special Magazines
  Up to 500 Kg

- Model Super Gorilla
  Lifting Special Magazines
  Up to 500 Kg

- Model A250
  Powered Pusher-Puller
  Handling (5) 12 Kg Racks

- Model C250
  Powered Lateral Shuttle
  Platform
  Handling 75 Kg Nodes and Servers
General Lifts

Model A250
Side-to-Side Ball Transfer
Handling Two Magazines

Model L200
Shaft Clamp Gripper
Handling up to 36 Kg Core Plugs

Model A1500
Powered Gripper
Powered Trunion, Detachable swing-away Boom
Handling 600 Kg ESSM Radome Molds

Model A800
Articulation Arm with Platform

Automotive Industry
Lifts for Cable Harnesses

Model A250
- Powered Clamp And Wrist
- Removable ESD UHMW Platform
- Handling 75 Kg Spools

Model A250
- Powered Expanding Mandrel
- Handling 75 Kg Rolls

Model 150-60
- Lifting Reels up to 200 Kg

Model C250
- Swivel V-Trough
- Handling 125 Kg Spools

Automotive Industry
Lifts for Assembly

- **Model A250**
  - Powered Dumper
  - Dumping 70 Kg Shop Box Into 36’ Hoppers

- **Model S1000**
  - 3-Segment Articulated-Arm With Tilting Rotating Powered Gripper
  - Handling 11 Kg Racks

- **Model B350**
  - Trunion Mounted Powered Clamp
  - Manual Wrists
  - Handling 125 Kg Sorters

Automotive Industry
Scissors Lifts

Alum-A-Sumo
Scissor Lift
Handling 150 Kg Components

Model A350
Powered Scissors
Lifting and Pushing components up to 200 Kg

Alum-A-Sumo
Scissor Lift
Handling 150 Kg Components

Model A350
Powered Scissors
Lifting and Pushing components up to 200 Kg
Articulated Arm
Handling 200 Kg Crucibles

Forkset
Handling 60 Kg Metrology Tools

Heavy Duty Fork Set
Handling 550 Kg Crucibles

Powered Trunion
Powered Clamp
Handling Hot, 150 Kg Ingots
Barrel Handling

Model A800
Parrot’s Beak
Handling 300 Kg Drums

Model A800
Powered Clamp And Trunion
Handling Drums weighing up to 280 Kg

Model A800
Power Clamps
Handling 270 Kg Drums
Roll Handling

Model L200
Powered Expanding Mandrel
Handling Rolls up to 75 Kg

Model B350
Expanding Mandrel
Handling Rolls up to 100 Kg

Model B350
Manual Clamp
Manual Trunion
Handling 125 Kg Rolls

Model B350
Powered Clamp
Manual Trunion
Handling 100 Kg Rolls

Chemical / Pharmaceutical Industries
Clean Room Lifts

Model C800
Heavy Duty Adjustable/Removable Width Fork Set
Handling 350 Kg Elements from a Frame

Model C250
Fixed Boom
4-Point Tether, Additional Prong
Handling up to 85 Kg Components

Model C800
Manual Clamp And Wrist
Handling 200 Kg Drums

Model C1500
Powered Clamp
Powered Wrists
Handling 270 Kg Rolls
Roll Handling

Packaging / Food Processing Industry

- **Model B350**
  - Powered Clamp With Wrists
  - Handling 150 Kg Rolls

- **Model A800**
  - Powered Clamp
  - Handling up to 255 Kg Drums

- **Model A800**
  - Powered Trunion
  - Powered Clamp
  - Handling up to 162 Kg Rolls

- **Model B350**
  - 3" Short Reach Expanding Mandrel
  - Handling up to 80 Kg Rolls
Barrel Handling

**Model A250**
Clamp
Handling 50 Kg Computers Out Of Boxes
And Onto Metro Cart

**Model A1500**
Powered Clamp
Powered Wrists
Handling 400 Kg Drums

**Model A800**
Powered Trunion
Powered Clamp
Handling up to 300 Kg Drums

**Model A800**
Powered Clamp
Powered Wrist
Handling Drums up to 225 Kg
Stainless Steel and Washable Lifts

- **Model Clean Room Lift**
  Handling up to 400 Kg Barrels, with stainless Steel Clamp

- **Model Washable Stainless Steel**
  Lifting any components inside of Clean Room, depending on End-Effector

- **Model Washable Stainless Steel**
  Washable Stainless Steel with End-Effector up to 300 Kg

- **Model L200**
  Offset Fork Set
  Handling 50 Kg Carboys
Filter Handling

Model A250
Powered Clamp
Manual Trunion
Handling 50 Kg Rolls

Model A150
V-Trough
Handling 10” Diameter Rolls

Model C1500
Heavy Duty V-Trough
Handling 750 Kg Rolls

Model A250
Powered Clamp
Manual Trunion
Handling 50 Kg Rolls
Filter Handling

Tool / Frame Handling

Wide Reach Fork Set
Handling 125 Kg Rolls
Class 100 Cleanroom

Model A800

Heavy Duty Fork Set
Handling 100 Kg Sacks

Model A2500

Adjustable Resistance Tube Catcher
Manual Trunion
Handling 100 Kg Glass Tubes

Model A800
Vacuum Lifts

Model C800
- Dual On-Board Vacuum System
- Fixed Boom With Rotating Suction Plate
- Handling up to 150 Kg Plates

Model C800
- Dual On-Board Vacuum System
- Fixed Boom With Rotating Suction Plate
- Handling up to 150 Kg Plate

Model A800
- Powered Rotating Suction Head, Dual On-Board Vacuum System
- Handling 100 Kg Quartzware

Model B350
- Boom Mounted Suction Head and Vacuum System
- Handling 75 Kg Chassis
Handling Molds

- Model L200
  Telescoping Boom
  Handling 55 Kg Electron Guns

- Model B350
  Fixed Boom With Swivel Eye and Tether
  Handling 50 Kg Dies

- Model B350
  Overload Sensing Boom and 3-Point Tether
  Handling 150 Kg Fixtures

- Model A1500
  Fixed Boom
  Handling up to 800 Kg Molds
Casino Lifts

- Model A800
  Powered Casino Clamp
  Handling 175 Kg Slot Machines

- Model B450
  Platform
  Handling 200 Kg Gaming Machines

- Model A800
  Powered Clamp
  Handling 250 Kg Gaming Machine

- Model A1000
  Heavy Duty Fork Set
  Detachable Platform
  Handling 500 Kg Motorcycle
Casino Lifts

Casino / Gaming Lifts

Casino Tugs

Alum-A-Lift Tug
For Transporting Dollies

Model

Model B350
For Transporting Products on Dollies, with Speed Control Module

Model A1500
For Transporting Products on Dollies, with Speed Control Module
Tool Handling

- **Model L150**
  Engagement Rail
  Handling 50 Kg Motherboards

- **Model A800**
  Class 100 Clean Room Lift
  Handling Heater Elements

- **Model A800**
  Adjustable Reach Boom
  Handling up to 110 Kg

- **Model A250**
  Beam Stop Gripper
  Ceramic Bushing Gripper
  For Cleaning Area
Component Handling

Model A800
Manual Clamp
Handling 50 Kg Bell Jars

Model B350
Powered Rotating Frame
Detachable Boom, Powered Rotating Shuttle
Handling 40 Kg Base Plates

Model B350
Powered Rotating Frame
Detachable Boom, Powered Rotating Shuttle
Handling 40 Kg Base Plates

Model L200
Adjustable Width Hook Set
On Swiveling Cross Bar
Handling 27 Kg FOUP Baskets
Class 100 Cleanroom Lifts

- Model S3000
  A multi purpose universal hoist, for handling components in a semi-conductor environment with Powered Articulated Arm (PAA)

- Model S1000
  Semi Lift
  A multi purpose universal hoist, for handling components in a semi-conductor environment

- Model C800
  Heavy Duty Adjustable/Removable Width Fork Set
  Handling 350 Kg Elements from a Frame

- Model S1000
  Semi Lift
  Powered Articulated Arm (PAA) with Gripper
Class 100 Cleanroom Lifts

Aerospace Industries

Missile Handling

- Model A800
  Telescoping Wrist Set
  Integrated Lateral and Vertical Shuttle
  Lifting 30 Kg Radome Assembly

- Model A250
  Powered Clamp On Manual Trunion
  Handling 27 Kg Nose Cones

- Model
  Retrofit of Lift 13187A

- Model A250
  Powered Clamp On Manual Trunion
  Handling 27 Kg Nose Cones
Explosion Proof Lifts

- Model Explosion Proof with Telescoping Arm
  Handling Round Elements
  Up to 300 Kg

- Model Explosion Proof with special Arm
  Grabbing Special Elements
  Up to 200 Kg

- Model Explosion Proof Lifts
  With Manual Precise Adjustment
  Up to 100 Kg

- Model Explosion Proof Lift
  Counterbalanced
  Special Application
  Up to 150 Kg
Explosion Proof Lifts

Aerospace Industries

Component Assembly Lifts

- **Model C2000**
  - Adjustable-Width Wide Forks
  - Handling Blades up to 250 Kg

- **Model C1500**
  - Powered Clamp
  - Powered Wrist
  - Handling up to 200 Kg Tires

- **Model A800**
  - Powered Rotating
  - Tilting Suction Head
  - On-Board Vacuum System

- **Model C800**
  - Powered Trunion
  - Mounting Frame
  - Handling 130 Kg Cabinets
 UPS Battery Handling

- Model L150
  Platform
  Handling Modules up to 30 Kg

- Model C1000
  Fixed Boom
  Swiveling Eyebolt
  Handling 400 Kg Material

- Model A800
  Swiveling Shuttle Boom
  Handling 225 Kg Batteries

- Model A800
  Swiveling Shuttle Boom
  Handling 225 Kg Batteries
Lifts for Server Rooms

- **Model A800**
  - Adjustable Width, Heavy Duty Forkset
  - Embedded Rollers
  - Handling Racks up to 250 Kg

- **Model A250**
  - Adjustable Forks
  - Handling 100 Kg Chassis

- **Model C250**
  - Fold-Up Fork Set
  - Inertial Navigation Devices
  - Weighing up to 37 Kg

- **Model A800**
  - Roller Deck
  - Manual Leveling
  - Handling Components up to 100 Kg
**Lifts for Printers and Office Lifts**

- **Model L150**
  - Aluminum Platform
  - Handling Trays From Burn In Racks To 60 Kg

- **Model L100**
  - UHMW Lined Platform

- **Model L200**
  - ESD UHMW Platform
  - Handling 20 Kg TX-Units

- **Model A150**
  - Platform
  - Handling up to 75 Kg
Lifts for Service Companies

Model T250
Trav-A-Lift
Handling Sterilizers up to 137 Kg

Model T250
Trav-A-Lift
Next Generation Platform

Model T250
Trav-A-Lift
Handling 137 Kg Power Supplies

Model T300
Trav-A-Lift With Boom
Spreader Bar, Slings
Handling 115 Kg Flat-Panel Display
Model T3000
Alum-A-Mula
Dual-Tow Latch and Bumpers

Model T4000
Adjustable Width Tines
Maneuvering 2000 Kg Cabinets

Model T4000
Adjustable Width Tines
Maneuvering 2000 Kg Cabinets

Model T1500
Tug pushing barrels