

MEKASTER

VISION FOR PERFECTION





MEKASTER

## **Rack & Pinion Lifts For Vertical Transportation Of Men & Materials !**

*Mekaster Industrial Lifts have become an integral part of wide range of Industries, providing customers with an improved method of Vertical Transportation for Men and Material. Mekaster meets stringent industry demands on Safe, Reliable, Vertical Transportation using positive drive of Rack & Pinion in dusty and hazardous environments. Mekaster lifts can be installed in existing plants, indoors or outdoors, on a straight, inclined or curved surface.*

*It all started over fifteen years ago. Mekaster was the first lift manufacturer in India to introduce Rack & Pinion drive technology. This technology offers unique advantages in comparison with conventional lift designs such as wire rope and hydraulic lift systems.*

*Mekaster has supplied Rack & Pinion lifts for various applications like Chimney, Coal Handling Plant, Boiler Erection for Thermal Plants, Pre-Heater Tower & Silos for Cement Plants, T.V. and Communication Tower, Container Crane, Grab Unloader, Shipyards for ports, High Rise Building Construction, Bridge Pylon Construction, Crude & Vacuum Column for Refinery, which are in successful operation in India. No one has greater experience and no one has made a greater contribution to the development and refinement of Rack & Pinion technology in India.*

*We are now geared up for future challenges to respond to new requirement, environments and needs.*

# RACK & PINION

## WHAT IS RACK AND PINION ?

The Rack and Pinion system is simplicity beyond question with 100 percent mechanical efficiency to provide precise and positive control and operations for transportation to unlimited heights. Each and every rack segment and pinion is machined to produce the quality finish required for safe and positive operation.

## WHY RACK & PINION ?

- ◆ Higher factor of Safety.
- ◆ Greater resistance to windy and hostile environment.
- ◆ Low operational costs and minimal maintenance.
- ◆ Curved and inclined traveling possible.
- ◆ Suitable for external and internal applications.
- ◆ No shaft is needed.
- ◆ Easy erection from the cage roof.
- ◆ Modular interchangeable system for various combinations.
- ◆ No Ropes or Sheaves required.



These lifts are suitable for construction, inspection and maintenance of tall industrial structures such as Chimneys, Boiler Plants, TV and Communication Towers, Process Plants, Silos, Container and Gantry Cranes, Tower Cranes in core Industries which include:



◆ Power Plants.

◆ Refineries

◆ Fertilizer & Cement Plants.

◆ Building Construction.

◆ Bridge Construction.

◆ TV. & Communication Towers.

◆ Ports & Shipyards.

# MEKASTER MODULAR SYSTEM

The MEKASTER Modular system is built up around basic elements, comprising of comprehensive range of Masts, Lifts Cages and drive units. This system enables the Lifts to be tailored to suit almost any project. Galvanized structures are also available.

## MASTS

Masts are available in different cross-section for a wide variety of applications and various load parameters. Some are square basically for heavy load capacity others are rectangular or triangular in cross-sections mainly for permanent installations. The sections are supplied complete with a Rack. Square Mast can be supplied with Rack on both sides for TWIN CAGE solution.



## CAGES

The Lifts are available in different cage dimensions. Due to the shape of the mast and cage, wind has minimal effect and least possible force is transferred to the wall. The cage can be fitted with different types of gates, interlocks and control systems.

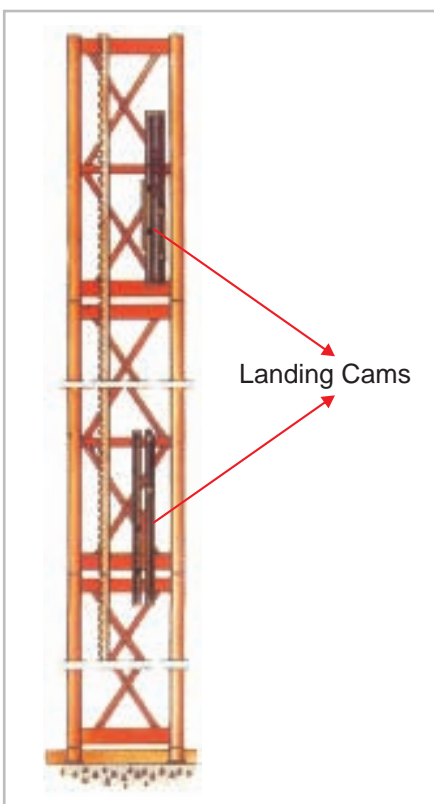
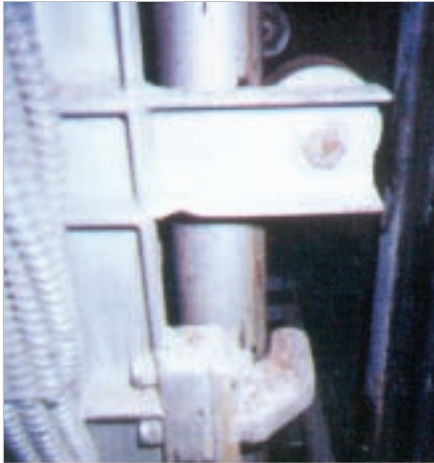


## DRIVE SYSTEMS

The Lifts are powered by the well-proven gear drive units, with self adjusting disc brake and over speed governor.



# BUILT-IN-SAFETY



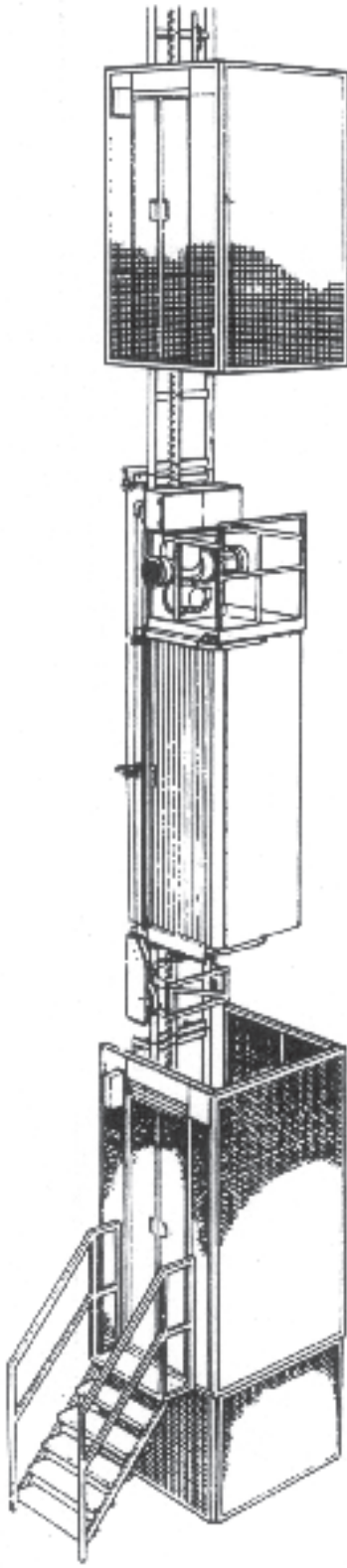
The MEKASTER Lift has safety systems that ensure absolute safety in all conditions. Electromagnetic Brake is provided to ensure safe travel of the lift. Centrifugal Brake is provided to prevent accidental tripping of safety systems. Mechanical Brake Releasing Mechanism is provided inside the cage to bring down the lift in case of power failure. The cage is equipped with safety hooks around the corner tubes of the mast to prevent detachment of cage from mast and heels to prevent the pinion from disengaging the Rack. Double locks make it impossible to open the cage door when the lift is moving.

The Lifts are fitted with progressive type positive action MEKASTER unique safety system called "SURAKSHA YANTRA" that brings the Lifts to a smooth stop in case of downward over speed. This device actuates when the lift exceeds the rated speed.

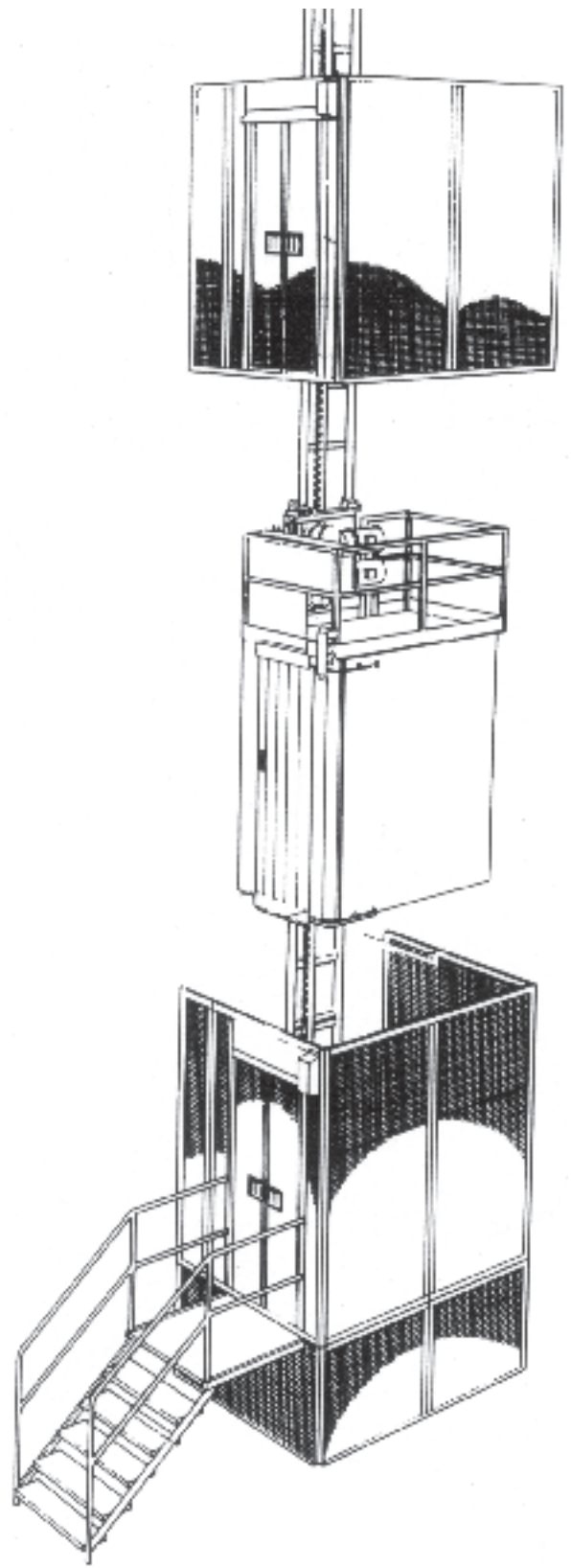
End stopping Cams are provided to activate limit switches at ground and top level to ensure that cage stops at top and bottom position. Also, Ultimate Switch is provided in case of over-run.

Landing cams are provided for smooth halt at landing level with adjustable leveling accuracy.

**LIFT FOR SMALLER VERSION**



**LIFT FOR BIGGER VERSION**





## TECHNICAL SPECIFICATION

Particulars	Unit	Model 400	Model 1000	Model 1200	Model 1500	Model 2000
Pay load capacity	kg	400	1000	1200	1500	2000
Cage Internal Dimension (W X L X H)	m	1.0 X 1.1 X 2.1	1.3 X 2.0 X 2.1	1.3 X 2.6 X 2.1	1.5 X 3.0 X 2.1	1.5 X 3.2 X 2.1
<b>Maximum Mast Height</b>						
Flat Mast	m	300	--	--	--	--
Rectangular Mast	m	425	200	200	150	150
Triangular Mast	m	425	200	200	150	150
Square Mast	m	425	250	250	200	200
Speed at 50 Hz	m/min	28.0 / 40.0	28.0 / 40.0	28.0 / 40.0	28.0 / 40.0	28.0 / 40.0
<b>Motors</b>						
Power	KW	1 X 9.2	2 X 9.2/ 3 X 9.2	2 X 9.2 /3 X 9.2	2 X 12.5/3X9.2	3X12.5/3X12.5
Power Consumption	KVA	13	26 / 30	26 / 30	35 / 40	50
Power Supply Fuses	amps	63	125	125	125	125
<b>Weight</b>						
Flat Mast	kg	62	--	--	--	--
Rectangular Mast	kg	105	105	105	105	105
Triangular Mast	kg	110	110	110	110	110
Square Mast	kg	130	130	130	130	130
Mast Length	m	1.508	1.508	1.508	1.508	1.508
Height required above top landing	m	4.5	4.5	4.5	4.5	4.5
Minimum clear space required	m	1.5 X 1.5	2.7 X 2.7	3.2 X 3.2	3.5 X 3.5	4.0 X 4.0
Distance between cable guides	m	6	6	6	6	6
Distance between anchors	m	1.5	6	6	6	6

\* The above mentioned specifications are standard features. Mekaster continuously improves on quality/ technology and for that reason reserves the right to make changes.

\* Increased lifting height can be offered on request.

\* High Speed Elevator with Variable Frequency Control (VFC) can be offered on request.

\* Twin cage on single mast can be offered on request.

## CONTROL EQUIPMENT SYSTEM

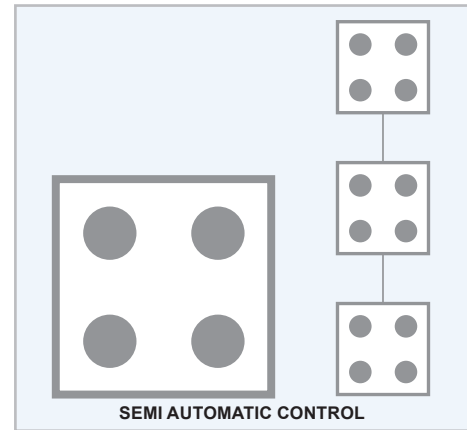
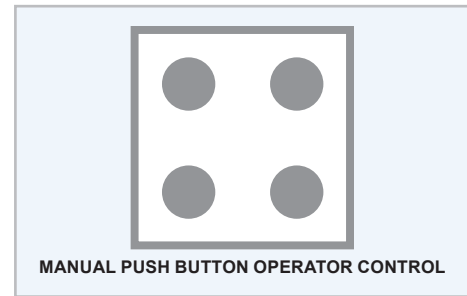
Depending on the frequency of use, the intended purpose and other factors such as number of landings, several options are available as standard.

### MANUAL PUSH BUTTON OPERATOR CONTROL

The Lift can only be operated from the Cage.

### SEMI AUTOMATIC CONTROL

Push buttons of type "UP", "DOWN" or "STOP AT NEXT LANDING" are placed inside the cage. The landings have similar set of boxes.



## ERECTION AND AFTER SALES SERVICE

MEKASTER lifts are renowned for their dependability, reliability and safety.

The erection, commissioning and after sales service are provided by MEKASTER trained engineers. We also offer Annual Maintenance Contract. Spare parts are available off-the shelf. In fact, every thing that you have come to associate with Mekaster.



## MAJOR CUSTOMERS REFERENCE LIST

NTPC LIMITED  
BHARAT HEAVY ELECTRICAL LIMITED (BHEL)  
WEST BENGAL POWER DEVELOPMENT CORPORATION LIMITED (WBPDCL)  
DAMODAR VALLEY CORPORATION (DVC)  
LARSEN & TOUBRO LIMITED (L&T ECC)  
NATIONAL BUILDINGS CONSTRUCTION CORPORATION LIMITED (NBCC)  
MCNALLY BHARAT ENGINEERING COMPANY LIMITED (MBE)  
SHAPOORJI PALLONJI LIMITED (SPL)  
GAMMON INDIA LIMITED (GIL)  
SIMPLEX INFRASTRUCTURE  
GANNON DUNKERLY LIMITED  
RELIANCE INDUSTRIES LIMITED  
PUNJLLOYD LIMITED  
RELIANCE ENERGY LIMITED  
NATIONAL ALUMINIUM COMPANY LIMITED



# MEKASTER

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**ISO 9001- 2000 Quality Assurance Certified**

