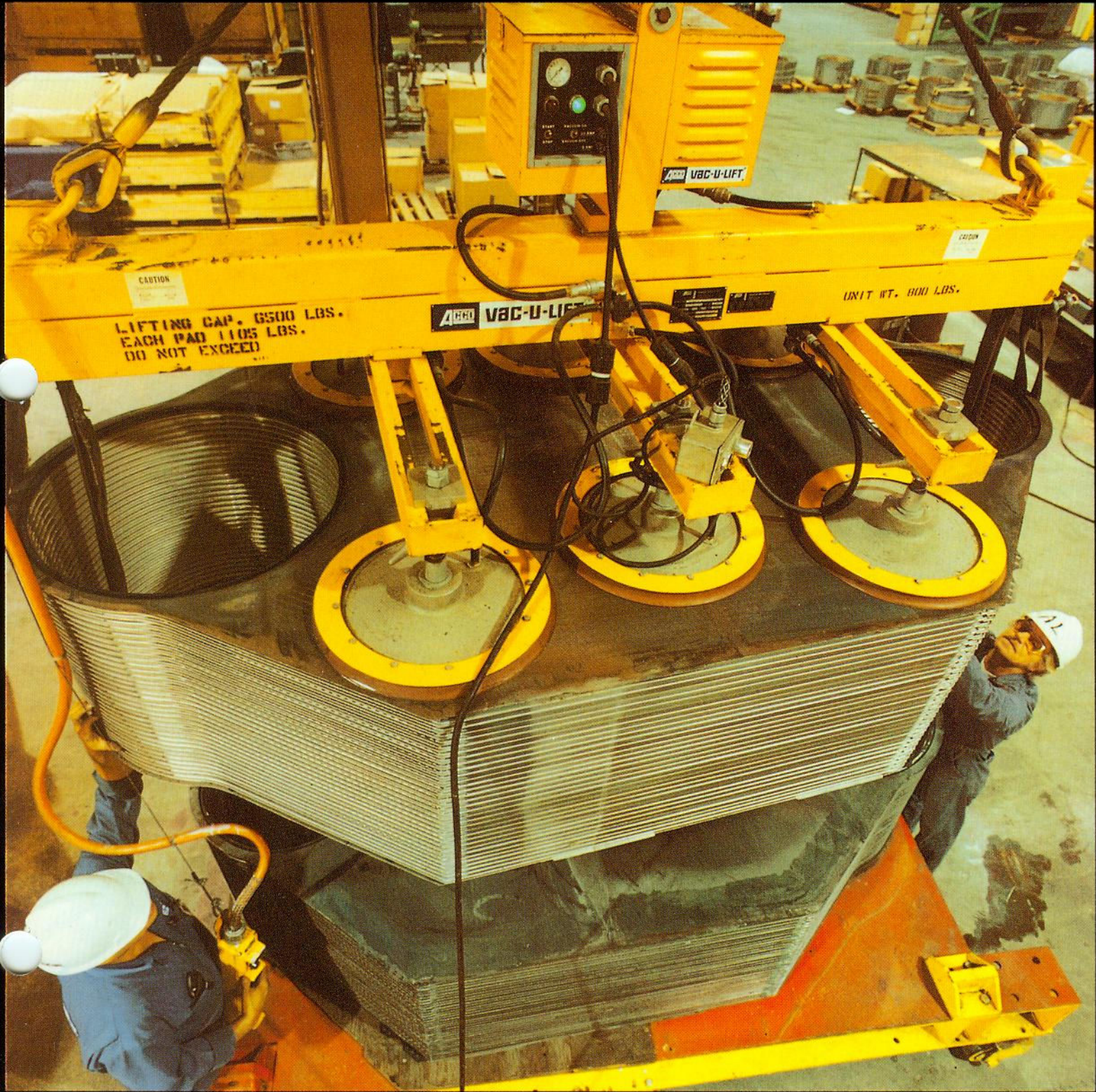


# VAC-U-LIFT<sup>®</sup>

## LIFTERS



# VAC-U-LIFT® -the answer to your below-the-hook lifting requirements!

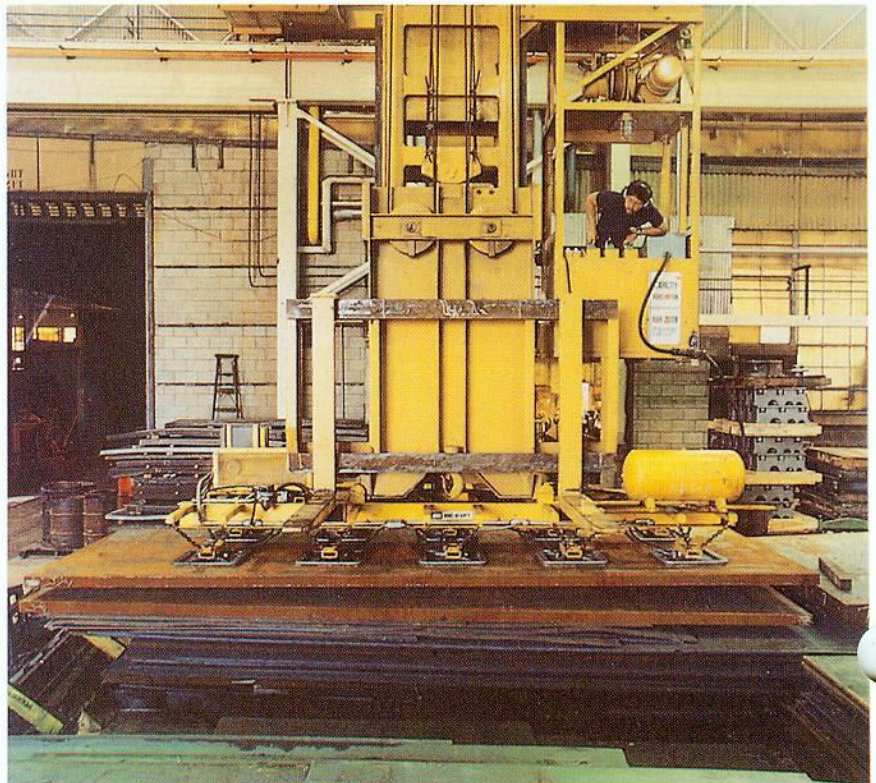
The leading name today in vacuum lifters is *VAC-U-LIFT*. Years of continuous development have resulted in today's most complete line of lifters, handling a wide range of applications in a number of industries.

**Standard Lifters** - our standard line includes lifters for handling:

- Sheets and plates
- Paper rolls
- Building materials
- Barrels, drums and cans
- Precast concrete panels
- Glass and plastic sheets

**Engineered Systems** for application requiring a special lifting device. We can provide an engineered vacuum lifter to solve a specific handling need. Our engineers have designed hundreds of such vacuum lifters for handling all sizes, shapes, and weights of material.

On the following pages are vacuum lifter selection considerations with photographs illustrating *VAC-U-LIFT* lifters in action in a variety of industrial applications.

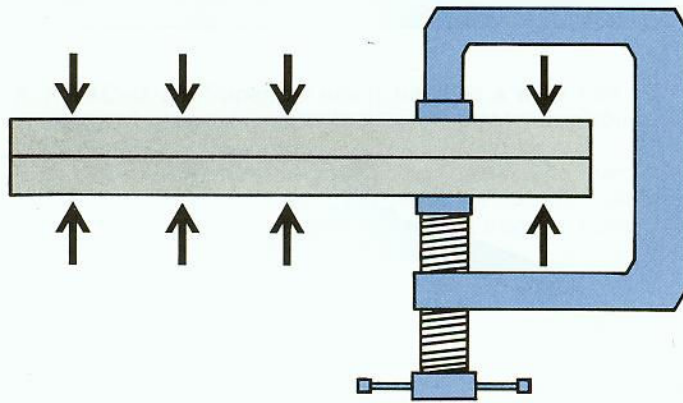


# VACUUM LIFTERS SELECTION CONSIDERATIONS

Specifying below-the-hook vacuum lifting devices requires the complete knowledge of the load to be handled.

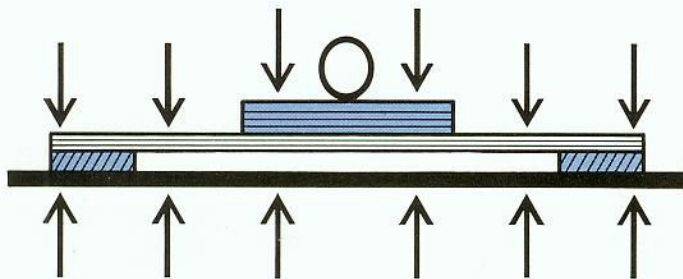
Loads may be large or small, heavy or light, flat or curved, hot or cold, wet or dry, rugged

or fragile, and single or multiple quantities. The lift may require certain time and space parameters and, most importantly, consider the safe handling of the load.



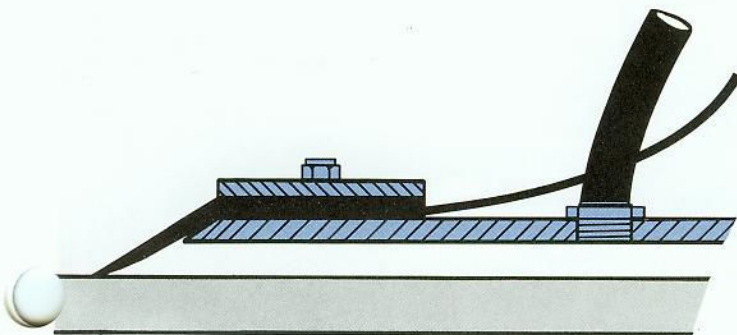
## ATTACHMENT

The first thing a vacuum lifter must do is attach to the object being lifted or handled. This attachment is achieved using atmospheric pressure, a force which acts like a giant clamp pulling the vacuum pad to the load.



## HOW DOES IT WORK?

Vacuum lifting is accomplished by setting vacuum pads on the surface of the material to be handled. Then a vacuum pump withdraws the air from between the pad and the load. The pressure differential between atmospheric pressure outside the pad and the vacuum inside the area covered by the pad binds both pad and load together. Pad capacity is directly proportional to the square inch area covered by the pad, and the induced pressure differential.



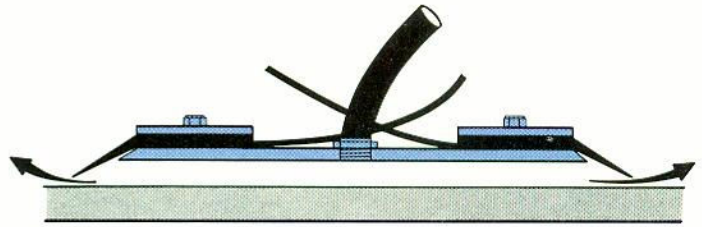
Vacuum can be created in different ways, depending on the lifting application and working environment. Some *VAC-U-LIFT* lifters create vacuum by using electric motors or combustion engines to drive a pump, while other designs use external air or vacuum lines. *VAC-U-LIFT* lifters, with push button controls, feature quick attachment and release. Pads on the crossarms may be deactivated to permit handling of different sheet sizes. Single sheets can be lifted without disturbing the stack. Since *VAC-U-LIFT* lifters may include upender mechanisms for rotating or tilting the load to any orientation, they are particularly desirable for automatic production operations.

# VACUUM ATTACHMENT FACTORS

There are three important factors governing successful vacuum attachment.

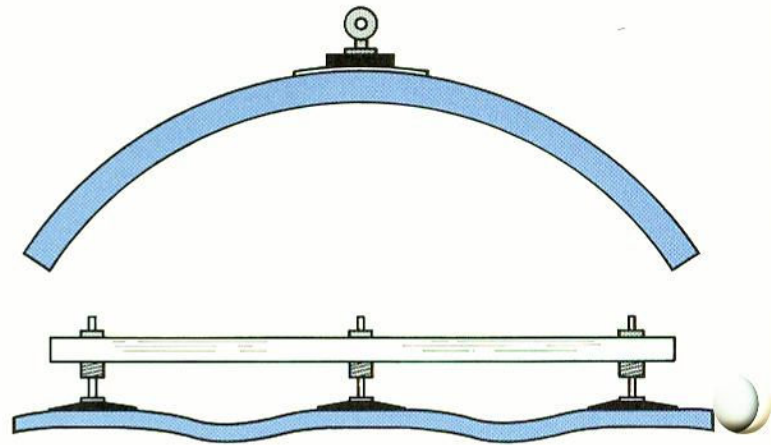
## 1. Effective Seal

The first factor for successful attachment is effective seal. The lifter ring won't seal well if the work piece is too porous, or the surface is uneven or pebbly causing vacuum leakage. If the temperature is too high the seal might melt, again ruining the attachment.\*



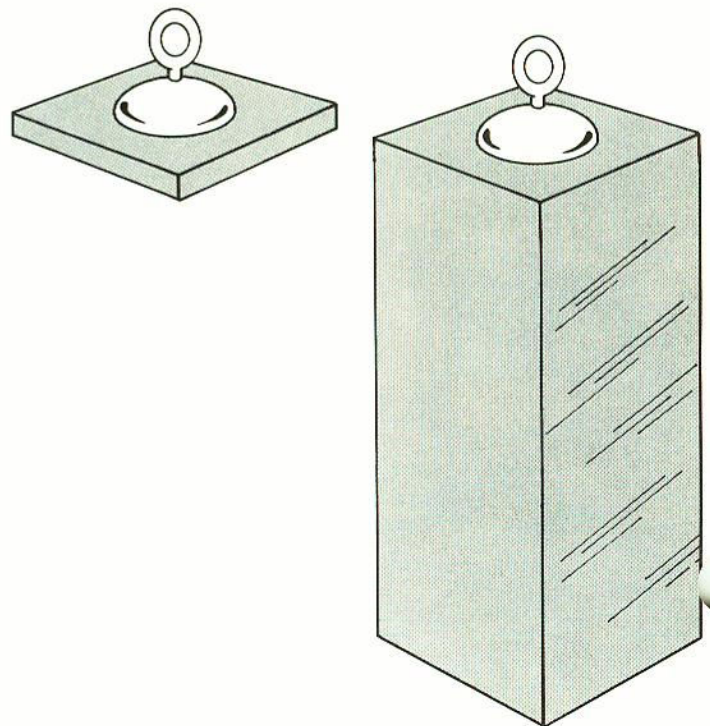
## 2. Load Distribution

The second attachment factor is load distribution. Thin, flexible material with high deflection may peel the pad from the load. This may be remedied by using a load-beam system with crossarms and multiple pads for an improved balanced lift. Standard pads are ball-bolt mounted to the crossarm allowing the pad to tilt up to 7½ degrees in any direction from horizontal. This produces a gimbal effect, which aids in reducing bending stresses that can cause fatigue failures when lifting loads.



## 3. Weight-To-Area Ratio

The third factor for secure vacuum attachment is the weight-to-area ratio. In short, the surface of the work piece material must be large enough for the pad lifting capacity.



\*Neoprene seals are available for temperatures up to 212°F. Silicone seals are available up to 600°F. Above 600°, consult factory.

# JUSTIFICATION

Vaccum lifters provide fast efficient movement, handling, and stacking of a wide variety of products for:

- Storage or in-process operations
- Decreased handling costs
- Reduced material waste
- Protecting fine surface finishes
- Facilitating production
- Optimizing use of valuable floor space

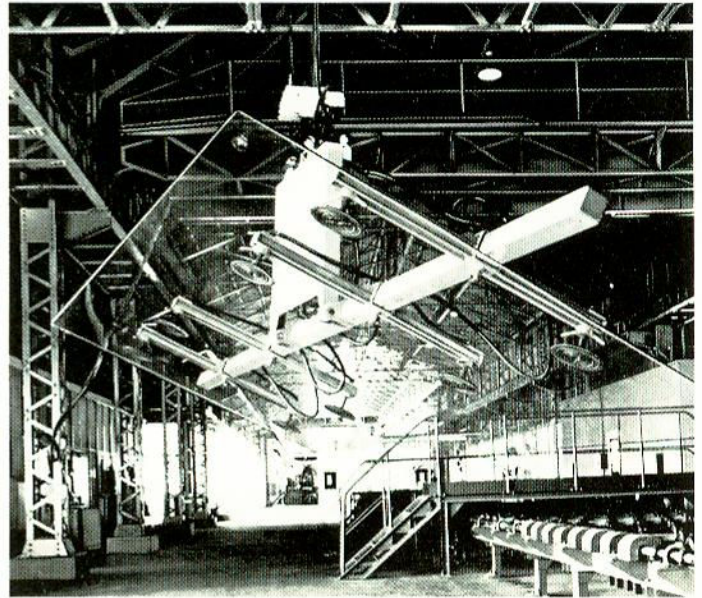
A. A *VAC-U-LIFT* upender easily handles a wide size range of glass sheets, with single operator control.

B. A *VAC-U-LIFT* lifter attached to a telescoping mast stacker crane easily removes various sized steel plates from a railcar, and delivers them to storage or burn tables.

C. *VAC-U-LIFT* Multihandler lifters safely handle heavy chunks of steel.

Equipment is often justified in one or more of the following ways:

- Reduction of Material Damage
- Increased Production
- Safety
- Manpower Substitution
- Manpower Reduction
- Only Feasible Way

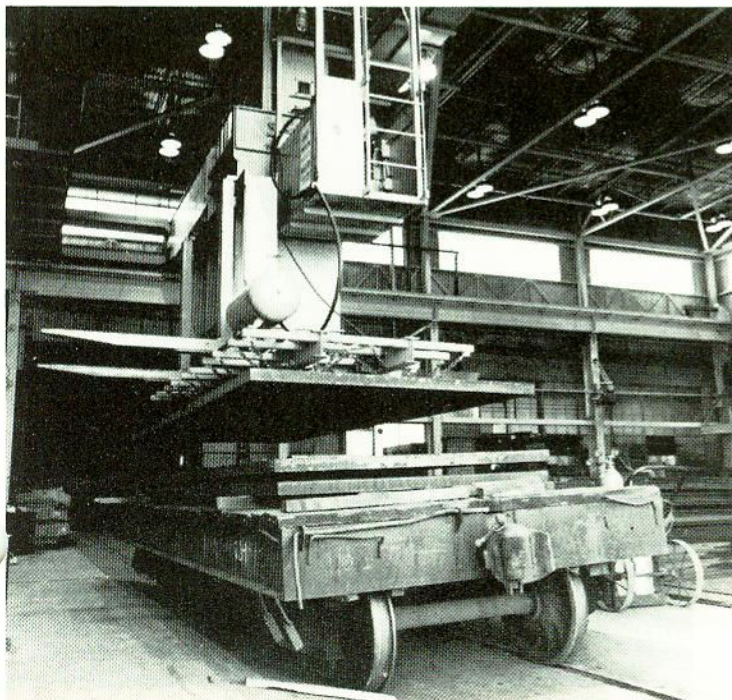


A. ▶



B. ▶

C. ▼



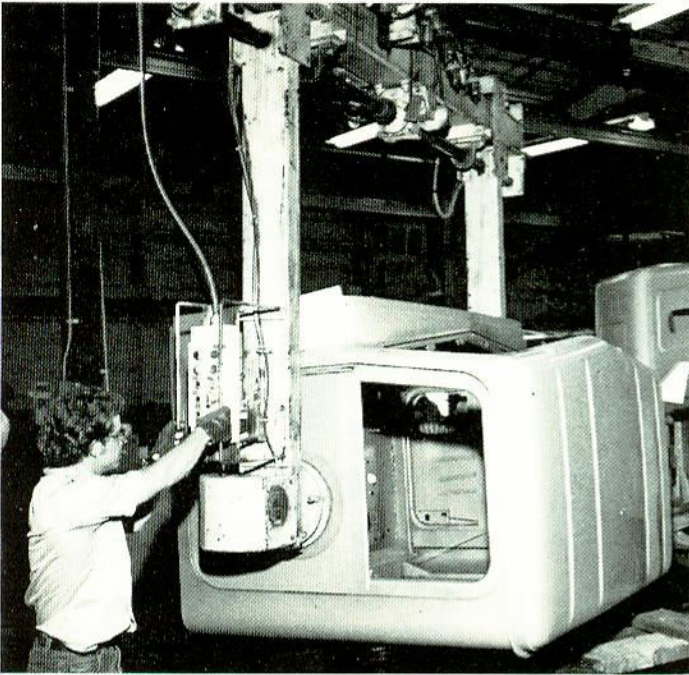
# TYPICAL V&C-U-LIFT® APPLICATIONS

A. A major truck manufacturer uses VAC-U-LIFT systems in the assembly of truck cabs. These lifters adapt to the cab surfaces for fast, efficient lifting and upending to assembly positions.

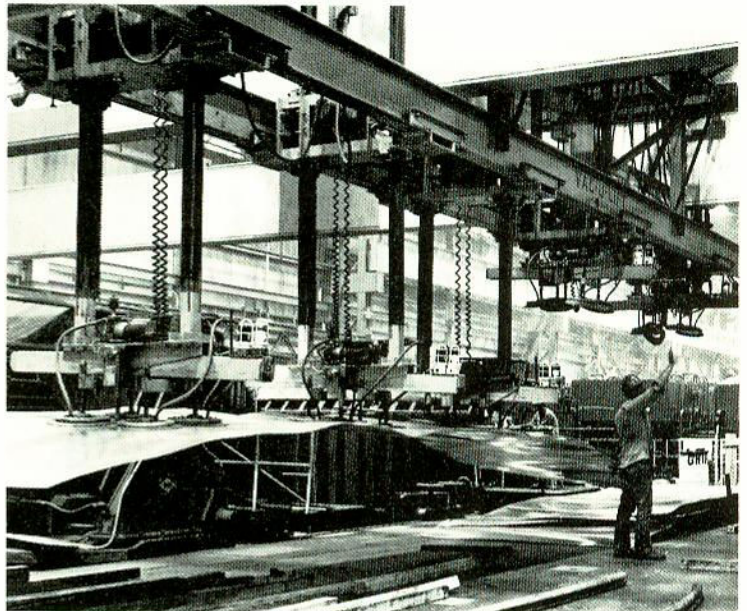
B. This VAC-U-LIFT lifter easily transfers a sheet of steel to a conveyor for movement to a press.

C. VAC-U-LIFT 20 pad lifter with telescoping arms lifts way aluminum plates and feeds it to a "Stretcher". The unit is designed to handle the delicate plate surfaces.

D. This 54 pad VAC-U-LIFT lifter is used to move the 85 foot long roof of an AMTRAK railway car between work stations.

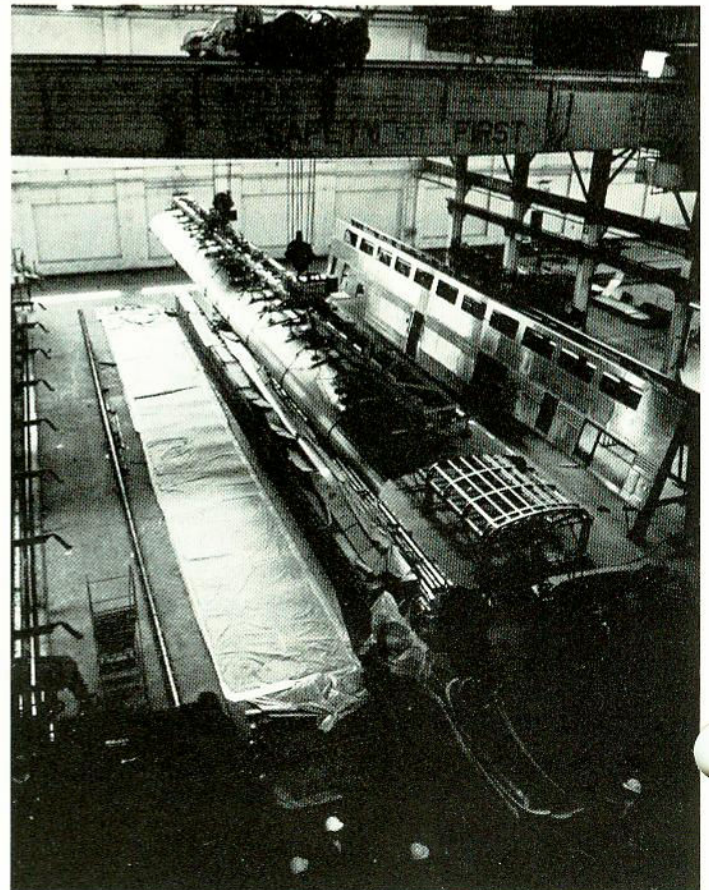
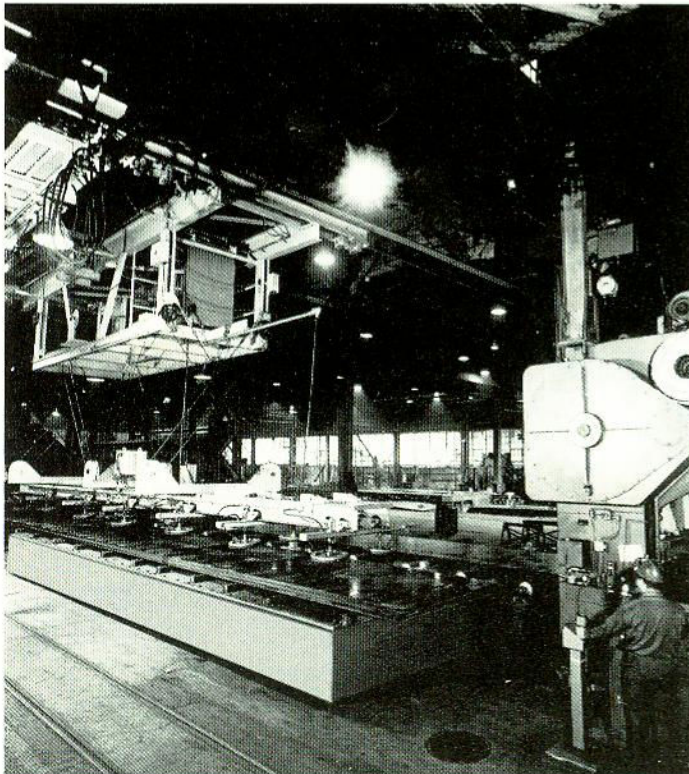


A. ▲



C. ▲

B. ▼



D. ▼



A. An automated welding line is loaded by a *VAC-U-LIFT* transfer unit, increasing plate production 1300%.

B. Two *VAC-U-LIFT* units suspended by simple cranes take formed plates to stacking tables, where they are built into cores for turbine regenerators.

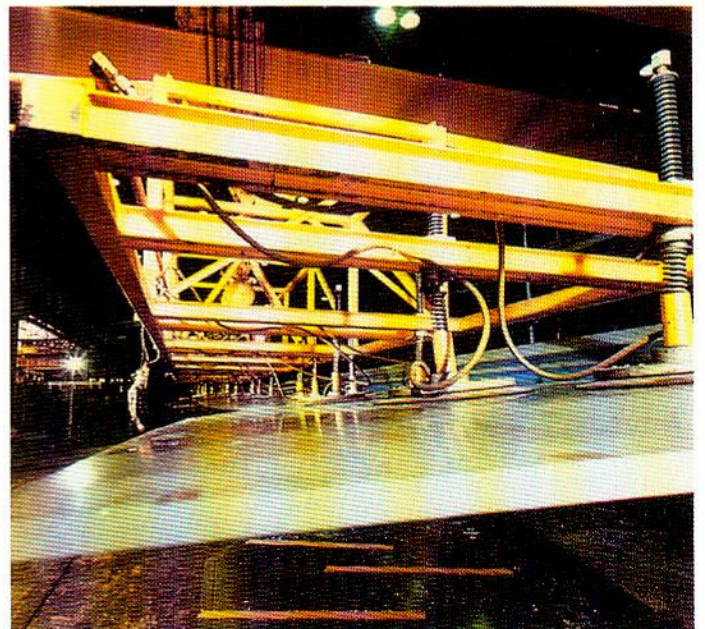
C. The *VAC-U-LIFT* lifter moves 100 foot long DC-10 wing skins on and off a milling machine.

◀A.



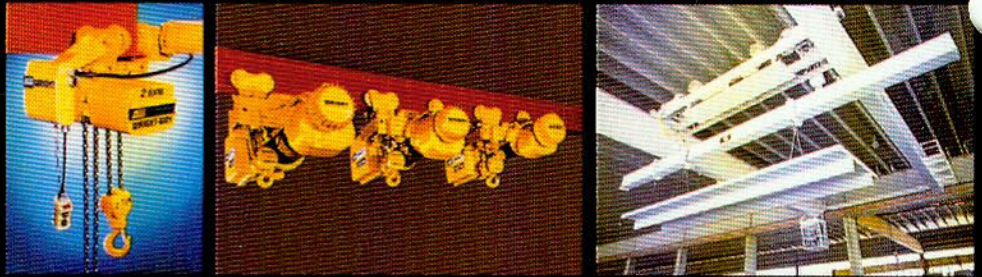
◀B.

C.▼

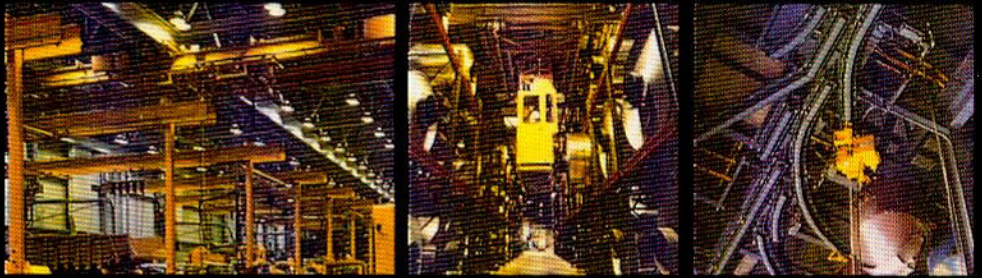


The productivity goals of today's industrial community can be achieved with the proper choice of material handling equipment. Whether your requirements are simple or complex, we can provide a solution. Call us today for an objective analysis of your needs.

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