WELCOME!

Overcoming Ergonomics Challenges in Obesity and Material Handling
Ergonomic Assist Systems & Equipment

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30 Industries Covered
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To broadly promote the benefits of ergonomic assist systems and equipment together with the advantages derived from the use of this equipment in the workplace and to promote the safety and health of the work environments.
Current Worker Population

- In 1972, average age of a US worker was 28. Currently it is approximately 46.

- The number of workers aged 45 and older has doubled since 1950.

- According to the AARP, the number of people 55 years and older in the labor force – which stood at about 18.2 million in 2000 – is projected to rise to 25.2 million this year and 31.9 million by 2025.
As We Age.....

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<th>Maximal Strength</th>
<th>Obesity</th>
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Pallets

Approximately 475 million new pallets produced each year in the USA. 1.4 billion (est’m) pallets are in use at any given time.

MANUAL LOADING AND UNLOADING OF PALLETS CONTINUES TO BE ONE OF THE MOST COMMON AND MOST INJURY PRONE TASKS IN INDUSTRY TODAY
Here is a very typical problem
In this retail paint store 65 to 80 lb. pails need to be moved from pallet to mixer and shaker - then back to the pallet.
The solution not only solves the lower back problem, it substantially enhances productivity.

Positioners allow the worker to stand erect, dramatically reducing the back bending.
Workers carrying heavy loads....

DOH! My aching back

....then picking or placing those loads on pallets which are on the floor.
Positioners hold pallet loads to a proper height
Lifts and positioners can also be fitted with turntables for "near side" loading.

As much as 40% of the time required loading a pallet, can be spent walking around it!
Lifts fitted with turntables eliminate wasted motion which enhances productivity.

....and put the load at the right elevation to reduce the possibility of back inquiry.
Balancers can also be used to unload pallets and make positioning goods at various locations within a machine or work center.

Notice the bi-directional work station crane.

These trays of parts become virtually “weightless.”
This balancer has a vacuum end-effector to quickly grab the heavy cheese wheels. The balancer speeds the lifting and maneuvering of this palletizing operation.
These lightweight aluminum stackers are highly maneuverable...

...they provide easy access to loads

...and increase productivity!
Inexpensive stackers to transport pallet loads in and around work stations. Even load/unload directly from the stacker.
Pallet rotators make quick work exchanging pallets...

...and they eliminate the human interface
Lift tables and gravity conveyor provide efficiency gains as well as ergonomic improvements.
Another solution to manually handling loads is the use of powered stackers. They are highly maneuverable in tight quarters.
Lumber to be processed that is on the floor or a pallet is slow, back breaking work.
With a lift table to level the stack the lumber can be feed in as fast as the machine can process it – no wasted motion here.
Vacuum lifters are efficient and very useful in handling unusual shapes and sizes in pick and place tasks.
Manual loading and unloading of wire baskets, containers and Gaylord's leads to a high incidence of lower back injuries.
Production Bottleneck:
Back bending, back extension, over reaching and fatigue
Portable tilters also provide for getting to all the material in the container.
They can work like this....

....or like this.
Picking 1,000’s of small parts made easy by using tilters

Notice the high hinge causing the container to elevate as it tilts
This spring loaded positioner elevates the goods in the container to speed picking the parts and eliminates the bending and extension issues.
Manipulators making easy work of handling heavy cylinder heads in a machining center
Here are good examples of how industrial tilters foster good ergonomics and help the older or obese worker get the job efficiently.
Lift & Tilt to position electrical panels in this work cell
Other applications
Proper positioning maximizes production & minimizes ergonomic issues

Positioning large assemblies

Turntable

Lift Table
Amplifies operator’s power
Unit has an intuitive, human-like feel

Intuitive
The operator has a sense of control & feel over the load using normal arm, wrist and hand movements.

Intelligent
Resolver feedback from the servomotor allows for future implementation of programmable human limits.
IAD’s for handling heavy castings
Hydraulic tilt table for large window assembly
Two wheel hand truck with powered lift
In this retail paint store 40 to 50 lb. cartons (4 gals.) need to be moved to shelving.
Battery powered scissors lift

This lifting devise permits a greater number of employees to get the same job done ....a job previously assigned to people which had the upper body strength.
High density vertical storage systems speed order picking and put each item at the correct height.
Articulated booms require substantially less force to move them, reducing the stresses on the operator.
This expandable conveyor is driven right into the truck.

The individual boxes and cartons are conveyed right to the worker.

Notice how the odd sizes and shapes are handled easily by a single piece of equipment.
Pick up your free copy of the (print or electronic)

Ergonomic Guidelines for Manual Material Handling

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Questions?

James J. Galante
EASE Council
Material Handling Industry of America
Charlotte, North Carolina