

# Cart Design & Wheel Patterns

## Caster Combinations for Trucks

There are several effective caster combinations that may be used in manufacturing, repairing and refurbishing material handling equipment. Various types of mountings are illustrated below.

### 4 Wheel Non-Tilt (All Swivel Casters)

This cart combination can be maneuvered in any direction. It is ideal for confined areas, but needs swivel locks for traveling long distances in a straight line or for use on ramps. This combination is excellent for use where side motion is frequently needed. This four swivel caster arrangement is the most versatile.



### Two Swivel Casters, Two Rigid Casters

This cart combination is the most popular and is the most practical and inexpensive arrangement for straight and/or long distances. It is easily turned or pushed straight and it trails well also. It can be used for heavy or medium loads depending on the weight capacity of the casters selected.



### 4 Wheel Diamond Tilt Mount (All Rigid Casters)

This tilt mount combination is the most economical, but is best suited for lighter loads. A tilt mounting rotates or pivots on the center wheels. This design cannot be pushed sideways. The tilt is best when the load wheels are 1/8" taller than the balance wheels. This combination is not recommended for use on ramps.



### 4 Wheel Diamond Mount (Two Swivel Casters, Two Rigid Casters)

This caster combination is highly maneuverable and will rotate in its own length. This mounting is not recommended for ramps.



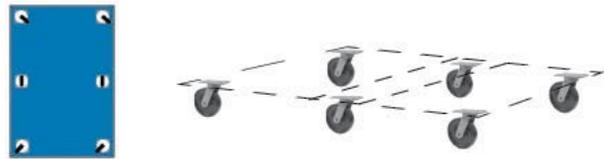
### Wagon (Fifth Wheel Steering)

This trailer combination features large axle mounted wheels for heavy loads, and is usually power drawn.



### 6 Wheel Tilt or Non-Tilt (Four Swivel Casters, Two Rigid Casters)

This caster combination is a level mounting design and is recommended for heavy loads and extra long trucks. The two rigid casters help to distribute and reduce the load on the swivel units and thereby maintain good maneuverability and easy steering. It turns on its own length. The casters on the corners provide stability.



## Material Handling Ergonomics

### Improved Ergonomics May Reduce Injuries

Annually, back injuries in the workplace cost American industry up to \$14 billion in worker compensation costs and result in approximately 100 million lost workdays, according to the National Institute for Occupational Safety and Health (NIOSH). Furthermore, up to 30% of

all worker's compensation claims deal with manual materials handling incidents, says Jim Galante, communication chairman for the Ergonomic Assist Systems and Equipment (EASE) Council of Material Handling Industry of America (MHIA).



With those statistics in mind, the Lift Manufacturer's Product Section (LMPS), a trade association of MHIA, has developed a checklist of ergonomic principles for manual handling tasks designed to help companies reduce the chance of worker injury.

