

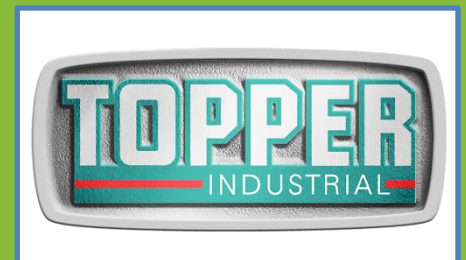
# ***SOLVE FOR X.***

***Why the Fork Truck Free  
Movement is the North  
American 2017 Material  
Handling Trend***

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# SOLVE FOR X.

1. What is Fork Truck Free?
2. How did fork truck free get started?
3. What is the benefits?
4. What are the limitations?
5. Can cart delivery work in any operation?
6. What vehicles replace a fork truck?
7. How does cart delivery work at the work cell?
8. What are the types of delivery carts?
9. Why is cart delivery lean?

# SOLVE FOR X.



# SOLVE FOR X.

## What is Fork Truck Free (FTF)?



### *100% Fork Trucks Free*

No fork trucks in plant. Everything is delivered to plants in trucks on carts.

The goal doesn't have to be fork truck elimination, but **reduction** is key.



### *Minimal Fork Trucks Use*

Fork trucks are only allowed at receiving/shipping. And at cart load/unload area.

*MOST COMMON*

# SOLVE FOR X.

Where did it all begin?

*ORIGINATED & WIDELY USED IN  
EUROPEAN & ASIAN COUNTRIES*

Fork Truck Free & Lean Initiatives have  
been utilized for years in Europe and  
Asia with excellent results

and *BENEFITS.*



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Why FTF is the 2017 trend in North American Material Handling.

The **DRIVING FORCE** is the proven benefits.

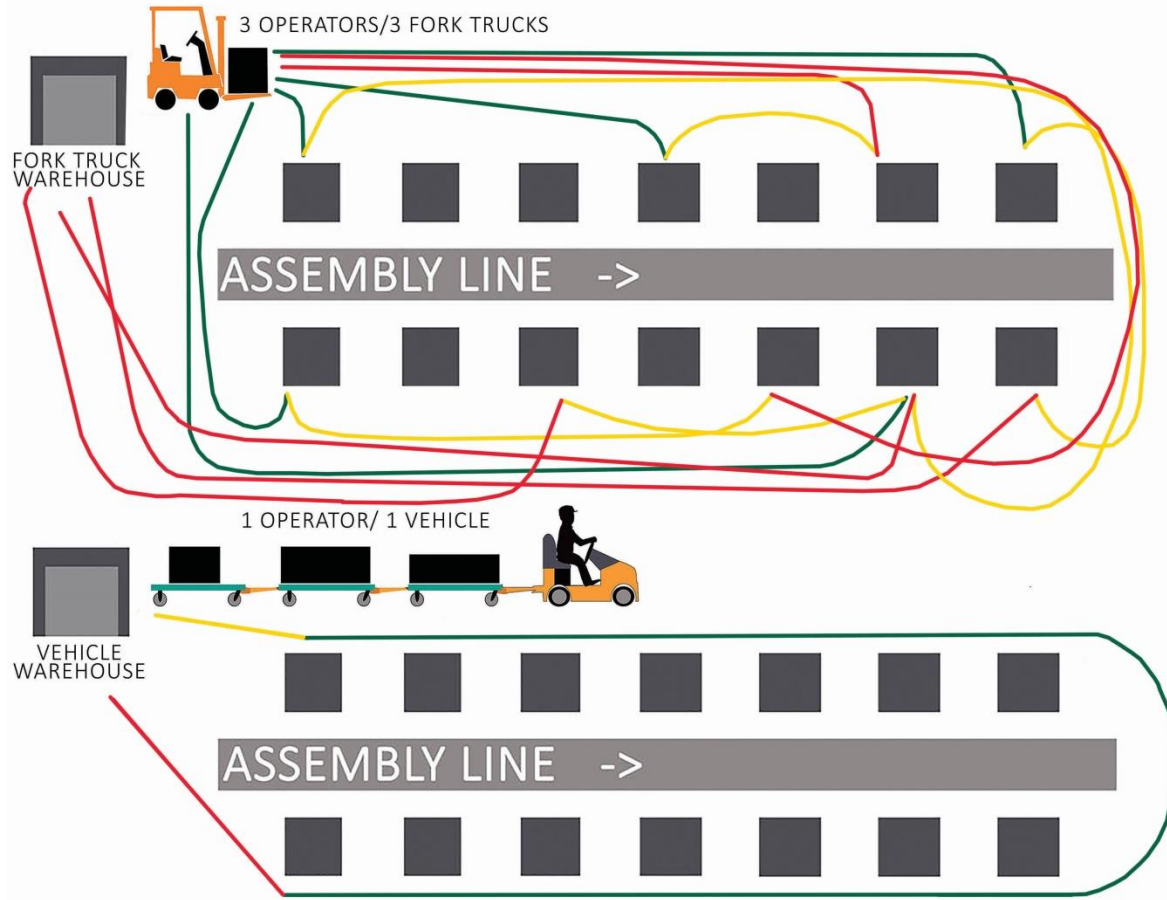
- Productivity
- *Safety*
- Flexibility
- Process Stability
- Inventory Reduction
- Earlier Quality Identification
- Reduce Costs & Labor
- *Lean Manufacturing Compatibility*



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Fork Trucks provide **ONE** load at a time delivery.

Cart Delivery Systems provide **MULTIPLE** loads at a time delivery.



GETTING  
THE *RIGHT* PART  
TO THE *RIGHT*  
LOCATION IN THE *RIGHT*  
QUANTITY AT THE *RIGHT*  
TIMING.

- █ NON-VALUE ADDED  
Movement without parts
- █ NON-VALUE ADDED, BUT NEED  
Movement with empties (dunnage)
- █ VALUE ADDED  
Movement with fulls

# SOLVE FOR X.

## What needs to be considered for FTF Cart Delivery?

SPACE	LOAD	EQUIPMENT	TIMING
Plant Size	What is the load?	Carts. What Type?	When should it move?
Aisle Size	How much needs to be moved at a time?	Containers. What Type?	How often should it move?
Available space.	What is the size of each load?	Conveyors. What Type?	Can the timing be scheduled?
		Tube and Joint. What Type?	

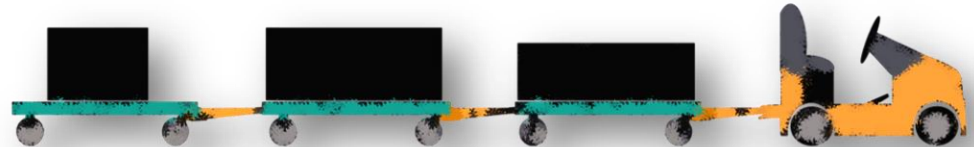
Cart systems  
can be designed  
& developed to fit  
the foot print of  
any floor plan.



## Vehicles available for Cart Delivery.

### *Tugger (Man Operated Tow Vehicles)*

A Tugger is a manned transport vehicle that can tug multiple carts/dollies. Also referred to as a tow tractor.



### *AGV (Automated Guided Vehicles)*

An Automated Guided Vehicle is an unmanned transport vehicle that is completely self guided. It is programmed to work automatically within a designated guided path. Paths are easily modified.

### *VGV (Vision Guided Vehicles)*

An Vision Guided Vehicle is an unmanned transport vehicle that is completely self guided. VGVs navigate without wires, lasers, magnets, or tape, and deliver unmatched flexibility. These vehicles are also usable in manual mode.

## Main Practice in FTF is Cart Delivery.

*Delivery Carts* are multiple carts designed for carrying unique materials & are towed in a train to variable workstations for multiple load delivery.

### *Two Options:*



1.  
Deliver material on cart and work out of the cart.



2.  
Deliver product on transfer cart.  
Transfer product by roller to work station.

## TYPES OF DELIVERY CARTS

**Tugged Carts** require a tow bar and are able to be towed in a train .



### TUGGED CART OPTIONS

- Static Carts
- Rotate Carts
- Shelf Carts
- Tilt Carts
- Small Parts
- Kit Carts



## TYPES OF DELIVERY CARTS

***Mother Daughter Carts*** have one large mother cart and two or more, smaller daughter carts. The daughter carts are designed to fit within the mother cart's frame work. Once inside, the daughter carts are locked into the mother cart and they move as one.





## TYPES OF DELIVERY CARTS

Any tugged cart can be a daughter cart.



## DAUGHTER CARTS OPTIONS

Daughter Carts can be static carts, quad steer carts, rotate carts, tilt carts, shelf carts, small parts carts, kit carts and transfer carts. Mother Carts can be designed to carry multiple different types of daughter carts within one frame work.



## TYPES OF DELIVERY CARTS



**Quad Steer Carts** have four wheel steering.

Quad Steer Carts track smoothly when being pulled with multiple carts in a train. They are designed to track well and handle tight radiuses.

Quad steer carts are used to deliver and pick up material from specific route along factory floor. The quad steer can remain attached to the vehicle with multiple carts in tow. There is no need to uncouple during delivery or pick up applications.



CART DELIVERY SOLUTIONS



## TYPES OF DELIVERY CARTS

### SPECIALTY CARTS

- Transformer Cart
- Tip Up Shelf Cart

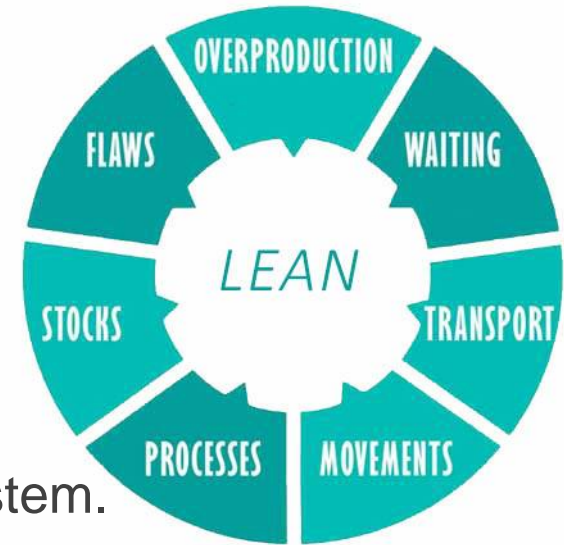


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## What is Lean Manufacturing?

Lean Manufacturing is a systematic method for the elimination of waste within a manufacturing system. The system is always on going. The goal is to continuously come up with solutions to make for better, more productive work flow within the system.



### *How the Fork Truck Free processes and Lean Manufacturing work together?*

Even if you are not implementing lean standards into your work flow, by designing equipment and material flow that replaces fork truck dependency (FTF), you are engaging in the elimination of waste (LEAN).

There is more value added to the production flow in for truck free environments.

## TYPES OF DELIVERY CARTS

### SPECIALTY CARTS

- Small Cart Delivery
- Gravity Flow Racks



## *Guest Speaker!*

How did implementing FTF practices work out for you?

We are eager to hear what you have experienced.



## How do you get started in a journey towards Fork Truck Free?

- Identify material flow problems and where to start.
- Create goals for FTF Implementation.
- Decide to reduce or eliminate fork trucks.
- Schedule an on-site visit and analysis.





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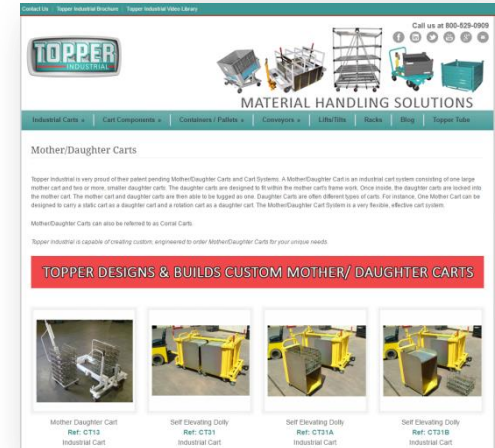
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