



# FORI AUTOMATION

## Automated Tugger & Dock N' Lock

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GLOBAL HEADQUARTERS

Automated Guided Vehicles

## Tugger AGV with 35,000 lbs. / 15,909 kg. Capacity



The Fori Tugger and Dock N' Lock AGVs are high capacity vehicles that are designed to replace fork lifts or standard man aboard Tuggers for material handling. The Tugger AGV is capable of weights up to 35,000 lbs. and have been designed to accommodate existing cart and hitch designs. The Tugger AGV is also upgradeable to a Dock N' Lock AGV which offers increased automation versus the standard Tugger AGV.

The Increased automation is achieved through an automated docking process. The Dock N' Lock AGV automatically backs into station and actuates an electro-mechanical pin that enables auto-docking. The docking method utilized for the Dock N' Lock, partnered with a companion cart allows the Dock N' Lock to be bi-directional, offering increased layout and process flexibility to the end user.

# Tugger & Dock N' Lock Specifications

## ADAPTABLE

The AGV can accommodate different cart and hitch designs. Allowing end users to utilize existing equipment.

- **Power supply:** 48VDC Lead Acid or Lithium Ion
- **Wireless WLAN:** IEEE 802.11a/b/g
- **Guidance:** Fori Hall Effect Magnetic Sensor following magnetic tape, bar or markers
- **Power-train:** Differential steer with (2) 48V AC servo motors
- **Drive Control:** Single channel AC motor controller
- **Charging method:** Automatic charging pad included and/or manual plug-in
- **System Control:** Touch Screen - HMI, Control Pendant and Onboard Safety PLC
- **Safety System:** Safety Scanner, pressure bumpers, status lights and alarm



The vehicles overall towing capacity is 35,000 lbs. The total capacity can be customized by utilizing different options of off the shelf drive wheel, gearbox and motor combinations. A Siemens Safety PLC is used for safety and vehicle control, resulting in an open controls architecture.

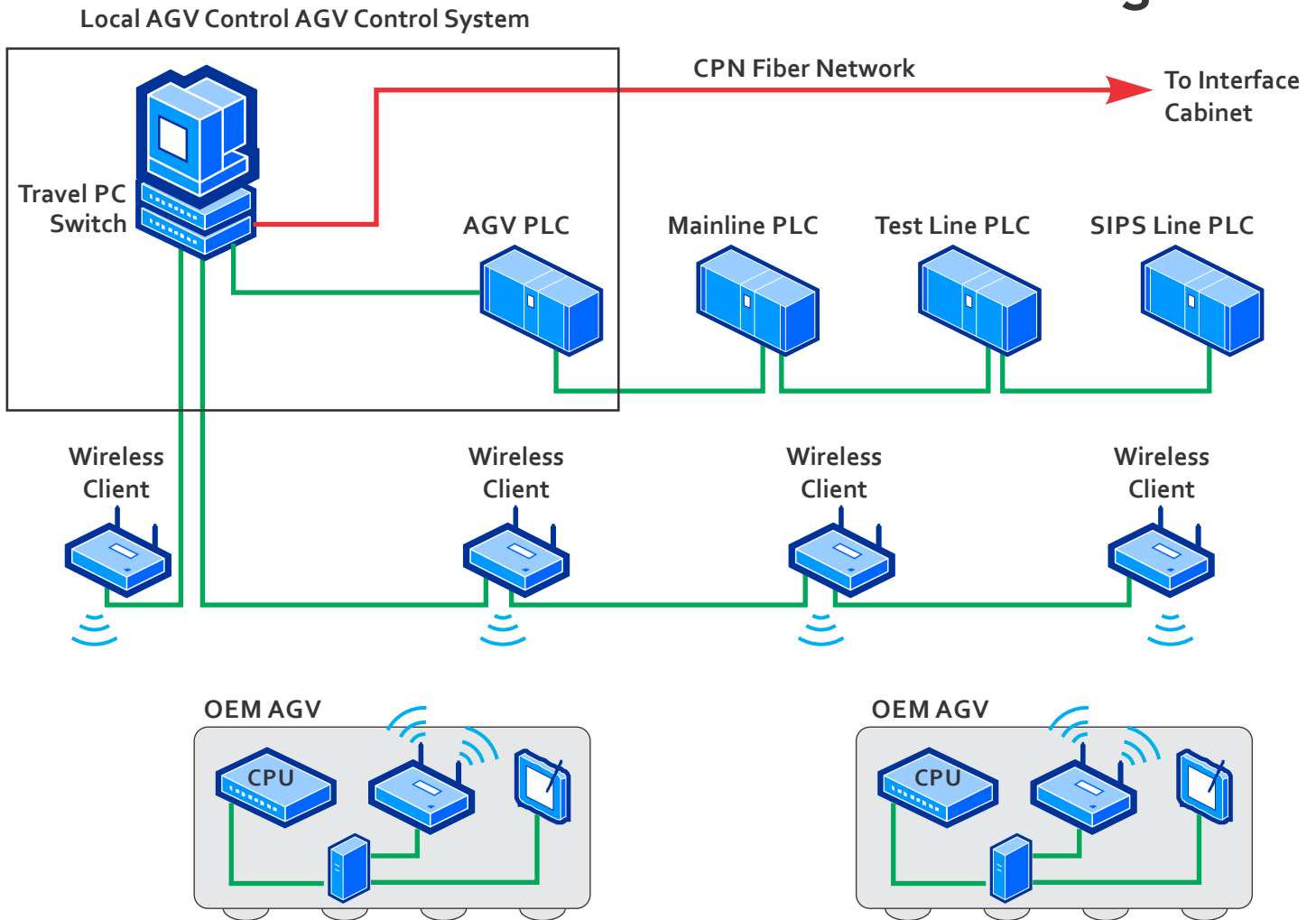
The Tugger & Dock N' Lock AGVs were designed to fit within existing plant environments and each plants respective material handling strategy. The Tugger AGVs were commissioned to replace non-value added material handling tasks, many of which are completed by Fork Lifts.

Not only is the return on investment favorable on the Tugger & Dock N' Lock AGV system, but the related product damage and safety concerns have been reduced.

The Tugger & Dock N' Lock AGVs are based on the same mechanical and electrical design. The only difference between the vehicles is the Tugger does not include the auto-docking feature. The Tugger requires operator interface for hitching the carts. These vehicles can be customized based on specific weights, speeds and total throughput.



# AGV Controls Configuration



## Product:

- AGVs - Tuggers & Dock N' Lock

## Results:

- Increased safety
- Increased reliability
- Increased throughput

## Controls:

- Vehicle management system
- Siemens open architecture
- Full-auto guidance

## Keys to Success:

- Chassis and coupler designed around customer process
- Siemens open architecture that matched customer strategy

## Safety:

- Safety scanners
- Safety bumpers
- Fail safe PLC

## Guidance Technology:

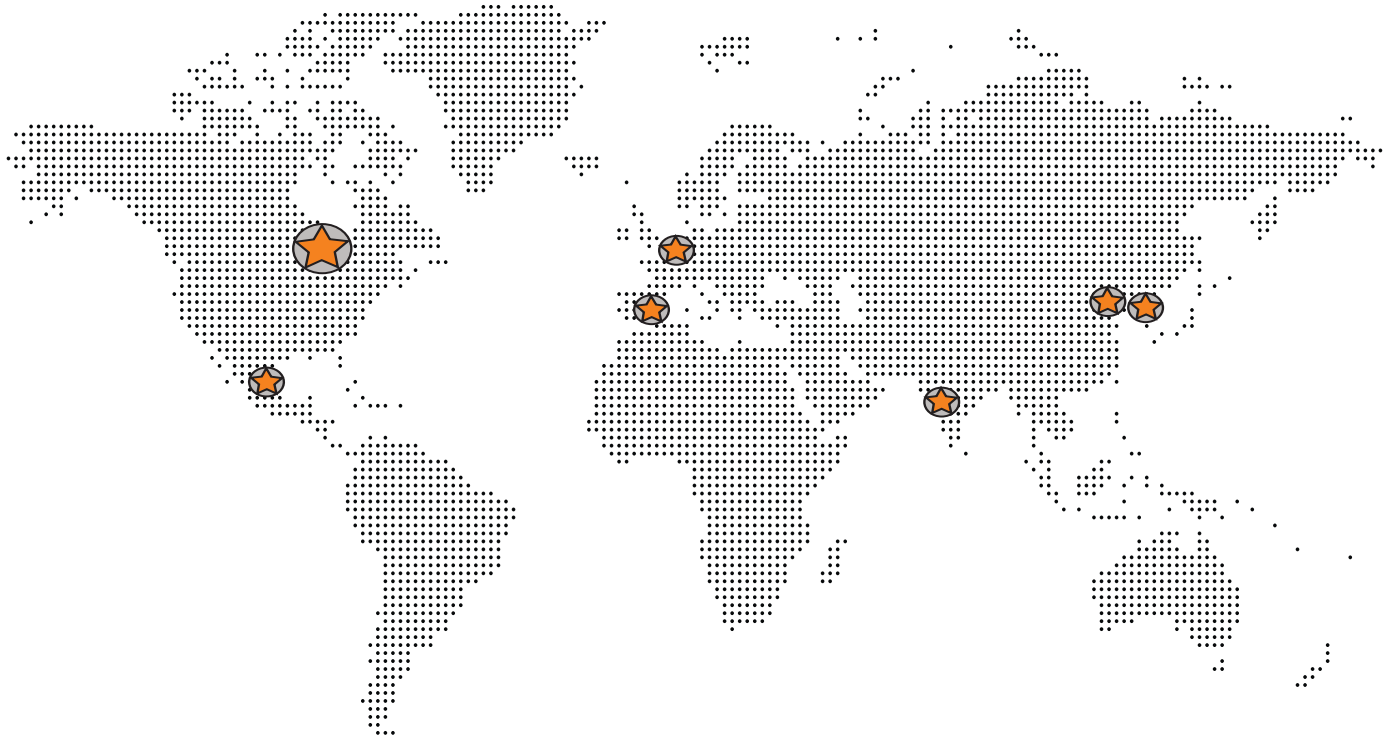
- Magnetic bar
- Inertial with pencil magnets
- Capable of 0 degree turn



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