

**MODERN**  
MATERIALS HANDLING

**MAKING  
THE CASE**

# IC Pneumatic Forklifts

## Meeting Rough-Terrain Challenges

### **ACROSS INDUSTRIES**



# Making the Case for IC Pneumatic Forklifts Meeting Rough-Terrain Challenges **ACROSS INDUSTRIES**

*The mainstay for many different types of industrial operations, Class 5 internal combustion (IC) pneumatic forklifts can take on everything from pallets to entire shipping containers with ease, all while providing a high level of operator and workplace safety.*

**THE MAINSTAY OF MANY** different industrial manufacturing operations, internal combustion (IC) forklifts are in a class of their own when it comes to heavy lifting in any tough environment. Used frequently by manufacturers, shippers, construction firms, ports, and other organizations, IC pneumatic forklifts can handle pallets, shipping containers, and even large pipeline sections.



**The Toyota Core IC Pneumatic Forklift is an industry leader in utility and reliability for outdoor use and is manufactured in the American heartland in Columbus, IN.**

Known for their fast travel speeds and quick acceleration, IC forklifts are easy to refuel on the fly at the pump, offer a lower upfront investment (typically 20% to 40% less than electric forklifts), and can handle a wide variety of terrain. “Any company with outdoor applications relies on pneumatic lift trucks, which are designed for use on uneven surfaces,” says Bill Byrd, national manager of dealer sales for TMHU’s western region. “Whether you’re talking about lumber, concrete, brick, oil and gas, foundries, and recycling firms — they all use IC forklifts on regular basis.”

Classified by the Industrial Truck Association (ITA), forklifts are categorized into five different types (Class 1-5), with Class 5 vehicles comprising IC forklifts with pneumatic tires. Powered by liquid propane gas (LPG), compressed natural gas



**World-renowned for their ability to tackle almost any outdoor challenge, Toyota IC Pneumatic Forklifts are engineered with an ergonomic design to keep operators comfortable and productive.**

(CNG), gasoline, or diesel fuel and used primarily outdoors, these vehicles are built to handle rough terrain in a safe and efficient manner.

Growing steadily over the last few years, the market for IC pneumatic forklifts is strong, with Toyota Material Handling U.S.A. (TMHU) claiming a dominant position in the market. In fact, more than one out of every four pneumatic tire trucks sold in the U.S. and Canada is made by Toyota, which develops, produces, sells, and provides services for a broad range of products, from industrial vehicles centered around a full lineup of lift trucks (0.5- to 43-ton capacities) to materials handling systems.

The company’s forklifts, which capture the top global market share, are delivered throughout the U.S. and Canada by its 66 North American

dealerships that offer over 200 locations. Toyota Industries also strives to provide finely tuned aftermarket services so that customers can always use its products in the best possible condition.

“We’re selling about 35 Class 5 IC pneumatic forklifts a day,” says Byrd. “We don’t have that position by accident; we have it because we’ve built a reputation in the IC market for having the best equipment in that space. Because of this, customers continue to come back to us.”

This is quite a feat in a market where roughly 17 different brands of pneumatic trucks are all going head-to-head for market share in the U.S. and Canada. “When you have 16 competitors and yet you’re still selling one out of every four trucks that are currently in use,” says Byrd, “you’re definitely the industry leader.” ●

# IC Forklifts solve your company's most pressing pain points

*This full line meets the needs of a wide range of users and helps industry thrive in today's fast-paced, demanding business environment.*

**D**esigned and manufactured from the ground up with operator safety, comfort, productivity, and efficiency in mind, Toyota offers a line of material handling equipment that includes hand pallet jacks to electric forklifts, IC forklifts, reach trucks, order pickers, and electric hand pallet jacks and stackers, among others.



**Toyota IC Pneumatic Forklifts offer a wide range of lift capacities, providing solutions for many material handling needs.**

Whatever your lifting, moving, stacking, or handling needs may be, Toyota has the solution. And just like the cars and trucks manufactured by its sister company, Toyota consistently ranks No. 1 in many key performance metrics for its forklifts. Extremely durable and engineered with ergonomics in mind, the **Core IC Pneumatic Forklift** can maneuver almost anything and features a lift capacity ranging from 3,000-6,500 pounds, making it the premier material handling solution for most outdoor applications.

With a capacity of 8,000-11,000 pounds, the **Mid IC Pneumatic Forklift**, was designed for a variety of mid-capacity outdoor applications. Powerful and comfortable, this lift truck is ideal for long days in the lumberyard, on construction sites, and most other outdoor applications.

The **Large IC Pneumatic Forklift** can lift up to 17,500 pounds, and can easily navigate in gravel, dirt, and other common outdoor terrains. Popular on construction sites as well as in lumberyards, brick and stone distribution centers, specialized warehouses, and heavy-duty manufacturing plants, this large, rough-terrain forklift is engineered to be efficient in most conditions.

And last but certainly not least, the **High-Capacity IC Pneumatic Forklift** is the largest forklift in Toyota's product line. With a lift capacity of up to 125,000 pounds, this large, rugged diesel forklift can handle almost any heavy load. Commonly found loading and unloading large shipping containers or on the construction site, this vehicle provides lifting solutions for heavy applications.

This full line of IC pneumatic forklifts meets the needs of a wide range of users, and helps companies solve their most pressing pain points in today's fast-paced, demanding business environment.

**THE LUMBER INDUSTRY:** Take a trip to your local Home Depot and in the store's lumber section you'll see an expansive variety of wood grouped in wide bundles, each of which weighs about 2,000 pounds to 3,000 pounds. Maneuvering these products around the



**Toyota's IC Pneumatic line has a forklift for every outdoor industry; the Mid-IC Pneumatic is ideal for lumber applications.**

lumberyard—and loading them onto trucks for shipping—requires the kind of power and stability that only an IC pneumatic forklift can provide.

Toyota's Core forklifts and Mid IC Pneumatic Forklifts—both of which feature the manufacturer's System of Active Stability (SAS)—create a safe and efficient way for lumber companies to get their products in and out of the warehouse or yard on time, every time.

One Texas building supply company, for example has positioned an IC pneumatic forklift at *every one* of its nearly 100 U.S. locations, and has converted that entire fleet over to Toyota lift trucks. "Every time they go out to crank up a truck and service a customer, they want to know that it will turn on, operate, and be operational with minimum downtime," says TMHU's Bill Byrd. "They've used our competitors' brands, but they keep coming back to Toyota as a preferred forklift supplier because of our product's reliability."

Finally, lumberyards tend to be very dirty places, where dust, gravel, and potholes create unique challenges for forklifts and

their operators. "Everything has to be made stronger," says Dave Samson, a TMHU territory manager, "and able to handle the shock and impact of potholes and unimproved surfaces—all while maintaining a high level of performance."

Engineered to handle even the most challenging dust, gravel, or pothole-ridden environments, pneumatic forklifts have steel vents that prevent large objects from entering the fully-sealed air intake. This vent is mounted high on right rear overhead guard to limit low-lying dust and debris from entering. Toyota's radial seal high-flow, 2-stage air cleaner includes an easy-change filter that features extensively pleated surface for more dirt trapping due to more surface area. It also comes with an automatic dirt ejector that collects large particles drawn into the filter housing.

"When the engine shuts off," says Samson, "the last intake pulse blows the large particles out of the air cleaner through a rubber valve."

## The most visited manufacturing plant in the world

Last year alone, over 2,500 visitors converged on Toyota Material Handling, U.S.A., Inc.'s (TMHU) Columbus, Ind., plant, hoping to get an inside peek at what the industry leader is up to.

"They come to study the Toyota Production System," says Bill Byrd, national manager of dealer sales for TMHU's western region. "They want to not only see how the forklifts are built, but also to get a glimpse at our 'secret sauce.'"

The plant's high visitor volume places it at the top of the list of the "most visited manufacturing plants in the world," and prompts at least some of those visitors to go back to their own operations and try to emulate Toyota's success.



Toyota's manufacturing and business campus in Columbus, IN is home to Toyota Industrial Equipment Manufacturing's state of the art manufacturing floor, a key attraction for visitors.

"We're one of the few companies that invites people to come in to study our production system," Byrd explains, noting that the process itself has been written about in numerous books and articles, and covered in industry courses and at universities.

"When customers see the process firsthand," says Byrd, "it's very impactful." A close look at any Toyota assembly line, for example, reveals a workforce empowered to

stop the assembly process upon identifying a quality defect or other issue.

"Empower all workers to stop a multimillion dollar operation because they want to improve the quality," says Byrd, "and it's pretty clear that quality is baked into every single step of the manufacturing process."



### THE MANUFACTURING ENVIRONMENT:

Industrial manufacturers love IC pneumatic forklifts for their versatility, strength, and reliability. After all, when hefting and moving heavy items, positioning equipment, and managing other heavy-duty jobs, nothing can beat an IC lift truck—both in terms of total cost of ownership and capability.

Able to accelerate quickly and attain high travel speeds, IC vehicles rely on a variety of gasoline, diesel fuel, liquid propane gas (LPG), or compressed natural gas (CNG) to run. The pneumatic forklifts' quick refueling capabilities, lower upfront costs, and rough-terrain capabilities make them especially well suited for the manufacturing environment. Capable of an endless variety of heavy-duty tasks, Toyota's IC forklifts are also intuitive—an advantage that manufacturers need in today's high-turnover labor market.

On the ergonomic front, the IC forklifts come with optional lumbar support technology; swivel capability to reduce the strain of long hours of turning; head, neck, and shoulder guards for added protection; side bolsters keep operators safe in case of a tipover incident; and cowl-mounted pedals

that are similar to automobile operation (so they align with operators' instincts).

"When operators come to work in the morning, they can hop into one of our ergonomically-designed vehicles and basically feel like they're driving their own personal vehicles," says Byrd. "By offering a high level of ergonomics and safety features, we're making the manufacturing employees' work day more enjoyable and comfortable."



### COMMERCIAL SHIPPING SEAPORTS:

Focused on bringing in oceangoing vessels, loading and unloading their cargo, and then getting those ships back out to sea quickly, the nation's seaports operate in an environment where fluctuating capacity and infrastructure constraints are the norm. To accommodate growing volumes of cargo—and to ensure operator safety—ports rely on Toyota's complete IC product solution when loading, stacking, and maneuvering containers.

The manufacturer makes an empty container handler, a loaded container handler, a reach stacker, and a 125,000-pound capacity model that's excellent for port use. "Our reach stacker can stack containers five-high and three-deep," Byrd says, "and we also offer a roll-on/roll-off model that can actually be driven



Toyota IC Pneumatic Forklifts offer a wide range of lift capacities, providing solutions for many material handling needs.

onto ships and used to move the containers."

And as the size of the forklift increases, the amount of cargo it can carry and maneuver increases exponentially. Whether the operator is unloading large bundles of pipe from a ship or loading a heavy piece of machinery onto a vessel, there's an IC forklift in Toyota's lineup that can handle the job with ease.

The port equipment has a two-part rust-inhibiting polyurethane base paint coat and two-part polyurethane top coat to shield against the moisture at ports, and all port equipment features an engine protection system to protect against overheating. Finally, for Toyota's Core to Large IC pneumatic models—which are also employed for port usage—90% of electrical connections are *not susceptible* to water intrusion (the 10% that are susceptible are housed in a moisture-resistant box for protection).



### THE CONSTRUCTION INDUSTRY:

Gravel, dirt, and uneven terrain present uncommon challenges for material handling. When heavy loads of lumber, metal, and other materials in construction are added to the load, equipment has to be powerful and durable to weather the demands of heavy use. Increased wear and tear from difficult working conditions make forklift maintenance and operation in

this industry a difficult challenge, especially since many construction companies rely on rental equipment to meet their changing needs from project to project.

"Five top rental companies in America use Toyota forklifts because they have such a high resale value and hold up so well on construction sites," says Byrd. Toyota forklifts have been the top selling brand worldwide since 2002 and are consistently rated as the highest in quality, durability, reliability, and value. Along with the tested value of the Toyota design comes access to the company's 200-location U.S. dealer network and its associated maintenance and tech support.

Products such as Toyota's Mid IC Pneumatic and Large IC Pneumatic are well-suited for the construction environment. Toyota's System of Active Stability helps reduce the risk of accidents, injuries, and equipment damage, even while navigating harsh environments and uneven terrain. A reinforced load backrest extension on the Large IC reduces the chances of jostled loads damaging the forklift. The flexibility of Toyota's design process also offers a variety of options and attachments to meet whatever challenges the current construction project may present. •

# Making the case for IC pneumatic forklifts

## What's the ROI for fleet managers, corporate buyers, and CEOs?

**The Case for Fleet Managers:** IC pneumatic Class 5 forklifts can help move large products from Point A to Point B on virtually any type of terrain, and within tight time constraints. These vehicles also offer high levels of quality and durability, yet they require very low levels of maintenance and down time. Combine these advantages with high levels of operator safety and comfort and the business case for IC forklifts becomes even stronger for fleet managers—and for the entire organization.

Featuring the lowest cost-per-hour operating expense of any forklift on the market, Toyota's IC pneumatic vehicles provide fleet managers with peace of mind that they're using a product that's built to last, and built to do its intended job in the most efficient possible manner.

And even if a vehicle does run into mechanical issues—as equipment is apt to do—Toyota's large, North American dealer network with over 200 locations is standing by, ready to help get that vehicle back up and operational as quickly as possible.

**THE CASE FOR CORPORATE BUYERS:** Finding reliable suppliers, reducing costs, meeting savings mandates, and mitigating risk associated with their procurement choices are all just part of the daily routine of the corporate buyer. When selecting forklifts, buyers want a vendor that offers flexible financing options. Because Toyota has its own captive finance company, Toyota Industries Commercial Financing (TICF), it is able to tailor both the equipment acquisition and the financial support to meet the needs of corporate buyers.

Some may want a flexible, 3-year lease that includes a 2-year option (i.e., to continue leasing at a reduced rate) while others want to be able to trade in their equipment and upgrade every

### Your IC forklift daily checklist

For forklift operators, pre-operation inspections should be part of a daily routine. Pre-operation inspections not only help to increase the longevity of a forklift, but also help decrease accidents due to component failure while operating it. Here's a checklist that every IC forklift operator should be using daily.

*Important note: Be sure forklift is parked on a level surface, brake is applied, forks are lowered to the ground, and the key switch is off before beginning the inspection.*

#### Exterior Inspection

- No visible coolant or oil leaks
- Brake fluid levels are appropriate
- Engine oil level is appropriate
- No tire pressure issues, damage, cracks, or wear
- No loose hub nuts
- No dirt, damage, or cracks on lamps
- Coolant levels are appropriate
- Hydraulic oil levels are appropriate
- No damage, bends, looseness, or chain tension on forks or backrest

#### On-vehicle Inspection

- Mast, forks, liftchains, hydraulics, and carriage operate properly
- Back mirror is in good condition
- Brake and clutch-pedals function properly
- Parking brake lever is effective
- Gauges are working properly
- No abnormal noise, vibration, emission color, or emission smell
- Lamps turn on and off
- No loose steering
- No abnormal sound from horn
- OPS indicator lighting operates properly

three years. TICF also offers a program known as a "one pay lease," which allows buyers to leverage the tax advantages of a lease, yet only make one lump sum payment at the beginning of the lease.

Other key advantages that corporate buyers enjoy include the quality, durability, and low downtime that Toyota's lift trucks provide, all of which help to increase return on investment (ROI) while reducing total cost of ownership (TCO). And thanks to Toyota's industry-leading dealer network, you'll know that your equipment is going to work long after you buy it. And even if the equipment does breakdown, the best dealer network in the industry is here to take care of you, thus increasing ROI while reducing TCO.

**THE CASE FOR THE CEO:** Today's CEOs understand that brand reputation and reliability mean everything when searching for suppliers that can support their own companies' initiatives. In today's competitive business arena, there is no room for stagnancy, poor supplier relations, or bad customer service. But in order to avoid these issues, CEOs need strong partners like Toyota—the company that sells roughly 35 pneumatic IC forklifts per day in the U.S. and Canada.

As the fifth most recognized brand in the world, according to Interbrand's influential "Best Global Brands" report, Toyota not only provides reliable, durable, dependable pneumatic IC forklift, but it also helps its customers mitigate risk, stay compliant, and keep their workforces safe. Whether they're moving huge pipes for oil and gas companies, unloading containers off ocean-going ships, or moving heavy pallets around a warehouse, operators can come to work every day knowing that their equipment is safe, reliable, and durable.

And the CEOs that are leading those companies can rest easy knowing that they're getting a product that includes high levels of serviceability and a low cost of ownership. ●

# IC Pneumatic Forklifts:

## The value for your dollar

*Break out of the commodity mindset—it's what's inside the truck that counts.*

**T**oyota's line of pneumatic tire, internal combustion forklifts are super durable to handle your toughest jobs on the roughest terrain that you can put in front of it. But when it really comes down to it, the inner workings of these lift trucks are what set them apart in the marketplace.

"It's what's inside that counts the most," says Dave Samson, a TMHU territory manager. "When you're working in hot, dirty manufacturing, lumber, or port environments, for example, you need a lift truck engine that can stand

**"It's what's inside that counts the most. When you're working in hot, dirty manufacturing, lumber, or port environments, for example, you need a lift truck engine that can stand up to those elements. Toyota has proven itself up to task on even the most difficult applications."**

—Dave Samson, TMHU account manager

up to those elements. Toyota has proven itself up to task on even the most difficult applications." Jon Vincent, a TMHU national account sales manager concurs, and says fleet managers, corporate buyers, and CEOs that are in the market for IC pneumatic lift trucks should focus on procuring a superior, safe product that will last.

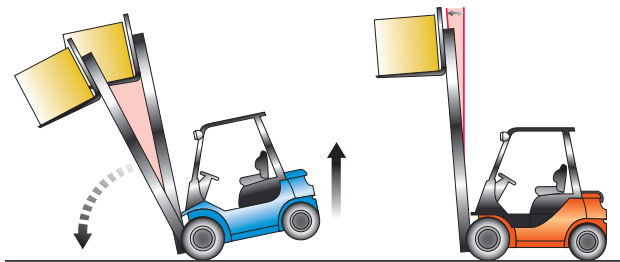
Break out of the commodity mindset, Vincent advises, and understand that there are nuances among both the pneumatic lift trucks themselves and the companies that manufacture them. "Here at Toyota," he adds, "we take pride in our products and we're focused on building the best forklift on the market."

And remember, says Bill Byrd, national manager of dealer sales for TMHU's western region, that Toyota holds the top spot on the list of 17-or-so forklift manufacturers for a good reason. "It's not by accident that we are the world's largest manufacturer of forklifts; it's because we get up every day ready to execute on our customers' behalf," says Byrd, "and because we provide them with the biggest value for their money." ●

# Toyota's commitment to "safety first"

Standard safety features have been designed into each unit, earning Toyota's reputation as the safest forklift available on the market today.

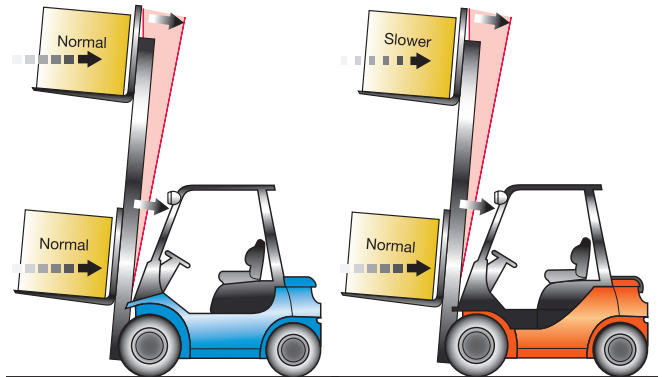
In an independent study conducted by Peerless Research Group, respondents ranked Toyota forklifts as the safest forklift available on the market today. Toyota forklifts have been designed to meet and exceed both American National Standards Institute (ANSI) and the Occupational Safety and Health Administration (OSHA) requirements.



As part of Toyota's commitment to safety, standard safety features have been designed into each forklift. Standard features include safety devices such as welded overhead guards, operator restraint systems, manually operated horns, skid resistant entry/exit steps, operator assist grips, Toyota's System of Active Stability (SAS), and ergonomic placement of hydraulic controls.

SAS helps reduce the risk of accidents and injuries, minimizes the potential for product and equipment damage, and increases overall productivity levels. It senses various factors that lead to lateral instability and potential lateral overturn. When those conditions are detected, SAS instantly engages the vehicle's swing lock cylinder to stabilize the rear axle, changing the forklift's stability footprint from triangular in shape to rectangular.

The resulting increase in stability substantially



reduces the likelihood of a lateral overturn. The Active Mast Function Controller detects mast height, load weight, and tilt speed to determine whether current conditions put operators at risk of a tipover. If activated, the forward or rear tilt speed controllers reduce the tilt speed by half to reduce risk of load spills and longitudinal tipovers.



To ensure the highest levels of safety, operators of powered industrial trucks must be fully trained and employer certified as required in recent federal regulation. As part of the regulation, forklift operators are required to complete formal classroom training, practical hands-on training, and an evaluation. Toyota forklift dealers offer specialized and comprehensive training materials and programs to help companies meet and exceed OSHA and CCOHS regulations. •

