

Terminal Tractor/Yard Spotter

Used Yard Spotter Fontana - Tow tractors, also called tow tugs or towing tractors are popular for moving loads horizontally in airports, arenas, warehouses, manufacturing plants and other large buildings. They are capable of towing several trailers in a train formation. Certain tow tractors can transport helicopters and giant airplanes for the purpose of positioning inside and outside airport hangars and terminals. All tow tractors use the concept of tractive effort to move loads. Tractive effort is the amount of traction a unit has on the ground. Heavier loads require more tractive effort compared to lighter loads. The tow tractor lifts a portion of the load during towing while ensuring the wheels on the load still remain on the ground. The load is partially lifted by use of the tow tractor's hydraulic mast which is specifically designed to produce downforce on the drive wheel immediately beneath it, increasing the tractive effort. Traction allows the machine to deliver very large and heavy loads.

Types of Tow Tractors Two types of towing tractors include heavy-duty tow tractors and load carriers. **Load Carriers** Numerous businesses need to transport items of different sizes on a regular basis including manufacturing, parcel delivery services and airport baggage. Tow tugs and load carriers easily transport single items that have been deposited on wheeled platforms and move them with ease. These load carrier tow tractors fall under the material handling equipment industry which includes other machines such as pallet jacks, forklifts and cranes. These units only transport loads at ground level and do not lift or lower items from shelving or off the ground. Therefore, the load must already be on wheels or on a wheeled platform, ready to be transported. The wheeled platforms are called bogies, trollies or skates. The tow tractor joins to the trolley and functions similarly to a train locomotive. Usually, the tow tug has a male-end steel coupling that couples to the female-end fixed to the front of the trolley. The trolley's back portion has a male-end steel coupling that can be used to connect a variety of trollies to a single tug. These machines can transport a variety of items in varying conditions. Different trolley types are on the market to facilitate better transportation customization. Most trollies types are compatible with each other, meaning they can be connected together. This means several different types of trollies can be used in a single train allowing greater flexibility for operations. Load carrier tow tractors deliver a clear view for the operator which can be better than relying on forklifts. Further, load carrier tow tractors tow their trollies behind them in a forward-only direction which decreases the safety concerns created by forklifts operating in reverse. This design is excellent for locations that have a high level of safety such as manufacturing locations and airports. It is more economical to tow multiple items when possible with a tug than using a forklift truck to transport single items. Tugs are easy to move and safe to use. One benefit of these tow tugs is that an operator usually does not require a license. This is because the load is not lifted from the ground so it does not fall under the usual restrictions and licensing required of standard forklifts, cranes and other load lifting equipment. There are three kinds of load carrier tow tractor units to choose from; pedestrian, stand-in and rider-seated.

Pedestrian Tow Tractors A pedestrian tow tractor, also referred to as an electric tug, electric tugger, electric hand tug or tow tractor, is a walk-behind machine designed for easy movement of wheeled loads. These machines are simple to use, extremely maneuverable and very compact. **Stand-in Tow Tractors** The most common design for businesses that rely on horizontal manufacturing transport and order picking are stand-in tow tractors. They provide a secure platform for the driver to operate while still having a smaller footprint than that of the rider-seated tow tractors. **Rider-Seated Tow Tractors** The rider-seated tow tractors are similar to the stand-in tow tractors with the exception they provide a seated platform for the driver. These models are commonly used for transporting loads over farther distances such as moving checked baggage from the airport check-in to the aircraft at the terminal. Reducing rider fatigue, the rider-seated models deliver more efficiency.

Heavy Duty Tow Tractors In the aviation industry, large passenger and cargo planes usually employ the concept of pushback. Pushback is the process of pushing an aircraft back from the terminal by means not originating from the aircraft's personal power. Heavy-duty tow tractors are known as pushback tugs or pushback tractors

complete this task. Pushback tractors are built with a low-profile to allow them to move underneath the nose of the aircraft so that it can attach. Enough ground friction is required to move the weighted aircraft, so these models need to be heavy themselves. A common tractor for moving large aircraft can weigh in up to fifty-four tons. Their driver's cab has the ability to be lowered and raised for increased visibility during reversing. The unit is called a pushback tow tractor or pushback tug but it is additionally used to move aircraft in situations where taxiing is not safe or practical including into and outside of aircraft maintenance. The two subtypes of pushback tow tractors include conventional tow tractors and towbarless tow tractors.

Conventional Pushback Tow Tractors Conventional units rely on a tow bar to connect the tug to the aircraft's nose landing gear. The tow bar is laterally fixed at the nose landing gear; however, it is possible to make height adjustments with slight vertical movements. The tow bar that attaches to the tug can pivot vertically and laterally. The tow bar functions as a sizeable lever to facilitate nose landing gear rotation. Each aircraft type has a unique tow fitting so the towbar also acts as an adapter between the standard-sized tow pin on the tug and the type-specific fitting on the aircraft's landing gear. Heavy-duty towbars required for sizeable aircraft ride on their own wheels when they are disconnected from the machine. The hydraulic jacking mechanism is attached to the wheels, allowing the towbar to lift to the correct height in order to mate with the tug and the aircraft. The same means are used in reverse during the pushback process to raise the towbar wheels from the ground. The towbar can be connected at the front or the rear of the tractor, depending on whether the aircraft will be pushed or pulled.

Towbarless Pushback Tow Tractors Towbarless tractors, as their name suggests, don't rely on a towbar. Instead, these machines scoop up the nose landing gear to lift it off of the ground so the tug can move the plane. This design facilitates higher speeds greater aircraft control and can eliminate the necessity of having a worker inside of the cockpit to apply the brakes. As there is no need to maintain numerous towbars, simplicity is the main advantage of this unit. By connecting the tug directly to the aircraft's landing gear tug operators have better control and responsiveness when maneuvering.