

## Terminal Tractor/Yard Spotter

Used Yard Spotter Richmond - Tow tractors are a common piece of industrial equipment used in large buildings, arenas, warehouses, airports and manufacturing plants for moving loads horizontally. They go by different names including tow tugs and towing tractors. Tow tractors are responsible for moving multiple trailers in a train. Some are designed specifically to tow large aircraft in order to position them into and out of airport terminals and hangars. All tow tractors use the concept of tractive effort to move loads. Tractive effort refers to the total amount of traction a vehicle deploys on the ground. The heavier the load is, the more tractive effort is needed. The unit works by lifting a part of the load while it is towing; however, the load's wheels stay on the ground. The tractive effort is increased by the unit's hydraulic mast. This has been engineered to produce downforce on the drive wheel directly under the mast. Traction allows the machine to deliver very large and heavy loads.

**Types of Tow Tractors** There are two basic types of tow tractors: 1. Load carriers; and 2. Heavy-duty tow tractors; Load Carriers Many industries including airport baggage divisions, manufacturing, parcel transportation and e-commerce rely on moving items of various sizes to and from different locations. Load carrier tow tractors or tow tugs are especially useful for these types of applications because they allow the single items to be gathered and stacked on the wheeled platforms, ready to be attached for tow and transport by the tow tractor. Load carrier tow tractor models are categorized in the material handling equipment that covers cranes, forklifts and pallet jacks. These units only transport loads at ground level and do not lift or lower items from shelving or off the ground. This means that the load has already been on wheels or placed on a wheeled platform before transport. Bogies, skates and trollies are other names for wheeled platforms. 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. Trollies move in a train-like system thanks to the male-end steel coupling on the back which can connect to numerous units and allow a single tug to transport them. Tow tractors are capable of moving many machines in a variety of conditions. The availability of many different types of trollies also allows for greater customization in transporting items. Many trollies can be connected since they are compatible with one another. 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. Towing solutions are a good alternative to traditional forklifts to handle many single items. Tugs are easy to move and safe to use. A key benefit of these units is that typically, the operator doesn't need 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 Pedestrian tow tractors go by many names including electric tow tractor, electric tug, or electric tugger. These units are walk-behind models that move wheeled loads. These compact machines are simple to use and can maneuver easily. Stand-in Tow Tractors Popular for industries that conduct order picking and horizontal transport for manufacturing, the stand-in tow tractors are the best design. 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 Rider-seated tow tractors are similar to stand-in models except they offer a seated platform for the operator. These types of load carrier tow tractors are popular where loads are transported over longer distances, such as airport baggage systems where checked baggage is transported from the check-in counter at the front of an airport to the aircraft at the terminal, often a great distance from one another. Rider fatigue is decreased with sit-down units for more efficiency and productivity. Heavy Duty Tow Tractors The pushback concept is

commonly used in aviation for cargo and large passenger planes. Pushback refers to the process of pushing an aircraft back from an airport terminal by some means other than the aircraft's own 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. Because of the added heavy weight of the aircraft, these tow tractors must be heavy enough to retain enough traction on the ground in order to move the aircraft. Large aircraft tractors can weigh as much as fifty-four tons. These models have a driver's cab that has the option of being raised or lowered during reverse for better visibility. The pushback tow tractor and pushback tug are also employed when taxiing the aircraft is not an option. They are commonly used to move the machine into and outside of aircraft maintenance hangars. There are two subtypes of pushback tow tractors: 1. Conventional; and 2. Towbarless. 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. At the end that attaches to the tug, the tow bar may pivot freely laterally and vertically. The tow bar functions as a sizeable lever to facilitate nose landing gear rotation. Every aircraft has a special tow fitting and the towbar functions as an adapter between the fitting on the landing gear and the standard-sized tow pin. Heavy-duty towbars required for sizeable aircraft ride on their own wheels when they are disconnected from the machine. The wheels are attached to a hydraulic jacking mechanism which can lift the towbar to the correct height to mate to both the airplane and the tug, and once this is accomplished the same mechanism is used in reverse to raise the tow bar wheels from the ground during the pushback process. 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 offers better control and higher speeds while eliminating the requirement of having a worker stationed in the cockpit to put the brakes on. Simplicity is the main advantage of the towbarless tugs since it is not necessary to maintain a variety of towbars. Directly connecting the tug to the landing gear allows operators to have better responsiveness and control while moving the aircraft.