

Terminal Tractor/Yard Spotter

Used Yard Spotter United States - Tow tractors, sometimes call towing tractors or tow tugs, are vehicles used in transporting loads horizontally in warehouses, manufacturing plants, airports, arenas and other large facilities. 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 hangers. Tractive effort is how these machines transport loads. The complete amount of traction a vehicle utilizes on the ground. The heavier the load is, the more tractive effort is needed. 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. The traction created by this process enables the tow tractor to pull 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 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. Load carrier tow tractor models are categorized in the material handling equipment that covers cranes, forklifts and pallet jacks. Load carrier tow tugs do not transport items from high places such as shelves or platforms. They only move cargo at ground level. In order to be ready for transport, items must be secured on a wheeled platform or already on wheels to use the tow tractor. The wheeled platforms are called bogies, trollies or skates. The tow tractor attaches to the trolley and operates similarly to how train cars are attached to a locomotive. Generally, the steel coupling on the tow tug's male-end joins to the front trolley's female-end. The back of the trolley has a male-end steel coupling that can then be used to attach multiple trollies onto a single tow tug, transporting all the trollies in a train-like formation. Tow tractors with a train of trollies enable a wider range in the type of items that can be transported and in the types of conditions they can be transported. Different trolley types are on the market to facilitate better transportation customization. Trollies can connect together and are compatible. This means several different types of trollies can be used in a single train allowing greater flexibility for operations. A key benefit of using a load carrier tow tractor is that operators can enjoy a clear view instead of relying on forklifts. Additionally, load carrier tow tractors move their units in a forward-only way and this drastically decreases safety concerns associated with forklifts traveling in reverse. This design is excellent for locations that have a high level of safety such as manufacturing locations and airports. Towing many items at once saves time and money compared to relying on forklifts to move single things. 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. Tow tractor operators do not need licenses since they don't lift loads off of the ground. Three subtypes of load carrier tow tractors include rider-seated, stand-in and pedestrian.

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 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. Rider-seated models are used for moving loads longer distances. They are popular for airport luggage transport to move checked baggage from the check-in counter to the aircraft parked at the terminal. Rider fatigue is decreased with sit-down units for more efficiency and productivity.

Heavy Duty Tow Tractors Aviation relies on the pushback concept for moving big passenger and cargo aircraft. 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 designed with a low profile design to enable them to move under the aircraft's nose in order to attach to the aircraft. Enough ground friction is required to move the weighted aircraft, so these models need to be heavy themselves. 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. While the vehicle is referred to as a pushback tug or pushback tow tractor, it is also used to tow aircraft in areas where taxiing the aircraft is not practical or safe, such as moving large aircraft in and out of maintenance hangars. The pushback tow tractors come in two subtypes, the towbarless and the conventional.

Conventional Pushback Tow Tractors These units use a tow bar to attach the tug to the nose landing gear on the aircraft. 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. Acting like a giant lever, the tow bar can rotate the nose landing gear. 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. Attached to the wheels, the hydraulic jacking mechanism allows the towbar to lift to the proper height to mate with the aircraft and tug. The same mechanism is employed in reverse to raise the towbar wheels off the ground for pushback. 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 allows better control of the aircraft and higher speeds; it may also eliminate the need to have a worker in the cockpit to apply the aircraft's 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.