

## Terminal Tractor/Yard Spotter

Used Yard Spotter New Jersey - 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. They are capable of towing several trailers in a train formation. Tow tractors can move aircraft into and outside of airport locations such as terminals and hangars. The tractive effort concept is how loads move from place to place. The complete amount of traction a vehicle utilizes on the ground. Heavier loads require more tractive effort compared to lighter loads. Based on this principle, the tow tractor works by lifting a part of the load it is towing while making sure the load's wheels remain 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. The traction created by this process enables the tow tractor to pull very large and heavy loads.

**Types of Tow Tractors** Two types of towing tractors include heavy-duty tow tractors and load carriers.

**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. Tow tugs and load carriers easily transport single items that have been deposited on wheeled platforms and move them with ease. The category that load carrier tow tractor models fall into includes forklift trucks, cranes and pallet jacks. Load carrier tow tugs transport loads at ground level only, rather than lifting or lowering off the ground or from shelving or other hard to reach areas. In order to be ready for transport, items must be secured on a wheeled platform or already on wheels to use the tow tractor. Wheeled platforms are called skates, trollies and bogies. 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 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. These machines can transport a variety of items in varying conditions. The availability of many different types of trollies also allows for greater customization in transporting items. Most trollies types are compatible with each other, meaning they can be connected together. Since multiple trolley types can be utilized in a single train, there is flexibility. 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 is vital for safety-sensitive places including airports and manufacturing facilities. 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. A key benefit of these units is that typically, the operator doesn't need a license. No license is necessary since these units do not lift loads up from the ground like cranes, and forklifts that require licensing. 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. It is compact, maneuverable and easy to use.

**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. These units deliver a secure driver platform and deliver a smaller footprint compared to the rider-seated models.

**Rider-Seated Tow Tractors** Similar to stand-in tow tractors, rider-seated units have a seated operator platform. 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** The pushback concept is commonly used in aviation for cargo and large passenger planes. Pushback is the process of pushing an aircraft back from the terminal by means not originating from the aircraft's personal power. Pushback is achieved by employing pushback

tugs or pushback tractors. Pushback tugs feature a low-profile enabling them to travel under the aircraft's nose for easy attachment. Since the aircraft weight is heavy, these units need to be heavy in order to retain adequate ground friction to move the aircraft. 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. 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** Conventional units rely on a tow bar to connect the tug to the aircraft's nose landing gear. The tow bar is fixed laterally at the nose landing gear, but may move slightly vertically for height adjustment. The tow bar that attaches to the tug can pivot vertically and laterally. 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. 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 is capable of being connected at the tractor's rear or front, depending on if the machine needs to be pulled or pushed. Depending on whether the aircraft needs to be pushed or pulled, the towbar can be attached to the front or rear of the tractor.

**Towbarless Pushback Tow Tractors** Towbarless tractors work without a towbar and scoop up the aircraft's nose landing gear to lift it off of the ground instead. 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. The main advantage of a towbarless tug is simplicity; there is no need to maintain multiple towbars. Directly connecting the tug to the landing gear allows operators to have better responsiveness and control while moving the aircraft.