

## Terminal Tractor/Yard Spotter

Used Yard Spotter Saskatchewan - 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. These machines can tow numerous trailers in a train or snake-like 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. Tractive effort refers to the total amount of traction a vehicle deploys 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 hydraulic mast on the tow tractor is responsible for lifting the load. It produces downforce on the drive wheel underneath to increase the tractive effort. The traction created by this process enables the tow tractor to pull very large and heavy loads. Types of Tow Tractors Heavy-duty tow tractors and load carriers are two types of 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. 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. The category that load carrier tow tractor models fall into includes forklift trucks, cranes 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. Boggles, skates and trollies are other names for wheeled platforms. The tow tug is attached to the trolley similar to train cars being attached to a locomotive. Typically, the tow tug features a steel coupling male-end that attaches to a female-end on the trolley's front. 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. Trolley types differ to provide customization options. 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. An additional benefit of operating with load carrier tow tractors as opposed to forklifts is the unobstructed view offered by a tow tractor, increasing the safety of work areas. 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. They are safe and easy to maneuver. 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 walk-behind model that can transport wheeled loads is called a pedestrian tow tractor. These machines may go by the names of electric hand tug, electric tugger, electric tug or tow tractor. These machines are simple to use, extremely maneuverable and very compact. 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. Stand-in tow tractors feature a tinier footprint compared to rider-seated editions and they offer a safe driver platform. 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 In the aviation industry, large passenger and cargo planes usually employ the concept of pushback. Pushing an aircraft back from the airport terminal without using the aircraft's own power is the pushback concept. Pushback is achieved by employing pushback tugs

or pushback tractors. Pushback tractors are built with a low-profile to allow them to move underneath the nose of the aircraft so that it can attach. Since the aircraft weight is heavy, these units need to be heavy in order to retain adequate ground friction to move the aircraft. A typical tractor for large aircraft weighs up to 54 tons. They usually have a driver's cab that can be raised and lowered to increase visibility when 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** 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. 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 work without a towbar and scoop up the aircrafts' 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. As there is no need to maintain numerous towbars, simplicity is the main advantage of this unit. Directly connecting the tug to the landing gear allows operators to have better responsiveness and control while moving the aircraft.