

Terminal Tractor/Yard Spotter

Used Yard Spotter Alaska - 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. These machines can tow numerous trailers in a train or snake-like formation. Certain tow tractors can transport helicopters and giant airplanes for the purpose of positioning inside and outside airport hangars and terminals. 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. 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 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 or load carrier tow tractors are excellent for these jobs as they can maneuver single items stacked on wheeled platforms for streamlined transport. Load carrier tow tractor models are categorized in the material handling equipment that covers cranes, forklifts 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. This means that the load has already been on wheels or placed on a wheeled platform before transport. The wheeled platforms are called bogies, trollies or skates. The tow tractor joins to the trolley and functions similarly to a train 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. 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. 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. 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. These safety considerations are of special importance in busy areas such as manufacturing floors and airports. It is more economical to tow multiple items when possible with a tug than using a forklift truck to transport single items. They are safe and easy to maneuver. The operator doesn't require a license, which is another benefit compared to forklifts. 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 subtypes of load carrier tow tractors: 1. Pedestrian; 2. Stand-in; and 3. 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. It is compact, maneuverable and easy to use.

Stand-in Tow Tractors The most common design for businesses that rely on horizontal manufacturing transport and order picking are stand-in tow tractors. These units deliver a secure driver platform and deliver a smaller footprint compared to the rider-seated models.

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 Aviation relies on the pushback concept for moving big passenger and cargo aircraft. Pushing an aircraft back from the airport terminal without using the aircraft's own power is the pushback concept. 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. 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. 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. There are two subtypes of pushback tow tractors: 1. Conventional; and 2. Towbarless. Conventional Pushback Tow Tractors Conventional tugs use a tow bar to connect the tug to the nose landing gear of 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. 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. 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 work without a towbar and scoop up the aircrafts' nose landing gear to lift it off of the ground instead. 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. 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.