

Use of drawbar trailer

Drawbar trailers come in many shapes, sizes and configuration depending on which specification the operator has sought for his/her particular operation. With this in mind operation is pretty much standard across the board. Like with everything within transport safety is the key factor, if you are unsure do not be afraid to ask.

Types

There are two key principle designs of draw bar trailer, A frame (also known as turn table) and swan neck (also known as straight bar).

A frame trailers consist of having at least one wheel at each corner of the trailer. Normally they comprise of a bogey front axle with an A frame extending forward of this where attachment to the prime mover (rigid truck) takes place. The bogey style front axle is attached on a pivot at the central forward portion of the trailer, enabling the trailer to steer independently.

Swan neck trailers have their axles mounted centrally along the body. They come in one, two or three axle configuration and have the swan neck extending centrally from the forward central portion of the trailer chassis where connection to the prime mover takes place.

Familiarisation and daily checks

When presented with a draw bar trailer before even considering hooking up, you must familiarise yourself with the different functions and operations. A good way of doing this is by reading the manufacturers manual or having an experienced driver of said trailer go through the walk round with you.

Before any hook up, the following daily checks should be carried out. It is always advisable to do these in a clockwise manner starting at the front offside of the trailer, so as not to miss anything.

- Check the end of the A-frame or swan neck for signs of cracking or stress at the connector ring.
- Check the condition of airlines, electrics, and ABS/IBS connectors.
- Check PARK and SHUNT buttons are in the ON position

- Check the suspension height lever position (down is best for hooking up or trailer being solo).
- Check offside tyres for wear, tears, and tread depth. If you can take a visual check on twin wheeled axles for debris such as stones or wood that may have lodged between them. Also if trailer is overloaded twin axle tyres may rub against each other causing a severe fire risk. If possible check tyre pressures.
- Check rear light clusters for cracks, water and the fact that they are in situ.
- Check you have the correct number plate corresponding to your prime mover
- Check rear stanchion legs on swan neck trailers. Ensure no buckling, they are in down position and winder handle is in situ.
- Check near side tyres same as offside.
- Check front stanchion legs – same as rear.
- Depending on the trailers function check load, restraints, doors etc

Once you have satisfied yourself that the trailer is operational proceed to hook up the prime mover.

Hooking up

This is an area of draw bar operation that first time operators find daunting. It does get a lot easier as time goes on and everyone when they start has two or three shunts to get on the pin, so please do not be disheartened. Again it cannot be stressed enough safety is the key aim when hooking up.

The hook up described below is for a swan neck central axle trailer as these are the most popular kinds of draw bar trailer used within the UK. A frame trailers are more common on the continent and use a very similar process but have sprung, leg or stanchion to hold the A frame at height for attachment.

Once you have completed your daily inspection of the trailer move the prime mover onto the trailer as centrally as possible leaving yourself about 5 foot between prime mover and trailer. At this point turn engine off and remove keys, so no one can move the prime mover back any further.

Move to rear offside of the prime mover and operate the hitch release valve, which are usually positioned here operated by air and in a black box. You will see it has two positions. Familiarise yourself with this by moving the lever to its different positions and watching the hitch at the same time. If your prime mover is well serviced you will see the pin within the hitch rising in one position and lowering in the other lever position. Bring the pin into the up position and DO NOT put your hands near the hitch at this point. Visually line up the eye of the swan neck with the hitch of the prime mover. Remember if the hitch looks higher than the eye try lowering the suspension on the prime mover and re-checking before attempting the hook up. Ensure all airlines and electrical cables are well clear of the hitch and eye, you do not want these becoming trapped.

Now slowly reverse the prime mover back to the trailer, hitting the hitch against the trailer hard may cause the trailer to jump backwards bending the legs, causing you not to be able to raise them, so good clutch control and slowly, slowly is the key. Hopefully if all is lined up correctly you will feel the prime mover touch the eye of the

swan neck and hear a clunking noise, which is the hitch pin locking into the down position. This is why you should never put your hands near an open hitch as it may accidentally activate the release mechanism, resulting in probable loss of digits! Go and visually inspect the hitch and ensure that the hitch pin has lowered through the eye of the swan neck, if you have missed try again. It will come naturally in the end! Sometimes a badly serviced hitch or differences in ride height between the hitch and the eye can cause the eye to be inside the hitch and the pin not to drop. To get over this gently rock the prime mover back a few times, until you hear the clunk of the pin dropping. This takes minimal movement, going too far forward may cause the pin to drop whilst the eye is out of the hitch and remember not too hard we don't want those legs bending now do we!

Once you are satisfied the hitch is in the locked position you can proceed to hooking up the air, electrics and ABS/IBS connectors. The air lines may come as male/female connectors or as a one sealed block unit. At this point it is advisable that you switch on the lights of the prime mover and complete the trailer daily checks.

Again the best way to finish the operation of hooking up the trailer is best done in a clockwise motion from the offside front of the trailer. Start by pushing the trailer brake ON/OFF switch forward into the OFF position. Then place the trailer suspension select lever into the fully raised position, reason for this is to bring the front and rear trailer legs off of the ground making it a lot easier to wind them into the up position. Move around and raise the rear legs, followed by the front legs into the up position. Go back to the trailer suspension select lever on the offside, do not do this by stepping over or on the swan neck, as wet or greasy surfaces may cause you to trip or slip resulting in severe pain and embarrassment. Move the lever into the middle ride height position and visual check the trailer is lowering into position.

You are now fully hooked up and ready to go. One last tip is to slowly drive the vehicle forwards and check mirrors to make sure all wheels on the trailer are turning. There is nothing worse than driving out of the yard dragging a seized wheel on the trailer, resulting in lots of smoke, damaged tyres, possible fire risk and down time stuck in a cold lay by.

Driving of the trailer

It is not intended here to teach people to drive or reverse trailers just a couple of hopefully helpful hints to help you along.

- Draw bar trailers when fully loaded have a tendency to swing from side to side on uneven roads. This when looking in the mirror seems a very unnatural movement and can be scary for the first time operator.
- Due to the trailer being considerably shorter than a semi trailer it has a tendency when reversing to have a mind of its own. Very small inputs to the steering will keep the trailer straight and true. Easy way to reverse without becoming too confused is to place hands on the bottom of the steering wheel (nearest section to yourself) if you want the trailer to go left move your hands to the left (making the steering wheel turn right) and vice versa for right.

- Always ensure the greater load is carried by the prime mover. E.g. always ensure your first drops are carried on the trailer, and when collecting goods load the prime mover first.
- Drawbars will not turn on a six pence like an artic. A good example is a 180-degree left turn in a yard. Do the turn in two shunts. Drive forward to the right then swing round to the left, before you finish the first turn (roughly 90 degree through the turn) straighten the prime mover and trailer as best as you can. Then reverse with right hand down making the trailer go left back to where you came. Be cautious not to let the prime mover and trailer go past 90 degrees to each other as swan neck will strike the prime mover causing damage to ancillary items. Now in this position you should find it easy to complete the rest of the 180-degree turn with ease.
- Keep a constant check when stationary in towns for pedestrians taking a short cut crossing the road between the prime mover and the trailer; unbelievable but it does happen.

Unhooking

Think about where you want to unhitch the trailer. Roads and lay-bys may seem suitable, but there is nothing worse than coming back to hook up and finding a vehicle parked in front of your trailer. Try wherever possible to find a level hard standing, as trailer legs when loaded have a tendency to stick into soft ground. When leaving the trailer, lower the front and rear legs and always drop the air suspension into the fully down position. This will stop the trailer bouncing during loading/unloading.

Again do the unhook process in an order like the hook up process. Start by pulling the parking brake lever into the ON position. Move around to the offside and drop the rear and front legs into the down position. Go to the air suspension height lever and lower the suspension to its fully down position. At this point remove all airlines, electrics and ABS/IBS lines from the prime unit and stow them clear of the hitch. This is because most hitches have a metal lever, which flips into the up position when raising the hitch pin. This either stops you removing the electrics/air lines or can cause damage to the lines.

You should now be in a position to release the pin on the hitch. Do the walk round in your head, brakes on, legs front/rear down, suspension down, leads disconnected. Move to the hitch pin control box, and move the lever to the up position. You should now see the hitch pin shoot up into its housing clear of the trailer eye. Now you may remove the prime mover from the trailer. Do this slowly and check mirrors at all times to make sure the pin has not settled back between the trailer eye.

Closing note

You will see people taking short cuts like not lowering the rear legs, leaving suspension in the ride height position and driving hard into the eye of the trailer, plus many more. It is not accepted practice for a professional driver to take dangerous short cuts. Correct use of a draw bar trailer may add a few minutes onto the working day opposed to those who take short cuts, but those few minutes may save a life.

Written by Liam Fassam. No. 10 in a series published by the Professional Drivers Association