INSTRUCTIONS

How to use the "Load Position Calculator"

Important Information

Note: – To achieve maximum results this program will require some ACCURATE measurements and important data input from the user. Particular attention MUST be paid when gathering weights and measurements from trucks, dollies and trailers.

Dimensions and weights are measured in ether metric or imperial; therefore weights and measurements should be to the nearest 1kilogram or 1 millimeter for accurate results. Alternately you can work in imperial measurement and once again you will need to be to the nearest fraction of an inch or 1 pound for accurate results.

Weighing Information

How to weigh the trailer or dolly kingpin (downward weight at kingpin on towing vehicle turntable).

This is the weight of trailer kingpin on dolly turntable or dolly kingpin on truck turntable. Always weigh at the height of the turntable the kingpin will be resting on and from the front most trailer or dolly kingpin. A crane and load cell can be used or jack the front of trailer up on a set of scales to the travel height to weigh.

If a crane is not readily available an alternate is to weigh the combination axle group and then weigh without the trailer than weigh again without the dolly. You will then be able to calculate the weight on each turntable with and without the trailer or dolly; this will give you the weight of the kingpin of the trailer and dolly. This is not as accurate as using check weigh scales or a load cell.

If the same combination is always used together than you can enter a "0" zero kingpin weight and just enter axle group weights. E.g. steer axles, drive axles, dolly axles and trailer axles. This will record the Kingpin weight on the towing vehicle axle group.

You will not be able to accurately mix and match combinations using this method due to differing kingpin weights.

If using a manufacture's manual for weights and measures remember to make allowances for extra equipment added to the machine after manufacture.

Getting Started

Once you have logged in by entering your email address and password the first page to open is the Load Position Calculator page.

From the menu ribbon at the top of the page you will be able to select from:

- **TRUCK**
- **TRAILERS**
- **DOLLIES**
- **CALCS**
- **SAVED CALCS**
- **INSTRUCTIONS.**

You will need to enter the truck, trailer and dolly information by selecting the respective tabs prior to being able to use the calculation page.

Truck

Select “TRUCK” to go to truck tab to enter truck details.

At the “Truck” page you can either add a new truck (prime mover), search for a previously saved vehicle from the search box or from the drop down menu below search box, or you can go to the created calendar and select a date from the drop down menu when vehicle was created.

You can also modify a previously saved vehicle by selecting a previously saved vehicle and making the required changes.

- **Add Truck**
  To add a new truck, select “ADD TRUCK”.

- **“Imperial” or “Metric”**
  Select either “Imperial” or “Metric” from the pop up screen. The “Load Position Calculator” will only work using one or the other unit of measurement it will not convert to the opposite measurement.

- **Registration**
  You can enter the registration number of your vehicle or a fleet number.

- **Description**
  You can enter either the fleet number or a brief description of the vehicle e.g. Mack Titan 6 X 4 200 tonne GCM.

- **Tare Weight of Steer Axle**
  This is the empty weight of the steer axle group. If your vehicle has more than one set you will need to weigh the first and second sets together. Record the weight to the nearest kilogram or pound as required.

- **Tare Weight of Drive Axle**
  This is the combined weight of all drive axles. Record the weight to the nearest kilogram or pound as required.

- **Front of Truck to Centre of Steer Axle**
  This is the distance measured from the front most point of the truck to the centre of the first steer axle.

- **Number of Steer Axles**
  You can either enter 1 or 2 steer axles.

- **Rear Steer Axle to Centre of First Drive Axle**
  This is the distance from the centre of the last steer axle to the centre of the first drive axle. If there is only one steer axle than the measurement is taken from the centre of that steer axle.

- **Number of Drive Axles**
  You can either enter 1, 2 or 3 drive axles.

- **Centre of First Drive Axle to Centre of Second Drive Axle**
  This is the distance measured from the centre of the first drive axle to the centre

of second drive axle. *Note:* it is not required to measure the second to third axle as this measurement is the same as between axle 1 and axle 2.

- **Turn Table Forward of Centre of Drive Axle Group**
  If the turntable or 5th wheel is directly over the centre of the drive axle than it needs to be recorded as a "0" (zero). When in front record it, for example, as 20mm. The turntable should never be behind the centre of the drive axle.
  If the turntable or 5th wheel is behind the centre of the drive axle than it will be recorded as a minus number (e.g. - 20mm).

- **SAVE, DELETE or CANCEL**
  Once all required fields have been entered you have three options: you can save information for future use, delete the unit, or cancel and start again entering new truck information.

Trailers

To add a new trailer, select "ADD TRAILER"

- **"Imperial" or "Metric"**
  Select "Imperial" or "Metric" from the pop up screen. The "Load Position Calculator" will only work from one or the other unit of measurement it will not convert to the opposite measurement.

- **Rego.**
  You can enter the registration number of your vehicle or a fleet number.

- **Description**
  You can enter either the fleet number or a brief description of the vehicle e.g. Drake 4 x 8 drop deck low loader.

- **Weight on Trailer Pin**
  You will need to enter the weight of the front of the trailer at the front most trailer pin.

  To weigh the trailer pin always weigh at the height of the turntable the pin will be resting on and from the front most trailer pin.

  For more information on weighing refer to "Weighing Information" in instructions.

- **Tare Weight on Trailer Axle**
  Enter the weight of the trailer axle group as one combined weight (not of individual rows). For more information on weighing refer to "Weighing Information" in instructions.

- **First Axle to Second Axle**
  Enter the measurement from centre of first trailer axle to the centre of the second trailer axle. You may find it easier to measure from the front of the first rim to the front of the second rim.

- **Last Axle to Rear of Trailer**
  Enter the distance measured from the centre of the last axle to the rear most point of the trailer.

- **Front Kingpin to Middle Kingpin**
  Enter the distanced measured from the centre of the first kingpin to the middle kingpin. If there is no middle kingpin enter a “0” zero in this location.

- **Front King Pin to Back King Pin**
  Enter the distance measured from the centre of the first kingpin to the rear most kingpin. If there is only one kingpin enter a “0” zero in this location.

- **Base of Goose Neck to Front of Trailer**
  This is the distance measured from the base of the gooseneck to the front of the trailer deck.

- **Base of Goose Neck to Rear of Trailer**
  This is the distance measured from the base of the gooseneck to the rear of the trailer’s deck.

- **First Axle to Last Axle**
  Enter the measurement from centre of first trailer axle to the centre of the last trailer axle. You may find it easier to measure from the front of the first trailer axle rim to the front of the last trailer axle rim.

- **Number of Trailer Axle Rows**
  Entre the number of axle rows from 1 to 30.

- **Number of Pin Combinations**
  The number of pin combinations is the number of spread width combinations for that trailer. E.g. the trailer may have a 2.5m or 8’2”, 2.8m or 9’, 3.1m or 10”, 3.5m or 11’ and 3.7m or 12’ spread widths. Therefore, in this instance, the trailer will have 5 trailer pin positions.

Pin Combination 1

- **Spread**
  Enter the spread width of trailer at position 1 (position 1 is always with the trailer closed to its minimum spread width).

- **Distance to Centre of Axle Group**
  This is the distance measured from the first trailer kingpin position to the centre of the trailer axle group.

  Repeat this process for each pin combination / spread width of the trailer. This is very important for accurate load position and must be re-measured at each pin position.

  Swing-wing trailer lengths change as the trailer increases in width, so does the throw of the load. This means that as the width increases there is a need to change the position of the load.

- **SAVE, DELETE or CANCEL**
  Once all required fields have been entered you have three options: you can save information for future use, delete the unit, or cancel and start again entering new truck information.

Dollies

To add a new Dolly, select “ADD DOLLY”

- **“Imperial” or “Metric”**
  Select “Imperial” or “Metric” from the popup screen. The “Load Position Calculator” will only work from one or the other unit of measurement it will not convert to the opposite measurement.

- **Rego**
  You can enter the registration number of your vehicle or a fleet number.

- **Description**
  You can entre either the fleet number or a brief description of the vehicle e.g. Drake 2 x 8 dolly.

- **Weight on Pin**
  You will need to enter the weight of the front of the dolly at the front most dolly pin.

  To weigh the dolly pin, always weigh at the height of the turntable the pin will be resting on and from the front most dolly pin.

  For more information on weighing refer to “Weighing Information” in instructions.

- **Tare Weight on Axle**
  Enter the weight of the dolly axle group as one combined weight not of individual rows. For more information on weighing refer to “Weighing Information” in instructions.

- **Number of Axles**
  Select the number of axles/rows 1, 2 or 3.

- **Centre of Pin to Centre of Axle Group**
  This distance is measured from the front most dolly kingpin to the centre of the axle group.

- **First Axle to Second Axle**
  Enter the measurement from centre of first dolly axle to the centre of the second dolly axle. You may find it easier to measure from the front of the first rim to the front of the second rim.

- **First Axle to Last Axle**
  Enter the measurement from centre of first axle to the centre of the last dolly axle. You may find it easier to measure from the front of the first rim to the front of the last trailer axle rim.

- **Main Pin to Next Pin**
  Enter the distance measured from the centre of the first kingpin to the next kingpin. If there is only one kingpin enter a “0” zero in this location.

- **Number of Turn Table Holes**
  For sliding turntables you will need to enter the number of turntable pin positions starting as 1 being the hole at the front with pin in it. There will be only 1 if fitted with a fixed turntable.

- **Centre of Turn Table Hole 1 To Centre of Axle Group**
  This is the measurement from the centre of the turntable position 1 to the centre

of the dolly axle group.

Turntable hole 1 should be the front most hole on the sliding turntable plate with the pin locked into position. This will be the turntable's closest position to the dolly axle group.

Repeat the input of measurements for each pin position measured from the centre of the turntable position 2, 3, 4 etc. to the centre of the dolly axle group.

For fixed turntables this will only need to be entered once.

- **SAVE, DELETE or CANCEL**
  Once all required fields have been entered you have three options: you can save information for future use, delete the unit, or cancel and start again entering new truck information.

Calculations

- **Select Calculation**
  At the top left of your screen you can choose "Select Calculations". This is a drop down list of previously saved calculations. Select the one you wish to modify.

- **New Calculations**

  Select "New Calc." to start a new calculation.

- **Configuration**

  - **Imperial**
    To use imperial the vehicle must be saved as imperial from the Truck, Dolly or Trailer section before being able to use imperial on the calculation page.

  - **Metric**
    To use metric the vehicle must be saved as metric from the Truck, Dolly or Trailer section before being able to use metric on the calculation page.

  - **Truck**
    Select the truck you wish to use from the drop down menu. These are trucks you have previously saved in the Truck section.

  - **Dolly**
    Select the dolly you wish to use from the drop down menu. These are dollies you have previously saved in the Dolly section. If you do not wish to use a dolly leave it blank.

  - **Trailer**
    Select the trailer you wish to use from the drop down menu. These are trailers you have previously saved in the Trailer section.

- **Maximum Mass**

  - **Steer**

Enter the maximum weight you wish to carry on the steer axle or axle group. E.g. 6000 Kg.

- **Drive**
  Enter the maximum weight you wish to carry on the drive axle or axle group. E.g. 18000 Kg.

- **Dolly**
  Enter the maximum weight you wish to carry on the dolly axle or axle group. If you are not using a dolly you will not be able to choose this option.
  E.g. 18000 Kg.

- **Trailer**
  Enter the maximum weight you wish to carry on the trailer axle or axle group. E.g. 36000 Kg.

➢ **Trailer Positioning**

- **Dolly Pin Position**
  From the drop down menu select the dolly kingpin position to be used.

- **Dolly Turntable Pin Position**
  From the drop down menu select the dolly turntable pin position to be used.

- Trailer spread width
  From the drop down menu select the trailer spread width to be used.

- Trailer Pin Position
  From the drop down menu select the trailer kingpin position to be used.

➢ **Load Placement**

- **Centre of gravity of load forward of centre of trailer axle group**
  You can enter a distance of the centre of gravity of the load forward of the centre of the trailer axle group.

  Alternately, once you have entered the load details you can left click mouse, hold down the button and drag load forward and back until the load changes to green.

  Or once all information is entered you can select “Auto calc. load and trailer positioning” and this will calculate the position for you.

- **Front lifting point forward of the centre of trailer axle group**
  This is the position of the front lifting point forward of the centre of the trailer’s axle group. The lifting points can be the centre of tires on a machine as well. The manufacturer of some machines will give you the empty weight of each axle group.

- **Rear lifting point forward of the centre of trailer axle group**
  This is the position of rear lifting point in relation to the centre of the trailers axle group. If it is a minus number than it will be behind the centre of the centre of the trailer axle group. The lifting points can be the centre of tires on

a machine as well.

The manufactures of some machines will give you the empty weight of each axle group.

- **LOAD**

  - **Weight**
    Enter the weight you wish to load on your combination. Ensure you do not exceed the maximum allowable load to be carried. The maximum allowable weight to be carried is to the right of “weight of load”.

  - **Max Allowable**
    This is the maximum allowable load to be carried on the current vehicle combination. Ensure you do not exceed the maximum allowable load to be carried.

  - **Length**
    Enter the length of load to be carried.

  - **Height**
    Enter the height of load to be carried.

  - **Length between lifting points**
    The lifting points can be a manufactured lifting point or the centre of tires on a machine.

  - **Centre of load from front**
    This is the distance from the centre of gravity to the front lifting point.

  - **Front point**
    This is marked as a percentage and can be moved up and down to represent the load distribution weight on the front of the load.

  - **Weight**
    This is the weight on the front lifting point.

  - **Rear point**
    This is marked as a percentage and can be moved up and down to represent the load distribution weight on the rear of load.

  - **Weight**
    This is the weight on the rear lifting point.

  - **Front of load to centre of gravity**
    This is the distance measured from the front of the load to the centre of gravity of the load.

  - **Rear of load to centre of gravity**
    This is the distance measured from the rear of the load to the centre of gravity of the load.

  - **Note**
    If you have the weight at either end of the load, the centre of gravity will be

calculated for you. Alternately if you have a centre of gravity you can measure from the centre to each end to get correct percentage of weight distribution.

Weight On Axle Groups

- **Weight on Steer**
  This is the calculated weight on the steer axle group.

  If marked with a green tick it is within allowable limits of up to 2% over the selected weight.

  If marked with red cross you will need to move the load, pin or turntable position. Alternately select auto calc. to achieve acceptable limits.

- **Weight on Drives**
  This is the calculated weight on the drive axle group.

  If marked with a green tick it is within allowable limits of up to 2% over the selected weight.

  If marked with red cross you will need to move the load, pin or turntable position. Alternately select auto calc. to achieve acceptable limits.

- **Weight on Dolly**
  This is the calculated weight on the dolly axle group.

  If marked with a green tick it is within allowable limits of up to 2% over the selected weight.

  If marked with red cross you will need to move the load, pin or turntable position.

  Alternately select auto calc. to achieve acceptable limits.

- **Weight on Trailer**
  This is the calculated weight on the trailer axle group.

  If marked with a green tick it is within allowable limits of up to 2% over selected weight.

  If marked with red cross move load, pin or turntable position. Alternately select auto calc. to achieve acceptable limits.

Auto Calculation Load And Trailer Positioning

- **Auto calc. load and trailer positioning**
  Select auto calc. to achieve acceptable limits. Axle weights will be within allowable limits of up to 2% over selected weight.

  You may wish to manually move load after auto calc. to get optimal weights on a given axle group.

Save Calculation

Select “Save Calc.” and follow prompts to save calculation for future use or reference

Email

Select “Email” and follow prompts to email calculation to truck operator or yourself for future use.

Instructions

Detailed instructions on how to use the “Load Position Calculator”.