

INDICATING AND LIMITING DEVICES

This presentation details the requirements for indicating and limiting devices fitted to rough terrain variable reach trucks as listed in AS 10896.1.





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Indicating devices provide information to the operator on the state of the telehandler. This information includes the chassis inclination, boom geometry, longitudinal load moment, load that is lifted, and the load that is

permitted to be lifted for the given boom geometry. Limiting devices are designed to prevent the load which is lifted from causing instability of the telehandler or structural damage.



INDICATING AND LIMITING DEVICES

This slide helps you understand what devices are required to be fitted.











Slope indicator

- Slope indicators are required on all telehandlers.
- An indicator is required for the lateral slope or chassis inclination.
- An indicator is required for the longitudinal slope or chassis inclination.
- They must be visible to the operator in the normal operating position.

Boom length indicator

- Boom length indicators are required on all telehandlers.
- They may be displayed on the boom or included in the electronic load management system.
- The display accuracy shall have a tolerance of 0.1 m.
- They must be visible to the operator in the normal operating position.

Boom angle indicator

- A gravity pendulum angle indicator must be fitted to all telehandlers.
- The indicator shall indicate the boom angle to the horizontal.
- If the load management system indicates boom angle, a pendulum style must also be fitted.
- The display accuracy must be within 0° to 2.5° from the actual boom angle.









Longitudinal load moment indicator (LLMI)

- Shall provide visual and audible warning to the operator that the longitudinal stability of the telehandler is approaching its limit.
- The visual indicator must have different colours indicating the various stability conditions. i.e. green for ok, orange for approaching the limit and red for "you may tip".
- The warnings cannot be cancelled by the operator. The LLMI is required on all telehandlers that are not fitted with a load management system (LMS).

Actual capacity indicator

- Required on all telehandlers designed to lift freely suspended loads greater than 3.0 tonnes.
- Shall warn the operator both visually and audibly before the load on the telehandler exceeds the actual capacity for a given boom configuration.
- May also be known as a load management system (LMS).

Load indicator

- Required on all telehandlers designed to lift freely suspended loads greater than 3.0 tonnes.
- Displays the mass of the load being lifted.
- Is not required to be a certified load weighing system.
 - The indicated load must be within 95% and 120% of the actual load.







Attachment rated capacity limiter

- Required to be fitted if the telehandler is designed to lift freely suspended loads which do not exceed 3.0 tonnes and an actual capacity limiter is not fitted.
- Must prevent the telehandler from lifting a load in excess of 110% of the rated capacity of the telehandler and attachment combination.
- Designed to prevent structural damage to the attachment.
- Not required if the rated capacity of the attachment exceeds what the telehandler is capable of lifting.

Actual capacity limiter

- Required on all telehandlers designed to lift freely suspended loads greater than 3.0 tonnes.
- Shall restrict further aggravating motion of the load so that it does not exceed 110% of the actual capacity.
- A constant pressure override switch may be fitted which allows no more than 60 seconds of override.

Longitudinal load moment control

- Required on all telehandlers unless an actual capacity limiter is fitted.
- Prevents the telehandler from tipping over the front.
- May be automatically disconnected when in bucket mode with boom angle less than 10° and boom extension less than 1 m.
- A constant pressure override switch may be fitted which allows no more than 60 seconds of override.

Definitions



The following definitions may be helpful.

Fixed load: loads which do not tend to swing during transport or during the lifting cycle. These include forks, fork rotators, buckets, hay bale grabs etc. Freely suspended load: loads which may swing during the lifting cycle or during transport. These include jib attachments, hooks and winches. Actual capacity: maximum load at a specified load centre distance based on component strength and truck stability for a given boom configuration (boom length and angle).

Rated capacity – truck: maximum load permitted by the manufacturer at the standard load centre distance that the truck is capable of lifting and transporting on fork arms.

Rated capacity – attachment: maximum load that the attachment is permitted by its manufacturer to handle in normal operation.

Truck: also known as Telehandler. Rough terrain truck is designed for operation on unimproved natural terrain as well as the disturbed terrain of work sites.



THANK YOU.

For more information please do not hesitate to contact us.

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