

Substituting a crane: There are many construction machines out there in the field that are capable of safely performing a variety of tasks outside their core design intent. As such, the functions of cranes can be legally performed by many other machines on the market that were never designed, let alone optimised for such work. Some common examples are:

- Excavators lifting pipe sections into the trench they just dug.
- Telehandlers lifting and mobiling suspended loads.
- Forklifts with Jib attachments.
- Scissor-Lifts used to temporarily support structures or lift loads/material and personnel simultaneously.



Due to the cost of hiring a crane and the fact that they are designed specifically to only perform one function (lifting), the temptation to substitute a crane for a multi-function piece of machinery that's already onsite has increased over the years with factory available adaptations of such construction equipment. While this practise is safe when done with proper equipment, planning and trained / experienced personnel, it can and does cause issues for the following reasons:

- The other machines lack the basic safety features of cranes like side slope deration and Load Moment Indicators (LMI).
- The operator of the multi-purpose machine will most likely not possess the 'lifting knowledge' or 'hazard identification' skills a licenced crane operator has.
- Lifts of this nature are often ad hoc, unplanned and on less than ideal surfaces.
- Complications arise as to the ratings of attachments required to lift vs the rating of the machine itself.
- Operators may not be aware of correct attachment points and slinging techniques whereas many crane operators have a dogging or rigging license and extensive experience rigging and slinging loads.
- Converting 'diggers' to 'lifters' may require a unique attachment / coupling or removal of the bucket which is a step often missed or ignored completely.

- Operators may lack the understanding of the load chart and working radius
- Bogmats, timbers, pads or steel plates are often not with the machine as it's not primarily lifting.
- Many diggers and excavators lack the precision placement capabilities of a purpose-built crane.
- A freely suspended load on a telehandler or forklift behaves very differently to a palletised load on the tines. Load swing and pendulum affects can catch an inexperienced operator off-guard.

When a purpose-built crane is hired in for a lift, you're tapping in to the expertise and knowledge of industry professionals that not only know their machines and their limits, but know the optimal machine that will get the job done with the greatest safety. A lot of thought goes into safely planning even a small lift including but not limited to: a thorough site inspection; correct choice of machine; preparation of a Safe Work Method Statement; the management, control and mitigation of risks identified in the SWMS and, of course, the skilled execution of the lift. There are issues and hazards that crane crews are especially trained to identify that even the most diligent excavator, EWP, telehandler or forklift operator will miss if he or she is not licenced and competent to operate that device as a crane.



This bulletin is not intended to suggest a crane should be used in place of purpose-built material handling machines and attachments. Nor does it suggest that in an emergency, other machines shouldn't be used when no crane is nearby, but rather, it seeks to point out there is a line that needs to be drawn in the sand when substituting a crane with another machine creates a greater risk. Investing in the best equipment and personnel for all tasks puts us in the best position statistically, to reduce the amount of injuries that occur in the construction industry every day.

CICA released a [position paper](#) About the Dangers of Excavators used for Lifting. [Stay Safe -CICA](#)