

Product Literature



FEATURES AND BENEFITS

- ▶ 90% vibration reduction at the crane boom
- ▶ Single device covers applications up to 60 tons
- ▶ Reduces harmonics during operation
- ▶ On board real-time telematics provide feedback for improved performance and reduced stress on crane
- ▶ Eliminates need for soft start attachment
- ▶ Protects your crane investments



THE HISTORY

An Australian crane company was using an all terrain crane to support a vibratory piling attachment when structural damage occurred to two boom sections, a result of vibrations transferred from the piling operations to the crane boom. Technician Peter Tighe repaired the crane and then set out to find a solution. Taking his inspiration from the hydraulic dampening systems utilized for load stabilization on rail cars, Peter engineered the first Neva-shock. Utilizing pneumatic suspension, it allows crane operators to change dampening frequencies to best adapt to the project.

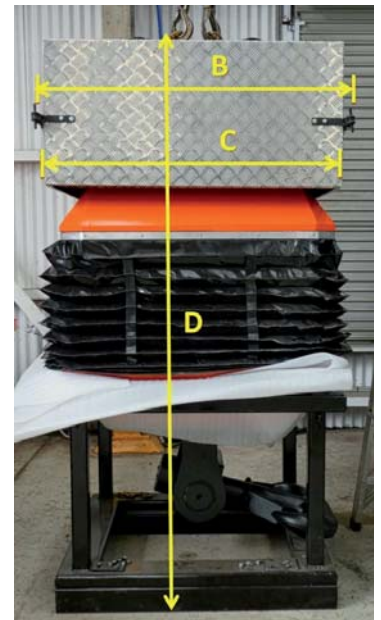
THE PROTOTYPES

Construction of the first prototype was completed in 2010 and tested in June of that year. SLR Consulting was engaged to provide independent testing of the results of those trials, and has continued to provide these services through to the completion of the pre-production model in 2018.

A principle of the Neva-shock is that there is no direct structural connection between the crane and the vibratory piling attachment. There are plates above and below the air bags, with the bottom plate connected to the crane and the top plate connected to the piling attachment. In the unlikely event of a catastrophic failure of the airbags, the bottom plate would then support the top plate so that the load remained secure.

Analysis showed vibration peaks at start-up and shut-down, and a steady state during operation. The first prototype significantly reduced the start-up and shut down peaks but had minimal impact on the steady state operation. Subsequent prototypes improved the vibration reduction at start-up and shutdown (up to 93% on land and 90% on water) and also reduced steady state vibration.

Finding: The vibration attenuation using air bags is most effective at low frequencies, which is also where the peak loads from vibratory piling occur.



DIMENSIONS AND WEIGHTS

(A) Overall Height (w/ service door open)	109" (2770mm)
(B) Width for Transport	48" x 48" (1200x1200mm)
(C) Width of Metal Enclosure	42" (1055mm)
(D) Transport Height	88" (2230mm)

Transport Weight (including cradle) 3650 lbs (1650 kg)

Note: Unit includes transport cradle (as shown at right above), and stand alone compressor (42 cfm/100 psi operational) with cradle (not shown).

BUL 726