



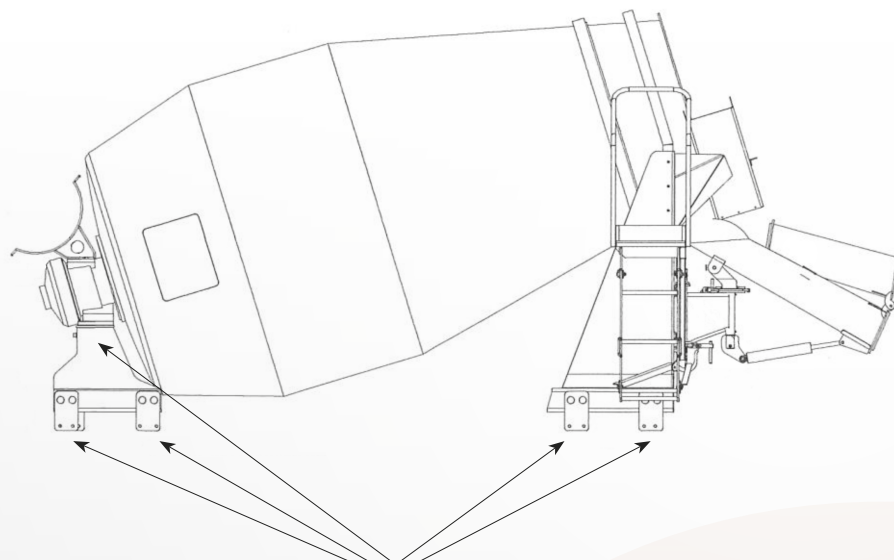
# CONCRETE MIXER BOWL

## CONNECTION BOLTS & SECONDARY RETAINING MECHANISM BEST PRACTICE

The intention of this document is to assist with the development (or revision) of concrete truck maintenance plans to include concrete mixer bowl connection points. The document also covers a secondary retaining mechanism.

All concrete bowls and frames are assumed to have been manufactured using quality materials and recognised engineering design practices. All fabrication and manufacture is assumed to have been completed by personnel trained and competent to undertake the work.

Assumptions are also made of 'normal' vehicle use on New Zealand roads, and that the secondary retaining mechanism is for a low speed event, such as a vehicle roll-over while negotiating a round-about, rather than a high-speed event where crash forces can be beyond practical design limits.



Connection points (approximate)

### CONNECTION POINTS

1. All connection bolts of the bowl frame to the truck chassis should be specifically designed by the bowl manufacturer and their specifications should be referred to for correct bolt size, type and torque setting.

#### Example:

- Frames manufactured by Technical Welding Services and Gough Engineering utilise 20mm grade 10.9 bolts torqued to 456Nm (wet torque).

2. All connection bolts of the bowl drive to the pedestal should be as specified by the manufacturer:

#### Example:

- Technical Welding Services and Gough Engineering specify grade 10.9 bolts.

These bolts are specific to this application. Their type and torque settings vary based on bolt design. Seek the manufacturer's recommendation for torque values.





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3. All connection bolts should have an indicator of some description on the bolt head or nut to give a visual reference should they move. Paint marks are an example.
4. All connection bolts should be inspected at scheduled service periods. All bolts should be re-torqued approximately 50 hours after first operation or their replacement. From that point on only a visual inspection is required at approximate 500 hour services.
5. All connection bolts should be replaced at the mid-point of the unit's operational life (i.e. at five years) and checked and re-torqued as per Point 4 above.
6. All connection bolts should be coated with an anti-rusting compound for the full length of the shank.

## SECONDARY RETAINING MECHANISM

1. It is recommended that all concrete bowls be fitted with a secondary retaining mechanism.
2. This secondary retaining mechanism should be designed by the manufacturer or supplier of the unit to reduce the likelihood of bowl detachment in the event of a low-speed incident.
3. Any secondary retaining mechanism should be designed to reduce pinch points or the creation of any hazard that may potentially cause injury.

## DISCLAIMER

The New Zealand Ready Mixed Concrete Association (NZRMCA) has developed this brief guide in the interests of promoting safety awareness. It is not, however, a comprehensive safety publication. Various laws, regulations and standards may apply to the hazard, procedure or matter identified in this publication. NZRMCA has not conducted a review of applicable laws and following this publication does not ensure your compliance with them. It is your responsibility to be aware of and to comply with all applicable laws. This publication is not a substitute for proper professional advice.



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