

	MRAT 175	<h2 style="text-align: center;">Concrete (cement) mixers</h2>	Applicable to: Electric powered and petrol engine powered mixers for mortar and concrete	See also: 173
Process(es) covered:		Using a powered mixer to mix mortar or concrete for use		

Control Measures

- Do not use petrol engine concrete mixers inside any building.
- Remove all possible sources of ignition before handling fuel and when running the engine.
- Ensure leads from spark plugs are properly insulated.
- Enclose or cover hot parts to prevent accidental contact.
- Only use 110 volt concrete mixers and power these from a 110 volt supply. This can be provided by a special waterproof transformer. Apart from this, do not use transformers with a 230 volt input supply in damp or wet conditions.
- Ensure there are guards around rotating parts.
- Tie back long hair; remove or cover jewellery and cover loose clothing with a secure apron or overall.
- Wear eye protection when loading materials into the rotating barrel. If the process will generate a large amount of dust the a suitable dust mask should be worn.
- The use of portable concrete mixers by students aged below 16 years must be under the direct supervision of an adult who has had suitable training. Students over 16 may use concrete mixers but there should still be suitable supervision in the immediate area.
- Correct training and supervision is essential because it is impracticable to guard all the hazardous areas when using a concrete mixer.
- Do not allow immature pupils to use portable concrete mixers unless under very close supervision.
- Route power leads to minimise tripping and damage.
- Use two persons to handle heavy items (see also sheet 190).

Immediate Remedial Measures:

If a particle could be in the eye	Try to prevent the casualty from rubbing the eye. Sit him/her down facing the light with the head leaning back. Stand behind the casualty to look for the particle in the eye. If it is over the iris or pupil, DO NOT ATTEMPT TO MOVE IT . Tell the casualty to hold a gauze pad over the eye and close the other one. Send for an ambulance to take the casualty to hospital. If the particle is visible over the white of the eye, try to wash it out with clean water. If this is unsuccessful try lifting it out with the corner of a damp tissue. Call 111 and seek medical advice.
Injury to the eye	If there is any sign of injury to the eye, tell the casualty to hold a gauze pad over the eye and close the other one. Take the casualty to hospital as quickly as possible.
Other injury	Apply pressure on or as close to the cut as possible, using fingers or a pad of cloth. Leave any embedded large bodies and press round them. Lower the casualty to the floor and raise the wound as high as possible. Protect yourself from contamination by blood.
Minor back pain	Help the casualty to lie down, either on the ground or on a firm mattress, and instruct him/her to rest until the pain eases. Call 111 and seek medical advice if symptoms persist.
Back injury resulting in loss of control of, or sensation in, limbs	Keep the head, neck and spine aligned while supporting the casualty's head. Send for an ambulance.

Risk Assessment

Hazards:

Fumes	Fumes from petrol engines can cause dizziness.
Fire	Fuel for petrol engine mixers is highly flammable
Electric shock	Petrol engines will require a high tension supply for the spark plug. Electrical power leads and equipment will present a shock hazard especially in damp or wet conditions.
User injury	Human contact with rotating parts can cause cuts or abrasions. This applies to the drive mechanism and the rotating barrel.
Tripping	Power leads present a tripping hazard and may be damaged, presenting electrical hazards
Entanglement	Long hair, dangling jewellery or loose clothing can become entangled with rotating parts, dragging the user onto them.
Manual handling	Moving the concrete mixer around the workplace can present a manual-handling hazard.
Dust	Dust will be created when the dry materials are loaded into the barrel.
Burns	The exhaust pipe and other parts of petrol engines will get hot.

Risks:

Fumes	Exhaust fumes will be a hazard if petrol engine powered mixers are used in confined spaces
Fire	The risk of fire with even small amounts of fuel is high
Electric shock	Spark plugs require many thousands of volts; modern electronic ignition systems deliver this voltage (~ 50 kV) with enough energy to give a severe shock. Electric shock hazard from an electrical supply is a high risk.
User injury	There is a high risk that trainees will put hands or fingers in hazardous places and experienced users may attempt short cuts.
Tripping	Trailing leads present a real risk of tripping and damage.
Entanglement	Entanglement is most likely to occur if rotating parts are exposed.
Manual handling	Handling heavy components or awkward manipulation will not occur frequently but will present a real risk.
Dust	Inhalation of fine dust or dust in the eye is highly likely.
Burns	Serious burns could result from the hot components.

Further Information:

- Portable tools should be examined before use and should have regular formal inspections and tests. The frequency depends on use but half-termly would be typical.