

## CONCRETE MIXERS tow and non-tow

**Applications**

Mixers are used when a small quantity of concrete is required. These mixers are used by small medium or large contractors and companies or individuals who need to mix concrete.

**Specifications**

Input Capacity : 280 litres;  
Output: 200 litres; Wheels: 2 solid rubber; Prime Mover: 5.5 hp Petrol engine; Drum type: tilt drum; Size L x B x H 1800 x 900 x 1500; Weight 295kg Hydraulic, integrated wheel kit.

**Operation and Basic Maintenance tips**

Always check oil level and v-belt before operation

Do not grease the ring gear

Check the gears for wear regularly by testing the machine under load

Always wash the machine down when the work for the day is complete

Check the revs of the drum should not be more than 25rpm or the concrete won't mix

Always advise operator of capacity of mixer.

**Safety Do's and Don'ts**

Don't operate without recoil starter cover

Keep hands and arms clear of all moving parts

When transporting make sure machine is fastened down properly

Don't place any objects other than sand, stone, water and cement in the drum.

# CONCRETE MIXER OPERATION

## LARGE BATCHES CONCRETE

### LOW-STRENGTH CONCRETE

Suitable for: House Foundations

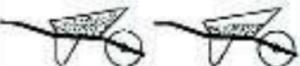
To make 1 cubic metre of concrete you will need: 5 1/2 sacks cement + 0,75 cubic metres sand + 0,75 cubic metres stone.

CEMENT	CONCRETE SAND	STONE
		
1 SACK	2 WHEELBARROWS	2 WHEELBARROWS

### MEDIUM-STRENGTH CONCRETE

Suitable for: House Floors, Footpaths and Driveways.

To make 1 cubic metre of concrete you will need: 7 sacks cement + 0,70 cubic metres sand + 0,70 cubic metres stone.

CEMENT	CONCRETE SAND	STONE
		
1 SACK	1 1/2 WHEELBARROWS	1 1/2 WHEELBARROWS

### HIGH-STRENGTH CONCRETE

Suitable for: Precast Concrete and Heavy Duty Floors.

To make 1 cubic metre of concrete you will need: 10 sacks cement + 0,65 cubic metres sand + 0,65 cubic metres stone.

CEMENT	CONCRETE SAND	STONE
		
1 SACK	1 WHEELBARROW	1 WHEELBARROW

## CONCRETE MIXER USAGE

### MORTAR

Suitable for: Laying bricks and blocks

To lay 1000 bricks you will need: 3 sacks cement + 0,6 cubic metres sand.

CEMENT	BUILDING SAND		
			
1 SACK	3 WHEELBARROWS		

### PLASTER

Suitable for: Exterior and Interior work

To plaster 100 square metres 15 millimetres thick you will need 10 sacks cement + 2 cubic metres sand.

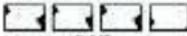
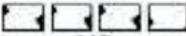
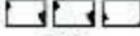
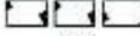
PLASTER

CEMENT	SAND		
			
1 SACK	3 WHEELBARROWS		

# CONCRETE MIXER USAGE

## LARGE BATCHES

Use containers such as buckets, drums or tins. Use the same size container for measuring all the materials in a batch.

CONCRETE	CEMENT	CONCRETE SAND	STONE
Low-strength concrete	 1	 3 1/2	 3 1/2
Medium-strength concrete	 1	 2 1/2	 2 1/2
High-strength concrete	 1	 1 3/4	 1 3/4

## MORTAR

CEMENT	BUILDING SAND
 1	 5

## PLASTER

CEMENT	PLASTER SAND
 1	 5

## NOTES:

1. The amount of water added to a mix must be enough to make the mix workable and plastic.
2. The following types of cement are suitable:
  - Ordinary portland cement
  - Ordinary portland cement 15 slag
  - Ordinary portland cement 15 fly ash
3. Stone for concrete should be 19mm or 16 mm size.
4. If you use a wheelbarrow for measuring, it should be a builder's wheelbarrow which has a capacity of 65 litres.

## CEMENT MIXING

### HINTS:

A few hints on mixing. First add water - approximately 12 litres, depending on the type of mix. Cement should go in after some of the aggregate. Work consistently to the ratio of ingredients as listed below, for whatever type of concrete mix you are working to. Beware of low grade aggregates, this only leads to trouble later on with sinking, spoiling the appearance of the pour. Also, more importantly, do not get the concrete mix too wet as this can reduce the strength and is less able to withstand weathering.

Never throw material into mixer, trickle it steadily over the rim or it will stick firmly to the back of the drum and can only be dislodged by stopping the mixer. The approximate mixing time for concrete is 2 1/2 minutes, which is taken when all the material, including water, has entered the drum. Over mixing can reduce strength and cause segregation of the coarser aggregates.

Keep your mixer clean, the slightest trace of material left in the drum will harden and attract more residue each time you use it until the machine is useless. Do not throw bricks into a mixer drum to clean it out. The best method is 19 mm gravel and clean water, use plenty of it, as this will do the job in half the time.

TABLE OF CONCRETE MIXERS	MIX	BATCH QUANTITIES			APPROX. LITRES OUTPUT
		Cement 50kg Bag	Sand Shovels	Stone Shovels	
LOW STRENGTH (House Foundations)	1:3.5:3.3	1	40	40	170
MEDIUM STRENGTH (House floors, foot paths)	1:2.5:2.5	1.5	40	40	170
HIGH STRENGTH (Heavy Duty Floors)	1:1.75:1.75	2	40	40	170

- 1 SHOVEL SAND = ± 3 LITRES
- 1 SHOVEL STONE = ± 3 LITRES
- 1 BUILDERS WHEELBARROW = ± 65 LITRES

## CEMENT MIXING FORMULA

### Volume

Most concrete mixer brochures show output in litres (eg: 260 litres) and the amount of concrete needed for the work at hand is usually in cubic metres. One cubic metre of Concrete is equal to 1000 litres. So if your machine is rated at 260 litres output, it can produce 0.26 cubic metres per mix.

### Production

Most brochures show a mixing cycle of 2 to 3 minutes. This is not an accurate figure for all practical purposes. When using the standard coffee grinder type mixer it is wise to use approximately 6 minutes as a mixing cycle. (Mixing cycle is the time it takes to fill the machine, mix the concrete and discharge it. Therefore we can pour:  $60 \text{ minutes} \div 6 \text{ minutes} = 10 \text{ mixes per hour}$ . We know that each mix is 0.26 of a cubic metre, so take 0.26 and multiply by 10 mixes per hour and we can produce 2.6 cubic metres per hour. This should assist you to work out how long you will need to hire the machine and your daily estimated production should be.



## MASONRY SAW



### Applications



For cutting of bricks for building, paving, refractory etc. Can also be used for tiles and stone in some circumstances.

### Specifications

Prime Mover to drive blade: 5.5hp; Petrol engine or 2.2kW Electric motor; Blade size: Up to 350mm; Size LxBxH 150 x 600 x 1400mm; Weight: 90kg

### Operation and Basic Maintenance tips

Always check oil level of the engine and that the air filter is clean. Check the water pump is operating and the pipes are not leaking. Check v-belts are tensioned properly and in good condition. Never force the brick against the blade. Before starting up make sure that there is water in the tray and that the water filter is clean. Check the shaft bearings for wear (no play on shaft)

### Safety Do's and Don'ts

Never operate the machine with the blade cover in the "up" position. Use both hands to hold the brick when cutting. Make use of the pedal lower the head or set the machine in a permanent cutting position. Do not run machine without a recoil starter cover.

## CONCRETE SAW

**Applications**

For cutting of expansion and contraction joints, neatening of slab/road edges, repairs to roads/slabs and cutting of surfaces for cable laying or replacing.

**Specifications**

Propulsion: Push type; Prime Mover for blade: 13hp Petrol engine; Blade size: Up to 350mm Size L x B x H: 1110 x 600 x 900mm; Weight: 235kg; Accessories: Blade Spanner, Blade guide Water tank: 50 litres.

**Operation and Basic Maintenance tips**

- Always check oil level of the engine
- Check that the blade cover and guide wheel are in place
- Check the taps and hose to the blades regularly
- Check v-belts are tensioned properly and in good condition
- Never force the machine forward
- Always use water when cutting
- When starting up, make sure the blade is off the surface to be cut
- Check the shaft bearings for wear (no play on shaft).

**Safety Do's and Don'ts**

- Never operate the machine with the blade cover in the "up" position
- Make sure the blade is fitted in the correct direction and fastened properly
- Do not run machine without a recoil starter cover
- Do not change direction while cutting.

## DRIVE UNIT



### Applications

Used for driving mechanical flex drive pokers and submersible pumps.

### Specifications

Prime Mover: 5.5hp petrol engine fitted into a roll over square tube frame with a drive dog and guide sleeve bolted to the engine;  
Size: L x B x H: 350 x 330 x 460 mm; Weight: 35kg.

### Operation and Basic Maintenance tips

Always check oil level and air filters of the engine before starting the machine

Always fit the poker or sub pump to the drive unit before starting the engine

Make sure that the rpm does not exceed 2850rpm – damage to inner core of pump and poker will result.

### Safety Do's and Don'ts

Don't put drive unit in concrete / or water

Do not make any adjustments to the drive dog or sleeve while the engine is running

Never fit the poker of sub pump while the engine is running

The cover to the recoil start must always be fitted.

## POKER



### Applications

The machines are used for the compaction of concrete. They remove air from the wet mixture of concrete by vibrating the wet concrete and releasing any air trapped inside the mixture before it sets.

### Specifications

Length: 6 m; Inner core: 12mm; Outer casing is reinforced rubber;  
Head sizes: 36 or 48mm; Diameter: Htz: 200;  
Circle of vibration for the 36mm: 130 – 250 mm;  
Circle of vibration for 48 mm: 180 – 350mm.

### Operation and Basic Maintenance tips

The poker should never be bent to any great degree

It should not be left in the concrete too long as it will cause segregation and weaken the concrete

It should never be allowed to run outside of the concrete for any length of time as it will overheat and seize

The drive units revs should never exceed 2850 rpm.

### Safety Do's and Don'ts

Do not try to couple up the poker to the drive unit while the engine is still running. This should be done before starting the engine.

## FLOOR GRINDER



### Applications

This machine is used for grinding concrete floors (dry process) It is used for removing laitance, paint, grease etc. It can also be used for grinding down construction joints to neaten the finish.

### Specifications

Prime mover: 5.5 hp Petrol; Motor: 1.5kw 220V or 1.5kw 380V  
Size: L x B x H: 1092 x 610 x 965; Weight: 102kg; 35 – 50 square m/hour  
Working width: 552mm.

### Operation and Basic Maintenance tips

Make sure that when starting up the machine that the grinding blocks are raised off the grinding surface  
Make sure the wedges are put in correctly before starting the machine (the blocks will be flung out of their correct positions immediately when the machine starts up if this is not done).

### Safety Do's and Don'ts

The correct diameter cable must be used when the motor is electric to avoid a voltage drop. Make sure that in the case where the machine is driven by a petrol engine, that ventilation is adequate

## POWER FLOAT



### Applications

The machine is used for creating a very smooth finish on new concrete slabs. In special circumstances, the machine can be used for polishing screeds.

### Specifications

Prime Mover: 5.5hp Petrol engine; Drive: Vee belt driven.  
 Polishing diameter: 1000mm; Size: L x B x H 2060 x 1100 x 600  
 Weight: 65kg; Features: Dead mans handle

### Operation and Basic Maintenance tips

This machine must be cleaned after working with it before the concrete sets on the blades

This will lengthen the life of the machine

Check the blade arms for wear before working with it to avoid bad finish

The blades should be flat to start with and as the job is done, the angle will be increased to create a really smooth finish

The blades should all be set the same.

### Safety Do's and Don'ts

Before using the machine, start the engine and when it is on idle, the clutch should not engage

Keep away from the protective ring of the machine while the machine is working.