

# Cemco Central Mixer

Sales Specification Sheet

Quality of Concrete and Design

Basic Overview



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## **Cemco Central Mixer**

The Cemco Central Mixer is a patented, time tested design which allows for a completely mobile and self-contained unit that is also capable of high production and quality concrete. The Cemco Central Mixer has minimal maintenance requirements and comes standard with a polyurethane liner. It is designed to be charged in two ways: direct feed from a Cemco Model 275 batch plant or it can be fitted with a charge hopper to be placed under any existing “dry-batch” plant. When direct fed, the mixer does not bottleneck the charge rate and thus 10 yards loads can be charged completely in approximately 30 seconds; however, if fitted with the charge hopper, the mixer charge time is reduced to approximately 60-70 seconds.

### **Cemco Central Mixer Portability**

The Cemco Central Mixer can be made to ship in one or two units. The Mixer has its own removable axle assembly weighing in at approximately 60,000 pounds and is pulled via fifth wheel. Cemco can mount the 350HP diesel power pack to the fifth wheel and thus allow for a single unit; however, it is recommended to mount the power pack onto a trailer that can be pulled by a ¾ ton truck.

Since the Cemco Central Mixer rotates, tilts, and trolleys hydraulically, there is no need for high voltage unless the 350HP diesel engine is substituted with an electric motor. Once onsite, the power pack quick connects to the mixer in minutes by simply plugging a few hydraulic connections. The Mixer has 4 hydraulic jacks with 20” of stroke on each for raising and leveling the unit. Once raised into place, the mixer is supported by six adjustable jack stands. The axle assembly is held into place by 4 pins, and can be removed in minutes during the setup process. Typically, the entire setup is complete in a few hours with the bulk of the time being positioning the mixer under the plant. Take down is equally fast and simple.

### **Mixer Uniformity/Quality of Concrete**

The Cemco Central Mixer has been designed to work in the most stringent of conditions and most importantly, it has passed the most difficult mixing uniformity tests on the market. The Cemco Central mixer has passed the mixer uniformity test mandated by the Army Core of Engineers on numerous occasions. Fully loaded, the Central Mixer rotates at 10-11 RPM and can be reduced by restricting hydraulic flow to the rotational motors if desired. There are a total of twelve blades within the drum

broken down as 4 charge end blades, 4 belly blades, and 4 discharge blades with approximate blade areas of 6.5 ft<sup>2</sup>, 10 ft<sup>2</sup>, and 9 ft<sup>2</sup> respectively.

When mated with a current Cemco Model 275 batch plant, the expected mix time for a homogenous load decreases when compared with typical accumulative batch plants. Cemco plants have the ability to flow control cement and each individual aggregate. This means the aggregate comes into the mixer as a proportioned blend and thus makes the mixers job easier. Cemco feels confident that a quality mix can occur over a 30 second mix time for most mix designs.

## Design Quality/Innovation

Perhaps the most ingenious aspect of a Cemco Central Mixer is its utilization of a sealed ball bearing for drum rotation. The inner race of the bearing is attached to the mixer tilting frame and the outer race is attached to the drum making the drum essentially the shaft within a bearing. This patented design creates for an extremely long lasting system which requires only periodic greasing. Since the first mixer, built in 1995, Cemco has not had to replace or service a single bearing due to wear.

Cemco has really pioneered the usage of hydraulics in concrete batching equipment and the Mixer is no exception. The 350HP diesel power pack is used to operate two piggy backed pumps simultaneously. The first pump in the series is a 180cc hydrostatic transmission pump which is used solely to rotate the drum. It has its own 50 gallon hydraulic tank with low oil kill and radiator. The second pump in the series is a 130cc load sensing open circuit pump which is used during the setup of the drum and also for tilting and trolleying functions. The open circuit has a designated 150 gallon hydraulic storage tank also with low oil kill and thermostat controlled radiator. The load sensing feature allows the pump to match oil supply with system demand, meaning that when the drum is not tilting or trolleying, the pump is in an idle mode, reducing wear and strain on components.

The entire unit is hand welded and inspected prior to sand blasting and paint. Once painted, all of the components are installed, inspected, and then tested. Cemco is happy to have potential buyers come to our factory and inspect the workmanship for themselves. Furthermore, Cemco is happy to provide demonstrations when finished equipment is on hand.

## Controls

The Cemco Central Mixer comes standard with a manual control panel which is ready to be wired into just about any control system on the market. The manual panel may also be used to start and stop the diesel engine from the batch house. All electrical connections between mixer/manual panel and mixer/power pack are via a durable IP66 or better rated HANS series quick plug. Pre-wired limit

switches let the control system know where the drum is at and also prevents user error by preventing the operating from moving the drum in a manner that would cause damage to the unit. The hydraulic cooling system automatically turns on radiator fans when the oil exceeds 120 degrees Fahrenheit.

In addition, the mixer engine is hardwired to shut down if the hydraulic oil in either tank gets too low. If this happens, a warning light on the manual panel will indicate the user why the engine has quit. If there is not a major leak, the operator may turn the engine back on in order to dump out material and then shut the system back off in order to add hydraulic oil.

## **Mixer Power**

The Cemco Central Mixer Electrical system is composed of 12 VDC and 120 VAC circuits. 120VAC is utilized for computer inputs and also water meter inputs and outputs. The control system may output 120VAC, but it will be stepped down to 12VDC at the manual panel prior to being sent to the mixer relay box. The 120VAC is either supplied by the batch plants gasoline power generator or it can be supplied by the customer. The 12VDC is supplied by the 350HP diesel engine's battery and maintained by the alternator on the engine.