RAPID MIX 400 CONTINUOUS MIX (RCC) PLANT

(800) 792-7427

The Rapidmix 400 is:

- **Totally Mobile**
- **Completely Self-Contained**
- **Has its own Power Source**
- **Completely Self-Erecting**
- **Hydraulic System Changes Plant from Travel to Operational Mode in Minutes**
- **Fully Adjustable Aggregate, Cement, and Water Systems**
- **Rapid Mix 400 is a continuous mixer, mixing up to 400 tons per hour**

OVERALL DIMENSIONS

Length of Machine when ready for transporting:	63'-11"(19.487m)
Width of Machine:	9 '-10" (3.00 m)
Height of Machine (When ready for transporting):	13 '-5" (4.0962 m)
Height of Machine (When Erected):	44'-4" (13.511 m)
Weight of Machine total:	74,112 lbs (35,860 KGs)
Weight on Rear Tri-axles:	50,000 lbs (24,900 KGs)

Chassis Construction

Hollow section members fully welded into Lattice design with brackets fitted for attaching hydraulic lifting rams, bin, silo, conveyors, mixer and all ancillary items, which make up the plant.

Running Gear

Axle type - Standard tri-axles.
Brakes - Standard air operated hub brakes complete w/automatic slack adjusters.
Suspension - Single leaf steel spring (2 per axle)
Wheels - 295/80R22.5 (4 No per axle total 12 wheels).

Aggregate Hopper With Variable Speed Feeder

Hopper has a capacity of 15.6 cu yds (12.00 cu m) and is 14 ft 2½ ins (4330 mm) on the loading side. It is so constructed having a removable division plate allowing two different materials to be mixed. In this mode the split hopper is loaded from both sides of the machine. The bottom outlet is flanged to suit the connection of the variable speed belt feeder. The hopper sides have very steep angles with side slopes of 60 degrees and end slopes of 60 degrees. The hopper sloped sides are fitted with low friction high molecular polyethylene lining ½ " (12 mm) thick. Manually operated adjusting slide gates are fitted at the exit end of the hopper to give additional variance to the feed rate. A conveyor belt feeder with variable speed control is fitted under the aggregate bin discharge point.

Twin Shaft Continuous Mixer

The twin shaft continuous mixer is fitted with paddles, which are intermeshed in a special phased relationship to optimise mixing and maximise throughput. The shafts are driven by a 75 kw (100 hp) electric motor through a set of bull gears, which run in an oil bath.
The mixing chamber is formed by fabricated sloped sides with a troughed conveyor under the mixer forming the bottom of the mixer. This conveyor is fitted with a high torque slow speed drive with a 5.5 kw (7.5 hp) motor and shaft mounted speed reducing gearbox. The driven conveyor drum is crowned and lagged and is 300 mm (12") diameter. This conveyor is used for clean out purposes only. The mixer should be lined with a bed of material every morning before production starts. This ensures easy clean out.

Cement/ Binder Silo

Total capacity of 55 US tons (50 tonnes) as under:

Capacity:	Based on material being 1500 kg/m^3 (93.64 lbs/ft^3).
Design:	All welded construction supported by mild steel stanchions stiffened with mild steel wind bracing.
Construction:	4 mm mild steel plate. The roof of the silo is surrounded at its perimeter by double tubular handrailing.
Slide Shut Off:	A slide shut off plate is supplied to isolate the silo outlet for maintenance to the paddle variable speed paddle feeder.
Variable Speed Rotary Valve:	750 mm x 750 mm (30" x30")flanged to fit onto silo bottom complete with a split staggered reduced volume rotor giving a feed rate of up to 60 TPH driven by 2.2 kW (3HP) geared electric motor.
Access to Silo:	A manhole is provided on top and in the cone of the silo for maintenance access
Pressure Relief Valve:	Situated for ease of maintenance on the manhole lid. Designed to protect the silo from becoming over or under pressurized.
Filter Unit:	20 m^2 Reverse Air Jet fan assisted type filter mounted on silo roof.
Filler Pipes:	2 No 100 mm dia terminating in a unicone fitting or standard pipe thread
Levels indicators:	High and low level indicators.
Access to Silo Roof:	Ladder with safety cage.

Out-Loading Conveyor

Transporting mixed material from mixer to gob hopper.

Length:	11.4 m c/c (37 ft)
Angle of Inclination:	20 degrees.
Construction:	RHS design.
Belt Width:	800 mm.
Belt Type:	2 ply flat belt.
Belt Joint:	Factory vulcanised.
Belt Tensioning:	By screw take up assembly at tail drum.
Head Drum:	Lagged and crowned.
Feed Boot:	6 mm mild steel plate with rubber skirts to prevent spillage.
Belt Scraper:	Polyurethane blade pre-cleaner mounted on the Of the head drum
Belt Scale:	A belt scale is incorporated approx. midway along the length of the conveyor

Water System

Tank capacity is 1750 litres (462 gallons) and is complete with ball valve and all necessary pipe-work.

Two positive displacement pumps are fitted to supply 2 water bars within the mixer. Each spray bar has a ball valve to allow addition of water early in the mix, later in the mix or both together. A calibration point for accurate water weighing is also included.

Pneumatic System

The Rapidmix 400 is equipped with a compressor to provide air for the gob hopper doors and silo filter.
1/2” solenoid operated spool valve for control of the gob hopper doors.
1/2” filter / auto drain
1/2” regulator (complete with pressure gauge)
1/2” lubricator

Hydraulic Power Pack

Used to level machine before erection and to erect Silo and out-loading conveyor.

HYDRAULIC POWER UNIT

Specification:	Electric Motor 11kW Bell housing Drive Coupling Hydraulic Pump Sub-plate Pressure Relief Valve Directional Valve Oil Reservoir Filler Breather Level Gauge Return-Line Filter
Cylinders:	4 Jacking Cylinders

Gen-Set

TECHNICAL SPECIFICATION

- Diesel powered generating set rated at 200 kVA, 3 phase, 480/277 volts, 60 Hz, 1800 RPM at NTP conditions.
- Powered by an Iveco, 6 cylinder (Tier 3), turbocharged diesel engine with directly coupled Newage Stamford brush-less alternator.
- Each machine will be built to a complete specification including:
- Heavy duty fabricated steel skid type baseframe with anti-vibration mounting pads.
- Electric starting system with heavy duty lead acid type starting batteries and battery charging system.
- High capacity air, fuel and lubricating oil filters.
- Fuel feed and return lines from engine to 8 hour capacity base frame fuel tank.
- Industrial exhaust silencer system.
- Electronic engine speed governor.
- Automatic engine shutdown protection equipment for low oil pressure, high engine temperature, low coolant level, overspeed, and fail to start.
- Set mounted FTP controls for monitoring engine and generator functions/conditions.
- Set mounted circuit breaker cubicle containing suitably rated 3 pole moulded case circuit breaker.
- Instruction manuals and electrical wiring diagrams.

Plant Controls

Siemens MP277 touch screen HMI which allows the operator to store, edit and retrieve up to 30 recipes for the proportioning of different materials and archiving information such as the current stock levels and production records.

Manual operation option on the panel including adjustable speed controls and rate meters, which display the speed of the in feeds during manual operation.

Mixer amp meter to display the current being consumed during manual or automatic operation of the plant.

A 40 character per line thermal printer

The operator Control Panel consists of a series of push buttons to allow automatic and/or manual control of the following:

Mixer	Air Compressor	Outloading Conveyor	Aggregate Conveyor	Silo Feeder
Water Pumps	Hydraulic Power Pack	Mixer Cleanout Conv.	Silo Filter Fan Unit	Internal & Ext. Lighting
Gob Hopper Doors	Auxiliary Feeder	High Silo Alarm	Low Silo Alarm	Low Water Alarm
Alarm Mute Button	Emergency Stop	Emergency Stop Reset	Panel Live Indicator	Generator Start Switch

Starter Panel There are 3 No starter panels

PANEL NO 1
Panel No 1 is located behind the mixer and houses the contactors, overload relays, timers and current transformers required to start and run the 75 kw mixer motor using a star / delta sequence.

PANEL NO 2
Panel No 2 is located under the operator control panel and houses all contactors, overload relays, MCB's, Hitachi A.C. inverters, Siemens S7300 PLC and all other components required to control the plant.

PANEL NO 3
Panel No 3 is located forward of the operator station and houses the Siemens Micro Master 440 VFD's for the various component feeders.

Commissioning Upon completion each machine will be subject to a two stage commissioning process.
a. Dry run at factory.
b. Full production at a site close to factory.