



Machinery Manufacturers  
to the Concrete Industry

## RAPIDMIX 400CW

The Rapidmix 400CW has been designed to be totally mobile and completely self-contained with its own power source. It is also completely self erecting, using the hydraulic system to change the plant from its travel mode into a fully operational plant in a few hours. The Rapidmix (CW) Plants are **continuous weigh**, continuous mixing systems. Materials are weighed from the aggregate hopper via Thames load cells to the mixing chamber. The silo is fitted with weigh hoppers, the weighed material is then delivered to the mixing chamber for an accurately weighed and mixed final product. The 400 CW model is capable of mixing up to 400 tons per hour depending on application.

### TRANSPORT DIMENSIONS

Length of Machine	63'-11" (19.5m)
Width of Machine	9'-10" (3.00 m)
Height of Machine	13'-5" (4.1 m)
Weight of Machine total	82,188 lbs (37,335 KGs)
Weight on Rear Tri-axles	57,144 lbs (25,920 KGs)
Weight on Front Pin	25,044 lbs (11,360 KGs)

### ERECTED DIMENSIONS

Length when erected	70'-7"
Width	Same
Height	41-45'

Front Axle - 8,720 Kgs (4410 on Operator Side, 4310 on Tool Box Side)  
Middle Axle - 8,770 Kgs (4460 on Operator Side, 4310 on Tool Box Side)  
Rear Axle - 8,430 Kgs (4180 on Operator Side, 4250 on Tool Box side)

### 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-axle. Suspension: Single leaf steel spring. Brakes: Standard air operated hub brakes with automatic slack adjusters. Wheels: twin wheels on each hub, (4 per axle total 12 tires) Lights: Rear marker lights, including indicators, brake lights and side markers in accordance with regulations.
- **Access:** Walkways are provided along the chassis of the machine for maintenance access. The walkways are constructed from aluminum treadplate with handrails at appropriate locations.



## - RAPID MIX 400CW Specifications -

### AGGREGATE HOPPER

- **Capacity:** 15.6 cu yds (12.0 m<sup>3</sup>)
- **Loading Width:** 14 ft 2½ ins (4330 mm). The hopper can be loaded from either side of the machine.
- **Construction:** S275 plate with stiffening ribs. Steep sides for difficult materials. (end slopes of 60 degrees).
- **Removable Division Plate:** The hopper has a removable divider, allowing two materials to be used.
- **Lining:** To aid the discharge of the materials the hopper surfaces are fitted with low friction high molecular polyethylene lining material 1/2" (12mm) thickness).
- **Adjustable Gates:** The outlet end of the hopper is fitted with adjustable gates to vary the ratio of materials and material weight manually.
- **Belt Feeder:** A conveyor boasts a 3 ply 1200 mm (4') weigh belt fitted at the bottom of the hopper, weighing material from the hopper to the mixing chamber. It is additionally equipped with adjustable rubber skirts and heavy duty support rollers.

### TWIN SHAFT CONTINUOUS MIXER

- **Mixing Action:** The twin shafts mix the material at up to 110 r.p.m., whilst moving the material toward the end of the mixer.
- **Paddles:** The twin horizontal mixing shafts are fitted with 72 Ni-Hard cast paddles, which are intermeshed in a specially phased relationship to optimize mixing action and throughput. Each paddle measures: 7.625" X 5.625" / 42.891 total square inches.
- **Cleaning and Maintenance Access:** Special attention has been paid to give the user maximum access for maintenance and cleaning operations. The top of the mixer is fitted with hinged access covers, which when opened, give access to all of the mixing chamber. Additionally, both sides of the mixing chamber open via hydraulic cylinders.
- **Drive:** The shafts are driven by a 75 kW (100 HP) electric motor through a reduction gearbox with twin gears to synchronize the shafts.
- **Mixing Chamber:** The mixing chamber is formed by fabricated sloped sides with a troughed conveyor under the mixer forming the bottom of the mixer.
- **Water Addition:** Siemens Mag flow meter controls 2 ball valve spray bars fitted into the top of the mixer to allow the water to be added to the material as it progresses along the mixer.
- **Clean-out/Maintenance Conveyor:** Mounted on the bottom of the mixer, forming the bottom of the mixing chamber, this conveyor allows the bottom of the mixer to be easily cleaned, post-production. The mixer should be lined with a bed of material prior to production. The conveyor is fitted with a low speed geared motor drive.



## - RAPID MIX 400CW Specifications -

### CEMENT/ BINDER SILO

- **Capacity:** 48 US tons based on material being 1500 kg/m<sup>3</sup> (93.64 lbs/ft<sup>3</sup>). Capable of up to 60 t.p.h. throughput.
- **Construction:** Square silo design constructed from all welded box section S275 plate with stiffening ribs.
- **Access to Roof:** The folding access ladder with safety cage is fitted with double tubular handrail and kicking strip. An access hatch is provided on top of the silo.
- **Outlet:** Flanged to suit the rotary valve paddle feeder. A shut-off plate is provided to close the silo outlet to allow maintenance to the feeder below.
- **Silo Venting:** 20m<sup>2</sup> Reverse Jet Filter with fan assistance and dust collector.
- **Filling Pipes:** (2) 4" (100mm) steel pipes with screwed end for fitting cam locks or other type of delivery hose fitting.
- **Level Indication:** Wam Torex rotating paddle style level indicators for high and low level control.
- **Weigh System:** 2 independent weigh hoppers with screw style powder dispensers.

### CEMENT PADDLE FEEDER

- **Type:** Rotolok 750mm (30") square rotary valve paddle feeder to feed the cement or binder material out of the silo.
- **Drive:** 2.2 kW (3 HP) geared electric motor with automatic variable speed control.

### OUT-LOADING CONVEYOR

- **Function:** Transporting the mixed material from the twin shaft mixer to the truck. The conveyor is designed to handle the maximum feed rate from the mixer. A gob hopper fitted to the top end of the conveyor which allows some mixed material to be "held" for a while, for example: while the next truck drives under for collection.
- **Construction:** Boxed steel construction with mounting brackets for rollers and pivot mechanism. The top section of the conveyor incorporates a folding section for transportation.
- **Belt:** 800mm (31.5") 3 ply belt with heavy duty top cover and vulcanized joint.
- **Drive:** Motorized drum with rubber lagging.
- **Belt Scraper:** Polyurethane blade pre-cleaner scraper mounted on the face of the head drum.
- **Gob Hopper:** Hopper fitted to the top end of the conveyor with pneumatic discharge doors. Constructed from S275 plate. 1 cu. yd. capacity.



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### WATER SYSTEM

- **Water Tank:** A 1750 litre (462 US gal.) is fitted complete with automatic shut off valve and galvanized steel piping.
- **Pumps:** Two positive displacement pumps are fitted to supply 2 water spray bars within the mixer.
- **Spray Bars:** Each mixer 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.
- **Flowmeter:** Siemens Mag flowmeter accurately measures water dispensed between pumps and mixing chamber.

### PNEUMATIC SYSTEM

- **Compressor:** The Rapidmix is equipped with a Hydrovane compressor to provide the air supply for the gob hopper doors and the silo filter.
- **Valves, Regulator:** Solenoid valves are fitted for the control of the gob hopper doors. A lubricator is provided for all pneumatic functions. Additionally, equipped with a regulator and pressure gauge to adjust the pressure as required.

### HYDRAULIC SYSTEM

The hydraulic system is used to lift and level the machine, erect the silo and out-loading conveyor. It is also used for opening mixer doors for maintenance and cleaning.

- **Hydraulic Powerpack:** This consists of: electric motor close coupled to a hydraulic pump unit, oil reservoir, return line filter, directional valve, filler/ breather, and level gauge.
- **Control Valves:** Lever operated valves for operating the cylinders.
- **Hydraulic Cylinders:** Double acting cylinders used on: jacking / leveling on 8 of 12 feet, silo elevation, out-loading conveyor fold-out, and mixer sides.



### GEN-SET

This unit provides electrical power for all machine functions. Diesel powered generating set rated at 200 KVA, 3 phase, 480/277 volts, 60 Hz, 1800 RPM at NTP conditions. Powered by a Volvo Tier 4 Final, 6 cylinder turbo charged diesel engine with directly coupled brushless generator.



## - RAPID MIX 400CW Specifications -

Each GenSet features:

- Heavy duty fabricated steel skid type base frame with anti-vibration mounting pads.
- Electric starting system with heavy duty lead acid batteries and alternator charging system.
- High capacity air, fuel and lubricating oil filters.
- Fuel feed and return lines from engine to 12 hour capacity baseframe fuel tank.
- Industrial exhaust silencer system.
- Automatic engine shutdown protection equipment with LCD display for low oil pressure, high engine temperature, low coolant level, overspeed, and fail to start.
- Complete circuit breaker enclosure containing ABB 3 pole molded case circuit breaker.
- Instruction manuals and electrical wiring diagrams.

### PLANT CONTROL SYSTEM

The system uses an Allen Bradley PLC to control all of the plant functions for automatic control with manual backup. A touchscreen operator panel is used for the display of all plant parameters and functions. Wi-Fi Capability.

- **Operator Control Panel:** Consists of touchscreen buttons which allow automatic or manual control of the following:
  - Mixer
  - Air compressor
  - Out loading conveyor
  - Aggregate weigh belt conveyor
  - Silo feeder
  - Water pumps
  - Mixer clean out conveyor
  - Silo filter fan unit
  - Internal lighting
  - External lighting
  - Gob hopper doors
  - Auxiliary feeder
  - High silo alarm
  - Low silo alarm
  - Low water alarm
  - Alarm mute button
  - Emergency stop and reset button
  - Panel live indicator
  - Generator remote start switch



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- The operator control panel also houses the following:
  - PC touchscreen based interface which allows the operator to store, edit and retrieve up to 100 recipes for the proportioning of different materials.
  - Manual rate meters which display the speed of the in feeds during manual operation.
  - A thermal printer for printing batch and daily total tickets.
  
- **Starter Panels:** There are 2 starter panels. Panel 1 for mixer and Panel 2 for all other functions.
  - **Panel 1** is located behind the mixer and houses the contactors, overload relays, timers and current transformers required to start and run the mixer motor using a star / delta sequence.
  - **Panel 2** is located under the operator control panel and houses all contactors, overload relays, MCB's, Siemens or Emerson inverters, Siemens or Allen Bradley PLC and all other components required to control the plant.

### COMMISSIONING

- Setup, calibration and and full capacity run at customer site.

### MANUALS

- Full operating and maintenance reference manuals are supplied with the machine.

*\*Equipment specifications herein are based on plants 2015 and newer, information provided is subject to change and varies per plant. We are able to provide plant specific specs on each plant after the plant has been manufactured.*



- RAPID MIX 400CW Specifications -



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