

**PRODUCT
SPECIFICATION**

TRANSBATCH 60M

MOBILE BATCHING PLANT



TYPE: **TRANSBATCH – 60M**

OVERALL WEIGHT (EMPTY): 33,500 kg (33.5 Ton) (73855 lbs)

TRANSPORT DIMENSIONS:

	mm	m	ft
Height:	4200	4.20	13.78
Width:	3000	3.00	9.84
Length:	18094	18.1	59.38

WORKING DIMENSIONS:

	mm	m	ft
Height:	10291	10.29	33.76
Width:	3000	3.00	9.84
Length:	18094	18.1	59.38

OUTPUT PER HOUR: 60 m³/hr (78.5 yds³/hr)

BATCH SIZE: 1.7 m³ (2.2 yds³)

CHASSIS:

Lattice space frame construction with mounting for mixer, bins, conveyor, weigh hoppers, running gear.

CONSTRUCTION:

Fabricated from mild steel box sections, channels, angles with diagonal bracing.

The mixer, cement and water weighers and discharge chute are supported at the front end of the chassis at height to suit loading of truck mixers.

The back end of the chassis houses the bins and compressor. Located underneath the chassis is the control cabin which will fold for transport.

ACCESS:

By access stairs and walkway at one side of the conveyor, with walkways continuing around mixer. Stairs and walkway are constructed from open deck flooring with double tubular handrails.

RUNNING GEAR:

Fifth wheel pin at mixer end of chassis with twin axle running wheels at rear. Running lights and airbrakes.

SUPPORTS:

Box section supports which fold down from within the chassis, when erected by the crane. Electro-hydraulic powerpack to operate the track system and the hydraulic rams for conveyor folding.



AGGREGATE STORAGE BINS:

DESIGN:	The upper bin division plates can be unbolted, detached and stored on the side of the chassis for transport. 4no. 10m ³ (15 tonne) aggregate bins with pneumatic discharge doors. Folds and partly dismantles for transport.
CAPACITY:	4 No 10m ³ (13.1 yds ³) compartments
TOTAL STORAGE CAPACITY:	40m ³ (52.3 yds ³).
CHARGING:	By loading shovel via client constructed ramp.
CONSTRUCTION:	The bins are mounted at the back of the machine chassis and consist of channel ring beam supporting the cone below and division plates above. Each Bin compartment consists of a lower cone section with discharge door and an upper section with greedy boards. Constructed from Grade S275 steel channels and 5mm plate.
DISCHARGE OUTLETS:	1 No pneumatically operated discharge door fitted to each of the compartments, discharging onto the weighed belt below.
VIBRATORS:	An electrical vibrator (3/200) will be fitted to 2No of the bins to assist discharge of sand. Chain and clips will be fitted to the bin outlet, at the vibrator to prevent the vibrator falling.



WEIGHED BELT / TRANSFER CONVEYOR:

Collecting conveyor to weigh sand and aggregates and also convey up to the mixer. The conveyor belt partly moves whilst weighing.

WEIGH SYSTEM:	4 No Load cells
WEIGH CAPACITY:	1.5 m ³ (2000kgs)
BELT LENGTH:	14.7m c/c (48.23ft)
BELT WIDTH:	900 mm vulcanised rubber belt with synthetic fabric polyester / polyamide carcass.
RATE OF DELIVERY:	167m ³ /hr (=300 T.P.H. @ 1.5 T/m ³)
CONSTRUCTION:	Channel type
CONVEYOR TYPE:	Troughed carrying rollers
BELT JOINT:	Vulcanised
DRIVE:	2No 15Kw Electric Geared Motor
HEAD DRUM:	Lagged and Crowned
FEEDBOOT SECTION:	Located at bottom end of conveyor fabricated from 6 mm mild steel plate with rubber skirts to prevent spillage.
VIBRATOR:	1No 180 W electrical vibrator fitted to assist with discharge. Chain and clips will be fitted to the boot, at the vibrator to prevent the vibrator falling.
BELT TENSIONING:	By screw take up assembly at tail drum
BELT SCRAPER:	An "Arch Environmental" pre-cleaner Polyurethane scraper is fitted to the front of the head drum.



RT1700 TWIN SHAFT CONTINUOUS MIXER:

- MIXING ACTION:** The twin shafts mix the material, whilst moving the material toward the end of the mixer.
- PADDLES:** The twin horizontal mixing shafts are fitted with chill cast steel paddles, which are intermeshed in a specially phased relationship to optimise mixing action, whilst maximising throughput.
- CLEANING:** Special attention has been paid to give the user maximum access for maintenance and cleaning operations.
- MAINTENANCE ACCESS:** The top of the mixer is fitted with hinged access covers, which when opened give access to all of the mixing chamber. Both sides of the mixing chamber hinge down, to give access, the sides are lowered by hydraulic cylinders.
- DRIVE:** The shafts are driven by 2 x 30kW (60 HP) IE3 3 phase electric motor electric motor through a reduction gearbox with twin gears to synchronise 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. Fully lined with chill cast steel tiles as standard for long wear life. 20mm (3/4") thick tiles.
- WATER ADDITION:** Water spray bars fitted into the top of the mixer allow the water to be added to the material as it progresses along the mixer
- AUTOMATIC GREASER:** The mixer gearbox is fitted with an electrically operated greasing system for lubricating the main shaft bearings and seals. A pump is supplied with grease from a large capacity reservoir unit.



CEMENT WEIGH HOPPER:

The hopper detaches from the chassis above the mixer and is stored at the weighed belt conveyor for transport

- CONSTRUCTION:** 3mm plate
- WEIGH CAPACITY:** 0.428m³ (=600 kgs @ 1400 kg/m³).
- WEIGH SYSTEM:** 3 No. Load Cells
- DISCHARGE AIDS:** Pneumatic butterfly valve with rubber sock down to the mixer.
- AERATION NOZZLES:** 3 No. Aeration Nozzles
- VIBRATOR:** 100W Electrical Vibrator (3/180). Chain and clip will be fitted to the hopper, above the vibrator to prevent the vibrator falling, should the mounting bolts work loose
- VENTING:** Via a 100 mm vent pipe and PVC sock to the mixer lid



READYMIX CHUTE:

This chute is located under the mixer door to direct the material into the truck mixer.

Construction: 6 mm thick steel cone with flexible rubber sock on the outlet of the chute.



WATER WEIGHER:

CONSTRUCTION:

3mm mild steel plate, with channel support bracket for 2No loadcells.

Outlet will be flanged to suit 4" outlet valve.

The weigher will be galvanised.

Flexible section of pipe will distribute the water to 2 inlets on the mixer by gravity.

300 Litres (+clearance)

CAPACITY:



CONTROL CABIN:

Control room positioned at truck loading area

CONSTRUCTION:

Box section steel frame with sheet steel walls and roof. The cabin will fold up into the chassis, under the main conveyor. A manual chain hoist will be used to hoist the unit up or down. Access door with lock. Short set of steps from ground up to the cabin.

SIZE:

1500mm x 2400mm (1.5m x 2.4m) (4.92ft x 7.87ft)



COMPRESSOR:

Hydrovane HV04 4kw (25cfm) compressor, and 250 litre receiver will be fitted to the plant to provide air for main plant batching functions. A drier unit will be supplied for this.



PLANT CONTROL SYSTEM:

1. Aggregate Area

- a. Aggregate Weighed Conveyor Loadcells:
- b. 4 No. Stainless Steel Folded Shear Beam loadcells for the weighed conveyor, to be installed by Rapid International. Loadcell Junction Boxes and Earth Straps. Eyebolt c/w tail.
- c. Barrel type proxy on weighed conveyor end flap
Aggregate Area Pneumatic Control Valves:
- d. Asco Joucomatic G553 ½" Sol/Spring spool valves for directly mounted onto the cylinders of 4 No. Aggregate Bin Doors
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2. Batch Section

a. Cement Weigh Hopper Loadcells

- Supply 3 No. shear beam loadcells c/w antivibration mounts for the cement weigh hopper, installation by Rapid International.
- Loadcell Junction Box and Earth Strap

b. Mixer Area Pneumatic Control Valves

- ASCO Joucomatic solenoid operated spool valves for:

Cement Weigh Hopper Door	Cement Weigh Hopper Aeration
3"Water to weigher	Mixer Weighed Water
Tempered Water to Mixer	Tempered water to Chute
Additive Weigher washout	Dump Water

c. Non-return valve will be fitted to the cement weigh hopper

d. Cement Area Switch Box (RIL supply & install)

Supply and install MIC23 Switch boxes to the following:

- Cement Weigh Hopper Door Butterfly (to indicate valve closed)

e) Cement Weigh Hopper Aeration Fittings

- Piping and non-return valves.

f) Mixer and Aggregate Area Interlocking:

- Guardmaster Prosafe 440T-MRPSE electrical interlock installed in the mixer inch panel, the key from here will be inserted into one of the 440T-MDALE dual key interlocks, second key from mixer lid will be used as a personell key or used to open the other mixer lid (same scenario)
- Agg Option 2 - Guardmaster prosafe 440T-MRPSE in panel & 2 of 440T-MSALE locks, no key exchange

g) Fluid Dynamix Additive Weigh System

- Single compartment stainless steel weigh vessel suspended from 2 No. high accuracy
- Single Point Loadcells.
- The vessel is housed within a galvanized framework sheeted with stainless steel covering.

Vessel capable of weighing 4 different admixtures and comes complete with 360 degrees washout facility with adjustable flow control.

Comes complete with washout solenoid valve, discharge pinch valve & pressure switch to provide valve closed signal.

Piping will be installed for 4 no. Admixtures and we will supply 2 no. Additive Pump c/w 1/2" ID delivery hose, stand and flow control valve. Further pumps can be added as necessary up to the maximum of 4

- RIL to provide a suitable mounting bracket above the water weigh hopper to support the admixture weigh system.

3. Plant Motor Starters

Sectional sheet steel enclosure, located in the batch container, housing the following:

- Mains Isolator (lockable in the OFF position)
- Allen-Bradley 100 series contactors complete with 140M manual motor protectors for:
- 1 No. Aggregate Bin Vibrators at 0.45kW D.O.L.
- 1 No. Aggregate weighed Incline Conveyor at 18.5kW c/w VSD
- Cement Weigh Hopper Vibrator at 0.18kW D.O.L.
- 4 No. Cement Screws at 18.5kw D.O.L.
- Water Pump at 15kW D.O.L. (From weigh vessel to mixer)
- 3" Water Pump at 15kW D.O.L. (Delivery to weigh vessel)
- Recycled Water Pump at 5.5kW D.O.L. (Delivery to weigh vessel)
- 2 No. Mixer Motors at 30kW c/w soft start (Rapid RTS3000)
- 1 No. Hydraulic Power Pack at 3kW D.O.L.
- 4 No. Admix pumps
- 1 No. Compressor at 5.5kW D.O.L.
- Mixer & Mains Contactor
- Three Phase Monitoring Relay
- Transformer (all controls 110V)
- M.C.B.'s: Control Panel Supply
- Silo Level Control Panel Supply
- Compressor Supply
- Supply to cabin
- Supply to Mixer Re-greaser

Note: All control wiring will be numbered and will terminate at a suitably identified terminal block. All mains wiring (415V) will be terminated in a separate terminal block. All contactors will have coil suppression devices fitted. All earth wires will be connected to a single brass earth bar located in the base of the panel.

4. Mixer Greaser System controls

Greaser Low Level alarm

5. DYNAMIX Batching Control Solutions

The PIL Dynamix System will be mounted in the control room and will comprise the following:

- 1 No. Industrial PC loaded with the latest PIL batching software
- 1 No. Flat Screen Colour Monitor
- 1 No. Standard 102 Key QWERTY Keyboard
- 1 No. OKI ML280 Printer
- 1 No. Uninterruptible Power Supply (UPS)

DYNAMIX[®] BATCHING CONTROL SYSTEMS

Modem Link, allowing remote access, enabling:

- PIL's Technical Engineers to interrogate the system and assist in fault finding or downloading new software updates.
- Management can receive production reports
- Stock can be assessed and ordered as required

All production and stock information is stored on hard disc for two years and can be accessed at any time. Client to fit broadband line to use this facility.

6. SYSTEM PARAMETERS

a. Running Screen:

The running screen allows the operator to oversee the entire batch process.

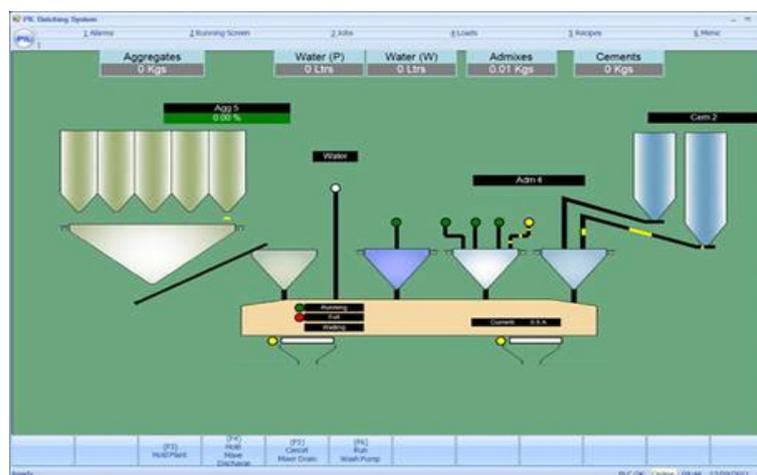
- With our continuous batch facility activated, multiple loads can be tracked simultaneously through the system.
- Comparisons can be made between ideal and actual batch weightments.
- Gives an overview of each weigher's status.
- Gives an overview of mixer/holding hopper status and moisture contents.
- Gives drop report summary as they are completed.
- Ability to pause the batching process at any time.



b. Mimic/Manual Control:

The Dynamix Control System allows complete manual control of the plant on the PC via the mouse.

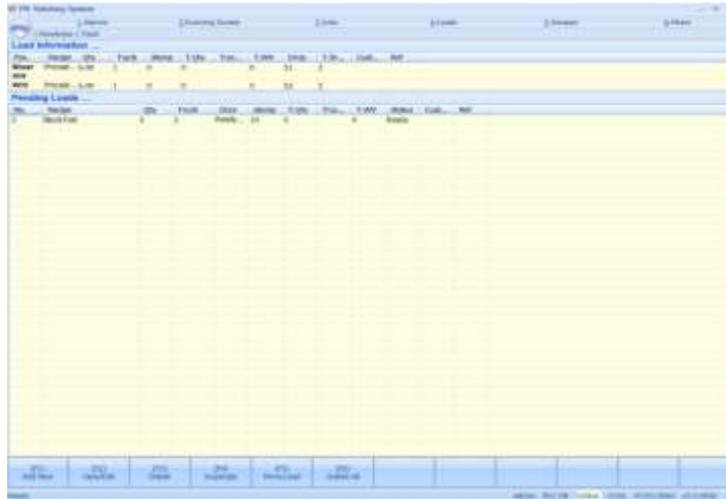
- 2D Mimic displaying each process in a visual representation of the plant.
- Easily switch between Automatic and Manual with one click.
- Instantly determine what process the plant is in.
- Hover over objects for control buttons to appear for manual interventions.
- Weight indication displayed for each weigher.



c. Load Queue:

The operator has full control over the load queue:

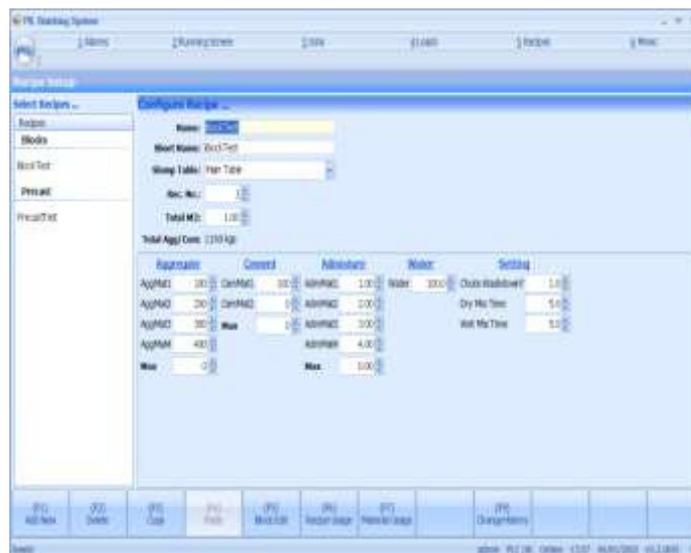
- Loads can also be entered directly on the load queue.
- Jobs on the load queue can be swapped, edited or removed.
- Loads can be tracked as they progress through the plant.
- Concrete returned in the lorry can be compensated for in the next load.



d. Recipe Screen:

Recipes can be added easily by the operator.

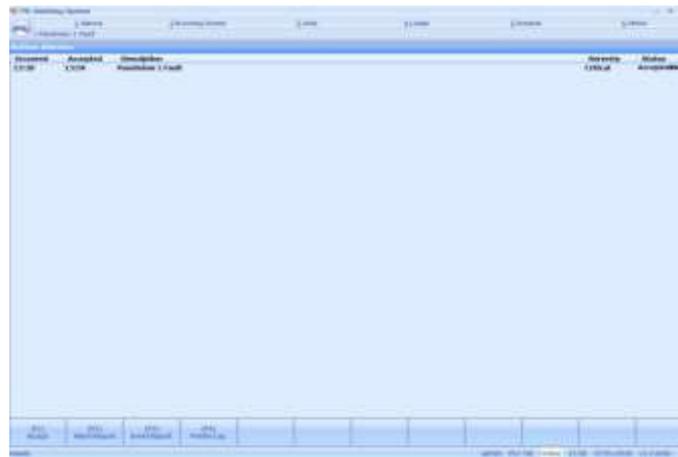
- Up to 100 recipes.
- Automated control of up to 5 aggregates, 3 cements, 4 admixtures, clean and recycled water (extra will require the full Dynamix system).
- Recipe configurable weigh hopper capacities.
- Recipe configurable mixing times.
- Recipe configurable slump table selection.



e. Diagnostics/Alarms:

Alarms occur to inform or warn the operator of certain system states. Any problems can be immediately diagnosed.

- Alarm is immediately viewable.
- Alarm screen gives full alarm details with exact dates and times.
- Gives access to printer log - a complete log of every operation as it happens.
- Similar to the printer log but filtered so only events like alarms, plant states etc are shown



f. Accuracy:

The accuracy of the system is constantly monitored and recorded. Built in intelligence means that the system teaches itself to be more accurate. System accuracy is achieved through the following features:

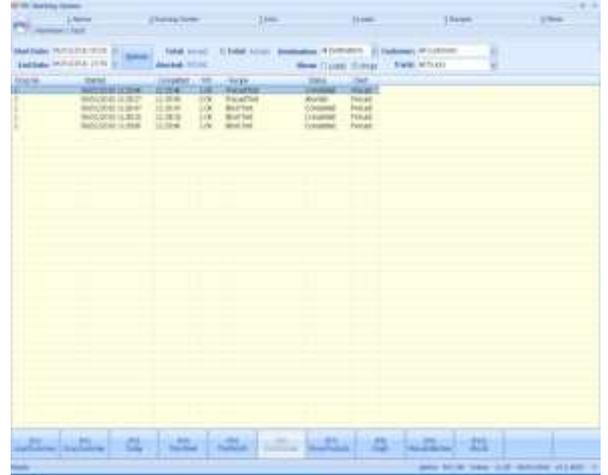
- Two/three stage control when weighing to improve accuracy
- Automatic inflight compensation
- Automatic dynamic jog
- Automatic tolerance checking when weighing up
- Stock accuracy. The recipe targets are compared to the actual weights to give a percentage error
- Water slump control

Material	Qty	Issue	Delivered	Used	Adjusted	Quantity Used
Aggregates						
CEM	Agg 1	-175.93	0.00	277.61	271.98	11.77 Tons
CEM	Agg 2	-488.84	23.23	36.36	147.36	21.08 Tons
CEM	Agg 3	-128.46	0.00	128.77	128.27	68.04 Tons
Slack	Agg 1	-174.99	0.00	350.14	408.28	28.79 Tons
Slack	Agg 2	-111.47	0.00	0.00	211.47	104.08 Tons
Concrete						
WATER	Cont 1	11.22	0.00	0.00	37.08	35.95 Tons
SPR	Cont 1	-89.22	880.00	885.85	813.11	22.84 Tons
SPR	Cont 2	-61.82	0.00	0.00	0.00	84.00 Tons
SPR	Cont 3	21.78	0.00	11.22	0.00	18.56 Tons
Admixtures						
Admix 020	Adm 1	-194.43	0.00	2090.47	1288.42	81.20 Tons
Admix 020	Adm 2	-228.22	0.00	-884.92	3081.20	88.27 Tons
Admix 111	Adm 1	0.00	0.00	0.00	170.01	170.00 Tons
Admix 111	Adm 2	-200.28	0.00	865.28	655.62	86.67 Tons
Water						
Water	Water	-3330.00	0.00	12900.07	0.00	10970.07 Tons

g. Reporting/Stock Taking:

The Dynamix Control System has reporting mechanisms for wide ranging reports relevant to the plant.

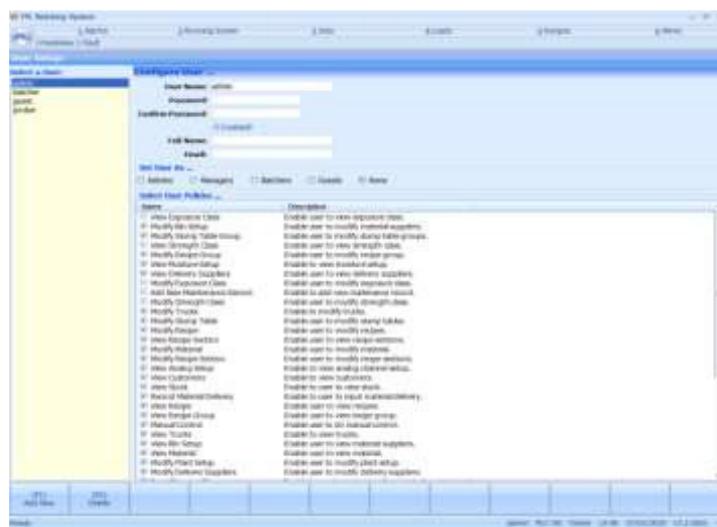
- Production screen giving a full detailed report of each drop.
- Material usage, indicating the ideal usage, actual usage and the percentage error of the weighing accuracy.
- Full stock inventory.
- Printer log.
- Record of stock accuracy.
- All reports can be saved as a TEXT or XML document.



h. Flexibility/Control:

The Control System offers total flexibility while maintaining unrivalled control. The plant is fully configurable via the Plant Setup Menu. It has the following features (to name a few):

- Weigh order.
- Delayed delivery of water.
- Bin standby. Select alternative bins to be used as backup.
- Intelligent vibrator control.
- Manual/Automatic moisture setup.
- Separate job time setup and in-flight table for small batches.
- Plant weigh setup.
- Re-configure bin setup.
- System times can be altered instantly, i.e. drain times, discharge delay times, run times etc.



i. Security:

Only authorised users are allowed to access the system.

- Two users allowing different levels of access within system.
- Only users with an authorised password can log in to the system.
- A comprehensive list of screens/settings which can be assigned to a user to grant full access, read only access or no access.

j. Remote Access:

The Dynamix Control System comes fully loaded with remote access for both management and PIL technical staff. (assuming plant is connected to the internet.)

- PIL Technicians can interrogate the system and assist in fault finding/viewing/analysis from their headquarters
 - PIL Technicians can download new software updates
 - Management/accounts staff can view/receive production reports from their own offices as required
- System can be started from a remote interface

7. Water

a. Water Weigh Hopper Loadcells

- Supply 2 No. Shear Beam loadcells c/w anti-vibration mounts for the water weigh hopper, installation by Rapid International.
- Loadcell Junction Box and Earth Strap

b. Water Supply

- 3" galvanized pipework to the water weigher with valves.
- 1 No. 3" Ball Valve c/w Single Acting HP Actuator, main supply to water weigher.
- 1 No. 2" Ball Valve c/w Single Acting HP Actuator, supply to chute
- 1 No. 1" Ball Valve c/w Single Acting HP Actuator, supply for fine control to water weigher.
- 1 No. 3/4" Ball Valve c/w Single Acting HP Actuator – additive wash-out
- Switch Box to suit.

8. Installation

- a. Wire all starters to their respective motors using SWA cable to BS6436. UK Solenoid local isolators (IP65) will be fitted in close proximity to its respective motor. All isolators conform to the latest standards (VDE 0113, EN 60204 and IEC 204).
- b. Mount pneumatic valve boxes and connect each valve to its respective cylinder, actuator and aeration nozzle using heat and UV light resistant nylon tubing manufactured to BS5409 and having temperature range of -35oC to +70oC.
- c. All SY & SWA cables will be terminated to their respective panel/motor etc., using the appropriate cable glands to BS6112:Pt1. Brass earth tags will be fitted and wired.
- d. The installation will be carried out at Rapid's works.
- e. The electrical installation and testing will be carried out to the IEE Wiring regulations (BS7671:2001)
- f. All panel mounted electrical components are rated IP2X - Finger Protection.
- g. All systems are designed and manufactured to meet the requirements of the EMC directive
- h. All external safety and proximity switches have a high degree of protection against the ingress of dust and moisture

OPTION 1 ADMIX SYSTEM

Litre counter and additive pump to measure the flow rate of additive into the mixer.

The Admixture Metering Systems are compact self-contained units that can accurately and very reliably dispense any amount of admixture.

The admixture metering system is based on microprocessor technology utilising an electrical pulse from the flow of admixture through a flowmeter.

Outputs Available:

12 LPM - transmitter options 33.3 or 100 PPL

28 LPM - transmitter options 10 PPL

50 LPM - transmitter options 10 PPL or 4 PPL

Electrical Specification:

12 LPM - Pump 230/1/50Hz 0.18 Kw IP55 1.4 amps 1430 rpm

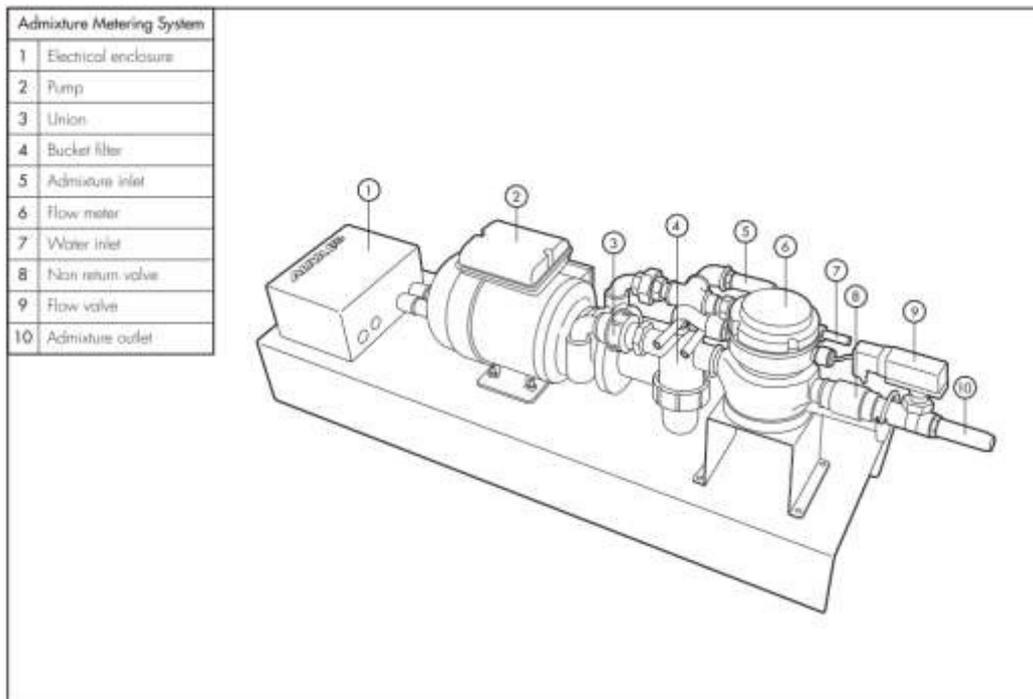
28 LPM - Pump 230/1/50Hz 0.37 Kw IP55 3.3 amps 1420 rpm

50 LPM - Pump 230/1/50Hz 0.75 Kw IP55 4.4 amps 2790 rpm

Reed Switch Maximum voltage 110v



SIZE	LENGTH	WIDTH	HEIGHT
12 LPM (Litres per Minute)	120cm	30cm	45cm
28 LPM (Litres per Minute)	125cm	30cm	45cm
50 LPM (Litres per Minute)	130cm	30cm	45cm



OPTION 1a MULTIPLE ADMIX SYSTEMS

Pneutrol can provide up to 4 x outputs in the PLC to control each of the 4 admixes – a separate output for each admix.

The user will define each admix material within the software, if the admix is used in the recipe, the output for that admix will be energised during the mixing process as would be normal, Pneutrol will then count and record the pulses from each admix and this will be stored in the production file for the loads being mixed. As each load is being mixed, the actual admix value used will be shown on screen – it is totally up to the operator to ensure this is set correctly to achieve the flow required. If the admix is not in line with the desired flow rate, Pneutrol are not to alarm, nor stop the machine.

All control of the admix, speed control, verification the admix is running, pumps, pulsers etc. to be supplied and installed by others.

Pneutrol assume there are enough spare inputs and outputs on the system to accommodate the changes required above. Pneutrol assume all site wiring and installation by others. Uploading of new programme to be done remotely via the modem link.

OPTION 2 SILOS

Sizes range from 30 tonnes to 1000 tonnes.

Up to 4 No. 71m³ (100 ton) Cement silos complete with reverse jet filters, ladders, filling pipes, level probes, aeration system and pressure relief valve.

Silo Filling Control: Located on a panel within batch cabin.

2 no. Screw Conveyors, 273mm diameter x 12.5mtr long with all fixtures and fittings

Precast concrete base not included, to be supplied by customer.



Transbatch silo

OPTION 3 PRECAST BASES

Rapidcan provide precast bases to mount silos on for mobile and remote applications.

OPTION 4 WASH-OUT SYSTEM

TheRapid Jetwash system can be added to Transbatch for automatic mixer cleaning.



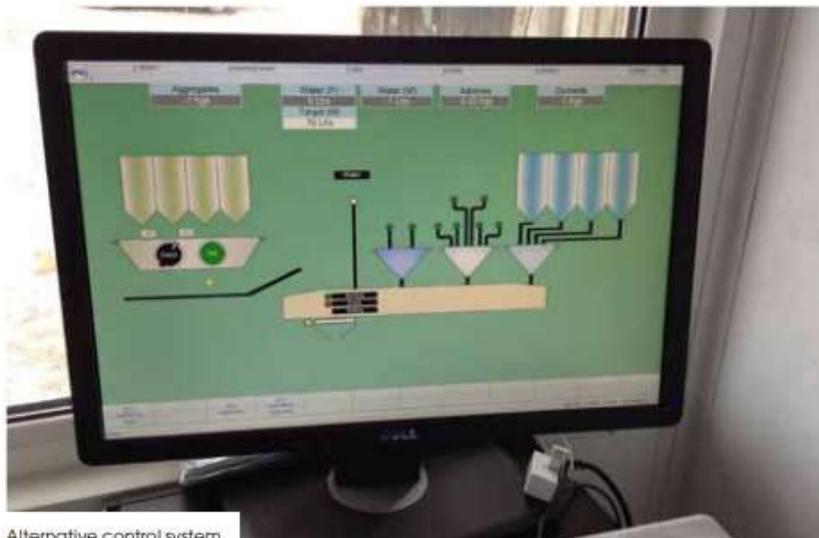
Mixer Jetwash

OPTION 5 WINTER PACKAGE

Fully winterised enclosure for plant, including heating systems for aggregates, water and mixer.

OPTION 6 CONTROL SYSTEM

Alternative automated control systems are available.



Alternative control system

OPTION 7 ICE / MICROSILICA WEIGH HOPPER

Additional weigh hopper for warm climates.

Notes on our Quotation

1. None of the above prices include VAT or local taxes. VAT or the relevant tax will be added to these prices at time of ordering, where applicable.
2. All contracts are undertaken subject to our conditions of sale, available upon request.
3. Prices are valid for 60 days from date of quotation. After this date check with our sales department.
4. Customer to provide a clean supply of water at an adequate pressure and flowrate. Water systems are designed for clean water only unless stated otherwise in the quotation.
5. Cleaning: the mixer and all equipment handling concrete must be cleaned regularly (daily or more frequently depending on application) when in use. Any damage to equipment as a result of not being cleaned will invalidate warranty and all repair expenses will be charged to the client.
6. Any defect in equipment supplied must be reported to us in writing immediately. If the defect is not notified to us and is allowed to continue and cause damage to itself and/or surrounding plant, any repair expenses will be charged to the client.

CONDITIONS OF SALE

1. General

- 1.1 In these conditions (unless the context otherwise requires) the expression "Company" means Rapid International Ltd and the expression "Customer" means the person, firm or company to whom the tender /quotation is addressed or whose order is addressed or whose order is accepted by the Company.
- 1.2 These conditions shall be deemed to be incorporated into all contracts made by the Company and all work undertaken by the Company shall be deemed to be carried out pursuant to a contract incorporating these conditions notwithstanding anything to the contrary in the Customer's order.
- 1.3 No representative or agent of the Company has any authority to vary or add to these conditions. Any variation or alteration shall only be valid if authorised in writing; signed by a Director of the Company.
- 1.4 The Customer shall be liable to the Company as a principal for all costs, charges and expenses that shall be due to the Company in respect of work carried out by the Company subject to these conditions whether or not such Customer purports to contract as an agent. A Customer may not assign the benefit or burden of any contract with the Company.
- 1.5 Any tender or quotation by the Company shall be deemed to be withdrawn unless accepted within 30 days of the date thereof. No order shall bind the Company unless and until the Customer has received written confirmation from the Company.
- 1.6 Any information from the Customer necessary to enable the Company to proceed with any order must be furnished within a reasonable time otherwise the Company may at its option cancel the order or charge the Customer an additional fee for the delay.
- 1.7 The singular in all cases shall include the plural and vice versa.

2. PRICES

- 2.1 All published prices are subject to VAT where applicable and are subject to revision without notice.
- 2.2 Orders are only accepted on condition that they are executed at the prices ruling at the date of despatch.

3. CONDITIONS & WARRANTIES

- 3.1 Whilst the Company shall make every endeavour to use the best materials available no liability is accepted by the Company for any loss, damage or injury to property or persons, lost income or consequential financial loss, directly or indirectly from any failure or defect in the machinery or equipment shipped.
- 3.2 The Company, at its discretion, undertakes to replace or repair free of cost any part or parts supplied by it direct to the Customer of which it shall receive written notice and which shall be proved to the satisfaction of the Company to be defective in workmanship or material either within a period of twelve months (or 2000 verified operating hours) of delivery or if the Company is responsible for re-erection within a period of twelve months (or 2000 verified operating hours) from the date when the machinery is ready for starting and provided:
 - (a) The written notice of complaints is given to the Company within one day of the discovery of the defect.
 - (b) That the part is returned carriage paid to the Company.
 - (c) That the part, if replaced, shall become the property of the Company.
 - (d) That the Company shall not be liable for the cost, of removal of the defective part or the cost of fitting a new part.
 - (e) That the defect has not been caused by carelessness, improper or inadequate lubrication, inadequate maintenance or cleaning, or excessive use.
 - (f) No un-authorized alteration or modification has been made to the plant or machine or component subject to the claim.
- 3.3 The new part will be delivered by the Company to the Customer's premises in the UK or port of exportation.
- 3.4 In the case of parts or components not manufactured by the Company, the Customer shall be entitled to the benefits insofar as they may be transmitted to the Customer of any guarantee given by the manufacturer in respect thereof and the Company's liability in respect of such parts or components is limited to make the benefit of the manufacturer's guarantee available as aforesaid.
- 3.5 Insofar as permitted by statute or otherwise the guarantee contained in paragraph 3.2 above is in lieu of and excludes any other conditions or warranties expressed or implied statutory or otherwise and in no event shall the Company be liable (except to the extent, if any) of its undertaking or by statute as aforesaid for any loss, injury or damage howsoever caused or arising.

4. DRAWINGS, CAPACITIES, ETC.

- 4.1 Dimensions, details and statements as to the suitability of machinery for any particular purpose or as to the capacity, type or power specified or contained in any drawings, quotations, catalogues, shipping or other specifications etc., and any illustrations or photographs referred to, though carefully given are not intended as, and must not be treated as, the contractual description.
- 4.2 The Company undertakes no responsibility for sites or foundations or any for any framework or support for machinery or compliance with any local By – Law or statutory regulations or for the fulfilment of any special requirements which the Customer may be bound to observe or fulfil. The Customer shall be responsible for the proper adaption of any designs to his own circumstances

5. DELIVERY

- 5.1 The Company shall not be liable for delays caused by any of the following:
 - (a) Industrial disputes.
 - (b) Strikes.
 - (c) Lock-outs.
 - (d) Fire.
 - (e) Accident.
 - (f) Non-delivery or late delivery of materials or parts by other manufacturers.
 - (g) Faulty castings or forgings.
 - (h) Works breakdown.
 - (i) Any other cause beyond the Company's control
- 5.2 Times and dates for delivery or performance are estimates only and not contractual obligations of the Company
- 5.3 The Company will make every endeavour to deliver by the time or date given, but accepts no liability for any loss caused by delay howsoever caused.
- 5.4 If the Customer shall be unable or unwilling to take delivery when the goods or part thereof are ready for despatch, then the Customer shall pay to the Company a reasonable charge for storage until such time as he is able and willing to take delivery of such goods or part thereof. Any payments due but delayed because the Customer is unable or unwilling to take delivery shall, if not already due, fall immediately due.

6 **TRANSIT**

6.1 Notwithstanding anything in the tenders, quotations, order or contract, as to the place of delivery, or payment of carriage the Customer agrees that any goods in transit shall be at his risk, and accordingly all consignments shall be deemed to be in the Customer's possession (whether the property therein shall have passed or not) after a despatch from the Company's premises.

6.2 All shipping delays, demurrage charges and shipping charges of any description, after the Company has fulfilled its obligation (if appropriate) to deliver to United Kingdom docks, shall be at the Customer's expense.

6.3 All unloading shall be at the risk of and expense of the Customer, except when the Company is contracted to erect the machinery.

6.4 The Customer shall keep goods fully insured and shall, if appropriate indemnify the Company against any loss or damage.

7 **PACKING**

All machinery shall be freighted open with small component parts crated unless specifically requested on the order "to be crated." Packing cases on all exports will be charged to the Customer at cost.

8 **COMMISSIONING**

8.1 Where the Company's sale includes commissioning the Company accepts no contractual obligation in respect provision of work or materials for the preparation of a proper site with suitable and sufficient access thereto. Unless otherwise expressly agreed in writing the Customer shall be responsible for and bound to provide at his own expense:

(a) A properly prepared, safe, site, with suitable foundations and adequate access and hard-standing for vehicles and plant.

(b) All necessary lifting tackle, raw materials for the process involved, fuel, water, oil and other stores and,

(c) Also sufficient labour and assistance to enable the Company to proceed properly with and complete the erection of and the starting and setting to work of the machinery.

8.2 If the Customer shall require training for his personnel he shall provide operators of acceptable calibre and physical capability to the Company, who shall provide suitable training at the Customer's expense. If necessary an interpreter shall be made available at the Customer's expense. The Customer shall indemnify the Company against any claims, damages, costs and expenses in respect of any accident, injury or loss sustained by personnel recruited by the Customer and arising out of and in the course of training of such personnel by the Company. The Customer shall on recruitment of such personnel effect the necessary employer's liability insurance in respect of them.

8.3

8.4 Prices quoted for erection are based on the Company's normal order and acceptance terms. Overseas travel of the Company's employees; board and keep shall be the responsibility of the Customer unless specific alternative arrangements are agreed in writing between the Customer and the Company.

9 **PATENT RIGHTS**

The Customer shall indemnify and keep indemnified the Company against all claims, damages, costs and expenses to which it may become liable through executing an order in accordance with the Customer's specification which constitutes an infringement of any patent or registered design.

10 **PAYMENT**

10.1 Payment shall be made net to the Company's head office or its appointed bank upon notice of the goods being ready for collection or despatch. Cheques, money orders, BACS or other negotiable documents must be made payable to the Company and only the Company's official receipt shall be valid. For export orders payments shall be in Sterling or in a currency specified by the Company against shipping documents at a bank in the United Kingdom, unless expressly stated otherwise by the Company.

10.2 The contract price will be payable by the Customer in strict accordance with the contract terms, notwithstanding any delay in delivery or performance on the contract or any adjustment or correction for minor defects which may be required to the plant machinery or work. The Company may suspend performance on any contractual obligation to the Customer so long as any account of the Customer is overdue.

10.3 Daily Interest at 5% APR will be charged, at the Company's discretion, on all overdue accounts, until the payment is confirmed in our bank account.

10.4 In no case, will the property in any goods pass to the Customer (notwithstanding that possession or risk shall have passed to the Customer) until payment has been made to the Company for the full contract price of the goods, including the price for erection or other work or services (if any) to be done by the Company.

10.5 In case of default by the Customer after the delivery of any goods and before the goods have become the Customer's property the Company may give notice to the Customer terminating the Customer's rights to possession where upon the Customer shall be bound, at his expense, to return the goods to the Company. In all such cases the Company may (whether with or without previous notice) itself retake possession of the goods and the Company is in such circumstances irrevocably authorised by the Customer to enter the premises on which the goods are situated and to dismantle and remove the goods from the same at the Customer's expense.

11 **SAFETY**

To the best of the Company's knowledge the machinery and plant manufactured by the Company complies with the requirements imposed on a Manufacturer under the regulations enforced in the United Kingdom or any part thereof. Should special or additional guards be required to meet the particular local requirements of the Customer they will be charged as additional items.

12 **JURISDICTION**

This contract is governed in all respects by the law of Northern Ireland within the United Kingdom and the Customer Submits to the Jurisdiction of the Courts of Northern Ireland.