

HIGH PRESSURE FOAMING MACHINES

ECOMASTER



ECOMASTER SERIES



PROGRESS THROUGH EXPERIENCE

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www.omsgroup.it

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The OMS Ecomaster 2 Series of High Pressure Metering Unit has been created to introduce the benefits of high pressure metering and mixing within a modular range of machinery which can be tailored to precisely match particular production requirements. Its design is particularly suited to the use of non-CFC formulations.

The Ecomaster 2 Series consists of three specific model groups, each of which has been designed to meet the particular performance and budget targets most commonly required by urethanes processors.

ECOMASTER 2 represents the starting point for the range with a combination of a high basic specification, the capability to run up to two mixing heads and a purchase price offering an excellent cost/benefit ratio.

ECOMASTER 2 PLUS expands on the base model by incorporating an electronic control system capable of operating in multi-head installations.

ECOMASTER 2 DATA is the ultimate choice for processors requiring, as standard, complete process monitoring facilities and data capture.

This modular approach to machine specification and performance includes an intelligently considered range of optional or additional equipment to enable machines of relatively simple specification to be upgraded should requirements change during the working life of the machine.





METERING GROUP

High precision axial piston type, variable output metering pumps with special ceramic bush and double seal arrangement for improved leakage resistance.

Group for pump suction filter equipped with digital pressure gauge for the control of the minimum feeding pressure. Horizontally mounted individually driven pump motor groups with high performance flange coupled electric motors for better balance and reduced noise.

Digital pressure gauge for the control and visualisation of the components recycle/pouring pressure with minimum and maximum thresholds.

Special design monocomponent flow-valves for fast reliable control between recycle and pouring phases. Discreet compartmented design reduces leakage risk, simplifies maintenance.

COMPONENT STORAGE AND TEMPERATURE CONDITIONING

250 litres (each) capacity pressurised and jacketed component tanks with nylon visual level tube.

Slow speed scraper blade type agitators to ensure even temperature distribution.

Integral electrical resistance heaters and cooling water solenoid valves for components temperature conditioning.

Optional capacitive level probes, electronic level controllers and pneumatic refilling valves to facilitate fully automatic, reliable component loading.

MIXING HEADS

ECOMIX Y2K precision manufactured impingement type high pressure mixing head for open and closed mould injection.

Self cleaning mixing and dispense chambers by means of hydraulically controlled high precision fit plungers.

Facility to introduce a third and/or fourth component, such as an additive or a colour, directly into the mixing chamber.

Double hydraulic solenoid valve control with interlock to ensure correct sequential operation

7,5 Kw hydraulic unit with pre-charged accumulator, pressure regulator and integral heat exchanger for reliable operation.

All the benefits of high pressure metering technology are available whichever version is selected and, when used in conjunction with the ECOMIX Y2K range of high pressure self-cleaning mixing heads, the following benefits can be expected:

- *Smooth and consistent pouring into open and closed moulds*
- *Reduction in costs from the elimination of cleaning solvents and waste*
- *Better product quality from improved mixing efficiency and consistent filling of moulds*
- *Capability to use fast reacting formulations to reduce production cycle times.*

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ELECTRICAL CONTROL SYSTEM

- Full electronic sequential control and operation of all machine functions by means of the programmable logic controller with standard capability to operate up to no.2 mixing heads.
- Touch screen operator panel for simple, user friendly setting of machine parameters, status displays, pouring times, etc.
- No.12 pouring programs as standard with selector.
- Diagnostic alarm facility with combined acoustic warning and text message display.
Electronic proportional band temperature controllers for accurate, responsive component temperature control.
- Night thermoregulation cycle.

PROCESS CONTROL EQUIPMENT (OPTIONAL)

- I.O.V. Process Control System fitted with flow meters able to monitor component outputs and ratio.
- Higher level I.O.V. Process Control system can be fitted to provide, in addition, monitoring of component temperatures and pressure.
- LCD Graphic operator panel for ratio and output displays and facility to enter alarm set point values.
- Printer and Interface.
- Data Capture System on USB memory card.



Electrical Control Panel

ANCILLARIES

- High pressure colour dosing unit.
- Programmable pouring module – 99 programs.
- Low pressure feeding pump group for high viscosity materials.
- Self-cleaning component filters.
- Index variation system.
- Chiller unit.
- Automatic level controls.
- Magnetic coupling for high pressure pumps.
- Metering pumps output variation through inverters.
- Modulating nozzles.
- Automatic loading valves and pneumatic transfer pumps.
- Air nucleation system.
- I.O.V. Process monitoring system.
- Standard mixing head boom, mounted on the main machine frame.
- Free-standing head support booms till 5,5m length.
- DCPD conversion kit

SERVICES REQUIRED

Electrical Power: 400v, 3ph, 50Hz (other voltages and frequencies available).

Compressed air: 6-8 Bar pressure, must be dry air having a min. dew point -20°C.



Metering Group



ECOMASTER 2

The standard ECOMASTER 2 metering unit, suitably specified for output range, can be used for virtually all types of polyurethane production and will generally be used in a stand-alone production situation.

Where circumstances require, the central component tank and metering group can also be used to service a multiple mixing head/piping installation.

In these situations the cost benefits in providing separate dispense points from a single unit are very well illustrated and a properly designed and installed multi-head installation will give excellent, reliable service.

ECOMASTER 2 PLUS

Building on the very comprehensive specification of ECOMASTER 2, the ECOMASTER 2 PLUS range incorporates an expanded electronic control system to handle the increased input-output signalling required in a multi-head installation, providing the means to control up to 12 mixing heads.

The upgraded programmable operator interface panel enables the operator to set the pouring parameters and dispense times from a central position and the control system can easily be interfaced with other equipment such as moulding presses or robots to facilitate automatic remote pourings to further reduce production cycle times.



I.O.V. Process Control System



Machine Day-Tank

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ECOMASTER 2 DATA

The modular approach to the design of the OMS ECOMASTER 2 SERIES of high pressure metering unit reaches its logical peak in the ECOMASTER 2 DATA version.

Fitted as standard are low loss type component flow meters, temperature and pressure transducers, providing data to the central electronic control system which in turn displays the data in a simple, easy legible way to the operator.

In addition to this display capability, the ECOMASTER 2 DATA can produce hard copy printout of all pourings giving further production data such as date, time, mixing head identification, etc.

A diagnostic facility built into the operating system alerts the operator to irregular operation and a text displays identifies the problem.

The alarm function operates on a two-tier system whereby any alarm which may have a direct effect on the safe operation of the machine will also automatically shut down the cycle, and where the alarm may be discretionary (i.e. temperature or flow alarms), the cycle may be allowed to continue and a decision made later as to the acceptability of the poured component.



Ecomaster 2 Metering Machine

The electronic control system is based on Siemens components for reliability and world-wide service and parts availability.

An operator panel is supplied as standard with the function of Data Capture System on USB memory card or their transferring on Ethernet.

The ultimate version ECOMASTER 2 AUTO-DATA incorporates electronic index variation by servo-control of pump output components with modulation component nozzles to enable a variety of different working outputs and/or ratios to be used whilst maintaining accurate recycle and pouring pressures. The system is self-monitoring and adjusting in real time to give full closed loop control.

ECOMASTER 2 AUTO-DATA is thus a perfect choice for applications such as cold cure flexible foam moulding where index change produces different physical foam characteristics.

ECOMASTER 2 DATA is simple to use and to understand, all machine variables and parameter setting are set through the operator interface panel through step by step menu pages:

- Working page with display of all machine parameters
- Help page with main commands for machine operation
- Password page for security
- Temperature conditioning and component level parameters
- Pressure and temperature alarm parameters
- Machine cycle setting parameters
- Pouring programs
- Process control systems parameters
- Pouring data printout
- Data capture system on USB memory card

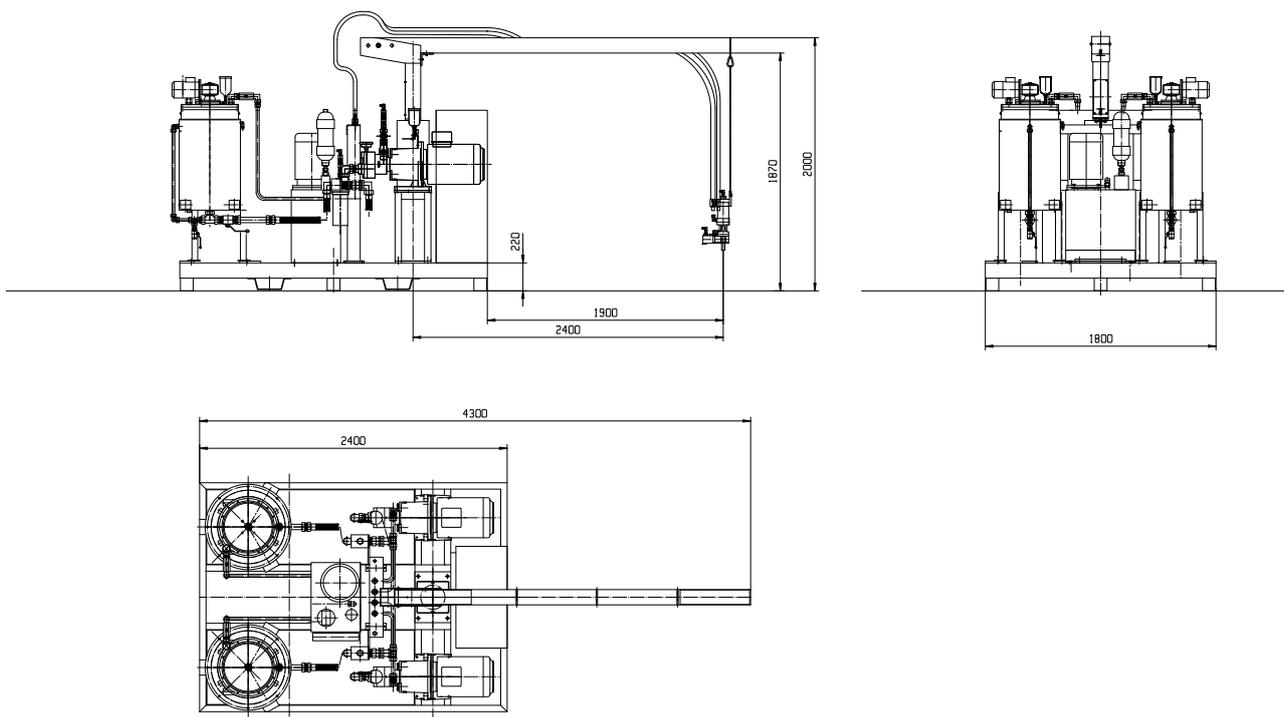


OUTPUTS								
SERIES	RATIO 1:1				2:1 or 1:2		POWER CONSUMPTION	NET WEIGHT
	gr/sec (low speed)		gr/sec (high speed)		gr/sec		Kw	Kg
	MIN	MAX	MIN	MAX	MIN	MAX		
Ecomaster 2 40/20	60	300	120	600	90	450	26	1650
Ecomaster 2 100/50	150	750	300	1500	225	1100	38	1720
Ecomaster 2 200/100	300	1500	600	3000	450	2250	52	1800
Ecomaster 2 300/150	500	2500	1000	5000	750	3750	110	2300
	RATIO 2:1							
	gr/sec (low speed)		gr/sec (high speed)					
Ecomaster 2 150/70	225	1250	450	2250			45	1800
Ecomaster 2 60/30	100	500	200	1000			32	1700
Ecomaster 2 15/5	/	/	75	250			26	1650

The outputs quoted above in grams/sec. are calculated using an average component specific of 1.2 g/cc and assuming a component viscosity not exceeding 2000 cps.

The above data is issued for guidance only, the detailed specification of any machine is subject to confirmation.

We reserve the right to improve the features of our equipment at any time without prior not.



SERIES



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