

CASTING MACHINES

COMCASTER



Key words: Casting machines, circulating lines, facades, walls



Content	page
1. Introduction	3
1.1. Advantages	4
1.2. General data	5
1.3. Detailed data	5
2. Key features	6
3. Product components	7
3.1. Frame	7
3.2. Casting wagon	7
3.3. Additional required components	7
4. Technical data	8
5. Additional information	9

1. Introduction

Casting machines used in precast processes are typically divided into categories according to the discharging method of the casting machines hopper e.g. hatches, belts, sector gate. They can also be separated by state of automation.

The **Elematic Comcaster** (from the words **compact** and **cast**) is the most suitable casting machine when low noise and special accuracy are needed. It also enables the automatic control of production of precast products of first-class surfaces. It is ideal for producing modern façade and internal wall elements, piles, columns and various special products.

The basic idea of the Comcaster is the adjustable vibrating equipment inside of the concrete dosing nozzle. This feature brings to the modern casting technique several improvements, which have a favorable effect on production performance, product quality and comfort of working environment. Examples of these improvements include:

Concrete pre-compaction takes place in the casting machine, therefore the final concrete consumption is easier to estimate.

Correct casting height can be easily obtained with the aid of the leveling plate of the dosing nozzle.

The Comcaster is specially designed and most suitable for casting of horizontal molds, e.g. in façade, partition and solid wall processes.

The Elematic Comcaster is most beneficial for:

- precision dosing
- precompaction during casting
- stiffer concrete
- thin casting layers

Concrete is brought to the Comcaster from the batching and mixing plant typically by a shuttle or bucket distribution method.

1.1. Advantages

FAST

ACCURATE

SMOOTH OPERATION

LESS NOISE IN THE PROCESS ENVIRONMENT

- Pre-vibration takes place already inside the concrete, thus absorbing most of the noise and minimizing the noise level.

EASY TO USE WITH ANY KIND OF CONCRETE

- Vibrator frequency can be infinitely variably adjusted for each concrete batch, and for different kinds of concrete.
- Pre-compaction and design of the machine makes possible casting of stiffer grades of concrete than with most other casting methods.

ACCURATE AND CLEAN DOSING

- Saves material costs.
- Design of the nozzle, with its watertight closing system, ensures accurate and clean dosing of concrete.

EASY TO OPERATE AND CONTROL

- With Comcaster, due to pre-compacting of concrete, it is easy to see when the mold has been filled to the right level, therefore saving material costs.
- Smooth movements of the machine, with stepless control.
- Adjustable casting nozzle enables accurate flow control.
- Movements of casting machine can be infinitely controlled by means of a radio-controller.

ECONOMICAL

- Adjusting of concrete flow very accurate means exact filling of mold.
- Minimizes labor need and cost.

1.2. General data

The Elematic Comcaster system consists of the Comcaster casting machine and the concrete transportation method. Concrete is dosed into horizontal moulds by the Comcaster casting machine. The concrete flow and the movements of the Comcaster casting wagon and bridge can be adjusted.

The Elematic Comcaster

The series includes two models:

Comcaster EB 2350,

- a half-portal type casting machine
- available portal spans (m): 6 - 22

and

Comcaster EB 2340,

- a bridge-type casting machine
- available bridge spans (m): 6 – 27



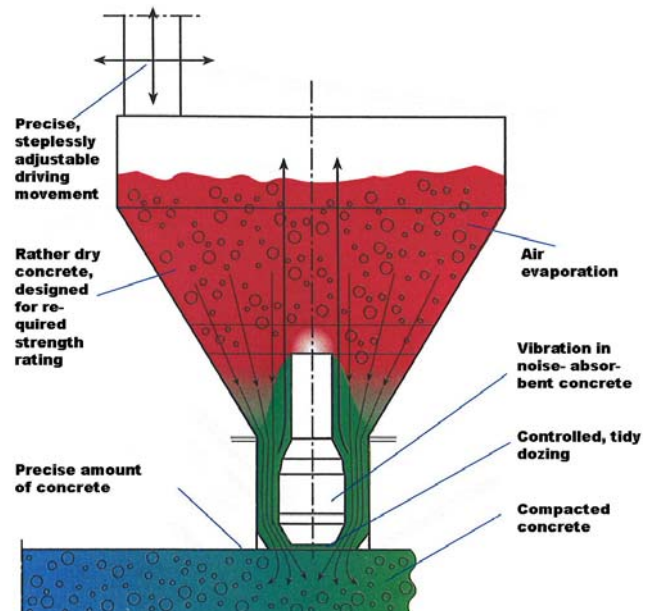
2. Key features

The Elematic Comcaster consists of:

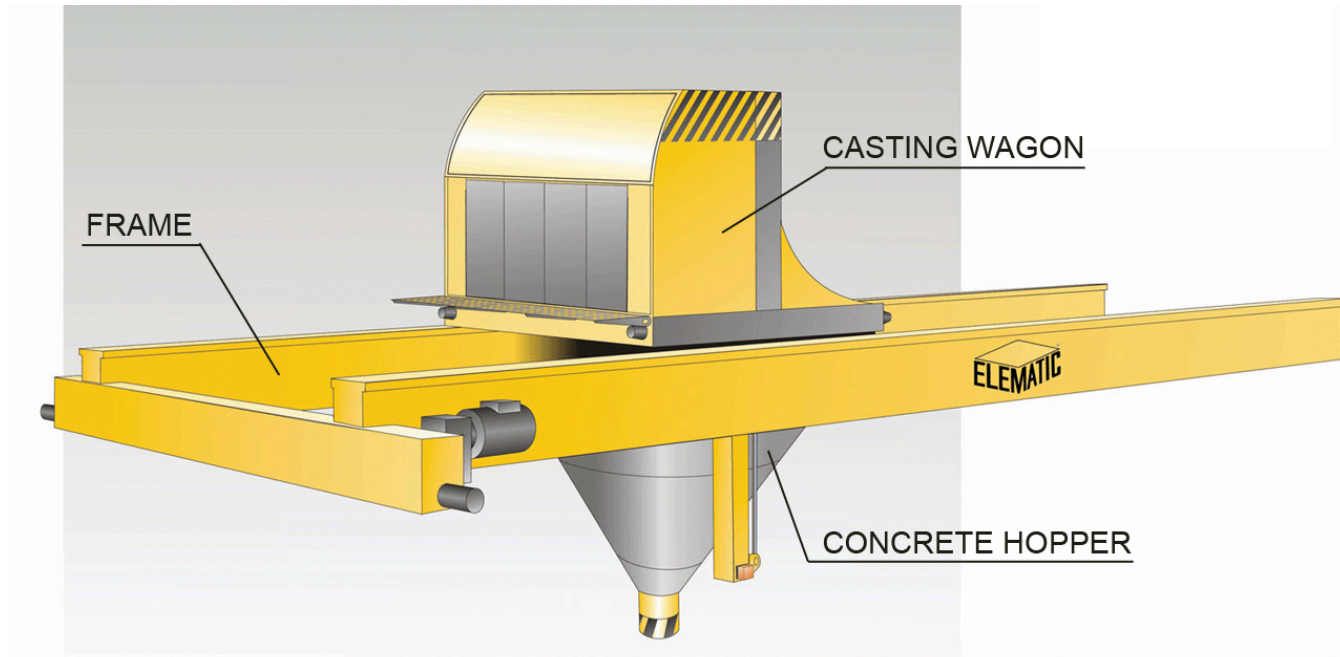
- a frame being either a half-portal or bridge type
- a casting wagon that moves on the frame girders and has a vertically sliding concrete bucket
- a combined vibrator/closing mechanism in the bucket, with which concrete is precompressed, flow rate of concrete adjusted, and the opening closed

The main features of the Elematic Comcaster:

- The Comcaster method allows lower water-cement ratios than the methods used by conventional casting machines.
- The Comcaster can cast stiffer grades of concrete than other casting machines.
- The hopper of the machine is fitted with a flow vibrator, which causes mechanical movement in the concrete. The concrete mix requires less water and cement, which eliminates hair cracks and top face flaking in final products. Surface finishing time is also reduced.
- Vibration at the upper end of the vibrator is kept as low as possible to prevent separation of concrete.
- Dosing is precisely controlled and clean, which makes it easy to give cast components a smooth finishing.
- The round design of the casting bucket contributes to expanding the casting area and improving the concrete mix flow.



3. Product components



3.1. Frame

- The frame of the Comcaster has a half-portal (type EL 2350) of bridge (type EL2340).
- It is formed of main girders and gearing boxes.
- Driving of the frame is inverter controlled.
- The frame is equipped with necessary safety devices, limit switches for stopping the bucket, and the energy transfer chains needed between the frame and the wagon.

3.2. Casting wagon

- The casting wagon is equipped with a vertically sliding (1000 - 2000 mm) concrete bucket.
- In the bottom end of the bucket there is a vibrator that pre-compresses the concrete. It functions also as the closing device of the opening.
- Driving of the casting wagon is inverter controlled and vertical movements are carried out by hydraulic cylinders.
- The casting wagon is equipped with a hydraulic unit, electricity center, energy transfer chain for vertical movement, radio control, and vibrator of the bucket.

3.3. Additional required components

The rails for moving the Comcaster are required according to the type. An enclosed conductor rail or flat cable is required for the current feeding of the casting machine.

4. Technical data

The following table shows the main technical data of the Comcaster Systems

EB 2350 Half-portal			EB2340 Bridge		
Portal span	6 - 22	m	Bridge span	6 - 27	m
Hopper/bucket:			Hopper/bucket:		
- water volume	2.5	m ³	- water volume	2.5	m ³
- batch size	2.0	m ³	- batch size	2.0	m ³
Casting speed	up to 400	l/min	Casting speed	up to 400	l/min
Connecting power	16	kW	Connecting power	16	kW
Connecting voltage	3P+PE		Connecting voltage	3P+PE	
	400	V		400	V
	50	Hz		50	Hz
Connecting voltage/USA	3P+PE		Connecting voltage/USA	3P+PE	
	480	V		480	V
	60	Hz		60	Hz

5. Additional information

During the past decade, dozens of Comcasters have been delivered to mainly precast wall and facade factories in Europe, Middle East and Asia. Latest deliveries have been to Finland, the Netherlands, Russia and Malaysia.



Elematic is a leading supplier of precast concrete machinery and equipment as well as the only supplier capable of delivering complete production plants anywhere in the world. Elematic's superior technology and industry expertise is currently in use in more than 100 countries across five continents. Elematic is headquartered in Toijala, Finland.

www.elematic.com



Finland

Elematic Oy Ab
Aiolantie 2
P.O. Box 33
37801 Toijala
Finland
Tel. +358-3-549 511
Fax. +358-3-549 5300
E-mail:
info@elematic.com

Germany

Elematic GmbH
Kleebergstrasse 1
63667 Nidda
Germany
Tel. +49-6043-9618 0
Fax. +49-6043-6218

E-mail:
info@elematic-gmbh.com

USA

Elematic Inc.
21795 Doral Road
Waukesha, WI 53186
USA
Tel. +1-262-798 9777
Fax. +1-262-798 9776

E-mail:
info@elematic-inc.com