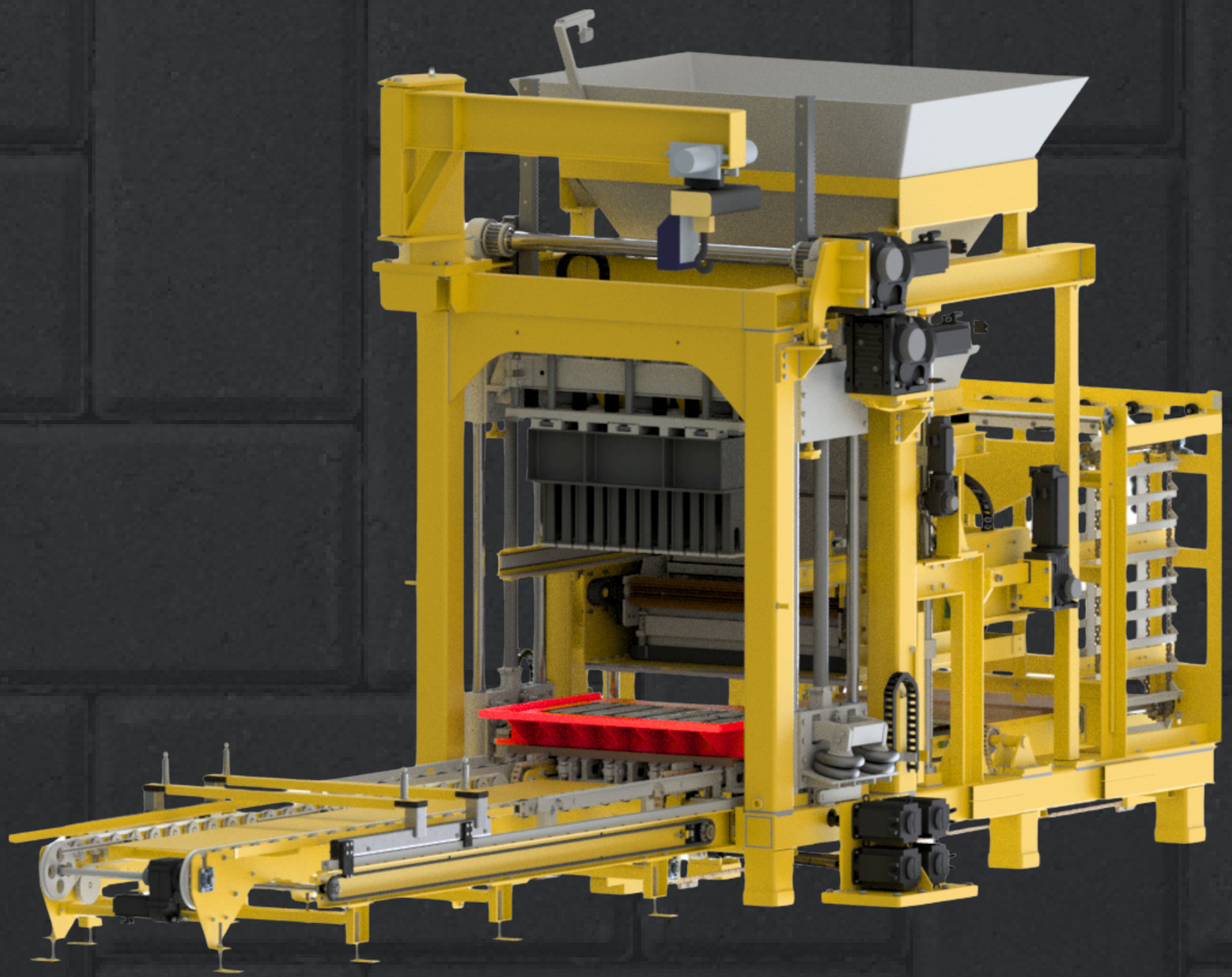
MEC Evolution-20

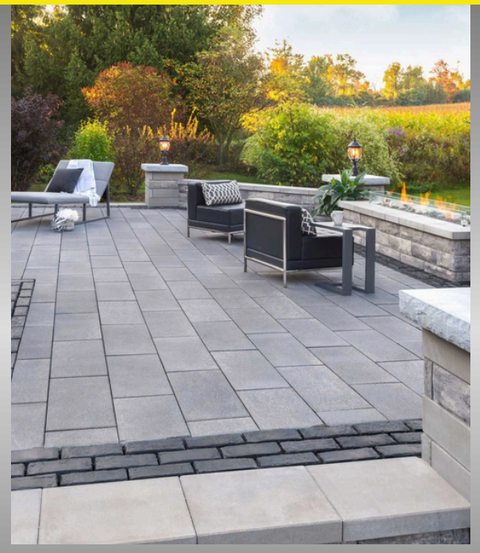


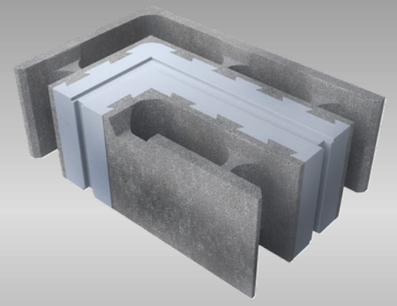
MEC EVOLUTION-20 | For block and landscaping products

MECMETAL

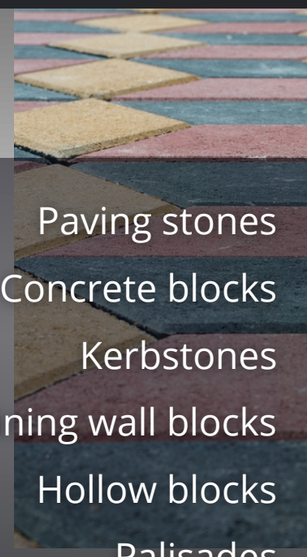




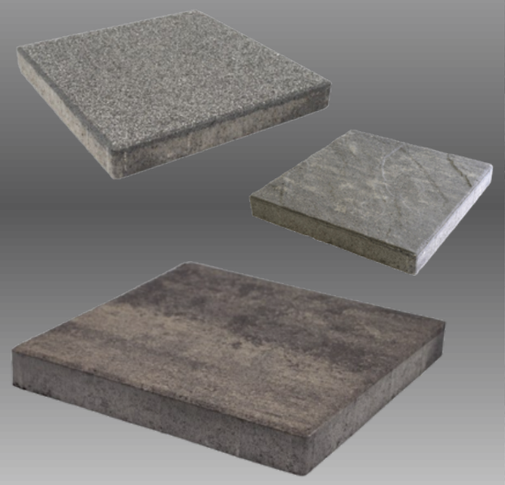


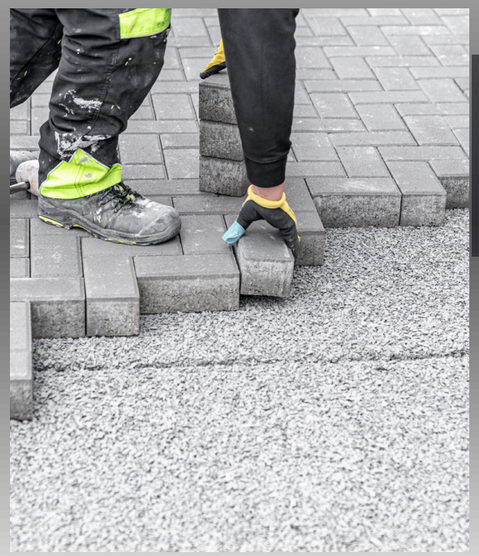






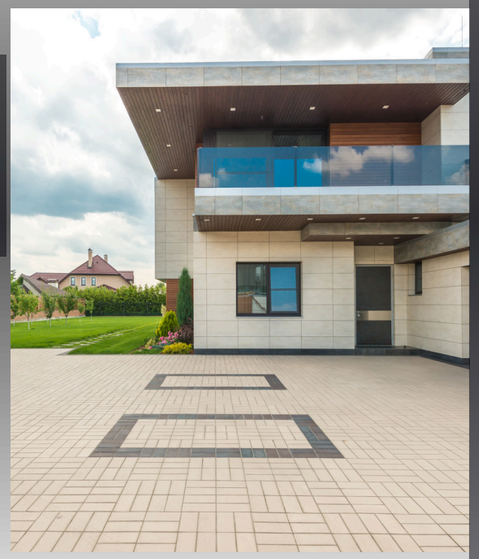
Paving stones
Concrete blocks
Kerbstones
Retaining wall blocks
Hollow blocks
Palisades
Paving slabs
Lightweight concrete blocks
Thermal insulation blocks
Hexagon pavers
Split-face blocks
Architectural stones
Fireplace elements
Garden edging Stones
Drainage channel blocks
Ventilation blocks
Chimney blocks
Washed surface stones
Old Town paving stones





Our customers are producers of high quality dry-cast products

MECMETAL













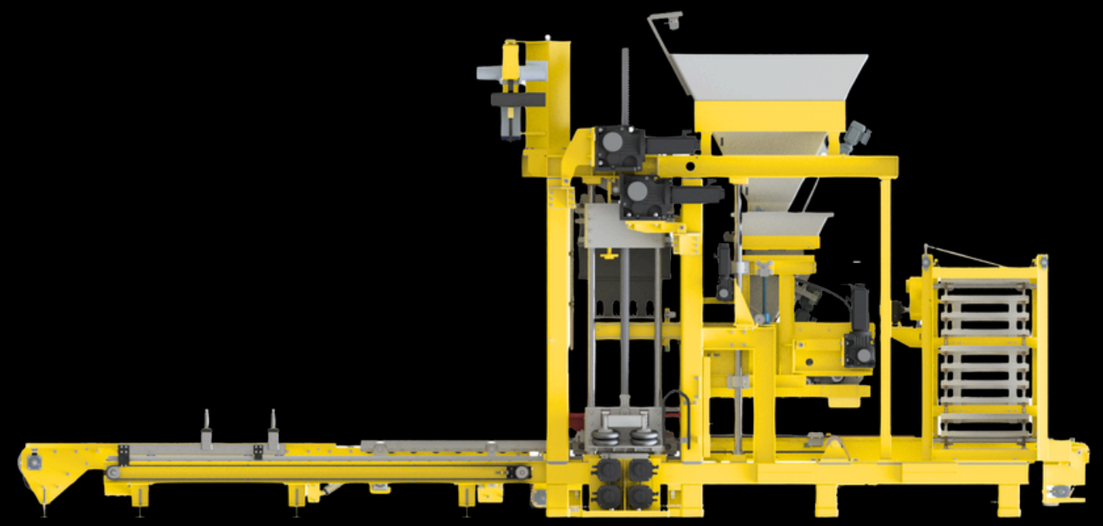


MEC EVOLUTION-20 | Concrete Block Machine

MECMETAL

FULLY ELECTROMECHANICAL OPERATION – SERVO GENERATION





	MEC 1413	MEC 1411	MEC 1490	MEC 1470	
• Production pallet	1400 x 1300 x 40	1400 x 1100 x 40	1400 x 900 x 40	1400 x 700 x 40	mm
• Production area	1320 x 1250	1320 x 1050	1320 x 850	1320 x 650	mm
• Minimum product height	15	15	15	15	mm
• Maximum product height	500	500	500	500	mm
• Weight	25000	21000	17000	13000	kg
Paving stone without face mix 200 x 100 x 60 mm					
• Cycle time	11	11	11	11	s
• Products per mold/cycle	66	54	48	36	pcs
• 8h production(1)	2938	2403	2136	1602	m^2
Paving stone with face mix 200 x 100 x 60 mm					
• Cycle time	13	13	13	13	s
• Products per mold/cycle	66	54	48	36	pcs
• 8h production(1)	2486	2034	1808	1356	m^2
Hollow block 400 x 200 x 200 mm					
• Cycle time	14	13	12	11	s
• Products per mold/cycle	18	12	12	9	pcs
• 8h production(1)	31474	22597	24480	20029	pcs

1) Production quantity per 8-hour shift is based on 85% machine availability. Actual output may vary depending on production conditions, materials, equipment, molds, and product format. Technical data are subject to change.

MEC EVOLUTION-20 | Technical configuration

MEC Evolution-20	
• Minimum production board depth [mm]	650
• Maximum production board depth [mm]	1400
• Minimum production board width [mm]	1200
• Maximum production board width [mm]	1400
• Minimum production board thickness [mm]	30
• Maximum production board thickness [mm]	50
• Minimum product height [mm]	15
• Maximum product height [mm]	500
• Vibration table, adjustable Servo vibrators, 1 table	X
• Vibration table, adjustable Servo vibrators, 2 tables	O
• Vibration table wearable rail	X
• Tamper head fastening, pneumatic	X
• Tamper head vibration, adjustable vibratory motors	X
• Tamper head adapter for existing moulds	O
• Tamper head cross cleaning brush for curbstone	O
• Tamper head, Servo control	X
• Central lubrication for tamper head guidings	X
• Central lubrication for mold guidings	X
• Central lubrication for vibration table vibratory	X
• Automatic central lubrication system	X
• Mold clamping, pneumatic	X
• Mold movement, Servo control	X
• Mold change cart, electric (from face mix side)	X
• Swivel crane for mold change	X
• Automatic fast mold change cart (from base mix side)	O
• Thermal insulation feeder, robotic	O
• Corepuller, electric	X
• Web-based MEC machine control system	X
• Digital twin and production monitoring service(MEC ProFactory)	O
X = Standard configuration O = Optional equipment	

Base mix unit	X
• Height adjustment of base mix mass unit, electric	X
• Automatic base mix unit detachment on rails, electric	O
• Automatic locking on base mix unit	O
• Lining inside base mix hopper, wear plastic / hardox	O
• Tapper for base mix hopper, pneumatic / electric	O
• Electric draw plate for colormix, base mix hopper	O
• Base mix hopper with two outlets	O
• Sensor for material level inside of base mix hopper	X
• Servomotor powered filling car, base mix unit	X
• Filling activator (Whiskes) at filling car, base mix unit	X
• Filling activator (Round bars) at filling car, base mix unit	O
• Pneumatic scraper at filling car, base mix unit	O
• Planing roller at filling car, base mix unit	O
• Tamper head flat brush, base mix filling car	X
• Tamper head rotating brush, base mix filling car	X
Face mix unit	**O**
• Height adjustment of face mix mass unit, electric	X
• Automatic face mix unit detachment on rails, electric	X
• Automatic locking on face mix unit	O
• Lining inside face mix hopper, wear plastic / hardox	O
• Tapper for face mix hopper, pneumatic / electric	O
• Electric draw plate for colormix, face mix hopper	O
• Face mix hopper with two outlets	O
• Sensor for material level inside of face mix hopper	X
• Servomotor powered filling car, face mix unit	X
• Filling activator (Whiskes) at filling car, face mix unit	O
• Filling activator (Round bars) at filling car, face mix unit	O
• Pneumatic scraper at filling car, face mix unit	O
• Planing roller at filling car, face mix unit	O
• Tamper head flat brush, face mix filling car	O
• Tamper head rotating brush, face mix filling car	O

MEC EVOLUTION-20 | Filling, vibration & compaction



CONFIGURATION

Flat brush, Standard
Rotating brush, Standard
Cross cleaning brush, Option
Planing roller, Option
Pneumatic scraper, Option

Main benefits of MEC filling system:

- Independent adjustment of shaft rotation and filling-car movement
- Better control of material distribution across entire mould
- More adaptable filling styles for different products and mixes
- Recipe parameters are stored for next time

These results to:

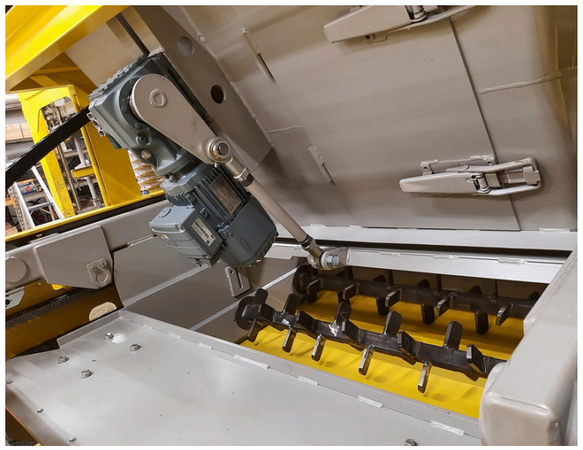
- Better compaction
- More uniform product density
- More accurate product height
- Reduced variation across the production board
- Products with demanding mould geometries are now easier to make

ADJUSTABLE FILLING BEHAVIOUR

In the MEC Evolution-20, the filling system combines servo-driven filling car with independently driven filling activators inside.

Movement profile of filling car and activators can be controlled separately from control system recipe settings. This means machine operators can adjust filling process more precisely to the product details, mould geometry and concrete mix.

The filling shafts can continue rotating even when the filling car is stationary in home position or on top of the mould. This ensures a uniform mix distribution across the entire mould area and prevents the concrete from packing into the corners of the filling box.



ACTIVE MIX DISTRIBUTION

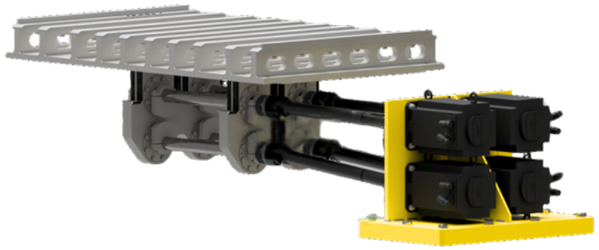
Independently servo-driven filling activators (whiskes) keep the concrete moving and help distribute material evenly across the entire mould area. Shaft rotation improves the filling quality and cycle time for tall products and dimensionally complex products

CONTINUOUSLY VARIABLE VIBRATION CONTROL

In the MEC Evolution-20 block machine, vibration time, speed (rpm), force and angle are continuously adjustable, allowing the vibration behavior to be matched to different products, moulds and production phases.

Vibration parameters can be stored in the product recipe. This helps operators reproduce proven settings and adapt the vibration process to different concrete mixes and product geometries.





The MEC Evolution-20 uses a four-axis directional vibration system driven by four servomotors beneath the one-piece vibration table. Bearings and critical components of the vibratory are lubricated by automatic central greasing system. (2 tables with 8 servos are Optional for large board size machines)

SERVO-CONTROLLED COMPACTION

All MEC Block machines are equipped with an electromechanical servo drive to control the tamper movement and final compaction

System controls the motion directly according to the programmed position profile up to 0.01mm accuracy. This enables precise and repeatable tamper head positioning throughout the compaction phase.

Harmonized bottom and top vibration with correctly adjusted pressing force, results to the most accurate and consistent concrete products

UNIFORM FILLING

Independent control and stepless movement profile helps distribute concrete evenly to all mould cavities

ADJUSTABLE VIBRATION

Recipe-controlled vibration lets operators adjust force, speed, timing and angle for different products, mixes and production phases.

ACCURATE COMPACTION

Direct and repeatable tamper positioning, supporting consistent product height and compaction.







In co-operation with SEW-EURODRIVE Oy and Mecmetal Oy

Mecmetal Oy and SEW-EURODRIVE Oy have a long history of cooperation. The first deliveries were in the 1990s. Over the years, the customer relationship has deepened further - from a component supplier to an innovation partner.

Mecmetal utilizes MOVI-C® drive technology for servos and gearmotors in its latest production machine. The companies have also jointly performed energy consumption measurements of production lines designed and manufactured by Mecmetal.

Energy consumption measurement in a nutshell:

→ In the energy consumption measurement, Mecmetal's electric concrete product machine and a known european hydraulic machine were measured.

→ Separate measurements of both product machines were performed with a power quality analyzer.

→ The measurements included the apparent power [kVA] and active power [kW] of the product machines' electrical consumption.



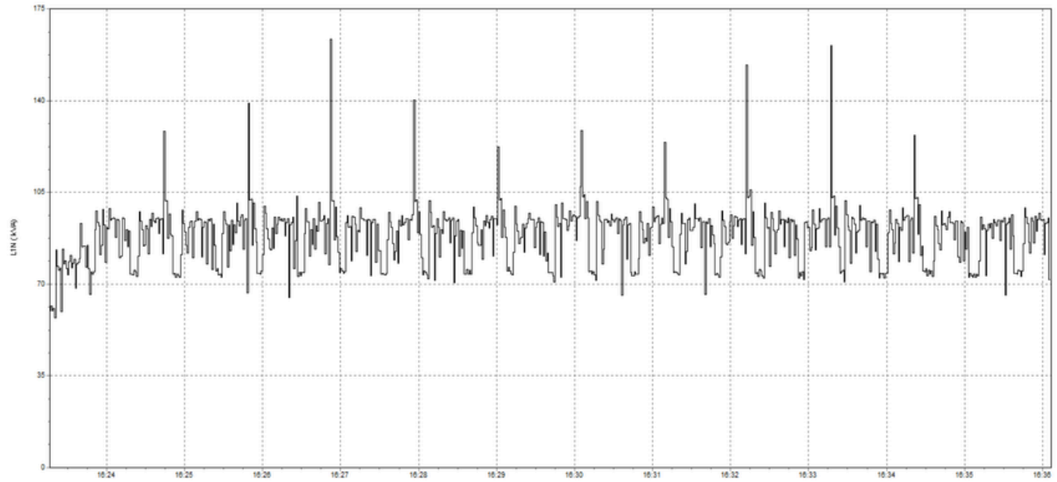
Concrete industry production machine manufactured by Mecmetal Oy.



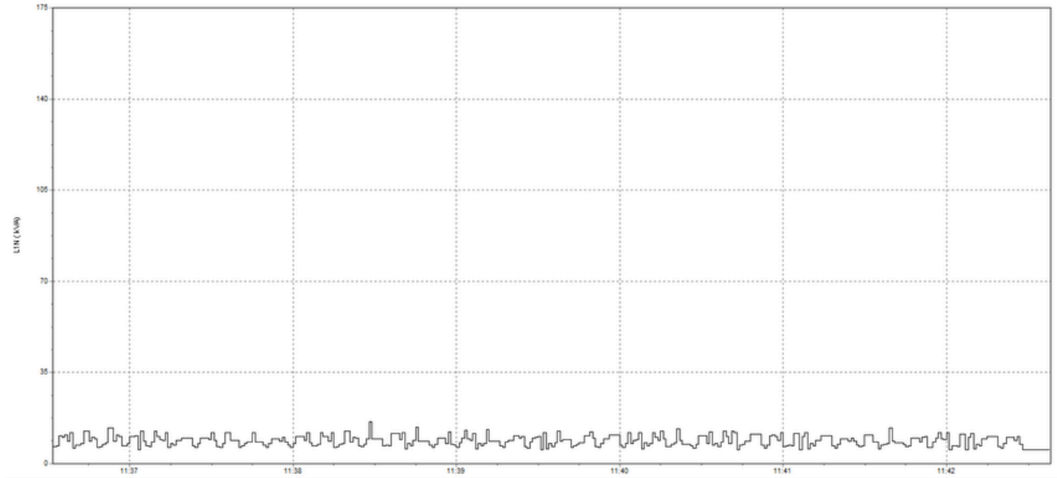
MOVI-C® modular automation system supplied by SEW-EURODRIVE Oy.

The energy consumption measurement results showed that replacing hydraulics with electric drives significantly saves energy. The MOVI-C® servo drive solution significantly reduces the industry's carbon footprint and life cycle costs.

Energy consumption measurement results



A cyclical 163 kVA / 124 kW start-up peak occurs in the **hydraulic solution**. Otherwise, during the production a continuous average of 88 kVA / 74 kW is consumed.



In the **MOVI-C® servo solution**, there is a cyclical 15 kW peak caused by the lifting operation. Otherwise, during the production, a continuous average of 8,7 kVA / 6,8 kW is consumed. With servo drives, the apparent power corresponds to the active power and reactive power does not need to be compensated.

Saving potential is up to 90 %.

Per 1000 production hours, the financial savings can be up to 67 000 kWh



The first year shows you the machine.
The years that follow show you the partner.

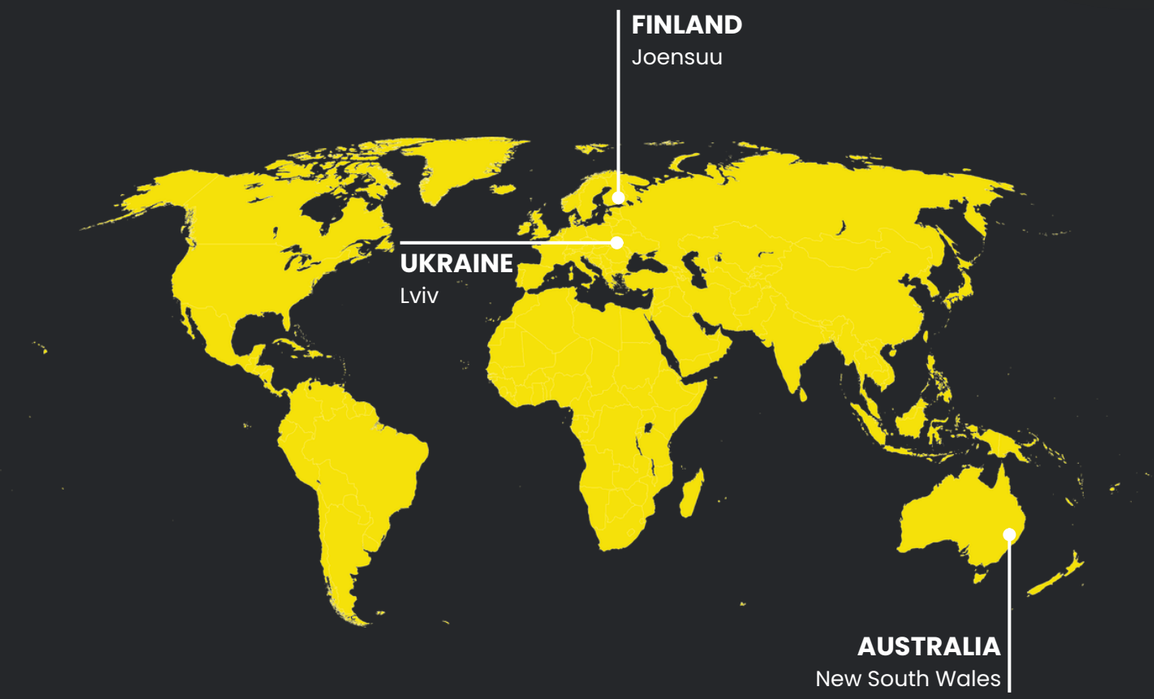
At Mecmetal, we believe the best solutions are created together with the people who use them. Every factory, product portfolio and production target is different, which is why we work closely with our customers to configure machines and production lines around their actual needs.

Our work does not end at commissioning. From training and remote support to spare parts, modernization and future development, we stay involved throughout the lifecycle of the equipment.

We are proud of our Finnish engineering roots
but the partnerships we build around the world are what define us



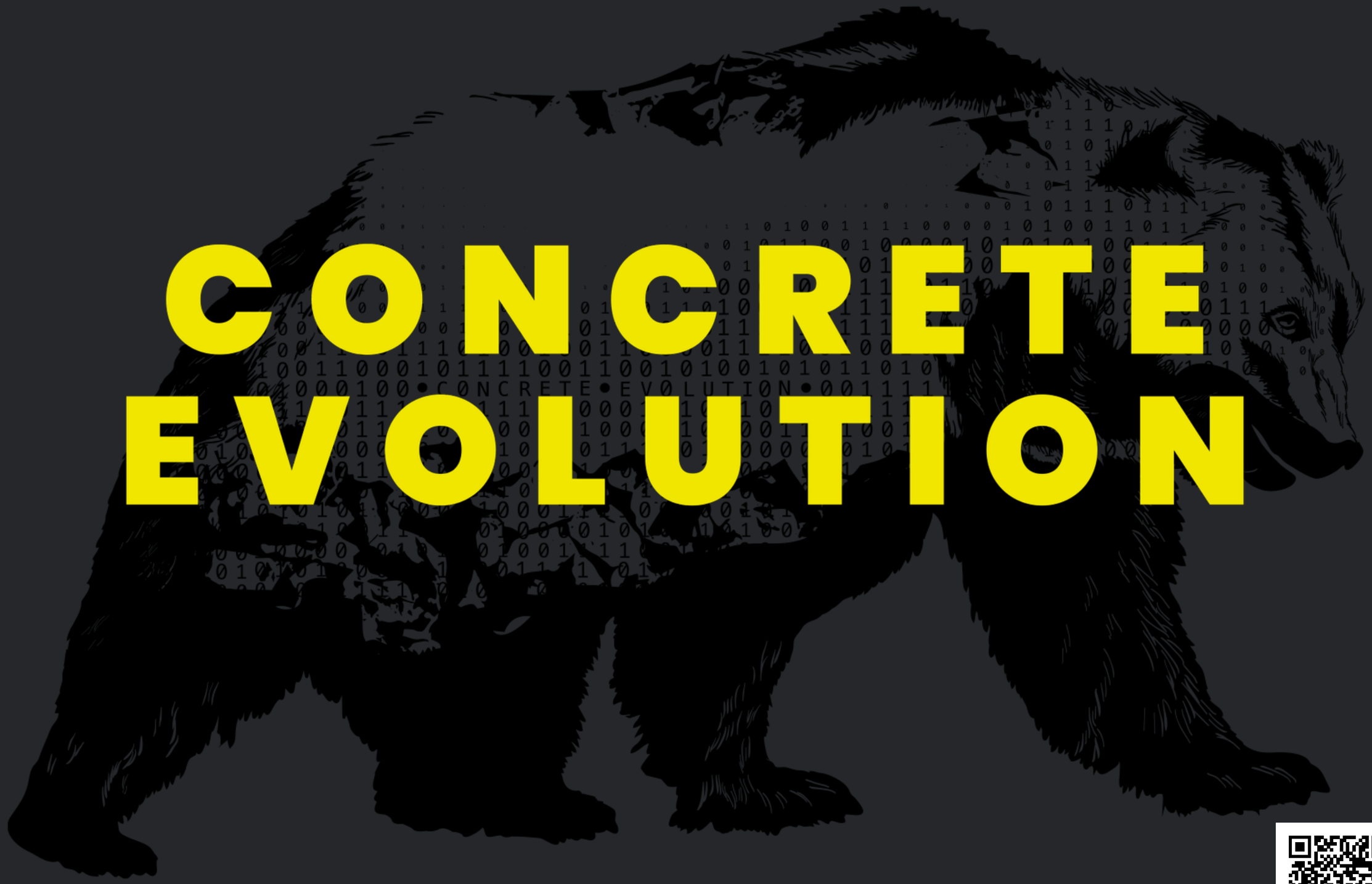
YOUR PARTNER FOR THE FUTURE



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