



CESARO
UM 320
PROFESSIONAL
WORKING
& LONG LIFE





NATURAL ATTITUDE





CESARO MAC IMPORT



UM 320

EXPERIENCE. SOLIDITY. POWER.



PERFECT MIXING FOR EVERY TYPE OF PROCESS AND FOR EVERY MATERIAL; WET OR DRY.

> **STRONG STEEL CONSTRUCTION**

Thanks to the use of high-quality steel, frame ribs, raised steel bars and a total weight of 19 tons.

> **HIGH CONSTRUCTION QUALITY**

Each individual component is manufactured in such a way that intensive industrial use of the mixer is guaranteed.

> **ACCESSIBILITY TO THE MIXING CHAMBER**

Large access doors to the mixing chamber on both sides.

> **DRIVE SYSTEM**

Motor, gearbox, turbo coupling, sprockets and drive chain (**breaking load 1,000,000 newtons equivalent to 100 tons**) are designed for intensive use.

> **LONG SERVICE LIFE**

all heavy-duty parts/tools are easy to replace



HIGH CONSTRUCTION QUALITY POWER AND RELIABILITY



> OUTSTANDING TECHNOLOGY

- a 3-auger mixing system, with mechanical transmission and intermediate turbo clutch
- Easy access to the mixing chamber for maintenance purposes
- Possibility to open the machine on both sides, to safely and easily replace worn parts
- The numerous active and passive safety features that the mixer is equipped with are technical features that make the product unique and unrivaled.

> SIMPLE AND RATIONAL ARRANGEMENT

The individual components were arranged according to the principles of reliability, rationality, ease of maintenance and reduction of operating costs.

> UNRIVALED ROBUSTNESS

An important feature of the UM 320 mixer is its robustness. The use of high-quality steel, the ribs of the frame, the increased sheet thicknesses and the construction methods used make the UM320 a machine of excellent strength, solidity and reliability.





> HIGH-QUALITY COMPONENTS

All mechanical components are of the highest quality and designed for continuous use of the machine, both for anaerobic digestion and composting plants as well as for the recultivation of contaminated soil.



> SIMPLE OPERATION

The mixer can be easily integrated into an existing plant system thanks to the modularity of the control software system. It is possible to create different recipes according to customer requirements. The mixtures are accurate and certifiable thanks to the proven integrated weighing system.



> DIAMOND COATING

The mixing chamber is lined with diamond plates to extend the service life and facilitate maintenance and replacement.



> 3 MIXING AUGERS

The mixing unit consists of 3 augers; one lower and two upper augers. Inside the mixing chamber, the material follows a precise rotation path that allows the different materials to be mixing the different materials together. The lower mixing screw is the largest and consists of 39 bolted tools.

> MIXING CHAMBER

The heart of the machine is a robust mixing chamber. The screws, the wear-prone tools and the walls of the chamber are designed to withstand the loads and torque to which the machine is exposed during the mixing phase. All materials used have been selected to ensure a long service life.



> TRANSMISSION SYSTEM

The UM 320 mixer has an operating transmission system that enables maximum utilization of the power transmitted by the electric motor in order to overcome any load peaks. This ensures continuous and uniform processing when long or very compact material is occasionally fed in.

The drive system consists of the following main elements:

- > 160 KW AC ENGINE
- > COUPLING
- > TURBO CLUTCH
- > REDUCER
- > TOOTH WHEELS
- > DRIVE CHAIN

Effective mixing requires the different input materials to mix together thoroughly. For the machine, this means that it must continuously move the entire material in the mixing chamber and, of course, the tools are subjected to stress. Therefore, all machine parts are designed for the required working load, e.g. **the drive chain of the UM 320 mixer is designed for a breaking load of 1,000,000 newtons, which corresponds to approx. 100 tons.**

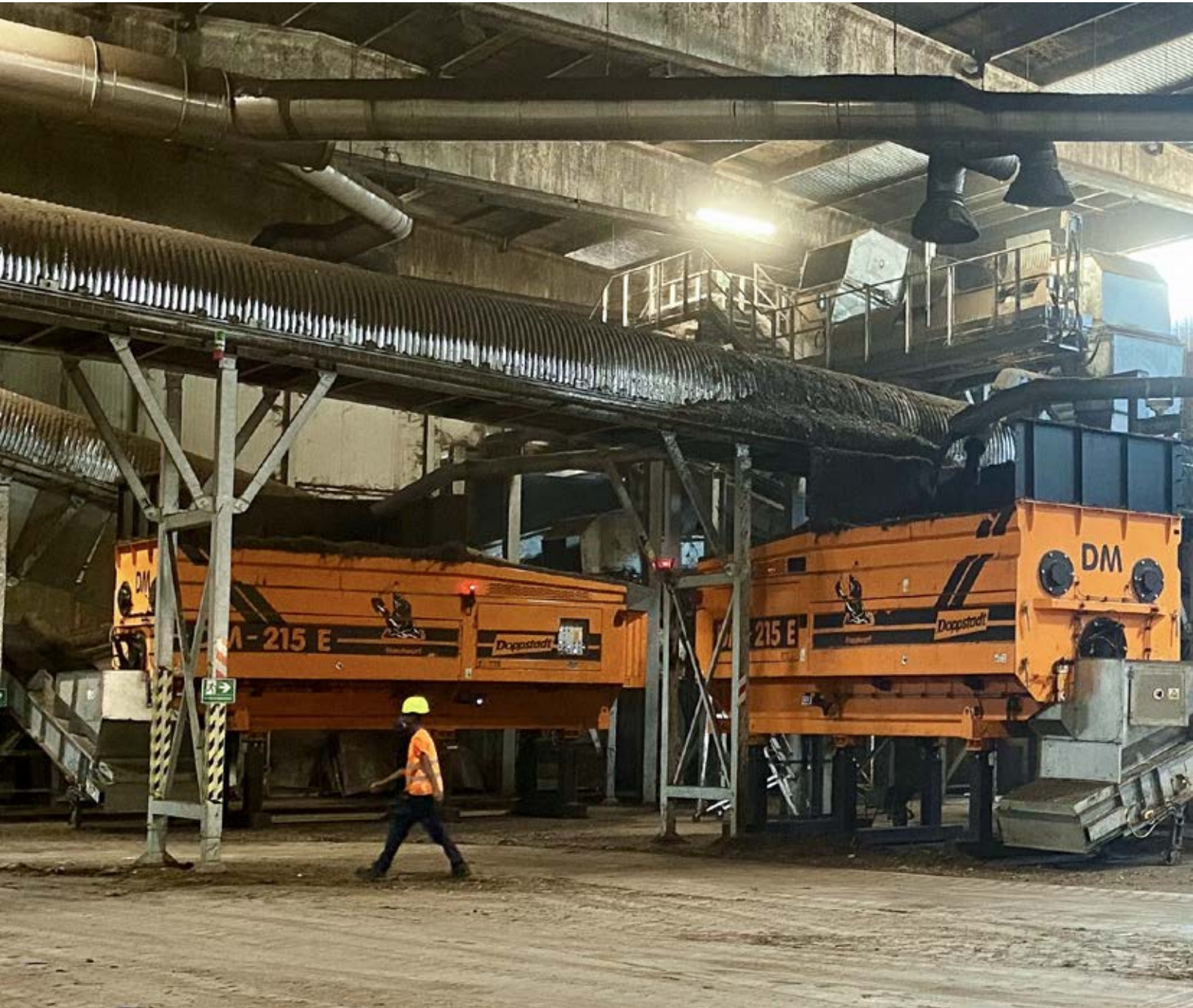


> SAFETY SYSTEMS

In the work process, it can happen that foreign bodies such as aggregates and metals are accidentally introduced, which are often present and not visible, e.g. in the pile of lignocellulosic material to be mixed with other organic waste materials.

To prevent damage to the mixing chamber and the connected parts, the UM 320 mixer is equipped with several safety systems:

- > TURBO COUPLING BETWEEN THE ELECTRIC MOTOR AND THE GEARBOX
- > BRAKE PINS ON THE UPPER AUGERS
- > LABYRINTHS TO PROTECT THE AUGER BEARINGS



25 YEARS OF PRODUCTION FROM "DM" TO "UM"

As part of the product development program, the experience gained from the realization of mixing lines for plants that combine the anaerobic digestion system in the continuous plug-flow process with composting systems in biotunnels, Cesaro acquired the rights from Doppstadt to build the mixing unit and created its own advanced product line for this special application.

For this reason, the name was changed from "DM" to "UM". The new mixer is 100% manufactured by Cesaro in Italy.



The UM 320 is particularly suitable for mixing fermentation residues with lignocellulosic materials.

In anaerobic digestion using the plug-flow process, the feeding of the digesters and the emptying of the digestion towers are necessarily connected with each other, in the sense that their biology and the fill level in the digesters must remain as stable as possible.

To maintain this stability, it is important to ensure the continuous operation of the mixing plant, which is intended for the digestate.

Mixing is a key point in the overall process and therefore requires high-performance machines such as the UM 320 mixer.





CESARO MIXER UM 320



It is precisely the quality of the mixture that guarantees a good aerobic ripening result.

For good aerobic maturation (composting) it is necessary that the digestate and the structuring agent (fresh green and recirculation surplus) form a homogeneous mixture with excellent porosity.



The UM 320 was developed out of this necessity, based on the experience of the last 20 years and is characterized by a **robust steel construction**, the special shape and dimensions of the mixing shafts and a powerful and reliable drive system. The accessibility of the mixing chamber from both sides, thanks to the opening through two large doors, allows a quick, safe and user-friendly service.

Another important area of application in which the value of the UM 320 is successfully implemented is the remediation of contaminated soils. There are several reference applications in Italy in this special area of application. The UM 320 makes it even possible to mix particularly complex and difficult input materials and ensures the desired result through continuous operation.





CESARO MIXER UM 320

A MACHINE DEVELOPED
AND TECHNICALLY DESIGNED
TO ACHIEVE INTENSIVE
AND CONTINUOUS
PRODUCTION

CESARO UM 320 PROFESSIONAL WORKING & LONG LIFE



EASY TO USE

Can be used in manual and automatic mode or integrated into existing process chains

STRENGTH AND DURABILITY

Frame with beams with special profile

SAFETY

Accessibility from both sides

CONVEYOR MATERIAL OUTPUT

per il controllo continuo del processo di scarico

SIMPLE DIRECT TRANSMISSION

with standard three-phase motor and sufficiently dimensioned gearbox

THREE ROBUST SPIRAL SHAVES / ROOT SHAVES with interchangeable blades

REPLACEABLE "ANTI-SHOCK COATING" in the mixing chamber, which increases the durability of the machine

BREAKING LOAD 1,000,000 N
100t breaking load of the drag chain

BLADES IN VARIOUS SHAPES AND DESIGNS
Machine use in various applications

WEIGHING MECHANISM
for adjusting the material composition

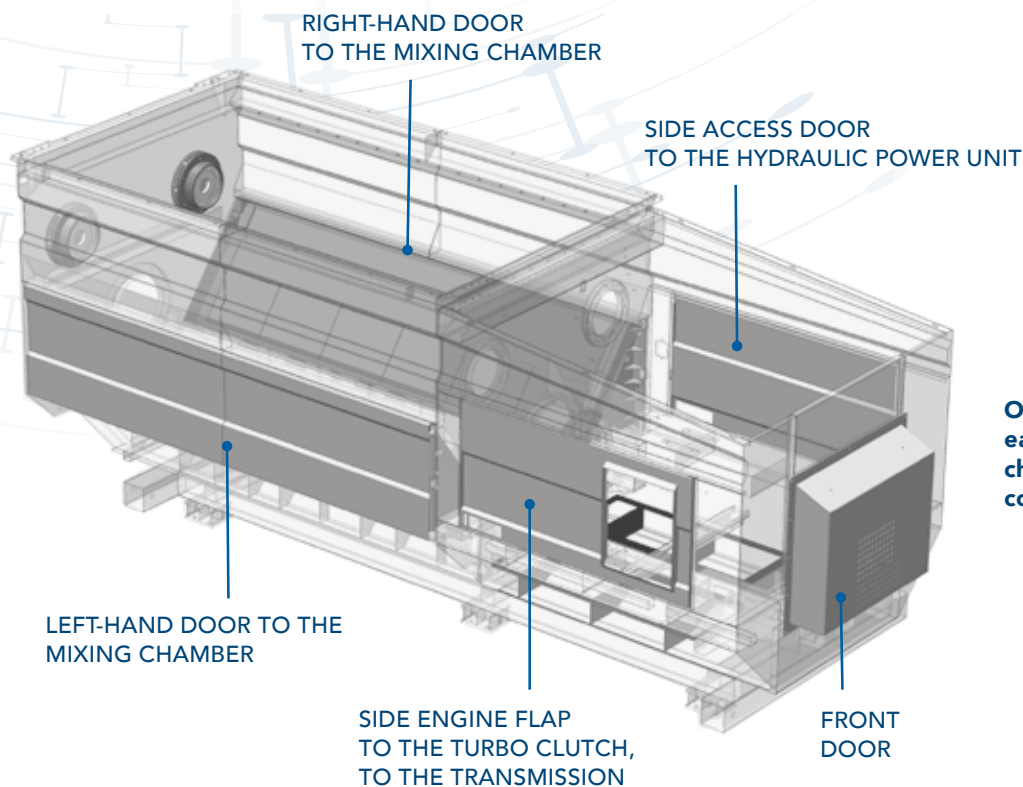
UNIT MIX 320 PRO

DIMENSIONS AND WEIGHT	
TOTAL LENGTH (without rear belt)	7,340 mm
TOTAL WIDTH	2,500 mm
TOTAL HEIGHT (without substructure)	3,363 mm
TOTAL WEIGHT	19,000 kg
TRACTOR DIMENSIONS	
WIDTH	2,300 mm
LENGTH	3,726 mm
LOAD HEIGHT	3,100 mm
CAPACITY	15/16 m ³
ENGINE	
BRAND	VEM or similar AC
MODEL	K11 R 315 MX4
POWER	160 kW
REGIME	1.477 1/min
MAX.	290 A
NOMINAL VOLTAGE	380 V
ELECTRICAL SYSTEM	12 V
TENSION CHAIN BREAKING LOAD	1,000,000 N (one million) equals 100 t
MIXING SYSTEM	
TYPE 3	3 spiral shaft system
DIMENSIONS OF THE LOWER HOUSING	Ø 1056 mm - length 3874 mm
DIMENSIONS OF THE UPPER HOUSING	Ø 825 mm - length 3778 mm
	Ø 800 mm - length 3778 mm
APPLICATION TOOLS	interchangeable blades / paddles
	26 blades in the main auger
	39 blades in the first mixing transport auger
	35 blades in the second mixing transport auger
MIXING	in continuous or batch cycle
EXHAUST GAS CAP	hydraulic adjustment
PROCESSING CAPACITY	
More than 70 m ³ /h depending on the processed material, load and type of mixing (continuous or batchwise)	
REAR OUTPUT BELT	optional



MECHANICAL ACCESSIBILITY AND SECURITY

ACCESS TO ALL PARTS OF THE MIXER IS POSSIBLE BY OPENING LARGE DOORS, WITHOUT THIS BEING STRENUOUS OR DANGEROUS FOR THE MAINTENANCE TECHNICIAN.



Opening the doors allows easy access to the mixing chamber and machine components

- > **Access to the mixing chamber is completely safe and maintenance-friendly via the side hinged opening.** This prevents maintenance staff from having to enter the chamber from above, where they could slip and fall.
- > **The blades of the mixing augers can be changed under ergonomic conditions;** this is maintenance-friendly and prevents the risk of injury. Safe access to the mixing elements and an adapted working area for service work to be carried out enable safe working without having to adopt unnatural postures
- > **Sufficient vertical and horizontal clearance** for carrying out the necessary service work
- > **Ensures easy cleaning of any substances present in the mixing chamber.** Knives or counter knives can be replaced without maintenance staff coming into contact with the material to be processed.
- > **In an emergency situation** where evacuation of the workplace is necessary, the design of the UM 320 allows the mixer to be vacated immediately and to be able to reach a safe location quickly.



> DURABILITY / INVESTMENT SECURITY

On the previous pages we have presented the most important features of the UM 320 mixer. These features make the machine a unique and unbeatably durable product in its areas of application.

All worn parts are easily replaceable as the machine is designed in such a way that it can be easily "overhauled", making the machine a safe long-term investment.

That too is sustainability. Intelligent sustainability.



CESARO SERVICE

A PROFESSIONAL AND INDISPENSABLE CUSTOMER SERVICE

FROM THE VERY BEGINNING, OUR COMPANY HAS FOCUSED ITS ATTENTION ON HIGH CUSTOMER SATISFACTION. CUSTOMERS WHO CHOOSE MACHINES FROM CESARO HAVE ACCESS TO A TEAM OF ENGINEERS, TECHNICIANS, MECHANICS AS WELL AS MANUFACTURING AND SERVICE PROCESSES THAT ARE COMMITTED TO CONSISTANTLY IMPROVING AND EXCEEDING CUSTOMER EXPECTATIONS.





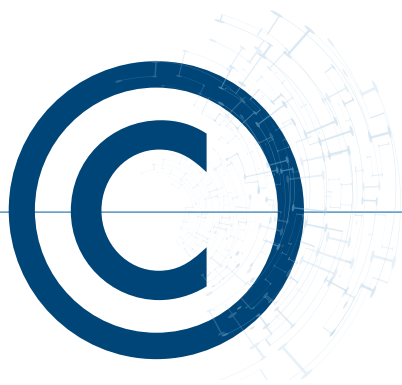
7000 m² covered workshop and 3000 m² warehouse with separate areas for machine overhaul, mechanical and electrical repairs, vehicle storage, washing, dismantling, painting and assembly.

On-site customer service is provided by several teams of technicians and 14 service vans equipped for rapid assistance, that can intervene both mechanically and electrically on any machine or system.

Telephone assistance service available at all times, trained to handle all requests and, if necessary, to forward requests to the appropriate technical area and to coordinate all types of service interventions quickly and efficiently.

External service that, thanks to active cooperation with authorized workshops throughout Europe always guarantees maximum punctuality.





CESARO MAC IMPORT

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