



MIXERS



FULL LINE COMPANY



Le Officine Riunite-Udine SpA represents one of the most well-known player in the international construction market. As a **FULL LINE COMPANY** it offers a complete range of products, solutions and services for working efficiently with concrete (production, transport and laying of concrete):.

The cornerstones of the company policy are continuously focused on **PRODUCT DEVELOPMENT**, and **INNOVATION** aiming to **MAXIMUM SAFETY**, **ENVIRONMENTAL PROTECTION** and the utmost **CUSTOMER CARE**.

IMER GROUP mixers: **REliability and PERfEct MlxlNg**

In the concrete production process, mixing is certainly the most crucial and delicate phase. The quality and cost of concrete depend, in fact, on the quality of the mixer.

The IMER Group mixers are the end result of a systematic study of the problems inherent in the mixing of materials of diverse grain size, shape, consistency and specific weight. These extremely sturdy and reliable mixers are designed for long life: extremely safe, yet simple and versatile, they are built with wear-resistant materials designed to hold maintenance costs down while brilliantly solving the mixing problems in many production environments. The ORU MS and MD mixers stand out for the following features:

- High quality of the concrete
- Perfect homogenization of the materials thanks to the combined movements of the mixing process
- Possibility of mixing any type of concrete
- Fast discharge without residues inside the machine
- Lining of wear-resistant materials
- Versatile configurations (from 1 up to 3 discharging gates)
- Easy cleaning

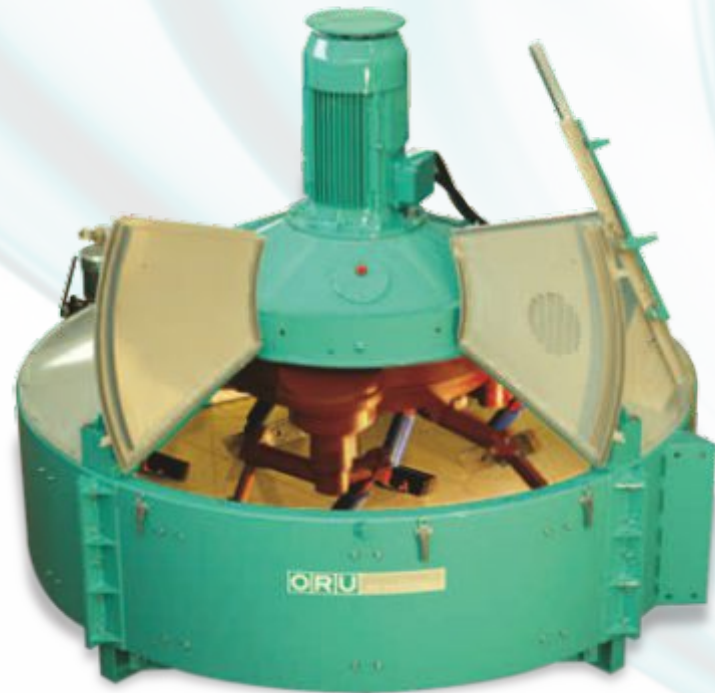
All the IMER Group mixers meet the **EEC directive** and the **UNI EN 1088 European Standard** regarding health and safety in the workplace. In addition to being highly safe and reliable, they are designed and built in full respect of the environment.

Pursuing its **Quality Objective** program, Le Officine Riunite Udine Spa is certified ISO 9001 rigidly checking and monitoring the incoming, the manufacturing process (engineering production - shipment), the finished products and the installation on jobsite



PlanEtar y Pan MixER ORU MS

The ORU MS planetary pan mixer with vertical shafts and coaxial motor allows the rapid mixing of all types of quality concrete: dry, semi-dry and plastic. The great versatility of the ORU MS pan mixer enables it to be used not only in the production of concrete (precast and RMC sectors), but also in the mixing of materials for the production of glass, ceramics, refractory materials, cold asphalt etc.



the reduction unit

The **reduction unit**, specifically designed for a balanced distribution of power to the various mixing devices, rotates on a large disk gear that ensures a low-noise rotation without backlash even under severe working conditions. The mechanism is contained in a single special steel and cast-iron gearcase and the gears, made of 18NiCrMo5 steel, are subjected to a hardening and tempering heat-treatment process to achieve a hardness extending in depth to the core of the gear itself. The lowering of the level of the oil from 10 cm to 4 cm, due to the large diameter of the case in which the gears work in an oil bath, does not affect the excellent operation of the machine. In fact, the oil, subjected to a continuous flapping by a special device, is forced upward within the gearcase, thus ensuring a constant lubrication of all moving devices. The oversize heavy duty reduction unit bearings stand up well to even the most grueling operating conditions. All the components in the reduction unit are individually subjected to painstaking laboratory controls by highly specialized personnel using precision equipment.

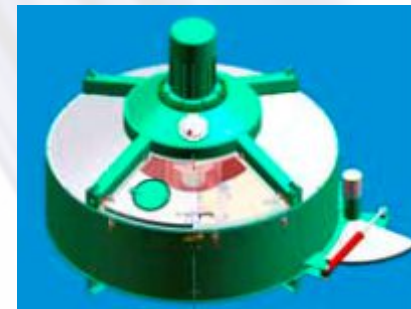


the electric motor

The **electric motor** is coupled to the reduction unit through a mechanical coupling and a hydraulic coupling*, which protect the transmission devices from overloads and impacts, thus allowing a soft startup of the machine even with a full load and with energy power saving. High efficiency and low power input are the most salient features.

An inverter can be installed instead of the couplings able to check the couple itself and the mixing speed during the concrete production process (optional).

*Only the mechanical coupling is provided for the ORU MS 500/330 and ORU MS 750/500 models



Mixing pan, bottom and walls

The **mixing pan** is made of thick steel plate and properly sized /arranged for the accessories assembling. The bottom and the wall plates are made of steel with 500 HB hardness and more (standard version) or, as an optional, they are made of sintered hard metal or polyurethane.



Scraping and mixing blades

The angles of incidence and the profiles of all the blades are carefully studied to draw the best advantage from the power available and to achieve the shortest possible mixing and discharge times. Due to the perfect angle, the blades involve completely the material whilst assure a high level of homogeneity of the concrete and a considerable reduction of the mixing time and the wearing. All blades are reversible, guarantee of longer life.

Each star is made up of two or three arms (depending on the model), each made of special steel with high elasticity index.

The round form of the mixing arms avoids the accumulation of material during the mixing and discharging cycles. They are also covered by anti-wear linings that guarantee a very long lasting nearly eternal. The anti-falling system permits an easy adjustment, fast, perfect and secure.

The scraping blades improve the mixing homogeneity and avoid the accumulation of material on the walls.

All the blades can be made of cast iron or, on request, elastomers or tipped with widia.

The whirling and rotation speeds of the blades have been extensively tested to give a high output without causing the segregation of materials of different grain size and weight. The movement of the material inside the mixing pan is smooth, progressive and continuous. The computer image clearly shows how, after only one complete rotation of the reduction unit, the blade movement completely covers the whole surface of the mixing pan.

On request the ORU MS can be fitted with a small mixer device very suitable for light concretes thanks to the combined effect of material lifting, rotating and pushing down.





Water system

The pan mixer is prearranged to fit with any automatic water metering system (by weight or volume). The water is added through a series of nozzles set at suitable angles which distribute the water over the whole surface of the mixture. The recycled water, directly added into the mixer by mean of a paddle spreader, is managed by a timer water system (on request).

discharge

The pan mixer is discharged very rapidly through a circular discharge door operated by a hydraulic cylinder. The discharge gate seal is fitted with polyurethane gaskets. In case of emergency, the door can be opened by means of a manual pump.

Easy cleaning

The round form of the mixing arms, the elimination of all sharp angles into the mixer, the opening angle of the covering doors for easy access make easier the maintenance/cleaning operations.

Ergonomic closing handle

Inspection door

At the same level with the cover

concrete collection device

Optional

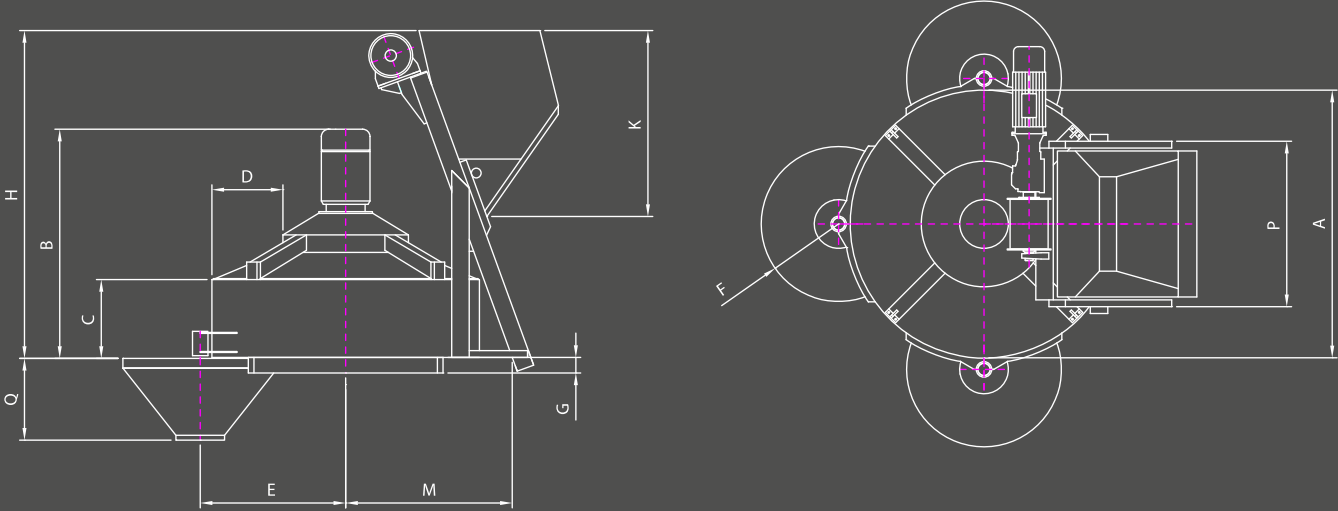
MixER mod. P (ORU MS 500/330P and 750/500P)

The P model mixers, with same size and appearance, presents a different internal configuration from the standard version due to the installation of a sort of whisk. In the standard version, the mixing of the material is mainly characterized by the movement from the wall to the center and vice versa and by the bottom-up overturning; in the P models the whisk adds a further up-bottom movement to the material to be mixed thanks to the centrifugal action of the small blades. This movement, in presence of light concrete, allows obtaining a very homogeneous mixture, particularly suitable for the production of bi-component manufactures used for the superficial finishing layer. The power unit and the mixing time are the same of the standard version.

technical characteristics

ORU MS RANGE	ORU MS 500/330	ORU MS 500/330P	ORU MS 750/500	ORU MS 750/500OP	ORU MS 1200/800	ORU MS 1500/1000	ORU MS 2250/1500S	ORU MS 3000/2000
Loading capacity (l)	500	500	750	750	1200	1500	2250	3000
Loading capacity (kg)	790	790	1200	1200	1900	2400	3600	4800
Fresh output (l)	478	478	725	725	1160	1450	2175	2900
Compacted output (l/kg)	330	330	500	500	800	1000	1500	2000
Mixing and discharging time (sec.)	45	45	45	45	45	45	45	60
Stars and mixing blades (n.)	1x3	1x2	1x3	1x2	1x3	2x2	2x2	3x2
Scrapping blades (n.)	1	1	1	1	1	1	1	1
Tangential blades (n.)	-	-	-	-	-	1	1	2
Gear train (r.p.m.)	16	16	16	16	14,7	12,4	12,4	10,4
Star (r.p.m.)	46	46	46	46	44,5	42	42	35,4
Mixer power supply (kW)	15	15	18,5	18,5	30	45	75	110
Hyd. unit power supply (kW)	2,2	2,2	2,2	2,2	3	3	3	3
Weight (kg)	1800	1900	2000	2100	3500	4800	5600	8800
Mixer (r.p.m.)		150		150				

dimensions (mm)



	ORU MS 500/330 500/330P	ORU MS 750/500 750/500P	ORU MS 1200/800	ORU MS 1500/1000	ORU MS 2250/1500S	ORU MS 3000/2000
A	1.600	1.850	2.200	2.450	2.750	3.300
B	1.540	1.705	1.995	2.240	2.350	2.550
C	650	700	760	805	805	835
D	390	520	590	580	730	860
E	900	1.025	1.220	1.350	1.495	1.770
F	565	615	695	795	795	910
G	120	120	140	140	160	200
H	2.480	2.490	3.045	3.330	3.360	3.825
K	1.190	1.500	1.540	1.650	2.050	2.120
L	140	140	160	180	180	220
M	1.035	1.195	1.385	1.555	1.820	2.020
N	925	925	1.075	1.195	1.160	1.550
P	1.200	1.200	1.400	1.700	1.700	1.900
Q	550	600	725	850	850	1.290



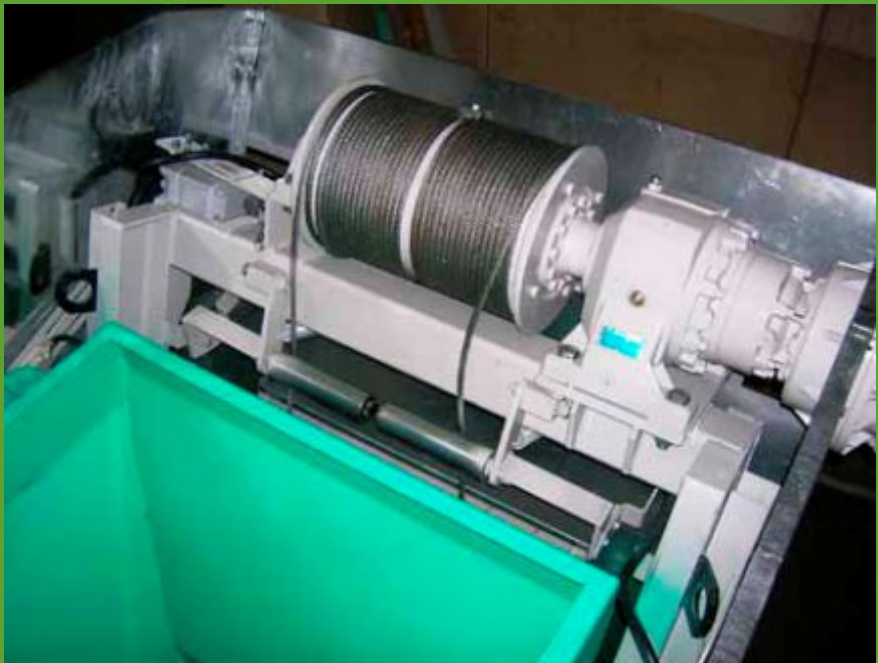
SKIP

The pan mixers can be charged by means of a conveyor or a skip. The skip, available in two different rise/decent speed versions, consists of a double-wound drum of large size with the gearbox beside. The skip moves between rails on 4 special steel wheels and outside on 2 special steel wheels, thus guaranteeing excellent stability of the skip in motion. The mechanical and electrical devices guarantee a long life to the lifting cable and report any operation anomaly . This, together with the other safety devices on the equipment, a high degree of safety. The skip has a truncated pyramid shape with a gravity discharge gate supported by two sturdy bearings.

On request, the skip can be supplied with a vibrator and can be provided with antiwear or non-stick lining (made of special steel or polyurethane).

SKIP - technical characteristics

SKIP RANGE	330/500	750/500	1200/800	1500/1000	2250/1500	3000/2000
Skip capacity (l)	572	866	1300	1732	2598	3464
Maximum capacity (kg)	725	1100	1650	2200	3300	4400
Rise-Decent speed (m/sec)	33	33	33	33	33	33
Power supply (kW)	7,5	9	15	18,5	22	30
Weight (kg)	820	1000	1300	1550	1700	2440



HORIZOntal tWIn-SHAft MIxER

ORU Md

The ORU MD horizontal twin-shaft mixers, thanks to ORU long experience on mixing sector and to the enhanced technological solutions introduced, are suitable for the preparation of various types of concrete (for civil and industrial constructions, dams, light concretes made with materials of low specific weight, mixtures for subfloors and road subgrades). The ORU MD mixer is provided with two horizontal counter-rotating mixing shafts with a turning motion synchronized with each other.

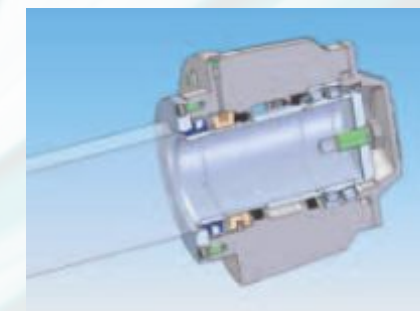
The main outstanding features are:

- oversize mixing pan
- maximum safety performance (improved service factor on gearbox)
- high reliable sealing system
- improved life of wear resistant parts



the mixing pan

The ORU MD mixing pan is oversized with an increased internal space respect to the mixing quantity, which, in turn, enables optimal mixing arms and blades configuration (high quality mix in a short time). The mixing pan itself is realized with high resistance upper bended borders which enables relevant welding reductions. The pan is lined with small bolted and interchangeable elements of special wear-resistant steel.



Sealing systems

The **sealing systems** installed on the mixing shafts are very reliable thanks to the mechanical grease special gaskets combined effect that considerably reduces the ordinary maintenance operations. The automatic greasing system is absolutely high reliable on all its components.

Mixing arms and blades

The steel mixing arms with welded anti-wear protection linings ensures a better mixing efficiency through larger anti-wear protection plates.

The mixing blades, installed on the mixing arms, are made of high resistant anti-wear steel with a profile designed to enhance their strength and shorten mixing times. The angle of inclination of the blades and the arms creates a counter-rotating, partially overlapping, spiral movement of the mixture, so as to obtain a complete forced mix, both horizontally and vertically. **This avoids problems of centrifugal separation or flotation of the lighter materials.**





Gearboxes

The enhanced reduction units are equipped with inlet bevel gears and improved service factor, in order to eliminate any possible overheating risk in heavy-duty conditions.

discharging gate

The discharging gate is fitted with seals and interchangeable linings with and adjustable plates. All these features ensure high tightness also with very fluid mixture. It extends over the whole length of the hopper and allows a rapid and complete emptying of the contents, avoiding all risks of stratification due to rolling.

In case of emergency, the gate can be opened by means of a **manual pump**.

Inspection cover

The **inspection and the maintenance**are facilitated by wide lids and grate-covered gates. The whole construction meets the most stringent safety standards.

Greasing system

Water system

The **water system** allows a uniform distribution of the water over the whole surface, guaranteeing a rapid homogenization of the mixture

charging skip

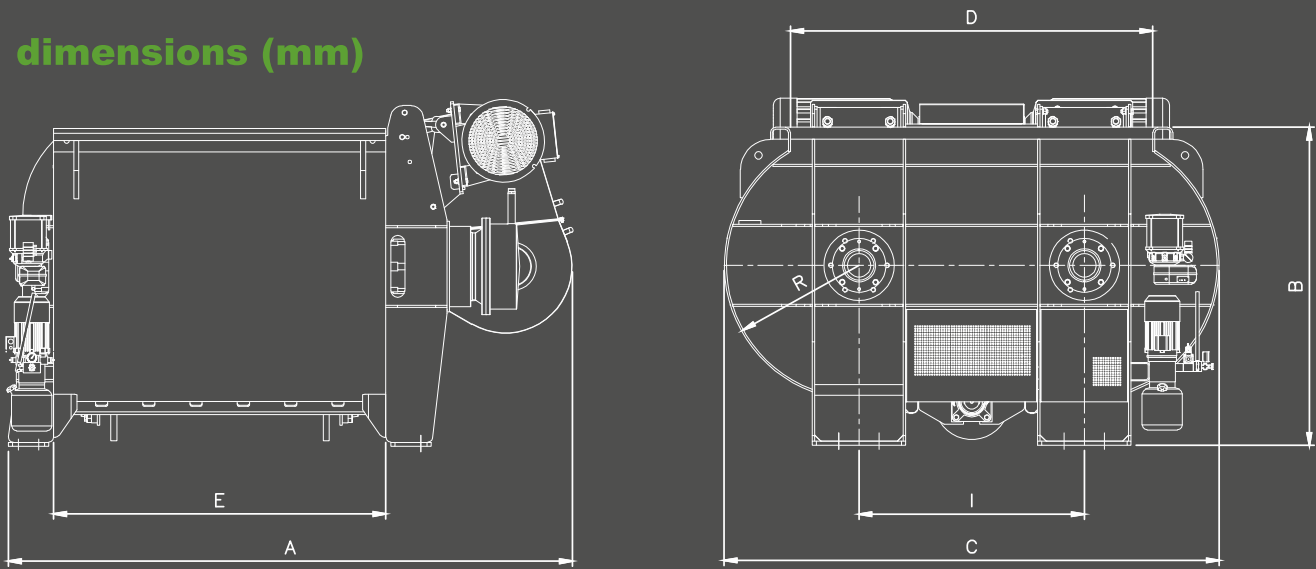
All the models can be provided with a skip with a mechanically operated discharge gate. The skip is lifted by a double steel cable wound on a grooved drum in a single layer for a smaller cable wear. A widely tested safety system holds the skip from falling and prevents major damage to the equipment, even if improper use or maintenance of the equipment lead to the breakage of the lifting cable.



technical characteristics

	ORU MD 3000/2000	ORU MD 3750/2500	ORU MD 4500/3000	ORU MD 5000/3350	ORU MB 6000/4000	ORU MB 6750/4500
Loading capacity (l)	3.000	3.750	4.500	5.000	6.000	6.750
Loading capacity (kg)	4.740	5.930	7.100	7.900	9.480	10.600
Compacted concrete (l)	2.000	2.500	3.000	3.350	4.000	4.500
Time per cycle (sec.)	55	60	65	70	75	80
Max size aggregates (mm)	0-150	0-150	0-150	0-150	0-150	0-150
Mixer power (kW)	2 x 37	2 x 45	2 x 55	2 x 65	2x75	2x90
Mixing blades (n.)	12	16	20	20	16	16
Hydraulic unit (kW)	1,5	1,5	1,5	1,5	-	-
Skip Loading capacity (l)	3.000	3.750	4.500	5.000	6.000	6.750
Standard skip speed (m/min)	35	35	37	37	24	24
Skip power (kW)	30	37	45	55	55	65
Weight (without skip) (kg)	7.100	8.200	9.300	9.500	10.800	11.200

dimensions (mm)



	ORU MD 3000/2000	ORU MD 3750/2500	ORU MD 4500/3000	ORU MD 5000/3350	ORU MD 6000/4000	ORU MD 6750/4500
A (mm)	2800	3280	3780	3830	4300	4300
B (mm)	1580	1580	1580	1580	1940	1940
C (mm)	2460	2460	2460	2460	2860	2860
D (mm)	1800	1800	1800	1800	2250	2250
E (mm)	1650	2120	2590	2590	2476	2476
I (mm)	1120	1120	1120	1120	1260	1260
R (mm)	660	660	660	660	770	770



IMER GROUP MIXERS
accessories

Both the ORU MS and the ORU MD mixers can be complemented with a wide range of accessories that make them suitable to solve even the most specific problems. The equipment available includes additive batching systems, colour metering systems, automatic moisture detection and water metering systems, ecological systems for recycling the concrete and the washing water, steam supply systems, dust exhaust and collection systems, washing systems, airbags, surge hoppers, special linings of the mixing blades and pans.

airbag

The airbag is an expansion chamber designed to collect the air displaced by the charging of aggregate and cement into the mixing pan. This device makes it possible to contain dust discharge into the atmosphere within accepted limits. As alternative, a dust suction filter can be installed.



ORU MS washing system

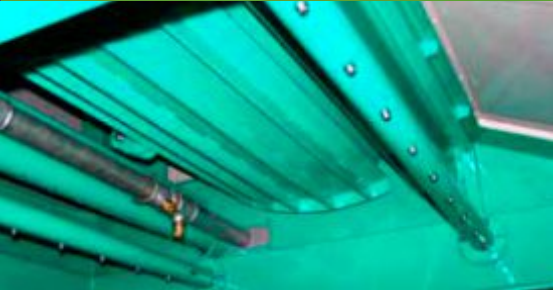
The pan mixer washing system is made up of:

- Pumping unit with 150l/min capacity, 60 bar pressure and 15 kW power input ;
- Galvanized steel water tank of 1.000 litre capacity;
- Manual washing nozzle
- Automatic rotary head.

This equipment is available in manual and automatic version. The washing system, used during the cycle phases, allows the mixing of concretes with different colour or mix design avoiding the contamination of the batches. The frequent use (several times a day) makes easier and more efficient the cleaning at the end of the working day.

standard System

Just for ORU MS 500/330



ORU Md Washing System

The washing system is composed of two collectors with nozzles moved by a hydraulic system: the high pressure flow involves the whole mixing pan. The washing system is made up of a pumping unit with 150l/min capacity, 60 bar pressure and 15 kW power input and a galvanized steel water tank of 1.000 litre capacity;



Moisture mix probe

The **moisture-mix probe** installed on the bottom of the pan mixer measures and displays the percentage of moisture contained in the mix. The microwave probes are usually installed in our mixers.

A correct positioning contributes towards a correct measurement of moisture. To ensure a precise w/c ratio it is very important to interface the probes with a good automation system able to accurately process the data and also excluding any anomalies

Thanks to the specific software for the microwave reading of the moisture probe, it is possible to achieve a high level of water metering accuracy.

accessories for ORU MS planetary pan mixer

- Automatic high-pressure washing systems for the pan mixer
- Automatic microwave moisture detection systems
- Heating systems with hot water or steam
- Cooling systems with refrigerated water or ice
- Aggregate waiting hopper /skip/belt
- Concrete waiting hopper
- Additive metering based on weight, volume or timer controlled systems
- Metering system for colours in liquid or powder form
- Duct suction and collection system
- Airbag
- Concrete sample collection system
- Up to two supplementary circular discharge gates operated by hydraulic cylinders with partial or total opening
- Bottoms and walls lined with sintered hard metal plates
- Mixing blades tipped with elastomers or widia
- Dosing system for metal fibres
- Dosing system for plastic fibres
- Temperature probes
- Cement weighing hopper with 1 or 2 bins

accessories for ORU Md horizontal-shaft mixer

- Automatic high-pressure washing systems for the mixer
- Automatic microwave moisture detection systems
- Heating systems with hot water or steam
- Cooling systems with refrigerated water or ice
- Aggregate waiting hopper /skip/belt
- Concrete waiting hopper
- Additive metering based on weight, volume or timer controlled systems
- Metering system for colours in liquid or powder form
- Duct suction and collection system
- Airbag
- Automatic centralized grease lubrication system
- Extra-thick mixing blades made of 500 HB steel or chromium cast iron with high resistance
- Mixing pan lined with heat-hardener plates
- Shaft cleaning rings
- Dosing system for metal fibres
- Dosing system for plastic fibres
- Temperature probes
- Cement weighing hopper with 1 or 2 bins
- Further discharging gate



Single-Shaft HORIZONTAL Mixer

ORU Mx

The **ORU MX single-axe mixer (the heart of the system)** owing to its operating system, can mix the various types of material with different specific gravities, such as light concretes, expanded concretes, expanded clay, polystyrene, sandy mixes, mortars and concretes of all classes (from S1 to S5 with no difficulty whatsoever). Owing to the layout of the helix-shaped blades which create a flow and a backflow, movement of the material inside the mixing case takes place by continuous lifting/overturning together with movements from right to left and vice versa.

As may be easily understood and demonstrated, this type of motion is the most effective and allows the mixing of materials that differ from one another, both in terms of specific gravity and class (at the most the mixing time changes). In the case of very wet concretes (class S5) or with higher mixing time than standard, with this mixer no adverse effects take place on the material (segregation of materials) and no grout comes out of the discharge mouth, as occurs in other types of mixers with the outlet located in the bottom part during mixing. In addition, also with very dry concretes (class S1 S2) the effect of overturning the material warrants the quality of the mix.





cilyndrical mixing pan

The **cylindrical mixing pan** , made of heavy-gauge steel sheet, is crossed by a central shaft bearing two opposed semihelix-shaped blades. The blades, moved by the rotating shaft, make the material turn over, and move from right to left and vice versa. Inside the hopper is lined with wear-proof material subdivided into interchangeable parts. In the top part of the hopper there is the loading mouth which during loading and mixing is hermetically sealed by rubber seals in contact with the bottom part of the batching hoppers, thereby preventing dust and splashes of concrete from coming out. An inspection gate has been created on the top to view the mix. This mixing method is very fast and effective even with mixes consisting of materials with different specific weight, avoiding the creation of lumps and segregation. Single-shaft mixers are very versatile: they are recommended for S1, S2, S3, S4, S5 consistency class concrete, for heavy, normal and light concrete (foam concrete, with polystyrene, expanded clay, etc.).

Mixing shaft

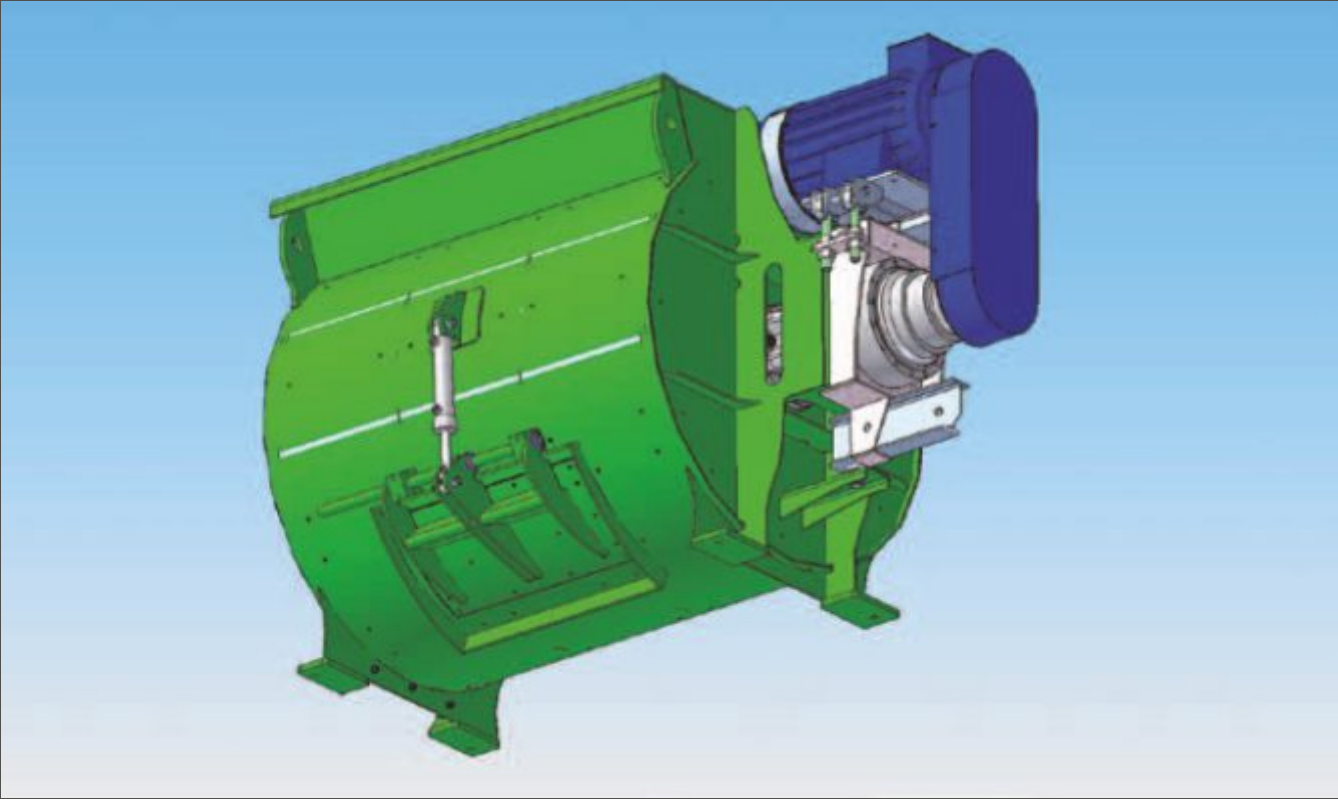
The **mixing shaft** is formed by flanged arms carrying the semi-helix-shaped blades. The blades are composed of a fixed support and an interchangeable part subjected to wear. The rotation axle rests on a support subdivided into two completely separate parts. The outer part contains the bearings (on which the shaft turns). In the inner part of the mixer a set of labyrinth oil-bath seals are fitted to prevent material from coming out during mixing (automatic and manual greasing). An oil-bath reduction unit powered by a fluid power motor turns the shaft.

discharging mouth

The **discharging mouth** is mechanically operated. During working operations it is in the middle-top part of the mixer, during unloading the tank is moved outwards and rotated to bring it down.

technical characteristics

ORU MX RANGE	ORU MX 1200/800	ORU MX 1500/1000	ORU MX 1875/1250	ORU MX 2250/1500
Pan capacity (l)	1.760	2.200	2.740	3.300
Loading capacity (l)	1.200	1.500	1.875	2.250
Loading capacity (kg)	1.920	2.400	3.000	3.600
Fresh concrete output (l)	1.160	1.450	1.815	2.175
Compacted concrete output (m³)	0,80	1,00	1,25	1,50
Mixer power (KW)	30	37	45	55
Mixing and discharging time (s)	30+10	30+10	30+10	30+10
Discharging gate	operated by a hydraulic cylinder	operated by a hydraulic cylinder	operated by a hydraulic cylinder	operated by a hydraulic cylinder
Hydraulic unit power (KW)	1,5	1,5	1,5	1,5
Skip power (KW)	15	18,5	22	18,5
Skip speed (m/min)	33,0	33,0	33,0	33,0
Weight (kg)	3.500	4.400	4.800	5.200
Pan diameter (mm)	1.400	1.400	1.560	1.560
Pan length (mm)	1.200	1.500	1.500	1.800



MIXERS



Rozenblat®

www.rozenblat.pl

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