

Dear Customer,  
compliments on your purchase: this IMER mixer, the result of long-standing experience in the field, features maximum reliability and innovative technical solutions.

**! - WORKING IN SAFETY**

To work in complete safety, read the following instructions carefully before using the machine.

This OPERATION AND MAINTENANCE manual must be kept by the Site Manager and be always available for consultation.

The manual is considered part of the machine and must be stored for future reference (EN 12100) through to scrapping of the machine itself. Should the manual be lost or damaged, a replacement copy can be ordered from the manufacturer.

The manual contains important information regarding site preparation, machine use, maintenance procedures, and requests for spare parts. Nevertheless, the installer and the operator must both have adequate experience and knowledge of the machine prior to use.

In order to ensure operator safety, safe operation and long service life, it is imperative to adhere to the instructions set out herein and the requirements of the legislation in force governing safety in the workplace. Use individual safety equipment (suitable shoes and clothing, gloves, safety glasses, etc.).

**! - Make sure that all signs are legible.**

**! - It is strictly forbidden to carry out any form of modification to the steel structure or working parts of the mixer.**

IMER INTERNATIONAL accepts no liability for failure to comply with laws governing the use of this type of equipment, with particular reference to: improper use, incorrect power supply, lack of maintenance, unauthorised modifications, failure to comply, either wholly or partially, with the instructions set out in this manual.

IMER INTERNATIONAL reserves the right to modify features of the mixer and contents of this manual, without the obligation to update previous machines and/or manuals.

**1. TECHNICAL DATA**

Technical data are stated in table 1 and electrical specifications in table 2.

Table 1 - TECHNICAL DATA	
Model	MIX 120 PLUS
Drum capacity	120 l
Mix capacity (approx.)	60 l
Paddle rpm	38 Rpm
Paddle rotation direction (view from loading mouth)	Clockwise
Wheel dimensions	250 mm
Single phase motor power	1.4 kW
Overall dimensions (width x length x height)	780x880x1000 mm
Machine weight	130 Kg
Weight with packaging	139 Kg

Table 2			
Feature	Motor (230V/50Hz)	Motor (220V/60Hz)	Motor (110V/50Hz)
Power (kW)	1.4	1.4	1.4
Rated voltage (V)	230	220	110
Frequency (Hz)	50	60	50
Absorbed current (A)	9	9.4	15
Number of poles	2	2	2
rpm	2800	2800	2800
Service type	S1	S1	S1
Insulation category	F	F	F
Protection category	IP55	IP55	IP55
Capacitor (µF)	50 (Ø 55x94)	50 (Ø 55x94)	100 (Ø 50x120)

**2. NOISE LEVEL AND VIBRATIONS**

Table 3 gives the sound pressure level of the machine measured at the ear of the operator when running empty (LPA) and vibrations transmitted when it is operating.

Table 3			
Model	Type of motor	L <sub>pa</sub>	A <sub>eq</sub>
MIX 120 PLUS	Electric	86 dB	2 m/s <sup>2</sup>

**3. DESCRIPTION AND OPERATION**

**! - The mixer is intended for use on construction sites for mixing a wide range of fine grained materials, both wet and dry, premixed in bags or drawn from silos, of low and high viscosity (mortar, paints, plaster, cement, adhesives, resins, coatings, vibration-damping materials, insulation).**

**! - Do not use the machine in environments subject to temperatures below 0° C.**

The mixer is composed of a frame (ref.1, fig.1) which supports the mixing tank (ref.2, fig.1).

The tank mounts the gear reducer (ref.6, fig.1) driven by the motor (ref.5, fig.1) via a poly-V drive belt.

The reducer's output shaft delivers the drive to the mixer head.

The tank can be emptied by opening the outlet (ref.7, fig.1) by hand.

The motor is started and stopped with the switch on the electrical cabinet (ref.8, fig.1).

The electrical cabinet has a plug (ref.9, fig.1) for connecting to the electric power supply.

**4. SAFETY MEASURES**

The IMER mixer is designed to operate on construction sites and is not equipped with its own lighting; the work site must be well illuminated (min. 300 lux).

**! - Never use the machine in areas at risk of explosion/fires.**

1. The IMER mixer will only run if all its safety devices are in place and in perfect condition.

2. Do not use improvised and/or defective power supply lines.

3. The connection lines on the site must be laid in such a way that they cannot be damaged. Never stand the mixer on its power supply cable.

4. The plug/socket connections must be protected from water. Use only connectors equipped with protection against water jets (IP67).

5. Repairs to the electrical installation must be performed exclusively by specialised personnel. Do not make any adjustments or carry out any maintenance work while the machine is powered up or running.

**! - Never put your hands or tools into the tank while the machine is running.**

**! - Take care, when handling mix components, not to raise dust which may be inhaled. If this is not possible, masks must be worn to protect the mouth and nose.**

**! - To stop the mixer, use the switch (ref.8, fig.1). Do not attempt to stop the mixer in any other manner.**

**5. ELECTRICAL SAFETY**

The IMER mixer is constructed in line with the provisions of EN 60204-1, and is protected against jets of water (IP 55) and equipped with protections against overloads and automatic restarting after power failures.

**6. MECHANICAL SAFETY**

The hazardous points on the IMER mixer are protected by means of safety devices, which must remain fitted at all times and kept in perfect condition - as, for instance, the drive belt guard.

The tank is fitted with a guard which enables mix components to be loaded into it while preventing access to the mixing area (ref.10, fig.1).

The machine is equipped with an electrical safety (interlock) which prevents it from running when the mixer tank guard is open.

The machine is also equipped with a guard on its outlet to prevent access to the mixing area (ref.11, fig.1).

## 7. TRANSPORT

Use the machine's handles (fig.4) to move it; these must be pulled out one at a time:

1. grasp a handle (ref.1, fig.4) and remove its locking pin (ref.2, fig.4).
2. Pull the handle (ref.1, fig.4) fully upwards.
3. Fit the locking pin (ref.2, fig.4).

Repeat with the other handle.

The mixer may also be moved with its four wheels (fig.5).

**! - Before moving the mixer in this way, make sure the tank guard safety hook (ref.12, fig.1) is engaged.**

When lifting with a hoist or similar equipment, hook a four-point harness into the holes on the frame (fig.3). Make sure the harness has arms of at least 1500 mm.

**! - Each arm of the harness must be rated for loads greater than the total weight of the mixer.**

**! - Always pull out its power plug before moving the mixer.**

## 8. INSTALLATION

Unpack the machine.

The machine is supplied with its legs removed, these must be assembled:

1. Fit the wheels into the rear legs and lock them with their cotters.
2. Raise the mixer and fit the front and rear legs; lock the legs at the desired height with their lock pins. Follow the layout given in fig.9.

The height of the mixer should enable easy unloading into the wheelbarrow used to move the mixed product around the worksite.

**! - Place the mixer on a stable, level surface (max slope 5°, see fig.2), so that it doesn't sink into the ground or tip over when running.**

**! - Leave at least 2 m clearance around the machine for handling materials and product.**

## 9. ELECTRICAL MAINS CONNECTION

**! - Make certain that a residual current device and miniature circuit breaker are installed on the electrical power line.**

### 9.1 Connecting versions with motor 220-230V/50Hz

Ensure that the supply voltage corresponds to machine dataplate specifications. At full load it must be between 205V and 240V.

**! - To supply the machine it is necessary to use a 2-pole + ground cable in order to ensure the machine's connection to the site's equipotential system.**

### 9.2 Connecting versions with motor 110V/50Hz

Ensure that the supply voltage corresponds to machine dataplate specifications. At full load it must be between 95V and 130V.

**! - To supply the machine it is necessary to use a 2-pole + ground cable in order to ensure the machine's connection to the site's equipotential system.**

### 9.4 Sizing the power supply cable

The power supply line must be suitably sized to prevent voltage drops. Do not use cable winders. The electric cable wire size must take into account the operating currents and length of the line to avoid excessive voltage drops (table 4).

Table 4					
Model	Type of motor	Cable (mm <sup>2</sup> )			Cable length (m)
		1.5	2.5	4.0	
MIX 120 PLUS	230 - 220V 9-9.4A	0 ÷ 19	20 ÷ 32	33 ÷ 50	
	110 V 15 A	0 ÷ 12	13 ÷ 19	20 ÷ 30	

The power supply cables used on the site must have an outer jacket that is resistant to crushing, wear and weather (e.g. H07RN-F).

## 10. COMMISSIONING THE MACHINE

Before connecting the machine to the electrical mains, ensure that all safety devices are fitted and are in perfect condition, that the extension

cord is in good condition and that the plugs and sockets (of the type protected against jets of water) are not wet.

Connect the mains power cable to the plug on the electrical panel. Start the mixer with the switch on the cabinet (ref.8, fig.1).

**! - The motor is protected against overloads by a thermal cut-out. It stops the machine automatically if it overheats. Allow the motor to cool down before starting it up again.**

## 11. EMERGENCY - STOP

**! - In case of emergency, stop the machine by pressing the emergency button. Then pull out its power plug. To start again, reconnect the power plug and turn the power switch to "1".**

## 12. OPERATION

For best mixing results and regular operation, the mixer must be installed on a level surface.

**! - Check that the machine stops as soon as the tank guard is opened.**

The machine must be started when the tank is empty.

**! - Do not start the machine when it is fully loaded.**

The tank guard is equipped with bag breaker blades to facilitate using premixed product. Load the mix components alternately, in the amounts required for the type of product, so as to reduce mixing time as far as possible.

**! - Load the material with the blades turning.**

**! - Only load the specified products into the tank.**

**! - Do not insert your hands or tools into the tank when the blades are turning.**

**! - Do not fill the tank beyond its mixing capacity (table 1).**

Ruin the machine for as long as it takes to obtain an even mix of the right consistency.

Empty the tank with the blades turning by opening its outlet by hand.

To do this, pull the lever (ref.1, fig.6), for its full stroke, to position B.

To close the outlet, return the lever (ref.1, fig.5) to position A.

**! - Make sure to place a container under the outlet before you empty out the tank.**

If any of the mix is left inside the tank for further use, the blades must be left turning until it is used. We recommend leaving the mix inside the tank as little as possible once it has reached the right consistency.

### 12.1 Blades jam while running

It may occur that the machine stops mixing because the mix is too dense.

To unjam the blades, proceed as follows:

1. Switch the machine off by setting the power switch (ref.8, fig.1) to "0".
2. Invert the direction of rotation of the blades by setting the switch (ref.8, fig.1) to "2".
3. Wait for a short time (5-10 seconds); then switch the machine off by setting the power switch (ref.8, fig.1) to "0".
4. Restore normal operation by turning the power switch (ref.8, fig.1) to "1".

**! - The machine only runs properly with the power switch set to "1" (blades turn clockwise)**

## 13. MAINTENANCE

**! - Maintenance must be done by adequately trained personnel, after switching off the machine, disconnecting it from the power supply and emptying the tank.**

**! - Make sure the guards/safety equipment are always functional and in good condition.**

Every two months of operation, check:

- the belt tension.
- the condition of the poly-V drive belt and pulleys.

Check weekly that the plug contacts on the electrical cabinet are clean, dry and rust free.

**⚠** - Periodically check the condition of the power cable jackets exiting the cabinet.

**⚠** - Periodically check, by raising the guard (ref.10, fig.1) 10mm, that the machine stops as soon as the tank guard is opened.

### 13.1 Cleaning

Before a long work pause or at the end of the shift, the mixer tank must be thoroughly cleaned by abundant washing. If you use a high-pressure hose to clean the machine, do not aim the water jet directly at the plug/socket connection or power switch.

**⚠** - When manually cleaning the tank, make sure not to run the machine.

**⚠** - Do not dump the waste water on the site.

**⚠** - If the guards are removed for cleaning, they must be reinstalled on completion.

Do not strike the tank with hammers, shovels, etc. Dents reduce the effectiveness of mixing and also make the tank harder to clean.

### 13.2 Belt tension

1. Switch off the motor and disconnect the power plug.  
2. Remove the belt guard (ref.2, fig.7) by undoing the bolts securing it (ref.1, fig.7).

3. Loosen the 4 screws (ref.3, fig.7) securing electric motor mount and pull the belt (ref.5, fig.7) with the screw (ref.4, fig.7) if the tension is correct, applying a force of around  $F=1.5$  kg at the centre of the belt's free section should displace it by around  $f=5$  mm (fig.8).

**⚠** - Do not overtension the belt, as this reduces its life and that of the reducer and motor bearings.

6. Once the belt is correctly tensioned, tighten down the 4 bolts (ref.3, fig.7).

7. Reinstall the belt guard (ref.2, fig.7) with its bolts.

### 13.3 Replacing the belts

1. Switch off the motor and disconnect the power plug.  
2. Remove the belt guard (ref.2, fig.7) by undoing the bolts securing it (ref.1, fig.7).

3. Slacken off the 4 bolts (ref.3, fig.7) securing the motor mount and slacken off the belts (ref.5, fig.7) with the screw (ref.4, fig.7) until they can be slipped off the motor and drive reducer pulleys.

4. Fit the new belts, first onto the reducer pulley and then onto the motor pulley.

5. Tension the belts (ref.5, fig.7) with the screw (ref.4, fig.7): if the tension is correct, applying a force of around  $F=1.5$  kg at the centre of the belt's free section should displace it by around  $f=5$  mm (fig.8).

6. Once the belt is correctly tensioned, tighten down the 4 bolts (ref.3, fig.7).

7. Reinstall the belt guard (ref.2, fig.7) with its bolts.

Check the belt tension again after the first 4 hours of operation with the new belts, and repeat the check every 18-20 hours.

### 13.4 Removing the outlet guard

1. Undo the bolts (ref.20, fig.1) and remove the guard (ref.24, fig.1).  
2. To refit the guard (ref.24, fig.1) align its holes with the mount holes and reinstall the bolts (ref.20, fig.1).

dual safety equipment. The machine is equipped with notices to indicate the residual risks and how to avoid them.

### 13.5 wheel installation - legs

#### UPPER AXLE

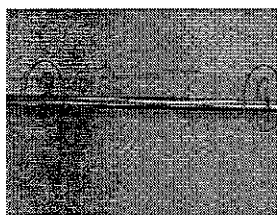


fig.1

INSERT THE COTTER PINS INTO THE TWO THROUGH HOLES IN THE AXLE (FIG. 1)

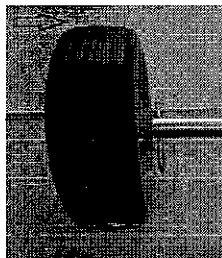


fig.2

FIT THE WHEELS ONTO THE AXLE (FIG. 2)



fig.3

INSERT THE SPACER BETWEEN THE TWO BRACKETS ON THE FRAME, AND THEN INSERT THE HEXAGON HEAD SCREWS INTO THE HOLES (FIG.3).

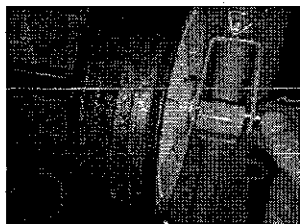


fig.4

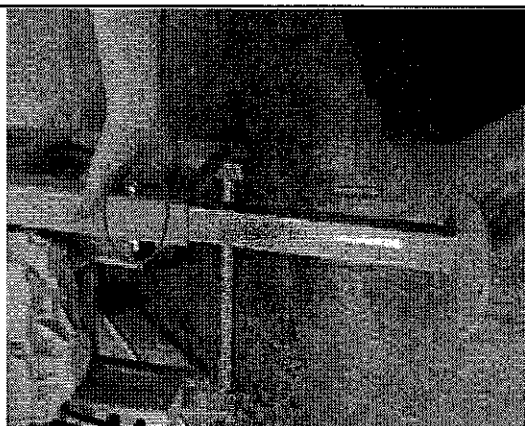
TAKE THE AXLE WITH THE WHEELS AND SCREW IT IN PLACE USING THE HEXAGON HEAD SCREWS INSERTED PREVIOUSLY (FIG. 4).

#### MOUNTING THE WHEELS ON THE LEGS



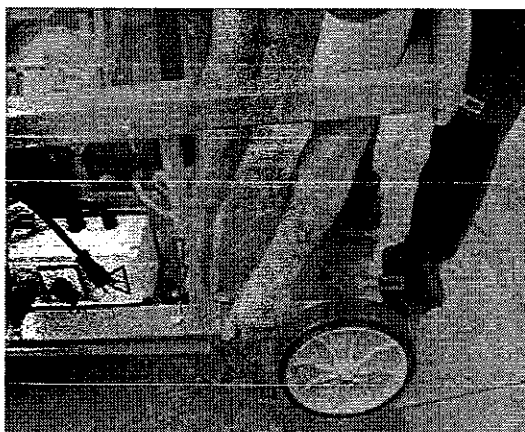
fig.5

EXTRACT THE TWO REAR LEGS, AND INSERT A WHEEL ONTO THE PIN ON EACH ONE. THEN SECURE THE WHEEL BY INSERTING THE OUTER COTTER PINS INTO THE THROUGH HOLES (FIG.5).



**fig.6**

INSERT THE FRONT LEGS INTO THE FRAME, AND SECURE THEM BY INSERTING THE PINS INTO THE DEDICATED ADJUSTMENT HOLES.  
SECURE THE PIN WITH THE DEDICATED SAFETY CLIP (FIG.6).




**fig.7**

INSERT THE TWO REAR LEGS WITH WHEELS INTO THE FRAME, AND SECURE THEM BY INSERTING THE PINS INTO THE DEDICATED ADJUSTMENT HOLES (FIG.7).

### 13.6 Repairs

Repairs must be done exclusively by specialised personnel. Use exclusively original IMER spare parts; modifications to parts are strictly prohibited.

 - **Never start up the mixing machine during repairs.**

 - **If any guards are removed for repairs, ensure they are correctly refitted at the end of work.**

### 14. RESIDUAL RISKS AND SAFETY NOTICES

Although the machine is constructed in line with established legislation, certain residual risks cannot be eliminated and require the use of individual safety equipment. The machine is equipped with notices to indicate the residual risks and how to avoid them.

#### NOISE HAZARD



*Wear ear defenders*

#### HAND CRUSHING/SHEARING HAZARD



*Wear gloves*

#### EYE INJURY HAZARD



*Wear safety glasses*

#### INCORRECT USE HAZARD



*Read the manual before operating the machine*

#### TRAPPING/CRUSHING AND SHEARING HAZARD



*Do not remove the guards*



*Do not touch drive components*



*Keep the hands away from the outlet*


#### ELECTROCUTION HAZARD



*Danger - electrical power*

Note that the employer is responsible for ensuring his workers use individual safety equipment.

### 15. TROUBLESHOOTING

 - **CAUTION!!! All maintenance operations must be performed exclusively with the machine switched off, with the selector set to "0" and the power plug disconnected from the mains.**

Fault	Cause	Remedy
Motor does not start when switch is turned	Defective power cable	Check power cables *
	Plug not inserted in socket correctly	Ensure correct connection
	Power cable from plug to control panel detached	Remake the connection *
	Loose wire inside motor circuit board	Remake the connection *
	Loose wire inside motor circuit board	Remake the connection *
	Limit switch malfunction	Replace limit switch *
	Faulty main switch	Replace switch *
	The overload safety device has been activated	Wait for a few minutes and then try restarting the machine
	Tank guard open	Close tank guard
Outlet does not open	Blocked outlet guard	Remove and clean outlet guard
During mixing, the blades slow down or jam	Belts are worn or slack	Tension or replace the belts
* Operation to be carried out by an electrician		