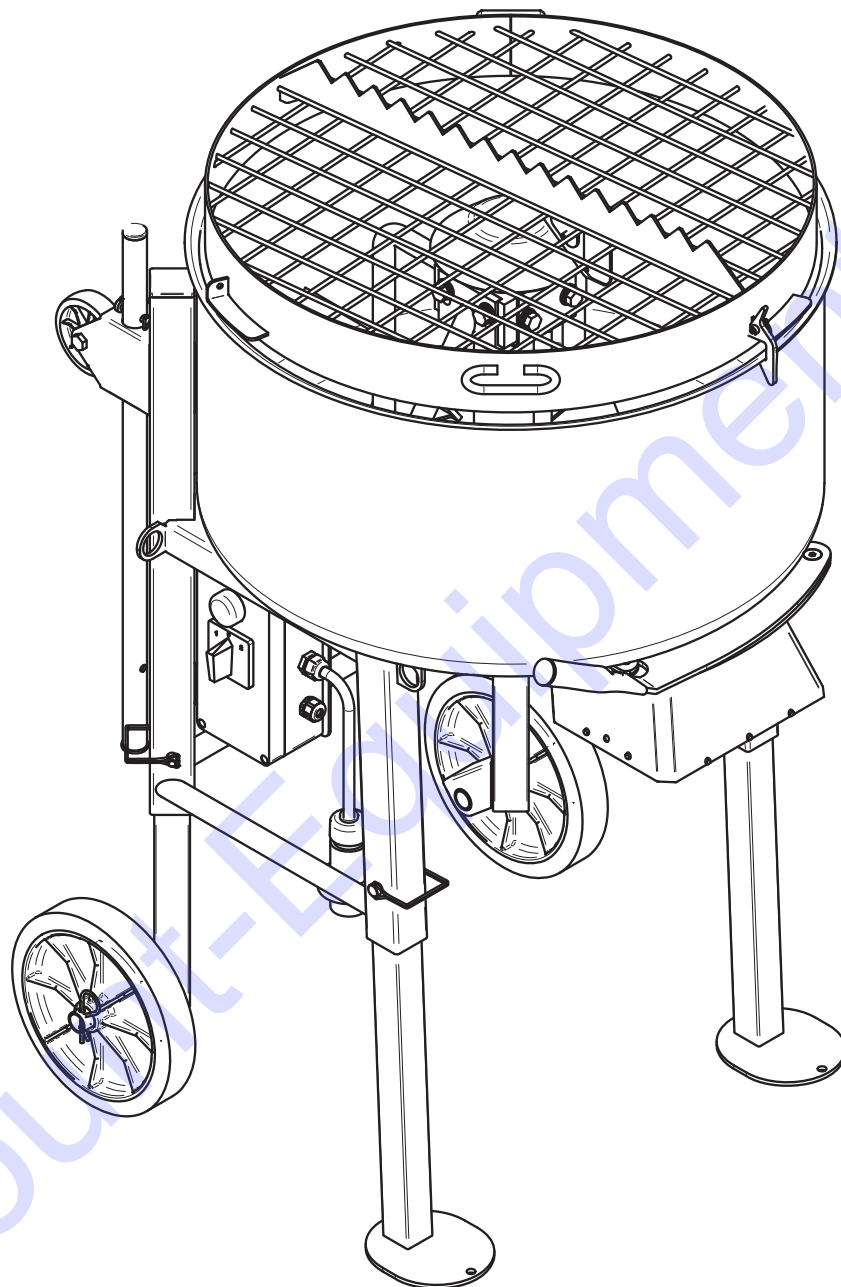


MORTARMAN 120 PLUS

MIXER



OPERATING, MAINTENANCE, SPARE PARTS MANUAL

**Discount
Equipment**

2015/10 - R04

Cod. 3230425

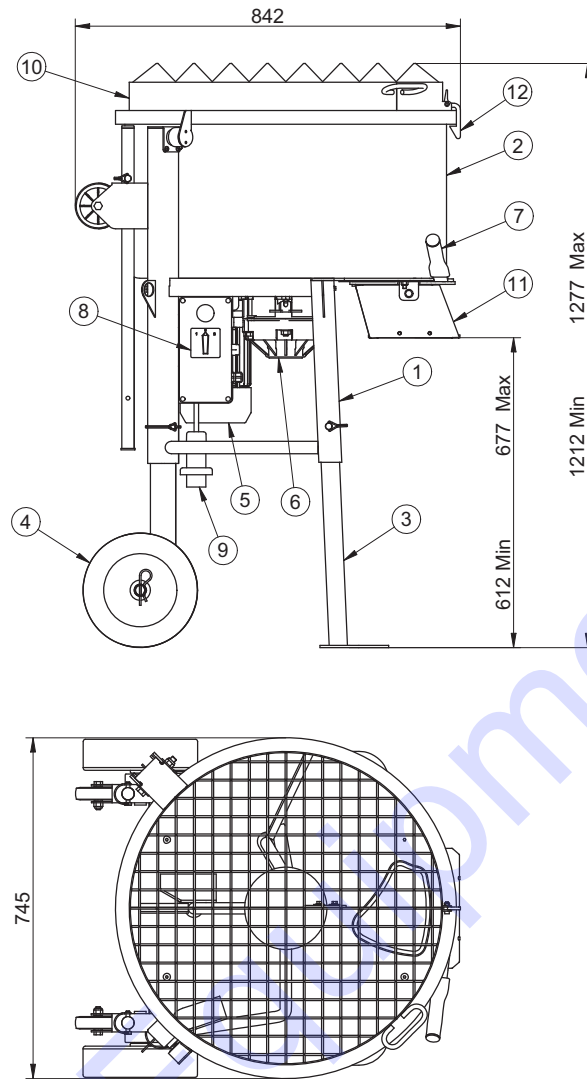


FIG.1

REF.	DESCRIPTION
1	Frame
2	Tank
3	Telescopic support leg
4	Wheel
5	Motor
6	Reduction gear
7	Outlet
8	Start and stop switch
9	Electrical connection socket
10	Tank protection
11	Outlet protection
12	Safety hook

Particolare attenzione deve essere fatta alle avvertenze contrassegnate con questo simbolo:
 Il faut pr ter une attention toute particuli re aux notes pr c d es de ce symbole:
 Special attention must be given to warnings with this symbol:
 Lesen Sie die mit diesem Symbol bezeichneten Abschnitte mit besonderer Aufmerksamkeit:
 Se tiene que prestar una atenci n especial a las indicaciones marcadas con el signo:



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 12100-2) 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	MORTARMAN 120 PLUS
Drum capacity	120 l
Mix capacity (approx.)	90 l
Paddle rpm	38 Rpm
Paddle rotation direction (view from loading mouth)	Clockwise
Wheel dimensions	300 mm
Single phase 115V/60Hz 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 (115V/60Hz)
Power (kW)	1.4
Rated voltage (V)	115
Frequency (Hz)	60
Absorbed current (A)	14.5
Number of poles	2
rpm	2800
Service type	S1
Insulation category	F
Protection category	IP55
Capacitor (µF)	100 (Ø 50x120)

2. DESIGN AND CONSTRUCTION STANDARDS

The MORTARMAN 120 PLUS mixer is designed and constructed in line with the following harmonized standards: EN 12151:2008; EN 12100-1/2:2005; EN 60204-1:2006.

3. 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 _{PA}	A _{eq}
MORTARMAN 120 PLUS	Electric	70 dB	2 m/s ²

4. 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.

5. 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.

6. 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.

7. 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).

8. 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.

9. 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.

10. ELECTRICAL MAINS CONNECTION

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

10.1 Connecting versions with motor 115V/60Hz

Ensure that the supply voltage corresponds to machine dataplate specifications. At full load it must be between 103V and 126V.

! - 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.

10.2 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).

Model	Type of motor	Cable (mm ²)			Cable length (m)
		1.5	2.5	4.0	
MORTARMAN 120 PLUS	115 V 14.5 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).

! - For the conformity of the power supply, see CEI-64-8 (harmonisation of CENELEC HD384).

11. 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.

12. 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".

13. 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.

13.1 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)

14. 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) 10 mm,

that the machine stops as soon as the tank guard is opened.

14.1 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.

14.2 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.

14.3 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=5mm (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.


14.6 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).

14.7. 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.

15. 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


ELECTROCUTION HAZARD



Danger - electrical power

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

16. 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 *
Outlet does not open	The overload safety device has been activated	Wait for a few minutes and then try restarting the machine
	Tank guard open	Close tank guard
During mixing, the blades slow down or jam	Blocked outlet guard	Remove and clean outlet guard
	Belts are worn or slack	Tension or replace the belts
* Operation to be carried out by an electrician		

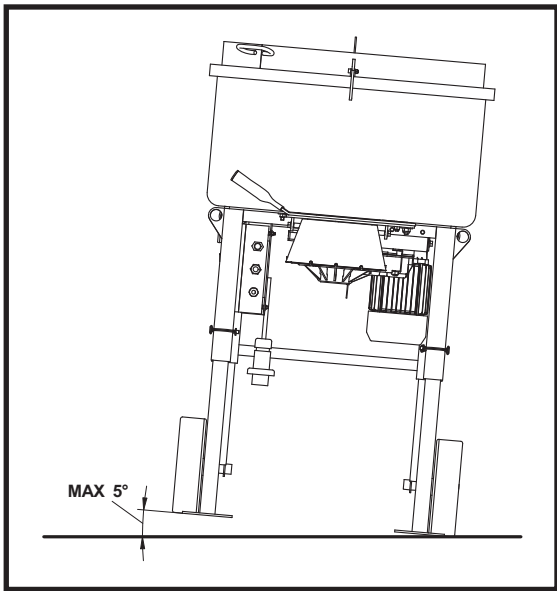


Fig.2

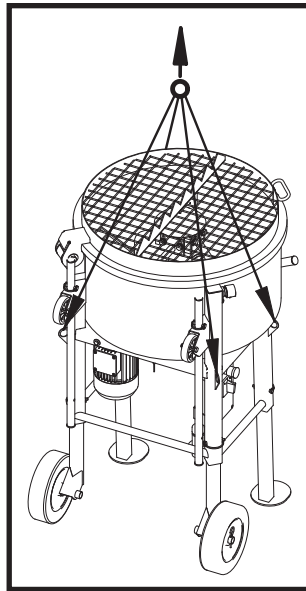


Fig.3

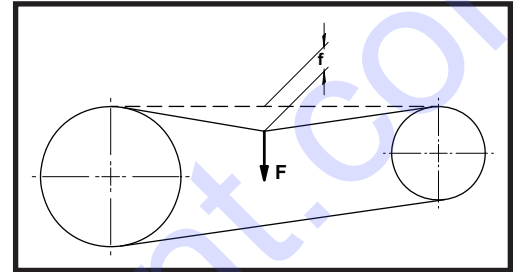


Fig.8

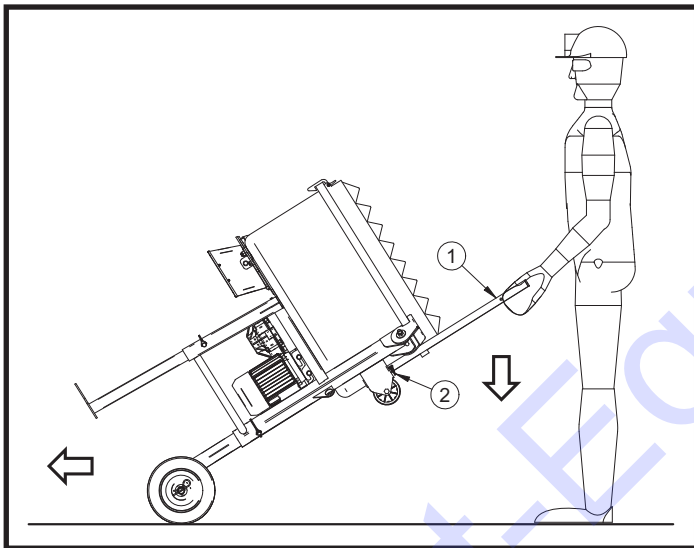


Fig.4

Fig.5

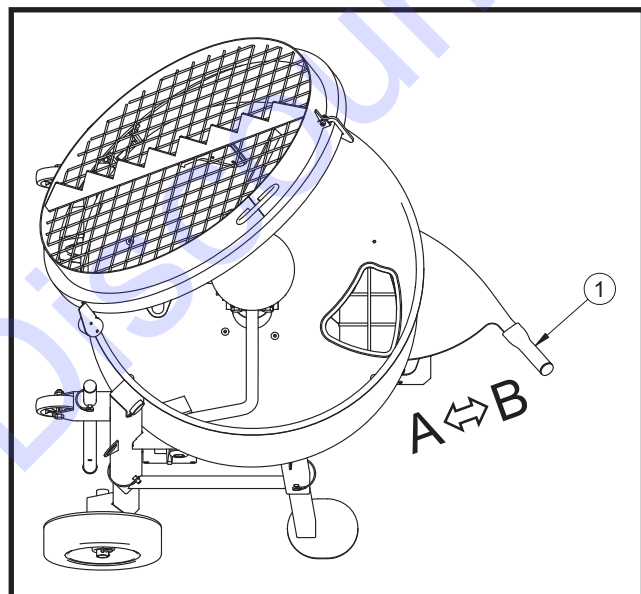
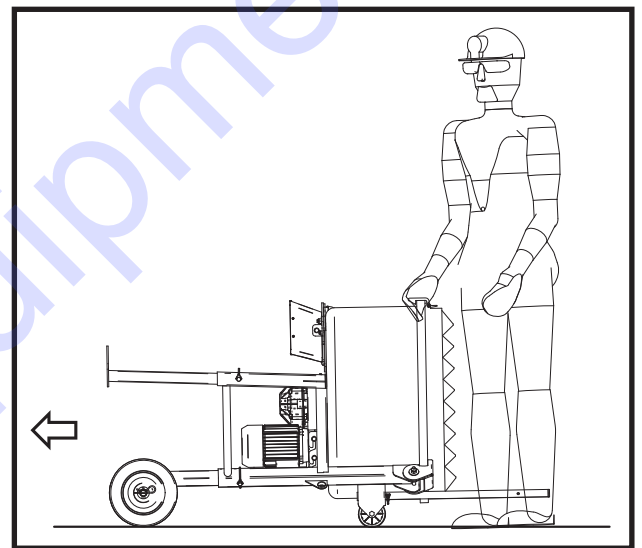
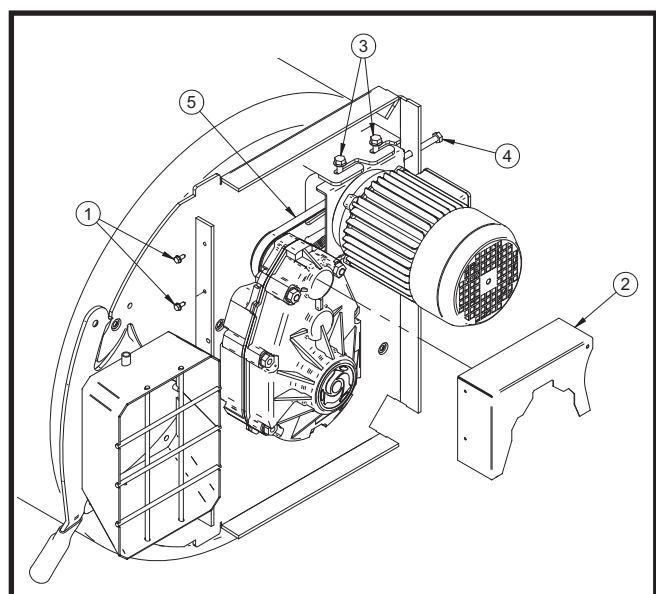


Fig.6

Fig.7



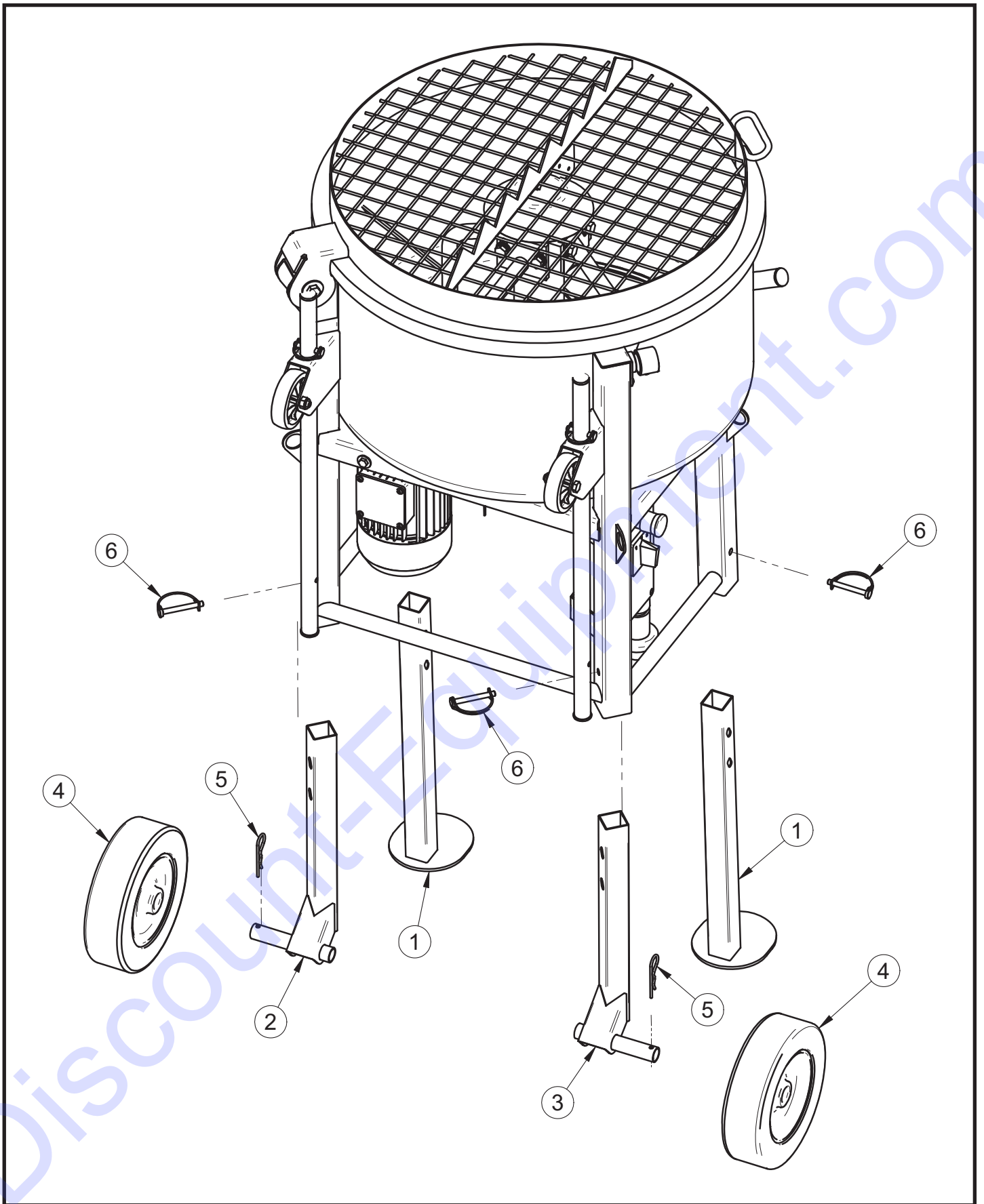
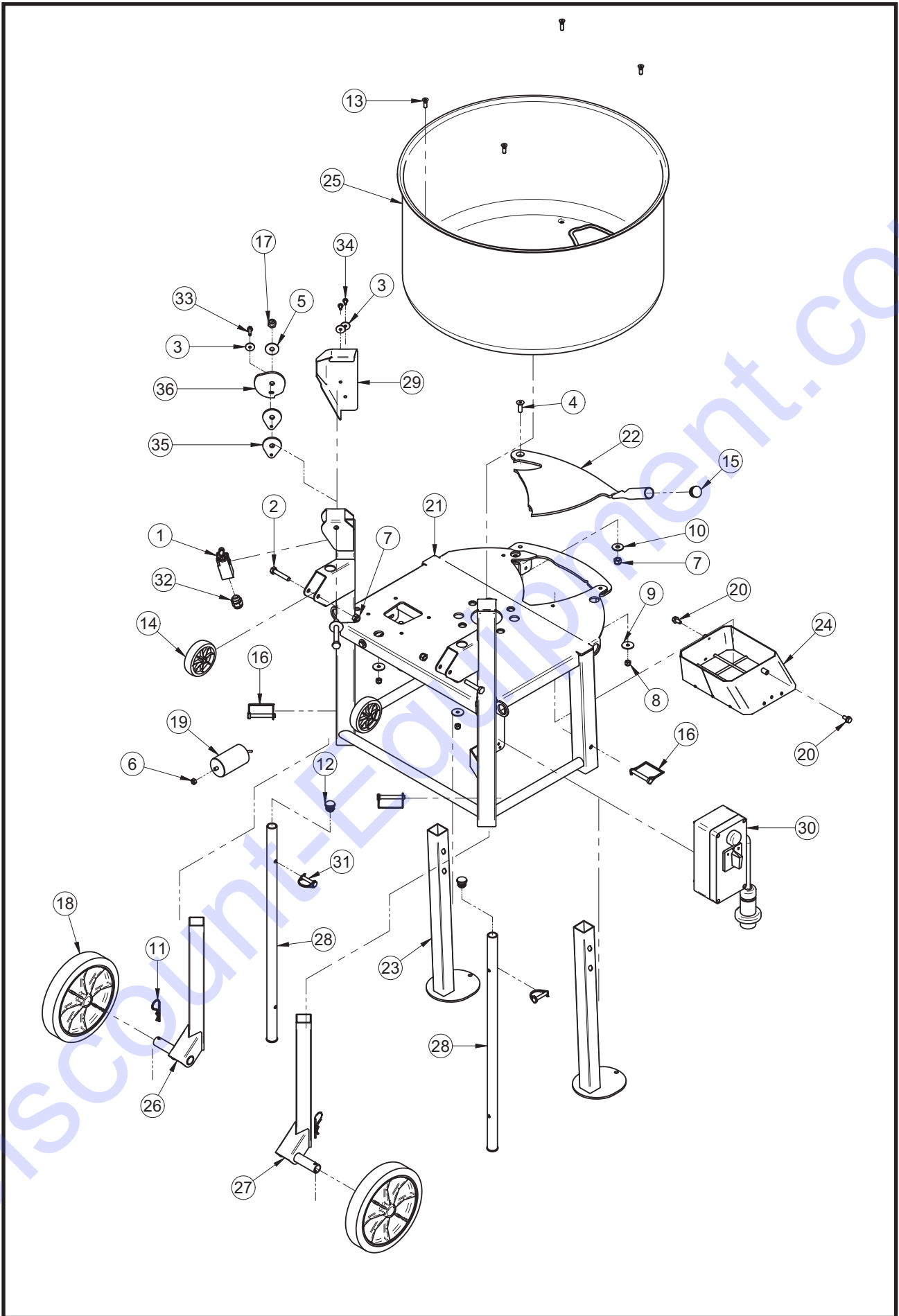


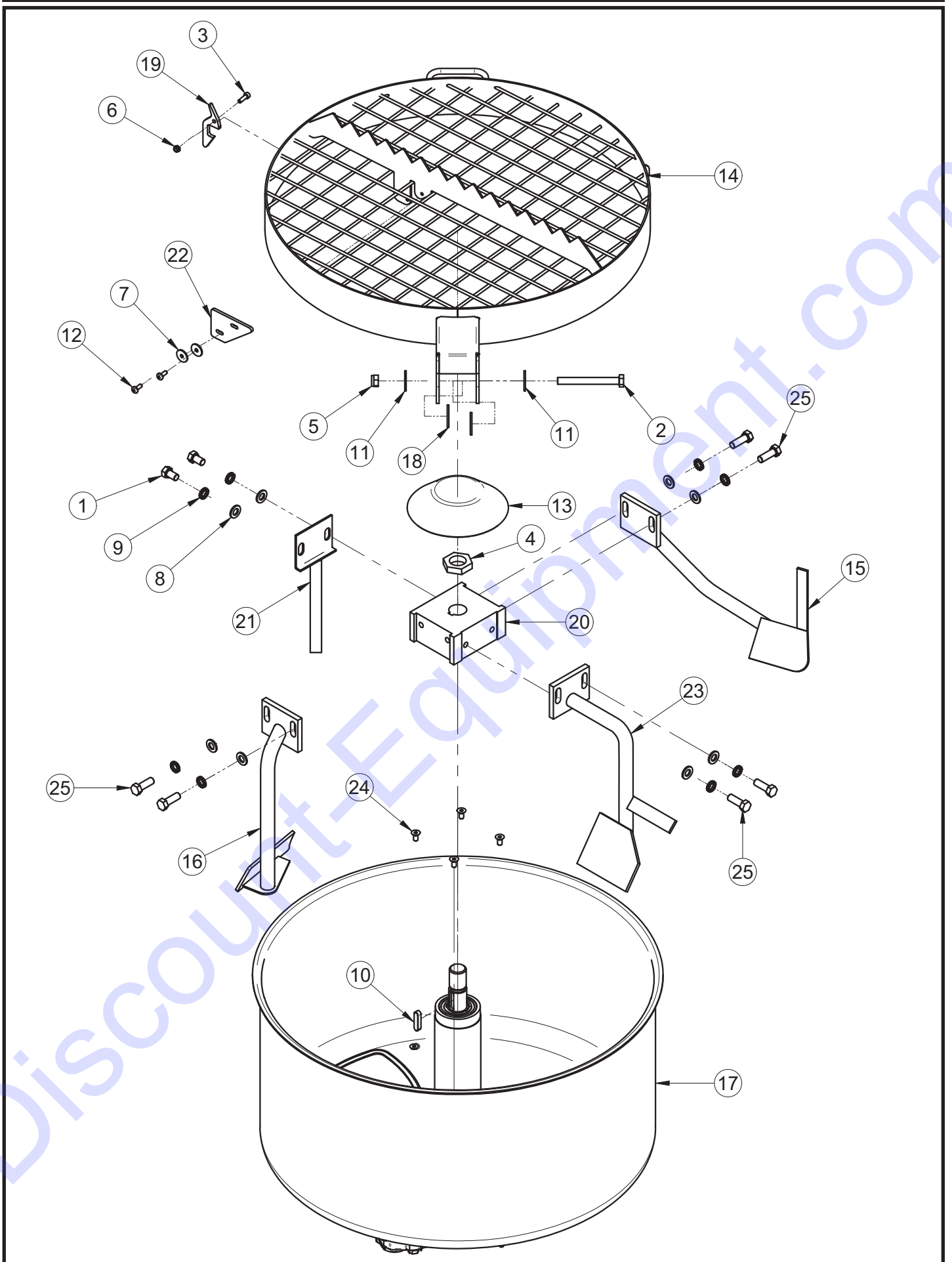
Fig.9



TAV. 1

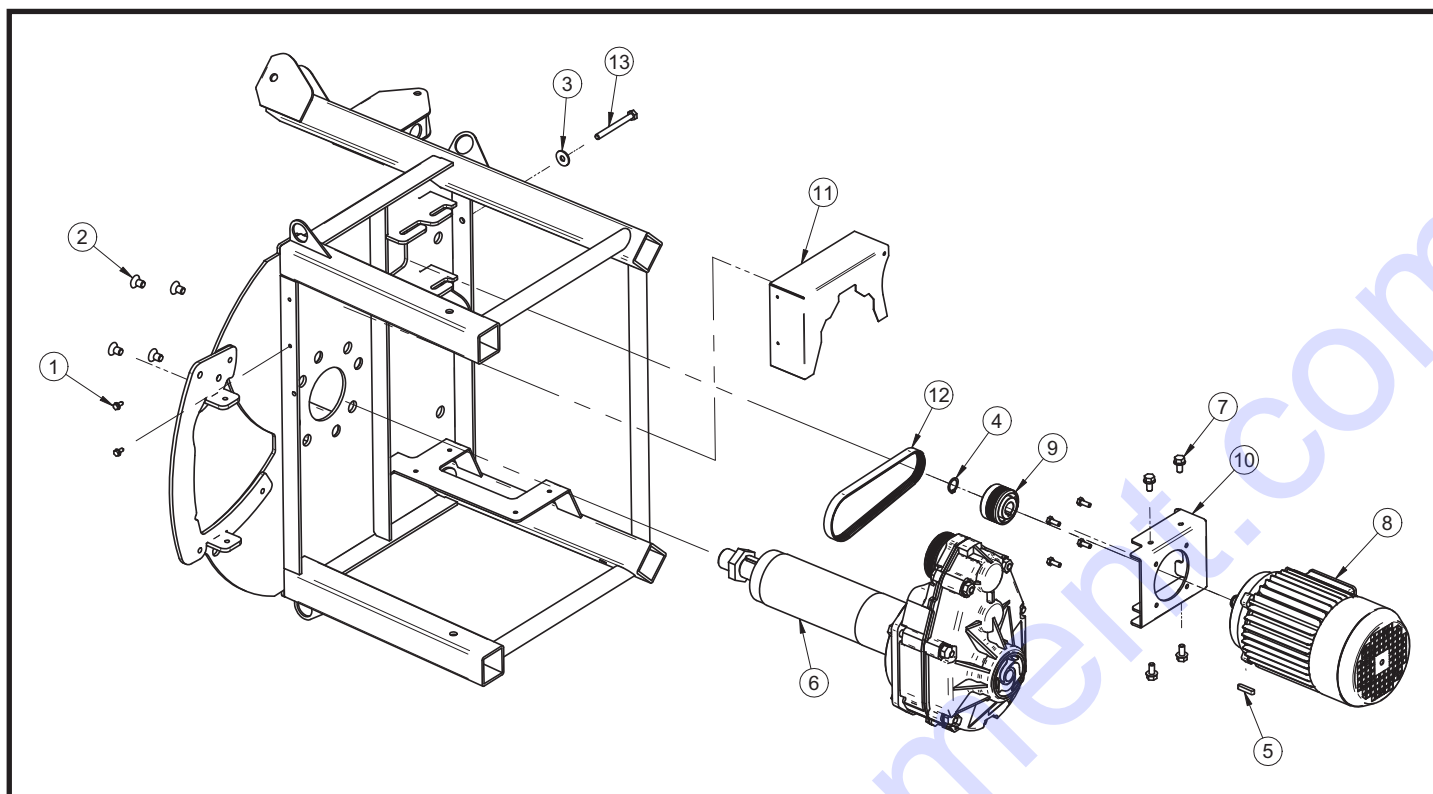


TAV. 1		STRUCTURE MACHINE	
REF.	CODE	DESCRIPTION	NOTES
1	3214791	LIMIT SWITCH	
2	2222144	BOLT	TE 8.8 5737 M10X55 Z
3	2222465	BOLT	TRILOB. TC PH M5X15 N
4	2222601	BOLT	TSPEI 10.9 5933 M10X30 Z
5	2223352	NUT	5588 M5 Z
6	2223570	NUT	5588 M8 Z
7	2223920	NUT	AUTOBL. 7474 M10
8	2223923	NUT	AUTOBL. 7473 M8
9	2224204	WASHER	6593 D.8X24 Z
10	2224260	WASHER	6593 D.10X30 Z
11	2226700	SPLIT PIN	AMA 3.5/72
12	2235452	CAP	
13	3201339	BOLT	TSPEI 5933 M8X25 Z
14	3205257	WHEEL	
15	3208452	CAP	
16	3231248	PIN	10X70 Z
17	3225175	BOLT	5927 M5X10 Z
18	3226342	WHEEL	
19	3229797	CAPACITOR	100 MF 250V
20	3227870	BOLT	TRILOB. TEFR 5739 M8X16 Z
21	3229553	FRAME	
22	3229559	OUTLET	
23	3229566	FRONT LEG	
24	3229598	OUTLET PROTECTION	
25	3229602	TANK	
26	3229773	RH REAR LEG	
27	3229775	LH REAR LEG	
28	3229778	HANDGRIP	
29	3229783	SUPPORT	
30	3234541	ELECTRIC PANEL	
31	3229800	PIN	8X45 Z
32	3201216	CABLE CLAMP	PG 13.5
33	3210099	BOLT	TRILOB.TEFR 6X25 Z
34	3209728	BOLT	TRILOB.TC PH M6X15 N
35	3234519	CAM	
36	3234521	SPACER	

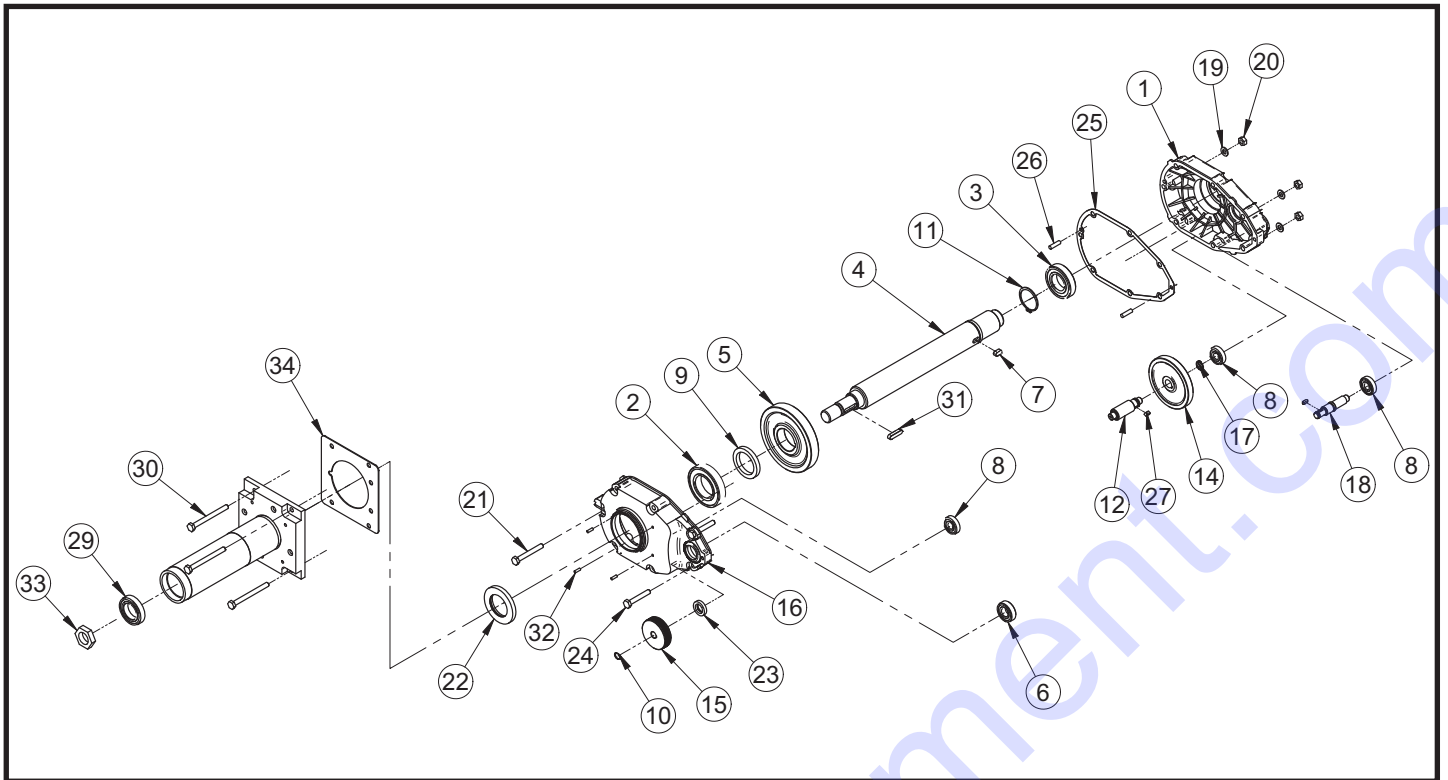


TAV. 2

TAV. 2		TANK	
REF.	CODE	DESCRIPTION	NOTES
1	2222034	BOLT	TE 8.8 5739 M12X20 Z
2	2222142	BOLT	TE 8.8 5737 M12X100 Z
3	2222540	BOLT	TCEI 5931 M6X20 Z
4	2223836	NUT	5589 M30X2
5	2223921	NUT	AUTOBL. 7474 M12
6	2223924	NUT	AUTOBL. 7474 M6
7	2224049	WASHER	6593 D.6X24
8	2224380	WASHER	6592 D.12X25 Z
9	2224900	WASHER	DEV 8842 A12 Z
10	2229555	KEY	10X8X40
11	3206904	WASHER	D.12X36
12	3225750	BOLT	TRILOB. TEFR M6X10 Z
13	3229562	DIFFUSER	
14	3234511	TANK PROTECTION	
15	3229588	OUTER BLADE	
16	3229594	INNER BLADE	
17	3229602	TANK	
18	3229622	WASHER	D.13X40X3
19	3234518	SAFETY HOOK	
20	3230009	MIXER HEAD	
21	3230013	SCRAPER	
22	3230020	SCRAPER RUBBER	
23	3230023	MIDDLE BLADE	
24	2222586	BOLT	TSPEI 10.9 5933 M8X16 Z
25	2222007	BOLT	TE 8.8 5739 M12X35 Z

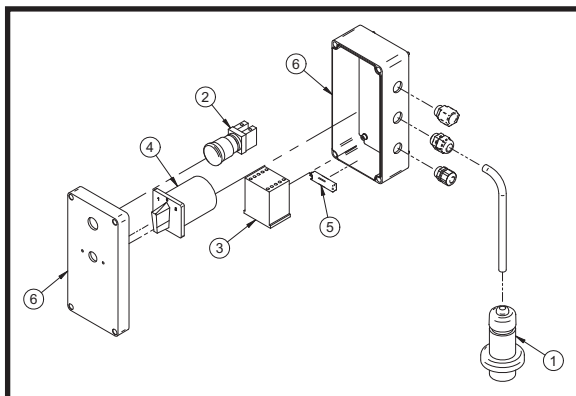


TAV. 3		TRANSMISSION	
REF.	CODE	DESCRIPTION	NOTES
1	2222420	BOLT	AUTOF. TE 6950 D.4,8X13 Z
2	2222599	BOLT	TSPEI 10.9 5933 M10 X16 Z
3	2224204	WASHER	6593 D.8X24 Z
4	2227310	STOP RING	E 19
5	2229310	KEY	6X6X30
6	3226385	GEAR BOX	
7	3227870	BOLT	TRILOB. TEFR 5739 M8X16 Z
8	3229828	MOTOR	
9	3229795	PULLEY	
10	3229599	MOTOR SUPPORT	
11	3229605	GUARD	
12	3229609	BELT	
13	3262752	BOLT	TE 8.8 5737 M8X80 Z



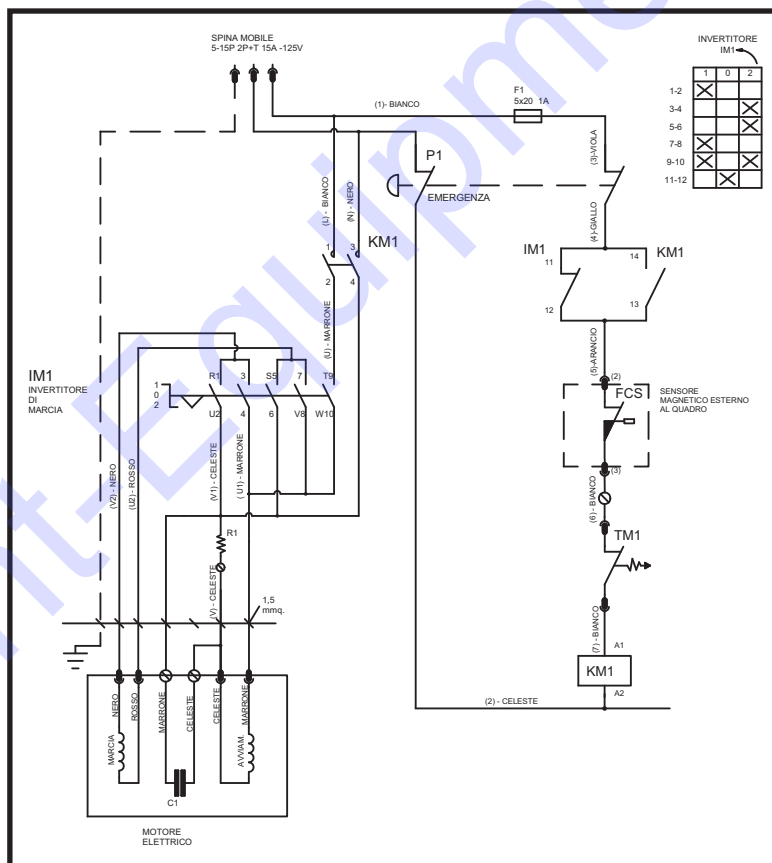
TAV. 4		GEAR BOX	
3226385			
REF.	CODE	DESCRIPTION	NOTES
1	3209514	GEAR BOX CASING	
2	2204569	BEARING	6211
3	3213282	BEARING	6208
4	3226384	MAIN SHAFT	
5	3208970	GEAR	
6	3208983	BEARING	6204
7	3213178	KEY	10X8X20
8	3209682	BEARING	6302
9	3208966	SPACER BRACKET	
10	1227330	STOP RING	E 15
11	2227207	STOP RING	E 55
12	3208975	PINION	
13	2229250	KEY	5X5X15
14	3209801	GEAR	
15	3208979	PULLEY	
16	3226386	GEAR BOX CASING	
17	2227320	STOP RING	E 20
18	3209799	SHAFT	
19	2224340	WASHER	6592 D.10X21 Z
20	2223650	NUT	5588 M10
21	2222145	BOLT	5737 M10X80 Z
22	3226388	OIL SEAL	90X55X10
23	3200094	OIL SEAL	35X20X7
24	2222148	BOLT	5737 M10X65 Z
25	3209811	GASKET	
26	3213180	PIN	D.8X30
27	2229259	KEY	6X6X14
28	3226390	BUSHING	
29	2204505	BEARING	6008
30	1222694	BOLT	5737 M10X110 Z
31	2229555	KEY	10X8X40
32	3226451	PIN	D.5X16
33	2223836	NUT	5589 M30X2
34	3234539	SPACER	

TAV. 5



TAV. 5		ELECTRIC PANEL	
REF.	CODE	DESCRIPTION	NOTES
3229825			
1	3209542	PLUG + ELECTRIC CABLE	
2	3225237	SAFETY CATCH BUTTON	
3	3230439	CONTACTOR	
4	3227796	INVERTER	
5	3230076	RESISTOR	
6	3230081	JUNCTION BOX	

TAV. 6



TAV. 6		WIRING DIAGRAM	
REF.	DESCRIPTION	NOTES	
P1	SAFETY CATCH BUTTON		
F1	FUSE CARRIER	5X20 1A	
IM1	INVERTER		
KM1	CONTACTOR		
FCS	LIMIT SWITCH		
TM1	THERMAL PROTECTION		
C1	CAPACITOR	100 μ F (250V 60Hz)	
R1	RESISTOR	33 K (10W 750V)	

ONE YEAR WARRANTY

We warrant to the original purchaser that the IMER equipment described herein (the "equipment") shall be free from defects in material and workmanship under normal use and service for which it was intended for a period of one (1) year from the date of purchase by the original purchaser.

Our obligation under this warranty is expressly limited to replacing or repairing, free of charge, F.O.B. our designated service facility, such part or parts of the equipment as our inspection shall disclose to be defective. Parts such as engines, motors, pumps, valves, electric motors, etc. furnished by us but not manufactured by us will carry only the warranty of the manufacturer. Transportation charges or duties shall be borne by the purchaser. This shall be the limit of our liability with respect to the quality of the equipment.

This warranty shall not apply to any equipment, or parts thereof, which has been damaged by reason of accident, negligence, unreasonable use, faulty repairs, or which has not been maintained and operated in accordance with our printed instructions for our equipment. Further, this warranty is void if the equipment, or any of its components, is altered or modified in any way.

THIS WARRANTY IS EXPRESSLY IN LIEU OF ALL OTHER WARRANTIES, EXPRESSED OR IMPLIED, INCLUDING ANY IMPLIED WARRANTY OF MERCHANTABILITY OF FITNESS FOR A PARTICULAR PURPOSE.

We make no other warranty, representation or guarantee, nor is anyone authorized to make one on our behalf. We shall not be liable for any consequential damage of any kind, including loss or damage resulting, directly or indirectly, from the use or loss of use of the machine. Without limiting the generality of the foregoing, this exclusion from liability embraces the purchase's expenses for downtime, damages for which the purchaser may be liable to other persons, damages to property, and injury or death of any persons.

This warranty shall not be deemed to cover maintenance parts, including but not limited to blades, belts, hoses, hydraulic oil or filters, for which we shall have no responsibility or liability whatsoever.



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