

USER MANUAL



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# SPIRAL MIXER

**CE**  
RoHS

**Warning: Please read the user manual carefully before operating the machine**

## Warning

1/ Keep in order your working area. Disorder can cause dangerous accidents.

2/ Consider environmental conditions. Do not use the machine in humid, wet or badly lit environments, close to inflammable liquids or gas.

3/ Make sure water and heat sources are at safe distance.

4/ Keep away from children and non authorized personnel.

5/ Only utilize the machine with the correct voltage.

6/ Dress in adequate way. Do not wear hanging clothes or any items that can be caught in the machine. Use no-slip shoes. For hygiene and safety keep your hair tied back and wear protective gloves.

7/ Protect the cable. Do not pull the cable to extract the plug. Do not leave the cable near high temperatures, sharp objects, water or solvents.

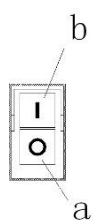
8/ Avoid insecure positions. Find the best surface to ensure the machine is balanced.

9/ Take the plug out when the machine is not in use, before cleaning, maintenance and moving it.

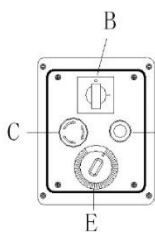
10/ Do not use further extensions.

11/ Check that the machine is not damaged. Before using the machine carefully check that all security devices are working. Check that: the mobile parts are not blocked, there are not any parts damaged, all the parts have been set up correctly and all the conditions that could influence the regular functioning of the machine are in working order.

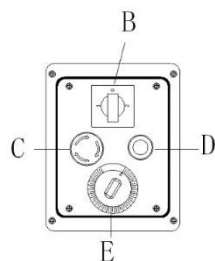
12/ Installing or repairing the machine by qualified personnel. Qualified people, using original spare parts, can only do the installation or repair. The non-compliance with these rules can represent danger for the user.



Pict.1



Pict.2



Pict.3 (2 speed)

## Switch

The machines are provided with the following operation and safety devices:

1/ Operating devices

1.1 / Sing-phase or Three-phase machines (LFM10 model):

a. Green button: Operating (Pict.1)

b. Red button: Stop

1.2/ Sing-phase or Three-phase machines (the rest of the models): ( Pict. 2 & Pict.3 )

B. Main switch

C. Red button: Emergency stop

D. Green button: Operating

E. Timer

## Installation

1/ The machine must be installed in dry, drafty and bright environmental condition.

2/ Please position the machine on a flat and firm place; you can put it on a workbench whose height fits you, and leave a space around it of 50 cm for easier usage and cleaning.

3/ The machine is constructed to have IPX23 protection level.

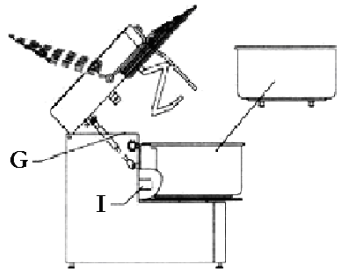
4/ The electric network must be provided with an automatic differential switch having characteristics suitable to those of the machine, in which the opening distance between the contacts must be of at least 3 mm. Most of all it is necessary a good ground system. Verify that the electrical set-up corresponds with the numbers of the specification (7) found and on the small label at the back of the machine.

5/ The connections type Y of the machine with the electric network is made by means of an operation cable, which is provided with a plug only in the single-phase model. As far as the three-phase machines are concerned it is necessary to put together the cable and a normalized and polarized plug.

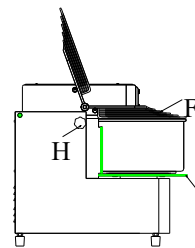
6/ The plug must be easily accessible, must not require any kind of movement. The cable from the machine to the wall plug must not be pulled tightly, also do not rest the machine on the cable.

## Safety Device

- F. Safety guard (Pict.4)
- G. Micro-switch(Auto-stop when the guard is up)
- H. Check pin of the head
- I. Locking pin of the bowl.



Pict.5



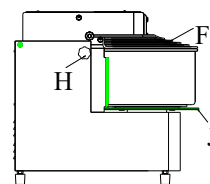
Pict.4

- 1/ the safety devices G, H, I, J can be installed only in the machines with raising top and removable bowl (LR series).
- 2/ The safety devices are applicable when:

- Raising the safety guard F (pict.4). The machine stops
- Raising the head (by means of the check pin H and/or taking off bowl the machine does not start)

Before operating the machine, the safety guard F must be completely lowered (pict.6), and the bowl is correctly inserted and locked by the disk J and that the head is down and locked by the check pin H (this must be completely inserted).

After inserting the plug the machine is ready for use.



Pict.6

## Working test

Machine mod. LFM10:

Operating: Push the green button a to start the bowl and the spiral (Pict.1)

Stop: Push the red button b.



1/ The rest of the machines models:

Operating: rotate the main switch B in position 1 (Pict.2 ),(the -2V models can rotate 1 or 2)( Pict.3), set timer E and push the Green button D to start the bowl and the hook.

Stop: Rotate the main switch B in the position 0, or push the red button C to stop the bowl and the hook.

In order to operate the machine again after the stop due to the raising of the safety guard F or to the activating of the emergency button C it is necessary to proceed as follows: lower again and completely the safety guard F; release the button C by rotating it clockwise, as shown by the arrow, and push the operating button a or D.

### Note

2/ For 3 phase machine, if the rotation of the bowl is opposite to that shown by the arrow, it is necessary to follow these indications for the connection:

- Stop the machine
- Take the 2 phase wire out
- Reverse the wire connection position of two phases (example: L1 with L2 and vice versa)
- Restart the machine and verify if the bowl is rotation the right direction.

Start the machine without loading, let it run for about one minute and verify that it is functioning perfectly.

## Usage of the machine

1/ After lifted up the safety guard **F**, pour ingredients to the bowl, close the safety guard, and press the operating switch **a** or **D**, with timer setting.

2/ The movement made by the hook, which is synchronized with the rotation of the bowl, gives an amalgamation of flour, water, salt, yeast and other eventual ingredients till you obtain a mixture of the consistence required.

3/ If necessary, in order to modify the characteristics and/or the consistence of the initial dough, pour the ingredients through the safety guard **F**.

4/ When work cycle is completed, leave the machine on hold, lift up the safety guard **F** to maximum opening, take the mixture out, proceed with cleaning of the machine following the indication at 5.1.

5/ Note: For the LR series, please stop the machine, unplug the machine, raise the safety guard **F** completely, pull the pin **H** as far as the head is un-lock, and raise the head by means of the little piston underneath. Then rotate clockwise the disk **J** as far as the bowl is unlocked, raise the bowl and take it out of the machine. Finally take off the dough.

6/ After cleaning, put the bowl back on, and make sure that the four pins underneath (pict.7) are correctly fixed in the four holes **M** of the machine; then lock the bowl rotating clockwise the disk **J**. Put the head down pushing it downwards as far as it is blocked by the pin **H**.

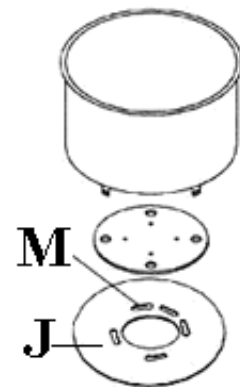
7/ Usage of the machine provided with timer

The timer is an electromechanical device that allows to program from 1 to 30 minutes

- The work-time of the machine by rotating the knob **O** in the desired position.
- Operate the machine following the instructions of 4.4.
- Once the set time is over, the timer stops the machine.

### Important

Before taking off the dough, make sure the timer are in position "0".



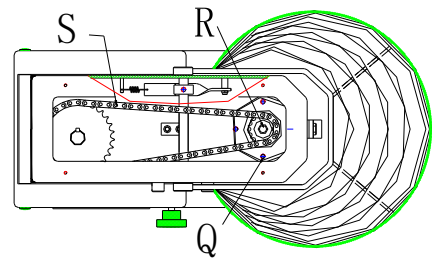
Pict.7

### Warning:

1/ Before effecting any kind of maintenance or cleaning, you must cut off the power supply.  
In any case of malfunctioning or damage of the machine, you must apply for authorized assistance from the manufacturer or dealer.

2/ The cleaning must be done every time the machine has been used following all the rules to prevent malfunctioning of the machine and for hygienic purposes.

Using a wooden or plastic palate first clean the residue of dough, then with a soft sponge and warm water accurately clean the bowl, the hook, the leading shaft and the safety guard, dry with kitchen paper.



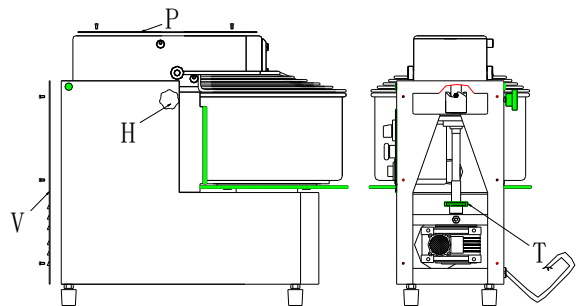
Pict.8

### Warning

3/ We recommend not to use any kind of chemical product abrasive or corrosive. Absolutely avoid using spraying water, sharp tools, rough or abrasive objects, metal/sponges etc., which can damage the surfaces and be dangerous from an hygienic point of view.  
To maintain the efficiency and security of the machine it is necessary to proceed with periodical maintenance (every 6 months) of the following indications:

#### 4/ Tensioning of the upper chain

The chain must be tensioned it, by checking it, it becomes loose or if the rotation of the hook is not constant: Unscrew the cover P, (Pict.9) loosen the screws Q, Pull the support of the hook R as far as the tension the chain is optimized. Lock the support R with the screws Q, Put the cover P on once more and fix it.



Pict.9

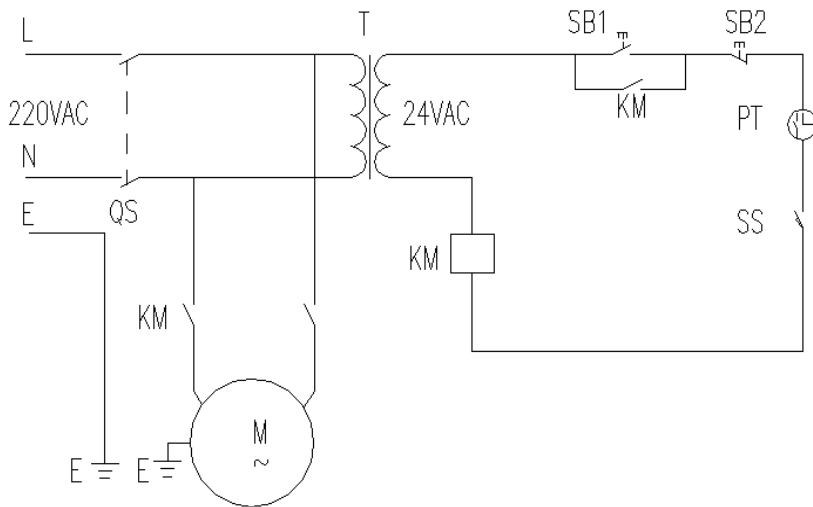
#### 5/ Lubricating the chains

After unscrewing the fixing screws, take away the cover P and the back panels V, put reasonable amount of proper grease on the chains S & T (pict.8-9), sufficient to lubricate all the links of the chain.  
Once this is done, mount the two panels and secure again with screws.

## Specification Table

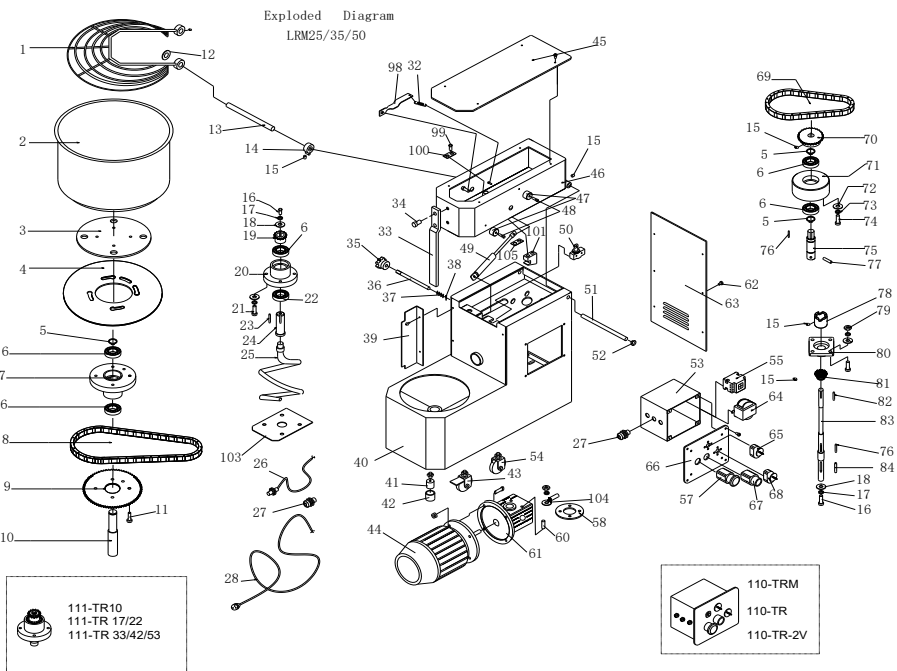
Model	HRM-20	HRM-25	HRM-30	HRM-50	HRM-60
Voltage(V)	230	230	230	230	230
Cycle(Hz)	50	50	50	50	50
Power(KW)	1.5	1.5	1.5	1.5	1.5
Max Dough capacity(KG)	10	16	20	30	35
Hook speed(rpm)	98	98	98	98	98
Bowl speed(rpm)	10	10	10	10	10
Dimension(mm)	677x353x637	720x400x620	798x433x726	820x485x726	880x550x720

### Slephase & single speeding Electrical diagram



- SS: Micro Switch
- M: Motor SP: Sensor
- QS: Main Switch
- T: Transformer
- KM: Contactor
- PT: Timer
- SB1: Start Button
- SB2: Stop Button
- Power Source Wire:L(red) N(blue)
- Ground Wire E:(yellow-green)

# illustration diagram



## illustration Part list

Item	Description	Qty	Part no.		Remark
			HRM-20	HRM-25	
1	Safety guard	1	17-003	22-005	
2	Bowl	1	17-002	22-006	
3	Bowl Flange	1	22-022	22-022	
4	Locking Flange	1	17-005	22-008	
5	Transit ring	3	22-053	22-053	
6	Bearing 6205	5	22-055	22-055	
7	Bearing support	1	22-019	22-019	
8	Chain 126	1	22-041	22-041	
9	Chain wheel 72	1	22-042	22-042	
10	Support axle	1	22-015	22-015	
12	Guard ring	2	22-035	22-035	
13	Guard axle	1	22-012	22-012	
14	Off-set ring	1	22-028	22-028	
19	Chain wheel 15	1	22-043	22-043	
20	Spiral support	1	22-020	22-020	
22	Bearing 6205	1	22-055	22-055	

illustration Part list Continue.....

Item	Description	Qty	Part no.		Remark
			HRM-20	HRM-25	
24	Mixing Axle	1	22-018	22-018	
25	Spiral	1	17-001	22-004	
27	Cable fixer	1	22-110	22-110	
28	Cable	1	22-082/171/086	22-082/171/086	LRM
			22-125	22-125	LR
			22-098	22-098	LR-2V
33	Divider	1	22-003	22-003	
35	Locker	1	22-048	22-048	
36	Lock axle	1	22-014	22-014	
37	lock spring	1	22-049	22-049	
39	Side cover	2	22-011	22-011	
40	Structure	1	22-001	22-001	
41	foot	4	22-033	22-033	
42	Rubber shoe	4	22-034	22-034	
43	Wheel with stopper	2	22-031	22-031	
44	Motor	1	22-152	22-152	LRM
			22-046	22-046	LR
			22-153	22-153	LR-2V
45	Top cover	1	22-009	22-009	
46	Head	1	22-002	22-002	
47	Nylon ring	2	22-029	22-029	
49	Air spring	1	22-051	22-051	
50	Micro switch	1	22-079	22-079	
51	Head axle	1	22-013	22-013	
52	Nylon cover	2	22-030	22-030	
53	Electrical box	1	22-096	22-096	
54	Wheel	2	22-032	22-032	
55	Contactor	1	22-155	22-155	LRM
			22-108	22-108	LR
			22-108	22-108	LR-2V
57	Emergency stop	1	22-099	22-099	
58	Transit ring	1	22-093	22-093	
61	Gear box	1	22-074	22-074	
63	Back cover	1	22-010	22-010	
64	Transformer	1	22-154	22-154	LRM
			22-107	22-107	LR
			22-107	22-107	LR-2V



JR serial illustration Part list Continue.....

Item	Description	Qty	Part no.		Remark
			HRM-20	HRM-25	
65	Main Switch	1	22-156	22-156	LRM
			22-169	22-169	LR
			22-157	22-157	LR-2V
66	Electrical panel	1	22-097	22-097	
67	Start Switch	1	22-100	22-100	
68	Timer	1	22-103	22-103	
69	Chain	1	22-040	22-056	
70	Chain wheel 29	1	22-045	22-045	
71	Bearing Connector	1	22-021	22-021	
75	Connector axle	1	22-017	22-017	
77	Connector key	1	22-024	22-024	
78	Engager	1	22-026	22-026	
80	Round bearing support	1	22-054	22-054	
81	Wheel 14	1	22-044	22-044	
83	Transmission axles	1	22-016	22-016	
98	Lever	1	22-172	22-172	
100	Hook divider	1	22-185	22-185	
101	Hook	1	22-161	22-161	
103	Water shield	1	22-187	22-187	
104	Adjusting screw	1	22-192	22-192	
105	Auxiliary relay PCB	1	22-281	22-281	
106	Hook washer		22-193	22-193	
110	Electrical complete	1	110-LRM	110-LRM	LRM
			110-LR	110-LR	LR
			110-LR-2V	110-LR-2V	LR-2V
111	Spiral support complete	1	111-TR17/22	111-TR17/22	



illustration Part list

Item	Description	Qty	Part no.			Remark
			HRM-30	HRM-50	HRM-60	
1	Safety guard	1	33-005	42-003	53-002	
2	Bowl	1	33-006	42-002	53-001	
3	Bowl Flange	1	22-022	22-022	22-022	
4	Locking Flange	1	33-008	42-005	53-004	
5	Transit ring	3	22-053	22-053	22-053	
6	Bearing 6205	5	22-055	22-055	22-055	
7	Bearing support	1	22-019	22-019	22-019	
8	Chain 144	1	33-027	33-027	33-027	
9	Chain wheel 85	1	33-029	33-029	33-029	
10	Support axle	1	22-015	22-015	22-015	
11	Screw	4	22-062	22-062	22-062	
12	Guard ring	2	22-035	22-035	22-035	
13	Guard axle	1	33-012	33-012	33-012	
14	Off-set ring	1	22-028	22-028	22-028	
19	Chain wheel 15	1	33-031	33-031	33-031	
20	Spiral support	1	33-018	33-018	33-018	
22	Bearing 6205	1	33-036	33-036	33-036	
24	Mixing Axle	1	33-017	33-017	33-017	
25	Spiral	1	33-004	33-004	33-004	
27	Cable fixer	1	22-110	22-110	22-110	
33	Divider	1	33-003	42-001	53-006	
35	Locker	1	22-048	22-048	22-048	
36	Lock axle	1	33-014	33-014	33-014	
37	lock spring	1	22-049	22-049	22-049	
39	Side cover	2	33-011	42-008	53-007	
41	foot	4	33-024	33-024	33-024	
42	Rubber shoe	4	22-034	22-034	22-034	
43	Wheel with stopper	2	33-022	33-022	33-022	
44	Motor	1	33-048	42-006	42-006	LRM
			33-033	33-033	33-033	LR
			33-049	33-049	33-049	LR-2V
45	Top cover	1	33-009	33-009	33-009	
47	Nylon ring	3	22-029	22-029	22-029	
49	Air spring	1	22-051	22-051	22-051	
50	Micro switch	1	22-079	22-079	22-079	
51	Head axle	1	33-013	33-013	33-013	
52	Nylon cover	2	22-030	22-030	22-030	
53	Electrical box	1	22-096	22-096	22-096	
54	Wheel	2	33-023	33-023	33-023	
55	Contacto	1	22-108	22-108	22-108	
56	Contractor	1	22-109	22-109	22-109	
57	Emergency stop	1	22-099	22-099	22-099	
58	Transit ring	1	33-042	33-042	33-042	

**Illustration Part list**

**Continue.....**

Item	Description	Qty	Part no.			Remark
			HRM-30	HRM-50	HRM-60	
59	Fuse holder	1	22-101	22-101	22-101	
61	Gear box	1	33-034	33-034	33-034	
63	Back cover	1	33-010	33-010	33-010	
64	Transformer	1	22-107	22-107	22-107	
65	Main Switch	1	22-169	22-169	22-169	
66	Electrical panel	1	22-097	22-097	22-097	
67	Start Switch	1	22-100	22-100	22-100	
68	Timer	1	22-103	22-103	22-103	
69	Chain	1	33-028	42-007	53-005	
70	Chain wheel 29	1	33-032	33-032	33-032	
71	Bearing Connector	1	33-019	33-019	33-019	
72	Washer	12	22-083	22-083	22-083	
73	Spring washer	8	22-089	22-089	22-089	
75	Connector axle	1	33-016	33-016	33-016	
77	Connector key	1	22-024	22-024	22-024	
78	Engager	1	33-020	33-020	33-020	
80	Round bearing support	1	33-035	33-035	33-035	
81	Wheel 16	1	33-030	33-030	33-030	
83	Transmission axles	1	33-015	33-015	33-015	
98	Lever	1	22-072	22-072	22-072	
100	Hook divider	1	22-185	22-185	22-185	
101	Hook	1	22-161	22-161	22-161	
103	Water shield	1	33-061	33-062	33-063	
104	Adjusting screw	1	22-192	22-192	22-192	
105	Auxiliary relay PCB	1	22-281	22-281	22-281	
106	Hook washer		22-193	22-193	22-193	
110	Electrical complete	1	110-TR	110-TR	110-TR	
111	Spiral support complete	1	111-TR33/42/53	111-TR33/42/53	111-TR33/42/53	



## Trouble shooting

Trouble	Cause	Solution
The machine does not start	<ol style="list-style-type: none"> <li>1. Lack of electric energy in the power supply</li> <li>2. The Emergency stop switch is locked</li> <li>3. The safety guard and/or the head are up</li> <li>4. The knob of the general switch is in position "0"</li> <li>5. The timer is in position "0"</li> </ol>	<ol style="list-style-type: none"> <li>1. Check the main switch, the plug, the wire.</li> <li>2. Rotate the button following the direction of the arrow.</li> <li>3. Close correctly both the safety guard and the head.</li> <li>4. Rotate the knob in position 1</li> <li>5. Rotate the knob of the timer form 1 to 30 minutes</li> </ol>
The hook turns inconstantly	The chain is loose	Stretch the chain following the instructions as 5.2
The dough barrel makes a loud noise	<ol style="list-style-type: none"> <li>1. The dough hook touches the bottom of the dough bucket;</li> <li>2. The dough hook touches the upper cover;</li> <li>3. Severe friction between the dough mixer shaft and the chain</li> </ol>	<ol style="list-style-type: none"> <li>1. Remove the upper cover, adjust the screws of the hook, and check the friction part;</li> <li>2. Adjust the progress or length of the chain to see if it is longer or shorter.</li> </ol>
The dough barrel cannot be removed	Long-term non-use, rusted and fixed;	Need to use it frequently or occasionally start it;
The dough mask does not stop even when it is pulled into place, or does not work when it is not pulled up	The dough mixer start contact piece deviates	Remove the upper cover of the machine and push the contact piece to the appropriate position
The barrel runs in the opposite direction to the direction indicated by the arrow	Plug wiring error	Stop the machine, take out the 2-phase line, and change the position of the two-phase plug (for example: swap L1 and L2, and vice versa)



Federal Hospitality Equipment Pty Ltd

**Australia**  
 ABN: 84 169 357 448  
 3B, 400 Moorebank Ave, Moorebank NSW 2170 Australia  
 P: 1300 887 055  
 F: +61 2 9771 3061  
[www.foodequipment.com.au](http://www.foodequipment.com.au)

**New Zealand**  
 NZBN: 942 903 654 5568  
 146 Neilson Street Onehunga 1643, Auckland, New Zealand  
 P: 09 415 6470  
 F: 09 415 6471  
[www.fedproducts.co.nz](http://www.fedproducts.co.nz)



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