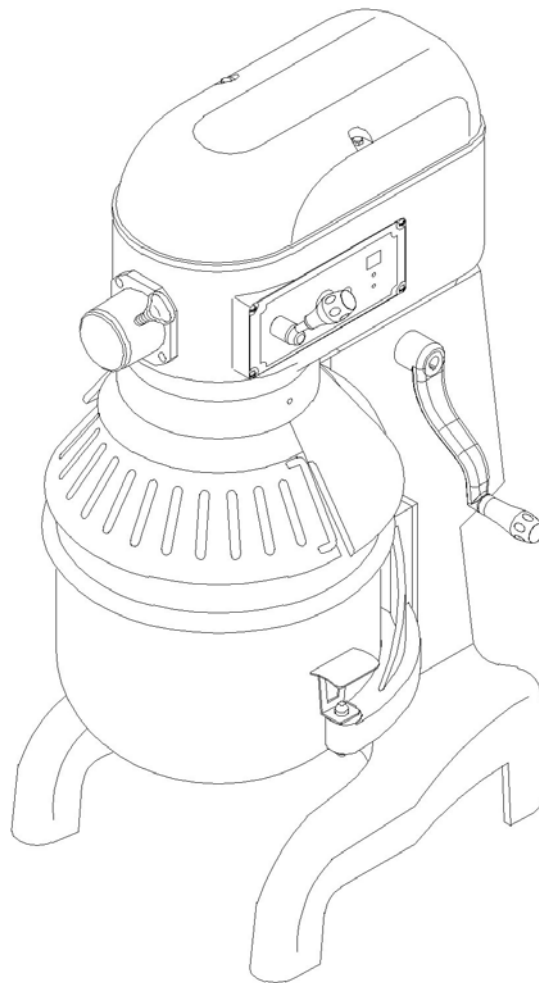




INSTALLATION / OPERATION MANUAL

BM20 Planetary Mixer



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Date Purchased	Serial No.....
Dealer.....	
Service Agent	

Introduction

Introduction

We are confident that you will be delighted with your BLUE SEAL MIXER, and it will become a most valued appliance in your commercial kitchen.

A new mixer can seem very complex and confusing at first glance. To ensure you receive the utmost benefit from your new Blue Seal, there are two important things you can do.

Firstly

Please read the instruction book carefully and follow the directions given. The time taken will be well spent.

Secondly

If you are unsure of any aspect of the installation, instructions or performance of your oven, contact your Blue Seal dealer promptly. In many cases a phone call could answer your question.

The Blue Seal BM20 is a dependable mixer for kneading and mixing all kinds of dough, egg, cream, cookies, mayonnaise etc. The mixer works smoothly and reliably. The Mixer has 3 speed selections and an electronic timer. The mixer comes with various style attachments which can be used to obtain the best results. These are made of alloy aluminum or are made of a food hygiene standard material.

The mixer is equipped with a powerful ½ HP motor and strong belt & gear drive design. The gears are made of hardened alloy steel and a hardened steel worm wheel. A stainless steel safety guard and electronic timer are available on all models.

With proper operation and maintenance this mixer will give you years of service, and obtain the best results.

Safety Precautions



Improper installation, adjustment, alteration, service or maintenance can cause property damage, injury or death.

Read the installation, operating and maintenance instructions thoroughly before installing or servicing this equipment. Failure to do so may result in serious injury or damage.

- Keep hands and clothing away from the bowl and hob attachments when in operation.
- Keep rigid objects away from the bowl and hub attachments when in operation.
- Do not use this machine for any applications other than food processing.
- Use the machine only with the electrical supply specified on the rating plate.
- Disconnect the machine from its power source before carrying out any maintenance.
- Do not disable or remove any of the safety mechanisms included with this machine.
- Do not leave the machine in operation unattended.
- Observe all maintenance and safety inspection schedules.
- Ensure the machine and any accessories / attachments are in stable, upright position before operating.
- Ensure all safety features of the machine are fitted and operate correctly within the safety requirements and procedures before operating the machine.

Motor

½ HP (0.375kW) powerful, ball bearing, ventilated within mixer enclosure.

Electrical Supply

230-240 Volts AC, 50Hz, 1P+N+E
or 400-415 Volts AC, 50Hz, 3P+E

Transmission

The gears are constant mesh gears in a special lubricant assuring long life; transmission gears are of heat treated alloy steel, of highly accurate construction. All bearings are ball bearings. Positive timing belt drive eliminates slip and speed variation.

Electronic Timer

The timer will stop the mixer when the desired time has elapsed.

Emergency 'Stop' Button

Located on the Control Panel on the right hand side of the machine. Pressing this button will stop all movement of the machine.

The Emergency Stop Button should only be used in cases of emergency and SHOULD NOT be used as the standard OPERATING method of stopping the mixer.

Safety Guard

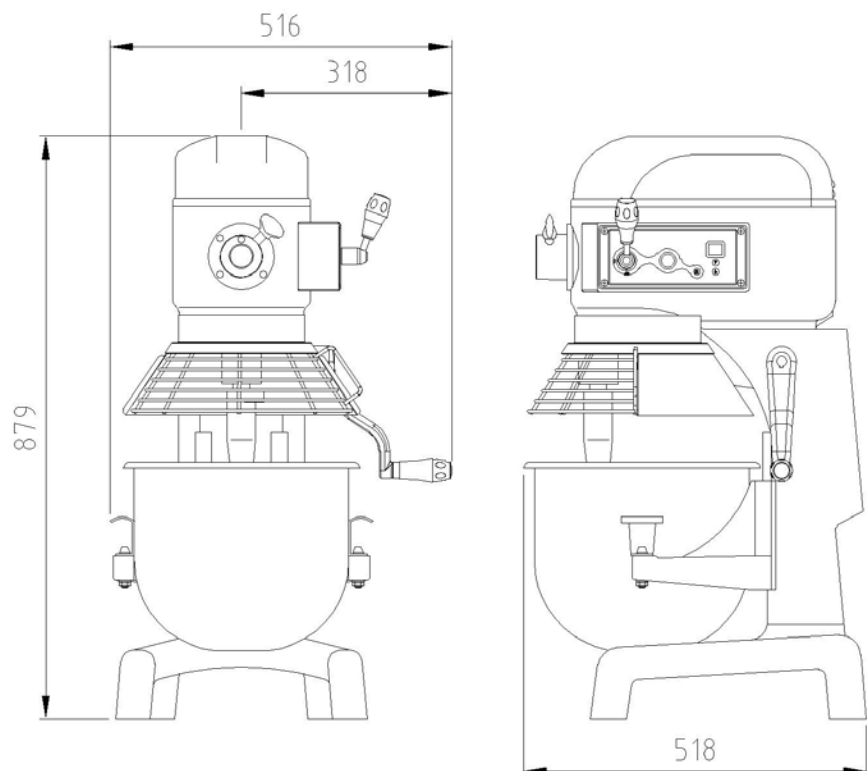
Stainless steel safety guard smoothly rotates open. Fitted with a limit switch to shut off power immediately to protect the operator.

Hub

The hub is only for the BM20HAT models.

Dimensions

Model	BM20AT	BM20HAT
Description	20 litre Mixer	40 litre Mixer (with Hub)
Motor Power	0.5 HP (0.375 kW)	
Net Weight (approx.)	98 Kg	
Agitator Speed (RPM)	Low	116
	Med	210
	High	383



Installation



Before installing the mixer, check that the available electrical supply match that of the mixer as stated on the mixer's rating plate.

Unpacking

Immediately after unpacking the mixer, check it for possible shipping damage. If this machine is found to be damaged after unpacking, save the packaging material and contact the carrier within one day of delivery.

Location

Place the mixer in its operating location - this should be a sturdy level surface. There should be adequate space around the mixer for the user to operate the control and install and remove bowls.

Holes are provided in the base to permanently secure the mixer, although this not necessary in normal installations.

Floor models must be leveled front-back and side-to-side by sliding shims under the legs as required.

Electrical Connection

The supply cord on this machine is provided with a three-pin 13A fused and earthed plug. It is imperative that the outlet to which this plug is connected be properly earthed (grounded).

Prior to installation, test the electrical service to assure it agrees with the specifications on the machine data plate located on the back side of the pedestal.

Permissible voltage fluctuation is $\pm 10\%$ of nominal voltage.

Components having adjustments protected (e.g. paint sealed) by the manufacturer, are only allowed to be adjusted by an authorised service agent.

Rotation

To start the motor, push the ON button. The speed selector handle must be at one of the numbers indicating a speed and not located between the numbers.

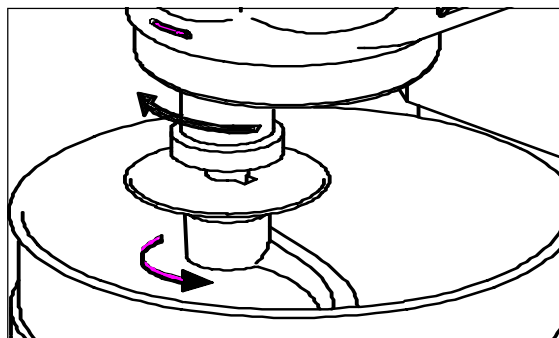


Figure 1



Keep hands, clothing and utensils out of the bowl whilst the machine is in operation. Failure to follow the operation instructions or improper use of the mixer may result in damage to the mixer, or cause injury to the operator.

Important:

Great care must be taken to minimise dust emission when handling dry ingredients such as flour. Bags should be opened in the lower part of the bowl and poured from as close to the base of the bowl as possible.

It is recommended that ingredients suppliers' hazard data sheets are consulted prior to use. The use of respiratory protective equipment may be required during loading of the bowl.

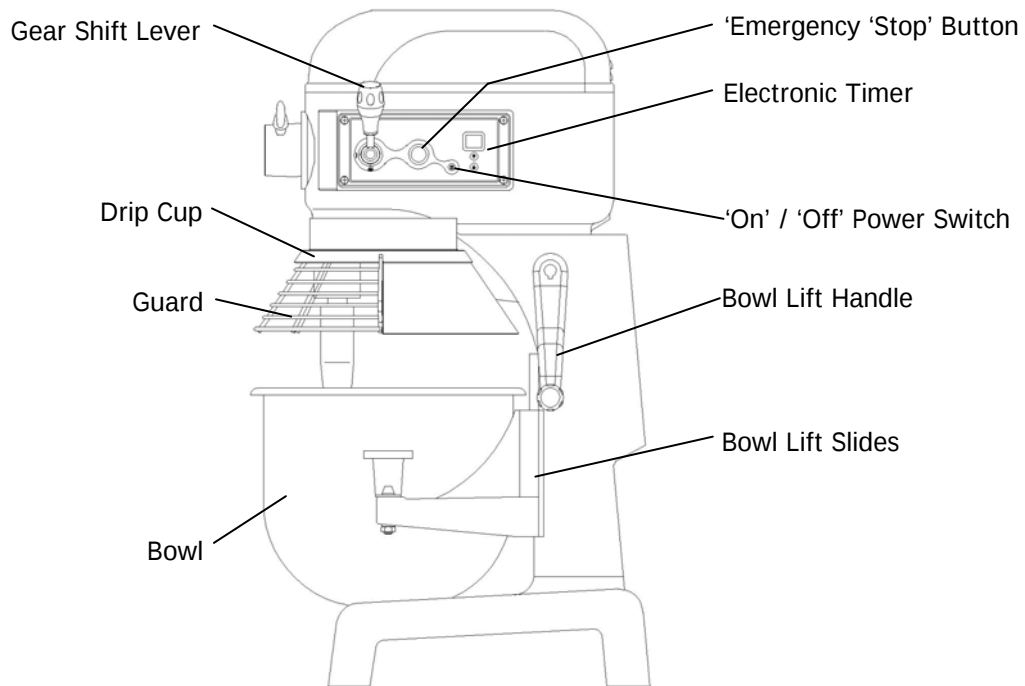


Figure 2

Controls

All models are fitted with an 'ON' - 'OFF' switch and an emergency stop switch which controls power to the mixer.

The **Electronic Timer** is used in conjunction with the 'ON' - 'OFF' switch for timed mixing operations and will stop the mixer when the desired timed has elapsed.

The **Gear Shift Lever** is used to change speeds. Always stop the mixer before changing speeds. To change speeds, turn the switch 'OFF', move the gear shift lever to the desired speed, and turn the switch back 'ON'.

Speed 1 (Low) - This speed is for heavy mixtures such as bread dough, heavy batters, and potatoes.

Speed 2 (Medium) - This speed is for light dough which must rise quickly, heavy batters, and some whipping operations.

Speed 3 (High) - This speed is fast speed for light work such as whipping cream, beating eggs, and mixing thin batters.

Operation

Emergency 'Stop' Button

The Emergency Stop Button should only be used in cases of emergency and **SHOULD NOT** be used as the standard OPERATING method of stopping the mixer.

Located on the right hand side of the machine, on the Control Panel. Pressing this button will stop all movement of the machine. ONLY ATTEMPT TO RE-START AFTER THE FAULT IS CORRECTED.

The machine cannot be re-started until:- The Emergency Stop Button is pulled up to release.

Mixing Bowl / Agitators

New mixers bowls and agitators (beaters, whip, and dough arms) should be thoroughly washed with hot water and mild soap solution, rinsed with either a mild soda or vinegar solution, and thoroughly rinsed with clean water BEFORE being put into service. This cleaning procedure should also be followed for bowls and agitators before whipping egg whites or whole eggs.

Fitting the Bowl

The bowl must be installed before the agitator. To install the bowl, fully lower the bowl support (Figure 2.). Position the bowl so the alignment bracket on the back of the bowl is in the bowl retainer and the alignment pins on the front of the bowl support fit in the holes on the sides of the bowl.

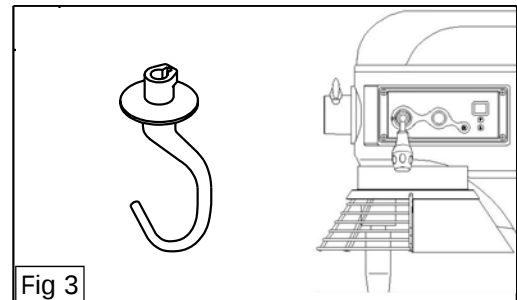
Fitting the Agitators

To install an agitator, the bowl must be installed and fully lowered. Place the agitator in the bowl, push it up on the agitator shaft, and turn it clockwise to seat the shaft pin in the slot of the agitator shank.

Dough Arm (Fig 3)

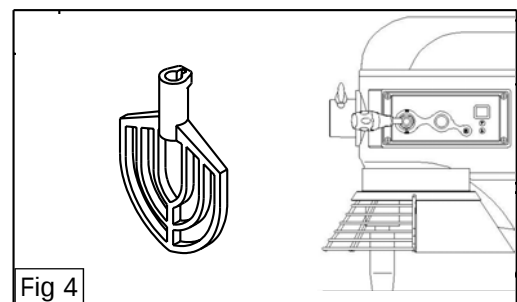
It is frequently used for heavy bread dough, and preferable to be use at low speed.

The moisture content of heavy dough is a critical when selecting proper mixing speed. You should never use 2nd speed when mixing heavy dough with an Absorption Ratio (AR) of 50% or less.



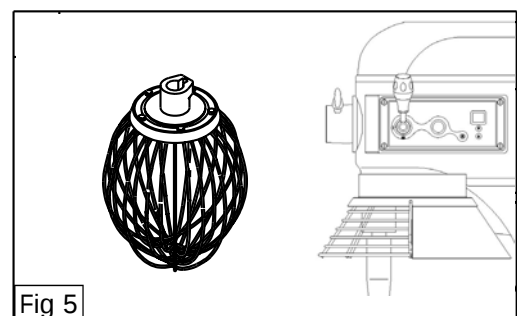
Beater (Fig 4)

It is commonly used for thin batters, cake and mashing potatoes, like stuffing and preferable to be used at middle speed.



Whip (Fig 5)

It is best for whipping cream and beating eggs and preferable to be used at high speed.



Attachments - Optional

To install an attachment, loosen the thumb screw on the attachment hub and remove the plug. Insert the attachment into the attachment hub making certain that the square shank of the attachment is in the square driver of the mixer. Secure the attachment by tightening the thumb screw.

Move the gear shift lever to the desired speed and start the mixer to operate the attachment.

The meat and food chopper attachment should be operated in second or third speed. If material in the cylinder stalls the mixer, stop the mixer at once. DO NOT attempt to restart the mixer in a lower speed - remove the adjusting ring, knife, plate, and worm and clear the obstruction.

Mixing Heavy Dough

The moisture content of heavy dough is a critical factor when selecting proper mixing speed. Do NOT use 2nd speed when mixing heavy dough with an Absorption Ratio (AR) of 60% or less. To determine the Absorption Ratio (AR) of a product, the water weight divide by the flour weight.

Example: Calculate the Absorption Ratio of a mixture containing 2 kg of water and 4 kg of flour.

$$AR = 2 \div 4 = 0.50 = 50 \%$$

Product	Agitator	BM20	
Egg Whites	Whip	1 l	
Mashed Potatoes	Beater	7 kg	
Mayonnaise (Qts. Oil)	Beater	10 l	
Meringue (Qts. Water)	Whip	1 l	
Waffle/Pan cake Batter	Beater	8 l	
Whipped Cream	Whip	4 l	
Sheet Cake Batter	Beater	9 kg	
Cup Cake	Beater	22 doz.	
Layer Cake	Beater	9 kg.	
Pound Cake	Beater	9.5 kg	
Sugar Cookie	Beater	30 doz.	
Bread or Roll Dough (Light/ Medium, 60% AR [†])	Hook *	Water 2.6 kg	Flour 4.3 kg
Bread or Roll Dough (Heavy, 55% AR [†])	Hook *	Water 2 kg	Flour 3.6 kg
Thin Pizza Dough, Pasta, Basic Egg Noodle (40% AR, = , 5 min. max. mix time)	Hook *	Water 0.9 kg	Flour 2.25 kg
Medium Pizza Dough (50% AR [†])	Hook *	Water 1.3 kg	Flour 2.6 kg
Thick Pizza Dough (60% AR [†])	Hook *	Water 2.7 kg	Flour 4.5 kg
Raised Donut Dough (65% AR)	Hook *	Water 1.3 kg	Flour 2 kg
Whole Wheat Dough (70% AR)	Hook **	Water 3.2 kg	Flour 4.5 kg

* 1st speed only

** 1st speed & 2nd speed only

[†] If high gluten flour is used, reduce above dough batch size by 10%

Cleaning Guidelines

Caution:

ALWAYS DISCONNECT FROM POWER SUPPLY BEFORE CLEANING OR MAINTENANCE
THIS UNIT IS NOT WATER PROOF.

The mixer should be thoroughly cleaned daily with a clean damp cloth and plastic scraper (metallic implements are not recommended).

Never use a metal or stiff brush to clean the mixer. Never clean the mixer with a water hose or any fluid pressure.

Bowls and agitators should be removed from the mixer and cleaned in a sink. The bowl guard should be removed periodically and wiped clean.

Maintenance Guidelines

The **Transmission Case** and **Planetary Mechanism** should be inspected weekly for leaks, damage, etc. Should it become necessary to repack the ball bearings, an authorized service technician or the manufacturer should be contacted. Use of unproved grease or lubricants may lead to damage and void the unit's warranty.

The **Bowl Lift Slides** (Figure 2) should be lubricated every six months, or more often under heavy usage. Disconnect the unit from the power supply before removing the top housing or apron.

The **Drip Cup** (Figure 2) should be inspected periodically for moisture or lubricant dripping. Remove the cup and wipe it with a soft cloth.

Any parts found to be damaged, defective or worn out should be replaced immediately.

Fault Finding

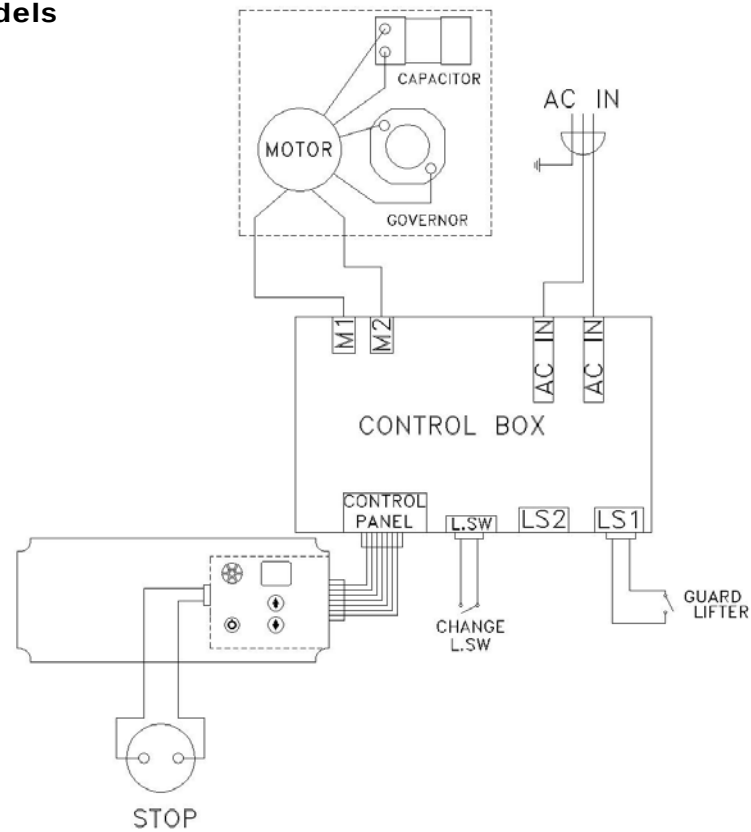
Fault	Possible Cause	Remedy
The mixer does not operate.	The mains isolating switch on the wall, circuit breaker or fuses are "Off" at the power board.	Turn 'On' the mixer.
	The mixer electronic timer is set to '0'.	Set time setting, or set electronic timer to '0' to allow manual operation.
Mixer stops during operation.	Mixer overload tripped. (Ensure that mixer is not being overloaded - refer to table on previous page for capacity guide).	Single phase models: Press reset button at rear of mixer. Three phase models: Call service

Replacement part list

BM20AT-12-001	Stainless Steel Bowl.
BM20AT-12-003	Aluminium Hook.
BM20AT-12-004	Stainless Steel Wire Whip.
BM20AT-12-002	Batter Beater.
BM20AT-06-003	HUB Attachment Drive.
HL-GL12SH	Mincer.
HL-VS12A	Slicer / Shredder.
BM20ATM	10 litre Reduction Kit (includes Bowl, Hook & Beater)
TBD	Electronic Timer.

Wiring Diagrams

Single Phase Models



Three Phase Models

