

Metcalfe SP-100 & SP-200
(9 Litre Heavy Duty Mixer & 20 Litre Heavy Duty Mixer)

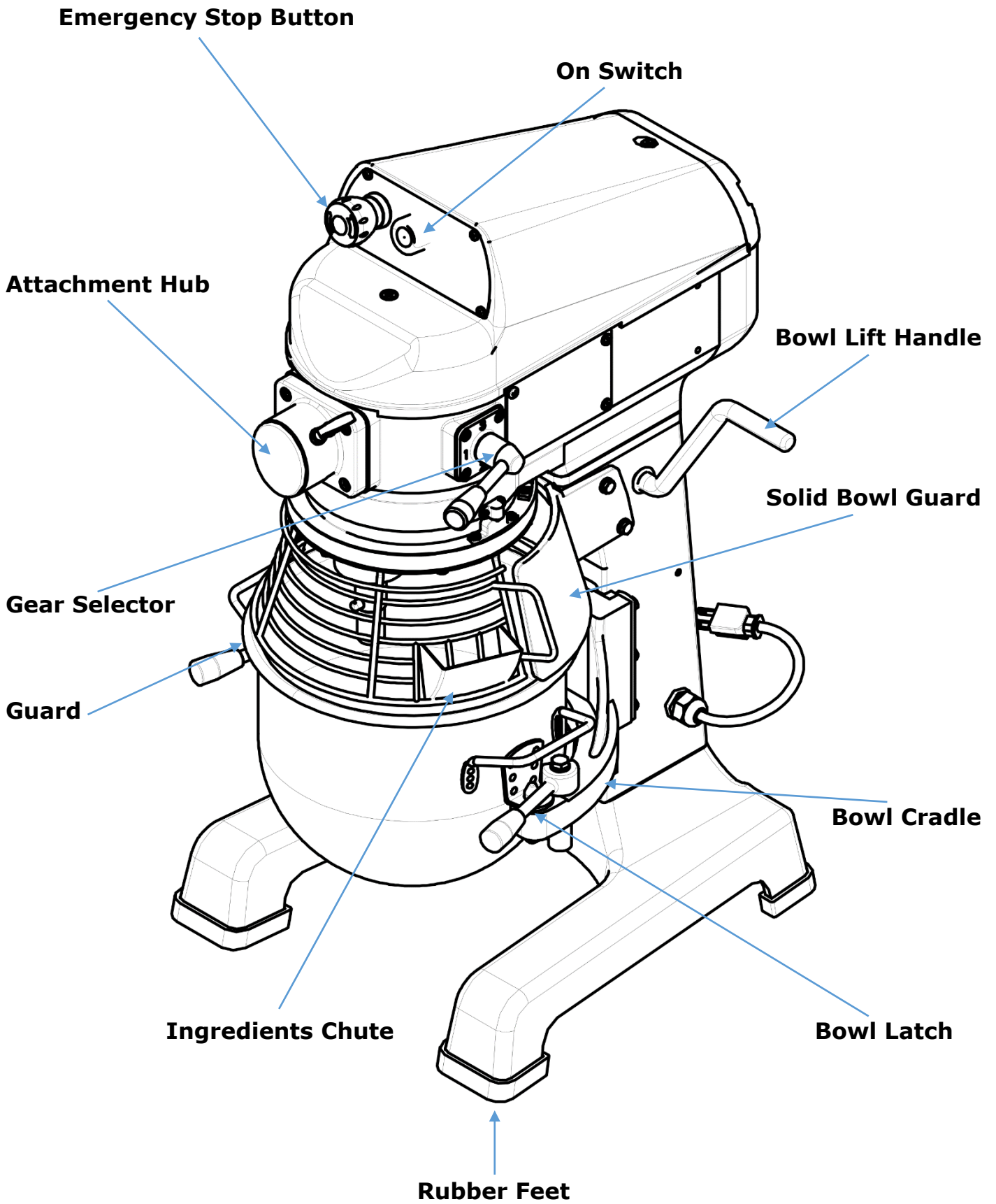
Installation, Operating Instructions
&
Wiring Diagram



Index

Your Mixer.....	2
SP-100 Technical Data Sheet.....	3
SP-200 Technical Data Sheet.....	4
Optional Extras.....	5
Installation.....	6
- Fitting the Bowl.....	6
- Attachment Selection.....	7
- Fitting Attachments.....	7
Speed Selection.....	7
How to use the attachment hub.....	8
Mixing Ingredients.....	8
Capacity Chart.....	9
Cleaning Instructions.....	10
Maintenace.....	10
Noise Test Report.....	10
Troubleshooting.....	11 - 12
Breakdown Drawing & Parts List.....	12
Spares & Service Contact Details.....	13
Product Information.....	13
Wiring Diagram (Single Phase).....	14
Wiring Diagram (Three Phase).....	15
Warranty Terms.....	16
Notes.....	17 - 18
Electrical PAT Test Certificate.....	19

Your Mixer



Metcalfe SP-100 (9 Litre Heavy Duty Mixer)

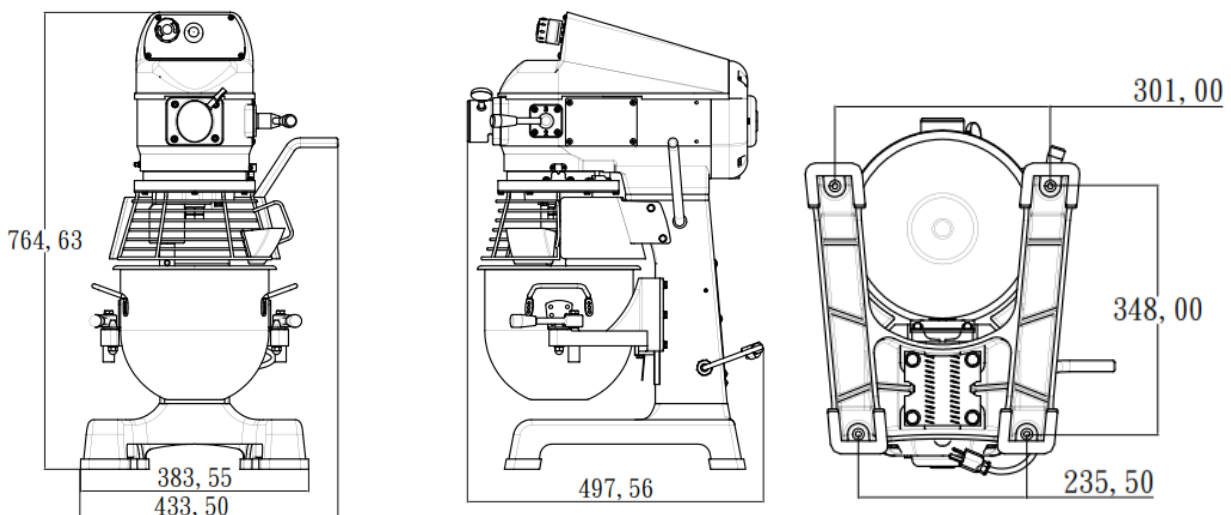
The Metcalfe SP-100 10 has a total bowl capacity of 10 quarts (9 litres). The 3 mixing tools provided ensure that all mixing requirements are met.

Features

- Gear driven
- Three speeds (106, 196 and 358) rpm
- Heavy duty heat-treated steel gears and shaft
- CE approved
- Safety interlocked bowl guard and bowl lift
- Stainless steel bowl with built in ingredient chute
- Emergency stop button
- Dual bowl clamps to lock bowl down
- Heavy duty gearbox
- Protective covers for feet to protect counters and provide stability
- Heavy duty cast iron frame
- No volt release
- Resettable thermal overload
- Non-slip rubber feet
- Optional Floor Stand or Mobile Trolley available
- Optional VH-12 Mincer attachment available
- Optional V99S Veg prep attachment available

Technical Specifications

Weight (kg)	Capacity (Litres)	Electrical Supply	Power (Hp)	Dimensions (mm) H x W x D
90	9	230V 50Hz (Only)	0.5	765 x 434 x 498



Metcalfe SP-200 (20 Litre Heavy Duty Mixer)

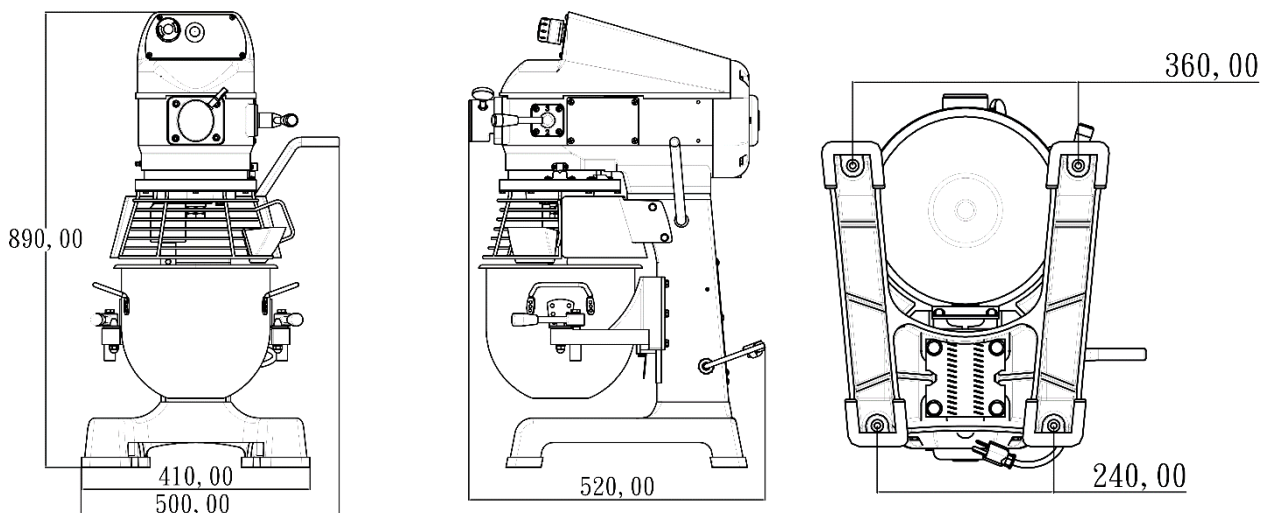
The Metcalfe SP-200 20 has a total bowl capacity of Quarts (20 Litres). The three mixing tools provided ensure that all mixing requirements are met.

Features

- Gear driven
- Three speeds (106, 196 and 358) rpm
- Heavy duty heat-treated steel gears and shaft
- CE approved
- Safety interlocked bowl guard and bowl lift
- Stainless steel bowl with built in ingredient chute
- Emergency stop button
- Dual bowl clamps to lock bowl down
- Heavy duty gearbox
- Protective covers for feet to protect counters and provide stability
- Heavy duty cast iron frame
- No volt release
- Resettable thermal overload
- Non-slip rubber feet
- Optional Floor Stand or Mobile Trolley available
- Optional VH-12 Mincer attachment available
- Optional V99S Veg prep attachment available
- Optional 10 quart conversion kit available.

Technical Specifications

Weight (kg)	Capacity (Litres)	Electrical Supply	Power (Hp)	Dimensions (mm) H x W x D
110	20	230V 50Hz (Only)	0.75	890 x 500 x 520



Optional Extras

Floor Stand or Mobile Trolley



The Metcalfe floor stand / mobile trolley are designed for use with both the SP100 & SP200 and features a robust stainless steel top with a mild steel frame and legs. The mobile trolley is fitted with lockable castors.

- (Stand) D x W x H (mm) 510 x 460 x 490
- (Trolley) D x W x H (mm) 510 x 460 x 590
- Weight 12Kg



VH-12 (Mincer)



The VH-12 mincer attachment is ideal for meat, fish and other foods (without bone). Supplied with stainless steel feed pan, sausage filler, pusher and 6mm extrusion plate.

- D x W x H (mm) 223 x 106 x 226
- Weight 6Kg

V99S (Veg Prep Attachment)

The V99S veg prep attachment, come complete with 8 plates to grate or shred all types of vegetable and fruit.

- Grating: 2mm, 3mm, 4mm, 7mm & 12mm
- Slicing: 2mm, 3mm & 8mm
- D x W x H (mm) 414 x 296 x 322
- Weight 10Kg



Pastry Knife (SP200 Only)

Designed to work with the Metcalfe SP200 only. The pastry knife cuts through the thickest of dough to easily combine ingredients, making it the ideal tool for mixing pastry and pie dough.

Half-Size Conversion Kit (SP200 Only)

The Metcalfe half-size conversion kit will convert your SP200 21 quart mixer to a 10 quart. With the conversion kit, your mixer can mix smaller batches just as effectively as you can with the larger 21-quart bowl. The kit includes a flat beater, whisk, dough hook and a 10-quart bowl with adapter.



Bowl Scraper

The bowl scraper eliminates the task of stopping mid batch to scrape product from inside of bowl. It reduces recipe time by no more stopping during mix time. Most recipes can have multiple steps reduced by use of the Bowl Scraper. In most cases, reduces time required for initial incorporation of ingredients. Provides product consistency by continuous scraping providing more consistent product results, batch after batch.

Installation

Unpacking

Unpack the mixer immediately after receipt. Please inspect the mixer to ensure no damage and all parts i.e. Bowl, Beater, Whisk & Dough Hook have been provided. If the machine is found to be damaged, keep all the packaging material and contact us immediately or contact your source of the equipment.

You should receive with your mixer:

- 1 x Stainless Steel Bowl
- 1 x Beater, Whisk & Dough Hook

If any of the above items were not received with your slicer, please refer to page 14 for contact details and inform us immediately for replacements.

Please ensure that you complete the product information section on page 13.

Installation

1. Before using the mixer please read this manual thoroughly. DO NOT proceed with any installation nor operation if you have any questions or do not understand anything within this manual. Please see contact details for telephone number for assistance.
2. Carefully unbolt the mixer from the pallet using a 3/8" wrench socket.
PLEASE NOTE: If the unit was supplied with Stand or Trolley, **DO NOT** dispose of the bolts as these will be required to secure the unit to either the Stand or Trolley.

Select a location for the mixer keeping these key points in mind:

- Floor or counter must be level
 - Work surface or bench must be able to support a load of 70Kg
 - Easy access for maintenance and servicing
 - Clearance for operating controls, installing and removing attachments or bowl.
 - Sufficient space for adding ingredients during mixing periods
 - Rear ventilation outlet of mixer **MUST NOT** be blocked.
3. For safety, reason the mixer should be bolted down into position using all four holes located in the legs.
 4. Please read the electrical information found on the data plate located at the rear of the machine. The incoming power should match the rating on the data plate.

Fitting the Bowl

NOTE: Install the bowl **BEFORE** attaching the agitators.

1. Lower the bowl by pulling the bowl lift lever forward and down to its resting position.
2. Lift the bowl by the bowl handles and



a) Slowly position the locking pin (located on the rear of the bowl) into the hole in the middle rear of the cradle (see fig A).

b) Lower the bowl onto the pins located on either side of the bowl cradle (Fig. A)

3. Once the bowl is positioned on the cradle, secure the bowl by pulling each bowl clamp forward until the bowl is locked tight (see fig B).

(Fig. B)



Attachment Selection

The beater, whisk and dough hook are meant for the work implied by their names. Do not use the beater for dough making or the whisk for anything other than whisking, aerating or mixing light mixtures. The below table shows the typical uses for each of the tools supplied.

 <p>Beater</p>	 <p>Whisk</p>	 <p>Dough Hook</p>
<p>Firm mixes such as;</p> <p>Light pastry Cakes Biscuits Icing Fillings Mashed Vegetables</p>	<p>Light mixes such as;</p> <p>Whipped cream Mayonnaise Egg whites Pancakes Soufflés</p>	<p>Heavy mixes such as;</p> <p>Dough Pie Pastry</p>

Fitting Attachments (i.e. Beater, Whisk & Dough Hook)

NOTE: It is easier to install the attachments prior to adding the ingredients into the bowl.

1. Rotate the bowl guard to the left so it rests in the open position (see fig A).



(Fig. B)

Excessive force used to open and close the bowl guard may damage the spring lock and bowl guard micro switch, and will void the warranty.

2. Slide the attachment slowly upwards onto the planetary shaft fitting the shaft pin through the slot in the agitator (see fig B).

3. Rotate the attachment clockwise to secure it onto the planetary shaft.






(Fig. A)

Speed Selection

Before changing speeds, the mixer must always be stopped. The necessary speed can then be selected before restarting the mixer by pressing the green start button.

The speed selected depends largely on the quantity and consistency of the product. It is recommended that mixing is always started at the lowest speed and progressively increased to the desire setting. In an emergency situation always use the red emergency stop button to stop the mixer. The below table show the recommended speeds for the range of tools;

Recommended Speed			
	1 st Gear	2 nd Gear	3 rd Gear
Whisk			
Beater			
Dough Hook			

How to Use the Attachment Hub

Never put your hand into the feed chute when using any mixer attachment.

The mixer must be OFF before installing attachments! Do NOT use attachments while mixing!

1. Loosen and remove the attachment hub thumbscrew (see fig A).
2. Remove the plastic cover from the attachment hub (see fig A).
3. Lubricate the attachment shaft with a food quality grease or mineral oil.
4. Insert the attachment shaft into the hub making sure to line up the alignment pin with the hub hole.
5. Tighten the thumbscrew back into the hub and securely tighten it.
6. Select the appropriate speed setting by lifting or lowering the speed control lever.



(Fig. A)

The below table shows the recommended speeds while using the hub attachments:

Recommended Speed			
	1 st Gear	2 nd Gear	3 rd Gear
V99S (Slicing)	→		
V99S (Grating)	→		
VH-12 (Mincing)	→		

NOTE: Make sure the bowl is up and the bowl guard is closed. The mixer will not start if the bowl and the bowl guard are not in the proper operating position.

7. Press the green start button located on the middle of the control panel.

CAUTION Always STOP the mixer BEFORE changing speeds! Failure to do so may damage the gears or other parts and WILL void the warranty!

8. To change the speed while using mixer attachments:
 - a) Press the red stop button
 - b) Change the speed by raising or lowering the speed control lever
 - c) Press the green start button to restart the mixer.

Mixing Ingredients

Please follow the capacity chart located on page 9. Overloading or not following the chart will damage the mixer and void warranty.




Attachments should always rotate in a clockwise direction around the bowl. If the attachment rotates, counter clockwise, contact a licenced technician immediately to correct incorrect wiring.

Important: Make sure the speed selector is on the 1st gear.

1. Add the appropriate mixing ingredients into the bowl.
2. Raise the bowl lift handle up completely until the bowl locks into position.
3. Slide the bowl guard to the right hand-side until it locks into place.

Note: The mixer will not start if the bowl guard is open or if the bowl is in the lower position.

Capacity Chart

Product	SP100 Max Reg Mix (Kg)	SP200 Max Reg Mix (Kg)			
Mashed Potatoes	5.8	6.0	•		
Pie Pastry	4.2	6.0	•		
Fruit Cake	6.5	11.5	•		
Sponge Cake	3.2	5.5	•		
Pound Cake	4.5	8.0	•		
Madeira	4.5	8.0	•		
Steam Pudding	4.5	8.0	•		•
Fondant (kg sugar)	3.0	5.0		•	
Whipped Cream	2.0 Litres	4.0 Litres		•	
Egg Whites	0.5 Litres	0.8 Litres			•
Mayonnaise	5.0 Litres	10.0 Litres			•
Batter	3.8 Litres	8.0 Litres	•		•
Meat	5.0	8.0	•		•
Croissant (kg flour)	3.0	4.0			•
Brioche (kg flour)	3.0	4.0			•
Light Bread Dough - 2 (60% Moisture Content)	5.7	8.5			•
Heavy Bread Dough - 2 (60% Moisture Content)	4.5	6.5			•
Pizza Dough - 2 (50% Moisture Content)	2.3	5.5			•
Pizza Dough - 2 (40% Moisture Content)	2.0	4.0			•

1. Recommended weight for a finished mix unless otherwise stated
2. Water content e.g. 25% Flour / 12.5% Water = 50% Moisture
3. For pizza dough with lower moisture content, consult Metcalfe Catering Equipment, (see contact details on page 15).
4. For higher gluten flour reduce dough batch by 25%

Cleaning Instructions

- **NEVER** use a scrubber pad, steel wool, or abrasive material to clean the mixer.
- **NEVER** use bleach or bleach based cleaner.
- **ALWAYS** remove the attachment/s after each batch. If not, the attachment/s can become stuck on the shaft and difficult to remove.

ALWAYS DISCONNECT OR UNPLUG THE ELECTRICAL POWER FROM THE MIXER BEFORE CLEANING.

Recommended Cleaning

Part	Required Action	Frequency
Attachments	Hand wash using soap and water, rinse, dry and sanitise.	Clean after each use
Guard	Hand wash using soap and water, rinse, dry and sanitise.	
Bowl	Using a sponge or cloth, soap and water, apply pressure to ensure the bowl is clean, rinse, dry and sanitise. The bowl can also be placed in a dishwasher	Clean after each use
Solid Bowl Guard	Hand wash using soap and water, rinse, dry and sanitise.	Clean after each use
Bowl Cradle	Hand wash using soap and water, rinse, dry and sanitise.	Daily
Planetary Shaft	Wipe with a clean damp cloth, dry & sanitise.	Clean after each use
Exterior	Hand wash using soap and water, rinse, dry & sanitise.	Daily
Hub Interior	Wipe with clean damp cloth, dry & sanitise.	Daily

Maintenance

Regular maintenance is necessary on all mixers if they are to run smoothly and problem free.

Part	Required action	Frequency
Planetary Ring	Reapply grease. Inject grease (2 pumps only) into fitting on the side of planetary DO NOT overfill	Once a year.
Bowl Slide Rods	Apply food quality grease on the bowl slide rods. Raise and lower the bowl to distribute the grease onto the rods.	If the bowl becomes difficult to raise or lower.

Noise Test Report

The average A-weighted sound pressure level is listed on the below table.

Model Noise	SP-100	SP-200
Noise Level	67.3 dB	65.5 dB

Troubleshooting

Problem	Possible Causes	Action Required
Mixer will not turn	Bowl guard not in closed position.	Rotate guard to the right until fully closed.
	Bowl not raised.	Raise bowl to highest position.
	Power not connected correctly.	Check all power connections. Plug into a live socket. <i>(Do not use extension cord!)</i> Test socket with another item.
	Building circuit breaker is off.	Check breaker box.
	Internal overload tripped.	Wait two minutes. Press stop button then press start button. <i>(If overload continues to trip, reduce batch size and/or adjust recipe!)</i>
	Gear not engaged.	Switch gear fully into position. <i>(Mixer will not operate if the speed control lever is positioned in between speeds)</i>
Mixing stops during mixing	Internal overload tripped.	Wait two minutes. Press stop button then press start button. <i>(If overload continues to trip, reduce batch size and/or adjust recipe!)</i>
	Damaged or broken transmission belt.	Replace belt.
Mixer is noisy	Mixer is not installed on level surface.	Adjust surface or relocate mixer. Make sure the rubber feet are installed.
	Bowl not seated correctly or clamps not in place.	Ensure bowl is seated into bowl cradle correctly and bowl clamps are locked into place.
	Attachment not fitted properly.	Remove and re attach attachment into position correctly
	Overloading bowl.	Reduce batch size. <i>(See capacity Chart)</i>
	Damaged or worn belt.	Replace belt
	Planetary ring gear needs more grease.	Technician to inspect for source of noise.
Safety guard seized (will not move freely)	Clean & lubricate slide sheath.	Technician must drop down planetary assembly to access mat & sheath.
Attachments won't go onto the planetary shaft easily	Lack of lubrication and / or cleaning of the planetary shaft.	Wipe planetary shaft with a clean damp cloth and lubricate the shaft with mineral oil or food quality grease.
Mixing time is too long.	Three-phase mixer is wired incorrectly.	Attachments should rotate clockwise around bowl. If not, electrician must rewire.
	Batch size too small.	Increase batch size or use half size conversation kit. <i>(SP200 only)</i>
Bowl lift sticking or not operational.	Lack of lubrication on bowl slides.	Lubricate bowl slides with food quality grease. If still sticking, technician must clean bowl lift mechanism.
One or more gear not working	Damaged or broken gear/s.	Technician to replace gears. <i>Always stop mixer before changing gears.</i>
Mixer will not mix medium or heavy loads.	Incorrect or low voltage.	Contact electrician.
Residue leaking from hub.	Contaminated hub due to food build-up.	Technician to remove hub and clean interior. To avoid problem, always wipe hub and dry after each use.

Attachments touching bottom or sides of bowl.	Defective or dented bowl.	Remove dents or replace bowl.
	Defective attachment.	Replace attachment.
Broken whisk wires	Batch size too large for mixer, Items too firm, speed too high.	Reduce batch size. (See Capacity Chart) Adjust recipe. Reduce speed.
	Hand utensil dropped into bowl while mixing.	Stop mixer before working on mixture.
Broken beater	Ingredients too cold or too large (e.g. frozen butter, cream cheese cut in chunks)	Wait for ingredient to reach room temperature before mixing. Reduce chunk size.
Broken dough hook	Batch size too large for mixer.	Reduce batch size. (See Capacity Chart). Adjust recipe.
	Ingredients too cold or too large	Wait for ingredients to reach room temperature before mixing. Reduce chunk size
Discoloration of mixed product	Bowl has not been cleaned thoroughly.	Clean bowl again (refer to page 9).

Breakdown Drawing & Parts List

To obtain a copy of the breakdown drawing & parts list relating to either of the below mixers. Either email enquires@metcalfecatering.com quoting the serial no of the unit as shown in the above image. Alternatively you can scan the below QR codes using a QR Scanner to download them directly to your phone or tablet.

- Metcalfe SP-100



- Metcalfe SP-200



To download a QR Scanner to your mobile / table click on either of the below to obtain the QR Reader application.



Or go to your app store and search for the below

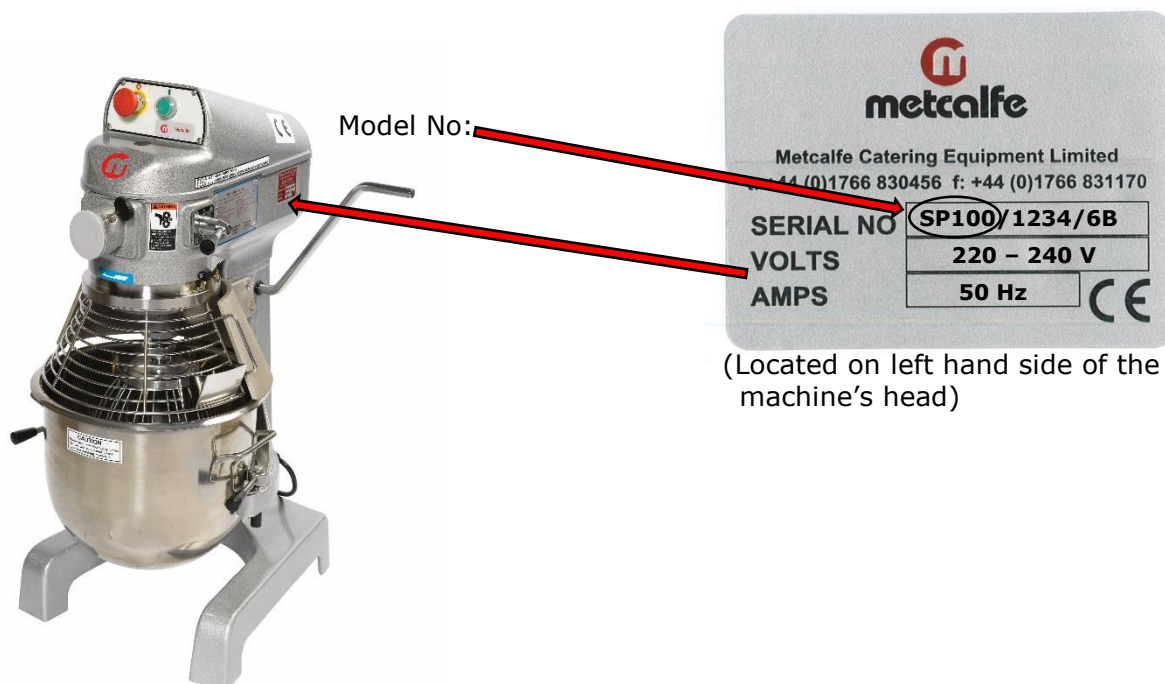
Apple Device
QR Code Reader by Scan

Windows
QR Code Reader

Android
QR Code Reader

Spare Parts and Service

For more information on Metcalfe Spares / Accessories and Service Support, please always quote the Metcalfe Serial Number of the machine. This can be found on the serial number plate which is shown below and the location as to where it can be found on the machine.



Contact us on the details below;

Metcalfe Sales & Spares Dept.

Tel: 01766 830 456 - Opt 1

Email: enquires@metcalfecatering.com

Metcalfe Service Dept.

Tel: 01766 830 456 - Opt 4

Email: karen@metcalfecatering.com

Additional copies of either the instruction manual or breakdown drawing for this unit can be obtained by visiting the Metcalfe Catering Equipment Ltd website or contacting sales.

Web-site: www.metcalfecatering.com / Sales e-mail: sales@metcalfecatering.com

Product Information

Please complete the below details and keep in a safe place. Ensure that you complete the Model No & Serial No sections for future reference when enquiring for spare parts and technical help.

Please see above for location of serial no on the Metcalfe data plate, the model no for your unit will be the first section of the serial no as shown on the above plate.

Metcalfe Catering Equipment Ltd

Company Name: _____

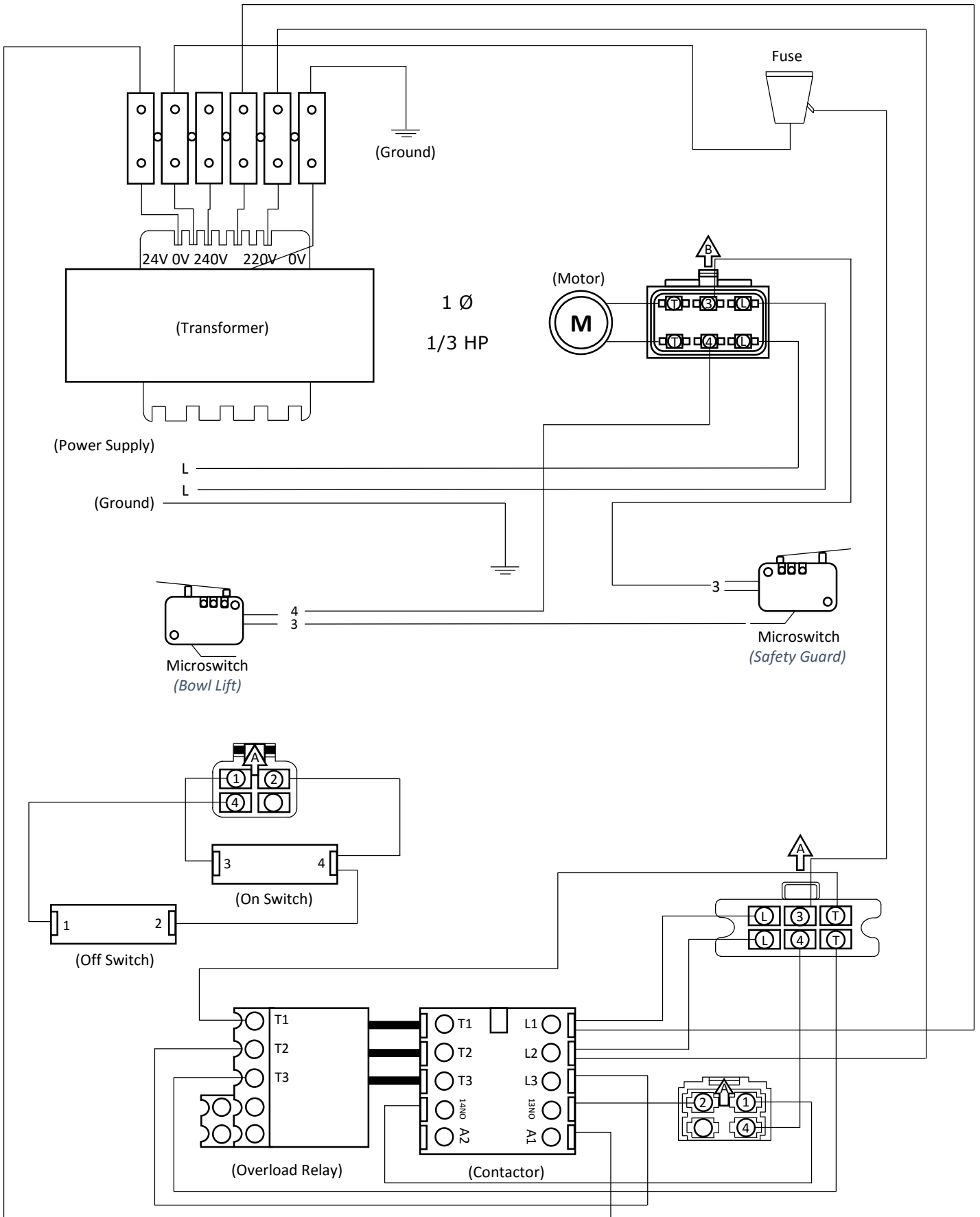
Company Address: _____

Model No: _____ Serial No: _____ Date of Purchase: _____

Name of Dealer: _____

Please retain this section for your records

SP100 & SP200 - Wiring Diagram (Single Phase)



Metcalfe Warranty

All Metcalfe products are guaranteed against defects in material and workmanship for a period of one year from date of Invoice, except where specially noted.

The Company's obligation under this warranty is limited to repairing or replacing, without charge, any part or parts found to be defective under normal use, in accordance to the specified operations manual and capacity ratings.

On all return to factory warranty items, it is the responsibility of the purchaser to return the entire unit to the factory, in a clean condition, properly packed and labelled.

All repairs, alterations or replacement of materials or parts not authorised by Metcalfe will automatically void all warranties in their entirety.

There is a limited **6-month warranty** on the following:

- Mixer attachments (beater, whisk and dough hook)
- Parts purchased or supplied for the repair of Metcalfe equipment

This warranty does not cover the following:

- Failure due to neglect, abuse, careless handling or misuse of machine
- Failure caused due to improper maintenance
- Blender clutches
- Knives and gears on can openers
- Sharpening of slicer blades
- General wear and tear

Metcalfe and its suppliers reserve the right to make changes in design and specification to any product without prior notification.



Electrical PAT Certificate

Test Details	Result
Item:	
Class:	Class 1 / Class 2
Date:	/ /
Appliance ID:	
User ID:	M.C.E
Visual:	
Earth Current:	amps
Class 1: Earth Result / RPE	Ω
RISO:	M Ω
1 EA:	MA
Class 2 RISO:	M Ω
1 EA:	MA
Insulation (500V):	M Ω
Load:	KVA
Leakage:	MA
Polarity (leads only):	

Test Details	Result
Item:	
Class:	Class 1 / Class 2
Date:	/ /
Appliance ID:	
User ID:	M.C.E
Visual:	
Earth Current:	amps
Class 1: Earth Result / RPE	Ω
RISO:	M Ω
1 EA:	MA
Class 2 RISO:	M Ω
1 EA:	MA
Insulation (500V):	M Ω
Load:	KVA
Leakage:	MA
Polarity (leads only):	

Electrical PAT Certificate

Test Details	Result
Item:	
Class:	Class 1 / Class 2
Date:	/ /
Appliance ID:	
User ID:	M.C.E
Visual:	
Earth Current:	amps
Class 1: Earth Result / RPE	Ω
RISO:	M Ω
1 EA:	MA
Class 2 RISO:	M Ω
1 EA:	MA
Insulation (500V):	M Ω
Load:	KVA
Leakage:	MA
Polarity (leads only):	

Test Details	Result
Item:	
Class:	Class 1 / Class 2
Date:	/ /
Appliance ID:	
User ID:	M.C.E
Visual:	
Earth Current:	amps
Class 1: Earth Result / RPE	Ω
RISO:	M Ω
1 EA:	MA
Class 2 RISO:	M Ω
1 EA:	MA
Insulation (500V):	M Ω
Load:	KVA
Leakage:	MA
Polarity (leads only):	