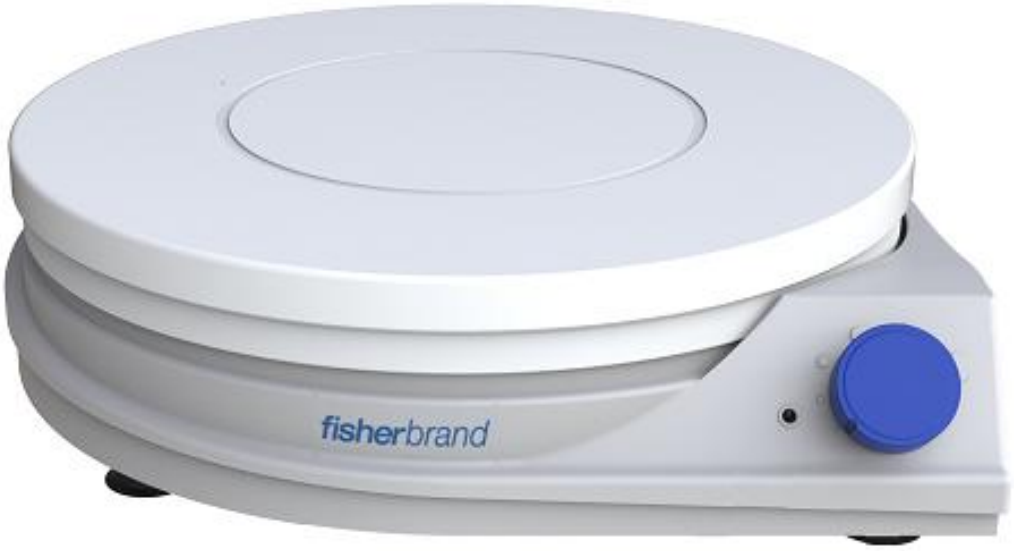
fisherbrand

Operation Manual

RT Basic 12, RT Basic 17 and RT Basic 22 Magnetic Stirrers



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part of Thermo Fisher Scientific

This manual cover the model is shown below

NA Model	EU Model	Voltage	Description
11676263	N/A	100 ~ 240V-US	FS RT Basic Stirrer 120US
11676264	15336607	100 ~ 240V-EU, UK, ANZ/CN	FS RT Basic Stirrer 120
11676265	N/A	100 ~ 240V-US	FS RT Basic Stirrer 170US
11676266	15346607	100 ~ 240V-EU, UK, ANZ/CN	FS RT Basic Stirrer 170
11676267	N/A	100 ~ 240V-US	FS RT Basic Stirrer 220US
11676268	15356607	100 ~ 240V-EU, UK, ANZ/CN	FS RT Basic Stirrer 220

Important Before using this product, read this entire operation manual carefully. Users should follow all of the operational guidelines contained in this manual and take all necessary safety precautions while using this product. Failure to follow these guidelines could result in potentially irreparable bodily harm and/or property damage.

Caution All internal adjustments and maintenance must be performed by qualified service personnel.

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This manual contains important safety and operation information. You must carefully read, understand, and follow all the instructions in this manual prior to operating this instrument. Keep this manual in a safe place nearby for reference and make it easily available to all users.

1) This manual highlights DANGER/WARNING/CAUTION/NOTICE alerts to prevent injury or property damage and also to achieve optimum performance of your instrument.

2) These alerts are classified into four types in this manual depending on the importance and the risk levels as described below:

Symbols	Meaning
⚠ DANGER	Indicates a hazardous situation which, if not avoided, will result in death or serious injury.
⚠WARNING	Ignoring this warning could cause serious injury or even death.
⚠CAUTION	Ignoring this caution could cause injury or property damage.
NOTICE	Ignoring this notice could cause operational problems.

3) The claim which is out of the quality guarantee published by the Manufacturer is out of Manufacturer's responsibility.

4) The damage which is from unexpected fault or damage of user by Acts of God is out of Manufacturer's responsibility.

Table of Contents

Section 1 Functional Description

The Fisher Scientific RT Basic is an economically compact and lightweight magnetic stirrer for any experimental lab environment. This stirrer has an operating range of 150rpm ~ 2,500rpm by exact speed and powerful performance provides stirring of high viscosity solutions

This magnetic stirrer is designed for user safety in the laboratory.
A description of features:

- Non-slip silicon plate covers inhibit sliding of glass flasks, beakers, etc.
- Each RPM adjusts real-time stirring with a quick action.
- Non-spark BLDC (Brushless Direct Current) motor stirring to offer safety and high quality durability in laboratory.
- White plate color allows easy monitoring of various color samples.

Construction

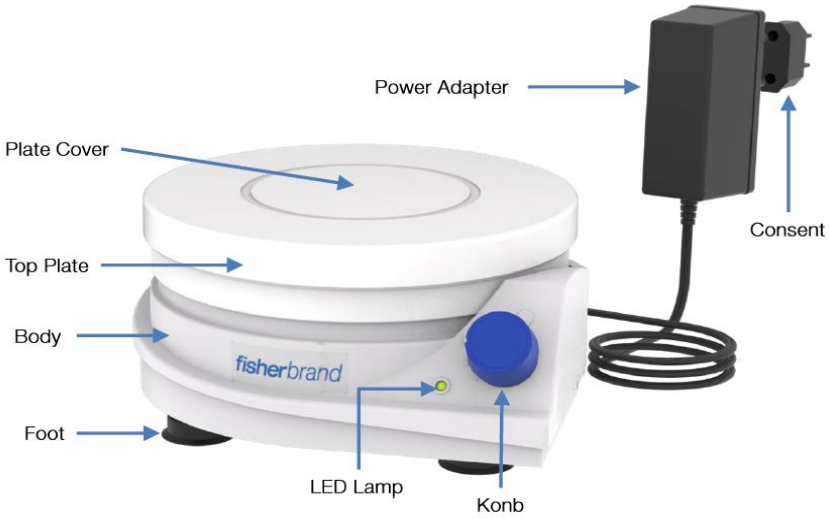

Figure 1-1. RT Basic 12, RT Basic 17 and RT Basic 22 Components

- Plate cover: Non-slip silicone covers prevent sliding of glass containers.
- Top plate: Protecting stirrer inside and preventing liquid inflow.
- Foot: Unit support and non-skid protection.
- LED Lamp: Easy to check if the stirrer power is on.
- Knob: Power ON/OFF and controlling stirring speed.
- Body: Motor and control system located inside body.
- Power adapter: Supplying power to stirrer.
- Adapter:
  - 230V Model: Power adapter & multi plugs.
  - 120V Model: Only for 120V/US style plug usage.

Section 2 Unpacking and Installation

Inspect the packaging before removing the outer container. On removal of the outer container, inspect the instrument for any damage that may have occurred during transportation

Check the Instrument Components

(1) Check the instrument components supplied in the package after unpacking.

(2) If there is a noticeable issue or an omission is found, immediately notify your local Fisher Scientific Service Department

Item	Figure	Quantity
Operation Manual		1
Adapter		1
Silicone Plate cover (White 1, Black 1)		1
Magnetic bar		1

Environmental Conditions

The unit should be installed in a suitable environment as described below.

- Avoid direct sunlight

- Environment temperature should be between 5°C - 40°C

- Relative Humidity (RH%) should be less than 80%.

- Altitude should be less than 2,000m

Introduction

Location Conditions

Place the unit on the bench or table when in use, and keep a proper distance between it and other apparatuses.

⚠WARNING

- Do not use the plastic beaker when operating the unit in explosive atmospheres.
- The plastic beaker can cause the magnetic field, resulting in igniting to explosive substances.

⚠CAUTION

- Do not place the unit near other laboratory equipment which can be readily influenced, even by weak motor vibration, or by magnetic force because the unit creates a magnetic field.

Arrangement of Unit

- Place the unit on the table. Check to make sure the non-slip feet are secured tightly to the unit.
- Ensure that the unit is parallel to the table.

Setting Up Cover Plate on Top Plate

- Place silicone cover on top plate.
- Silicone cover is not required for use.

Connection to the Mains Power Supply

(1) Turn the knob counterclockwise until a “click” sound is heard, to make sure that power is off.

(2) Power connection on the Magnetic Stirrer RT Basic 12, RT Basic 17 & RT Basic 22.

⚠WARNING

- Ensure that the unit should be connected to a power source that is an appropriate voltage, phase, capacity.
- Failure to connect to a proper power supply will cause the risk of fire, electric shock, and personal injury.
- Never use a forked socket, or a double-tapped socket.
- Failure to obey safety instructions will result in burning of the cable, or risk of fire.
- Use only the main power cord recommended by the manufacturer or provided with the unit.

Stirring Action

Stirring test can be performed without placing a beaker, or flask on top of top plate, through the following procedure;

(1) Make sure that the unit is on by turning the knob clockwise until the “click” sound is heard.

(2) Observe the magnetic stirring bar start to spin with the lighting of the LED lamp, and the spinning motor.

(3) Make sure that the more the unit is speeding up, the more the unit is vibrating up, by turning the knob clockwise, until it works properly.

(4) Stop the stirring by turning the knob counterclockwise to the end. Observe the LED light shut off.

Section 3 Operation

To **start** the stirrer, follow the procedure below.

(1) Pour liquid to be stirred into a vessel.

(2) Place a magnetic stirring bar at the center of the vessel base.

(3) Place vessel on the top center of the top plate, with or without the silicone plate cover.

(4) Turn the knob clockwise to start stirring.

(5) Adjust the knob clockwise or counterclockwise until the required stirring speed is achieved.

To **stop** the stirrer, follow the procedure below.

(1) After stirring is completed, turn the knob counterclockwise to off.

(2) By inertia, the magnetic stirring bar may continue spinning for a short time, even if the LED light is off.

⚠CAUTION

Do not exceed the maximum load of 10kg for Magnetic Stirrer RT Basic 12, and 20kg for Magnetic Stirrer RT Basic 17, respectively.

Section 4 Maintenance

Periodic Maintenance

Maintenance procedures for these units follow.

Item	Inspection Interval	
	Daily	Weekly
Generals		
The conditions of connection for power supply and an adaptor.	●	
The presence of power supply and an adaptor contact wetting, and cable peeling off, and out of contact.	●	
The cleanliness of top plate and plate cover.		●
Magnetic stirrer		
The status of ON/OFF on LED light.	●	
The status of ON/OFF on motor.	●	
The status of motor speed up and down.	●	

Cleaning

Top plate

- Remove a contaminant by cleaning the unit with a wet soft cloth.
- Keep the unit clean by dusting the unit frequently with a dry soft cloth.

Plate cover

- Remove any contaminant by cleaning the unit frequently with a soft cloth before and after using, otherwise the cover may become difficult to clean.
- Always keep the unit clean, without any contaminants.

⚠WARNING

- Do not immerse the unit in water for cleaning.

To Store the Unit

(1) Unplug the instrument from the main power.

(2) Clean the instrument with a soft cloth.

(3) Store in a dry place.

Section 5 Trouble Shooting

Electrical Trouble	Causes	Solution
The unit does not turn on	Incorrect electric power.	Compare power source and voltage on the ID plate and make sure they are the same. ID plate is found on the back of unit.
	Power failure or circuit breaker shuts down.	Find out the causes of power failure and recovery.
	Main plug not seated properly.	Check the electrical cord connection at the unit to ensure it is fully seated.
	Socket / plug / main power line might be cut.	If the socket / plug / main power line are cut, request service.
Building circuit breaker keeps going OFF	Electrical short or too many plugs in.	1. Check out voltage capacity of circuit breaker. 2. Check the electrical cord connection at the unit to ensure it is fully seated.
No LED	Power failure.	Find out the causes of power failure and recovery.
	Main plug not seated properly.	Check the electrical cord connection at the unit to ensure it is fully seated.
	Connection of adapter in socket.	Check the adapter connection at the unit to ensure it is fully seated.
With the LED ON, the unit does not stir	Motor could be malfunctioning.	Contact Fisher Scientific for service.

Symptoms During Operation	Causes	Trouble shooting
Magnetic bar is out of position	Too much solution (solvent) in flask.	Reduce volume of solution (solvent) or increase RPM slowly.
	High density of solution (solvent) in flask.	Increase RPM slowly.
	Magnetic force of bar is weak.	Replace magnetic bar.
Some kind of bumping sound from inside	Something could be loosened.	Contact Fisher Scientific for service.

Section 6 Accessories

NA Model	EU Model	Description
11676272	15396607	Plate cover (White color, Silicone rubber Ø120mm)
11676273	15316617	Plate cover (White color, Silicone rubber Ø170mm)
11676274	15326617	Plate cover (White color, Silicone rubber Ø220mm)

Section 7 Technical Specifications

MODEL		Magnetic Stirrer RT Basic 12	Magnetic Stirrer RT Basic 17	Magnetic Stirrer RT Basic 22
				
120V	US Catalogue Number	11676263	11676265	11676267
	EU Catalogue Number	N/A	N/A	N/A
230V	US Catalogue Number	11676264	11676266	11676268
	EU Catalogue Number	15336607	15346607	15356607
Technical data	Stirring Capacity (Liter, H_2O)	2	4	5
	Speed range (rpm)	150 ~ 2,500		
	Speed display	None		
	Motor rating input / output (W)	2.9 / 1.6		
	Magnetic bar (Ø x L, mm/inch), Max.	8 × 30/0.31 × 1.18	8 × 40/0.31 × 1.57	10 × 50/0.39 ×1.97
	Load, Max (kg / lbs)	15 / 33.07	20 / 44.09	25 / 55.12
Top plate	Material	Polypropylene with non-slip plate cover		
	Dimension (mm, Ø)	120	170	220
General data	Body material	Polypropylene		
	Dimension (mm/inch, W x D x H)	130 x 130 x 65 / 5.12 x 5.12 x 2.56	185 x 185 x 65 / 7.28 x 7.28 x 2.56	230 x 230 x 65 / 9.06 x 9.06 x 2.56
	Weight (kg / lbs)	0.6 / 1.32	0.9 / 1.98	1.1 / 2.43
	Permissible ambient temperature (°C)	+5 ~ 40		
	Permissible relative humidity (%)	up to 80		
	Electrical requirements	DC 12V x 1A Power adapter with free AC voltage and frequency (AC 100 ~ 240V, 50/60Hz)		
	Power consumption (W)	5	6	6
	Controller	Long life BLDC motor and electronic speed control		
	Safety Device	Thermal Shutdown, Current limit protection		
	Protection class acc. to DIN EN 60529	IP42		

Disposing of the Unit

Before disposing of the magnetic stirrer:

(1) Dispose the unit with separating plastic mold, motor, and magnet.

(2) Check with your institute or laboratory for individual policies and procedures for disposal of laboratory equipment.

(3) Contact your local governing body for regulations regarding disposal of electrical, metal (brass, aluminum, steel and stainless steel), refrigeration and rubber components. Fisher Scientific recommends the user find a local recycler or laboratory equipment recycler to properly dispose of the unit and its components.

FISHER SCIENTIFIC STANDARD PRODUCT WARRANTY

When used in laboratory conditions and according to these operation instructions and maintenance, this product is warranted for 24 months against defective materials or workmanship.
The 24 month warranty period begins from the delivery date of this product.
For product quality or performance issues, contact Fisher Scientific Customer Service.

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