

INSTRUCTIONS

FISHER DRY BATH INCUBATORS

Catalog Nos.	11-718
	11-718-2
	11-718-4
	11-718-6
	11-718-8

Fisher Dry Bath Incubators provide controlled heat for a wide variety of clinical and general chemistry applications. They operate through a temperature range from slightly over ambient to 130 C. The various models can accommodate 1, 2, 3, 4, or 6 dry blocks. Each unit is controlled by two adjustable thermostats, one for operation up to about 60 C, and the other for up to 130 C. A fully-insulated pad-type heating element is bonded directly to the entire underside of the dry block support plate to provide even heat distribution. The support plate is made from aluminum for rapid heat transfer.

Each model is designed to be used with any of eight different accessory dry blocks. (See the Accessories Section for a listing of catalog numbers). Blocks are made from solid aluminum with a black anodized finish. Each block is marked so that every well can be identified. Dry blocks can handle a variety of tubes from 1.5 ml microcentrifuge tubes to 25 mm diameter tubes. All of these accessory dry blocks are interchangeable.

Typical applications for these dry baths include incubation, culture inactivations, enzyme reactions, melting and boiling points, and many other procedures that require controlled heat.

Performance Characteristics

Temperature Range: Slightly Above Ambient to 130 C

Note: Tolerances on temperature ranges are approximately -5 to +10 C. Maximum attainable temperature may exceed 140 C.

Uniformity: * + or - 0.5 C

*Variation, at a given time, of a sample temperature from the average of all sample temperatures within a dry block (at 37C). Temperature variation between blocks may exceed this spec.

Capacities:

11-718	1 Block
11-718-2	2 Blocks
11-718-4	3 Blocks
11-718-6	4 Blocks
11-718-8	6 Blocks

Power Requirements:

11-718	115V, 50/60 Hz, 90 Watts
11-718-2	115V, 50/60 Hz, 180 Watts
11-718-4	115V, 50/60 Hz, 270 Watts
11-718-6	115V, 50/60 Hz, 360 Watts
11-718-8	115V, 50/60 Hz, 540 Watts

Physical Data:

11-718	9in X 8in X 3.5in	4.6 lbs
11-718-2	9in X 8in X 3.5in	4.7 lbs
11-718-4	9in X 11in X 3.5in	5.8 lbs
11-718-6	12.5in X 8.5in X 3.5in	6.1 lbs
11-718-8	12.5in X 11in X 3.5in	7.4 lbs

Unpacking

These Dry Bath Incubators are shipped in a single carton, completely assembled. Each is supplied with this manual, a warranty card, and a Dry Block Handle (for handling or moving dry blocks). The warranty card should be completed and returned as soon as possible. In cases where shipping damage is observed, keep the unit and carton intact, including the packaging materials, and file a claim with the final carrier.

Note; Because of the wide variety of applications and sample block designs, dry blocks are not included with dry baths. The user must select and order the blocks that best suit the particular application.

OPERATION

Each dry bath is equipped with two temperature controls (thermostats), a selector switch, and a red-lensed lamp which indicates heater operation. The lamp comes on when the controlling thermostat, as selected by the switch, closes to supply power to the heater. Once the dry bath reaches thermal equilibrium, the cycling of the lamp, and the heater, should continue on a regular basis. In case of a malfunction, such as a heater failure or thermostat stuck in the closed position, the lamp will remain on. Should the thermostat fail with the contacts open, the light will remain off.

1. Place the unit on a flat, level surface, in an area free of drafts and temperature changes. (Note; Drafts and ambient temperature changes will adversely affect temperature constancy and uniformity.)

2. Make sure that bath cavity is free of foreign matter, then place empty dry block(s) into bath cavity.
3. Connect unit to an appropriate, grounded power source as specified on the unit's data plate.
4. Insert an immersion type thermometer, graduated to the desired temperature range, into the thermometer well in the dry block. Note; For more precise measurements, the thermometer can be placed into the sample tube or a similar tube adjacent to the sample tube.
5. Set the three-position switch at the appropriate setting:
 - "Low" setting for ambient to 60 C
 - "High" setting for 50C to 130 C
6. Adjust the appropriate temperature control to a setting that approximates the desired temperature. The following can be used as a general guideline. On the Low temperature control a setting of "0" will be ambient, "6" or "7" about 40 C, and "10" about 60 C. On the High temperature control a setting of "0" will heat samples to about 50 C, "5" will heat to about 90 C, and "10" about 130 C.
7. As the dry bath is heating, monitor the temperature reading on the thermometer and observe the indicator lamp. If the thermometer reading exceeds the desired temperature, reduce the temperature control setting. When the lamp cycles on and off at regular intervals (or "flickers"), the unit has reached equilibrium. If the dry bath is not at the desired temperature, adjust the temperature control in the appropriate direction.
8. Once the dry bath has stabilized at the desired temperature, samples may be inserted into the blocks.
9. Use the Dry Block Handle to remove blocks. Be sure that the Dry Block Handle is securely engaged with the block before lifting it from the bath.

CAUTION:

- Be sure dry bath is connected to only grounded power sources of the appropriate voltage.
- Never heat samples beyond safe levels.
- Tightly capped sample tubes may burst when heated.
- Use the Dry Block Handle to move the dry blocks.
- Turn the Selector Switch to the Off position and unplug unit when not in use.

FOR BEST RESULTS:

- Use Dry Bath Incubators in an area with a constant ambient temperature and no drafts.
- All samples should be placed in identical tubes, filled to equal levels no higher than top of block. All sample tubes should be placed in identical blocks.

MAINTENANCE

These dry baths require no periodic maintenance other than routine cleaning with mild cleaning products. Be sure units are unplugged prior to cleaning. Never use abrasives or harsh chemicals to clean units. Never immerse units in liquids or pour liquids onto the dry block support plate.

SERVICE

It is recommended that dry baths be serviced only by those qualified in instrument maintenance. Service is available at any of the Instrument Service District Offices located throughout the country. If you need service or service information, please contact the office nearest to you. The representatives there can issue a return authorization number, if necessary. Emergency, on-site service calls are not covered under the warranty.

Unit Disassembly

WARNING: Unplug unit prior to disassembly.

1. Loosen set screws and remove temperature control knobs.
2. Turn unit upside-down and remove four screws.
3. Remove base by first lifting at rear, then moving forward to clear temperature control stems.
4. Note the routing of wires and the location of insulation so that the unit can be properly re-assembled.
5. Carefully remove insulation.

Thermostat Replacement

1. (Optional) Remove screws that attach Heater Base Assembly to the Top Cover Assembly.
2. Observe wiring connections, then remove two wires connected to appropriate thermostat.
3. Remove fastener holding thermostat in place, then remove thermostat.
4. Connect wires to new thermostat and install.
5. Re-attach Heater Base Assembly if it has been removed.
6. Position base onto unit and check alignment of thermostat shaft with center of hole in front of base. Remove base and reposition thermostat as required, then tighten securely.

Heater Replacement

1. The heater is permanently bonded to the dry block support plate, and can only be replaced as a pre-assembled unit. This assembly is called a Heater Base Assembly.
2. Remove the fasteners which attach the thermostats to the dry block support plate.
3. Remove the fasteners that attach the dry block support plate to the dry bath top cover assembly.
4. Locate and remove the splices at the end of the heater leads.

5. Connect the new heater leads, making sure that the connections are secure and properly insulated.
6. Attach the new dry block support plate and thermostats (see Thermostat Replacement section).

ACCESSORIES

Item	Capacity	Cat. no.
Dry Block, 24 tubes, 1.5ml		11-718-9
Dry Block, 30 tubes, 6mm diameter		11-718-10
Dry Block, 20 tubes, 10mm diameter		11-718-12
Dry Block, 20 tubes, 13mm diameter		11-718-14
Dry Block, 12 tubes, 16mm diameter		11-718-16
Dry Block, 8 tubes, 20mm diameter		11-718-18
Dry Block, 6 tubes, 25mm diameter		11-718-20
Dry Block, Combination		11-718-22
	6 tubes, 6mm diameter	
	5 tubes, 13mm diameter	
	3 tubes, 25mm diameter	

Selector Switch or Indicator Lamp Replacement

1. Note wiring connections of device to be replaced, then remove wires.
2. Squeeze tabs that hold device in place, then push out through front of base.
3. Install new device into appropriate hole in base.
4. Reconnect wires.

Re-Assembly

1. Position insulation over heater.
2. Make sure that wires are routed so as not to come in contact with heater.
3. Properly position base, checking alignment of thermostats as in Thermostat Replacement section.
4. Fasten base to top cover, and replace knobs.

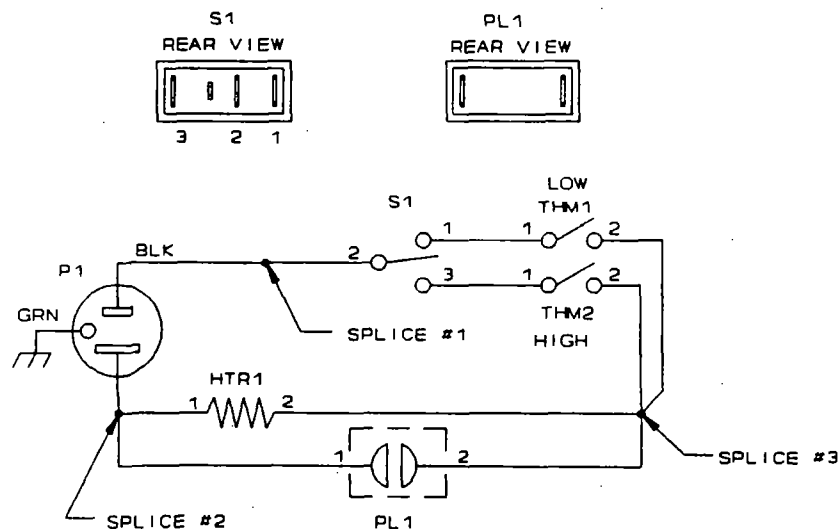
Replacement Parts

Item	Part Number
Thermostat, Low Temp	83310
Thermostat, High Temp	83311
Selector Switch	83364
Indicator Lamp	64057
Dry Block Handle	83326
Heater Base Assembly for 11-718	83305
Heater Base Assembly for 11-718-2	83306
Heater Base Assembly for 11-718-4	83307
Heater Base Assembly for 11-718-6	83308
Heater Base Assembly for 11-718-8	83309

Part No. 83315
Instructions for Dry Bath Incubators
 Rev. A. (12/91)

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