

BIOHIT





ePET[®]
BIOHIT

**Instruction Manual
Bedienungsanleitung
Mode d'emploi
Manual de Instrucciones
Istruzioni d'impiego**





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1. BIOHIT ELECTRONIC PIPETTOR

Your new Biohit  electronic pipettor offer a cost-effective electronic pipetting alternative by using a direct charging system which requires no charging stand. The self-calibrating, microprocessor-based system reduces the possibility for human error and instrument contamination by controlling all piston movements. Also selected models offer replaceable tip cone filters to help prevent contamination and damage.

Its light weight and ergonomic controls take the effort out of pipetting to help reduce the risk of repetitive strain injuries (RSI) that are common in manual pipetting. All  electronic pipettors operate on the air displacement principle and use disposable tips.

1.1. single-channel electronic pipettors

Cat.No.	Volume Range	Increment	Biohit Tip
71052XET	0.2 - 10 μ l	0.1 μ l	10 μ l
71001XET	5 - 100 μ l	1 μ l	300 μ l, 350 μ l
71002XET	50 - 1000 μ l	5 μ l	1000 μ l
71004XET	50 - 1200 μ l	5 μ l	1200 μ l
71050XET	100 - 5000 μ l	50 μ l	5000 μ l Plus


X: 1=Euro, 2=U.S., 3=U.K., 4=Jpn

1.2. multichannel electronic pipettors


Cat.No.	Channels	Volume Range	Increment	Biohit Tip
71020XET	8-Channel	0.2 - 10 μ l	0.1 μ l	10 μ l
71021XET	8-Channel	5 - 100 μ l	1 μ l	300 μ l, 350 μ l
71022XET	8-Channel	25 - 250 μ l	5 μ l	350 μ l
71080XET	8-Channel	50 - 1200 μ l	10 μ l	1200 μ l
71030XET	12-Channel	0.2 - 10 μ l	0.1 μ l	10 μ l
71031XET	12-Channel	5 - 100 μ l	1 μ l	300 μ l, 350 μ l
71032XET	12-Channel	25 - 250 μ l	5 μ l	350 μ l
71081XET	12-Channel	50 - 1200 μ l	10 μ l	1200 μ l

X: 1=Euro, 2=U.S., 3=U.K., 4=Jpn

1.3. H-sign

All  pipettors have been quality tested according to ISO 8655 and have received the H-sign (Konformitätsbescheinigung, DIN 12600) printed on each pipettor. The quality control according to ISO 8655 involves gravimetric testing of each pipettor with distilled water (quality 3, ISO 8655-6) at 22 °C using original Biohit tips.

1.4. Biohit pipettor tips

Original Biohit pipettor tips are recommended for use with  pipettors. These detachable, disposable tips are made of natural colour polypropylene. Biohit pipettor tips are available with or without filters. Filter tips are presterilized. Tips without filters packaged in bulk or space-saving trays are autoclavable (121°C, 1ATM) (Fig. 1).

Note: *Never pipet liquid without attaching a tip to the pipettor.*



Fig. 1

2. UNPACKING & PREPARING THE PIPETTOR FOR USE

The pipettor package contains the following items:

- Pipettor
- Grease
- Filters and filter forceps (selected models see page 8)
- Instructions for use
- Performance certificate in accordance with ISO 8655-6
- AC/DC Adapter (functions as a recharging unit)

Make sure that all items are included and that no damage has occurred during shipment.

Note: *The pipettor can only be charged with the original AC/DC Adapter supplied with the pipettor.*

2.1. Biohit Stands



A convenient carousel stand holds up to 5  pipettors and a single-place stand one  pipettor (Fig. 2 and 3.). These stands are just for the storage of the pipettor. To recharge the pipettor, the AC/DC adapter must be manually plugged directly to the pipettor.



Fig. 2.



Fig. 3.

Cat. No.	Product
710990	Carousel Stand
710999	1-place Stand

2.2. Electrical Specifications

Battery

- Rechargeable NiMH battery
- Charging time max 12 hours for empty battery

AC/DC Adaptor

- Input voltage and main plug according to local requirements
- Output voltage 9 VDC

2.3. Charging the Pipettor

An ON/OFF switch is located at the top of the pipettor (Fig. 4.). This switch protects the battery from discharging when the pipettor is not in use and the pipettor cannot be connected to the recharger unit.

1. Switch the pipettor ON (the far left position) (Fig. 4.).
2. Simply connect the AC/DC adapter to a compatible AC outlet and to the pipettor (Fig. 4.).



Fig. 4.



Fig. 5.

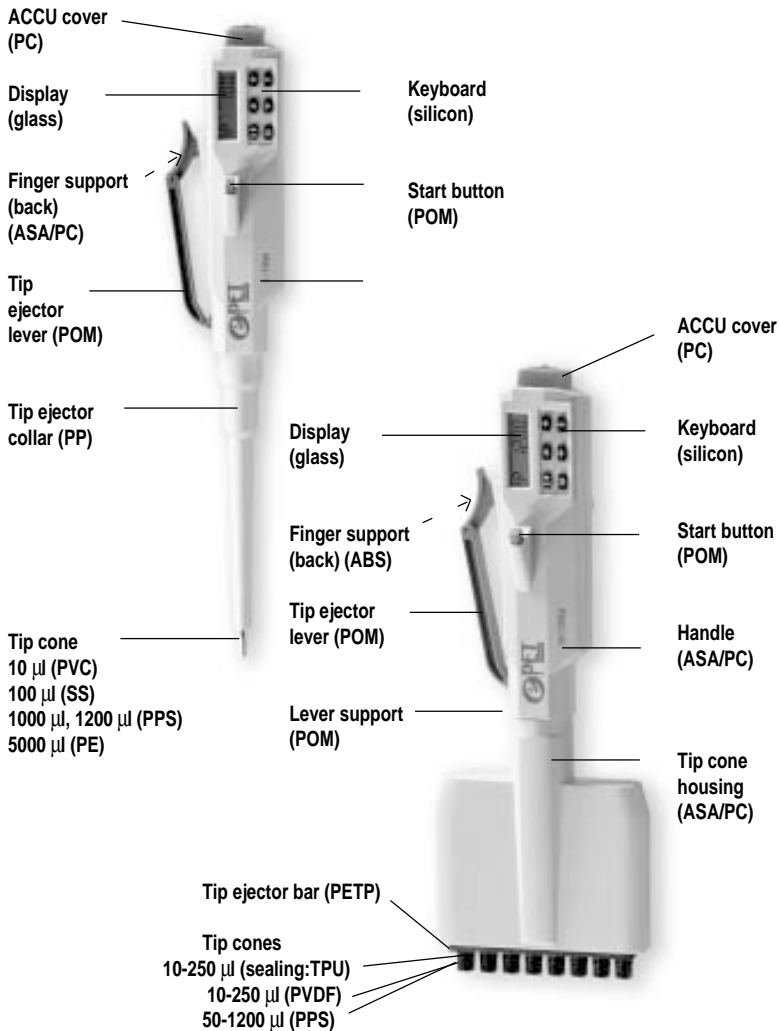
Note: The charging light will remain illuminated when properly connected to the AC/DC Adapter/Recharger unit (Fig. 5.).

3. If the pipettor is new or the battery is low keep the pipettor connected to the charging unit for 12 hours to fully charge the pipettor before continuing use.
4. Display shows [◀E_____]. Press the START button twice and the pipettor is ready for the default pipetting at maximum volume or for program changes.

Note: The pipettor will charge in both the ON and OFF positions. Leave the pipettor ON connected to the charging unit to retain user-selected settings as switching OFF will reset the unit to default settings.

Note: If the pipettor is left in the ON position uncharged for several days, the display will be empty and there will be no response from the keyboard or START button, as the battery voltage will be below the operating level.

3. PIPETTOR MATERIALS



4. PIPETTOR DESCRIPTION

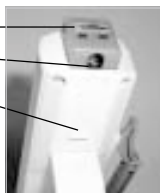
The control and programming of the **OPET** electronic pipettor are done using the keyboard and display shown in detail below.

4.1. Controls



- S▶** Changes speeds
- M** Moves to next Mode
- ▲** Increases volume or speed
- ▼** Decreases volume or speed
- E** Confirms setting changes
- *** Switches Mixing on - off

Power Switch
Recharger Connection
Battery Compartment



START BUTTON Triggers all mechanical operations

TIP EJECTOR LEVER Squeezed to remove pipettor tip(s)

4.2. START Button

The **START** button triggers the aspiration and dispensing operations according to selected operating mode. Only a quick click is required to operate the button. If the **START** button is kept down, the piston will stop in the lowest position until the button is released. This feature is applicable to all modes of operation, except for multiple dispensing (d).

4.3. Direction Symbols

These symbols indicate the direction in which the piston moves upon pressing the **START** button. The small **RIGHT ARROW** in the display means that the next function is to aspirate the liquid. The small **LEFT ARROW** in turn indicates the dispensing function in accordance to the selected operating mode.

4.4. Display

The left display is the status indicator. It informs the user about parameters to be programmed, functions to be performed and the number of dispensings available.

The right display is used for programming and displaying the various volumes needed in different operating modes.

4.5. Sealing and Ejecting tips

Original Biohit Proline tips are recommended for use with Biohit **ePEI** pipettors. Before fitting a tip make sure that the pipettor tip cone is clean. Press the tip onto the cone of the pipettor firmly to ensure an airtight seal. The seal is tight when a visible sealing ring forms between the tip and the tip cone (Fig. 6.).



Fig. 6

Biohit **ePEI** pipettors are designed for simple and light attachment and ejection of the tips. To eject the tip, simply place the pipettor over the discard container and squeeze the tip ejector lever (Fig. 7.).



Fig. 7

4.6. Optional Filters

The tip cones of select Biohit **ePEI** electronic pipettors allow the use of a removable Safe Cone Filter as an option (Fig. 8.). The filter prevents liquids and liquid vapours from entering the pipettor. The filter does not affect the calibration of the pipettor. Biohit filter forceps should be used to avoid touching the dirty filters by hand.



Fig. 8

Cat.No.	Channels	Volume Range	Standard Filter	Plus Filter
71052XET	Single Channel	0.2 - 10 µl	N/A	N/A
71001XET	Single Channel	5 - 100 µl	N/A	N/A
71002XET	Single Channel	50 - 1000 µl	721006	721016
71004XET	Single Channel	50 - 1200 µl	721006	721016
71050XET	Single Channel	100 - 5000µl	721006	721016
71020XET	8-Channel	0.2 - 10 µl	N/A	N/A
71021XET	8-Channel	5 - 100 µl	721014	N/A
71022XET	8-Channel	25 - 250 µl	721014	N/A
71080XET	8-Channel	50 - 1200 µl	721006	721016
71030XET	12-Channel	0.2 - 10 µl	N/A	N/A
71031XET	12-Channel	5 - 100 µl	721014	N/A
71032XET	12-Channel	25 - 250 µl	721014	N/A
71081XET	12-Channel	50 - 1200 µl	721006	721016

X: 1=Euro, 2=U.S., 3=U.K., 4=Jpn

5. PROGRAMMING THE PIPETTOR

Programming is done using the six-button keyboard and the LC-display. There are three operating modes offering special functions and varying speeds for your selection.

5.1. Mode Selection and Mode Recall

1. Press **M** repeatedly to view the available modes of the pipettor.
2. Press **E** when the desired mode is displayed. The pipettor is ready for use in the mode selected.

Note: Mode can only be activated when the piston is in its home position (arrow right sign is lit), not in the middle of an aspiration or dispensing cycle.

5.2. Setting Speeds




1. Press **S▶** to display the current aspiration speed.
2. Press **▲** or **▼** until desired aspiration speed is displayed ("5" Fast and "1" Slow).
3. Press **E** to confirm speed selection. Display shows the current dispense speed.
4. Press **▲** or **▼** until desired dispense speed is displayed ("5" being Fast and "1" Slow).
5. Press **E** to confirm speed selection.

Note: The speed may not be changed in the middle of the aspiration or dispensing cycles.

Note: The default speed is 3 for all speed settings.

5.3. Pipetting Mode (P)

The pipettor performs ordinary pipetting with blow-out.

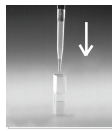
1. Press **M** to display .
2. Press to **E** confirm the mode change.
3. Select the desired pipetting volume by using  to increase, and  to decrease.

Note: When holding down  or , the volume display starts to scroll faster.

4. Press to **E** confirm selection.
5. Position the tip to aspirate and press the START button.
6. Position the tip to dispense. Press the START button. The tip is emptied with a blow-out and is ready for next pipetting.








Step 5.



Step 6.

5.4. Multi-Dispensing Mode (d)

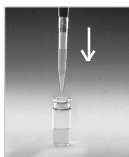
The pipettor performs repetitive dispensings of a selected volume. During this operation, the desired volume plus and automatically selected excess volume is aspirated into the tip.

1. Press **M** to display .
2. Press **E** to confirm the mode change.
3. Press  or  until the multi-dispense volume is displayed.
4. Press to **E** confirm selection.
5. Press  or  until the desired number of aliquots is displayed.
6. Press to **E** confirm selection.
7. Position the tip to aspirate and press the START button. The * sign and ARROW LEFT are lit to indicate the reset function.
8. Position the tip to discard priming excess and press the START button.
9. To dispense, position the tip, press the START button and repeat until the cycle is complete.
10. Finally, position the tip to discard any remaining excess and press the START button twice.

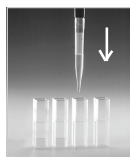
Note: Upon delivering the programmed volume, it is also possible to continue to aspirate and dispense the same volume without the empty function. To continue, keep the START button pressed down and within one second the direction of the arrow will change. Keeping the button down, place the tip into the liquid again and the sample is aspirated into the tip by releasing the START button.



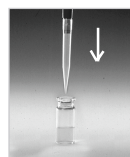
Step 7.



Step 8.



Step 9.



Step 10.

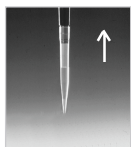
5.5. Diluting Mode (dd)

Two different solutions separated by an air gap are aspirated and then dispensed together with automatic blow-out. The purpose of the air gap is to avoid contamination when aspirating the second volume but it will not prevent the two liquids from mixing in the tip.

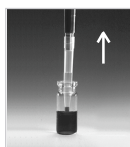
1. Press **M** to display **dd**.
2. Confirm the mode change by pressing **E**.
3. Select the desired diluent volume (volume 1) by using **▲** or **▼**.
4. Confirm by pressing **E**.
5. Press **▲** or **▼** to select the sample volume (volume 2) on the display.
6. Press **E** to confirm selection.
7. Position the tip to aspirate volume 1 and then press the START button.
8. With the tip in the air press the START button again to aspirate an air gap.
9. Position the tip to aspirate volume 2 and press the START button.
10. Finally, position the tip to dispense and press the START button.



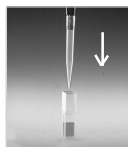
Step 7.



Step 8.



Step 9.



Step 10.

5.6. Mixing Mode with Pipetting or Diluting (*)




The piston is automatically moved up and down to mix the liquid in the delivery vessel. The mixing time is controlled by the START button.

1. Use **M** to select either **P** or **dd** onto the display.
2. Press ***** to switch on mixing. The display should read either **P*** or **dd***.







Note: Pressing ***** will alternately switch mixing on and off.

3. Confirm the mode change by pressing **E**.

For Pipetting:

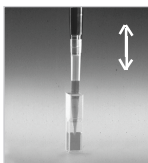
1. Press  to increase, and  to decrease.
2. Press  to confirm selection.
3. Position the tip to aspirate and press START button.
4. Position to dispense and press the START button .

For Diluting:

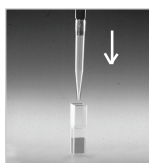
1. Select the desired diluent volume (volume 1) by using  or  .
2. Confirm selection by pressing  .
3. Press  or  to select the sample volume (volume 2) .
4. Confirm selection by pressing  .
5. Position the tip to aspirate volume 1 and then press the START button.
6. With the tip in the air, press the START button to aspirate an air gap.
7. Position the tip to aspirate volume 2 and press the START button.
8. Finally, position the tip to dispense and press the START button.

To Mix:

1. Position the tip in the solution, then press and hold the START button.
The mixing is done automatically as long as the START button is held down.
2. Position the tip to dispense. Press the START button twice.



Step 1.



Step 2.

Note: The mixing is done with about 70 % of the total volume.

6. PIPETTING RECOMMENDATIONS

By using the different operating modes and special functions, several different liquid handling procedures are made possible. Modes P and dd feature automatic blow-out and others leave an excess liquid in the tip. Follow recommendations below to ensure optimal performance.

6.1. Dispensing with Blow-out

The P and dd modes have an automatic blow-out function, followed by an immediate return of the piston to the "home" position. To avoid accidental aspiration of the liquid back into the tip, it is recommended that the dispensing is always done above the liquid surface.

By holding the START button down during dispensing the piston will stop in the lowest position. This allows the tip to be placed against the bottom or the wall of the container. Once the liquid is dispensed, the tip can be removed from the container and the START button released.

6.2. Dispensing without Blow-out

The pipettor will not perform the blow-out function when using the d mode. Therefore, it is recommended that dispensing is always performed with the tip set against the wall or the bottom of the container. The use of the d mode is especially useful when pipetting small volumes or solutions that have a tendency to foam or have a high viscosity.

6.3. Other Recommendations

- Hold the pipettor vertically and place the tip a few millimeters into the liquid when aspirating.
- Prerinse the tip by filling and emptying the tip five times. This is important when dispensing liquids which have a viscosity and density different from water or a temperature other than ambient.
- Check that the pipettor, tip and liquid are at room temperature.
- Avoid contaminating the tip cone.
- Connect the pipettor charging unit when the pipettor is not in use. Switch the pipettor OFF when not in use if it is not connected to the charging unit.
- Never strike the tip cone against a tip tray when mounting tips as this can damage several internal components.
- Do not drop the pipettor or AC/DC-adaptor as this may cause excessive shock.
- Avoid exposing the unit to extreme temperature changes, humidity and dust.
- Avoid rough handling. Moderate pressure is all that is required when using the keyboard or START-button.
- Avoid leaving the pipettor on its side with liquid in the tip which might seep back into the mechanism.
- Always pipette against the inside wall of the receiving vessel. Remove the tip by drawing it up against the inside wall.
- Change the filter on the tip cone regularly (after 50 - 250 pipettings).

7. STORAGE

When not in use it is recommended that the pipettor is stored on the stand in the ON position connected to the charging unit. The green charging light should illuminate.

8. PERFORMANCE TEST

It is recommended to check the performance of your electronic pipettors regularly (e.g. every 3 months) and always after in-house maintenance. However, users should establish a regular testing routine for their pipettors depending upon the accuracy requirements of the application, frequency of use, number of operators using the pipettor, nature of the liquid dispensed and the acceptable maximum permissible errors established by the user. (ISO 8655-1.)


Performance test should take place in a draught-free room at 15-30°C, constant to $\pm 0.5^\circ\text{C}$ and relative humidity above 50%. The pipettor, tips and the test water should have stood in the test room a sufficient time (at least 2 hours) to reach the equilibrium with the room conditions. Use distilled or deionised water (grade 3) and analytical balance with a readability of 0.01 mgs. (ISO 8655-6.)

1. Carefully fit the tip onto the tip cone.
2. Prewet the tip with test water by pipetting the selected volume 5 times.
3. Replace the tip and and prewet the new tip once.
4. Aspirate the test water, immersing the tip only 2-3 mm below the surface of the water and keeping the pipettor vertical. Withdraw the pipettor vertically and touch the tip against the side wall of the container.
5. Pipette the water into the weighing vessel, touching the tip against the inside wall just above the liquid surface at an angle of 30° - 45° . Withdraw the pipettor by drawing the tip 8-10 mm along the inner wall. Read the weight in mgs.
6. Repeat ten times and record each result.
7. Convert the recorded masses to volumes by multiplying the mass with the correction factor Z (at 22°C and 101.3 kPa: $Z=1.0033$).

Note: Users should establish their own performance specifications based on the field of use and the accuracy requirements set on the pipettor (ISO 8655-1).

This method is based on ISO 8655.

9. MAINTENANCE

Biohit  Electronic pipettors require regular cleaning to ensure trouble-free operation. Use a soft cloth lightly moistened with a Biohit Proline Biocontrol (cat.no. 724004, 5l) or mild detergent to clean the outer surface of the pipettor. DO NOT AUTOCLAVE. Change the tip cone filter regularly.


Note: *The pipettor must be turned off prior to servicing!*

9.1. In-house maintenance

1. Remove the tip ejector collar: Gently twist the tip ejector collar anti-clockwise and slide off.
2. Using Biohit Proline Biocontrol or ethanol and soft lint-free cloth, disinfect the tip ejector collar and the tip cone.
3. Unscrew, anti-clockwise, the tip cone and remove it, exposing the piston. The piston may stick to the tip cone, should this occur remove the piston with a pair of tweezers.
4. To avoid scratching the surface of the piston use Biohit Proline Biocontrol or ethanol and a lint-free tissue when cleaning the piston. Let the parts dry.

Note: For complete decontamination place the tip cone, tip ejector collar, piston, O-ring and spring into a beaker containing Biohit Proline Biocontrol and leave for at least 30 minutes, rinse the parts with distilled water, then dry preferably with warm air.

5. Grease the piston thinly with the grease provided. Do not use any other grease. Check that no lint or particles are on the surface of the piston. Avoid excess grease, especially at the bottom of the piston.
6. Reassemble the pipettor by screwing the piston and tip cone in their places, replace the tip ejector collar allowing the ejector handle connection to snap into the attachment notch of the ejector collar. Replace the filter if fitted.
7. Test the pipettor by pressing the START-button several times. Test the tip ejector operation.

Note: Check the performance of your Biohit  pipettor regularly e.g. every 3 months and always after in-house service or maintenance.

9.2. Battery Replacement


If the battery does not hold a sufficient charge for proper operation of the pipettor, follow these steps for replacement of the battery.

1. Switch the unit "OFF".
2. Remove the top two screws on the back of the pipettor and remove the battery cover (Fig. 9).
3. Carefully remove the battery by lifting it straight out of the holder.
4. Install the new NiMH-battery by pressing the positive (+) end against the contact spring at the bottom of the holder.
5. Replace the cover and the screws. Do not overtighten the screws.
6. Dispose of battery appropriately.



Fig. 9

10. TROUBLE-SHOOTING

Biohit  electronic pipettors have a built-in monitoring program to control the performance of each pipetting action. If the error message Er1 appears on the display, this means the pipettor has been unable to perform the attempted action properly. If you receive the error message please do the following:

Note: As this procedure will empty the tip, it is recommended that you remove the tip before resetting the pipettor.


1. Place the pipettor in the charging stand for 15 minutes.
2. Clear the error message from the display by pressing **E**.
3. Press START button, which will set the pipettor to its home position.



Occasional Er1 situations can be caused by electrical outlets that have been switched off or if the pipettor has been in the OFF position during charging.

Repeated occurrence of the the Er1 message is caused by an internal error failing to complete the execution of the pipetting. The pipettor will need to be returned to your local Biohit representative for repair.

Trouble	Possible cause	Solution
Droplets left inside the tip	Unsuitable tip	Use original tips
Leakage or pipetted volume too small	Non-uniform wetting of the plastic Tip incorrectly attached Unsuitable tip Foreign particles between tip and cone Instrument contaminated Insufficient amount of grease on piston and O-ring.	Attach new tip Attach firmly Use original tips Clean the tip cone, attach new tip Clean and grease piston and tip cone Grease accordingly
Pipettor out of given specs	Instrument damaged	Send for service
Pipettor blocked, aspirated volume too small	Liquid has penetrated tip cone and dried	Clean and grease piston and tip cone.
Tip ejector jammed or moves erratically	Tip cone contaminated	Remove ejector collar, clean with 75% ethanol
Continuous error message	Instrument damaged	Send for service

11. WARRANTY INFORMATION

Biohit  electronic pipettors are warranted for one year (batteries/three months) against defects in materials and workmanship. Should it fail to function in any period of time, please contact your local representative immediately. The warranty will not cover defects caused by normal wear or by handling or using the pipette in a manner contrary to the instructions given in this manual.

Each Biohit  electronic pipettor is tested before shipping by the manufacturer. The Quality Assurance Procedure is your guarantee that the Biohit  electronic pipettor you have purchased is ready for use.

All Biohit electronic pipettors are CE-marked, fulfilling the requirements of the EMC standards EN 55014, 1993 and EN 55104, 1995.



12. SPECIFICATIONS

Note: The manufacturer's specifications below should be used as guidelines when establishing your own performance specifications in accordance with ISO 8655.

Biohit  Single-channel Pipettors:

Cat.No.	Ch	Volume Range	Test Volume	Inaccuracy	Imprecision	Number of Dispensings
71052XET	1-ch	0.2 - 10 µl	10 µl	0.90 %	0.50 %	2 - 50
			5 µl	1.00 %	0.70 %	
			1 µl	2.50 %	1.50 %	
			0.2 µl	12.00 %	10.00 %	
71001XET	1-ch	5 - 100 µl	100 µl	0.40 %	0.15%	2 - 20
			50 µl	0.70 %	0.30 %	
			10 µl	2.00 %	1.00 %	
			5 µl	2.50 %	1.80 %	
71002XET	1-ch	50-1000 µl	1000 µl	0.40 %	0.15 %	1 - 20
			500 µl	0.70 %	0.20 %	
			100 µl	1.50 %	0.50 %	
			50 µl	2.00 %	1.00 %	
71004XET	1-ch	50-1200 µl	1200 µl	0.40 %	0.15 %	1 - 24
			600 µl	0.70 %	0.20 %	
			100 µl	1.50 %	0.50 %	
			50 µl	2.00 %	1.00 %	
71050XET	1-ch	100 - 5000µl	5000 µl	0.50 %	0.15 %	1 - 48
			2500 µl	0.80 %	0.20 %	
			500 µl	0.80 %	0.30 %	

Biohit  Multichannel Pipettors:

Cat.No.	Ch	Volume Range	Test Volume	Inaccuracy	Imprecision	Number of Dispensings
71020XET	8-ch	0.2 - 10 µl	10 µl	0.90 %	0.50 %	2 - 50
			5 µl	1.50 %	0.80 %	
			1 µl	4.00 %	4.00 %	
71021XET	8-ch	5 - 100 µl	100 µl	0.50 %	0.20 %	2 - 20
			50 µl	0.70 %	0.30 %	
			10 µl	2.50 %	1.50 %	
			5 µl	4.00 %	2.50 %	
71022XET	8-ch	25 - 250 µl	250 µl	0.40 %	0.15 %	2 - 10
			125 µl	0.60 %	0.20 %	
			25 µl	1.50 %	1.00 %	
71080XET	8-ch	50 - 1200 µl	1200 µl	0.50 %	0.15 %	1 - 24
			600 µl	1.00 %	0.20 %	
			100 µl	4.00 %	0.80 %	
			50 µl	8.00 %	1.50 %	
71030XET	12-ch	0.2 - 10 µl	10 µl	0.90 %	0.50 %	2 - 50
			5 µl	1.50 %	0.80 %	
			1 µl	4.00 %	4.00 %	
71031XET	12-ch	5 - 100 µl	100 µl	0.50 %	0.20 %	2 - 20
			50 µl	0.80 %	0.40 %	
			10 µl	2.50 %	1.50 %	
			5 µl	4.00 %	2.50 %	
71032XET	12-ch	25 - 250 µl	250 µl	0.40 %	0.15 %	2 - 10
			125 µl	0.60 %	0.20 %	
			25 µl	1.50 %	1.00 %	
71081XET	12-ch	50 - 1200 µl	1200 µl	0.80 %	0.15 %	1 - 24
			600 µl	1.00 %	0.20 %	
			100 µl	4.00 %	0.80 %	
			50 µl	8.00 %	1.50 %	

Biohit spare parts:

711033	ACCU3-assembly, BPE , colour 131688
711192	Tip ejector assembly, BPE MCP, colour 131688
711201	Pico-board SC/MC 10
711202	Pico-board SC 100
711205	Pico-board SC 1000
711206	Pico-board SC 1200
711207	Pico-board SC 5000
711211	Pico-board MC 100
711212	Pico-board MC 250
711213	Pico-board MC 1200
711412	Tip ejector collar, E-Pet,SC, 5-100µl and 10-250, colour 131688
711412	Tip ejector collar, E-Pet,SC, 5-100µl and 10-250µl, colour 131688
711422	Tip ejector collar, E-Pet,SC, 10-500µl , colour 131688
711432	Tip ejector collar, E-Pet,SC, 50-1000µl , colour 131688
711462	Tip ejector collar, E-Pet,SC, 50-1200µl , colour 131688
711665	Tip cone housing, E-pet, MCP 8, colour 131688
711666	Tip cone housing, E-pet, MCP 8/10 colour 131688
711667	Tip cone housing, E-pet, MCP 8/1200 colour 131688
711676	Tip cone housing, E-pet, MCP 12/10 colour 131688
711677	Tip cone housing, E-pet, MCP 12/1200 colour 131688
711678	Tip cone housing, BPE MCP 12 and E-Pet, colour 131688
711852	Cover assembly, E-Pet 10, colour 131688
711863	Tip ejector collar, E-Pet,SC, 0.2-10µl, colour 131688
711892	Tip ejector assembly, BPE, SC, colour 131688
711915	Tip ejector collar, E-Pet,SC, 100-5000µl , colour 131688
712207	Bottom plate assembly, including battery cover, colour 131688
712208	Battery cover, BPE, colour 131688
712213	Cover assembly, E-Pet 1000, colour 131688
712214	Cover assembly, E-Pet 1200, colour 131688
712215	Cover assembly, E-Pet 5000, colour 131688
712216	Cover assembly, E-Pet , MCP 250, colour 131688
712217	Cover assembly, E-Pet 100, colour 131688
712218	Cover assembly, E-Pet 250, colour 131688
712221	Bottom plate assembly, E-pet, including battery cover, colour 131688
712222	Battery cover, E-pet, colour 131688
712682	Finger grip assembly, BPE, colour 131688

BIOHIT

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