

SPECIFICATIONS

Weight	162 g
Spacing	9 mm
Channels	8
Volume Uptake	1500 µl/channel (maximum)
Volume Delivery	29x50 µl/channel 14x100 µl/channel 8x150 µl/channel 6x200 µl/channel
Accuracy	50µl: 4% 100 µl: 2 % 150 µl: 2 % 200 µl: 2 %
Precision	50 µl: CV = 4 % 100 µl: CV = 3 % 150 µl: CV = 2 % 200 µl: CV = 2 %

Thermo Labsystems reserves the right to change specifications without prior notice as part of our continuous program of product improvement.

The pipette is calibrated at the factory and can not be recalibrated.

MATERIALS

Handle	ABS/PC
Body	PA
Tipcone Assembly	PC
Tips	PP

PACKAGE

The MULTISTEPPEP 50/100/150/200 is shipped in a specially designed package containing the following items:

- Multisteppep 50/100/150/200
- Tube of lubricant grease
- Sample tips (8 pcs)
- O-rings (8 pcs)
- Operating instructions
- Allen key
- Piston release

REFERENCES

Multichannel Pipettes are covered by the following U.S. patents:
3 810 391, 3 855 868, 4 215 092, 4 151 750,
4 237 095, 4 284 604, 4 283 950, 4 304 138,
4 335 621. In addition, there are numerous patents in other countries and several patents pending in various countries.

SPARE PARTS

Only the parts or assemblies which are shown with a code number are available as spare parts.

A. Handle Assembly 2203711

1. Screw	
2. Volume Selector Knob	
3. Name Label	1011371
4. Storage Label	1524440
5. Loading Lever	1053440
6. Volume Label	1011380
7. Handle, front part	
8. Handle, rear part and mechanism	
9. Grippy	1058350
10. Locking Ring	1057000
11. Screw	

B. Body Assembly 2203691

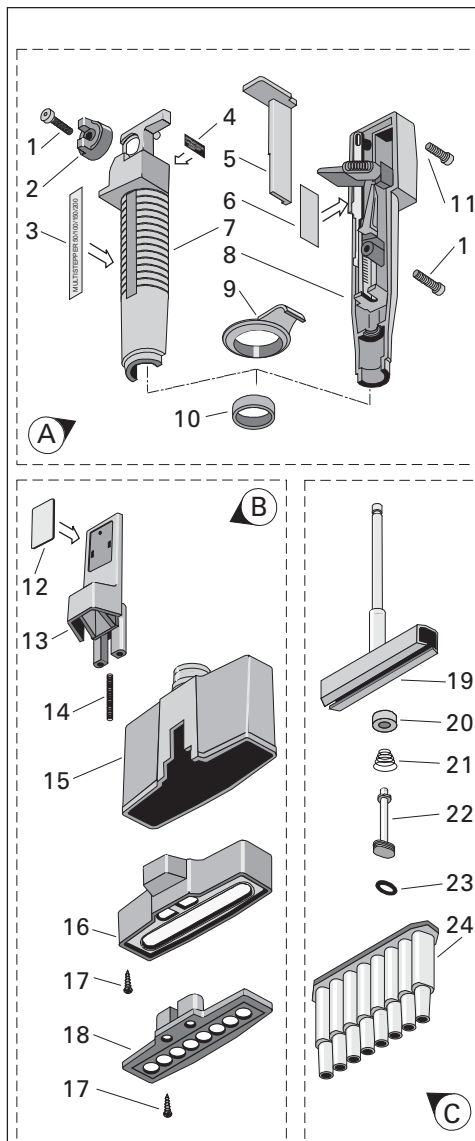
12. Label	
13. Tip Ejector, upper part	
14. Tip Ejector Spring	
15. Body, upper part	
16. Body, lower part	
17. Screw	
18. Tip Ejector, lower part	

C. Piston Assembly 2203680

19. Piston Holder	
20. Bushing	
21. Spring	
22. Piston	
23. O-Ring	1030880
24. Cylinder Block	1058580

Multisteppep Tips

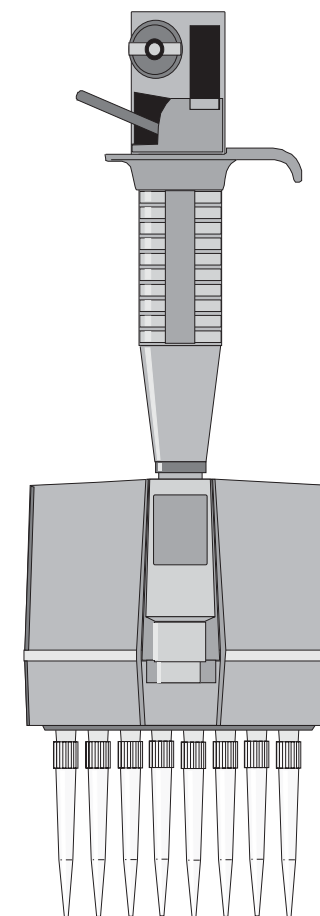
Box of 400 pcs	9401300
Tray of 96 pcs x 10	9401330



Finnpipette® Multisteppep

50/100/150/200

Instructions for use



Thermo Labsystems

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SPARE PARTS

1500731-04

INTRODUCTION

MULTISTEPER 50/100/150/200 is a handheld dispenser for accurate dispensing of liquids into microplates.

MULTISTEPER 50/100/150/200 has eight individual channels, each calibrated to deliver simultaneously the same amount of liquid. The spacing of the channels corresponds to that of a microplate.

With a single loading of MULTISTEPER 50/100/150/200 the operator can deliver 50 μ l into $8 \times 29 = 232$ wells, 100 μ l into $8 \times 14 = 112$ wells, 150 μ l into $8 \times 8 = 64$ wells or 200 μ l into $8 \times 6 = 48$ wells.

OPERATION

Reagent

Pour the reagent into a clean reagent reservoir for easy loading.

Tip

Attach eight tips firmly onto the tipcone assembly.

Adjusting the delivery volume

The volume selection table located in the head of the handle (Fig. 1) tells how to obtain the desired delivery volume.

Knob position indicates the four positions for the volume selector knob. Read vertically 1, 2, 3 and 4.

The number of strokes indicates the maximum number of deliveries of the desired volume. Read vertically 29, 14, 8 and 6. Please note that the first stroke is not included in the total number of strokes.

MULTISTEPER 50/100/150/200 delivers twenty-nine 50 μ l volumes (position 1), fourteen 100 μ l volumes (position 2), eight 150 μ l volumes (position 3) or six 200 μ l volumes (position 4) from each of the eight channels.

Select the volume by turning the volume selector knob (Fig. 1) in the handle.

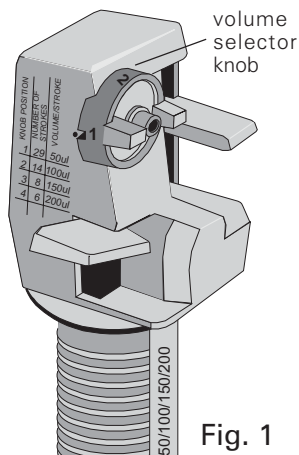


Fig. 1

Loading

MULTISTEPER 50/100/150/200 is stored loading lever down. For loading raise the loading lever into its upper position by pressing the dispensing lever (Fig. 2).

NOTE: If MULTISTEPER 50/100/150/200 is not in continuous use the dispensing or loading lever has to be pressed harder at first because the piston O-rings are greased.

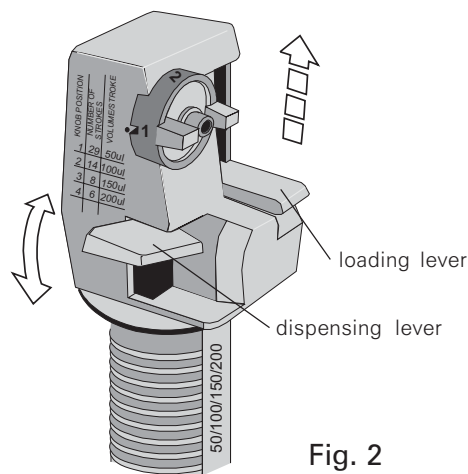


Fig. 2

NOTE: STORAGE POSITION: LOADING LEVER DOWN

Insert the tips into the reagent.

Gently press the loading lever down. This fills the tips with reagent. All tips should have the same amount of reagent. This can be checked visually.

Withdraw the tips from the reagent touching the edge of the reagent reservoir to remove excess reagent.

WARNING: If the loading lever is pressed down too quickly, the liquid entering the tips may boil with the result that it enters the pipette itself. If liquid does enter MULTISTEPER 50/100/150/200, it will cause loss of accuracy and possibly corrosion, contamination and malfunction.

Dispensing

Dispense the first stroke back into the reagent reservoir in order to prime tips properly.

Align the tips with the first column of wells.

Press the dispensing lever down. This operation dispenses the pre-selected volume of reagent (either 50, 100, 150 or 200 μ l).

Let the dispensing lever return to its original position.

Raise MULTISTEPER 50/100/150/200 and gently tap the tips against the walls of the wells to remove any remaining drops from the tips.

Proceed to the wells of the next column and repeat the dispensing procedure.

From a single loading MULTISTEPER 50/100/150/200 allows the operator to fill twenty-nine columns with 50 μ l/well, fourteen columns with 100 μ l/well, eight columns with 150 μ l/well or six columns with 200 μ l/well.

Tips should be changed at least before loading and dispensing a new reagent to avoid any carry-over effect. Use the tip ejector (Fig. 3) to remove the tips.

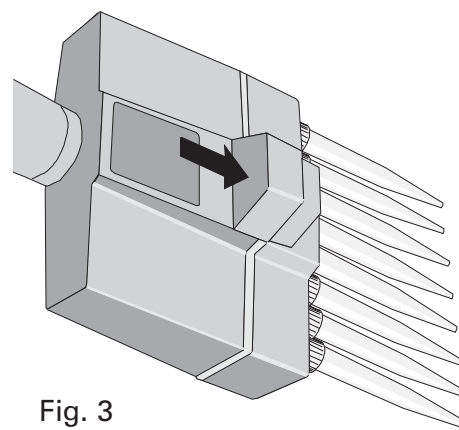


Fig. 3

Quick unloading of the tips

Tips filled with reagent can be quickly emptied into a reagent reservoir by raising the loading lever.

Partial tip filling

When necessary the tips may be partially filled by depressing the loading lever only part of the way down.

STORAGE

MULTISTEPER 50/100/150/200 is stored loading lever down. This is essential because of grease used for the piston O-rings and ensures the pipette functions properly.

However, if MULTISTEPER 50/100/150/200 is stored for long periods with the loading lever in the upper position, the pistons may jam. When that happens, use the piston release as follows (see Fig. 4):

- use the four middle tip cones in the tip cone assembly
- gently insert the piston release into one cone at a time repeating until the pistons are released.

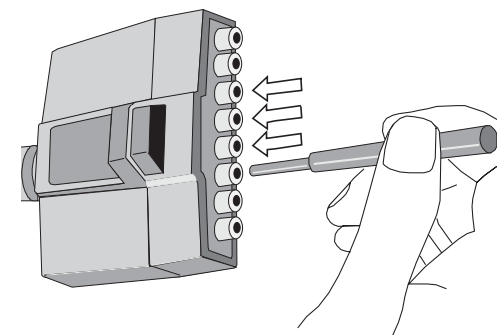


Fig. 4

SERVICE

The MULTISTEPER 50/100/150/200 requires a limited amount of maintenance and service. If used daily, the operator needs only to clean the cylinders and O-ring base with a napless cloth once or twice a year. Similarly the O-rings and pistons should be lightly greased with the lubricant grease provided in the package.

There is no need to adjust the pipette.

In the case of malfunction please return MULTISTEPER 50/100/150/200 to the nearest Thermo Labsystems subsidiary or its authorized agents.

NOTE! Please, clean MULTISTEPER 50/100/150/200 very carefully if harmful substances have been used before sending it for service.