analytikjena

FasTrans

Automatic Pipettor

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This documentation describes the state of this product at the time of publishing. It need not necessarily agree with future versions of the product.
Subject to change!

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1 Introduction

1.1 Intended Purpose

The FasTrans is an automatic pipettor designed for routine laboratory jobs with small to medium sample throughput in automated procedures to prepare media plates, notably, PCR-plates.

You should carefully read this Manual before you start working with the FasTrans.

Make sure that all safety instructions are properly followed. The FasTrans may only be operated by duly trained personnel.

1.2 Notes Regarding Use of this Manual

The following warning and information signs are used throughout this Manual:

Danger!
A warning of this kind must be followed in all circumstances. This is necessary to prevent physical injury or harm to people.

Caution!
Instructions of this kind must be followed, in order to prevent damage to the pipettor.

Risk of electric shock!

Note
Provides useful advice that should not be disregarded if correct results are to be obtained.

For the purpose of this Manual, the following rules will apply:

- Chapters and illustrations are consecutively numbered.
- Each illustration has its own image caption.
- Specified process steps are numbered.
- Cross-references to other Manual sections are marked with an arrow (example: → "Introduction" on page 3)

2 Safety Instructions

2.1 Warning Labels on the FasTrans

Follow all warning labels on the FasTrans!

A special warning label is affixed to the baseplate of the FasTrans:

Hand Injury Warning!
Do not place your hand or fingers into the inner FasTrans space while a pipetting sequence is in progress. You might suffer physical injury from mechanically moving parts.

2.2 General Safety Instructions for FasTrans Operation

For your own safety and to ensure failsafe operation, you should carefully read this chapter before you proceed to any kind of start-up action.

Comply with all safety rules that you find described in this Manual, as well as related control software messages and prompts displayed on the screen.

Intended Use!
The FasTrans with original accessory items may not be operated in any other way than described in this User Manual. No claims for liability will be accepted by the manufacturer in the event of non-conforming application of any kind, including non-complying use of individual assemblies or components. The same shall apply to service or repair work performed by anyone other than duly authorized service personnel. Claims for warranty and guarantee will be null and void in such cases.

Local Regulations!
You are required to observe local safety practices as may be appropriate for and applicable to pipettor operation (e.g. job safety regulations, accident prevention rules, personal injury protection schedules).

Notes in this Manual providing a reference to potentially dangerous situations cannot be regarded as replacing compulsory industrial labour protection laws.

Personnel!
The FasTrans may not be operated by anyone other than fully trained and qualified personnel.

Knowledge of this Manual is a vital prerequisite and assumed to have been acquired before pipettor operation.

Shutdown in the Event of Emergency!

In the event of an emergency, the power supply to the FasTrans and its components must be cut by pulling the power connector from the socket.

Make sure that the mains plug is easily accessible.

Caution! The PC may lose data and the operating system may suffer damage from emergency shut-down action!

Operating substances, dangerous substances

The operator is responsible for the selection of substances used in the process as well as for their safe handling. This is particularly important for radioactive, infectious, poisonous, corrosive, combustible, explosive and otherwise dangerous substances.

When handling dangerous substances local safety instructions and guidelines must be observed.

Warnings on the labels must be always observed.

Only use clearly marked containers as well as protective goggles and rubber gloves.

Biological samples have to be handled according to local guidelines regarding the handling of infectious material.

Cleaning and decontamination measures

The operator is responsible for carrying out suitable decontamination should the device be contaminated externally or internally with dangerous substances.

Spots, drops or larger spillages should be removed and cleaned using an absorbent material such as cotton wool, laboratory wiping cloths or cellulose. The affected areas are then to be wiped with an **Incidin Plus solution**.

Before another cleaning or decontamination procedure is used as that prescribed by the manufacturer, the user shall check with the manufacturer that the intended procedure will not damage the device.

Danger!

The weight of the FasTrans is 23 kg. Therefore, the device must be transported by at least 2 persons.

Removing all samples, sample adapter, tips and trays before the transport. Do not leave any dangerous substances at the transport in the device!

Electrical Shock!

The FasTrans requires an electric power supply for operation. There is **life-threatening electric voltage** present at several points inside the system!

The power connector may only be plugged into a socket with PE contact, in order to maintain class 1 protection level (protective conductor terminal) of the pipettor. This protective function must not be rendered ineffective by an extension without PE capability.

Remember to turn power off and pull the power connector before you open the FasTrans or remove any of its cover panels!

Check that the nameplate specification for operating voltage on the pipettor's back wall complies with the line voltage level that is actually provided by the selected power socket. Operation at any voltage other than the specified operating voltage may result in destruction of the pipettor.

No operation in rooms where there is danger of explosion!

Water

Take adequate precautions to prevent water from penetrating into the inner FasTrans space.
The pipettor might suffer damage.

Danger of Corrosion

Do not install the FasTrans in the direct vicinity of areas where aggressive-vapours are present, for example, strongly etching acidic or caustic fumes! Fumes of this type may corrode terminals or mechanical parts of the pipettor.

Do not place objects or containers with liquid onto the FasTrans for storage!

Close the front view panel before triggering any kind of FasTrans action!

While a pipetting job is being performed or during other required motion of the pipettor head, the tiltable front panel must always be closed (tilted down). This is necessary to ensure the safety of personnel and the proper and precise function of the FasTrans.

Keep clear of mechanically moving parts!

Do not place your hand or fingers into the working range of the pipettor head once you have triggered a motion sequence via the software command.

2.3 Standards & Guidelines

The FasTrans has been designed, built and tested to comply with the following standards and guidelines:

Safety class and safety type

The FasTrans belongs to safety class II.
The casing has safety type IP 20.

Device safety

The FasTrans conforms to the safety standards

- DIN EN 61010-1
- DIN EN 61010-2-101

EMC compatibility

The FasTrans has been tested for radio interference elimination and interference immunity and fulfills the requirements stipulated by

- DIN EN 61326-2-6
- DIN EN 61326-1

3 FasTrans Technical Data

Number of retainer pockets	9 x MTP Standard
Interfaces	1x RS 232 for communication with PC
Line voltage:	100 V to 240 V
Power consumption:	80 VA
Frequency:	50/60 Hz
Fusing	None
Phys. dimensions (WxDXH)	595 mm x 495 mm x 462 mm
Weight	23 kg
Temperatures: Working range: Transportation:	 15 °C to 35°C -20 °C to 65 °C
Tips:	20, 50, 200 µL, no filter, Tecan-Genesis compatible 10, 50, 175 µL, with filter, Tecan-Genesis compatible
Working volume:	0.5 to 30 µl or 0.5 to 200 µL respectively

4 Transportation & Installation Requirements

4.1 Transportation & Storage

Danger!

The weight of the FasTrans is 23 kg. Therefore, the device must be transported by at least 2 persons.

Removing all samples, sample adapter, tips and trays before the transport. Do not leave any dangerous substances at the transport in the device!

For transportation and storage, the following ambient conditions must be observed:

- Temperature range: -40 ... +70 °C
- Rel. air humidity: up to 95%

4.2 Installation Requirements

Caution! The following rules must always be observed for Installation!

Do not place any objects onto the FasTrans for storage!

Do not operate the pipettor in rooms with an explosive atmosphere!

Make sure there are no aggressive vapours, for example, strongly etching acidic or caustic fumes in the direct surroundings of the pipettor.

The installation site must meet the following requirements:

- The FasTrans operating site must be free from drafts, dust, etching vapours and vibration.
- No FasTrans installation in the vicinity of electromagnetic fields (e.g. motors).
- Prevent the presence of drops of water, splashes and spray near the FasTrans.
- Do not expose the FasTrans to direct sunlight or radiator emissions.

- Operating temperature range: + 15 °C to + 35 °C
- Rel. air humidity for operation: up to 90% (at + 30 °C)

Footprint requirements

With physical dimensions as specified above and an additional clearance of approximately 100 mm on all sides, the FasTrans requires a minimum footprint of 800 x 700 mm^2 (approx.) plus a base areas for the PC and the display screen.

5 FasTrans Setup

Components

1 Tiltable front view panel (tilted up)
2 Pipettor head
3 Base plate with 9 positions
4 Status light for voltage supply

Fig. 1 Components of the FasTrans (front view)

Rear connections

The terminals of the FasTrans are located on its rear panel. The FasTrans must be linked up with the COM port of the PC.

1 Nameplate
2 Main power switch
3 Power inlet
4 Terminal for PC (COM interface)

Fig. 2 Connections on rear panel of FasTrans

6 Installation & Start-Up

6.1 Installation

Watch Pipettor Position!

The FasTrans may only be transported in an upright position (use markers on shipping case for guidance).

Do not allow the FasTrans to topple over whilst unpacking.

Electrical Shock

Check that the pipettor's nameplate specifications for operating voltage match your actual power supply values. Operation at any voltage other than the specified operating voltage level may result in destruction of the pipettor.

1. Place the FasTrans onto a desktop base with adequate spacing from other systems. A minimum clearance of 10 cm must be provided around the FasTrans.
2. Use the COM interface port for FasTrans connection to the PC.
3. Use the power cord (enclosed) to connect the FasTrans to power supply.
4. Turn power supply on using the FasTrans main power switch.
5. Start the FasTrans program software.
6. Select Process / Initialize pipettor menu command.
   Once communication between the PC and the FasTrans has been successfully established, the pipettor head will move into the rear far-right corner of the FasTrans. If the pipettor head already was in this position prior to initialization, homing motion may be almost unperceivable in some cases.
7. In the event of failure to establish FasTrans-PC communication, you should check for correct interface settings.
   - Select **Options / Interface** menu command in FasTrans program.
   - Set the connected PC interface port, once the dialog screen has opened.
   - Select **Options / Settings** menu command.
   - Disable the **Demo** check box in the **Options** dialog screen, then click on **[OK]**.
   - Repeat the test procedure for pipettor initialization.

On successful completion thereof, the FasTrans is operational.

6.2 Turning the FasTrans On & Off

Never trigger a motion sequence of the pipettor head, unless you have placed the appropriate storage container (tip tray with tips) into the specified retainer pocket!

Failure to comply might cause damage to the FasTrans.

Refrain from any kind of unsolicited (not prompted by software) manual motion of the pipettor head or the bridge!

Do not use force! This might cause damage to the FasTrans.

Turning automatic pipettor on / Triggering program session

1. Use the main power switch to turn the FasTrans on.
2. Trigger FasTrans control software session.
   Communication between the FasTrans and the PC will be established.
3. Select pipetting program.
4. Fill base plate pockets of automatic pipettor with plates and tubes as required by your current program layout.
5. Launch pipetting program (refer to “Trigger Program“ section of software user manual).

Note

On failure to observe the prescribed sequence of powering-on actions, the software will initially start in demo mode. You may then establish communication between the FasTrans and the PC by selecting the **Options / Settings** menu command and unmarking the **Demo** check box in the **Options** dialog screen (open).

Turning automatic pipettor off

On completion of work with the automatic pipettor, all plates and tubes must be removed from their retainer pockets.

There is no prescribed order of actions for turning power to the PC and the automatic pipettor off.

7 Operation

FasTrans operation runs under the control of an identically named software package: "FasTrans".

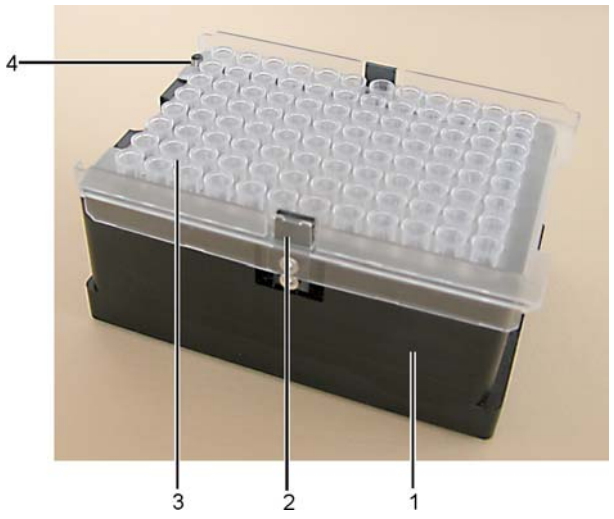
7.1 Loading the FasTrans

Caution!
Make sure that all plates or adapters are correctly mounted in their respective positions. Any kind of misplacement may result in damage to the FasTrans or to plates.

The FasTrans provides nine pockets for the mounting of plates or adapters in standard micro-plate format, tip trays and dump boxes onto its base plate. To insert a selected plate with adapters or tubes into a given retainer pocket, proceed as follows:

- Install adapters and tubes only in the pocket positions which are specified by your software program.
- Insert an adapter with tip tray so that the guide pin (4, Fig. 3) is located on the left-hand side.
- Place the dump box as centrally as possible so used tips need not be unnecessarily handled over plates.
- Plates which underwent software calibration together with an adapter must be installed with this adapter. Note variances in height!

7.2 Changing Tip Trays



1 Adapter
2 Locking pad
3 Tip tray
4 Guide pin

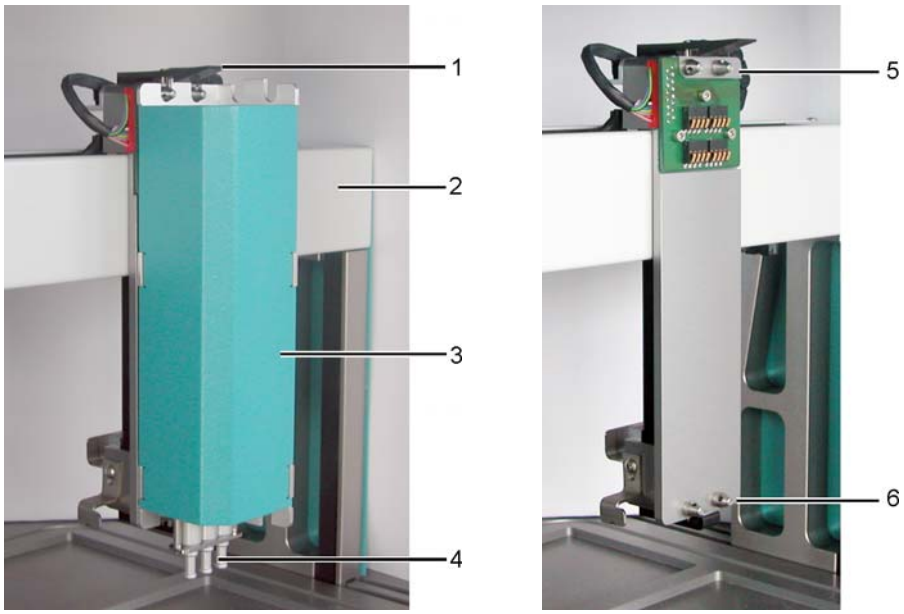
Fig. 3 Adapter with tip tray

A tip tray must be inserted into and firmly clamped in an adapter for tip trays.

1. To retrieve a tip tray (3) from an adapter (1), press both thumbs on one of the two long sides against the tray from below, until the tray is mechanically unlocked (2). Then release the tray on the other long side in the same manner.
2. Having done this, place a new tray onto the adapter. Make sure that the tray's groove is located around the guide pin of the adapter (4). Exert vertical pressure from above, until you hear the locking pads on either side snap into locked position.

7.3 Changing the Pipettor Head

The FasTrans is equipped with replaceable pipettor heads.



1 Locking lever
2 Bridge
3 Pipettor head
4 Tip holder
5 Upper guide cone
6 Lower guide cone

Fig. 4 Pipettor head

1. Select **Process / Head Change** software command for conversion to other pipettor head.
   The bridge will move to the front.
2. Push locking lever up with one hand. At the same time remove pipettor head from the front with the other hand.
3. Place new pipettor head onto the lower guide cones.
4. Push pipettor head backwards, until the locking lever snaps into place.

8 Accessories

8.1 Tip Types

Use only recommended types of tips.

The FasTrans only accepts "Tecan Genesis"-compatible tips. The following tip types may be used for operation:

Volume	Material	Type
20 µL	Pure polypropylene	sterile / non-sterile
10 µL	Pure polypropylene	ART-filter
50 µL	Pure polypropylene	sterile / non-sterile
50 µL	Pure polypropylene	ART-filter
200 µL	Pure polypropylene	sterile / non-sterile
175 µL	Pure polypropylene	ART-filter

8.2 Pipettor Head Types

Different types of pipettor heads are available for FasTrans operation:

	Type	Volume	Channel(s)
01	30 µL 1-channel	30	1
02	250 µL 1-channel	250	1
03	30 µL 3-channel	30	3
04	250 µL 3-channel	250	3
05	30 µL 4-channel	30	4
06	250 µL 4-channel	250	4
07	30 µL 6-channel	30	6
08	250 µL 6-channel	250	6

Note
Remember to set the installed pipettor head in your software.

8.3 Used Adapters and Sample Blocks

MTP-adapter 12 mm

MTP-adapter 30 mm

Waste box

TipTray adapter

Centrifugal adapter, pipeeting station and cooling block, metal for microplate 2x36 LP

Centrifugal adapter, pipeeting station and cooling block, metal for microplate 96 LP

Block 0,2 ml (for 0,2 mL tubes and strips, unskirted PCR plates (96 tubes))

Block 0,2 ml (for skirted and semiskirted PCR plates (96 tubes))

Block 2,0 ml (for 1,5 und 2,0 mL tubes (24 tubes))

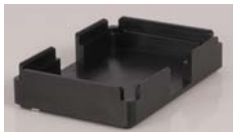
Adapter for 0,2 ml MTP

Block 0,5 mL

Block combi (for 0,2 mL, 0,5 mL, 1,5/2,0 mL (8 of each in one block = 24 zubes)

Block for SpeedCycler microplate 96 LP

Adapter for LightCycler



Adapter for Quiagen Loading Block 96 x 0,2 mL

MTP adapter

9 Preventive Maintenance & Care

The FasTrans is largely maintenance-free.

Required maintenance and care actions are limited to the cleaning of shielding and cover panel surfaces and of the base plate.

Use only spare parts from Analytik Jena AG. Consumable materials and wear & tear parts can be ordered from our Customer Service department.

Cleaning

1. Use absorbent material to immediately wipe shielding/cover panels or the desktop surface clean of pockets of spilt liquid. Follow safety instructions issued by the manufacturers of such liquids when doing this.
2. Use a soft clean piece of cloth which may be slightly moistened with a commercially available neutral cleaning agent to wipe away contamination from the pipettor.

Cleaning in medical laboratory

Where the FasTrans is required to process infectious material, special care must be taken because the FasTrans cannot be decontaminated as a whole unit.

Contamination as a consequence of normal operation is limited to the base plate. Clearly visible pockets of contamination must be promptly removed using adequate means and substances. Care must be taken to prevent solvent from penetrating into the inner pipettor space during cleaning procedures.

For cleaning, recommended disinfectants are:

Decosept AF spray disinfectant	from Dr Schuhmacher GmbH
Meliseptol HBV-wipes	from B. Braun

For decontamination, wipe the FasTrans and the adapter surfaces down with a non-shedding piece of cloth. Make sure you do not moisten affixed inscription labels or lettering if you use a spray disinfectant for decontamination.

Adapters may be cleaned with ethanol or a disinfectant if necessary. They are not autoclavable.

Likewise, UV-decontamination may be removed from the FasTrans, its pipettor head or from adapters. Use only suitable UV-decontamination lamps for this purpose.

Before reshipment of a FasTrans, which has been used to process infectious material, to Analytik Jena AG for necessary service work, it must be decontaminated and related documentary proof provided.

10 Disposal

The owner/operator is required to dispose of any waste material (sample material) resulting from FasTrans operation in accordance with binding law and local regulations.

On expiry of its service life, the FasTrans, including electronic components, must be disposed as electronic waste under the latest binding provisions of law.

Disposal

11 List of Illustrations