Terumo®
Terufusion® Infusion Pump
TE-171/TE-172

The outstanding reliability of Terumo's MIDPRESS puts you at ease
TERUMO has developed an innovative MIDPRESS system that uses a peristaltic finger method. With the conventional peristaltic finger method, solutions are administered by occluding the solution-administration tube until it becomes completely flat. With the MIDPRESS method, however, solutions are administered with high accuracy by pressing the solution-administration tube only halfway to closure. By precisely controlling the finger and stroke through the MIDPRESS, a stable volume is delivered and a more accurate flow rate is achieved.

**MIDPRESS system**

- Inflow: Solution flows into the tube, while part D is closed.
- Inflow stops: A certain amount of solution accumulates in the tube as part A presses against the tube.
- Outflow: Outflow starts as part D opens and part B presses the tube.
- Outflow stops: Part D presses the tube fully.
- Pulse flow adjustment: Part E presses the tube and completes outflow cycle.

**High accuracy**

High flow rate accuracy is achieved: within ±3% using the specified TERUFUSION® infusion sets type E and within ±5% using conventional TERUFUSION® infusion sets.

The MIDPRESS method succeeds in minimizing flow rate changes even over long periods, particularly for the delivery of vasopressor or depressor drugs.

**Wide range of flow rate settings is possible, from very low to high**

Flow rates can be set within a wide range (from 0.1 mL/h to 1,200 mL/h). This makes it possible to perform infusions in a wide variety of situations and applications, such as small infusions for neonates, rapid infusion for emergency care and the delivery of parenteral nutrition.

**Transfusion**

Since the MIDPRESS system doesn’t flatten the tube completely, damage to hemocytes is reduced. This means that the TE-171/TE-172 can be used for blood transfusions in pediatric or ICU cases with the specified SAFEED extension tube for pumps.

**Solid aluminium die-cast frame**

The TERUFUSION® infusion pump TE-171/TE-172 has a precision machined solid aluminum die-cast frame for the base of the MIDPRESS finger part. This structure helps to ensure highly accurate flow rates.
The TERUFUSION® Infusion Pump TE-171/TE-172 has a revolutionary MIDPRESS system that provides highly accurate infusions. With other user-friendly and advanced safety features, the TE-171/TE-172 fully meets the demands of modern infusion therapy.

**Body weight mode**

The TE-172 automatically calculates and sets the proper flow rate when the dose rate, body weight, drug mass and solution volume are entered. This eliminates the need for time-consuming calculations and having to refer to a conversion table.

1. Press the [DISPLAY ON/OFF] switch and the body weight mode screen lights up.
2. Press [SELECT] switch to select between the dose rate (µg/kg/min.), body weight (kg), drug mass (mg), and solution volume (mL).
3. The flow rate is automatically calculated and displayed after entering the specified dose rate, body weight, drug mass and solution volume.

**Selectable three-step (L, M and H) occlusion detection pressures**

As versatile as they are reliable, these infusion pumps provide a variety of pressure level settings (three in all) to match virtually any requirement. For earlier alarm notification during occlusion, the detection pressure can be set at the lowest setting.

**Convenient time remaining indication function**

After the flow rate and volume to be delivered have been set, the time required to complete the delivery is automatically indicated.

**Informative alarms and added safety functions**

User-friendly alarms and safety functions include: air-in-line, occlusion, irregular flow, door alarm, low battery, re-alarm, start reminder alarm and self check, and a front panel lock-out safety function.

**Convenient battery indicator**

The TE-171/TE-172 features a series of informative battery indicators for easy confirmation of the onboard battery power* (3 levels).

- [Battery operation time reference](#)

**Easy-to-see operation indicators**

For easy confirmation from any angle, the indicator light protrudes from the unit. A green light blinks to indicate that operation is in progress, while a flashing red warning light informs the user that a problem has occurred.

**Brightness adjustable display**

The brightness of the display can be lowered to allow a patient to enjoy undisturbed sleep.

**Door light for use in the dark**

The light inside the door is convenient for nighttime use or in darkened rooms.

**Simple maintenance care**

The main body and door construction have a rubber sealing to prevent solution leakage. Solution left on the surface can be easily wiped off thanks to its rounded-corner design.

**Trouble-free battery replacement**

The battery can be easily exchanged via the quick-access battery compartment. Replacing a battery doesn’t require removing the unit’s entire casing.

**History function**

Historical data of infusion records: warnings, settings, starts and stops of infusion, etc.

**Connects to the drip sensor (option)**

For safety, this drip sensor (option) can double check irregular flow rates.

**Computer interface connector available**

Computer interface connection enables connection to RS-232C/RS-485.

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* Operates for approximately three hours in continuous use.

** When the low-battery alarm is not on.
Specifications

Product name and model
TERUFUSION® infusion Pump TE-171
TERUFUSION® infusion Pump TE-172

Pumping system
MIDPRESS® peristaltic finger system, a newly developed system to provide accurate infusion without pressing the tubing completely.

Accuracy (Nominal value)
Within ±3% (Conditions) Infusion set: Specified TERUFUSION® infusion sets type E for pump, solution: water/saline, test time: second hour, delivery rate: 1.0 mL/h or more, temperature: 25 °C
Within ±5% (Conditions) Infusion set: Specified TERUFUSION® infusion sets for pump, solution: water/saline, test time: second hour, delivery rate: 1.0 mL/h or more, temperature: 25 °C

Delivery rate
0.1 – 1,200 mL/h (0.1 – 99.9 mL/h: 0.1 mL/h step, 100 – 1,200 mL/h: 1 mL/h step).
The delivery rate can be set in 1 mL/h step throughout the range by the internal mode select switch.

Delivery limit
1 – 9,999 mL (1 mL step) or „——“ (delivery limit free)

Volume delivered
0.0 – 9,999 mL (0.0 – 99.9 mL: 0.1 mL step, 100 – 9,999 mL: 1 mL step).
The volume delivered reading is in 1 mL step from 1 to 9,999 mL by the internal mode select switch.

Purging
Higher than 500 mL/h

Alarms
AIR/OCCCLUSION/FLOW ERR./DOOR/LOW BATT.
* Operation indicator flashes red, and the alarm message comes on. Pump stops except during the ‘LOW BATT’ alarm.

Occlusion detection
13.3 – 133.3 kPa (100 – 1,000 mmHg, 0.1 – 1.4 kgf/cm²)

Pressure
The detection pressure can be adjusted in 3 levels (L, M, H) within the above range.

Completion function
When the total volume delivered reaches the preset delivery limit, the indicator and buzzer notify the operator.

Nurse call alarm
Outputs an alarm relay contact. (Can be connected to the nurse call system)
Contact rating: DC12 V 1.0 A

Computer interface
RS-232C/RS-485

Special functions
• ‘Keep vein open’ function (After the delivery limit has been reached, delivery continues at 1 mL/h for a set flow rate of ≥ 1 mL/h, or at the delivery rate setting < 1 mL/h.)
• Tubing clamp function (When the door is opened, tubing is automatically clamped)
• Volume delivered clear function
• Time remaining display
• Battery capacity indicator (3 levels)
• Adjustable display brightness (Can be switched to 2 levels)
• Adjustable buzzer volume (3 levels)
• Operation history function (Storage/display of operation history)
• Standby function
• Repeat alarm function
• Start reminder function
The following functions can be selected via internal switches:
• Volume memory function
• Delivery rate 1 mL/h step

Operating conditions
Temperature: +5 to +40 °C, humidity: 20 to 90%

Storage conditions
Temperature: –20 to +45 °C, humidity: 10 to 95% (No condensation)

Power supply
AC 100 – 240 V, 50 Hz DC12 – 15 V
Internal Nickel-Cadmium battery
Operating time approx. 3 hours
Conditions: new battery, delivery rate: 25 mL/h, temperature: 25 °C with the power off, after 15-hour charging

Power consumption
28 VA (AC 100 – 240 V), 11 W (DC power)

Classification
Class I & internal power supply: Type CF/IK1 Continuous operation

Dimensions
100 (W) x 215 (H) x 208 (D) mm (Excl. protrusions)

Weight
Approx. 3.6 kg (TE-171), 3.7 kg (TE-172)

Body weight mode (Dose rate calculation)
• Dose rate: 0.01 – 99.99 µg/kg/min. (0.01 µg/kg/min. step)
• Drug mass: 0.1 – 999.9 mg (0.1 mg step)
• Solution volume: 0.1 – 999.9 mL (0.1 mL step)

Memory function
The latest five patterns of the above four parameters are automatically saved and can be displayed.

Every day, as healthcare professionals, you are working to ensure life and to contribute to the well-being of your patients.
Every day, Terumo Europe provides you with the clinical systems, means and solutions to keep life flowing.