



Terumo® Terufusion® Infusion Pump

TE-171/TE-172



**MID
PRESS**

The outstanding reliability
of Terumo's MIDPRESS
puts you at ease

TERUMO®

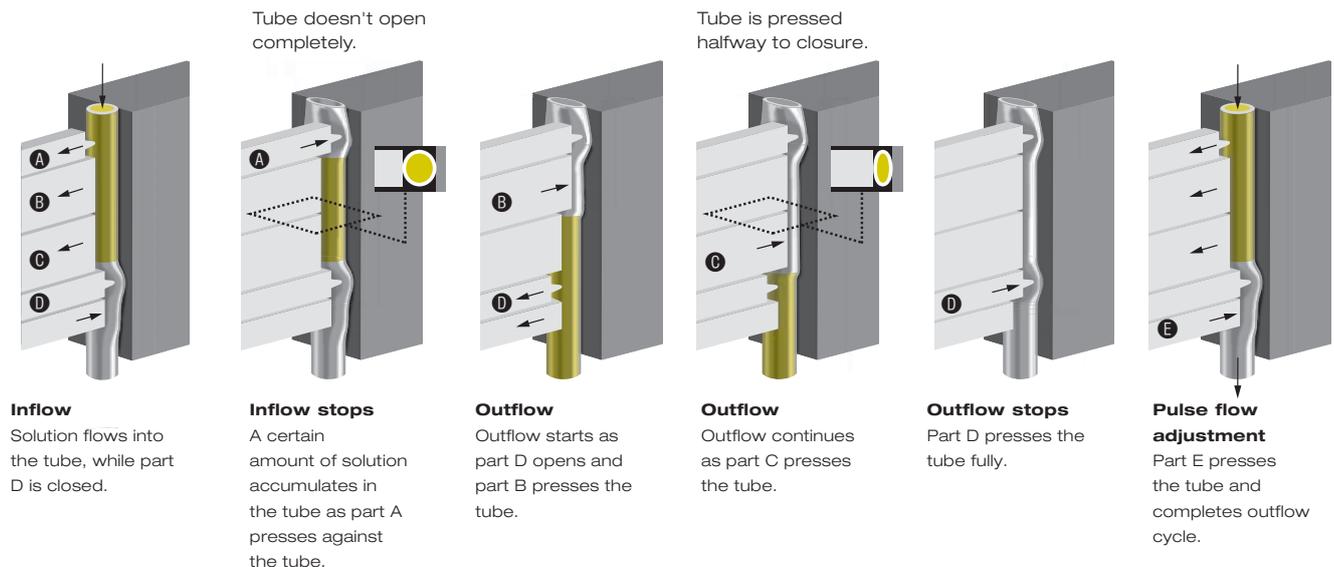
We keep life flowing

User-friendly features and easy operation in a single space-saving unit

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.

MID PRESS

MIDPRESS system



High accuracy

High flow rate accuracy is achieved: within $\pm 3\%$ using the specified TERUFUSION[®] infusion sets type E and within $\pm 5\%$ 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 aluminium 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 ($\mu\text{g}/\text{kg}/\text{min.}$), 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).

* Operates for approximately three hours in continuous use.

Battery operation time reference

Approx. 160 minutes or longer

Approx. 80 minutes or longer

Approx. 30 minutes or longer**



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

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.

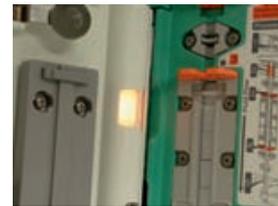


Brightness adjustable display

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.

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/OCCLUSION/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 ≥ 1mL/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/IPX1 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)

TE-172

Body weight mode (Dose rate calculation)

- Dose rate: 0.01 – 99.99 µg/kg/min. (0.01 µg/kg/min. step)
- Body weight: 0.1 – 300.0 kg (0.1 kg 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.

* Computer interface is available on the specified product.
The specifications and design are subject to change without notice.

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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.



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