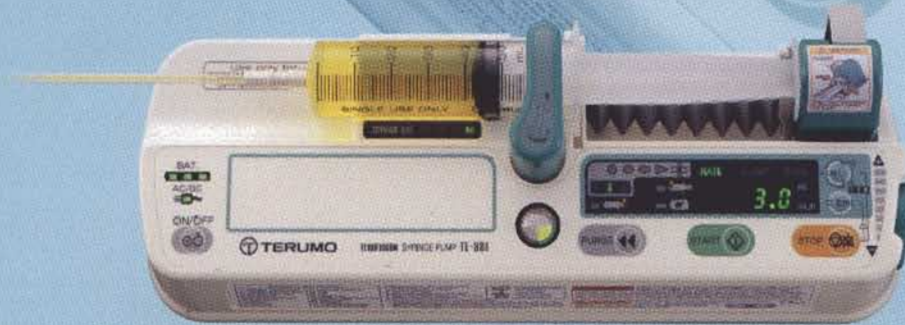


Towering safety and easy operation



TERUFUSION® Syringe Pump TE-331, TE-332

Advanced safety mechanisms and user-based design

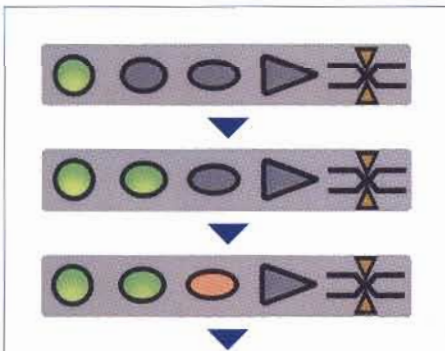
Advanced Mechanisms Provide Safety

■ Occlusion monitor and occlusion bolus reduction function

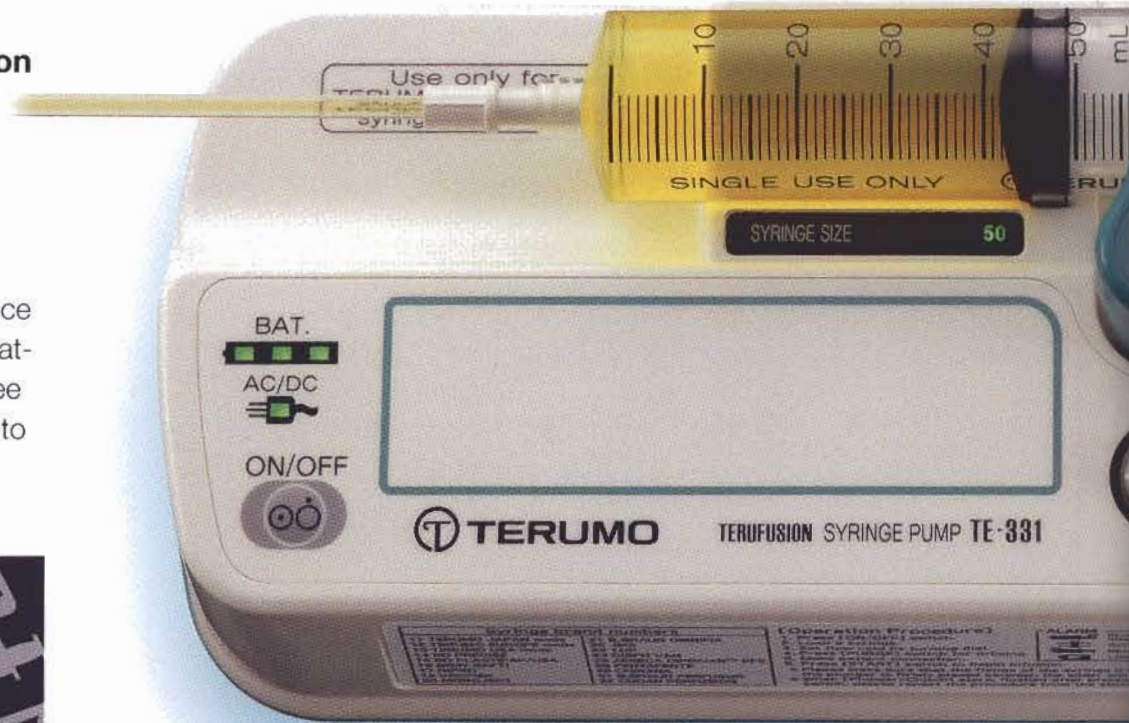
Pressure in the infusion line is displayed by three occlusion pressure monitor lamps. When an [Occlusion] alarm is issued, a function to automatically reduce the in-line pressure will be activated. Occlusion pressure has three levels (I, II, III), and it's possible to change the detection pressure without turning off the power.



Three signals light up from left to right as infusion pressure rises.



A buzzer sounds when the measured value has reached the preset detection pressure.



■ Setting dial minimizes setting errors

A unique user-friendly dial lets the operator choose a preset flow rate, helping avoid incorrect digit-setting. The dial allows fine adjustments quickly and easily.



Boost performance and reliability to new heights

Easier to Use, More Convenient Operation



■ Easier and lighter

The TE-331/332 are both about 500g lighter than the previous model.

■ More efficient battery for extended operation

The internal battery provides about 5 hours operation.

■ Convenient battery indicator

	BAT.		Battery operation time reference:
	AC/DC		Approx. 240 minutes or more
			Approx. 120 minutes or more
			Approx. 30 minutes or more*

*When the low battery alarm is not on.

Body weight mode

The TE-332 automatically calculates and sets the proper flow rate when the dose rate, patient's body weight, drug mass and solution volume are preset beforehand.

- 1 Press the [DISPLAY ON/OFF] switch and the body weight mode screen lights up.
- 2 Press the [ITEM SELECT] switch to select parameters.
- 3 The flow rate is automatically calculated and displayed after all necessary parameters have been entered.
- 4 The dose rate unit can be changed ($\mu\text{g}/\text{kg}/\text{min}$) and ($\text{mg}/\text{kg}/\text{h}$) by pressing the [UNIT SELECT] switch for 2 seconds.

Setting with the mg/kg/h dose rate unit

Press for about two seconds.

Press for about 0.5 second.

Flow rate is displayed.

Symbolic parameter design provides easy entering.

- Body weight.
- Solution volume
- Drug mass.



TE-332

Boost performance and reliability to new heights



■ Secure slider hook and syringe plunger/clutch disengaged alarm

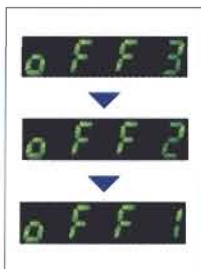
Syringe slider hook makes syringe loading quick and easy. For added safety, the pump unit will not operate if the syringe plunger is not properly engaged in the slider, and/or the clutch is not properly engaged in the internal mechanism.



■ Sophisticated alarms and functions

To avoid accidental power off, power is turned off by pressing the [ON/OFF] switch for about 3 seconds. The power-off indication is shown on the display at right.

- Operation indicator
- History function (500 events)
- AC power cord disengage alarm
- Low battery alarm



■ Standby function

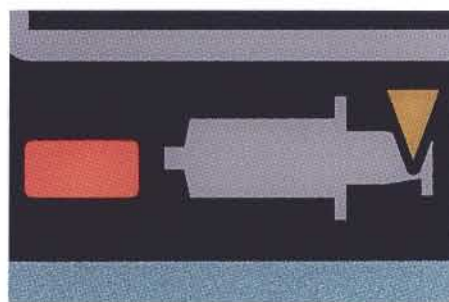
Standby function can temporarily clear the start-reminder alarm.

■ Nearly empty alarm adjustable to specific time

This special function allows you to set the alarm to a specific time (3 to 30 minutes in 3-minute steps) before the syringe completely empties.

Symbolic alarm design provides alarm status easily and clearly

- Nearly empty
- Syringe disengage
- Low battery



TERUFUSION® Syringe Pump TE-331, TE-332

SPECIFICATIONS

Product name	TERUFUSION Syringe Pump TE-331	TERUFUSION Syringe Pump TE-332
Model	TE-331	TE-332
Usable syringes	10, 20, 30, 50mL	
Setting range of flow rate	0.1 - 300mL/h (10, 20, 30mL syringes in 0.1mL steps) 0.1 - 1,200mL/h (50mL syringe, 1,000 - 1,200mL/h in 1mL/h steps)	
Display range of total volume delivered	0.1 - 999.9mL (in 0.1mL step)	
Accuracy of flow rate	Mechanical accuracy: Within $\pm 1\%$ Accuracy including syringe: Within $\pm 3\%$ (Accuracy measured over 1 hour after starting infusion, and measured every hour thereafter, using Terumo syringe at a flow rate of 1.0mL/h or above)	
Occlusion detection pressure	Selectable from three levels (III, II, I) III 106.7 \pm 26.7kPa (800 \pm 200mmHg) II 66.7 \pm 13.3kPa (500 \pm 100mmHg) I 40.0 \pm 13.3kPa (300 \pm 100mmHg)	
Purge rate	Approx. 1,200mL/h (50mL syringe) Approx. 500mL/h (30mL syringe) Approx. 400mL/h (20mL syringe) Approx. 300mL/h (10mL syringe)	
Alarms	OCCLUSION, NEARLY EMPTY, LOW BATTERY, SYRINGE DISENGAGED, PLUNGER/CLUTCH DISENGAGED and AC/DC cable disconnection	
Special functions	<ul style="list-style-type: none"> • Setting of delivery limit: 0.1 - 999.9mL (0.1mL step) • Infusion completion alarm (when delivery limit is specified): When delivery amount has been reached • Keep open rate (KOR) function: Even after completion, infusion continues at 0.1mL/h • Nearly empty alarm: Programmable time till syringe empties • Repeat alarm • Start reminder alarm • Standby: Temporarily cancels the start reminder alarm function • History: Displays the operation history 	
Operating conditions	<ul style="list-style-type: none"> • Ambient temperature: 5 to 40°C • Relative humidity: 20 to 90% 	
Storage conditions	<ul style="list-style-type: none"> • Ambient temperature (Original condition): -20 to 60°C • Relative humidity: 10 to 95% (No condensation) • Ambient temperature (Without packing): -20 to 45°C • Relative humidity: 10 to 95% (No condensation) 	

Power supply	<ul style="list-style-type: none"> • 100 - 240VAC, 50/60Hz • 12 - 15VDC • Operable duration using internal battery: Approx. 5 hours (using a new battery at a flow rate of 5mL/h and ambient temperature of 25°C, after charging for at least 15 hours with the power off)
Power consumption	TE-331: 18VA (on AC100 - 120V)/23VA (on AC100 - 240V)/7.5W (DC) TE-332: 19VA (on AC100 - 120V)/25VA (on AC100 - 240V)/7.5W (DC)
Computer interface	RS232C or RS-485
Nurse-call connector	Alarm relay contact is provided (Connectable to nurse call system) Contact capacity: 12VDC, 1A MAX
Classification	Class I and internal power supply type CF IPX4 Protected against splashing fluid
Dimensions	322 (W) x 114 (H) x 115 (D)mm
Weight	Approx. 1.8kg (TE-331)

Main Unit (TE-332 only)

Unit setting range	Dose rate: 0.01 - 99.99 μ g/kg/min (0.01 μ g/kg/min steps) or 0.01 - 99.99mg/kg/h (0.01mg/kg/h steps) Body weight: 0.1 - 300.0kg (0.1kg step) Drug mass: 0.1 - 999.9mg (0.1mg step) Solution volume: 0.1 - 999.9mL (0.1mL step)
Weight	Approx. 1.9kg (TE-332)

Note: Specifications and design are subject to change for improvement without notice.

Accessories (Common to TE-331/TE-332)










Accessories	AC power cord 1
	Pole clamp 1
	Instruction manual 1
	Syringe brand label 1

Conformity standards

IEC 60601-1 (1998), Amd. 1 (1991), Amd. 2 (1995)
IEC 60601-1-1 (1992), Amd. 1 (1995)
IEC 60601-1-2 (1993)
IEC 60601-2-24 (1998)
MEDICAL DEVICE DIRECTIVE 93/42/EEC (1993)

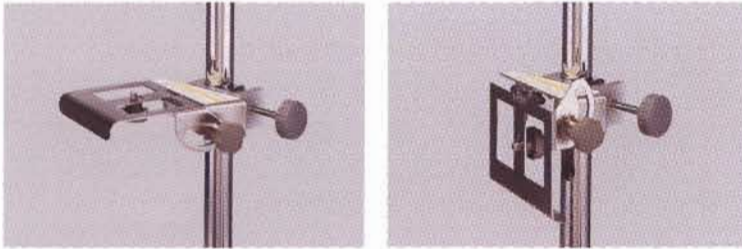
TERUFUSION® Syringe Pump TE-331, TE-332

Units Available

Reorder number	Voltage	Plug type	Socket type	Body weight mode	Computer interface/ Nurse call connector
TE•331NX1	100 - 120V	American type		—	—
TE•331NW2	100 - 240V	UK type		—	—
TE•331NW3	100 - 240V	European type		—	—
TE•331CX1	100 - 120V	American type		—	yes
TE•331CW2	100 - 240V	UK type		—	yes
TE•331CW3	100 - 240V	European type		—	yes
TE•332CX1	100 - 120V	American type		yes	yes
TE•332CW2	100 - 240V	UK type		yes	yes
TE•332CW3	100 - 240V	European type		yes	yes

Note: Separate setup procedures are required for products with voltage-plug combinations other than listed above.

Optional Equipment



Angle-adjustable pole clamp

Code No. TE•852

Pole clamp allows the syringe pump to be loaded at angles of 0° to 90°



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