# Reciprocal shaker NR-1, Rotary shaker NR-2, Double shaker NR-3

## Compact sized easy to use for bench tops and inside Incubators. 3 models: Reciprocal, Orbital, Switchable Reciprocal shaking. Options are compatible with those of Bioshaker (Small sized).

**"Bioshaker BR-21/22/23 with temp. control" series --> P.018  OD-Monitors measureing turbidity while shaking --> P.034**

Other platforms can be used with each model in combination other than the combination shown below.

NR-1 with Optional shaking platfrom

NR-2 with Optional shaking platfrom
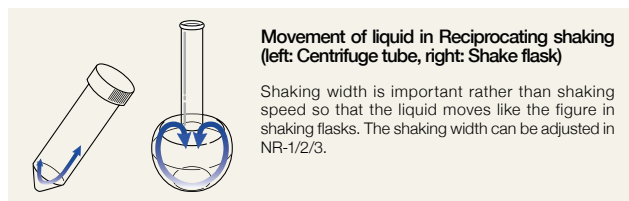
NR-3 with Optional shaking platfrom

## Features

- •Reciprocal shaking of Test tubes and Shake flasks [NR-1]
- •Orbital shaking of mainly Erlenmeyer flasks [NR-2]
- •Switchable Reciprocal/Orbital shaking [NR-3]

### Compatibility of Reciprocal shaking and Vessels.

Reciprocal shaking is suitable for Test tubes and Shake flasks. In shaking culture with Shake flasks, adjust the flow rate to 1/2 of the capacity so that the liquid can be moved properly.
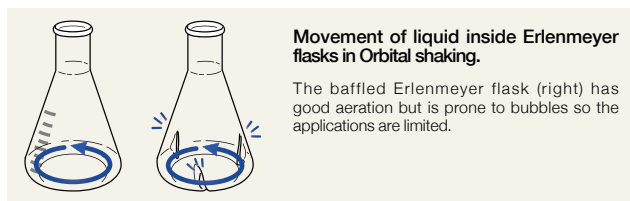
**Movement of liquid in Reciprocating shaking (left: Centrifuge tube, right: Shake flask)**

Shaking width is important rather than shaking speed so that the liquid moves like the figure in shaking flasks. The shaking width can be adjusted in NR-1/2/3.

## Applications

- •Shaking culture of Microbes inside Incubators etc.
- •Shaking culture of Algae etc. inside Incubator with LED irradiation
- •Staining/Decolorization of Gels and Membranes[NR-80]

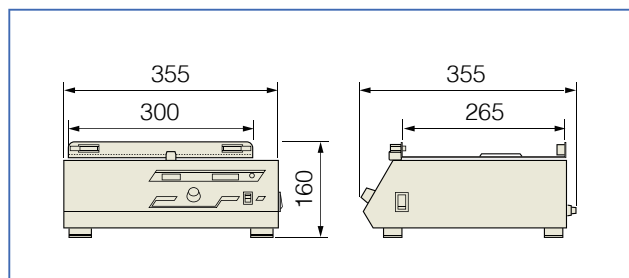### Compatibility of Orbital shaking and Vessels.

Orbital shaking is suitable for Erlenmeyer flasks. In shaking culture with Erlenmeyer flasks, adjust the flow rate to 1/5 to 1/3 of the capacity so that the liquid can be moved properly.

**Movement of liquid inside Erlenmeyer flasks in Orbital shaking.**

The baffled Erlenmeyer flask (right) has good aeration but is prone to bubbles so the applications are limited.

| Model | NR-1 | NR-2 | NR-3 |
|---|---|---|---|
| Shaking motion | Reciprocal shaking | Orbital shaking | Switchable Reciprocal/Orbital shaking |
| Shaking speed | 20 to 200r/min | | |
| Shaking width | 10 to 40mm, Stepless (Default: 25mm) | | |
| Platform dimensions and Capacity | 290 x 250mm Erlenmeyer flask 500mL x 4,  3L x 1 | | |
| Maximum load | Approx. 5kg (Shaking platform and vessel holders included) | | |
| Shaking duration integrator | 0.1h to 999.9h (Automatic resetting function) | | |
| Safety devices/functions | Motor protection circuit at overload, Fuse | | |
| Dimensions  / Weight | 355 x 355 x 160mm, Approx. 13kg | | |
| Power supply | AC220 to 240V/0.5A | | |

(*)Shaking platform and vessel hplder are option.

## Related products: OD-Monitor series and Small-sized incubator

Can be combined with the "OD-Monitor series (page 34)  that can automatically measure the turbidity of culture liquid (OD 600) without stopping shaking culture.  Prepare the universal shaking platform and clamps when combining.

Can be put on the lowest shelf of "In vitro Box iB-130 (page 138) for use. * No adverse effects from vibration verified. This is an energy-saving small size incubator that can control the temp. below RT. Very useful if no incubation room when culturing or incubation that requires low temp.

## Dimensions (Each model common)

355
300
355
265
160

We contribute to the development of research and industry.

● Protuberances not included in Dimensions. ● Vessels of photo not included.

# Optional accessories and Capacity of Vessels

**Small size incubator "in vitro box iB-130"-->P.138**

## Spring net shaking platform and Capacity of Vessels.

| Model | MR-2925 |
|---|---|

Vessels can be easily mounted on regardless its shapes.It can be used by removing some springs and changing the height of spring net as necessary.
Universal shaking platform (w/o Clamp *It is option) recommended if vessel should be tightly held.

| Spring net Pitch | 20mm |
|---|---|
| Spring net Pitch | 1 tier (Height is changeable.) |
| Dimension | 290×250×108Hmm |
| Weight | Apporx.1.1kg |

| Capacity of Vessel | φ16 mm test tubes (*1) | 50 (*2) | Erlenmeyer flasks 250mL | 5 |
|---|---|---|---|---|
| | Disposable Centrifuge tubes for 50 mL | 20 (*2) | Erlenmeyer flasks 300mL | 5 |
| | Erlenmeyer flasks 50mL | 20 | Erlenmeyer flasks 500mL | 4 |
| | Erlenmeyer flasks 100mL | 10 | Erlenmeyer flasks 1L | 2 |
| | Erlenmeyer flasks 200mL | 9 | Erlenmeyer flask 2L | 1 |

(*1)When below φ16mm test tubes, fix the test tube stand (incl. φ16mm) whole with the spring net.
(*2)The number is when Angle rack tilted 45 °.
(*3)Be careful when using Shake flask as it is fragile.

## Universal shaking platform and Capacity of Flasks

| Model | MT-2925 |
|---|---|

It is used together Clamps, Angle racks and "OD-Monitor" series (Clamps of Erlenmeyer flask and Shake flask are available). It can hold flasks tightly than Spring shaking platform.

| Dimension | 290×250×23Hmm |
|---|---|
| Weight | Apporx.0.9kg |

| Capacity of Vessels | Erlenmeyer flasks 50mL | 20 | Erlenmeyer flasks 500mL | 4 |
|---|---|---|---|---|
| | Erlenmeyer flasks 100mL | 10 | Erlenmeyer flasks 1L | 2 |
| | Erlenmeyer flasks 200mL | 9 | Erlenmeyer flask 2L | 1 |
| | Erlenmeyer flasks 250mL | 5 | Erlenmeyer flask 3L | 1 |
| | Erlenmeyer flasks 300mL | 5 | Sakaguchi flasks 500mL | 4 |

## Angle rack for Test tube (Mounted on MT-2925 for use.)

| Model | AT-1250 | AT-1620 | AT-1650 | AT-1820 |
|---|---|---|---|---|
| Capacity | φ12mm ×50 | φ16.5mm ×20 | φ16.5mm ×50 | φ18mm ×20 |
| Qty of mounting on MT-2925 | 2 (*) | 2 (*) | 2 (*) | 2 (*) |
| Dimension (mm) | 250×100×95H | 285×70×80H | 286×110×100H | 320×70×80H |
| Weight | Apporx.0.8kg | Apporx.0.6kg | Apporx.0.9kg | Apporx.0.7kg |

AT-1250

(*)The qty when Angle rack with 160mm test tube tilted 45 °.

## Angle rack for Disposable Centrifuge tubes (Mounted on MT-2925 for use.)

| Model | AT-3518 |
|---|---|
| Capacity | 50mL×18 |
| Qty of mounting on MT-2925 | 2 (When Angle rack tilted 45 °) |
| Dimension/Weight | 285×110×102Hmm,Apporx.0.8kg |
| Remarks | Be sure use below 50°C. |

## Stick sheet shaking platform

| Model | SR-2925 |
|---|---|

Flat bottoms such as Erlenmeyer flasks and Petri dishes can be held simply by placing them on the platform. The decreasing an adhesive force by dirt can be recovered by washing with water and drying it. Even Erlenmeyer flasks can be used up to 200r/min by using Optional Clamp belt.

| Max. shaking speed | 100r/min (200r/min when using Clamp belt) |
|---|---|
| Dimension/Weight | 290×250×30Hmm,Apporx.1.1kg |
| Standard accessories | Stick sheet×1 |

## Stick sheet, Clamp belts

Stick sheet (ST-2925) above also available as sold separately.
Clamp belt (CB-0205/1000) is for securely holding Erlenmeyer flask on Stick sheet shaking platform.

| Model | ST-2925 |
|---|---|
| Dimension | 290×250mm |

| Model | CB-0205 | CB-1000 |
|---|---|---|
| Volume of Erlenmeyer flasks | 200 to 500mL | 1 to 3L (*) |

(*)Up to 2L of Erlenmeyer flask can be used with the NR-1/2/3 series.

## Clamps (Mounted on MT-2925 and AF-2070 for use.)

| Shape | Vessels / Capacity | | Model |
|---|---|---|---|
| Above 300mL Clamps comes with Spring and Above 500 mL comes with Octagonal rubber sheet.<br><br>MT-2925 with Plural clamps mounted. | Erlenmeyer flasks | 50mL | CF-0050 |
| | | 100mL | CF-0100 |
| | | 200mL | CF-0200 |
| | | 250mL | CF-0250 |
| | | 300mL | CF-0300 |
| | | 500mL | CF-0500 |
| | | 1L | CF-1000 |
| | | 2L | CF-2000 |
| | | 3L | CF-3000 |
| | Sakaguchi flasks | 500mL | SF-0500 |

## Angle rack for Erlenmeyer flasks
(Mounted on MT-2925 *Clamps required for use)

| Model | AF-2070 | AF-2570 |
|---|---|---|
| Capacity | 50mL：4,100mL：3pcs, 200 to 300mL：2pcs, 500mL：1pc | 50mL：5pcs ,100mL：4pcs, 200mL：3pcs , 250 to 500mL：2pcs |
| Qty of mounting on MT-2925 | 2 pcs (*1) | 2 pcs(*1) |
| Dimension | 250×110×50Hmm | 300×110×50Hmm |
| Weight | Apporx.0.8kg | Apporx.0.9kg |

AF-2070

(*1)When Angle rack tilted 30 °

## Tube holders (Mounted on MT-2925 for use.)

M-0150
M-0500
M-0015

| Tube holder M-0015 |
|---|
| For 1.5/2.0 mL Microtubes and Micro Vials, 3 sets x 8 racks |

| Tube holder M-0150 |
|---|
| Disposable Centrifuge tube for 15 mL 3 sets x 6 racks (*) |

| Tube holder M-0500 |
|---|
| Disposable Centrifuge tube for 50 mL 3 sets x 4 racks (*) |

(*) Up to 3 sets can be mounted on MT-2925 in NR-1/2/3 series.The vessel tips will protrude from MT-2925 when 3pcs are attached. Thus, be sure not to make them hit the surroundings during shaking.

● Protuberances not included in Dimensions. ● Vessels of photo not included.

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[ 2019-2020 General Catalog ] **TAITEC**

Selection guide

Constant temperature incubator shaker OD-Monitor

CO₂ incubator CO₂ incubator shaker

**Shaker**

Mixer Rotator Stirrer

Bead beater homogenizer Ultrasonic homogenizer

Aluminum block bath Minisize bath

Water bath Shaking water bath Immersion cooler

Hybridization oven Constant temperature chamber

Centrifugal concentrator Cold trap

Freeze dryer

Electrophoresis and Blotting apparatus

Constant temperature water circulating system [Chiller]

Appendix