

# ACTIVE AIR MONITORING WITH CONTACT PLATES ON MAS-100 NT®



## INTRODUCTION

In routine environmental monitoring programs active microbial air sampling with MAS-100® air samplers is always combined with passive air sampling (settle plates) and optionally as well with surface monitoring (contact plates). Instruments of the MAS-100 family of air samplers are open systems and are not tied to specific media suppliers. They are generally used with standard 90-100 mm petri dishes. However, customers may want to limit the number of different plate types in usage. This is why MBV offers a plate adapter and associated perforated lids for settle and contact plates when using MAS-100 NT/Eco (Fig. 1 and 2).

# HOW IT WORKS

Once the contact plate adapter (also called RODAC adapter) is placed on the microbial air sampler, it must be positioned in the middle of the adapter. Central positioning of the contact plate guarantees that all impact holes will be on the agar surface. This is assured if the dot mark on the contact plate is aligned with the dot mark on the plate holder of the [MAS-100 NT](#). Finally, the adapter is fixed with three blue hexagon socket screws (Figure 1, in blue) using the Allen key (Figure 1, left).

The quality of all materials used in the process is decisive for satisfactory results. That is why MBV recommends using validated [contact plates](#) or [settle plates](#) from Merck KGaA. Both the 300x0.6 mm and 400x0.7 mm [perforated lids](#) fit the contact plate adapter and can be used for routine air monitoring provided the calibration has been performed for the respective perforated lid.

The [MAS-100 VF](#) does not require an adapter. A 180 degree rotation and positioning of the three clamps is sufficient to fix the culture plate in the middle. A brief tutorial on how to adjust the plate holder of the MAS-100 VF can be found on the [MBV Youtube](#) channel.

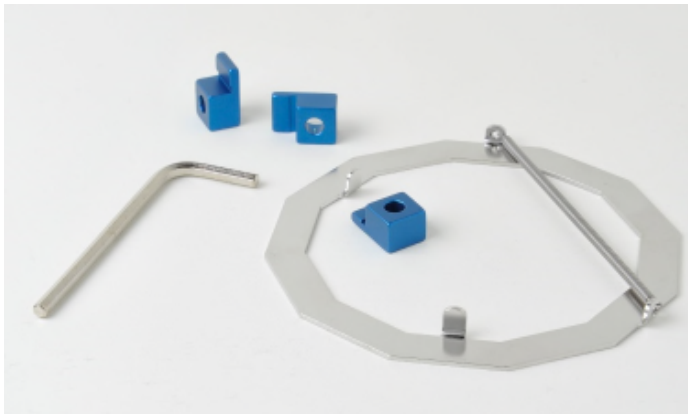


Figure 1: **Adapter for contact plates:** The adapter is fixed on the microbial air sampler with the three blue hexagon socket screws (blue) using the Allen key (left).

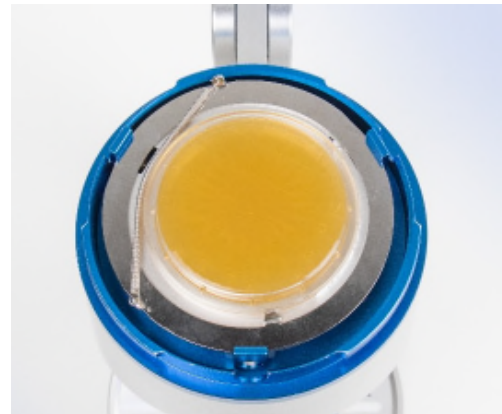


Figure 2: **Contact plate mounted on MAS-100 NT®:** Note that the center of the contact plate is aligned with the dot in the center of the Petri dish holder.

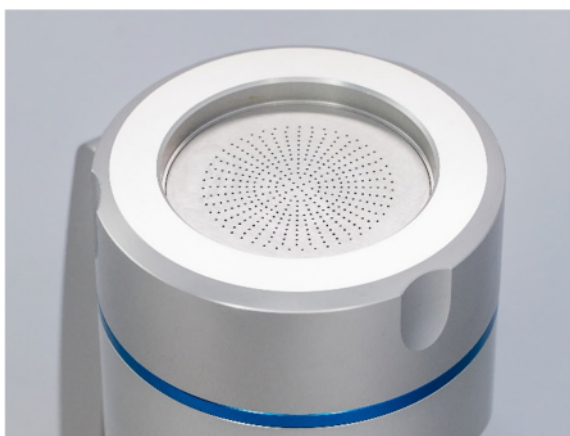


Figure 3: **Ready-to-use setup for active air sampling with MAS-100 NT® and 400x0.7 mm perforated lid:** The contact plate was fixed on the air sampler contact plate holder using the special adapter for contact plates.



Figure 4: **400x0.7 mm contact plate after sampling 1000 L ambient air with MAS-100 NT® and contact plate adapter:** The regular impactation pattern demonstrates homogeneous air impact over the complete agar surface

# BENEFITS

The MAS-100 family of air samplers is an open system and users are not dependent on a specific type or supplier of agar plates. However: Environmental monitoring departments may want to restrict the number of different media plates in usage. As air monitoring by settle plates and surface testing by contact plates are mandatory anyways, it may be advantageous to use those plates also for active air monitoring. For this purpose MBV offers a plate adapter including positioning template and matching perforated sampling lids as accessories. These options permit using 55mm plates also for active air monitoring on MAS-100 NT/Eco.

For maximum physical and biological sampling efficiency it is crucial that the sampled air is directed homogeneously onto the complete surface area of the media plate. This ensures the best growth conditions for every potential CFU. The hole pattern of the specific perforated lids for 55 mm plates is optimized to evenly cover virtually the complete Agar surface (Figure 4). Both the standard 300x0.6mm with a cut-off size ( $D_{50}$ ) of 1.1  $\mu\text{m}$  and classical 400x0.7mm ( $D_{50}$  = 1.6  $\mu\text{m}$ ) are available providing straightforward comparison to sampling using the standard 90-100mm petri dishes.

## ORDER ITEMS:

Article name	Total height contact plate + agar	Order number MBV	Order number Merck KGaA
Perforated lid aluminium 300x0.6 mm for Merck lockable and non-lockable contact plates	13-15 mm	06.6017.01	1.19149.0001
Perforated lid aluminium 400x0.7 mm for contact plates (e.g. Merck non-lockable contact plates)	7-9 mm (NT, Eco) 7-12 mm (VF)	06.7120.01	1.09213.0001
Perforated lid aluminium 400x0.7 mm for Rapid MicroBio agar plates		06.6018.01	N/A
Adapter for contact plates		06.7124.01	1.09214.0001

Please contact us if you require versions of contact plates that are not listed above. We are able to provide you with a solution.

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