DrySyn MiniSpin
Instruction Manual

Asynt Ltd
enquiries@asynt.com
www.asynt.com

Thank you for purchasing this Asynt product

CONTENTS

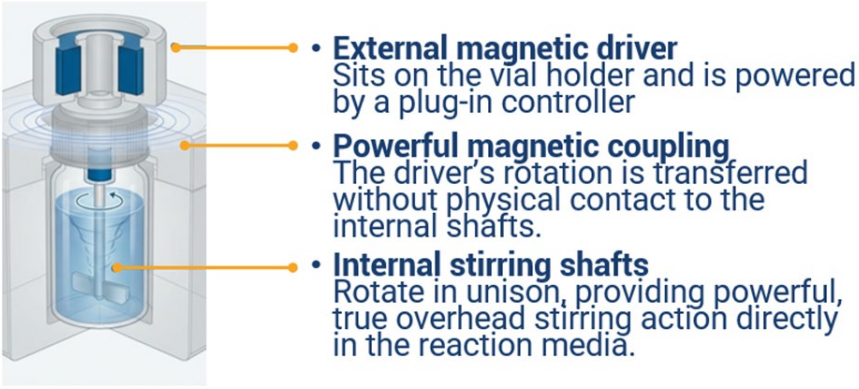
PLEASE READ THESE INSTRUCTIONS PRIOR TO OPERATING YOUR UNIT.

IF THERE IS AN ISSUE WITH YOUR PRODUCT, PLEASE CONTACT YOUR SUPPLIER.

PLEASE DO NOT RETURN ANY GOODS WITHOUT PRIOR AGREEMENT.

INTRODUCTION

Thank you for choosing DrySyn MiniSpin. These overhead magnetic stirring systems are designed for efficient mixing in vials, with chemically resistant components, variable speed control, and adaptability for different vial sizes. This booklet will guide you through setting up, using, and maintaining your DrySyn MiniSpin system safely and effectively.



SPECIFICATIONS

MINISPIN VIAL ASSEMBLIES

These are the stirring units connected to each reaction vial, secured in place by the thread on the vial. Varieties include:

MINISPIN VIAL ASSEMBLY FOR 2DRAM VIAL

- 3D-printed PPS-CF/GF body , chemically resilient, operable from -20 °C to 130 °C.
- Pre-assembled with Kalrez O-ring for sealing.
- Pressure relief cap (150 psig).
- Teflon rod with PPS-CF magnet support, pitched Teflon blade designed for 2Dram vials.
- Options include single side arm (10-425 thread, for use with standard GC vial caps).

MINISPIN VIAL ASSEMBLY FOR 20 ML VIAL

- 3D-printed PPS-CF/GF body, chemically resilient, operable from -20 °C to 130 °C.
- Pre-assembled with Kalrez O-ring for sealing.
- Pressure relief cap (150 psig).
- Teflon rod with PPS-CF magnet support, pitched Teflon blade designed for 20 mL vials.
- Options include up to 2 side arms (10-425 thread, for use with standard GC vial caps) and/or B14 (14/23) sockets.

MINISPIN CONTROL ASSEMBLY

- These are the control modules that are mounted above (up to 4 of) the MiniSpin Vial Assemblies.
- Directional control switch.
- PA-GF body.
- Max. speed 1000 rpm at 12 V.
- Requires power supply to run.

MINISPIN POWER SUPPLY

- Built-in on/off switch.
- Adjustable voltage from 3-12 V DC.
- CE certified.
- Available with UK, EU or US plug.

PERFORMANCE DATA

Testing carried out using the 20 mL vial setup, with heating on the Asynt magnetic hotplate stirrer.

	MATERIAL 1 ~50 cP		MATERIAL 2 ~1000 - 2000 cP		MATERIAL 3 ~2000 to 4000 cP	
APPROX. VISCOSITY TEMPERATURE (°C)	AMBIENT	70 °C	AMBIENT	70 °C	AMBIENT	70 °C
APPROX. RPM	1200	1200	1200	1200	500	1000+

SAFETY WARNINGS

GENERAL WARNINGS

- Handle all chemical-contacting parts (MiniSpin vials, stirrer impellor assembly, O-rings etc.) with care; use PPE as required.
- Ensure all seals are properly assembled; leaks may lead to damage, unsafe exposure, or contamination.
- Do not exceed recommended temperature or speed limits.
- Always disconnect power before cleaning or performing any maintenance.
- Use only components provided or approved by Asynt; substituting parts may compromise safety and/or performance.
- If any part shows signs of wear, damage, or failure (e.g. cracked glass, worn O-ring), stop use and replace before continuing.

HOT/COLD SURFACE WARNINGS

Do not touch the DrySyn MiniSpin base whilst hot/cold. The base will retain high/low temperatures (max 130 °C) for some time after use.

Ensure that the electrical cable does not touch any part of the DrySyn MiniSpin that will reach high/low temperatures.

ELECTRICAL WARNINGS

Keep the DrySyn MiniSpin away from water sources. Do not use if wet. Isolate at the socket, switch it off, and only use once an authorised person has inspected it.

Keep away from flammable substances. Avoid hazardous reactants and products.

ASSEMBLY

1. Unpacking
    a. Remove all components from packaging.
    b. Inspect all parts: MiniSpin vial, vial assembly, blade/rod, O-rings/gaskets, MiniSpin controller, power supply, etc.
2. Assembling the MiniSpin
    a. Install the O-ring in the bottom of the vial assembly (pre-assembled when supplied as new). Once in position, the O-ring will sit above the thread.
    b. Ensure the magnetic coupling is orientated square-side down on top of the stirring unit. Attach the rod/blade into the MiniSpin Vial Assembly (pre-assembled when supplied as new).
    c. Attach the reaction vial to the MiniSpin Vial Assembly.
    d. Fit any additional components to side-arms/joints as needed (e.g. for reflux, sampling etc.). Use joint types as specified (10-425, 14/23), ensuring threads/joint connectors are clean.
3. Sealing/Leak-proofing
    a. Apply appropriate thread-seal tape (e.g. PTFE tape) to threaded joints to ensure no leaking. This is especially important for side arms or when working under vacuum.
    b. Check o-ring fit and condition and replace if damaged or worn.
    c. Check condition of septa and replace if damaged or worn.
4. Connecting Controller and Power Supply
    a. Position complete vial assemblies within the designated DrySyn reaction vial insert:
        i. For 2Dram reaction vials use ADS3-R-16.95-1.
        ii. For 20 mL reaction vials use ADS3-R-27.65-1.
    b. Mount the MiniSpin controller atop the vial assemblies, ensuring the fit is secure and the vials remain aligned correctly.
    c. Connect the power supply to the MiniSpin controller.

USAGE GUIDE

OPERATION INSTRUCTIONS

1. With everything assembled and sealed, switch on the power supply.
2. The agitation (stirring) speed depends on:
   - Applied voltage.
   - Viscosity / density / weight of mixture.
   - Size and shape of blade / rod.
3. Use the voltage control knob on the power supply to adjust speed. Lower voltages = lower rpm, higher voltages = higher rpm. Be mindful of mixing regime (vortex, laminar, etc.). Avoid exceeding rated rpm for the specific MiniSpin/Controller.
4. Suggested RPM settings based on measurements with water:

5. For viscous mixtures, allow slower speeds at first, then ramp up as needed; initial, abrupt, high speeds may cause stress to the assembly.
6. Reversible agitation is achieved by switching the lever on top of the MiniSpin body.

REMOVING THE BEARINGS

For cleaning and inspection, it is necessary to extract the bearings from the main assembly. To achieve this, you will need the bearing tool.

1. Disassemble the MiniSpin, removing the vial, rod, lid and magnetic coupling.

2. Insert the thin end of the bearing tool through the bottom bearing. Tilt it against the top bearing, then push the bearing out.

3. Insert the thicker end of the bearing tool through the top of the stirring unit and push the lower bearing out.

To insert the bearings, put one on the thicker end of the bearing tool, and insert into bottom of the stirring unit. Repeat this for the other bearing through the top.

Note: If working with fine particulates, we recommend inserting the bearings so that the exposed side of the bearing faces the cap and the covered side faces the vial contents. This will ensure the longevity of the bearings.

MAINTENANCE AND CLEANING

- After use, turn-off and disconnect power. Remove the MiniSpin assembly from the vial or reaction setup.
- Clean all wetted parts (rods, blades, sealing surfaces, O-rings, bearings) with suitable solvent / detergent compatible with the materials.
- Avoid using abrasive cleaners that may damage surfaces.
- Inspect O-rings, gaskets, septa, bearings, and blades for wear or deformation. Replace as needed.
- For storage, dry all parts thoroughly. Keep in a dry, clean environment.

TROUBLESHOOTING

Problem	**Possible Cause**	**Remedy**
Low stirring speed even at high voltage.	High viscosity mixture; blade misaligned; motor load too high.	Reduce load; ensure blade is properly seated; increase voltage gradually.
Leakage from joints or side-arms.	O-rings missing/damaged; threads not sealed.	Check and replace O-rings; apply PTFE/thread tape; ensure joints tight but not over-torqued.
Unstable or noisy stirring.	Blade or rod bent; bearing worn; component misaligned.	Inspect and replace blade/rod; check bearings; realign assembly.
Controller or power supply not responding.	Cable issues.	Check cables & connections.
Overheating.	Running above specification; poor ventilation.	Lower speed; allow cooling; ensure ambient temperature acceptable; check rated temperature of components.

WARRANTY AND SUPPORT

- Asynt provides warranty coverage for defects in materials and workmanship under normal use. Specific terms (duration, coverage) should be verified at time of purchase.
- For replacement parts (o-rings, vials, blades, etc.), contact enquiries@asynt.com or authorised distributor.
- For technical support please contact enquiries@asynt.com.

Asynt Ltd

29 Hall Barn Road Industrial Estate,
Isleham, Ely, Cambridgeshire CB7 5RJ, UK

+44 (0)1638 781709

enquiries@asynt.com

www.asynt.com

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TL080 Version Number: 1.0