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Rockland Scientific MicroRider-G (RDL) Operational Checklist
(Pre-Cruise, Deployment, and Post-Recovery Procedures)

Instrument Serial Number: _____

Cruise / Project:_____

Operator(s): _____

Date: _____

1. PRE-DEPLOYMENT PREPERATION

General Reminders

- ☐ Contact Rockland Scientific at least 4 months prior to deployment if instrument servicing or sensor calibration is required.
- ☐ Review the Instrument Manual, especially sections titled ”Assembly, Operations Maintenance” (currently Sections 3-5).
- ☐ Inspect all sealing surfaces and O-rings. Replace O-rings if damaged or worn. Rockland recommends replacing O-rings annually regardless of instrument use.
- ☐ Ensure all required instrument tools, deployment gear, laptops, cables and spare parts & probes are included with the instrument and are in good condition.
- ☐ Rockland recommends shear probes are calibrated annually or more frequently if desired.
- ☐ Rockland recommends inspecting and checking probes against Technical Note TN-067.
- ☐ Ensure the instrument is properly mounted on the deployment platform in accordance with manufacturer instructions (e.g. glider). The platform manufacturer should be consulted with any questions about the integration or mounting of the instrument.

Probe Port Checks

- ☐ Remove test probes and use a light to inspect SMB ports for any signs of moisture ingress and or corrosion.
- ☐ Confirm each probe port contains a greased undamaged O-ring.

Electronics Bench Test

- ☐ Ensure test probes are installed in the correct port.
- ☐ Perform an electronics bench test.
- ☐ Use the Bench Test tool in Zissou Software and Rockland Bench Test Checklist to review the resulting p-file and confirm that the instrument electronics are in healthy condition and that all instrument channels are recording normally.

Reference: See Instrument Manual & Bench Test Checklist for more information.

Bench Test Completed Date:_____

Record Probe Serial Numbers

- ☐ Confirm deployment probes SNs.
- ☐ Update setup.cfg file on instrument with correct probe serial numbers available probe calibration values (e.g. shear sensitivity from most recent probe calibration report).

Recommendation: Specify the correct shear probe sensitivity values in the setup.cfg file prior to deployment to ensure effective use of the instrument's real-time In-situ Data Processing (ISDP) capability (see TN-054 for details).

S1: _____

S2: _____

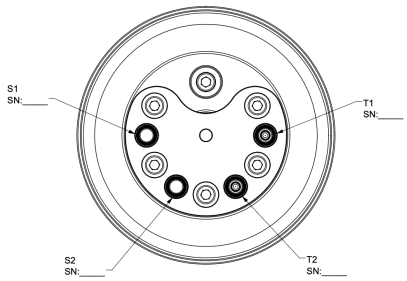
T1:_____

T2: _____

Additional Sensors:_____

Probe Installation

- ☐ Install the 4 pronged plastic sensor guard.
- ☐ Follow the instructions in the manual to install probes in correct probe ports (T1, S1, T2, S2), ensuring each probe is properly connected to the SMB connector . Ensure you hear an audible click of each probe as it is installed.



- ☐ Verify shear probe orientation (flat sections oriented 90° relative to each other), with S1 probe flat section oriented towards the anode (Z-axis) and S2 flat section oriented to the right (Y-axis).
- ☐ Hand-tighten compression plate in star pattern to apply force evenly, until snug and no gap between the plate and front bulkhead is visible. It is important that the plate is fully flush with the front bulkhead.
- ☐ Don’t forget to record or photograph the probe serial numbers prior to deployment.
- ☐ If not deploying right away consider covering the front bulkhead and probes with a protective cover that goes over the 4-pronged instrument guard.

2. DURING DEPLOYMENT

Depending on the host platform and level of integration, remote monitoring of data quality and instrument performance may be available. Refer to the platform manufacturer's documentation for setup and integration guidance.

Rockland instruments can transmit two types of diagnostic output:

Channel statistics:summary values (mean and standard deviation) for each logged channel, reported in raw counts over 1 second intervals. This information can be useful to assess the health of the sensing probes during a deployment. Host platforms can continuously query and record channel statistics during a mission. These data provide a simple way to monitor probe performance during deployment.

Resource: Refer to the Rockland Channel Statistics Checklist for guidance.

In-situ Data Processing (ISDP) output: onboard processing available on instruments equipped with the Rockland Data Logger (RDL). ISDP generates reduced data products suitable for telemetry (e.g. via Iridium), while full-resolution raw data remain stored on the instrument. Setup is defined via the isdp.cfg file.

Resource: Refer to TN-054 or contact: support@rocklandscientific.com

3. POST-DEPLOYMENT

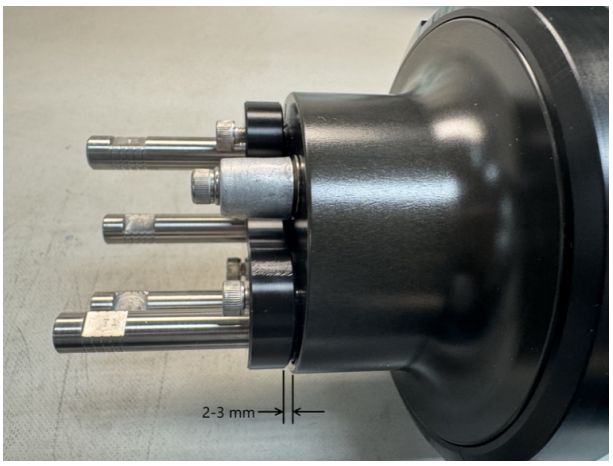
Initial Inspection

- ☐ Perform visual inspection of instrument.
- ☐ Inspect installed probes for damage.
- ☐ Ideally cover the front bulkhead of the instrument with probes installed to avoid any potential damage until you are ready to rinse & dry the instrument to remove probes.

If issues are observed, take photos & contact Rockland (support@rocklandscientific.com)

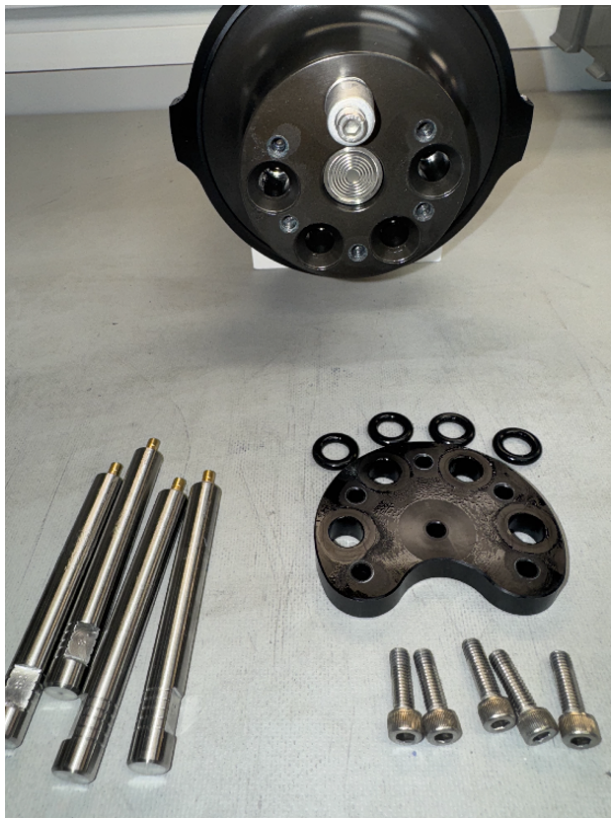
Instrument Cleaning

- ☐ Rinse instrument and probes with freshwater to remove salt and any residue or debris.
- ☐ Loosen the compression plate until a visible gap is clear and use lint-free wipes to carefully soak up as many visible droplets of water as possible but is highly recommended to not yet remove the probes, giving the instrument 1-2 hrs to allow any moisture near the O-rings to evaporate.



Probe Removal

- ☐ Disconnect and remove all sensing probes, starting with the FP07 thermistor probes (if unguarded),then the shear probes. It can be tricky to disconnect installed probes. One suggestion for finding good grip and leverage is stand behind the instrument, placing your fingers on the compression plate and getting a good grip on the probes to push the probe out. Be careful to not touch the pressure port.
- ☐ Next fully remove the compression plate and O-rings. We suggest placing the O-rings on a lint free wipe to keep them clean.



- ☐ Soak up immediately any more water that's visible. Now carefully inspect probe ports for signs of moisture inside the probe port cavities.
- ☐ Wipe off the compression plate to ensure it is dry. Then install the compression plate and tighten fully.

Important: *Water trapped inside probe ports may cause oxidation of SMB connectors and could degrade signal quality during future deployments.*

Post-Cruise Maintenance

☐ Perform maintenance procedures according to the instrument manual.

Tasks may include:

- Inspect sealing surfaces
- Inspect or replace O-rings
- Clean probe ports
- Inspect cables and connectors

Pre-Storage Bench Test

☐ Install test probes.

☐ Perform electronics bench test.

☐ Confirm instrument readiness for storage or next deployment.

☐ Bench Test Completed

Date: _____ Operator:_____

Additional Notes_____

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