

DESMI SPEED SWEEP 1500 OPERATIONAL NOTES

The Speed Sweep is a system designed to collect and contain oil at speeds ranging from 0.5 to 3 knots. The system is mounted on a hydraulic reel for easy deployment and recovery. Once deployed, the Speed Sweep can be towed either by two vessels (one tow line each) or a single vessel using the Ro-Kite (or another vane). The system is ideally suited to harbours, inlets and inshore waters. Offshore and open coast use is an option but limited by sea state.



Technical Specifications

- Speed sweep on reel weight 2100 KG
- Reel can be lifted using suitable fork hoist or by crane using lifting eyes
- Support crate can be lifted using suitable fork hoist or by crane using lifting slings
- Dimensions of reel – length 2300 mm, depth 1830 mm, height 2200 mm
- Total system deployed length – 45 meter
- Draught depth – 0.72 meter
- Swath width approx - 15 meters
- Maximum in-line towing speed – 10 knots
- Maximum open (collecting) towing speed – 3 knots
- Recommended bollard pull – 2 x 1.5 ton if pulling at 3 knots with swath at 15 meters
- Maximum sea state – waves up to 3.5 meters
- Number of inflatable chambers – 12 speed sweep, 8 encounter boom (4 per side)
- Material – Neoprene Hypalon

- System contents – Reel, Speed Sweep, towing and recovery lines, 2 x encounter 20-meter booms and 1 x reel cover

Health and Safety



To safely operate this equipment a minimum of 6 people are required.

Safe Operating Requirements

- Ensure adequate PPE is worn – as detailed below,
- All personnel are to be trained in the use or under the close supervision of a trained operator
- If required a Job Safety Analysis (JSA) to be conducted prior to work commencing. Identification of the following safety factors are critical, but not limited to:
 - o Manual Handling,
 - o Slips/Trips/Falls,
 - o Vehicle/Vessel Movements,
 - o Pinch Points
 - o Spatial Awareness
 - o Contamination/Decontamination.
- Ensure adequate Personal Protective Equipment (PPE) is worn –
 - o * Life jackets must be worn on or near water dependant on operation
- A communication plan must be decided upon to ensure clear and concise communication at all times
- Be aware of pinch points and 'the bight' between the vessel during deployment.
- A full safety brief must be conducted.
- The captain on any assisting vessel must follow the instructions from the main vessel captain.
- A person located in the working area of the main vessel should be appointed Team Leader. They are responsible for the practical deployment of the equipment.
- This person should be part of the radio communication chain.
- All incidents, accidents and near misses must be reported as per AMOSC company policy.

Operational procedures for the Speed Sweep 1500

General

Deployment / Recovery

1. Ensure a clear, clean and uncluttered area for inflation/deflation of boom sections.
2. **Speed Sweep reel MUST be secured down prior to operation commencing.**
3. Ensure a smooth transition from the deployment area to the water.
4. Provide a minimum of 3.2-meter width for deployment and at least 5 metres between the reel and the edge of the deployment platform.
5. The system is deployed with the **Speed Sweep first** and recovered with the **encounter booms first.**
6. Ensure an unobstructed view from the power pack to the reel and operational area.
7. Normal vessel handling safety rules apply.



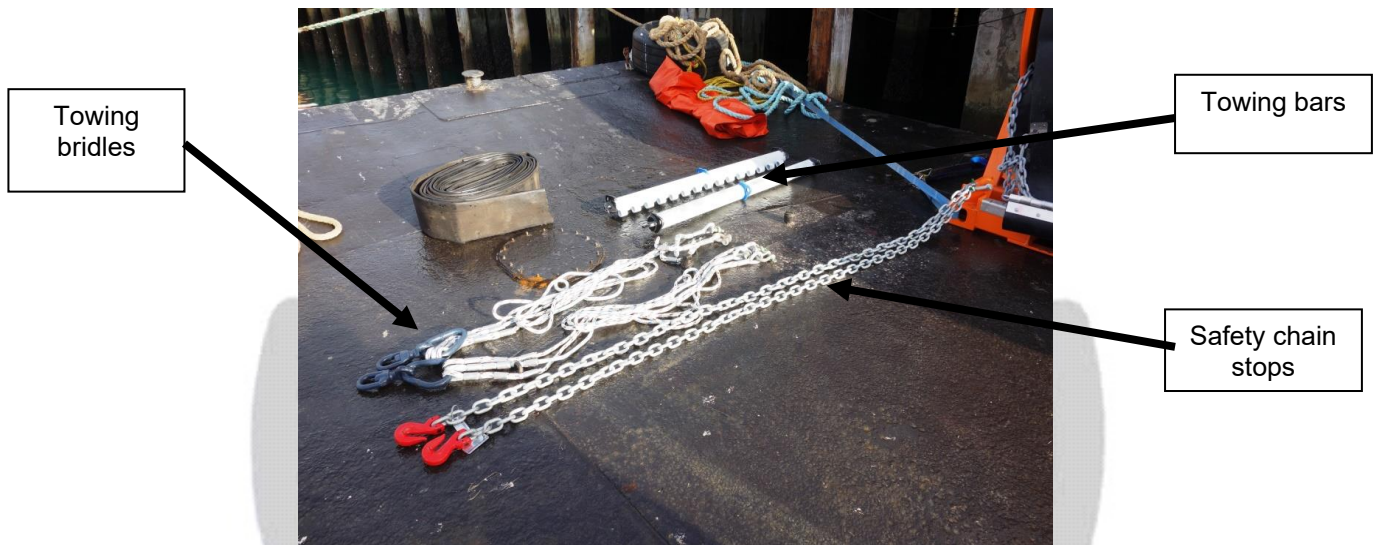
Speed Sweep deployed and in tow (vessel and boom vane)

Towing arrangements

The bridle used for towing shall be the one provided with the Speed Sweep encounter booms. This bridle is specially constructed to distribute the weight of the boom across the whole depth and to transmit the towing force into the tension members on the boom.

The three legs of the towing bridle are designed to be the weak link in the towing system and thus will break before any damage is done to the boom under situations of high load.

Note; it is important that the shackle on the ballast chain is properly secured to the towing bar, otherwise the boom will be damaged. Best practice is to mouse the shackle to prevent it coming lose.



Towing tackle and chain stops



Towing bridle configuration

Hand hooks

These should **always** be hooked into the boom or chain from the underneath of the boom. This allows them to fall out if you need to remove them in a hurry.



Deployment and recovery team

The deployment team requires the following **six** personnel:

- A supervisor who is in overall charge of the operation and who provides the communication link between the deployment team and the towing vessel.
- An equipment operator for the power pack.
- Two persons for buoyancy chamber inflation.
- One person for buoyancy chamber capping.
- One person to operate safety chain.

The recovery team requires the following **six** personnel

- A supervisor who is in overall charge of the operation and who provides the communication link between the deployment team and the towing vessel.
- An equipment operator for the power pack.
- Two persons for buoyancy chamber deflation.
- Two persons to assist in stowing the boom properly onto its reel; one of these is also the safety chain operator.

Working practices

The reel must always be securely restrained in the deployment/recovery area. Loads can be imposed that may cause the reels to be dragged and displaced in any direction. Chains and ratchets are common methods to secure the reel to the deck. All reels have standard container “twist lock” corners if twist locks are an available option.



Chain and ratchet technique to secure reel to deck

The safety chains should always be in place and tensioned up whenever the operation stops, also when the Speed Sweep is being re-aligned directionally to the reel and when connecting the towing line. The safety chain takes the load of the ballast /tension member and transfers it to the bottom of the storage reel. Once the chain is on and tensioned, the boom cannot run out also load is taken off the boom material.



Safety chain hooked onto ballast chain then secured back to the reel

Safety chain in place

NOTE – 2 x safety chains are required for Speed Sweep deployment

When connecting additional lengths of encounter boom, it is important to cross the shackles on the ballast chain to provide the continuity of tension along the length of the boom. If you do not do this, the boom **may be severely** damaged.



Example of correct technique to connect two ballast chains

Inflation / deflation of buoyancy chambers

The rubber grommets on the end of the airlines are in place for inflation. Each chamber is inflated until easy pressure of your free hand will produce a 'dinner plate' sized depression on the chamber.

Deflation requires the rubber grommets to be removed from the air lines in order to allow the metal fitting to open the non-return flap in the chamber inflation port.



Inflation hose in place

It is important that all of the air is removed from each chamber during deflation. If this is not done properly the boom will not be able to be stowed on its reel.

Buoyancy chamber capping

Each buoyancy chamber has a plastic cap secured in the inflation port after inflation. This is to provide a seal and avoid deflation as a result of any leaks past the non-return flaps. The caps are easier to use if they are wet so keep a supply of water in a container for the caps. The caps are twisted using the hexagonal wrench on the hand hooks.



Plastic cap in place

Deployment set up

To deploy the Speed Sweep, the Speed Sweep must be unloaded off to the reel first and the encounter booms last.

1. Start deployment by winding the Sweep section off the reel and inflating the sections. No towing attachments are required.
 - **Vessel deployment** – Have vessel making way to ensure the sweep section does not bunch up when in the water
 - **Land/static barge** – Bunching up may occur but this can be rectified using vessels once the whole system is in the water.
2. Once the encounter booms are off the reel and in a suitable position to attach towing bridles, halt the deployment.
3. Secure both safety chains in place and take the weight of the deployed boom and Sweep.
4. Remove the reel recovery wires and prepare the towing tackle
5. Connect the towing bars to the ends of the encounter booms. Ensure ballast chains are secured to tow bars via the shackle.
6. Connect the towing bridles to the tow bars.

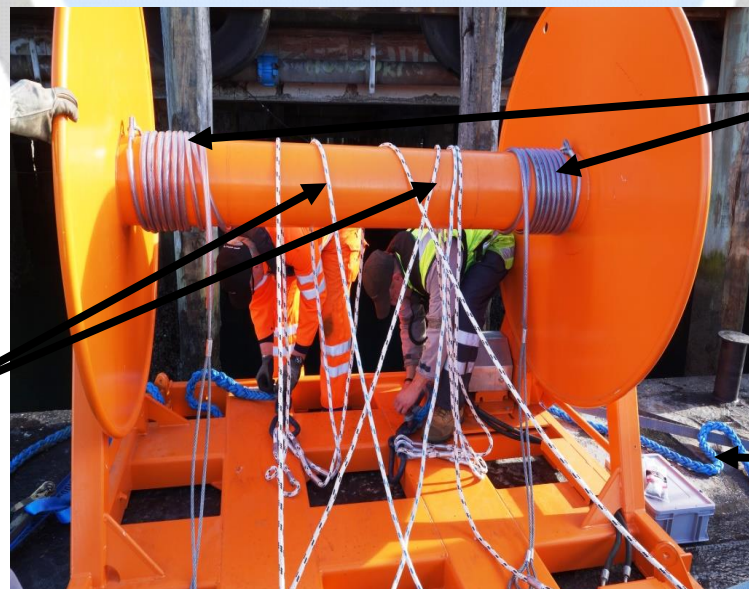
NOTE – Moussing of all shackles is recommended



3 leg tow
bridle
connected
to tow bar

Tow bar
connected
to one of
the
encounter
booms

7. Connect the 2 x tow bridles to the 2 x tow lines.



2 x towing
bridles.
These are
being
connected
to the tow
lines

Reel
recovery
wires

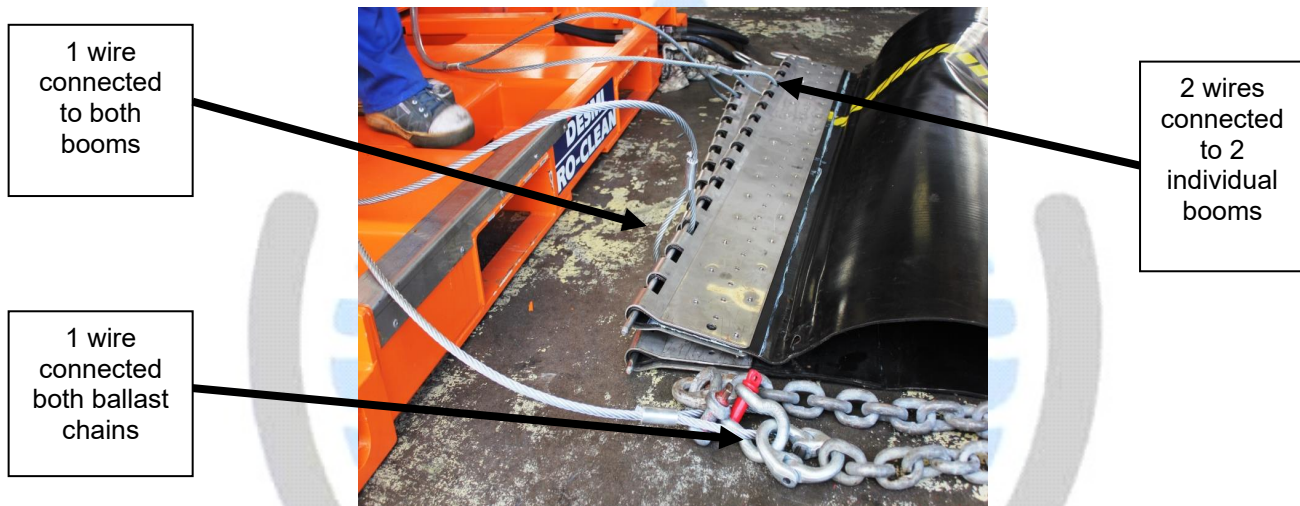
Tow line.
Note –
second
tow line
on other
side of

8. Release the safety chains and fully deploy the system into the water

Recovery of system

To recover the Speed Sweep, the encounter booms must be loaded on to the reel first followed by the Speed Sweep.

1. Recover the system using the tow lines onto recovery platform (vessel or land). This will be by manual/crane method rather than using the reel.
2. Once the ends of the encounter booms are in a suitable position near the reel, secure both safety chains in place to take the weight of the boom.
3. Tow lines, tow bridles and tow bars can now be removed. **Put these to one side to minimise slips, trips and falls.**
4. Connect the 4 x reel recovery wires to the ends of the two encounter booms.
NOTE – 2 wires connect to the 2 individual encounter booms at the top, 1 wire connects to both encounter booms and 1 wire connects to both ballast chains.



5. Start winding the encounter booms back onto the wheel to remove tension from the safety chains.
6. Remove safety chains and put to one side.
7. Continue recovery on to the reel. Deflation of chambers can now commence. **Ensure chambers are fully deflated as they go onto the reel.**
8. Keep the encounter booms and Speed Sweep as square to the reel as possible at all times.
9. Avoid large sags or slack in recovered booms on the reel.
10. Repeat steps 7 to 9 for Speed Sweep recovery.

Safety of personnel

Never walk across or stand on the boom chambers. If you want to get from one side of the operation to the other, go around the back of the reels.

Never work between reels. Other than for initial pass over of the wire cable and boom end. After that, operators should achieve Speed Sweep recovery stationed in front of the reels.

Always wear appropriate safety equipment/clothing (PPE)

The operation is as safe as you make it. The above instructions are designed to assist in setting up a safe and efficient operation. The boom can be deployed quite easily and quickly if you work as a team and stick to the rules.

Maintenance

All maintenance and repairs are to be completed in accordance with the manufacturer or AMOSC procedures.
All equipment must be left in an operational condition when not in use.
All defects must be repaired immediately or the equipment be “tagged out” for maintenance and repair.

Related Documents

AMOSC HSSE Plan
PN08 - HSSE Policy
AMOSC JSA Template
PN 11 AMOSC Vehicle Use Policy (AMOSC Vehicle Checklist / AMOSC Load Assessment Checklist)
SOP 1001 Ops; Forklift Operations
SOP 1002 Ops; Loading and Securing of Cargo
SOP 1003 Ops; Transporting Equipment To/From Warehouse
(SharePoint documents – Operations/equipment/AMOSC/Geelong/equipment/boom - Speed Sweep)
Operations manual Ro-Kite 1500 - 2015-11-17 – Print.pdf
Speed Sweep 1500 - Guidance - 2015-07-03.pdf

