

Standard Operating Procedure

Dispersant AFEDO delivery system



Equipment description

AFEDO dispersant delivery system is a portable, diesel driven spray system complete with twin spray nozzles. Electric and hand start, diesel engine connected to a roller pump.

The system allows for adjustable flow rates to supply the AFEDO nozzles. The nozzles are designed to ensure an even consistency of droplet size across the entire spray application zone.

Can be used to deliver neat dispersant, or mixed sea water and dispersant, to give variable dosage rates.

Technical Specification

Weight:	315 kg
Fuel type:	Diesel
Engine:	Yanmar L70 Diesel Engine
Pump:	BS50-TS Hypro 6500 Roller Pump (Maxflow rate 83 LPM) BS100-TS Hypro 1700 Roller Pump (Maxflow rate 170 LPM) BS200-TS Hypro 1500 Roller Pump (Maxflow rate 235 LPM)

Health and Safety



Gloves to be chemical resistant. Eye protection to be goggles. Chemical or Tyvex type suit to be worn complete with hood. The SDS is always to be referred when using dispersant.

Safe Operating Requirements

- Ensure adequate PPE is worn – as detailed below,
- All personnel are to be trained in the use of AFEDO dispersant delivery system, 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 Contamination/Decontamination.
- Ensure adequate Personal Protective Equipment (PPE) is worn –
 - o * Life jackets must be worn on or near water dependant on operation

- Do not ingest or inhale dispersant vapour, or allow direct contact of dispersant with skin or eyes
In the case of skin contact, flush skin with clean fresh water. Seek medical advice,
- Clean up any spillage immediately,
- Deck areas which are exposed to dispersant spray will become slippery and must be washed down before personnel are required to use the affected deck areas,
- Safety Data Sheet (SDS) for dispersant must be available,
- 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 of the vessel is in charge of the operation.
- All incidents, accidents and near misses must be reported as per company policy.

Operational instructions

Emergency shutdown

In the event that an emergency shutdown is required, the following measures should be taken.

- Move the throttle to the "off" position
- Turn key to the "off" position
- Shut off all valves, including Intermediate Bulk Container (IBC) valve if applicable

Pre-start checks

- Check general condition of all equipment and ancillaries
- Check operation of throttle / engine stop
- Check engine oil level
- Check fuel level

Operation

Prior to commencing dispersant spray applications, ensure that authorisation to apply dispersant has been provided.

Various configurations of this system are possible. For any other configurations other than described below see operation manual

Nozzle positioning

- Two (Port and Starboard) AFEDO nozzles are supplied with the Boat Spray system.
- These nozzles are fitted with universal clamps designed to ensure the nozzles can be secured to any convenient structure on the side of the vessel (i.e. gunwale top).
- Position nozzles at 90° to the vessel, pointing up at an angle of 40°

Neat Spraying

- Position an adequate supply of dispersant next to the pump unit.
- Connect the 2" Dispersant Suction Hose to the Main Suction and the dispersant IBC or manifold.
- Ensure the Dispersant Control Valve (Dilute option only) is closed and the Coupling Cap is fitted to the Dilute Dispersant Suction inlet.
- Prime the pump by filling the system including the Dispersant Suction Hose with water or dispersant via the Priming Port. If the dispersant level is above the Main Suction, release the Priming Cap to allow the dispersant to flow through the pump pipe work thus priming the system. If using a portable dispersant tank, priming is achieved by releasing the priming cap and opening the tank outlet valve until fluid flows into the pump.
- Assemble the Flow Control Module.

- Connect the 1 1/2" x 2m Outlet Hose to the Outlet Coupling and the Flow Control Module.
- Connect the second delivery Hoses between the Flow Control Module Flow Meters and the AFEDO nozzles.
- Turn the first outlet Valve and the first recirc valve fully opens to supply dispersant to the AFEDO nozzles.
- Start the engine in accordance with the Boatspray (50-TS, 100-TS or 200-TS) Operating Manual (Section 4) and reduce the engine speed. Once running smoothly, slowly close the recirculating valve to increase the flow to the AFEDO nozzles to the following flow rates:
 - BS-50TS 60 LPM as indicated on the flow meter (30 LPM on each nozzle)
 - BS-100TS 100 LPM as indicated on the flow meter (50 LPM on each nozzle)
 - BS-200TS 150 LPM as indicated on the flow meter (75LPM on each nozzle).
- Increase engine RPM if necessary.
- Control the dispersant application by the speed of the vessel in accordance with the Dispersant Application Guidelines in the Boat spray (50-TS, 100-TS or 200-TS) Operating Manual (Section 5).

Dilute Spraying

- Position an adequate supply of dispersant next to the pump unit,
- Prime the Seawater Suction Hose with seawater and connect as described in Section 3 of the manual,
- Connect the 1" Dispersant Suction Hose to the Dispersant Suction as described in Section 3 of the manual,
- Prime the pump by filling the system including the Sea Water Suction Hose with water via the Priming Point. Connect the 1 1/5" x 2m Outlet Hoses to the Outlet Coupling and the Flow Control Module,
- Connect the second delivery Hoses between the Flow Control Module Flow Meters and the AFEDO nozzles,
- Turn the first outlet Valve and the recirculating valve fully open to supply dispersant to the AFEDO nozzles,
- Ensure the eductor Shut-off Valve is fully open,
- Start the engine in accordance with the Boat spray (50-TS, 100-TS or 200-TS) Operating Manual (Section 4) and reduce the engine speed. Once running smoothly, slowly close the recirculation valve to increase the flow to the AFEDO nozzles to the following flow rates:
 - BS-50TS 60 LPM as indicated on the flow meter (30 LPM on each nozzle)
 - BS-100TS 100 LPM as indicated on the flow meter (50 LPM on each nozzle)
 - BS-200TS 150 LPM as indicated on the flow meter (75LPM on each nozzle).
- Increase engine RPM if necessary.
- Open the Dispersant Control Valve to educt the dispersant into the flow to supply diluted dispersant to the AFEDO nozzles. Set the dispersant flow and vessel speed as required and in accordance with the Dispersant Application Guidelines in the Boat spray (50-TS, 100-TS or 200-TS) Operating Manual (Section 5). Adjust the Recirculating Valve as necessary.



Post operation

When spraying is complete:

- Stop Engine.
- Close the IBC valves. Disconnect suction hoses from IBC being aware a catch tray may be required to catch excess dispersant
- Run pump with suction in water to flush system through
- Stop engine
- Flush the deck areas close to the AFEDO Nozzles to remove any dispersant
- Drain down the AFEDO Nozzles and hoses
- Remove the hoses, flush through with fresh water and dry off
- Remove the AFEDO Nozzles, flush through with fresh water and dry off. Replace protective caps
- Remove the Flow Control Module, flush through with fresh water and dry off
- Flush pump unit through with fresh water. Drain pump and fill pump cavity with lubrication or bio-degradable oil. Refit cap. Pull engine over to distribute oil around moving parts
- When dry, repack all equipment and ancillaries
- Ensure that all equipment is returned to response ready condition

Note - Do not flush dispersant into the stormwater system

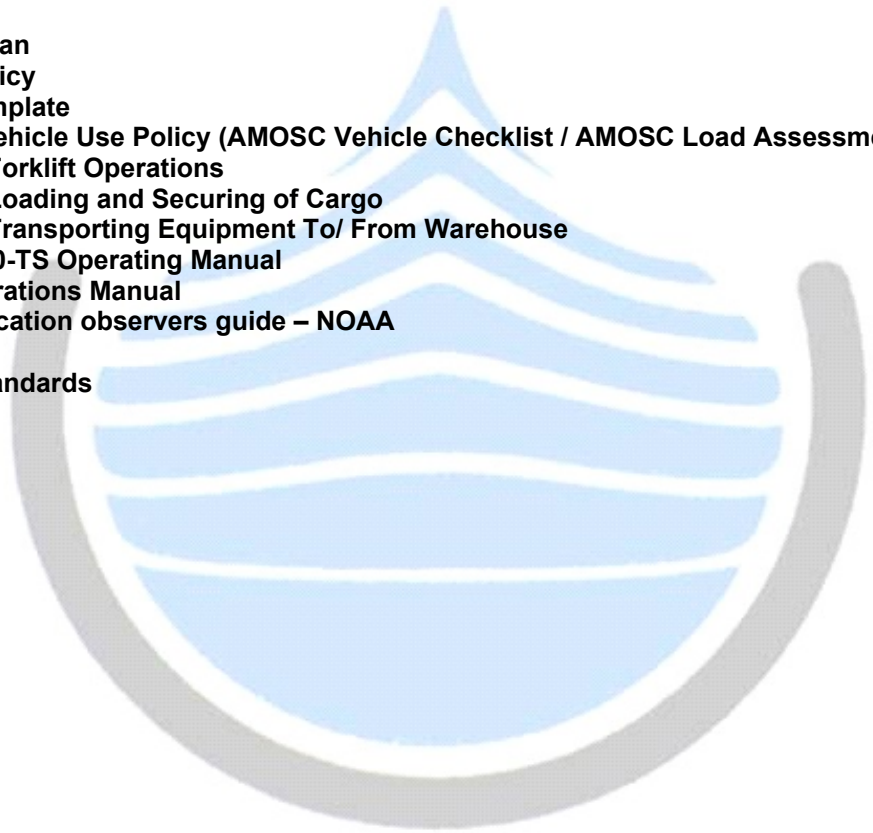
Additional information

For specific dosage rates and areas of coverage, refer to operating manual

Maintenance

- All maintenance and repairs are to be completed in accordance with either 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
BOATSPRAY 200-TS Operating Manual
Heli Forklift Operations Manual
Dispersant application observers guide – NOAA
Dispersant SDS
Geelong Port Standards