



## Muffler DEMPMP

### Introduction

The Vetus exhaust system components are especially suitable for use in **water-injected** exhaust systems.

The maximum continuous operating temperature of the plastic components of the exhaust systems is 70 degrees C (158 degrees F).

- Fit a temperature alarm to warn of excessively hot exhaust system temperature.
- If the quantity of injected coolant water is reduced to in order to lower back-pressure in the exhaust system, check that there is still sufficient water injected when the engine is ticking-over. This will prevent excess temperatures in the exhaust system.
- Excess temperature can also be the consequence of insufficient mixing of coolant water with the exhaust gasses.

In general, good mixing is obtained by a virtually vertically installed exhaust injection bend.

Poor mixing can also occur with an engine on tick-over; especially when the coolant water injection bend is installed virtually horizontally.

If necessary, take action. For example; by fitting a water vortex or a water splitter in the exhaust pipe, to improve the mixing of coolant water with the exhaust gasses.

With water-injected exhaust systems, fit a hose of suitable quality.

This hose must be reinforced, resistant to exhaust gasses, high temperatures (100 degrees C, 212 degrees F) and oil. Easy flexibility is essential for installation, while the hose must not collapse when heated.

Vetus exhaust hose fulfils all the above requirements.

The complete VETUS range includes the following hose diameters: 30 mm (1.2"), 40 mm (1.6"), 50 mm (2"), 60 mm (2.4"), 65 mm (2.6"), 75 mm (3"), 90 mm (3.5"), 100 mm (4"), 110 mm (4.3"), 125 mm (4.9") and 150 mm (5.9"). A minimum hose diameter must be used in relation to the engine power:

Engine power to:	Hose dia.:	Engine power to:	Hose dia.:
10 kW (14 hp)	30 mm	65 kW (90 hp)	75 mm
18 kW (25 hp)	40 mm	95 kW (130 hp)	90 mm
23 kW (32 hp)	45 mm	118 kW (160 hp)	100 mm
29 kW (40 hp)	50 mm	142 kW (193 hp)	110 mm
40 kW (55 hp)	60 mm	184 kW (250 hp)	125 mm
50 kW (68 hp)	65 mm	265 kW (360 hp)	150 mm

### WARNING

If water enters the engine from the exhaust silencer into the exhaust system (for example: under sail when the ship rolls or pitches heavily) this will lead to irreparable damage to the engine.

Too much water in the silencer can effect engine starting; drain off this water first. Too much water in the silencer can be also caused by repeated starting attempts while the engine refuses to start.

### Installation

#### Installing silencer DEMPMP

The silencer can be fitted in front of, or after the goose neck. Fitting after the goose neck gives less of a gurgling exhaust sound.

During operation, the silencer contains water. This means that the weight increases considerably and the silencer requires additional support.

The silencers with a hose connector diameter between ø 40 and ø 90 mm are fitted with two handles to secure them.

The silencers with a hose connector diameter of ø 100 mm can be secured using the two Ty-rap®'s supplied.

N.B: There is no DEMPMP silencer available for 30 mm (1.2") diameter exhaust systems.

#### Exhaust pipe

In order to ensure the proper drainage of the coolant water injected into the exhaust pipe, the pipe must be installed with a slope downward over its whole length from the water injection point to the exhaust silencer.

During operation, the exhaust pipe will contain water. This will increase its weight considerably, so support the exhaust pipe properly.

The exhaust pipe from silencer to transom connection must be installed in such a way that:

- The highest point in the exhaust pipe should not be more than 150 cm (60") above the underside of the exhaust silencer.
- The length of the section between the exhaust silencer and the highest point, should not exceed 300 cm (120").

#### Hose connections

To ease the fitting of the hose to the hose connector, use only water and/or soap, NOT grease or products containing oil.

Fit each hose connection with 2 stainless steel 12 mm (0.5") wide hose clamps.



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## Installation examples

Exhaust systems with an exhaust silencer type LP/LSS/LSG, and silencer type DEMPMP, goose neck type LT and a transom connection are shown on page 15.

Entry of water from the aft is almost completely prevented by the extra height difference in the goose neck.

When the engine is stopped, any water which is still in the exhaust pipe (between the highest point in the exhaust system and the exhaust silencer) will run back to the exhaust silencer.

To reduce the amount of this water as much as possible, the swan's neck should be fitted directly above the exhaust silencer, if possible (see drawings 1 and 3).

When the swan's neck is fitted directly to the transom (drawings 2 and 4), the maximum length of the exhaust pipe, between exhaust silencer and tee highest point, should be taken into account.

## Prevention of syphoning (drawings 3 & 4)

If the water injection point 'C' is below, or less than 15 cm (0.6") above the waterline (also when the ship heels under sail), there is a risk that when the engine is stopped, the coolant water will enter the engine due to syphoning. This syphoning can be prevented in two ways:

- ① By creating an air vent system in the coolant water hose between engine block and water injection point 'C', by fitting an air vent with air vent pipe, for example.
- ② By fitting an air vent (with valve) in the coolant water hose between the engine block and water injection point 'C'.

## Maintenance

Check all hose connections for gas and water leaks regularly.

Before the winter lay-up, drain the exhaust silencer. The exhaust silencer has a drain plug for this purpose.



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