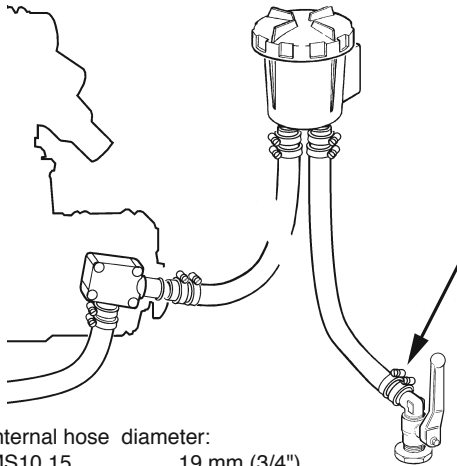


Cooling system

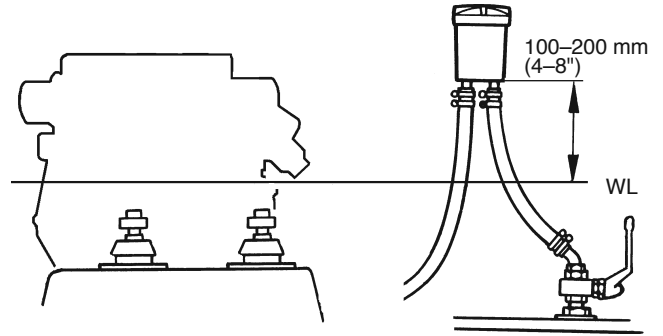
Seawater intake



Internal hose diameter:

MS10,15	19 mm (3/4")
MS25, HS25	32 mm (1 1/4")
130S	19 mm (3/4")
150S	32 mm (1 1/4")

Always install a shut-off valve on the water intake. Two hose clamps for each connection should be used.



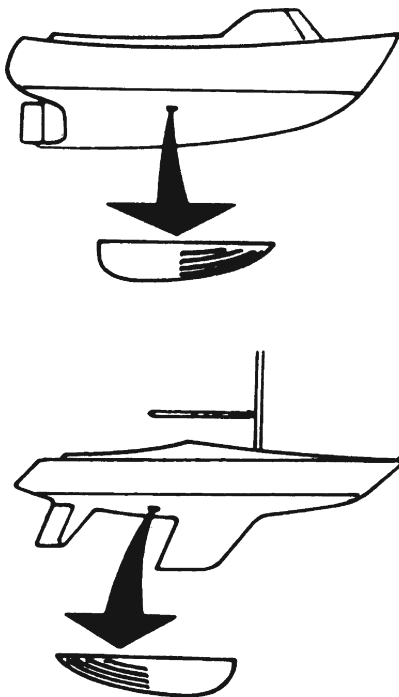
Seawater filter

The seawater filter should be installed minimum 100 mm and maximum 200 mm (4–8") above the static water line level.

NOTE! At all load conditions.

⚠ IMPORTANT! No valves or connections that could restrict water flow may be installed in the cooling system.

Seawater inlet



If a scoop pickup is used on a sailing boat the water intake should be facing backwards to avoid water to be pushed into the exhaust system during sailing.

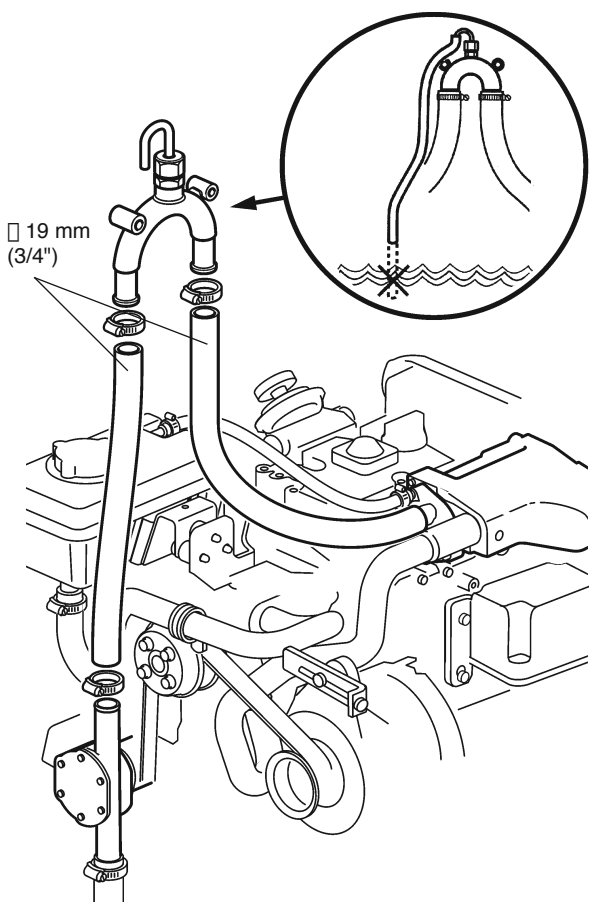
Vacuum valve

⚠ IMPORTANT! Vacuum valves require service. Therefore, do not install a valve unless below criteria is fulfilled.

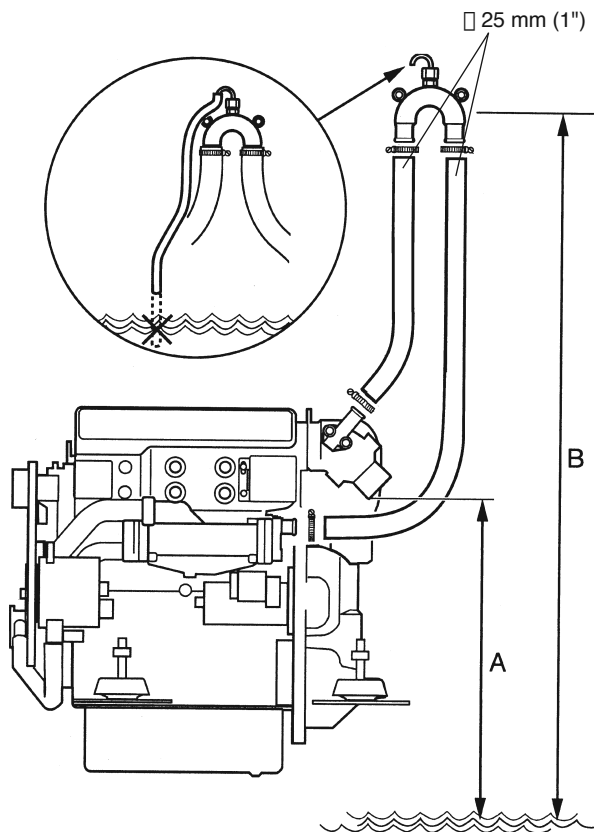
⚠ IMPORTANT! If the distance from static water level to exhaust outlet (A) is less than 200 mm (7.9") a vacuum valve must be installed.

Install the vacuum valve in an accessible place not less than 500 mm (19.6") above loaded water line level (B).

D1-13, D1-20, D1-30, D2-40

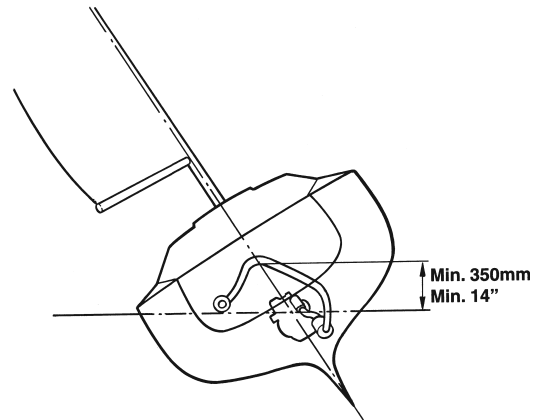
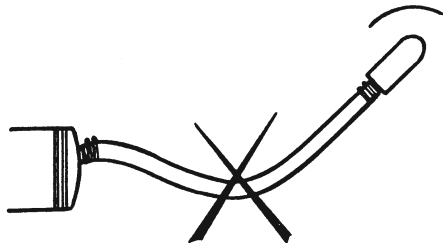
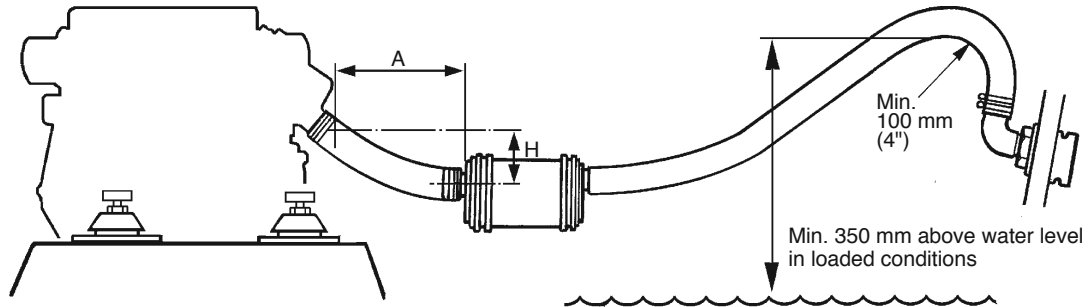


D2-55, D2-75



Exhaust system

Routing of exhaust hose between silencer and exhaust bend



⚠ IMPORTANT! Residual water must flow to silencer or overboard when the engine is shut off.

Highest position of silencer in relation to exhaust hose length, all engines

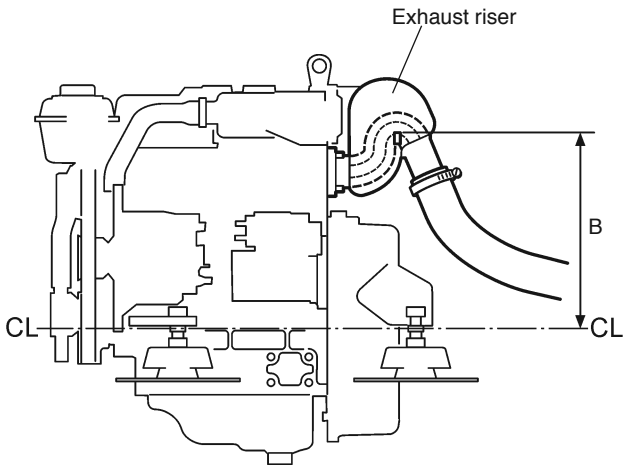
mm (inch)

A	H
300 (11.8)	110 (4.3)
400 (15.7)	120 (4.7)
600 (23.6)	150 (6.0)
1300 (51.2)*	180 (7.1)

*) Support needed to avoid water to stay in hose before silencer.

⚠ IMPORTANT! If measurement H cannot be met, an exhaust riser has to be installed.

Exhaust riser
D1-13, D1-20, D1-30, D2-40



Standard installation

Engine	B measurement, mm (")
D1-13	197 (7.75)
D1-20	197 (7.75)
D1-30	222 (8.75)
D2-40	222 (8.75)

Exhaust riser installation

Engine	B measurement, mm (")
D1-13	288 (11.3)
D1-20	288 (11.3)
D1-30	323 (12.7)
D2-40	323 (12.7)

The riser increases the overall engine installation height by **12 mm (0.5")**.

Exhaust hose dimensions

Engine	Hose inner diameter mm(")
D1-series	45 mm (1 3/4)
D2-40	45 mm (1 3/4)
D2-55	57 mm (2 1/4)
D2-75	90 mm (3 1/2)

Exhaust back pressure measurements, kPa, (psi / mm Wc)

Engine	Back pressure	
	Minimum	Maximum
D1-series	—	20 (2.9/2040)
D2-40	—	20 (2.9/2040)
D2-55	15 (2.2/1530)	20 (2.9/2040)
D2-75	15 (2.2/1530)	20 (2.9/2040)