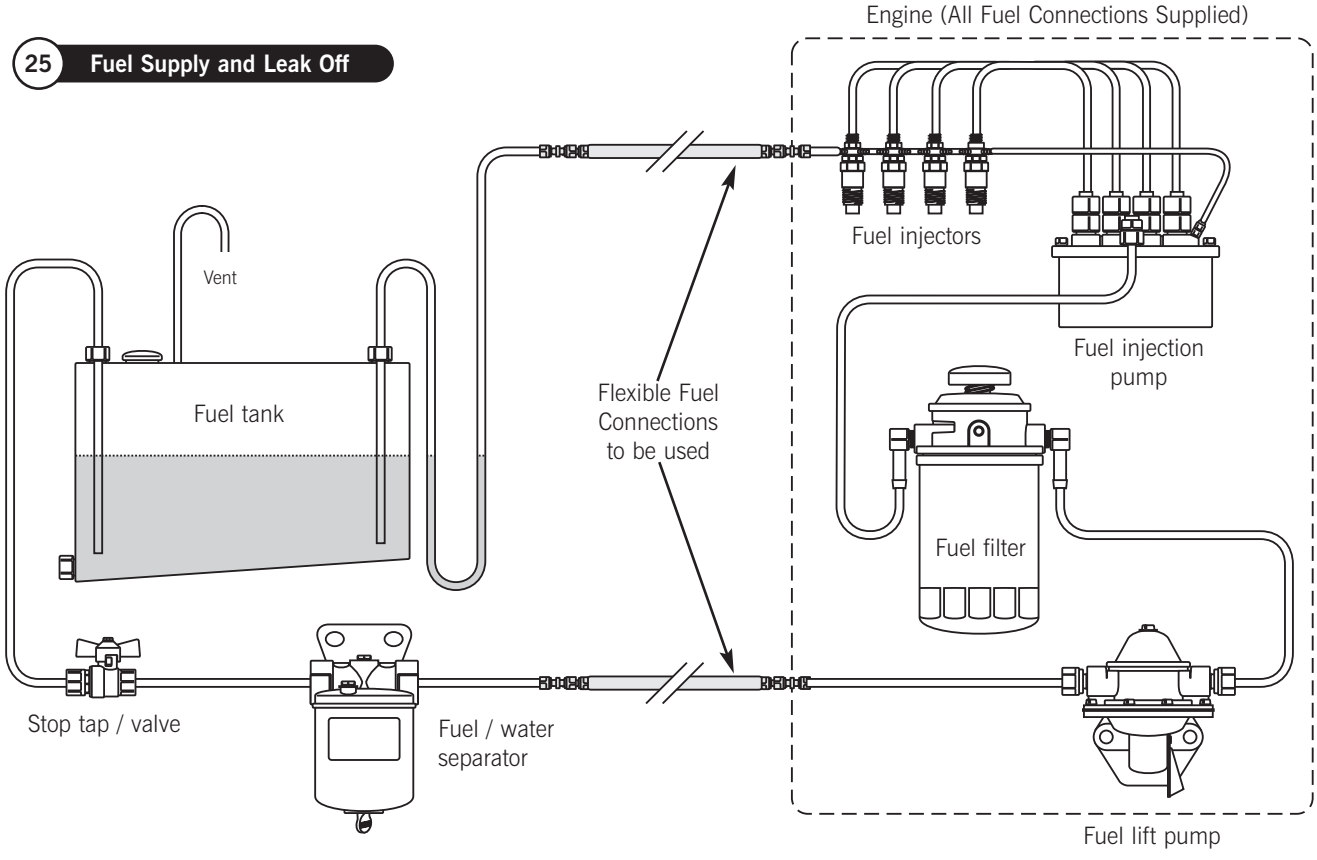
# ENGINE CONNECTIONS

| Actual Connector: | Required Pipe Size: |
|---|---|
| Fuel supply and fuel leak-off connections are 8 mm conex with olives | 8 mm OD piping for both, a flexible section is required |
| **Heat Exchanger - Yachts** | |
| Seawater cooling connections are is 19 mm OD<br>Exhaust water injection bend is 50 mm OD | Sea water pump inlet = 19 mm ID hose<br>Flexible rubber exhaust pipe of correct quality = 50 mm ID |
| **Keel Cooling - Narrowboats** | |
| Keel cooling connections are 22 mm OD copper pipe<br>Keel cooled exhaust stub is $1^1/_2$" BSP male thread | Engine inlet and outlet = 22 mm ID hose<br>$1^1/_2$" BSP female thread flexible exhaust pipe |

# FUEL SUPPLY & LEAK OFF




**NOTES:**

1. **A fuel / water separator must be installed.**
2. The mechanical fuel lift pump is fitted to all engines as standard, but if a suction head of 0.25m or more is required, then an electric fuel lift pump must be fitted (ask your dealer or Beta Marine).
3. It is very important that the excess fuel from the injectors is fed back to the fuel tank and not back to any point in the supply line. This will help prevent air getting into the system.
4. The fuel return (leak off) pipe must loop down to be level with the bottom of the tank before it enters the top of the tank - see drawing. This prevents fuel 'drain down'.
5. Fuel lines and hoses connecting the fuel tank to the engine, must be secured, separated and protected from any source of significant heat. The filling, storage, venting, fuel supply arrangements and installation must be designed and installed so as to minimise the risk of fire. When connecting the engine to the fuel supply and return lines, flexible fuel hoses must be used (next to the engine) and must meet the requirements detailed in standard ISO7840:1995/A1:2000 and/or as required by your surveyor / authority.
6. Any fuel leaks in the system when static are likely to cause poor starting and erratic running and must be corrected immediately. These leaks will allow air to be sucked in when the engine is running.