Pressure multiplier troubleshooting

The pressure multiplier is a device used to boost the pressure in a water circuit so to allow the execution of leakage tests at high pressure (for instance 12 bar).
If you're experiencing problems with the pressure multiplier, the following troubleshooting might help.

Problem A:

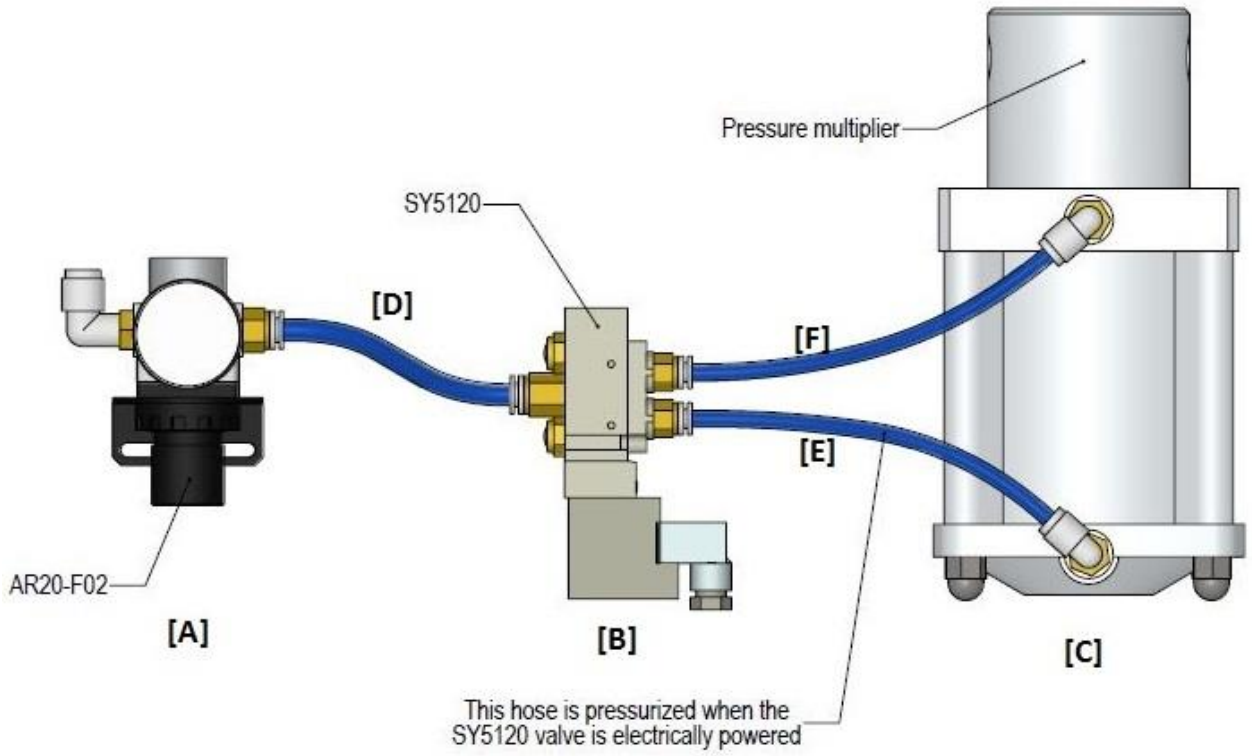
the pressure multiplier doesn't allow to reach the desired water pressure

Possible reason	Possible solution

Air is trapped into the water circuit	• Increase the filling time
	• Fill the circuit from the opposite side (if possible)
	• In case of tests executed on the central heating circuit:
	  ○ Repeat the water filling operations and make sure the air vent is open to let air evacuate from the pipings
	  ○ Make sure the expansion vessel is isolated when executing this test
	• (When applicable) In case a safety valve is installed along the same circuit of the test bench where the pressure multiplier acts, and it is set to a pressure lower than the one created by the pressure multiplier, then this safety valve has to be segregated from the circuit when this test is executed.

Pressure multiplier air inlet pressure too low	• Set the air inlet pressure at the correct value on the dedicated air pressure regulator (ref. [A] in the drawing here below). The multiplying factor is 4 therefore if you set 3 bar at the air pressure regulator [A] the leakage test will be executed at 12 bar. Never set air pressure higher than 3.5 bar on air pressure regulator [A]
One of the pneumatic valves of the water circuit could be broken/leaking	• When executing the leakage test by increasing pressure with the pressure multiplier [C] - if deactivating electro-valve [B] you measure a pressure drop - the problem can be with the pneumatic valve that separates the pressure multiplier from the appliance under test. If so disassemble the pneumatic valve and remove any dirt or replace the broken/leaking pneumatic valve(s)
Flexible hoses are too soft (the ones that connect the appliance under test to the test bench)	• Use harder flexible hoses

Possible reason	Possible solution
The electro-valve, that supplies air to the pressure multiplier, doesn't work (ref. [B] in the drawing)	• Check wiring of the electro-valve • Ensure air pipe [E] is pressurised when electro-valve [B] is activated • Check air pipes [D] [E] [F] that connect air pressure regulator, electro-valve and pressure multiplier • Replace the electro-valve [B]



Problem B:

water has flown in the pressure multiplier's air pipes [D] [E] [F]

Possible reason	Possible solution
Compressed air circuit is not dry	• Compressed air needs to be dehumidified
The pressure multiplier's internal gaskets are damaged	• Replace the pressure multiplier