

ABSTRACT

REFILL UNIT FOR ENGAGING WITH, AND CLOSING THE OUTLET VALVE FROM AN INK STORAGE COMPARTMENT

A refill unit 155 contains a body of ink for refilling a negatively pressurized ink storage compartment 46 that in turn supplies ink to a printhead assembly 22. The ink storage compartment supplies the printhead 22 via a normally open outlet valve 16. When refill unit 155 releasably engages the ink storage compartment 46, an outlet valve actuator 159 closes the outlet valve 16 as the refill unit 155 engages the ink storage compartment 46.

The ink storage compartment is maintained at a negative pressure to avoid ink leakage from the printhead. However, during an ink refill process, the negative pressure is removed when the ink storage volume is filled to capacity. Without the negative pressure in the ink storage compartment, there is a high risk of ink leakage. It is possible to re-establish the negative pressure by slightly increasing the compartments capacity immediately after refilling, but until the negative pressure is re-established, there is a high likelihood of leakage. By designing the refill unit to shut the outlet valve as it engages the storage compartment, ink leakage is prevented until the negative pressure is re-established.

Figure 1