

VARIFLO - PRESSURE ATOMIZING NOZZLE

OIL HEATING PRODUCTS - VARIFLO NOZZLES

The Delavan Variflo nozzle is a pressure-atomizing nozzle, which provides discharge rate variations without changing nozzles. This is accomplished through the bypass principle.

With constant inlet supply pressure and the by-pass (return line) closed, the nozzle operates as a simplex atomizing nozzle. For a reduced discharge flow, the bypass line is opened and part of the fuel is allowed to return to the tank. The advantage is reduced flow without deterioration of the spray quality.

The maximum to minimum discharge flow rate at constant supply pressure is referred to as the "turndown ratio." The standard catalog nozzles have turndown ratios of approximately 5 to 1 on 5/8" hex sizes and 4 to 1 on 13/16" and 1 1/4" sizes

The key advantage of the Variflo over a simplex nozzle is flexibility; larger turndown ratios with better atomization. With the Variflo nozzle, using a constant supply pressure the discharge flow rate varies approximately as the square of the bypass pressure. This means that at minimum flows the atomization pressure is reduced approximately 35%. With the simplex nozzle the discharge flow rate varies as the square root of the supply pressure. This means that to obtain one-half of the design flow rate the supply pressure must be reduced by 1/4 of the original pressure. This pressure is too low for good atomization.

Spray Characteristics

- Good atomization over a wider flow range
- Wider spray angles at lower flow rates
- Less subject to clogging
- Less buildup of carbon and gum residue