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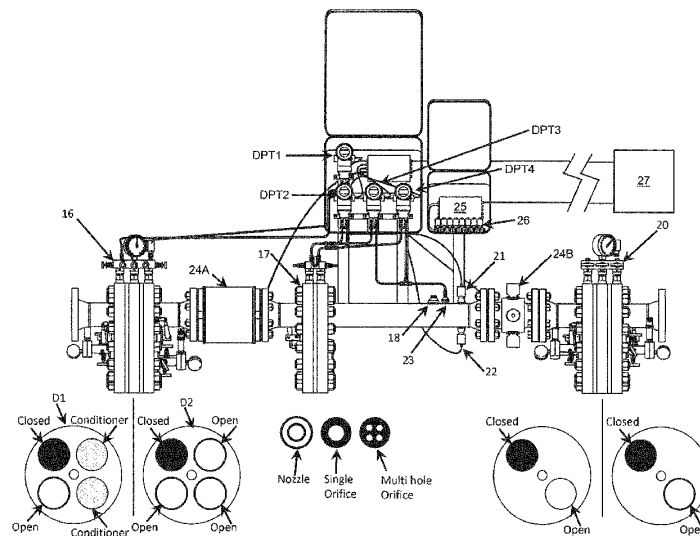


FIGURE 3B

(57) Abstract: A flow meter run offers autonomous operation whilst improving measurement performance & confidence, increased safety and improving the total cost of ownership. A plurality of isolation valve assemblies each offer DBB (Double Block & Bleed) isolation to isolate a component or meter run section. This DBB isolation includes components being extracted from the main metering line. The meter run philosophy is detailed with use of a novel rotational orifice meter, though other flow meters may be substituted. The flow meter run also features extractable filters, a rotational and extractable flow conditioner which includes open and blind isolation components. The rotational orifice meter can house several independent orifice plates or nozzles and extractable sample probes and temperature elements. Further instrument sensors include the direct (non-inferred) measurement of density and/or viscosity. The system is configured for multiple sensors to monitor performance, autonomy, validation and isolation.

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