

# Flow Control Device

**Tool Type:** CDL-FCD

**Tool Size:** All Tool Sizes



← **Top Connection.**

**Inflow, Outflow, and Cyclic Control Devices:** Inflow Control Device (ICD), Outflow Control Device (OCD), and Cyclic Control Devices (CCD) can vary with custom design. A typical ICD/OCD/CCD may consist of a combination of the following main components: nozzles, melt out plugs, shifting sleeves, and sand control.

← **Orifices:** Orifices can be in the form of Nozzles or Port Holes which are installed on the mandrel of the FCD. They can be manufactured using different materials to combat against erosion, corrosion, and scaling. The nozzle design itself will be custom designed according to the customer requirements and well geometry. Orifices can be designed, straight, angled, tapered, and of various lengths. When the FCD is used to inject steam (OCD), the orifices will be accompanied with some form of blast coupling collars to guard against washing. Orifices can also be equipped with Melt-Out Plugs (MOP) or Burst Disk Plugs (BDP) which can later be opened using temperatures and pressures.

← **Sand Control:** Sand control methods are used to retain formation sands from entering the FCD liner. The different types of sand control that can be installed to the FCD are Direct & Slip-on Wire Wrap Screen, Slip-on Precision Punched Screen, Slip-on Slotted Liner and Pre-Packed Gravel Pack Screens. Whichever sand control is chosen, it will be custom manufactured and assembled to the FCD.

← **Shifting Sleeves:** Shifting sleeves are used to open, close, or alter the orifices that are installed to the outer mandrel. The sleeves are commonly referred to as the inner sliding sleeve. The sleeves will contain spring detent rings, seals, and scraper rings. The inner sliding sleeve will be manipulated using standard Otis-B shifting tools connected to tubing joints, coiled tubing, or wireline. The shifting can either fully open, partially open, or fully close the FCD orifices.

← **Bottom Connection.**

*All tools are custom designed. Customer would receive technical data sheet with actual dimensions, threads and performance data.*



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