

CAM20-FB Multitrim Choke Valve

Interchangeable trims to suit operating conditions

Applications

- Control of flowback during frac plug drillout and unconventional (shale) well cleanup and testing
- Automated sand removal from a sand separator, when used with a control system
- Control of directional drilling equipment

How it improves operations

CAM20-FB multitrim choke valves have a modular design that enables changing the needle-and-seat trim to suit field conditions during flowback. This solution is faster and less expensive than replacing the entire valve.

Available trim options include a unique wear-resistant design made of ultrahard polycrystalline diamond (PCD) material that can withstand highly erosive flow. It greatly extends the interval between changeouts, minimizing NPT and total cost of ownership (TCO). During field testing, this trim lasted for the duration of an entire frac plug drillout operation on a well (>60 stages).

The CAM20-MT production choke valve and the CAM20-FB have interchangeable trims, providing a wide range of choices for both trim and external floating sleeve sizes. Interface dimensions match other choke valves used in flowback service, facilitating deployment.

The valves can also eliminate the need to manually empty sand separators during flowback and production, enhancing operating efficiency. In addition, they can be used to generate pressure pulses (through rapid movement) in drilling mud to control directional drilling equipment.

How it works

The needle and seat control flow of larger solids, while the floating sleeve provides more precise control of pressures, flow rates, and finer solids. The sleeve is also approximately ten times more durable than a tungsten carbide needle-and-seat trim when the well flow contains fine solids. The ultrahigh wear resistance of PCD trims, on the other hand, eliminates the need for a sleeve.

Choke valve actuation can be manual, using an 18-in handwheel, or electric. Conversion to a single- or variable-speed electric actuator can be performed in the field, and a logic controller can be added to enable automated operation.



CAM20-FB multitrim choke valve with single-speed electric actuator.

CAM20-FB Multitrim Choke Valve Specifications

Pressure rating, psi	15,000, standard service		
	10,000, NACE service		
Qualification	API Spec 6A Annex F PR2		
API Spec 6A temperature classification	P-U		
API Spec 6A material classes	BB, EE		
Needle-and-seat trim diameter, in	1.25	1	0.75
Needle-and-seat trim flow coefficient, C_v	44.5	28.5	16
Needle-and-seat trim material	Tungsten carbide (various grades)	Tungsten carbide (various grades)	Tungsten carbide (various grades) or polycrystalline diamond
External floating sleeve diameter, in	1		
External floating sleeve flow coefficient, C_v	23.5		
External floating sleeve material	Tungsten carbide (various grades)		
Positive bean size	6-64		
End connections	2-in and 3-in standard 1502 hammer wing unions [†]		

[†] Consult your Cameron representative for additional options.