



Weatherford®

Cementing Products

MudMaster™ II Filter Shoe and Auto-Fill Float Equipment

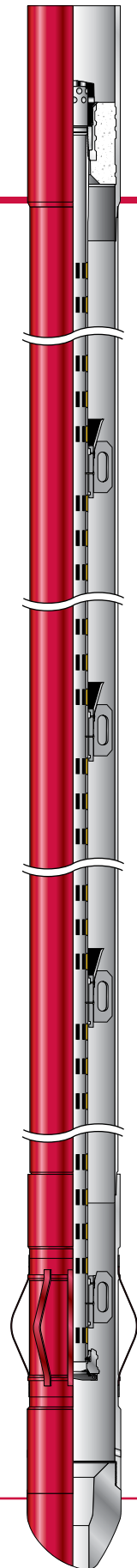
Weatherford's patented *MudMaster II* filter shoe system is designed for use in critical environments and high-inclination wells especially sensitive to surge pressures and well debris. This patented component of the WellMaster™ system provides distinct advantages in casing strings equipped with auto-fill equipment and is the first line of defense for ensuring successful cementing operations.

Debris tolerance. The unique design of the *MudMaster II* shoe track allows the mud to flow freely through very large cumulative flow areas while removing potentially damaging contaminants. In conventional auto-fill designs, cuttings and debris are swept into the casing string as mud fills the pipe, which can contribute to float valve, inflatable packer, and liner hanger failures.

Surge reduction. Surge pressures are reduced with fluids flowing freely into the casing through an innovative high flow-area guide nose and slotted filter pipe, thus increasing maximum allowable running speed and minimizing mud losses.

Applications

- Pressure-sensitive formations and close-tolerance annuli, where surge reduction and fast running speeds are advantageous
- Liner and casing strings, where debris in the wellbore could adversely affect or block Sub-Surface Release™ cementing plugs, auto-fill float equipment, inflatable packer valves, moving components in liner hangers, or the landing and sealing of wiper plugs during cementing





MudMaster™ II Filter Shoe and Auto-Fill Float Equipment

Features, Advantages and Benefits

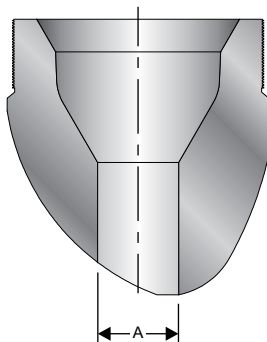
- Unique filter pipe design prevents debris from entering the casing string and allows mud to flow easily through a very large cumulative flow area through a series of milled slots to reduce incidents caused by debris ingress.
- The *MudMaster II* filter shoe joint can be delivered to the wellsite as a fully assembled shoe track to save significant setup time.
- Filter components are PDC drillable and compatible with most liner, subsea, and full-string casing accessories; therefore, no special equipment is needed to operate the filter shoe. The minimized number of moving components enhances equipment reliability, and drillout time is reduced. In addition, filter components are designed for use with nominal 38- to 42-ft casing joints, which are usually available from inventory. This design eliminates the need for a special pup joint or accessory threading charges.
- The filter shoe allows the operator to use most auto-fill PDC drillable float collars, which also saves time by allowing circulation of the casing string, or performance of other operations, without losing the auto-fill capability of the collar. Maximum flow area for clean mud through the valve is enhanced by retaining the ball in the float collar, eliminating the need to drop a tripping ball from the surface.

Guide Nose Options

- Available in composite aluminum or cement materials
- Concentric or eccentric (recommended) shapes
- Static or free-rotating styles

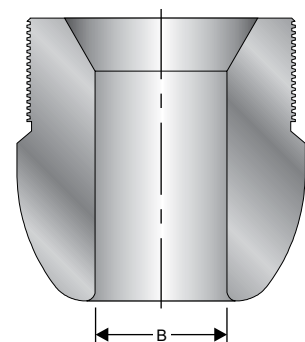
Eccentric Guide Nose

Size (in.)	A	
	(in.)	(in. ²)
9-5/8	5	19.63
9-7/8	5	19.63
11-3/4	5	19.63
13-3/8	5	19.63
13-5/8	5	19.63
16	5	19.63
18	5	19.63
22	5	19.63



Concentric Guide Nose

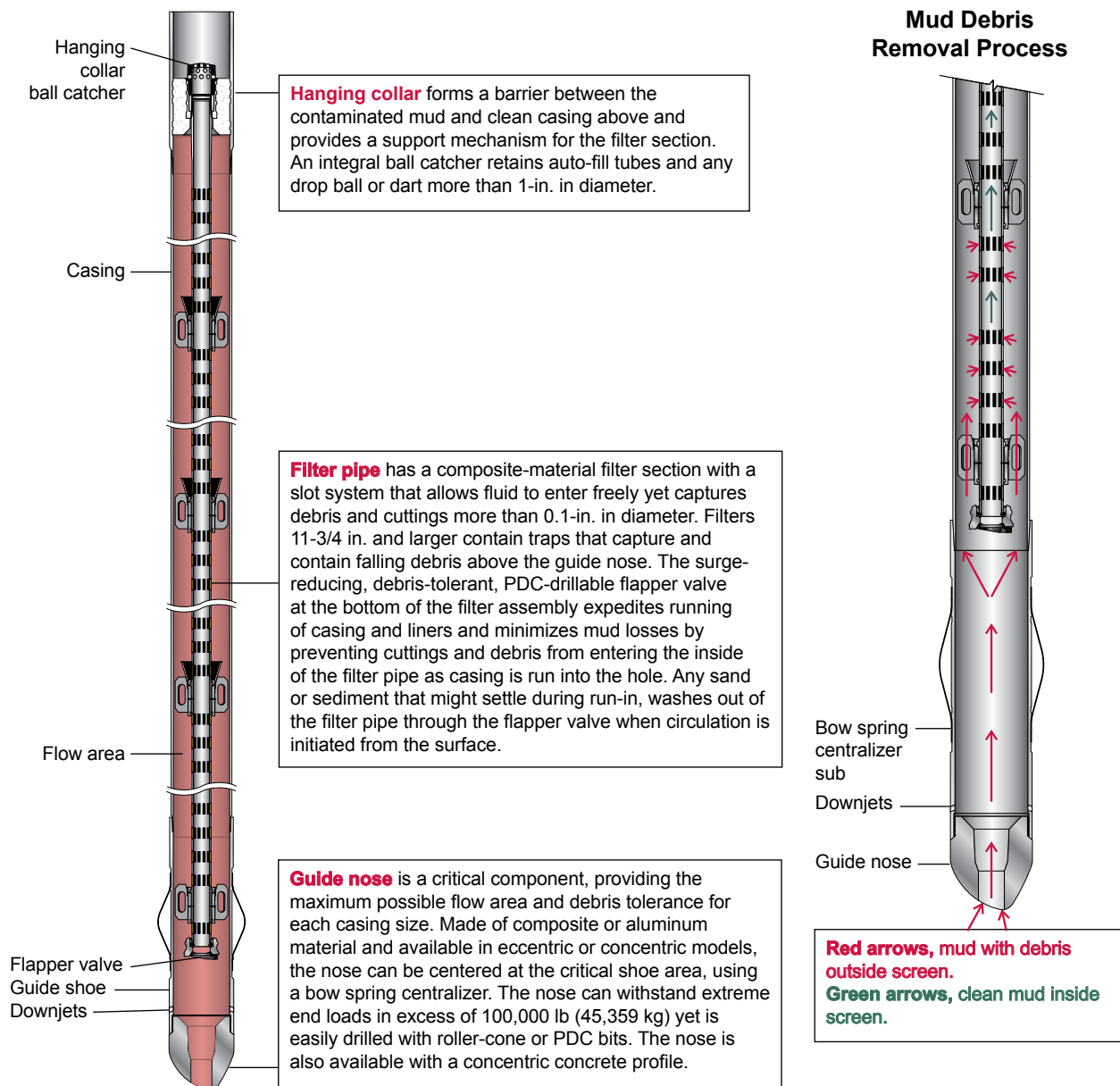
Size (in.)	B	
	(in.)	(in. ²)
7	3.50	9.62
7-5/8	3.50	9.62
7-3/4	3.50	9.62





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Filter Shoe Components





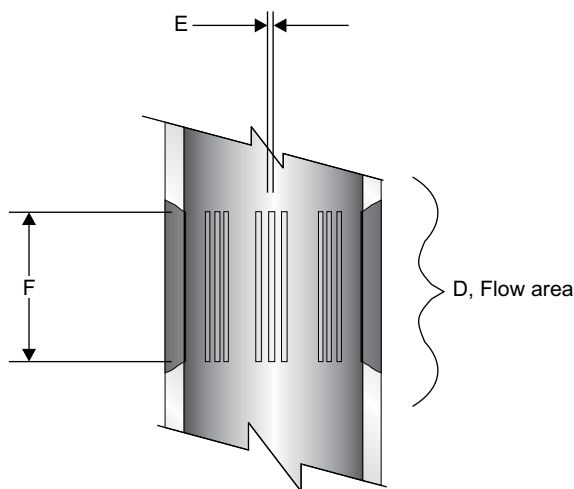
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Specifications

Filter pipe sizes (in.)	7 to 10-3/4	11-3/4 to 22
Filter pipe minimum ID (in.)	3	4
Filter pipe slots flow area/ft of length	Equivalent to minimum ID of filter pipe	
Minimum cuttings diameter (in./mm)	0.10 2.5	
Temperature rating (°F/°C)	250 121	

Filter Pipe

Size (in.)	A (in.)	B (in.)	C		D (in. ²)	E (in.)	F (in.)	G (in.)	H (ft)
			(in.)	(in. ²)					
7 to 10-3/4	3.92	4.90	2.98	6.97	9.00	0.10	2.50	6.00	29.50
11-3/4 to 22	5.02	5.85	3.98	12.44	15.00	0.10	2.50	6.00	29.50



Typical slot configurations

