BaraMag[®] Swarf Separation and Recovery Unit

EFFECTIVE REMOVAL OF FERROUS METALS FROM FLUIDS WHILE MILLING CASING

OVERVIEW

Significant quantities of swarf (metallic shavings, filings, and particulates) can be generated during slot recovery and decommissioning operations that may require the removal of sections of the original casing strings. Where cutting and pulling of the casing is not an option, extensive milling may be required. Additionally, section and window milling to sidetrack wells often generates large quantities of swarf.

CHALLENGE

Failure to remove this harsh metallic material can lead to excessive wear and tear on rig surface equipment; contamination of drilling fluids; and health, safety, and environmental (HSE) risks to personnel. Traditional solids-control shale shakers are not the best tools to remove this significant quantity of swarf from the fluid at surface. Removal of swarf from a milling fluid requires a reliable and efficient means of separation at surface to ensure successful operations.

SOLUTION

The BaraMag[®] swarf separation and recovery unit is designed to separate the swarf from the drilling fluid by mechanical and magnetic means. Return flow from the well passes through the unit, with the first stage capturing the majority of the swarf and discarding the material into a collection skip. A second separation and polishing stage removes fine to ultra-fine magnetic particles that may still be entrained in the fluid. The BaraMag unit offers operators an efficient and cost-effective solution for swarf separation and recovery.



BENEFITS

- » Removes more than 95 percent of swarf before reaching the shakers
- » Mitigates contamination of the surface fluid system
- » Prevents wear and tear of downstream equipment
- » Minimizes manual handling of swarf

FEATURES

- » Fluid level monitoring and warning system
- » Magnetic removal techniques
- » Multiple 6-inch outlets for fluid return
- » DNV 2.7-1 lifting certification
- » DNV 2.7-2 ATEX/IECEx Zone 1
- » Upper access platforms allow for monitoring and removal of birds' nests
- » Overflow channels and return line
- » Access hatch for cleaning and inspection
- » Few moving parts
- » Compatible with hole-cleaning fiber sweeps

APPLICATIONS

- » Plug and abandonment
- » Platform decommissioning
- » Sidetracks
- » Offshore platforms, semisubmersibles, jackups, and drillships
- » Onshore drilling and workover rigs

Technical Specifications

BaraMag [®] Swarf Separation and Recovery Unit				
Zoned Area	Suitable for Zone 1, Zone 2, and unclassified area use			
Flow Rate	273 m³/hr (1,200 gpm)			
Swarf Removal	Approximately 6,614 lb/hr (3000 kg/hr)			
Power Requirements	380/480 Vac, 50/60 Hz (16 Amp)			
Inlets / Outlets	1 x 12-in. ANSI 150 flange / 3 x 6-in. Full bore ball valves			
Design / Approvals	DNV 2.7-1/ 2.7-2 / CE / ATEX / IECEx			
Dimensions (LxWxH)	118 x 96 x 114 in. (2991 x 2438 x 2896 mm)			
Maximum Gross /Tare Mass	14,330/13,228 lb (6500/6000 kg)			
Deck Loading	1.37 MT / m²			
Estimated Maximum Operational Weight	22,046 lb (10 000 kg)			
Fluid Capacity	528 gallons (2000 liters)			

Equipment Components

BaraMag [®] Swarf Separation and Recovery Unit				
	 » 12" Fluid inlet » Access hatch » 6" Fluid outlets 		 » Secondary Tri-magnet system (two sets per side) » Zip-Klean magnet style for easy swarf removal 	
	 Fluid flows to stainless steel (non-magnetic) rotating drum with internal dynamically positioned magnet system 		 » Upper access platform on both sides allows monitoring of process » Overflow ports 	
HALLIBURTON	 » Swarf rotates up and over with drum rotation, held in place by the internal magnets » Dynamically positioned magnets retract to release swarf 		 » Surge protection » Drum speed control » Internal overflow sensor 	
TARE BOOKC	 Scraper system to ensure swarf removed from drum and directed to discharge chute 		» Multi-voltage & frequency VFD control	

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