Vulcan HDS Heavy Duty

Heavy Duty
Submersible Slurry Pumps
for Industrial Applications



A Brownlee-Morrow Company
Forged for Life!

Volcan HDS Heavy-Duty Submersible Slurry Pumps

The Vulcan HDS delivers continuous, heavy-duty performance with a full range of design options. Built to handle your toughest applications!

MINING / STEEL

- -Kaolin Clay
- -Red Mud Decanting
- -Magnetite Recovery
- -Clarifier Sludge
- -Waste Water and **Basement Sumps**
- -Coal Pile Runoff
- -Slag Pits
- -Scale Pits
- -Swarf Boxes
- -Flume Flushers
- -Interceptor Pumps

POWER GENERATION

- -Coal Pile Runoff
- -Coal Crusher Sumps
- -Coal Tunnel Sumps
- -Coal Fines Recovery
- -FGD Blowdown Sumps
- -Bottom Ash Transport
- -Fly Ash Sumps and Ponds
- -Waste Water and Basement Sumps

SAND & GRAVEL

- -Weir Overflow
- -Dust Suppression
- -Recycle Water
- -Wheel Wash Pump
- -Cyclone Feed
- -Dredging
- -Barge Unloading

Oil & Gas

- -Drilling Mud Reclamation
- -Tripping Tank
- -Fracking
- -Tar Sands
- -Washdown Sumps
- -Transport Unloading Sumps

STANDARD FEATURES:

- 316 Stainless Steel Hardware
- · High Chrome Iron Construction
- Particle Ejection Ports
- Agitator
- Internal Slurry Seal
- High Strength Cast Stand

F Class Installation Standard (H Optional & 90° C High Ambient Models Available)

Integrated Lifting Points

Heavy-Duty Cast Ductile Iron **Motor Housing Components** (Standard 3 mil Coal Tar **Epoxy Coating)**

Internal Slurry (Continuous Run Dry Capable) or Explosion-Proof Seal

17-4 PH Non-Cast Wet End Components Standard (Alloy 2205 Optional)

> Impeller Clearance Gaskets

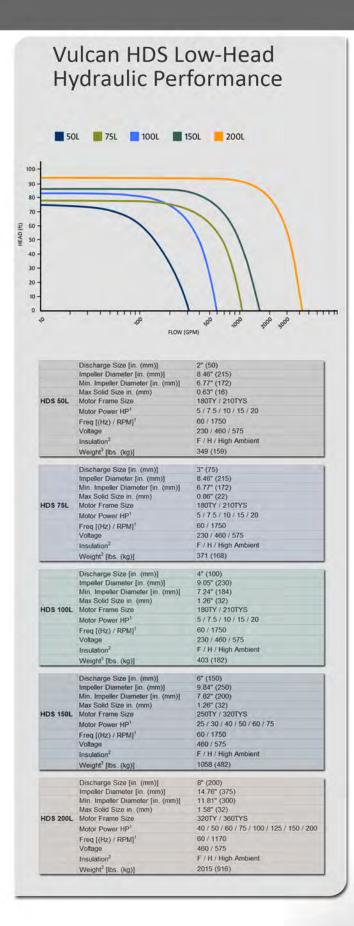
316 Stainless Steel Fasteners Standard

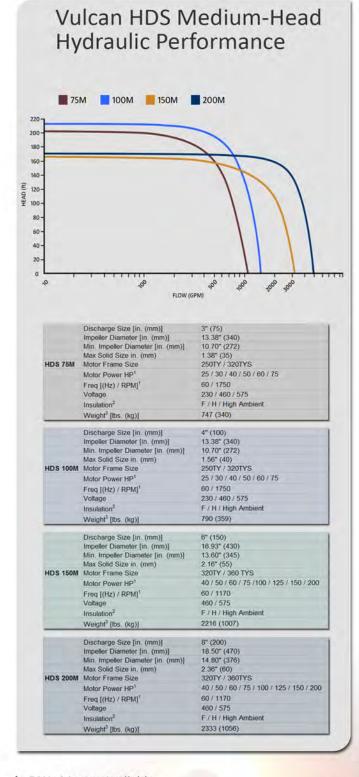
Screened Inlet (316 Stainless Optional)

Agitator

Power and Control Cable Entry

Forged for Life!





- 1. 50Hz Motors Available
- 2. Class F- 120°F Class H- 160°F High Ambient-190°F
- 3. Weight Subject to Motor Size

STANDARD HDS FEATURES

Internal Slurry Seal



- Mechanical seal configuration designed for prolonged motor operation in severe duty slurry applications
- Double mechanical seals operate in an oil chamber - Components are isolated from the pumped slurry
- Carbon -Ni Resist face (upper) and Tungsten Carbide face (lower) with stainless hardware



HDS Agitator

- Provides agitation to suspend solids for cleaner sumps

Particle Ejection Ports



- Expels solids to extend seal life
- Maintains minimum flow during closed valve operation

OPTIONAL HDS FEATURES

Moisture Detector



- Prolongs pump performance
- NEMA 4 enclosure
- Motor safeguard
- Signals early seal failure to avoid costly repairs

- Signals early seal



Control Panel
- Simplex/Duplex

- Built-In thermal overload and

moisture detector

Super Slurry Seal

- The seal solution for the most demanding applications
- The Super Slurry Seal feature duplex stainless construction, silicon carbide faces, and encapsulated spring design to operate in the most severe environments
- Suitable for both standard and explosion proof motors



Stainless Steel Spray Ring

 Extra agitation when required for heavy solids





Vulcan Cable Guard

- Protects cable connection
- Prevents excessive

force on cable to prevent binding and avoid damage

1.41

Explosion-Proof Slurry Seal

- Carbon-Ni Resist faces and 316 Stainless Steel hardware for internal seal
- Tungsten Carbide faces and 316 Stainless Steel hardware for external seal

Barges & Floating Pump Packages

Custom pontoon-mounted floating pump packages are available to meet almost any performance requirements. Call or click today to learn more about how a Vulcan float package can benefit your operation.







& A Brownlee-Morrow Company

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POWER GENERATION

The Vulcan HDS is a hard metal severe duty submersible slurry pump designed for the harshest power generation applications. Built out of the toughest materials with a wide range of pump sizes, options, and accessories, the HDS is prepared to tackle your most demanding pumping problems.

APPLICATIONS:

- Coal Pile Run Off Fly Ash Sumps Coal Tunnel Ash Ponds
- Waste Water Clean-Up Sumps
 FGD Blowdown Sumps

- 28% Chrome Iron (CD4MCU Optional) Liquid End Construction
- Heavy Duty Motor with Thermal Overload and Moisture Sensor
- Internal Slurry Mechanical Seal with TC Faces
- 316 SS Hardware
- 17-4 PH Pump Components
- Deflector and Particle Ejection Ports
- High Tensile Strength Cast Stand
- UL and CSA Approved Motors
- Novocoat SP 2000W Protective Coating
- Various Options and Accessories to Fit Your Needs





STEEL PRODUCING

The Vulcan HDS is a hard metal severe duty submersible slurry pump designed for the harshest steel production applications. Built out of the toughest materials with a wide range of pump sizes, options, and accessories, the HDS is prepared to tackle your most demanding pumping problems.

APPLICATIONS:

- Coal Pile Run Off
 Scale Pit
 Flume Flush
- Slag Pit
 Swarf Box
 Interceptor Pump

- 28% Chrome Iron (CD4MCU Optional) Liquid End Construction
- Heavy Duty Motor with Thermal Overload and Moisture Sensor
- Internal Slurry Mechanical Seal with TC Faces
- 316 SS Hardware
- 17-4 PH Pump Components
- Deflector and Particle Ejection Ports
- High Tensile Strength Cast Stand
- UL and CSA Approved Motors
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- Various Options and Accessories to Fit Your Needs





MINING

The Vulcan HDS is a hard metal severe duty submersible slurry pump designed for the harshest mining applications. Built out of the toughest materials with a wide range of pump sizes, options, and accessories, the HDS is prepared to tackle your most demanding pumping problems.

APPLICATIONS:

- Floor Clean-Up Sumps
- Magnetite Recovery
- Dust Suppression
- Concentrate Sumps
- Conveyor Sumps
- Tunnel Sumps

- 28% Chrome Iron (CD4MCU Optional)
 Liquid End Construction
- Heavy Duty Motor with Thermal Overload and Moisture Sensor
- Internal Slurry Mechanical Seal with TC Faces
- 316 SS Hardware
- 17-4 PH Pump Components
- Deflector and Particle Ejection Ports
- High Tensile Strength Cast Stand
- UL and CSA Approved Motors
- Novocoat SP 2000W Protective Coating
- Various Options and Accessories to Fit Your Needs





SAND AND GRAVEL

The Vulcan HDS is a hard metal severe duty submersible slurry pump designed for the harshest sand and gravel industry applications. Built out of the toughest materials with a wide range of pump sizes, options, and accessories, the HDS is prepared to tackle your most demanding pumping problems.

APPLICATIONS:

- Weir Overflow Recycle Water Cyclone Feed
- Dust Suppression Wheel Wash Sump Dredging

- 28% Chrome Iron (CD4MCU Optional)
 Liquid End Construction
- Heavy Duty Motor with Thermal Overload and Moisture Sensor
- Internal Slurry Mechanical Seal with TC Faces
- 316 SS Hardware
- 17-4 PH Pump Components
- Deflector and Particle Ejection Ports
- High Tensile Strength Cast Stand
- UL and CSA Approved Motors
- Novocoat SP 2000W Protective Coating
- Various Options and Accessories to Fit Your Needs





Oil and Gas

The Vulcan HDS-XP is a hard metal severe duty submersible slurry pump designed for the harshest oil and gas industry applications. Built out of the toughest materials with a wide range of pump sizes, options, and accessories, the HDS-XP is prepared to tackle your most demanding pumping problems.

APPLICATIONS:

- Drilling Mud Reclamation Tripping Tank Fracking
- Tar Sands Washdown Sumps Transport Unloading Sumps

- 28% Chrome Iron (Duplex Stainless CD4MCu Optional) Liquid End Construction
- Agitator for heavy solids concentration
- Heavy Duty FM Approved Explosion Proof Motor with Thermal Overload and Moisture Sensor
- Internal Slurry Mechanical Seal with Silicon Carbide Faces
- 316 SS Hardware
- 17-4 PH Pump Components
- Deflector and Particle Ejection Ports
- High Tensile Strength Cast Stand
- Wide Range of Hydraulic Coverage
- Novocoat SP 2000W Protective Coating
- Various Options and Accessories to Fit Your Needs





Vulcan HDSS

Vulcan's most popular pump - now in **Stainless Steel!**

Introducing the all-new HDSS Corrosive Slurry pump, your answer to the harshest corrosive and abrasive slurry applications

CD4 Duplex Stainless Steel (ASTM A890-1B Gr. CD4MCU) Liquid End Casing, Impeller, Agitator, and Suction Liner (2205 Optional)

316 SS Pump Stand

Heavy Duty 316 SS Motor Housing with 316 SS Motor Shaft

Moisture and Thermal
Overload Motor Sensors

Internal Slurry Mechanical Seal with Silicon Carbide Faces and Viton Flastomers

50' of Power and Control Cable

316 SS Hardware

17-4 PH Pump Components

Deflector and Particle Ejection Ports





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Vulcan HDS

Vulcan's most popular pump now has more options, giving it the **versatility** to **adapt** to the

TOUGHEST SITUATIONS

so you can get the dirtiest jobs in the industry DONE RIGHT

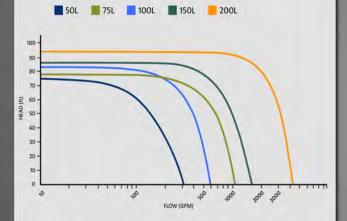


Dont	HDS	HDSS	
Part	Material (ASTM)	Material (ASTM)	Optional (ASTM)
Casing	28% Chrome Iron (A532 CL III Type A)	CD4MCu (A890-1B)	
Impeller	28% Chrome Iron (A532 CL III Type A)	CD4MCu (A890-1B)	
Suction Cover	28% Chrome Iron (A532 CL III Type A)	CD4MCu (A890-1B)	
Motor Side Cover	28% Chrome Iron (A532 CL III Type A)	CD4MCu (A890-1B)	
Agitator	28% Chrome Iron (A532 CL III Type A)	CD4MCu (A890-1B)	-
Stand	Hi-Strength Ductile Iron (A536 Gr. 80-55-06)	316 SS (A276 Type 316)	Alloy 20 (B473)
Shaft Adapter	17-4 PH (A564 Gr. 630)	17-4 PH (A564 Gr. 630)	Alloy 20 (B473)
Shaft Extension	17-4 PH (A564 Gr. 630)	17-4 PH (A564 Gr. 630)	Alloy 20 (B473)
Motor Deflector	316 SS (A276 Type 316)	316 SS (A276 Type 316)	Alloy 20 (B473)
Fasteners	316 SS (A276 Type 316)	316 SS (A276 Type 316)	Alloy 20 (B473)
Motor Housing	Ductile Iron (A536)	316 SS (A351-CF8M)	HPL 2310/4310 Coating
Motor Flange	Ductile Iron (A536)	316 SS (A351-CF8M)	CD4MCu (A890-1B)
Motor Shaft	416 SS (A711)	316 SS (A711)	Alloy 20 (B637)
Seal Faces	Tungsten Carbide	Silicon Carbide	-
Elastomers	Buna	Viton	



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Vulcan HDS Low-Head Hydraulic Performance



	Discharge Size [in. (mm)]	2" (50)	
	Impeller Diameter [in. (mm)]	8.46" (215)	
	Min. Impeller Diameter (in. (mm))	6.77" (172)	
	Max Solid Size in. (mm)	0.63" (16)	
HDS 50L	Motor Frame Size	180TY / 210TYS	
	Motor Power HP ¹	5/7.5/10/15/20	
	Freq [(Hz) / RPM] ¹	60 / 1750	
	Voltage	230 / 460 / 575	
	Insulation ²	F / H / High Ambient	
	Weight ³ [lbs. (kg)]	349 (159)	

	Impeller Diameter [in. (mm)]	8.46" (215)	
	Min. Impeller Diameter [in. (mm)]	6.77" (172)	
	Max Solid Size In. (mm)	0.86" (22)	
HDS 75L	Motor Frame Size	180TY / 210TYS	
	Motor Power HP ¹	5/7.5/10/15/20	
	Freq [(Hz) / RPM] ¹	60 / 1750	
	Voltage	230 / 460 / 575	
	Insulation ²	F / H / High Ambient	
	Weight ³ [lbs. (kg)]	371 (168)	

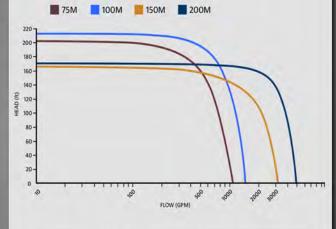
Discharge Size [in. (mm)]

	Impeller Diameter [in. (mm)]	9.05" (230)	
	Min. Impeller Diameter [in. (mm)]	7.24" (184)	
	Max Solid Size in. (mm)	1.26" (32)	
HDS 100L	Motor Frame Size	180TY / 210TYS	
	Motor Power HP1	5/7.5/10/15/20	
	Freq [(Hz) / RPM] ¹	60 / 1750	
	Voltage	230 / 460 / 575	
	Insulation ²	F / H / High Ambient	
	Weight ³ [lbs. (kg)]	403 (182)	

	Discharge Size [in. (mm)]	6" (150)	
	Impeller Diameter [in. (mm)]	9.84" (250)	
	Min. Impeller Diameter [in. (mm)]	7.82" (200)	
	Max Solid Size in. (mm)	1.26" (32)	
HDS 150L	Motor Frame Size	250TY / 320TYS	
	Motor Power HP ¹	25 / 30 / 40 / 50 / 60 / 75	
	Freq [(Hz) / RPM] ¹	60 / 1750	
	Voltage	460 / 575	
	Insulation ²	F / H / High Ambient	
	Weight ³ [lbs. (kg)]	1058 (482)	

	Insulation ²	F / H / High Ambient
	Weight ³ [lbs. (kg)]	1058 (482)
	Discharge Size [in. (mm)]	8" (200)
	Impeller Diameter [in. (mm)]	14.76" (375)
	Min. Impeller Diameter [in. (mm)]	11.81" (300)
	Max Solid Size in. (mm)	1.58" (32)
HDS 200L	Motor Frame Size	320TY / 360TYS
	Motor Power HP1	40 / 50 / 60 / 75 / 100 / 125 / 150 / 200
	Freq [(Hz) / RPM] ¹	60 / 1170
	Voltage	460 / 575
	Insulation ²	F / H / High Ambient
	Weight ³ [lbs. (kg)]	2015 (916)

Vulcan HDS Medium-Head Hydraulic Performance



	Discharge Size [in. (mm)]	3" (75)	
	Impeller Diameter [in. (mm)]	13.38" (340)	
	Min. Impeller Diameter [in. (mm)]	10.70" (272)	
	Max Solid Size in. (mm)	1.38" (35)	
HDS 75M	Motor Frame Size	250TY / 320TYS	
	Motor Power HP ¹	25 / 30 / 40 / 50 / 60 / 75	
	Freq [(Hz) / RPM] ¹	60 / 1750	
	Voltage	230 / 460 / 575	
	Insulation ²	F / H / High Ambient	
	Weight ³ [lbs. (kg)]	747 (340)	
	Discharge Size [in. (mm)]	4" (100)	
	Impeller Diameter [in. (mm)]	13.38" (340)	
	Min. Impeller Diameter [in. (mm)]	10.70" (272)	
	Max Solid Size in. (mm)	1.56" (40)	
HDS 100M	Motor Frame Size	250TY / 320TYS	
	Motor Power HP ¹	25 / 30 / 40 / 50 / 60 / 75	
	Freq [(Hz) / RPM] ¹	60 / 1750	
	Voltage	230 / 460 / 575	
	Insulation ²	F / H / High Ambient	
	Weight ³ [lbs. (kg)]	790 (359)	
	Discharge Size [in. (mm)]	6" (150)	
	Impeller Diameter [in. (mm)]	16.93" (430)	
	Min. Impeller Diameter [in. (mm)]	13.60" (345)	
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	Discharge Size [in. (mm)]	6" (150)
	Impeller Diameter [in. (mm)]	16.93" (430)
	Min. Impeller Diameter [in. (mm)]	13.60" (345)
	Max Solid Size in. (mm)	2.16" (55)
HDS 150M	Motor Frame Size	320TY / 360 TYS
	Motor Power HP ¹	40 / 50 / 60 / 75 /100 / 125 / 150 / 200
	Freq [(Hz) / RPM] ¹	60 / 1170
	Voltage	460 / 575
	Insulation ²	F / H / High Ambient
	Weight ³ [lbs. (kg)]	2216 (1007)
	Discharge Size (in (mm))	8" (200)

	Discharge Size [in. (mm)]	8" (200)
	Impeller Diameter [in. (mm)]	18.50" (470)
	Min. Impeller Diameter [in. (mm)]	14.80" (376)
	Max Solid Size in. (mm)	2.36" (60)
HDS 200M	Motor Frame Size	320TY / 360TYS
	Motor Power HP1	40 / 50 / 60 / 75 / 100 / 125 / 150 / 200
	Freq [(Hz) / RPM] ¹	60 / 1170
	Voltage	460 / 575
	Insulation ²	F / H / High Ambient
	Weight ³ [lbs. (kg)]	2333 (1056)

- 1. 50Hz Motors Available
- 2. Class F- 120°F Class H- 160°F High Ambient-190°F
- 3. Weight Subject to Motor Size



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- -Recycle Water
- -Wheel Wash Pump
- -Cyclone Feed
- -Dredging
- -Barge Unloading

Oil & Gas

- -Drilling Mud Reclamation
- -Tripping Tank
- -Fracking
- -Tar Sands
- -Washdown Sumps
- -Transport Unloading Sumps

STANDARD FEATURES:

- 316 Stainless Steel Hardware
- · High Chrome Iron Construction
- Particle Ejection Ports
- Agitator
- Internal Slurry Seal
- High Strength Cast Stand

F Class Installation Standard (H Optional & 90° C High Ambient Models Available)

Heavy-Duty Cast Ductile Iron **Motor Housing Components** (Standard 3 mil Coal Tar **Epoxy Coating)**

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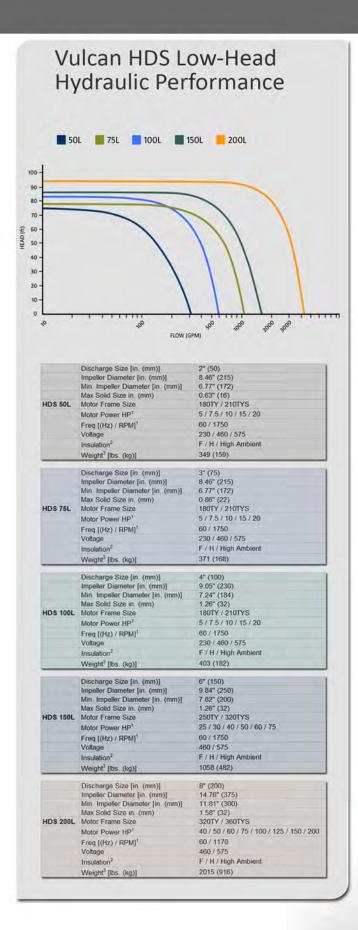
316 Stainless Steel Fasteners Standard

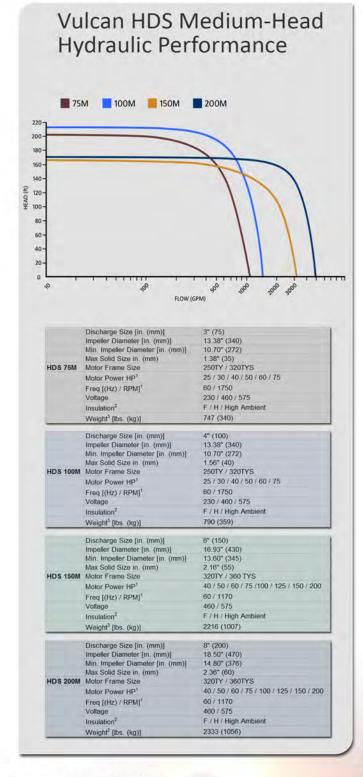
Screened Inlet (316 Stainless Optional)

Agitator

Stand ASTM 536 Gr.80-55-06 (316 Stainless Optional

Power and Control Cable Entry





- 1. 50Hz Motors Available
- 2. Class F- 120°F Class H- 160°F High Ambient-190°F
- 3. Weight Subject to Motor Size