



ATEX & IECEx

AF/AL/GF-Ex

EXPLOSION-PROOF SIDE
DISCHARGE PUMP

50Hz



make future flow

ATEX & IECEx Directives

HCP PUMP follows the directive of the minimum safety requirements for workplaces and equipment used in explosive atmospheres.

- **HCP Ex-certified Side Discharge Explosion-Proof Pumps** can be used in potentially explosive environments such as gas stations and municipal and industrial wastewater treatment at 0~40°C (32~104°F).
- **Protection:** HCP Ex-certified pumps have a Motor Thermal Sensor (MTS) and Moisture Sensor (MS). The MTS is incorporated into the stator for motor protection, and the oil chamber is equipped with an MS for leakage detection.
- **Non-clog impellers:** The vortex (U-type), open (P-Type), channel (E-Type), cutter (C-type), and grinder impellers are available for different models and help the pump transport fibrous liquid to liquid with solid particles without disruption.



IECEx CSAE 24.0007X
CSANe 24ATEX1070 X

HCP PUMP Explosion-Proof Protection Classification description under ATEX and IECEx.

CE 2813 Product complies with European standards. Identification number 2813 of the Notified Body which has certified the quality system for ATEX & IECEx.



1. The specific marking of explosion protection according to Annex II of ATEX Directive 2014/34/EU.
2. Group of the equipment. Group II: electrical equipment for use in places with an explosive gas atmosphere other than mines.
3. Category of the equipment protection level and atmosphere type. In presence of potentially explosive atmospheres of Gas, Vapors, and Mist (G). The equipment can be installed in ZONE 2 & ZONE 1 (ZONE 0 is not allowed.)
4. Explosion-proof machine: mechanical part with increased safety protection. The type of electrical protection for the equipment is a flameproof and Intrinsic safety equipment enclosure, suitable for Gas Group IIB and IIA.
5. Temperature Class of the equipment. (maximum surface temperature 135°C)
6. Equipment for explosive gas atmospheres, having a "high" level of protection (EPL, Gb), suitable for use in ZONE 2 & ZONE 1.

GAS (G)

■ **Zone 0** - Area in which it is permanently present.

■ **Zone 1** - Area in which it is likely.

■ **Zone 2** - Area in which it is unlikely or of short lasting

The formation of an explosive atmosphere consisting of a mixture of air and flammable substances in the form of gas, vapour or mist.

ZONE 2

ZONE 1



ZONE 0
Fuel Storage Tank

**Unvented
Garage Pit**



ZONE 1

APPLICATIONS

HCP pumps are widely used in water applications. Some applications deal with flammable substances that can cause catastrophic damage when mishandled. Compliance with safety standards is crucial to helping lower explosion risks and ensuring safety and reliability, making explosion-proof pumps indispensable. HCP PUMP presents Explosion-proof pumps for applications in potentially explosive settings.

Municipal and Industrial Wastewater

- Pumping wastewater in a potentially explosive like the sewer, etc
- Transporting sewage with high solid content, fibrous material, or sludge
- Wastewater drainage in paper, primary metals, food, and beverage plants
- Pumping stations for untreated wastewater and manure tanks
- Gas station sewage system



Petrochemical and Power Plants

- Chemical and petrochemical liquid/water pumping
- Pumping wastewater containing solids and fibrous material
- Liquid transfer in environments full of explosive gases like biogas



Infrastructure Project

- Stormwater systems
- Commercial Building wastewater drainage
- Pumping mud and light agricultural sewage



AF-Ex SERIES EXPLOSION-PROOF SUBMERSIBLE SEWAGE/WASTEWATER PUMP



- Pump body is made of cast iron and with high solids epoxy coating which offers the highest quality and performance.
- Eco-friendly Food Grade Lubricant to keep wastewater applications a toxic free environment.
- U Type Vortex Impeller: Vortex impeller produces a vortex (whirlpool effect) allowing long fibrous materials and solid waste to pass through, without contact with the impeller.
- P Type Open Impeller: Open impeller (Single or Two Vanes) design. Impeller is excellent to use for waste materials to prevent clogging.
- E Type Channel Impeller: Enclosed channel impeller features high efficiency, large capacity, large solid passage and non-clogging.

PRODUCT NOMENCLATURE

80	AF	P	2	1.5	MS	Ex
Discharge mm	Type	Impeller type (U/P/E)	Pole	kW	Moisture Sensor	Explosion- Proof



U Type
Vortex Impeller



P Type
Open Impeller



E Type
Channel Impeller



SPECIFICATIONS

Spec.	Description
Liquid Temp.	0~40°C (32~104°F)
Motor	2P (3000rpm) / 4P(1500rpm) • Dry Motor
Insulation	Class F
Protection	IP68
Protector	MTS & MS
M.seal Type	Double M.seals
Impeller Type	Vortex (U) • Open (P) • Channel (E)

Item	Material
Upper Cover	FC200 / GG-20
Motor Frame	FC200 / GG-20
Shaft	SUS403 / X5Cr13
M.seal	CA/CE & SiC/SiC
Casing	FC200 / GG-20
Impeller	FC200 / GG-20
Cable	H07RN-F

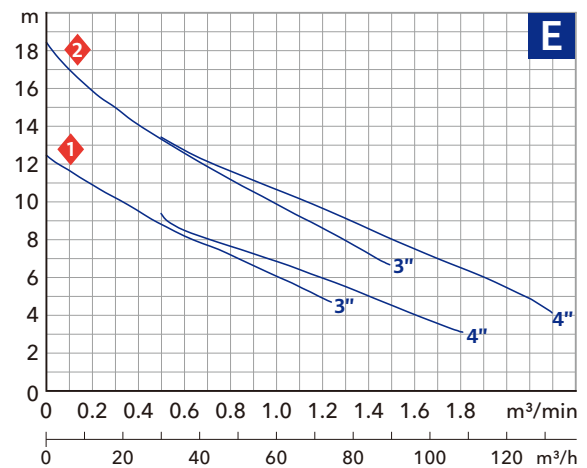
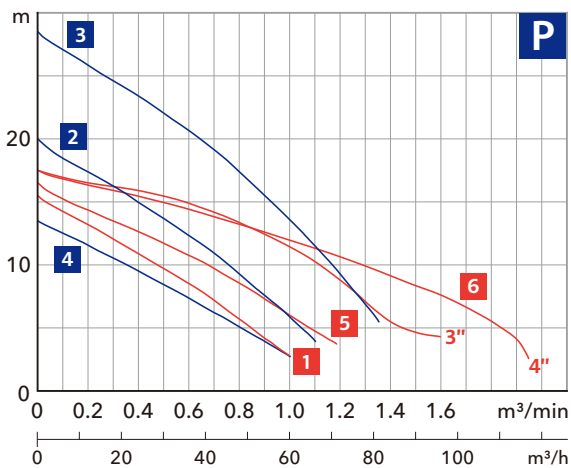
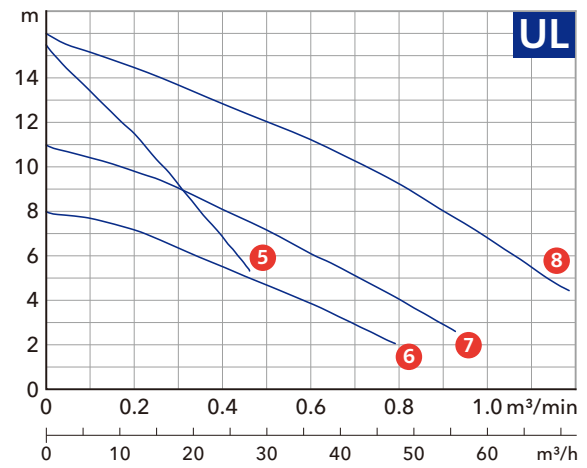
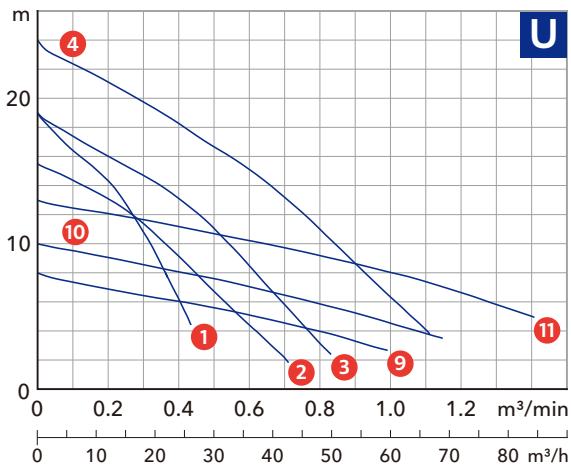
APPLICATIONS

- Residential buildings, hospitals, commercial buildings and household usages
- Livestock farming, pig farming, dairy farming and sewage treatment
- Food industry, pulp and paper industry, mining, dyeing and finishing factory, leather factory, steel manufacturer, electronics industry and wastewater treatment
- Hydraulic engineering and flood control
- Sanitary sewer pumping

ACCESSORIES : ELBOW / GRS-GUIDE RAIL SYSTEMS

AF pumps can be installed with 90° Elbow Flange outlet or GRS guide rail system, to have easier / safer installation or removal during replacement and maintenance. The GRS does not support the vertical casing models.

PERFORMANCE SPECS AND CURVES



Model	Output HP(kW)	Discharge Inch(mm)	Phase Ø	Start Method	Standard m-m³/min	Max. m-m³/min	Solid Passage mm	Casing Type	Weight kg
① 50AFU21.5-MS-Ex	2 (1.5)	2" (50)	3	DOL	14-0.2	19-0.45	35	V	37
② 80AFU21.5-MS-Ex	2 (1.5)	3" (80)	3	DOL	8.5-0.4	15.5-0.75	50	H	40
③ 80AFU22.2-MS-Ex	3 (2.2)	3" (80)	3	DOL	12.5-0.4	19-0.85	50	H	42
④ 80AFU23.7A-MS-Ex	5 (3.7)	3" (80)	3	DOL	16.5-0.5	24-1.15	50	H	55
⑤ 50AFU21.5L-MS-Ex	2 (1.5)	2" (50)	3	DOL	10-0.25	15.5-0.47	50	V	38
⑥ 80AFU21.5L-MS-Ex	2 (1.5)	3" (80)	3	DOL	4.5-0.5	8-0.85	76	H	42
⑦ 80AFU22.2L-MS-Ex	3 (2.2)	3" (80)	3	DOL	7-0.5	11-0.95	76	H	44
⑧ 80AFU23.7LA-MS-Ex	5 (3.7)	3" (80)	3	DOL	11-0.6	16-1.2	76	H	57
⑨ 80AFU41.5-MS-Ex	2 (1.5)	3" (80)	3	DOL	5-0.6	8-1.1	76	H	54
⑩ 80AFU42.2-MS-Ex	3 (2.2)	3" (80)	3	DOL	7-0.6	10-1.2	76	H	70
⑪ 80AFU43.7-MS-Ex	5 (3.7)	3" (80)	3	DOL	10-0.6	13-1.5	76	H	71
① 80AFP21.5-MS-Ex	2 (1.5)	3" (80)	3	DOL	8.5-0.5	15.5-1.05	35	H	41
② 80AFP22.2-MS-Ex	3 (2.2)	3" (80)	3	DOL	12-0.6	20-1.15	35	H	43
③ 80AFP23.7A-MS-Ex	5 (3.7)	3" (80)	3	DOL	20.5-0.6	28.5-1.4	32	H	57
④ 80AFP41.5-MS-Ex	2 (1.5)	3" (80)	3	DOL	8-0.5	13.5-1.1	50	H	55
⑤ 80AFP42.2-MS-Ex	3 (2.2)	3" (80)	3	DOL	10-0.6	16.5-1.2	50	H	73
⑥ 80(100)AFP43.7-MS-Ex	5 (3.7)	3" (80)	3	DOL	14.5-0.6	17.5-1.6	50	H	78
		4" (100)			11.5-1.0	17.5-2.0			
① 80(100)AFE42.2-MS-Ex	3 (2.2)	3" (80)	3	DOL	7.0-0.8	12.5-1.35	76	H	79
		4" (100)			6.5-1.0	12.5-1.9			
② 80(100)AFE43.7-MS-Ex	5 (3.7)	3" (80)	3	DOL	11-0.8	18.5-1.6	76	H	82
		4" (100)			10.5-1.0	18.5-2.3			

※ Excludes Cable & Elbow Weight.

※ Casing type : V stands for Vertical and H for Horizontal.

AF-Ex SERIES EXPLOSION-PROOF SUBMERSIBLE SEWAGE/WASTEWATER PUMP



- C Type Tungsten carbide edged open impeller is perfect for pumping sewage and breaking/tearing debris.
- Heat-treatment harden casing cover enhance the ability to against abrasion.
- Casted iron body pump with 150~250µm high solids epoxy coating.

PRODUCT NOMENCLATURE

80	AF	C	2	1.5	MS	Ex
Discharge mm	Type	Impeller type	Pole	kW	Moisture Sensor	Explosion- Proof

C Type Open Impeller and Cutter Casing Cover



Tungsten carbide edge on the impeller vanes shreds against the inner cutting blades to break down destructible solids to prevent clogging.

Hardened casing cover designed to withstand the abrasion.



SPECIFICATIONS


Spec.	Description
Liquid Temp.	0~40°C (32~104°F)
Motor	2P (3000rpm) / 4P (1500rpm) • Dry Motor
Insulation	Class F
Protection	IP68
Protector	MTS & MS
M.seal Type	Double M.seals
Impeller Type	Open
Item	Material
Upper Cover	FC200 / GG-20
Motor Frame	FC200 / GG-20
Shaft	SUS403 / X5Cr13
M.seal	CA/CE & SiC/SiC
Casing	FC200 / GG-20
Impeller	FC200 / GG-20 + Tungsten
Casing Cover	FC200 / GG-20 + Heat (2P) • FCD700 / GGG-70 + Heat (4P)
Footing	FCD450 / GGG-45 (2P) • None (4P)
Cable	H07RN-F

APPLICATIONS

- Drainage of waste water containing debris from factories
- Sewage management, water accumulation, septic tanks, and or farms
- Drainage of waste water from attenuation, purifying and sewage tanks in water treatment plant

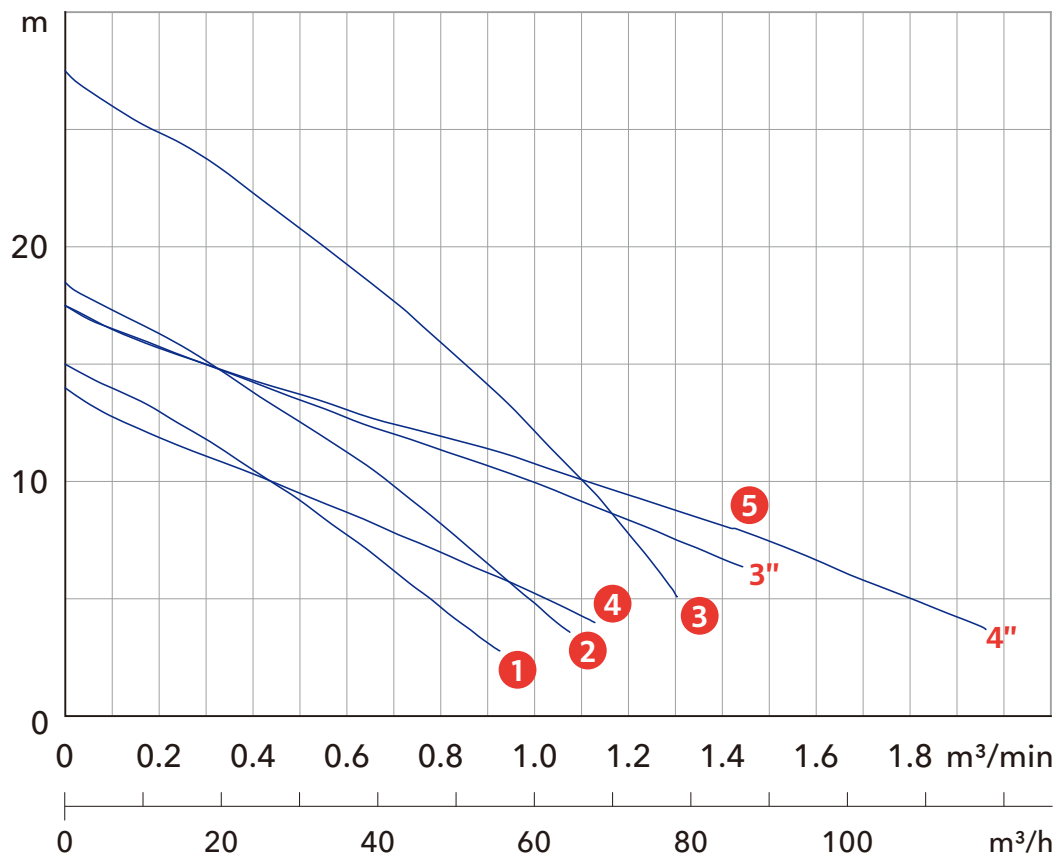
EXTREME CUTTING ABILITY



 The pictures are for reference only. The actual result might be varied cause on-site condition and application environment.



PERFORMANCE SPECS AND CURVES



※ Excludes Cable & Elbow Weight.

※ Casing type : V stands for Vertical and H for Horizontal.

AL-Ex SERIES EXPLOSION-PROOF SUBMERSIBLE WASTEWATER/EFFLUENT PUMPS



- Casted iron body pump with 150~250µm high solids epoxy coating offering the highest quality and performance.
- Compact, high head, and high efficiency for wide range of use.
- Oil Elevation Disk design in the oil chamber to ensure the mechanical seals lubrication and to extend the service life of pump.
- High head performance design and with strainer to block big solid to make sure no clogging in pipe.

PRODUCT NOMENCLATURE

80	AL	2	1.5	—	MS	—	Ex
Discharge mm	Type	Pole	kW		Moisture Sensor		Explosion- Proof



Open Impeller



SPECIFICATIONS

Spec.	Description
Liquid Temp.	0~40°C (32~104°F)
Motor	2P (3000rpm) • Dry Motor
Insulation	Class F
Protection	IP68
Protector	MTS & MS
M.seal Type	Double M.seals
Impeller Type	Open

Item	Material
Upper Cover	FC200 / GG-20
Motor Frame	FC200 / GG-20
Shaft	SUS403 / X5Cr13
M.seal	CA/CE & SiC/SiC
Casing	FC200 / GG-20
Impeller	FC200 / GG-20
Footing	FC200 / GG-20
Cable	H07RN-F

APPLICATIONS

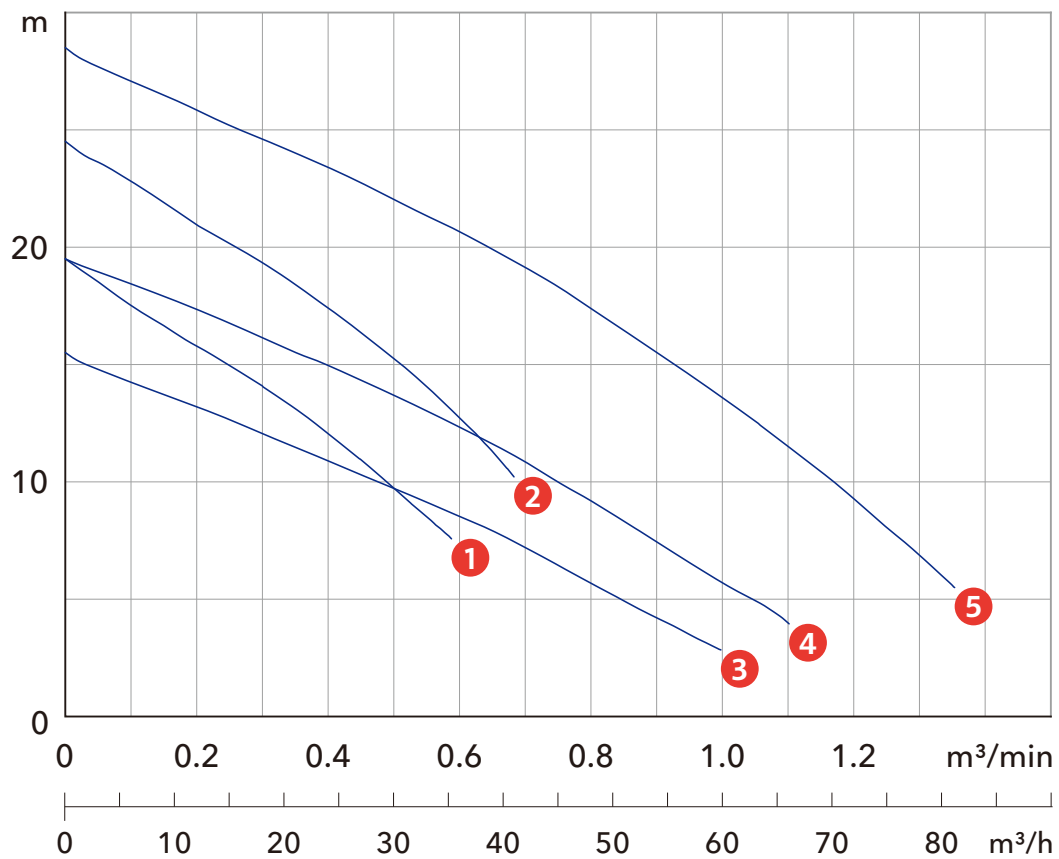
- All industry wastewater
- Building rainwater drainage, flood water removal
- River / lake water extraction
- Landscaping, aquaculture and agriculture irrigation

ACCESSORIES : ELBOW / GRS-GUIDE RAIL SYSTEMS

AL pumps can be installed with 90° Elbow Flange outlet or GRS guide rail system, to have easier / safer installation or removal during replacement and maintenance. The GRS does not support the vertical casing models.



PERFORMANCE SPECS AND CURVES



※ Excludes Cable & Elbow Weight.

※ Casing type : V stands for Vertical and H for Horizontal.

GF-Ex SERIES EXPLOSION-PROOF SUBMERSIBLE GRINDER PUMPS



- Standard accessories include: cable with an epoxy resin sealed water-resistant cable base, Motor Thermal Sensor (MTS) , Moisture Sensor (MS), double mechanical seals and oil seal design.
- Vortex impeller design prevents clogging.
- Radial cutter and cutter ring SUS440C: corrosion resistant material, hardened to 55~60 Rockwell C.

PRODUCT NOMENCLATURE

32	GF	2	1.5	H	—	MS	—	Ex
Discharge mm	Type	Pole	kW	High Head		Moisture Sensor		Explosion- Proof



Radial Cutter &
Cutter Ring



SPECIFICATIONS

Spec.	Description
Liquid Temp.	0~40°C (32~104°F)
Motor	2P (3000rpm) • Dry Motor
Insulation	Class F
Protection	IP68
Protector	MTS & MS
M.seal Type	Double M.seals
Impeller Type	Vortex
Item	Material
Upper Cover	FC200 / GG-20
Motor Frame	FC200 / GG-20
Shaft	SUS403 / X5Cr13
M.seal	CA/CE & SiC/SiC
Casing	FC200 / GG-20
Impeller	FC200 / GG-20
Radial Cutter	SUS440C / X105CrMo17
Cutter Ring	SUS440C / X105CrMo17
Cable	H07RN-F

APPLICATIONS

- Used in pressure sewage system
- Drainage of wastewater from individual residences, apartment buildings, recreational developments, motels, hotels
- Transferring wastewater of commercial building, industrial plants

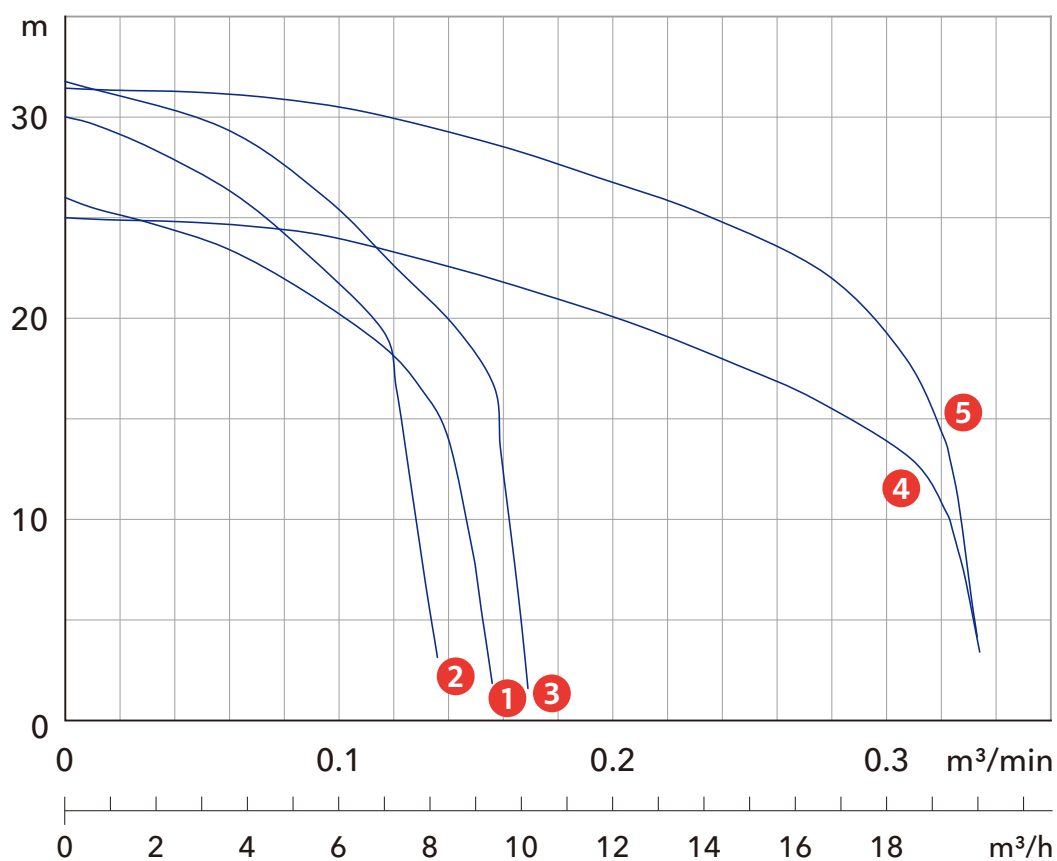
EXTREME GRINDING ABILITY



The pictures are for reference only. The actual grinding result might be varied cause radial cutter & cutter ring condition and application environment.



PERFORMANCE SPECS AND CURVES



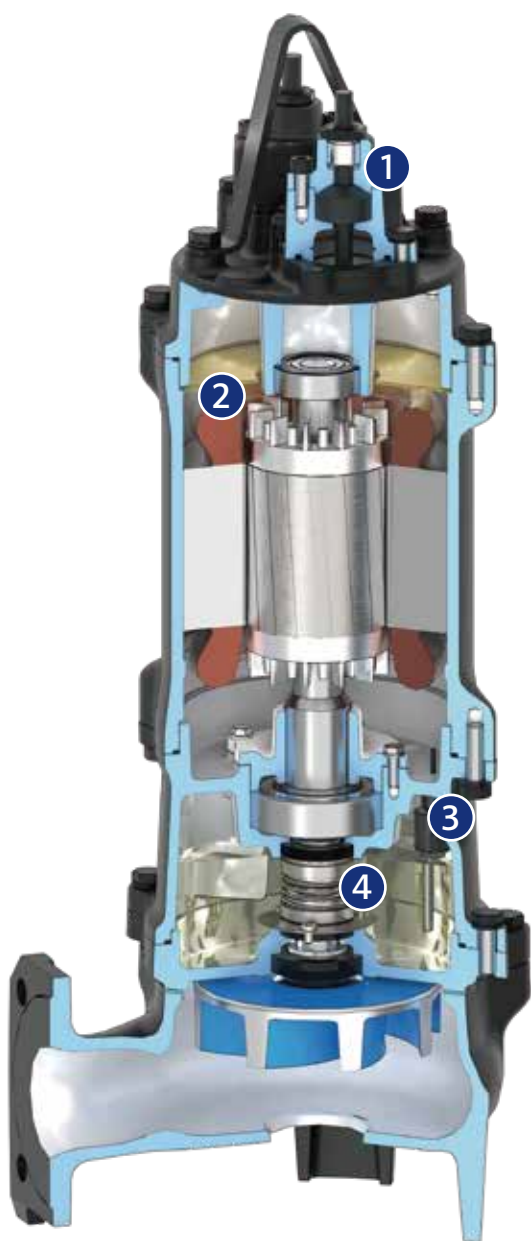
Model	Output HP(kW)	Discharge Inch(mm)	Phase Ø	Start Method	Standard m-m³/min	Max. m-m³/min	Casing Type	Weight kg
① 32GF21.5-MS-Ex	2 (1.5)	1 1/4"(32)	3	DOL	23-0.06	26-0.15	V	38
② 32GF21.5H-MS-Ex	2 (1.5)	1 1/4"(32)	3	DOL	26-0.06	30-0.14	V	38
③ 32GF22.2-MS-Ex	3 (2.2)	1 1/4"(32)	3	DOL	29-0.06	32-0.165	V	41
④ 50GF22.2-MS-Ex	3 (2.2)	2" (50)	3	DOL	20-0.2	25-0.33	H	55
⑤ 50GF23.7-MS-Ex	5 (3.7)	2" (50)	3	DOL	27-0.2	31.5-0.33	H	56

※ Excludes Cable & Elbow Weight.

※ Casing type : V stands for Vertical and H for Horizontal.



PRODUCT FEATURES



① Explosion-Proof Cable Base

The sealed explosion-proof base prevents the thread from damaging during transportation with a cable fixer.

The cable fixer can be replaced with an IECEx/ATEX-certified metal Cable Gland to protect the cable from physical and mechanical stresses and prevent water intrusion into the motor.



② Motor Thermal Sensor (MTS)

MTS is a bimetal strip sensor embedded in each phase of the stator winding to sense motor from overheating and cause of electrical motor failure. MTS must be connected to control panel.



③ Moisture Sensor (MS)

MS is Electrode sensor installed in the Mechanical seal chamber to detect water entering cause seals failure, and to prevent water penetrates motor to cause of electrical motor failure. MS must be connected to control panel.



④ Double Mechanical Seals

Superior abrasion resistant mechanical seal is manufactured with silicon carbide to ensure the best seal effect.



Professionalism • Innovation • Service • Commitment
HCP PUMP MANUFACTURER CO., LTD.
www.hcppump.com

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DEXEN5-2411



YouTube



Selection
system



Catalog