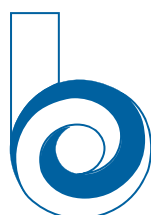


EASY | COST-EFFECTIVE | RELIABLE



battlemax

HEAVY DUTY SLURRY SOLUTIONS

GRAVEL PUMPS

Design Considerations

BATTLEMAX Gravel pumps are designed for long life, efficient operation and ease of maintenance.

Gravel pumps have high-chrome wet ends with expeller or stuffing box seal arrangements.

APPLICATION FEATURES

Bearing assembly and shaft

- The shaft is designed with a short overhang to:
 - Reduce shaft deflection
 - Minimise vibration
- Provided with hardened shaft sleeve to protect the shaft
- Bearing assembly is retained on a one piece frame
- Grease-purged piston rings to help seal contaminants out of bearing housing

Impeller

- Enclosed impellers to maximise efficiency
- Pump-out vanes on both shrouds
 - Minimises re-circulation
 - Reduces stuffing box pressure
- High chrome liquid ends
- Interchangeable hard metal impellers
- Impeller clearance is set by moving the bearing assembly
- High efficiency impeller optional

Single casing with assembly clamps

- Easy assembly and disassembly of liquid end
- Clamp design facilitates rotation of volute
- Large volute reduces friction and wear
- Minimal parts + simple design

Centrifugal seal option

- Reduces or eliminates need for gland service water
- Reduces sleeve wear and possible bearing contamination

An optional heavy duty bearing assembly is available for Battlemax Pumps for applications where additional power or bearing loading is required.

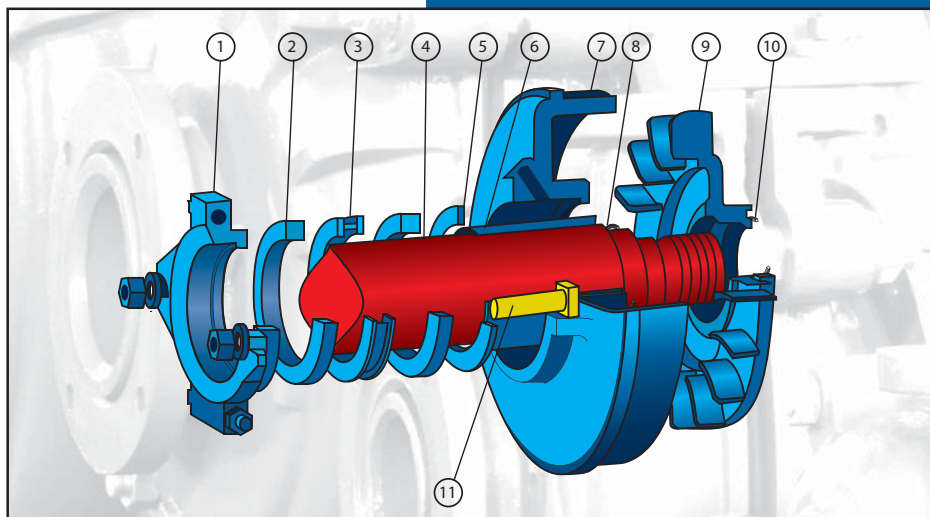
STD. BEARING ASSy		HD. BEARING ASSy	
Size	kW Max	Size	kW Max
C	30	CC	55
D	60	DD	110
E	120	EE	225
F	260	FF	425

Construction and Materials options

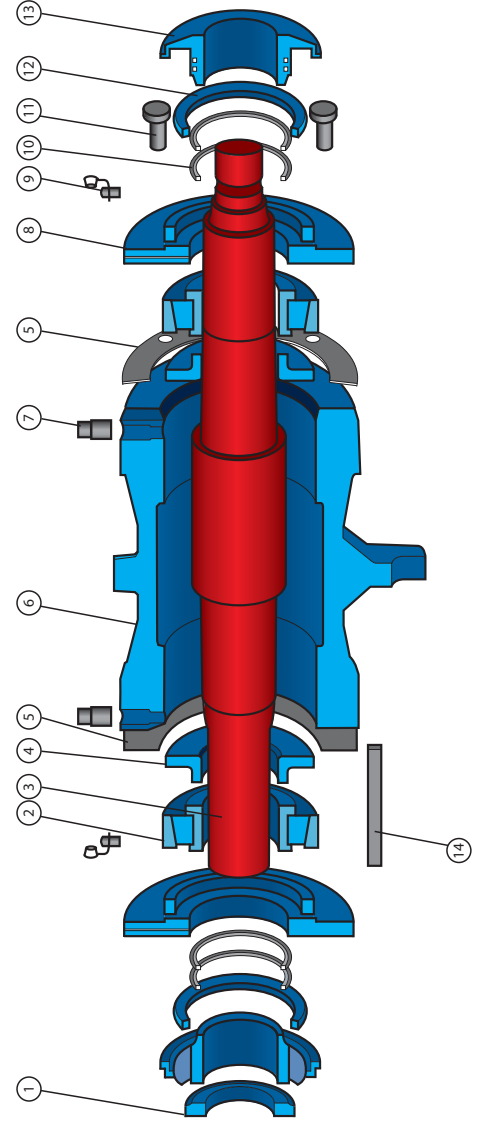
	STANDARD	OPTIONAL
LINERS	High chrome	Ultra chrome
IMPELLERS	High chrome Natural rubber	Ultra chrome, special pH alloy urethane, ceramic
GLAND	Stainless Steel	
SHAFT SEAL	Packed gland stuffing box or expeller seal	Mechanical seal

EXPELLER SEAL ARRANGEMENT

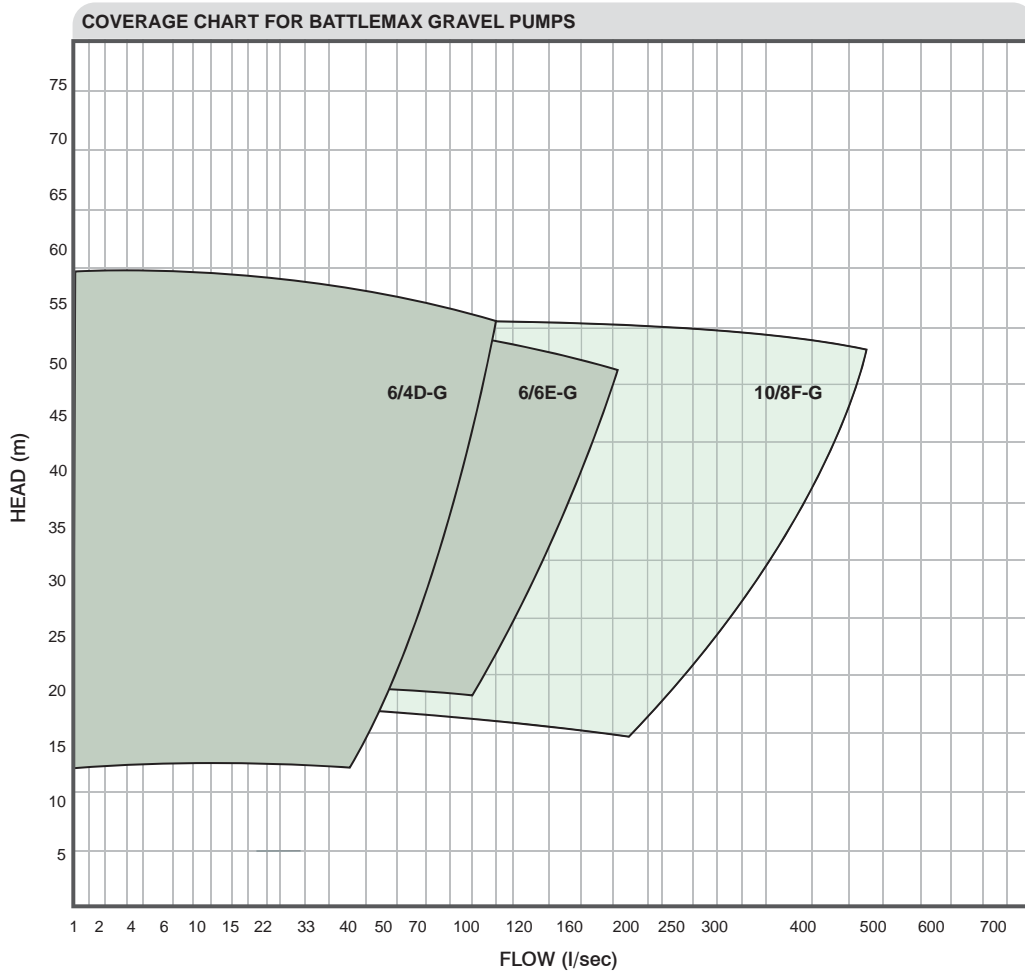
- GLAND ASSEMBLY (44)
- PACKING (11)
- LANTERN RING (63)
- SHAFT (73)
- NECK RING (67)
- SHAFT SLEEVE (75)
- EXPELLER RING (29)
- SHAFT O-RING (109)
- EXPELLER (28)
- IMPELLER O-RING (64)
- GLAND BOLT (45)



Exploded view Gravel Pump



- 1 LABYRINTH LOCKNUT (61)
- 2 BEARING - DRIVE END (09)
- 3 SHAFT (73)
- 4 GREASE RETAINER
- 5 SHIM SET (25)
- 6 BEARING HOUSING (04)
- 7 PLUG (-)
- 8 END COVER (24)
- 9 GREASE NIPPLE (-)
- 10 PISTON RING (08)
- 11 END COVER SET SCREW (27)
- 12 BEARING SEAL (89)
- 13 LABYRINTH PUMP END (62)
- 14 SHAFT KEY (70)



For conventional packed stuffing box and lantern restrictor construction, gland service water must be provided at a minimum of 1 BAR above discharge pressure to ensure positive flow.

Where suction conditions allow, the Battlemax expeller seal can eliminate the need to supply water to the stuffing box. Where high suction pressures or series pumping is required other methods of sealing must be utilised.

Expeller and expeller ring are constructed of Hi-Chrome material. Shaft sleeve material is 14% chrome hardened to protect the shaft from wear.

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