Enriching Lives

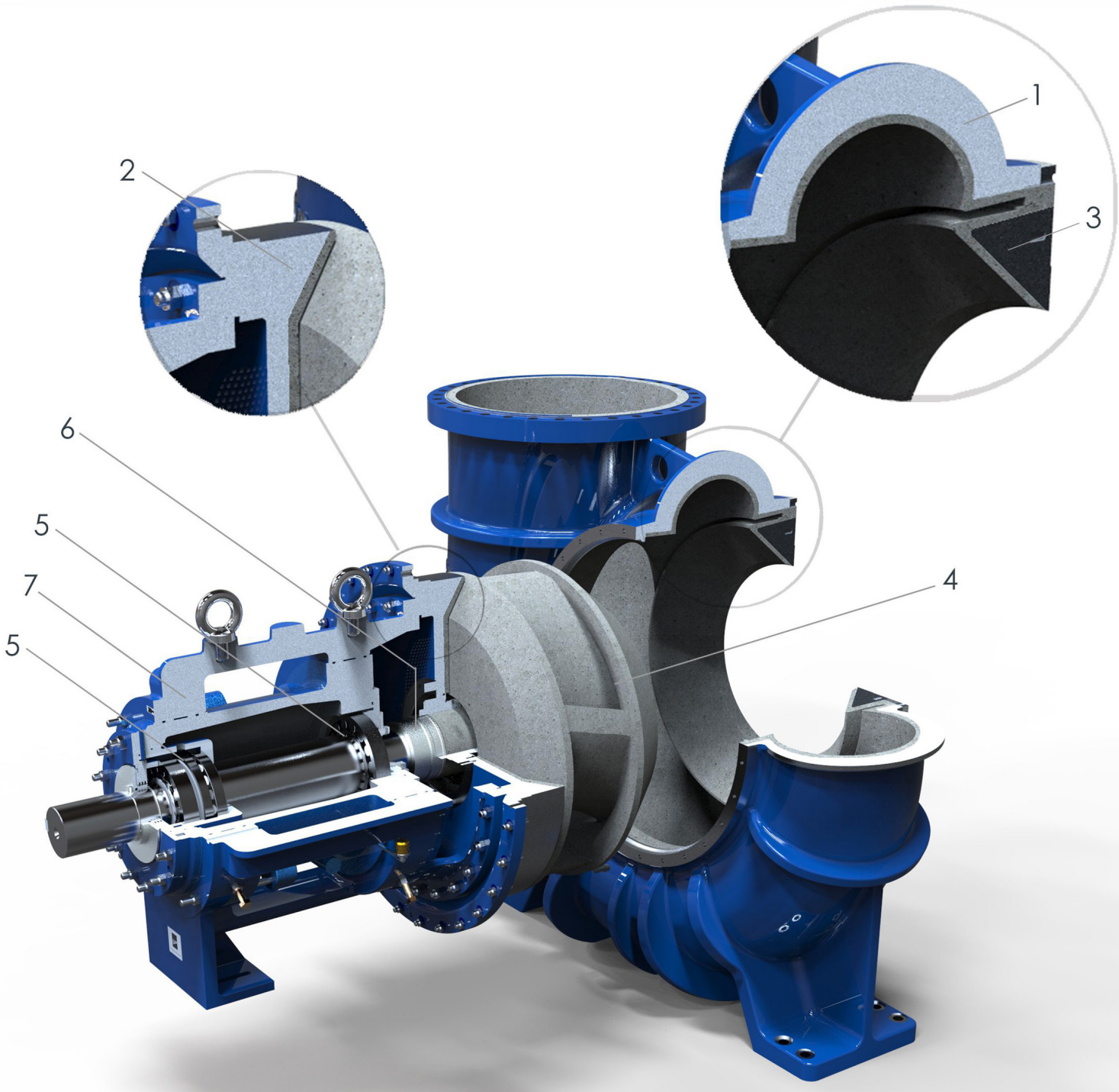
Flue Gas Desulphurisation GFP Series End Suction Slurry Pump

Flue Gas Desulphurisation (FGD) is a set of technologies used to remove Sulphur Dioxide (SO_2) from the exhaust flue gases of fossil-fuel power plants and from the emissions of other Sulphur Oxide emitting processes.

The Kirloskar end suction slurry pump range is one of the world's most comprehensive range of centrifugal slurry pumps used in power plant applications.

KIRLOSKAR BROTHERS LIMITED
Established 1888
A Kirloskar Group Company

Cut sectional view of the GFP pump:



Major components:

1. Volute Casing (Silicon Carbide layer)
2. Casing Cover (Silicon Carbide layer)
3. Suction Wear Plate (Silicon Carbide)
4. Impeller (Silicon Carbide)
5. Bearings
6. Seal
7. Bearing Housing

MATERIAL OF CONSTRUCTION:

FGD process demands high resistance to corrosion and abrasion. This is achieved by using Silicon Carbide with suitable epoxy resins to create extremely durable material for wetted parts of the pumps.

STANDARD SCOPE;

- DELIVERY CASING/CASING COVER: CAST STEEL ASTM A 216/216M WCB + SiC COATING,
- IMPELLER/ SUCTION WEAR PLATE: SILICON CARBIDE+EPOXY RESIN
- SHAFT: ASTM A 276 TYPE 431 ANNEALED, DUPLEX SS, SUPER DUPLEX SS
- SEAL: SINGLE MECHANICAL SEAL WITH SiC-SiC FACES

* IMPELLER AND WEAR PLATE IS ALSO AVAILABLE IN HARDENED DUPLEX STAINLESS STEEL ON REQUEST

CONSTRUCTIONAL FEATURES:

KBL Gypsum Slurry Flue Gas Desulphurisation Pumps (GFP) is a range of centrifugal, horizontal end suction, single volute type pumps. These pumps are supplied for aggressive liquid like gypsum slurry.

Back pull out assembly is accessible for inspection or maintenance by removing spacer from Coupling without disturbing suction and delivery piping and motor.

- Higher grade Silicon Carbide material to avoid wear down in hydraulic portion
- High reliability
- Heavy duty bearings for aggressive slurry application
- Good suction performance
- Telescopic arrangement for movement of unit towards suction due to wear/tear
- Low NPSHR requirement
- Special mechanical seal with higher grade material for slurry application
- Stable characteristics
- Minimum maintenance required
- High hydraulic and overall efficiency

Pump Casing:
The Casing is of radially split volute type end suction design with suction, discharge flanges and the mounting feet cast is integral. Back pull out assembly is removable without disturbing the suction or discharge piping and motor by using spacer coupling. Casing is coated with Silicon Carbide composite material inside hydraulic portion to avoid wear & tear.

Impeller:
Silicon Carbide impeller is of the enclosed type and is statically and hydraulically balanced. The impeller is keyed to the Shaft and positioned axially by the Shaft Sleeve and the Impeller Nut. High efficiency impellers designed for long life and low operating costs.

Shaft:
The Shaft is robust and designed to operate under heavy loads with minimal shaft deflection under the Mechanical Seal. Pump has a rigid shaft with a short overhang, a large diameter and improved reliability of Mechanical Seals.

Shaft Sleeve:
Shaft sleeve is provided under the Mechanical Seal to protect the Shaft against wear marks.

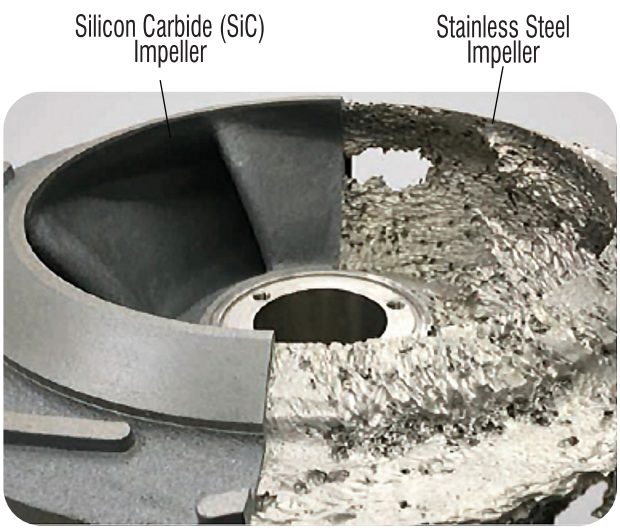
Casing Cover:
Separable Casing Cover which can accommodate either the Gland Packing or the Mechanical Seal has been provided.

Bearings:
Large robust oil lubricated Bearings that can carry higher radial and axial load.
Non Driving End - 1. Cylindrical Roller Bearing
Driving End - 1. Cylindrical Roller Bearing
2. Spherical Roller Thrust Bearing

Bearing Housing:
Rigid Bearing Housings with telescopic arrangement is bolted to the Casing Cover.

Direction of Rotation:
Standard: Clockwise (CW) viewed from the driving end.

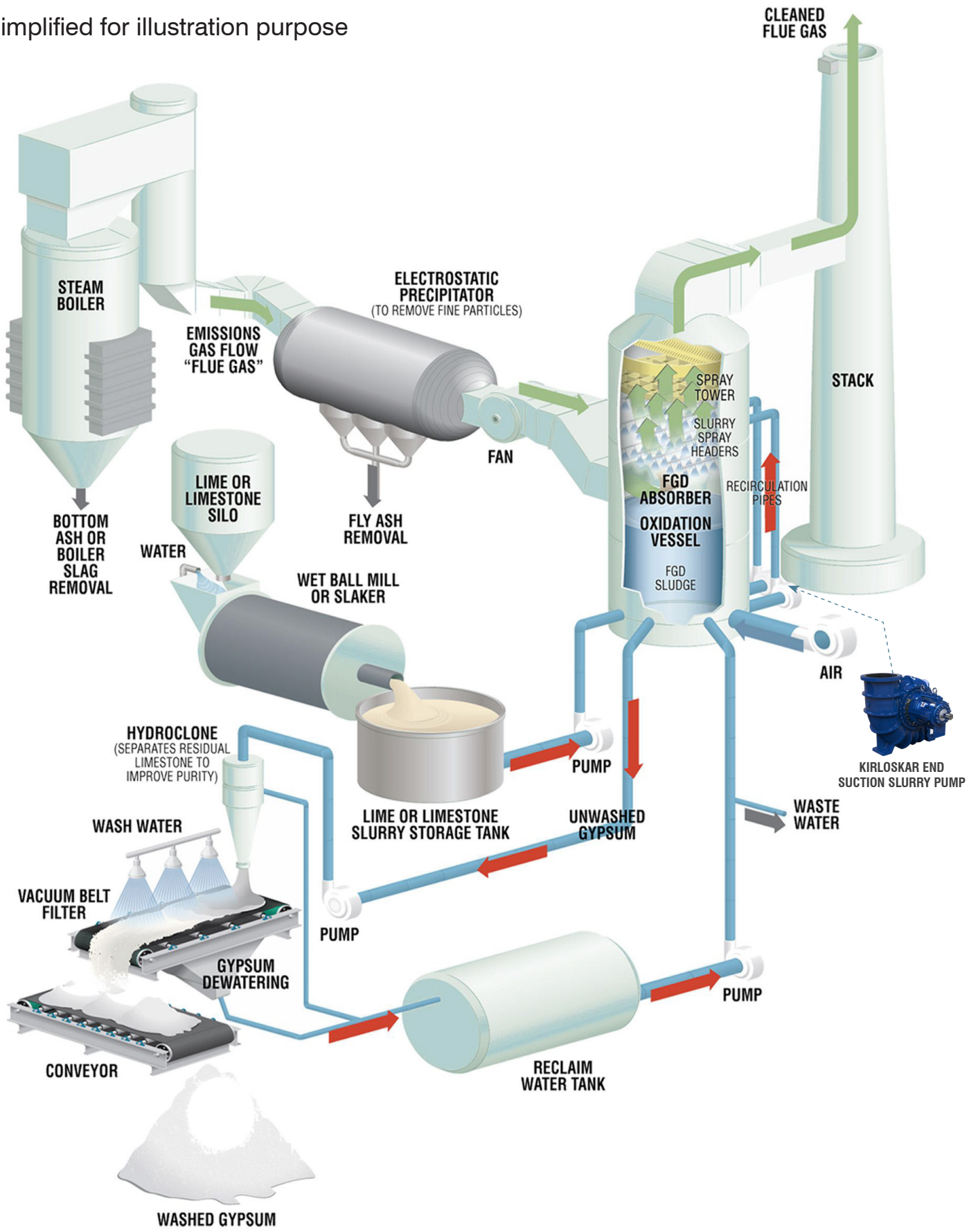
Advantages of Silicon Carbide coating and SiC Impeller:
High wear resistance due to high proportion of Silicon Carbide
High chemical resistance pH 0-14
High abrasion resistance
High corrosion and erosion resistance
Impeller has a longer life than the one made up of Duplex stainless steel
Low maintenance cost



Comparison of pump parts made of Stainless Steel and Silicon Carbide material under identical operating condition.

Flue Gas Desulphurisation (FGD) Gypsum Process

Simplified for illustration purpose



Performance Range:

Delivery Size: 600 to 1200 mm
Head Range: Up to 30 m
Flow Range: 4000 to 20000 m^3/hr
Speed: 300 to 600 rpm

Note - For replacement cases, the fitment dimension on the baseplate and nozzles can be maintained as per the site conditions.

NOTES

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