

CASE STUDY REF: 011

REPLACEMENT OF CONVENTIONAL DOME VALVE BY JASH SCHUTTE SWING GATE VALVE, MODEL KU-HP+PAM FOR FLY ASH CONVEYING



Project Details

Customer	Bhilai Steel Plant
Project	Bhilai Steel Plant
Location	Bhilai, Chhattisgarh
Product	Swing Gate Valve
Model	KU-HP+PAM
Series	C-303
Size	DN250
Application	ESP Ash Conveying

Material Parameters

Opr. Temp	150°C
Opr. Press	2.5 Bar
Material Comp	Ash
Particle Sizing	Maximum up to 5 Microns



Background:

Bhilai Steel Plant (BSP), a major producer of steel in India, was observing problems in their fly ash conveying system due to operational issues in conventional Dome valves used in ash discharge of ESP hopper. We were approached with the following observations related to the dome valve as installed in the ash conveying system.

- Frequent wearing and replacement of dome seal.
- Heavy ash leakages from dome edges.
- Frequent replacement of dome.
- Replacement of complete dome valve in 1 year.

Solution Provided:

Jash Schutte with its approach of application-based valve solution introduced its Swing gate valve, model KU-HP+PAM, Series C303. This design has various advantageous over conventional dome valves such as:

- No material movement across inflatable seal during valve closure or opening, so nominal seal wear over a high cycle of operations.
- No leakages to the environment due to its glandless design, so cleaner plant environment.
- No jamming due to the absence of horizontal dead surface inside the valve, so higher operational reliability.
- Fast and powerful closing action, etc.

However, on account of the big difference in pricing, our offered valve was not found attractive for this application. Ultimately, increased maintenance costs have pushed them to consider this alternative.

Application trials at Customer's end:

BSP proposed to try out our Swing gate valve, model KU-HP+PAM on a trial basis so that they can compare the performance of our swing gate valve with dome valve installed side by side. We were asked to supply the valve under strict contractual implications and stringent warranty norms. To undertake this obligation for one valve installed at a public sector company located over 600 kms away from our location was a challenge. However, based on the success this valve design had in similar applications worldwide gave us confidence to accept this proposal.

The best alternative for Dome Valves in Pneumatic Conveying!

Initially, one number swing gate valve was installed and several field trials were taken by BSP. After continuous monitoring of the installed valve at this location BSP decided to install one more Swing gate valve in order to replace another existing dome valve. Our KU-PAM valves with **Pressure Airmatic Seals** are performing trouble-free and works with minimal maintenance and parts replacement thereby recovering the additional investment of higher capital cost in this application.

With outstanding functional performance, this valve has given industry a ray of hope as an potential alternative for existing dome valves which is majorly ruled by few OEM's and they take the customer for granted by governing the prices of spares by their own will.

Many customers such as Bajaj Energy Limited, Adani Power, Wonder cement limited, Ultratech Cements Limited, JSW Energy Limited, JSW Steel Limited, Arya Iron and Steel, HIRA Group are considering our KU-PAM valve as an alternative for the conventional dome valves due to –

- Higher replacement time frame (Once in three years).
- Longer seal life
- Lower maintenance.
- Leak free operations.

We are working in close loop with our customers to suggest best possible modifications and are very sure to increase our footprints for this application in the next two years.

Installation Photographs



KU-PAM DN250
Installed at M/s Bhilai Steel Plant



KU-PAM DN250
Integrated for ESP fly ash conveying system

JASH ENGINEERING LTD,

31, Sector-C, Industrial Area, Sanwer Road, Indore-452015 (MP), India
 Phone : +91 (731) 2720143, 2721143,
 Email : info@jashindia.com, prashant@jashindia.com
 Website : www.jashindia.com

SUBSIDIARIES:

Rodney Hunt INC, **USA**.
 Mahr Maschinenbau Ges.m.b.H, **AUSTRIA**
 Engineering & Manufacturing Jash Ltd, **HONG KONG**
 Shivpad Engineers Pvt Ltd, **INDIA**