Impressing globally with Swiss performance.

That’s the Wey.
Editorial

SISTAG AG NEWS
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Address of the editorial office:

SISTAG AG
Alte Kantonsstrasse 7
CH-6274 Eschenbach
Switzerland
Phone +41 41 449 9944

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Dear Customers and Partners

Wey – winning people over worldwide!

What a lot of things we are confronted with every year. The strong Swiss franc continues to make itself felt, markets are drying up as a result of war and power struggles, which in turn are creating wave after wave of refugees, and, among many other things, voices promoting marginalization and protectionism are becoming louder and louder. All of these things can have a paralyzing effect on business.

In contrast, as a traditional, family-run Swiss company, we want to continue to impress on a global scale. We produce all DIN/ISO-certified Wey products in-house at our main headquarters in Eschenbach near Lucerne. We are also proud to be able to offer you – our valued customers – support on a daily basis and products from Wey. For this, we are truly thankful!

Our name and the Swiss cross are always on show, and you can take my word for it when I say that if you see the Wey name, then you can be sure it’s a Wey product! You won’t find our name on any products of neutral origin that come from far-flung production sources. However, as you can see from the articles in Wey News, we are also active outside Switzerland too. We have a very international focus, which is no surprise when you consider that over two-thirds of our customers are located all over the world. All of these reference projects are spread out over a wide range of applications where Wey products are used. In addition to the off-the-peg solutions listed in our catalog, we are also there to offer tailored solutions for all sorts of applications based on our over 50 years of experience in valve technology.
Wey is a firm believer in cooperation and dialog, and not in isolation. This will allow us to continue to grow, as demonstrated by the cooperation with our US subsidiary for the gold mining project in Turkey. While the Wey valves “Made in the USA” (much to the delight of the new President, no doubt) meet ANSI standards, these are also based on Swiss engineering. They are used predominantly in mining applications (ore mines, oil sand, etc.) and can be ordered from all of our companies and partners.

Come take a closer look at the articles in Wey News – there’s no “fake news” here, I assure you!

That’s the Wey and see you soon!

Kind regards,

Hans-Jörg Sidler
Various renovation and expansion projects are planned in the Wankdorf-Aare reservoir (KWA) in Bern, Switzerland in the coming years. To carry out these projects, the KWA tunnels have to be periodically drained section by section. While there is the possibility of directing the wastewater to the treatment plant via alternative channels, these have a smaller hydraulic capacity. This means that rerouting the water can only be carried out in the winter months when there is a lower risk of heavy rainfall. The wastewater is diverted using Wey penstocks, which have already been installed at seven existing construction sites. In order to ensure an efficient changeover between normal operation and rerouting the wastewater, the majority of these penstocks are controlled from above ground using a portable electric actuator.

We were able to design, build and install these standard and special solutions in the various construction sites within a short space of time.

Customized technical solutions and demanding assembly conditions are a real challenge for us. Carrying out these projects professionally and on schedule is what motivates us and drives us on every single day.

Wey sluice gate 3.4 with manual gearbox, flow passage 1,800 mm / water column 10,000 mm. The sluice gate was designed in two parts so that it could pass through the existing shaft entrance, which measures 1,000 × 1,000 mm. Assembly and final installation were carried out in the shaft itself.
BASF’s Savannah Georgia, USA, facility processes kaolin which is Georgia red clay. Kaolin in its non-degritted form is highly abrasive as it still contains sand and silica. Kaolin is an additive to many products including: Paint, pigments, toothpaste, ceramics and porcelains, cosmetics, adhesives, etc.

BASF posed a challenge to Wey Valve Inc. and its local distributor, Advanced Valve & Instrument (AVI) roughly ten years ago to find a replacement for their Y-pattern switching valves. The existing valves were manual gate style and operators had to beat the valve gates with sledge hammers to change the position. To make matters more difficult, the existing piping and valve were 5" which is an odd size.

Wey Valve Inc. offered an automated version of their 5" MF series valve. Wey Valve Inc. quickly proved their value to BASF. As such BASF has found multiple new applications for our valves and have partnered with Wey Valve Inc. and AVI to look for new and creative ways to solve their valve application issues.

For example, on the bottom of their tanks, BASF previously used diaphragm valves or ball valves. The diaphragm valves had a limited life due to abrasion of the diaphragm. The ball valves proved to be problematic as the kaolin solids would become entrapped under the ball leading to valve seizures. As you can see in the attached pictures, all of the tank drain valves at BASF Savannah today are Wey VL or Wey VS series. (See pictures 1 and 2).

On their main process lines, BASF was able to automate their hopper system. The hoppers contain kaolin in a pure powder form. This 100% solids application was the plant’s problem child and was costing the local plant production time. Wey Valve Inc. replaced a manual a competitor’s manual 12" knife gate, where
plant operators were having to beat the
gates of the valves so as to obtain clo-
sure. Additional problems created by this
design were that downstream velocity
often caused the piping to erode since
the valves were rarely fully closed.

To lengthen the life of these valves, Wey
Valve Inc. suggested automating our VS
series valves. At first BASF was skeptical
that an automated valve would be able
to close against a static column. The VS
series worked extremely well and BASF
replaced all eight of the competitor’s
valves. We just recently began upgrading
to the W0 series (picture 3) to add even
more longevity.

The partnership between Wey Valve Inc.
and BASF has grown steadily the past
ten years and continues to offer new op-
portunities for Wey Valve Inc.
Let’s take a trip and try to find out why the number 175,000 is so important for one of our most long-standing customers. This customer is part of the world’s third-largest food company (which has over 110,000 employees) and is located on an “Emerald Isle” that has 1,200 sheep for every 1,000 inhabitants – and is also located 1,200 kilometers north of Porto.

When taking a look inside this production company, it becomes clear that everything revolves around cocoa beans. This raw material comes from all over the world and is delivered here by sea. In the factory, the beans are cleaned, broken and eventually turned into chocolate of the highest quality. However, before arriving at the final product, Wey knife gate valves come into play – as they have done reliably at one-minute intervals for over 25 years. The knife gate valves have thus proven a real success story here.

The customer first came into contact with our products about 30 years ago when used in combination with a sugar hopper. Their positive experiences here meant that the Wey knife gate valves were also considered when it came to refining the cocoa nibs – an intermediate product seen in chocolate manufacturing. Back then, the first tests were carried out with a Wey SLC knife gate valve. The major challenges during the process were – and still are – the problem of sporadic adhesion of the medium to the valve, the necessary process vacuum, the large number of cycles and the associated process stability (more of which later).
After they are delivered to the customer, the cocoa beans are cleaned, thermally pretreated, roasted, broken and shelled. The cocoa nibs contain unwanted odors and flavors that are eliminated during the conching phase at the end of the manufacturing process. As these undesirable substances can be eliminated easier from the solid cocoa nibs than from the cocoa mass – where the substances are encased by the cocoa butter – attempts have already been made towards refining the nibs. In this way, the time required for the energy-intensive conching phase can be reduced. Refinement is made in a special dryer (pressure reactor), where Wey MFC knife gate valves are currently used successfully as inlet, outlet and insulating valves.
The Wey knife gate valves used in the pressure reactor are designed for a rated pressure of PN 6, whereby the customer expects complete leak tightness at a constant pressure of around 250 mbar and a temperature of 82 degrees Celsius. As the drying process in the reactor progresses, the homogeneous mass turns from a paste-like consistency to a dry, crumbly, granulated product known as chocolate crumbs, which are then used as a base product in chocolate production. This production step requires strict adherence to the correct temperature and vacuum, meaning leak tightness is of the utmost importance. For this reason, the inner dimensions of the housing were adapted and increased so that the medium does not stick anywhere – something which can result in leaks. The valve plate made from 1.4034 RC51 stainless steel is tempered and powder-coated, which thus ensures the expected durability and smooth running. Furthermore, the valves also have an inlet cone for centering the flow of the sticky, moist medium. In order to reliably maintain the required vacuum, the rear of the cone is equipped with an additional FPM round section seal and the valve is equipped with a double transverse seal. The neck area of the valve comes with a Teflon lining, which minimizes the space between the plate and housing and thus prevents the build-up of any deposits. This plays a decisive role in preventing possible jamming and also enhances the smooth running of the valve.
Time is money, as they say, which means the valves should remain in operation and run smoothly for as long as possible. From experience and as part of preventive maintenance, the customer replaces each valve after 12 months in operation. Just 12 months, you may think? No, there’s no mistake – after all, the valves make a complete stroke every three minutes, or 175,000 strokes per year. And there we have it – the number that makes both our customer very happy and SISTAG no less proud. In order for this to remain so in future, we are in close contact with the customer as to which further improvements can be made. After all, we want to learn from history but be open to innovation.
SISTAG AG has received two major orders that will benefit the plants in Eschenbach, Switzerland and Shannon, USA. The contracts were signed just before Christmas and will be delivered in mid-2017.

**411 WEY KNIFE GATE VALVES ORDERED IN TOTAL**

A total of 319 W0 and HD valves were ordered by the Turkish/Canadian company Anagold/Alacer Gold. These valves will be used in the Çöpler Sulfide Expansion Project in Erzincan Province, Turkey – above all in the tailings at an operating pressure of 80 bar, while others will be used in the autoclave circuit at 220 degrees Celsius. These are two extremely challenging applications for our valves, and ones where high-quality products from Wey offer a considerable advantage. This order is another important milestone in making the Wey brand name and its renowned reliability more well known in the mining industry. “We are delighted to have received the biggest single order at SISTAG AG to date and are convinced that our excellent teamwork will enable us to complete this project successfully,” explains Marketing and Sales Manager Simon Eggerschwiler. The Wey W0 valves will be manufactured at our subsidiary in Shannon, USA and the Wey HD valves in Eschenbach, Switzerland.

A further 92 MG valves were ordered by a consortium led by NPO Passat from Soligorsk/Minsk on behalf of the end user Belaruskali – one of the world’s largest producers of potash and potash fertilizers. This order came about as a result of the successful project handling by our
subsidiary SISTAG GmbH in Muggensturm, Germany under the leadership of Thomas Mücke and Andreas Hauns. Thanks to our outstanding expertise and the positive experiences seen when using Wey products during the potash manufacturing process, we were able to convince the customer that Wey products were the right choice for their project.
At a construction site in Hammer – situated approximately 1 km from the Schönau wastewater treatment plant in Cham – the two collectors Städtlerstollen and Chamerstollen are combined to form one main sewer. Every day, around 50 million liters of wastewater flows to the wastewater treatment plant from the 75 km long sewer network, which is used by over 145,000 inhabitants. The sewage network at the GVRZ includes the entire canton of Zug, plus other municipalities in the cantons of Schwyz and Lucerne.

In order to also keep the wastewater volumes constant in rainy weather, the penstocks in the Städtlerstollen and Chamerstollen can be regulated via a level control and are monitored using the central management system in the control room at the treatment plant. Both “Stollen” (tunnels) are 2.5 meters wide and 3 meters high. As part of a renovation project, the Wey 5.3 gates – which were over 30 years old – were replaced by two new 3.3 gates. This replacement was made in two stages and required meticulous planning. In the individual tunnels, a complex de-watering process was initiated, the water recirculated, the old gate removed, the new two-piece gate assembled and installed, and the tunnel flooded again. The gates were back in operation just two and a half days after starting the work.

Hammer construction site
Technical data for the penstocks and control valves:

**STÄDTLERSTOLLEN**
Model: Wey sluice gate 3.3  
Clear span: 2,500 mm  
Plate height: 2,300 mm  
Stroke: 2,300 mm  
Actuator double stem with  
Auma SAR and Matic AM01.1

**CHAMERSTOLLEN**
Model: Wey sluice gate 3.3  
Clear span: 2,500 mm  
Plate height: 1,700 mm  
Stroke: 900 mm  
Actuator double stem with  
Auma SAR and Matic AM01.1
Wey knife gate valves have been used around the world for decades. They guarantee absolute leak tightness in both flow directions and are thus suited to media flows of all types and consistencies. Among other applications, they have thus been used in wastewater treatment facilities across the globe for quite some time now. In the fall of 2016, the building owner at the wastewater treatment plant in Leinburg (Germany) made the decision to use Wey valves in future.

**HIGH-PERFORMANCE WASTEWATER TREATMENT PLANT**

Leinburg is located around 20 km east of Nuremberg in the south of Germany. The average daily intake of wastewater in the treatment plant comes to around 2,000 cbm – polluted with household contamination, hazardous materials from trade and industry, plus dirt and debris washed from public roads. In terms of individuals, the plant is designed for the 6,600 people living in Leinburg. Including industry – with Leinburg home to a thriving automotive supplier industry in particular – the total treatment capacity corresponds to the equivalent of a population of 14,000. Around 99% of the sewage from the 11 municipality areas flows into the public sewage system. The cleaning performance comes to 97% of the degradable materials.
COMPREHENSIVE WASTEWATER TREATMENT

The wastewater is treated according to the latest standards. The process starts with mechanical treatment, where paper is removed in the control center before sand and other coarse substances are deposited and then separated as sludge, for example. During the subsequent biological treatment, organic compounds, nitrogen compounds and phosphorous are broken down by microorganisms and the resulting activated sludge is separated. In the final treatment stage, chemical reactions such as oxidation and precipitation are carried out without using microorganisms. Now separated from the residual sludge, the treated water is then fed back into the Röthenbach, which in turn flows into the Pegnitz. The water discharge is measured using an inductive flow meter.

WEY VALVES DURING THE TREATMENT PROCESS

So, where do the Wey valves come into play during this complex treatment process? Worthy of particular mention here is the regulation of the wastewater flows by Wey valves in the control center during mechanical treatment. Wey valves are also used to efficiently regulate the wastewater flows in the pumping station for recirculated sludge following biological and chemical treatment. Using the Wey valves, the flow volumes can be controlled and monitored by the two specialists at the wastewater treatment plant.
During maintenance work, the Wey valves in the individual application sectors are fully closed. Thanks to the “A” leakage rate – meaning 100% leak tightness – the staff can then clean the pipelines in question efficiently and without any interruptions.

**SIMPLE MAINTENANCE AND COST-EFFECTIVE REPAIRS**

Why did the Leinburg municipality choose Wey products in the fall of 2016? Roland Elsner from the Leinburg wastewater treatment plant comments as follows: “As far as I’m aware, the simple maintenance and cost-effective repairs together with the services on offer were the clincher. During the procurement phase, it also became clear that the products offered good value for money.” His colleague André Behr adds: “To give you an example, we save ourselves a lot of time as we no longer have to remove a valve when it starts to leak. By tightening the four screws we can reseal or ‘tamp’ the valve quickly and easily.” This product attribute is offered exclusively by Wey and is patented by the company.

To sum up, Wey valves have proven their absolute suitability for such applications when in use, ensure reliable, fault-free operation and also result in lower costs during continuous operation thanks to their optimized sealing system.

*Shaft for magnetic-inductive flow meter*
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Look for us in Hall 3.2, Booth D07.

Swiss trade fair for public enterprises and major companies.