



KLINGER Fluid Control and the Icelandic market

Klinger Fluid Control GmbH, Austria

Energy, heat and wellness in Iceland - KLINGER Fluid Control valves provide quality, fluid control and safety in all application fields.

KLINGER Fluid Control has been a reliable partner to district heating and power plant operators in Iceland for 25 years, providing valves and related services - experience that has allowed the company to build up an extensive network of contacts. Icelanders have been harnessing the island's unique geothermal wells to produce natural energy and heat for a long time. In so doing, they have acquired extensive know-how in planning and building geothermal power and district heating plants.

These power plants produce energy by conveying geothermal heat from boreholes that can be up to four kilometres deep - enough to reach far into the volcanic heart of the Mid-Atlantic Ridge. The temperature and pressure of the steam depends on the drilling depth. The deepest of the 22 boreholes at Nesjavellir is 2.2 kilometres, where the temperature reaches 380 °C. The power harnessing cycles can be split into three parts: accumulating and processing steam from the boreholes; heating cold water; and generating electricity.





worth when operating in this special kind of fluid. That's because the hard silicic shell will be broken and released from the hard-chromed ball by the metallic seal.

KLINGER valves have five times the service life of competitors' valves. Steel is the preferred body material (Material Code VIII) because the aggressive fluid (due to its high salt content) has less impact on low alloyed steel.

However, there is another busi-



KLINGER valve applications begin at the boreholes: KHA-FL and KHA-G ball valves are used as testing ports behind the fully automated main shut-off valve (the so-called wellhead) for analysing gas and measuring pressure and temperature. KHA ball valves are used as drain valves for the main collection pipe from the borehole to the separation station, too. The water required for the condensers and heat exchangers is collected in tanks (where KLINGER reflex gauges are used to determine the water level). In Svartsengi's power plant, KLINGER Ballostar KHSVI stainless steel ball valves (DN 200) are used for the separation pumps (fluid: saltwater). KHI valves (DN 300 - 350) with welding ends are also used for shut-off duties in the power plant's main steam line.

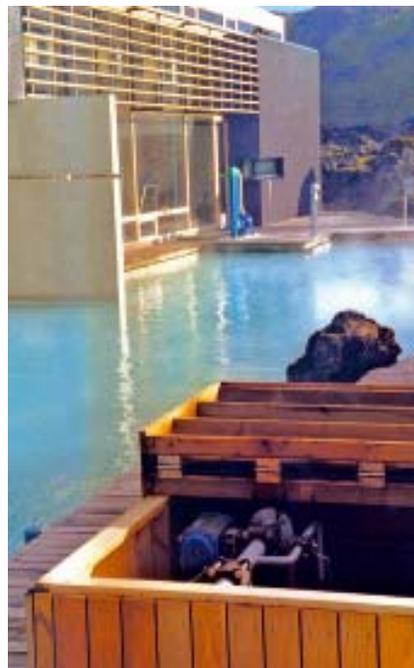
District heating plants also produce heat by conveying geothermal energy

from boreholes. The steam is separated, and hot water is generated in geothermal fluid heat exchangers with a fluid temperature close to 100 °C.

The operators of power generation and district heating plants prefer KLINGER valves. The reason is easy to see: the operating fluid is brine water, comprising 2/3 saltwater and 1/3 freshwater. But the fluid also contains silicon dioxide (silicic) in solution. Beneath around 70 °C it solidifies and produces a kind of shell inside both the pipeline and the valves. So after a short operating time the ball becomes coated with this silicic shell, which destroys all types of soft seal. Our metallic sealing elements, in particular, have proved their

business sector that has discovered the advantages of our valve products: it is the wellness branch, with its famous Blue Lagoon outdoor geothermal spa and brand new Blue Lagoon Medical Center. The water in the lagoon is anything but frosty! The temperature in the outdoor swimming area averages about 40 °C and is regulated using KLINGER Ballostar KHA-SK ball valves. The Blue Lagoon has also discovered the positive wellness aspects of silicon dioxide, which is used in their skin care products. ■

Regulation of the water temperature in the Blue Lagoon Spa: a KHA-SK valve with actuator and a KHA-SK equipped with a hand lever (emergency shut-off) concealed in a wooden box.



KLINGER ball valves in a district heating application.



Technology guarantees air quality

Richard KLINGER Ind. e Com. Ltda., Brazil

When it comes to systems for analysing industrial gases, Yokogawa can count on KLINGER know-how.

These days, environmental protection is a major concern for all companies. In response to strict regulations about the release of pollutants into the atmosphere, several sectors - the oil, paper, chemical and cement industries, for example - are looking at their smoke and fume emissions. The testing procedure requires extremely sensitive analysers. The results are passed to the environmental authorities who then check compliance with the law. Yokogawa, a Japanese test instrument manufacturer with production facilities throughout the world, provides general services to industrial projects and installations. In addition to supplying other test equipment systems for the industrial sector, it also assembles, maintains and supplies the all-important continuous-process analyser. "We take on delivery the gas analysers from Yokogawa Japan. We then develop and manufacture the sample-conditioning systems here", says Reinaldo Morelli de Oliveira of the Department of Applied Analytics at Yokogawa South America. "KLINGER supplies the half-inch pneumatic ball valves that we use".



The Yokogawa Group has factories throughout the world.

He goes on to explain that the computer-controlled analytical equipment is housed in a cabinet with a system of ducts and sensors through which the gas passes before it is tested. "The KLINGER kits are used to block the gas sample at critical points, for example, or in critical applications where it is essential to work under vacuum conditions", says Oliveira. He points out that the company cannot run the risk of using ordinary valves because they can leak. The air would then be drawn in by the vacuum and mix with the analysed gas to 'compromising' the whole result, which has to be exact", Oliveira adds. Since the sampling system was de-

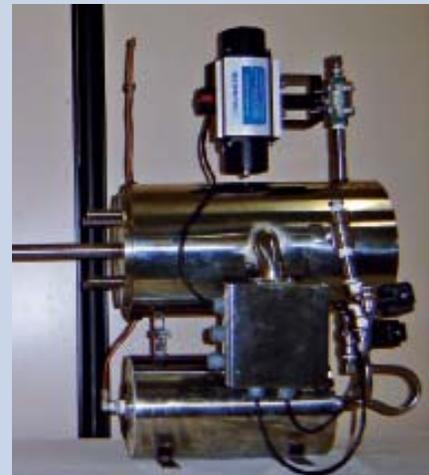
veloped in Brazil four years ago, KLINGER ball valves have become standard equipment. "We can then guarantee that samples will be free from any type of contamination", says Oliveira. "Our analysers are equipment with a high level of added value. So KLINGER valves are perfect. ■



Mr Oliveira of Yokogawa: a precision result with the help of KLINGER.

The Yokogawa gas analyser used for the examination of pollutants.

The KLINGER valves used in the process.





Resistance of KLINGERSIL®-Gaskets to renewable fuels

Rich. KLINGER Dichtungstechnik GmbH & Co. KG, Austria

European Directive 2003/30/EG dated 8 May 2003 for promotion of the use of biofuels or other renewable fuels in the traffic sector not only presents a declaration of intent but is also a firm commitment to the increased use of biofuels.

immersed in the test medium at room temperature. For the first evaluation, commercially available biodiesel was used as the test medium, and the values obtained were then compared to test results in ASTM fuel B under the same conditions.



Article 4, Paragraph 3 states "The member states will examine the effects of the use of biofuels in diesel admixtures of more than 5 % in non-retrofitted vehicles and will if necessary take the required measures in order to assure compliance with the corresponding community regulations concerning emission norms."

As a result, KLINGERSIL® materials have now been tested for resistance to biofuels.

Test parameters

The basis for the evaluation was the change in thickness, weight and tensile strength of the sealing material after 5 hours freely

Conclusions

It is obvious that both testing fluids, biodiesel and fuel B, are not similar with regard to chemical content. However, due to the identical field of application (installation points, etc.), the results on tolerability and changes in properties should at least be similar. A direct comparison shows that the values obtained with fuel B are similar to the biodiesel findings, and thus confirm the material's suitability. ■

The following KLINGERSIL® sealing materials can therefore be recommended as appropriate for use in biodiesel: KLINGERSIL® C-4300, C-4324, C-4400, C-4430, C-6307 und KLINGER® top-sil-ML1.





World novelty - adjustable KGS/VD flange gasket

KLINGER GmbH, Germany

When laying pipes, in particular in the mining industry, and also underground pipes and flanges for connection to building systems, hydrants, etc., the routing is not always sufficiently straight. Misalignment is the result, creating wedge-shaped gaps between bolted components such as flanges.

The usual way to compensate for such misalignment is to insert an adapter between the surfaces that comprises two wedge-shaped metal compensating rings that can be rotated in relation to each other. These are fastened to each other using studs to form a seal. The adapter also comes with a set of separate ring-shaped flange gaskets with essentially parallel sealing faces. The system is not only complicated and expensive, but also difficult to handle and fit, so mistakes can easily occur during assembly.

KLINGER GmbH of Germany has now come up with a gasket for compensating misaligned flanges. It only has two components, which are mated mechanically by means of a snap connection. It promises considerable cost savings and easier assembly, which leads to a higher margin of safety and a faster, more efficient, installation job.

The new flange gasket has two rings. Each is wedge shaped in cross section, with annular mating surfaces that are set at 90° to the ring axis. These surfaces are smooth, and when interlocked can still rotate in relation to each other. Consequently, the flange gasket can be adjusted to any position between the point where the outside surfaces of the flanges are basically parallel to each other so that the pipes are in a straight line (0° splay), and a point where the gaskets and flanges form a mirror image and assume the maximum splay angle (approximately 8°). The correct position can be reached simply by rotating both rings in relation to one another on site. Handling is thus very straightforward. The same goes for manufacture: the rings can be moulded to the required shape from a flexible rubber material, vulcanised, and then mated by making a snap fit between tongue and groove.

To stabilise the separate rings of the adjustable KGS/VD flange gasket against the force of the bolts, they can be reinforced by vulcanising metal washers into their mass. Non-reinforced gaskets are envisaged for normal pressures of pN 10 - 16, with reinforced gaskets operating up to pN 40 pressure. Individual testing of reinforced gaskets has shown that pressure peaks are permissible up to 70 bar. Maximum operating temperatures are naturally dependent on the stability of the elastomers used. A flexible rubber EPDM material is used as standard, but any other suitable material such as fluorelastomers is also possible if the application demands it.

The adjustable KGS/VD flange gasket had its debut at the ISGATEC gasket fair in October of this year in Nuremberg, Germany, in front of a wide professional public. Although interest was huge, it was expressed solely in the form of requests for exclusive marketing rights. Naturally, this was not possible.

Copyright has now been granted, and suitable patents have been applied for.

For further information, please e-mail: Frank.Eisenach@klinger.de. ■





KLINGER at the 49th International Trade Show for Technology and Technical Achievement in Belgrade

KLINGER Fluid Control GmbH/Austria

1100 exhibitors from 45 countries were at the 5-day show, which was staged between 9 - 13 May, 2005. Presenting their products to a wide public were international companies like Böhler, WIKO and Krohne as well as firms like Flowserve and AUMA, which supply actuators for KLINGER valves. The result? - More than 120,000 visitors were able to learn about the latest tools, heating systems, machine tools, electrical installations, drives, measuring equipment - and of course, valves.



Thanks are due to our local marketing representatives for preparing the stand and creating an excellent showcase for KLINGER products.

Our colleague Eduard Kopitsch, who is responsible for sales promotion and marketing support on the technical level, was at our Serbian marketing partners' side with assistance and advice. He also had the honour of accepting a special prize won by the two-part KHE ball valve. Awarding the prize for innovation was an expert jury who described the KLINGER product as 'A step into the future'.

The entire KLINGER Fluid Control product range attracted a lot of interest and we are sure that our local marketing partners will use this opportunity to form excellent relations with new and potential customers.

We are already looking forward to the 50th technology trade show in Belgrade! ■



It's a nice feeling!

KLINGER GmbH, Germany



**Construction model of the plant, courtesy of Triplan AG.
L to R: RHENUS LUB - Wolfgang Weil, Director Strategic Purchasing; Reinhard Zutz, Director Operations; Detlef Riechert, Plant Manager; with the KLINGER Sales Team - Kurt Richenzhagen, Sales Engineer; Jürgen Wössner, Sales.**





Product seminar and market launch of the two-part KLINGER Ballostar KHE ball valve for Overseas trading partners

KLINGER Fluid Control GmbH

The training covered more than just theoretical information like technical specifications, sample applications and sales arguments; participants were also given a chance to gain hands-on experience with our valves and liquid level gauges by assembling and dismantling them in the workshop.

Our overseas trading partners also had an opportunity to have their first look at the new KLINGER Ballostar KHE ball valve. And like the West European sales meeting, a professional presentation covered the three main areas: selling points, technical advantages, and a comparison with the competition.

Naturally, the product launch was supported by comprehensive sales documentation - the so-called Sales Manual which in addition to advertising flyers and

At the end of May, Sales Manager Wolfgang Steinwender invited overseas trading partners to Gumpoldskirchen for the first time in order to attend a three-day product training course. Representatives from Australia, Argentina, Iran, Indonesia, Singapore, South Korea, the United Arab Emirates, Brasil and Thailand took the opportunity to find out more about the KFC product range.

posters, etc. also includes the product catalogue and general product presentation.

As mentioned in the last issue, the design of KHE-CL ball valve meets the requirements of the key ANSI standards and therefore enables KFC to access new industrial markets.



KLINGER Germany has been selected as the key supplier of valves for a new plant that is well-equipped with KLINGER products.

Privately owned company Rhenus Lub is a specialized system supplier of high-tech grease and oil products produced in Mönchengladbach. When it comes to competition, Rhenus Lub has one big advantage: the unique Rhenus Lub Fluid Management Concept - an international service providing lubrication technology back-up for Rhenus customers throughout the world.

Recently, Rhenus Lub has invested EURO 15 million in a brand-new facility based on a concept engineered by Triplan AG. A specialist in plant engineering for the chemical and pharmaceutical industries, Triplan AG was founded in 1967 and offers its customers engineering, technical consulting, qualification and validation services. KLINGER Germany has been

awarded a EURO 400,000 valve contract that covers a wide range of KLINGER and KLINGER-branded products:

- INTEC K224 ball valves for high-temperature services, manufactured by TEG/Germany.
- RK-Chemoball for all medium services, automated by KLINGER/Germany.
- KLINGER piston valves for steam/condensate and thermal oil applications, from KFC/Austria.
- KVn valves for steam control services, with a pneumatic actuator supplied by KLINGER/Denmark.
- INTEC K500 tank bottom ball valves, manufactured by TEG/Germany.
- Manifolds for air-pressure services, manufactured by TEG/Germany.

For further information, please contact Michael Wüllerich, Division Manager Fluid Control, wuellerich@klinger.de



Manifolds for air-pressure services, manufactured by TEG Germany. RK Proball ball valves for general services, from KLINGER Germany.



Commissioning a new large-scale manifold production centre at KLINGER in Austria

KLINGER Fluid Control GmbH, Austria

The new manufacturing centre – supplied by Waldrich Coburg – is one of a kind. Its inauguration on 9 June 2005 was marked by a small but nevertheless successful ceremony attended by the KLINGER management and virtually all staff members, plus the entire Board of Directors under the leadership of Dr. Thomas Klinger-Lohr. Also present for the dramatically staged commissioning event was the Head of the Provincial Government in Lower Austria, Dr. Erwin Pröll.

The eight-station palletising system and the two Waldrich-Coburg machines, each with approximately 130 tools, make up one of the world's most up-to-date manufacturing facilities for large-scale valves. Integrated tool and sub-assembly changing systems as well as tightening and alignment stations mean that the production process is fully automatic. This comes with levels of precision and efficiency that go beyond pure industrial valve production. The portal processing system as well as the portal vertical turning machines have a power rating of 140 kVA and a total weight of 135 tonnes. The foundations for the installation use 2100 tonnes of steel and concrete.

The six-million-Euro investment programme was on time, within budget and professionally managed from the initial planning and concept phase through to realisation of the machine concept and final acceptance. It is a clear sign that KLINGER is intent on securing its position in the marketplace. But construction of the centre also sends out an important signal to other KLINGER companies and the valve manufacturing industry as a whole. Investment in large-scale valves is set to rise over the coming years. ■



Middlesbrough petrochemical industry at Old Trafford

KLINGER Limited, UK

A contingent of England supporters, all Middlesbrough-based engineers from Huntsman, Mitsui, Invista, Weir and Caverna, joined KLINGER's Middlesbrough Branch Manager Kevin Housam and KLINGER UK Managing Director Alan Bates at Old Trafford to see England beat Austria and go through to the World Cup in Germany. ■

stop press....stop press...stop press...stop press...





Ensuring safety in the sugar and alcohol industry

Richard KLINGER Ind. e Com. Ltda., Brazil

One process is fundamental to the production of sugar and alcohol, and that is water vapour generation. Here, it is essential that the boiler functions correctly. There must also be effective monitoring of the high energy levels obtained. Safety, harmonised factory logistics and a smooth production flow will be the result. Edson Gomes adds: "The level gauges are the most important equipment in a boiler. If they do not function properly there can be serious problems, which may go beyond production stoppages and even cause accidents."

Aware of the importance of this equipment, Usina Moreno sought to replace its gauges with more reliable types. To help make the right decision, the company consulted other sugar and alcohol producers. The response was unanimous: "Use KLINGER!"

Usina Moreno uses a reflection level gauge manufactured by KLINGER - the UPR model - which is rated at a maximum 32 kgf/cm² of pressure. So far, this equipment has surpassed all expectations. The company has already ordered three more gauges from the Autoval distributor in Ribeirão Preto (São Paulo). Edson Gomes concludes: "We have achieved excellent results. We are entirely satisfied as far as safety goes, while maintenance work has also been facilitated." ■

Success at Usina Moreno is due to the care that goes into all processes, as well as the standards of quality achieved. At Usina Moreno, quality is monitored in all phases, from the planting of sugarcane right through to the end product. "Each day we obtain over 1,200 analytical results in the laboratory from all stages of production", says General Manager Edson Gomes.

Usina Moreno: International large-scale producer of alcohol and sugar.



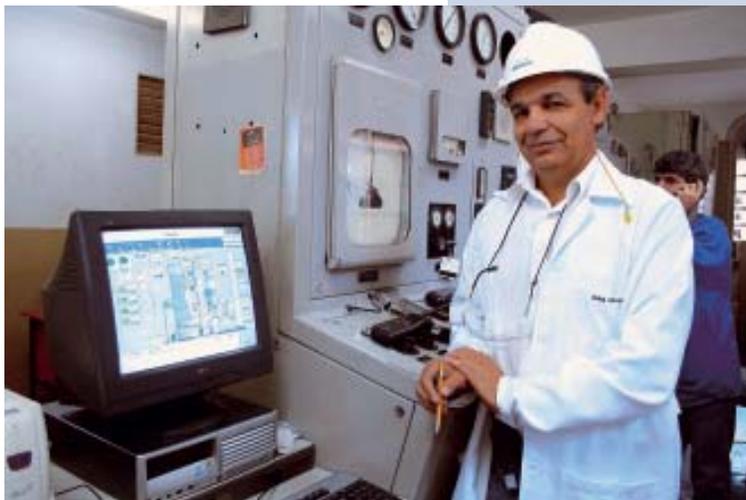
Usina Moreno for alcohol and sugar

Brazil, the world's main manufacturer of alcohol and sugar and its largest producer of sugarcane, is the first country to introduce alcohol on a large scale as a renewable alternative to petrol. Brazil's

sugar and alcohol industry generates a total of more than US\$ 20 billion p.a. - the result of modernisation and the adoption of new technology in sugar mills, leading to significant increases in production capacity. The Usina Moreno mill in the city of Luiz Antônio (São Paulo) is a key company in the sector.

With a harvest lasting all of eight months, Usina

Moreno is a large-scale producer of alcohol and sugar and has important customers throughout the Americas, Europe and Africa. The company also supplies sugar to major companies in various sectors on the domestic market. Usina Moreno also sells alcohol to large fuel distributors throughout Brazil. ■



Edson Gomes in the control room: "In a boiler, level gauges are the most important equipment."





When the customer benefits, we do too

Rich. KLINGER S.A.A.C.I.yF., Argentina

After several years of careful planning and investment, we have now achieved a major objective: on 27 October 2005, the new KLINGER-TECNOFLOW building with its training facilities and reception area for customers and suppliers was inaugurated at our plant at Garín in the Province of Buenos Aires.

ways striving to achieve excellence.

The result? - Customers can count on our support. With the inauguration of the new facilities, KLINGER-TECNOFLOW is reaffirming this commit-



The training room at Garín.

Each year, in order to learn about its business activities, the Argentine-Austrian Chamber of Commerce selects a firm of Austrian origin that is established in Argentina. This year, it was KLINGER-TECNOFLOW's turn to accept the honour, giving us a timely and welcome opportunity to explain the activities of the two companies in Argentina. There could have been no guest more appropriate than Dr. Gudrun Graf, the Austrian Ambassador to Argentina. Together with members of the Argentine-Austrian Chamber of Commerce, she was given a special tour of the plant and



The Austrian Ambassador, Dr. Gudrun Graf, with Alberto Pinter, GM of Klinger-Tecnoflow.

warehouse complex, and saw how KLINGER-TECNOFLOW runs its business in Argentina. At KLINGER-TECNOFLOW, in-house employee training and special courses for customers and product end-users are a priority objective - part of a working philosophy that means we are al-

ment.

Our Goal? - To use these new facilities for one major purpose: namely, to exchange knowledge and information with our customers and so help them identify the product or service that meets their needs exactly. ■



Showcase Buenos Aires

Rich. KLINGER S.A.A.C.I.yF., Argentina

The International Argentina Oil & Gas Exhibition 2005 was held in Buenos Aires between 3 and 7 October at the Costa Salguero Exhibition Centre. KLINGER was among more than 300 firms that showcased their range of products and services for the oil and gas industries in a total of six pavilions. Once again we were able to demonstrate that, when it comes to solving problems in sealing and fluid control, KLINGER is the ideal partner. The International Energy Forum 2005 was staged to



Klinger - a strong partner for all sealing solutions.

coincide with the exhibition and covered a broad range of subjects relating to future energy consumption and environmental protection. With its products and services, KLINGER has certainly a lot to say and offer in this respect. One of the stars of the International Argentina Oil & Gas Exhibition 2005 was KLINGERexpert® - the Software package that has proven to be an indispensable tool for guaranteeing a secure seal. So once again, KLINGER has made its presence felt! ■



A visit to KLINGER in Austria... KLINGER GmbH, Germany

...by members of the Association of Industrial Distribution (VTH) - Technical Group 'Sealing Technology' for the 7th Annual Conference.

On 29 and 30 September 2005, members of the Gasket Technology Technical Group were invited by KLINGER to hold this year's conference at the company's headquarters in Gumpoldskirchen, south of Vienna. As VTH Managing Director Thomas Vierhaus reports, in addition to the usual exchange of experience and opinions, the programme included a visit to the gasket sheeting manufacturer, which can be counted amongst the circle of VTH TOP-Partners.

In the old KLINGER family mansion, members of the Gasket Technology Technical Group were able to sense the presence of the firm's founder Richard Klinger, who in May 1893 set the company up as the Gumpoldskirchener Maschinen-u. Metallwarenfabrik. Inspired by his success, this year's member conference under the chairmanship of Technical Group President Karl-Friedrich Berger of the Berger S2B company, based in Mannheim, developed into an interesting discussion on current market events. He reported, for example, on the new requirements of customers in the automobile and supplier industry: it's called PPAP (Production Part Approval Process), a special procedure for the initial sample acceptance that has been

stipulated for all production and spare parts. It is leading to an unprecedented flood of paperwork. In addition to such developments (which tend to cause a general shaking of heads), confidential exchanges about the suppliers of gasket technology were, of course, also on the agenda.

The current price situation in the different product areas is a particular headache for gasket makers: on the one hand, many suppliers are demanding increases that are very difficult if not impossible to pass on to the market; and on the other, a real drop in price can be observed with some goods. And naturally, the competition is also not sleeping and specialist subsidiaries have started to offer total gasket solutions that are precisely tuned to industry demands.

As so often before, KLINGER has once again surpassed all expectations as the perfect - and at the same time very interesting - host to the technical trade. Starting with an elaborate and well-conceived organisation, moving on to a pleasant and atmospheric evening in a local wine garden, and rounded off by an informative visit to the manufacturing facility and a tour of the new laboratory - all in all, there were many plus points to report. ■



KLINGER Italy as sport sponsor

KLINGER S.p.A., Milan/Italy, places a high value on fostering relationships with customers.

So the directors of KLINGER S.p.A were delighted when they were asked to be joint sponsor of the cycling event organised by Società Global, one of the leading manufacturer of aluminium alloy radiators, on 4 September 2005 in Rogno, in the Province of Bergamo, Italy.

The event was inspired by company owner and founder Ottorino Fardelli to commemorate the untimely death of his son Davide.

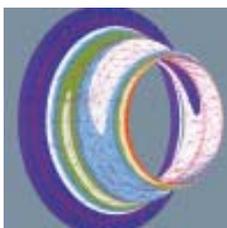
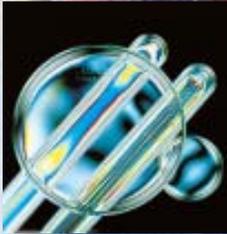
The competition involved a series of time trials in various categories - for both men and women - over a challenging course, and also featured renowned national and international cyclists - including some Italian champions.

KLINGER S.p.A. Managing Director Angelo Molteni handed out some of the prizes to help make the day a resounding success. ■





Connect with Quality



The Global Partner for Global Players

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