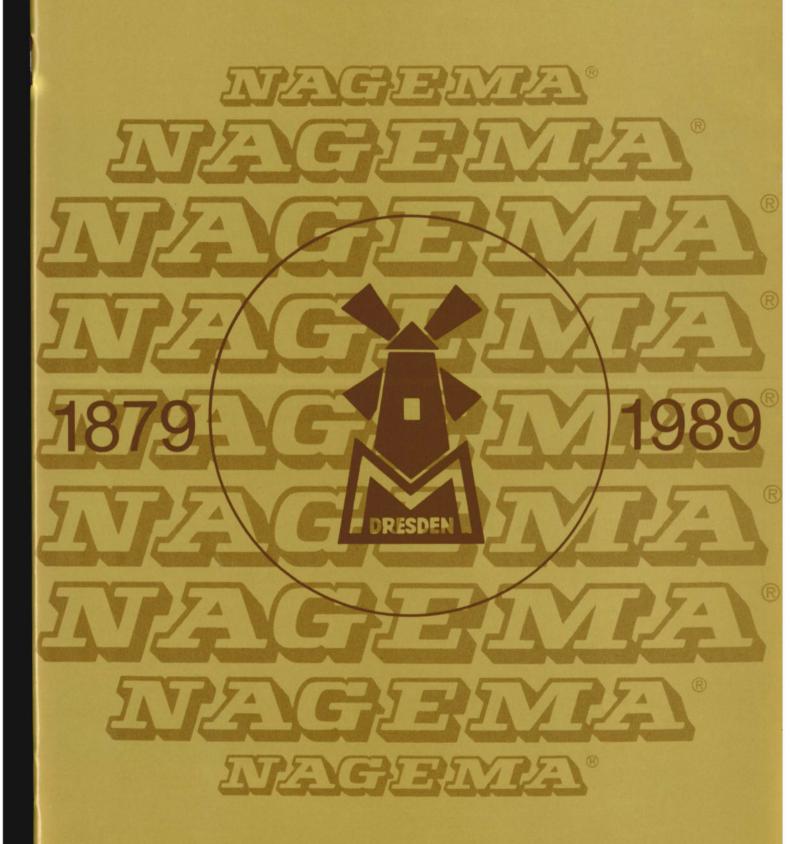
Mühlenbau Dresden



Dear mill builders,

Today the nationally owned enterprise "Mühlenbau Dresden", which can look back upon 110 years of industrial mill construction in our city Dresden in 1989, is an appreciated enterprise both at home and abroad.

The foundation and evolution of industrial mill construction made an essential contribution to the development of machine building into an important industrial branch of our city.

Your 110-year jubilee, which you can celebrate in the year of the 40th anniversarv of the foundation of the German Democratic Republic, demonstrates the successful work of several mill builder generations and thus the tradition of mill construction. Due to the diligence and energy of the working class, a worldfamous nationally owned enterprise was born out of the rubble and ruins of World War II.

Today the nationally owned enterprise "Mühlenbau Dresden" - committed to scientific and technological progress designs, produces, supplies and erects flour mills, feed mills, pelleting plants and single machines with an internationally appreciated

The employees of the nationally owned enterprise "Mühlenbau Dresden" achieved

Today their products are to be found in 41 countries on 5 continents. These products prove the efficiency of our economy and contribute to continue strengthening the good reputation Dresden enjoys in the world.

I offer you, dear mill builders, the city councillors' congratulations as well as the congratu- of the City of Dresden lations of all citizens of our

you further success in your work for the benefit of your customers, your enterprise and our republic.

Berghofer Mayor

NAGEMA offers knowledge, technology and services

Due to the experience gained by several mill builder generations, the nationally owned enterprise "Mühlenbau Dresden" is respected within the combine NAGEMA, which is a large industrial association in the German Democratic Republic

range of packaging and food processing machinery as well as of weighing installations and large kitchen equipment. Our enterprise has a share in making our combine today one of the best in the world regarding its wide range of products and NAGEMA highly appreciated within this branch owing to its principle of being customer-tailored.

We have a proven staff of skilled workers, creative

scientists, designers and technicians as well as trained recruits. Due to this we are sure that we shall be able to meet the growing requirements in future, too. The above mentioned advantages are an important key to our SUccess

At present, about two thirds of our machines and equipment are equipped with microelectronics. The portion of microelectronics continues to

increase. Finally, we introduce a large number of new or further developed products into the production every year. The level of these products depends above all on how to manage the integration of high technology, i.e. to combine microelectronic control systems, microcomputers or computers with our plants in a sensible way. However, in future, we think also of biotechnological processes and the application of the light emitting technique to transfer information between the machine and the control station.

Here, the producer's and user's interests meet. The mill builders' grain processing plants made according to the latest scientific knowledge are also a proof of this.

"Mühlenbau Dresden" and all enterprises within the industrial association NAGEMA will also in the next years always be anxious to guarantee the proven unity of experience, skill and scientific and technological knowledge over and over again for the benefit of our customers. We promise this on the occasion of the jubilee.





Experience gained by generations is cultivated, used and increased

The history of milling dates back to the grindstone which was used to grind grain millennia ago by the Egyptians. From this point of view, 110 years of industrial mill construction in Dresden are rather a short period indeed but a period of great importance for the improvement of flour milling technology. Considering the fact that man needs food above all, the most recent experience in human production **Tradition and progress** technology has always been utilized in milling. This in one line is a special feature of its history. Mill construction has been and continues to be a typical reflection of the

Thus, the tradition has a special importance in our trade and it is advantageous for us to keep it up. The tradition is also a factor which plays rather a considerable part in the decision of our customers, in addition to quality and efficiency.

stage reached in produc-

tion technology in general.

The 1,400 employees working now in the nationally owned enterprise "Mühlenbau Dresden" are especially proud of the achievements which have been made since the foundation of the German Democratic Republic. More than 400 flour mills, feed mills and pelleting plants at home and abroad as well as thousands of single machines are convincing proof of these achievements.

The origins

The story begins in 1879, when the Seck Brothers establish the "Factory for milling and grain husking machines" in Dresden. This is the foundation stone for the industrial production of flour mills. The basis for the establishment of this factory is the further developed milling technology which meets the

demand to extract more flour of a high grade from the available grain. This further developed technology includes the roller mill instead of stone mill technology, the centrifugal sifting machine, the space-saving and powersaving plansifter, advanced grain cleaning machines. and improved material handling within the mill etc.

After the turn of the century. the factory expanded and increased also its business connections which now spread to abroad.

In the twenties, the factory fused with other mill constructing enterprises and "MIAG" (Mühlenbau und Industrie AG - Mill construction and industry company limited by shares) was formed.

World War II interrupted this evolution. Instead of making products for the survival of mankind, means for its destruction are now produced. The logical consequence is the expropriation according to the Potsdam Agreement after the defeat of Hitler facism.

The new start

After 1945 the workers Max Gemeinert, Kurt Büttner and Max Krebs organized the reconstruction of the enterprise in cooperation with 189 additional employees. First, basic consumer goods urgently needed by the population were produced. Next,

repairs to mills and silo plants were carried out. In 1949, the year of the foundation of the German Democratic Republic, the enterprise, which was nationally owned now, employed already 800 people again and produced milling machines as well as handling equipment. The first complete plant, a pneumatic rye and wheat mill, was handed over to a user in our country in 1951. In 1955, the first 50 t wheat mill was exported.

Today

The present, nationally owned enterprise "Mühlenbau Dresden" is the only manufacturer of complete wheat, rye and maize mills, feed mills and pelleting plants in the German Democratic Republic. Due to its experience in technology and the quality, performance and efficiency of its plants, our enterprise is a popular partner in many countries of the world. Up-to-date production plants guarantee products of superior quality. Any desired version of the electrotechnical equipment with control and switch installations can be designed and produced owing to a special section in our enterprise. Computer - aided handling of offers and designs ensures quickest information for customers as well as planning and coordination of the main and auxiliary plants, i.e. installations which meet the highest requirements.



engineer Wolfgang Haefke. winner of the national prize

Acting on this principle, we have won the trust and recognition of experts from all over the world. Due to the experience of several mill builder generations - which become visible in handicrafts skill and technical knowledge - combined with the latest knowledge in science and technology, we are able to supply up-to-date milling plants, feed mills and pelleting plants. It is our most important concern to advise our customers in a helpful manner and to submit customized offers. That means for example that we offer plants having a simple local switch-on as well as plants with a more complicated switch-on up to those having a fully automatic interlocking sequential circuit in a central control room.

Works manager

Meeting the worldwide increased demands, we supply main plants for flour and feed mills as well as all auxiliary and ancillary plants, i.e. complete plants "from o n e source". Above all in this respect, our affiliation to the efficient combine NAGEMA as well as the cooperation with most variable special enterprises of our country prove a suc-

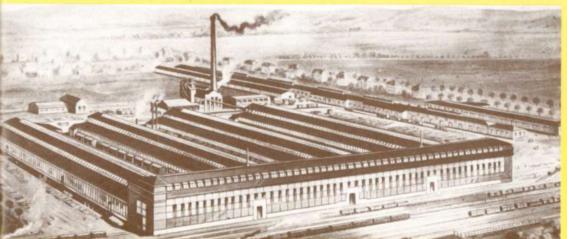
The export of products and plants plays the dominant part in our enterprise. The training of skilled workers, who are necessary to operate the plants, is of special importance. We count this as one of our first duties. The training takes place in training centres in the concerned country as well as in German Democratic Republic enterprises.

By using of microelectronics and computer technique in our own production processes as well as in our produced plants, we are well prepared to meet all requirements today and tomorrow.

The employees of our enterprise will connect tradition and progress in the interest of our customers in future, too.





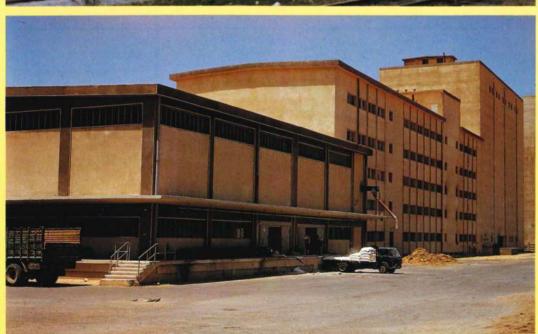


Mills from Dresden since the foundation of the German Democratic Republic

Albania Australia Bangladesh Burma Columbia Cuba Egypt Greece India Iran Iraq Lebanon Libya Mexico Morocco Poland
South Yemen
Sudan
Syria
The Netherlands

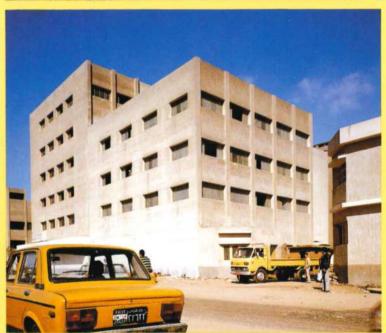
Turkey Yugoslavia











Flour mill 150 t/d at Toluca/Mexico

> Flour mill 250 t/d at Homs/Syria

Flour mill 120 t/d at Beli Manastir/Yugosla Flour mill 70 t/d at Komotini/Greece

> Flour mill 250 t/d at Embaba/Egypt



Up-to-date plants from one source

Cooperation with competent partners

The whole research and development, design, cooperation with subcontractors, ordering, delivery, erection and putting into operation of the complete plants, as well as service and the production of constructional elements, machines and spare parts for flour and feed mills are concentrated in our enterprise.















TATE SEPTIME

The up-to-date mill

The romantic mills of olden times seldom attract tourists today. Already in the 19th century, the first industrial enterprises developed from these simple mills. However, the heart of the mill continued to be the milling section from the arinding or revolving stones moved by hand, water or wind power to the fully automated up-to-date roller mill. Advances in the milling section were decisive for the whole technological process, which became more and more effective and rational, and changed the necessary machinery fundamentally.

The triumph of the roller mill, which was submitted for a patent in 1876 for the first time by Friedrich Wegmann, coincides with our enterprise's developing history. Therefore the tradition is so significant for us, since the invention of the roller mill revolutionized the other milling machinery, too. Some years later, Konegen invented the plansifter. Saving space and power, it replaced the previous sifting machines. Dresden's mill builders together with their colleagues at the NAGEMA enterprise "VEB Maschinen- und Mühlenbau" (nationally owned enterprise for machine and mill building) in Wittenberg - have had a great share in the continuous development of the flour milling machinery during the past decades and still have today.

Although nothing has changed with regard to the basic principle of the technological process, i.e. cleaning, milling, sifting, purifying and mixing, utilization of the physical properties of the raw material has been more sophisticated. The process

of wheat cleaning and conditioning, which has been discontinuous so far, is developed into a continuous process by a drastic shortening of the conditioning time with preceding damping of the wheat.

The up-to-date mill is highly mechanized and automated. It has centralized control and supervision. The extraction and the whiteness of flour are determined automatically

I ar

and printed out on tapes. The moisture is continuously measured and regulated by microelectronics.

An essential improvement results from the pneumatic grain and flour handling. It is space-saving, improves the general appearance, is more hygienic and combines aspiration and handling in a suitable way. The passage flours are mixed automatically. Owing to

work becomes considerably easier. The hard work of carrying bags is a matter of past. The biggest proportion of final products is transported in bulk flour tankers to the consumer of the next stage of processing. Thus the miller's iob has changed. Today he is a qualified operator with biochemical knowledge. In one shift, the today's miller copes with the same amount of work these improvements, the miller's which took an old mill one week.

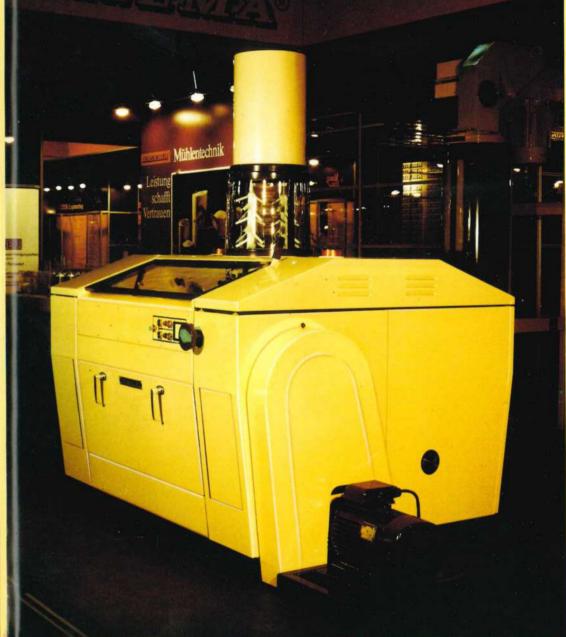
The rationalization of milling technology and the remarkable increase in effectiveness ensure a milling capacity more than twice as high as the original one in the case of reconstruction in old mill buildings. Our customers decide the kind and degree of mechanization and automation in the mill, which can extend to operation without operating staff. We advise our customers in such a way that maximum efficiency will be achieved under the given conditions. Our uppermost principle is to be customer and user-tailored. On this principle we plan and work.

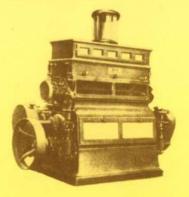
The plansifter

with its finely graduated sieves considerably influences the high demands made on the flours. These demands could essentially be met by the plansifter in wooden construction up to about 1960. Then, the plansifter was further developed above all to shorten the time for sieve changing. A plansifter in metal construction was developed

in the early sixties. Now it was possible to change the sieve frame within a few minutes. Since 1965 the plansifters have got the following new features, which have increased their use value:

- Covibrating drive motor, omission of the pendulum shaft, reduction of the horizontal ceiling load
- Lightmetal construction, reduction of the ceiling load by 40 %
- Drawer-type sieves
- Reduction of the floor area by 30 % due to increased sieve stacks per compartment
- Further developed sieve frames, i.e. from square ones to octagonal and finally diagonal ones, and thus an essentially improved plansifter diagram.





Roller mill "GM 421"

Seck roller

Plansifter in wooden construction



For intensified animal production

Hammer mills

The hammer mill is a machine which has been produced in large numbers in our enterprise for more than 30 years. In the fifties, we were producing hammer mills in frame construction according to the then demands of agriculture.

The new generation of this machine, which was produced in the sixties, has a consider-

ably higher throughput due to the optimized dimensions of the grinding chamber, optimized number and type of beaters as well as adapted pneumatic and filter systems. The casing material has been changed from grey cast iron to sheet steel.

New scientific knowledge as well as the economical aspects concerning savings in power consumption and material have led to a completely new type of hammer mills for 10 years. These hammer mills have an optimized throughput of products. Due to these advantages it is possible to meet a wide range of customers' requests. This new type can crush, for example, corncob-mixtures and oil cake.

Feedstuff pelleting presses

The feedstuff pelleting press is one of the main machines

in the modern mixed feed industry. It has to meet high demands especially with regard to the load-carrying capacity. The first type developed in our enterprise was the press 63 V, which was produced in series and had worked with the best results. Another press type was developed to meet the growing demands of the mixed feed industry as well as the necessary differentiated performance characteristics.

This type has an optimum graduation of throughput from 2 t to 10 t. Thus, the international trend as well as the most varied customers' requests are met. Another advantage is the considerable reduction of the specific energy consumption and of the specific weight. Presses today are microelectronically controlled. At the international fair in Novi Sad/Yugoslavia a gold medal was awarded to them in 1987.

Pelleting plants

We make pelleting plants of the GFA type, by which feed with a high nutritive value can be produced in a rational and effective way. These plants can process straw, grain, sugar-beet products, mineral and agent premixes, non-protein nitrogen compounds, expellers and other products.

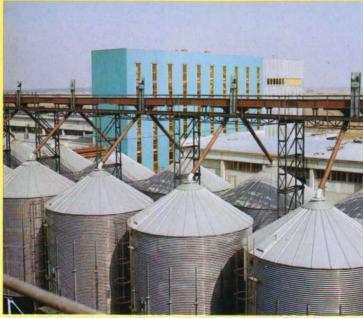
Beside the plants for pelleting feedstuffs, we offer ones for pelleting hop with the help of which the hop is stored and preserved with minimum losses. Due to this technique it is possible to ensure a homogeneous quality of raw material, to utilize the components more intensively, to automate the hop dosage and to reduce the transport costs and the required storage capacity.

Feed mills

One result of the modernization of agriculture and its increasing industry-like production is an intensive livestock farming, by which it is possible to meet the increased demand for meat products in a more appropriate way. This modern animal production requires mixed feeds. The formulas are worked out scientifically by taking into consideration the kind, age and purpose of the animal and ensure a maximum growth and best health with the most economical application of raw material. Such mixed feeds or concentrates must be produced industrially because of the required quantity and quality. This results in the buildup of a new branch of industry.

In the early sixties we took on the design, production, delivery and erection of complete feed mills. The first type series were plants with a capacity of 20 t/h, erected in slip-form construction and controlled by electronic components. Among the electronic components there are 9,000 transistor logic components and 2,000 relays - a quantity of components being used in one feed mill for the first

However, the remarkably increased demand for mixed feeds as well as technological progress require still larger and more up-to-date plants. Our latest type series has double capacity, i.e. 40 t/h with two lines. It is computer-controlled, i.e. a computer controls all processes from the intake to the mixing of

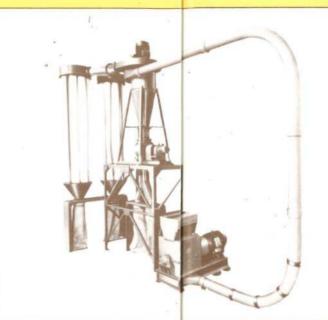




feed and finally to the discharge and calculation.

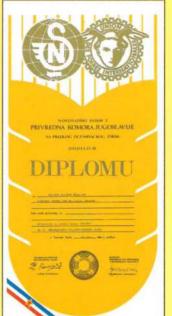
With regard to feed mills, we are also successful in the field of exporting. Up-to-date plants work to the fullest satisfaction of our customers in the Soviet Union, in Iraq and Iran, in

Guyana and Cyprus. Besides, the principle mentioned above is relevant for feed mills, too. We deliver as per customers' request with regard to the throughput and equipment of the feed mill – up to the "plant from one source".









	Feed mill	Hammer mill	Feedstuff pelleting press
	at Vinni/U.S.S.R.	50/63 B	63 V
-	Pelleting plant GFA	Hammer mill	Pelletizing group
	at Vinni/U.S.S.R.	GM 405 B03	805 A03



References then and today

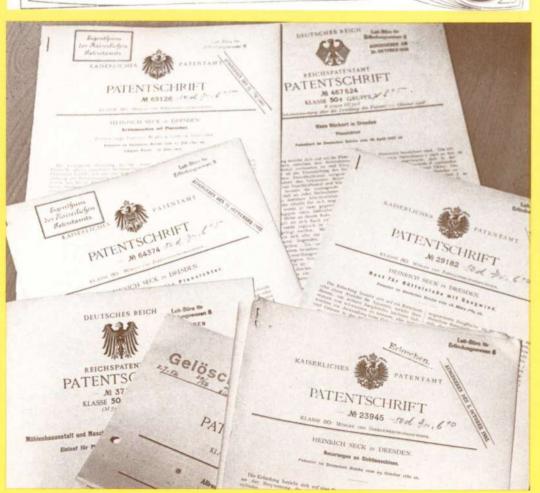
Walzenmühle "Tre Kronor" in Stockholm (Schweden).

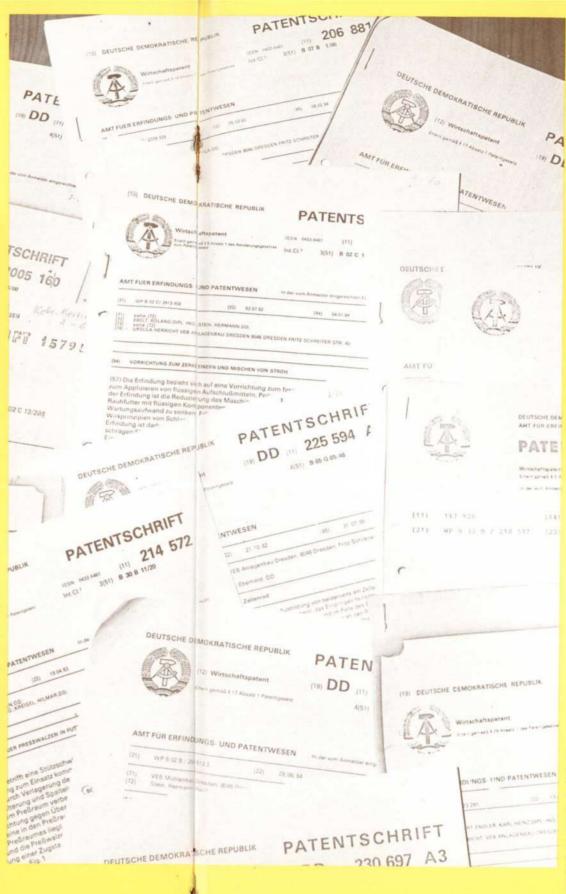
In nachfolgender Schilderung wollen wir den Lexern eine Anlage vor Augen führen, welche einerseits infolge der sachgemäßen und nach jeder Richtung hin gutdurchdachten Ausführung der einzelnen Teile und



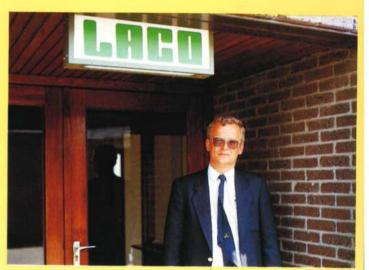
anderseits durch eine umsichtige und tatkräftige Leitung heute mit zu den bedeutendsten Betrieben der schwedischen Mühlenindustrie zählt. Im Jahre 1897, dem Gründungsjahre dieses Unternehmens, erhielt die Mühle "Tre Kronor" dem Betriebe über geben werden, und von Anfang an funktionierte das Werk in allen seinen Teilen tadellos. Gewiß ein bereittes Zeugnis von der Akt.-Ges. vorm. Gebrüder Seck in Dresden von einem Konsortium angesehener Fachleute den ehrenvollen Auftrag, zu einer am Stockholmer Hafen projektierten großen, der Neuzeit entsprechenden Dampfmühle die gesamte







Examples of significant innovative strength





Letter of reference from the LACO firm in Holland

"In 1984 we bought a complete flour mill from Fortschritt / NAGEMA in the GDR.

Now, after the mill has been working for two years, we can say that our expectations have been completely fulfilled. The excellent workmanship on the part of the manufacturer and the great reliability of the plant culminating in our fullest satisfaction."

"A place of transhipment or a sales store for flours of different kind resulted in the crumbling factory Laco in Holland. Now it commands about 75 % of the market and offers a wide range of goods ...

In order to guarantee a smooth fabrication of crumbs, an own milling plant with the necessary storage silos for finished products was decided upon. The planning and all preparations were carried out by the NAGEMA enterprise "Mühlenbau Dresden", which has existed for more than 100 years... "Mühlenbau Dresden" delivered all machines and fulfilled any individual wish of the Laco firm. Thus, all commercial kinds of flour, semolina and dunst of best quality can be produced at a high extraction thanks to this plant".

"Die Mühle und Mischfuttertechnik" (The Mill and Feed Mill Technology), number 27/28, 122nd year's issue, July 4, 1985

Fully automated mills are possible in future ...

The technological process in the up-to-date milling industry requires in general supervision and maintenance by the operator since machines, equipment and technology guarantee reliability, suitability and automation of a high degree. With this it is possible to equip the mills with control, automation and safety elements which can be operated without operating staff.

.. but customers' wishes determine the scope of services

Our offers correspond to the specialities of raw materials being processed as well as to the geographical and climatic conditions, since we plan and work customer and usertailored. The economical effects for the operator are upper-most in our mind to ensure that each customer makes the desired profit. The benefit of our customers is upper-most in our planning. The customer's negotiator is also his adviser. We figure out for our customers the utmost benefit regardless of what is concerned, the building, the equipment or the degree of automation.

Computers supervise, control and regulate

We make available for our customers flexible modular automation systems with hardware and software forming a whole. Up-todate computers, for example, control and supervise the processing of grain into flour and the production of mixed feed in the desired blends. We offer "know how" and technical assistance.

Joint research leads to high results

Cooperating with universities and institutes, we focus our attention on further developments concerning the reduction of the specific water and energy consumption, the increase of the plants' performance and reliability by means of process automation, the ensurance of the most economical utilization of

raw materials, the improvement of health, labour and fire protection as well as the reduction of space requirement per ton of product.

Prof. Dr. habil. Hans-Peter Friedrich, Department for Food Economics and Technology of the Humboldt University Berlin, said among other things the following on this subject:

"We succeeded in further increased contribution

for food production. This includes advances in the manufacturing industry, which were obtained, for example, by new operating principles in close cooperation between science and practice.

We try to improve the plants for grain preparation and processing (after all, grain is harvested from 50 % of the world's agricultural area) and to be technically more

efficient and economically better than our strong competitors on the world market. To save more energy, to have higher extraction and quality and to give a more successful consideration to environmental conditions - these are only some of the criteria we have to pay attention to."

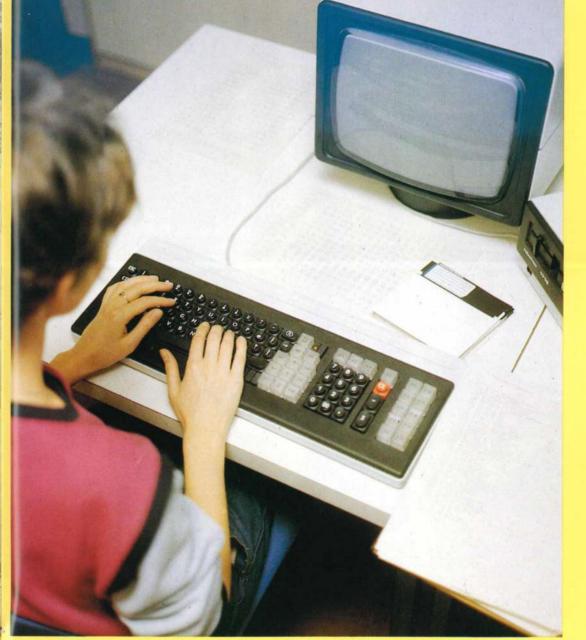
Computer-Aided

Owing to the application of computers in all preparing sectors we ensure an optimum information content in our offers and prompt submission.











Juan Elias Murra & Co. Ltd. Colombia

This letter is intended to thank you for the excellent machines. The plant having been put into operation, has a capacity which is higher than that agreed in the contract

30 t/d Throughput: design capacity obtained capacity

Extraction: 74 % of flour grade A-first quality (being on the Colombian market flour of the finest grade) 5% of flour grade B - inferior quality used for

waffle production

The mill has been working to our fullest satisfaction, especially after Mr. Siegfried Koch had increased the throughput by 2 % when running in the plant.

Yours faithfully

Juan Flias Murra Ganen Manager



Efficient service

NAGEMA – exhibitor at international fairs

Our enterprise, the combine NAGEMA and their exporter, the state-owned foreign trade enterprise "Fortschritt Landmaschinen Export – Import" take part in important international fairs, specialized and multibranch fairs as well as in various self-organized events every year:

Cairo
New Delhi
Baghdad
Teheran
Damascus
Bogota
Izmir
Novi Sad

Thessalonica Dubai Casablanca Lausanne Detmold Mexico City Leipzig Moscow Arab Republic of Egypt
Republic of India
Republic of India
Republic of Iraq
Islamic Republic of Iran
Syrian Arab Republic
Republic of Colombia
Republic of Turkey
Socialist Federal
Republic of Yugoslavia
Greek Republic
United Arab Emirates
Kingdom Morocco
Swiss Confederation
Federal Republic of Germany
United States of Mexico
German Democratic Republic
Union of Soviet Socialist Republics
People's Republic of Romania

Our products are always up-to-date due to our experience gained in 110 years of industrial mill construction and the application of expensive testing facilities for both products to be processed and machines. Laboratory tests guarantee the reliability of empirical values – a solid basis for judging possible applications as well as the construction of our machines realistically.

Many new methods for the processing of various raw materials have been developed on this basis in the nationally owned enterprise "Mühlenbau Dresden" with the construction and technology being continuously adapted to the latest knowledge – also to your benefit.

To know its stuff, to have innovative strength, to speed up investments in technology, and to carry on project management these are the tasks which the nationally owned enterprise "Mühlenbau Dresden" has set itself in order to justify your confidence in us as partner - as your partner - at any time. The result of our effort is an impressive list of references from customers of the milling and feed manufacturing industry from all over the world. You, too, can benefit from our experience. We look forward to your inquiries with interest.

The service of our enterprise includes:

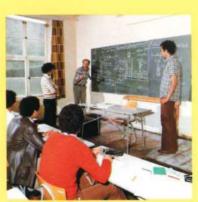
 Training of the operating staff, i.e. of millers, electricians and fitters, in training centres

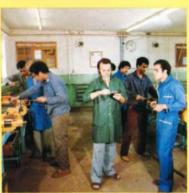
 Employment of head millers and chief fitters

Establishment of service centres and spare parts stores

 Regular inspections during the building and erection to guarantee the required parameters

 Performance tests in order to obtain the quality and quantity aims of the plant agreed in contracts.







Efficient communication between manufacturer and user is a feature of our time. Therefore, NAGEMA follows the principle of a continuous up-to-date and practiceorientated information for the experts. New experience gained in our development laboratories, test centres, design offices and application departments contribute towards the rationalization of processing of nutritional and non- essential foodstuffs as well as of weighing, metering and packing. We have been making use of the opportunities given at fairs and exhibitions to exchange information with experts for many years. Many questions concerning the application and economy are clarified with the help of the exhibited NAGEMA product in conversation between the interested parties and the offerer.

