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Machine tool works

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REPORT

FEHLMANN



REPORT
The Fehlmann customer journal
1st edition, June 1997
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Dear reader,

In front of you, you have the first edition of our new brochure **REPORT**.

This irregular appearing journal is intended to inform our business partners about big and small news from

Fehlmann. Occasionally, we also want to report

about important branch events. Irregular because we only want to take up your time when there is really something interesting to know.

By closing this communication gap, we hope to keep you up-to-date at all times. We are certain that you, dear customers and suppliers, will find something of interest to you in every edition.

Yours Frank, Willi sen. and Willi jun. Fehlmann



The successor to the proven P 18 S: The new PICOMAX 20.

FEHLMANN internal. Our apprentices are our future.

Ready for take-off! The PICOMAX 82 with Erowa-Robot.

From P 51 DC-M to P 51 TNC

New accessories and the most important data 1997/98 of interest to you

Our ever friendly field service team. They all learned their „business“ starting from the bottom and will be glad to answer all your questions.

Standing from the left:

Freddy Hasler
Technical adviser internal, sales export F and I, advertising

Karl Birkelbach
Technical adviser, sales French speaking Switzerland

Frank Fehlmann
Assistant to the director, technical adviser, sales export Eastern Europe, Asia

Jürg Solenthaler
Technical adviser, sales Switzerland

Front from the left:
Roland Sandmeier
Technical adviser, sales export D, NL, B, N, DK, S, GB and L

Mirella Tornatore
Sales secretary

Urs Schmid
Technical sales, demonstrations and customer training



FEHLMANN sponsor of the International Professional Olympics.

From 4th to 7th July 1997, 600 of the best young craftsmen from 32 countries will meet in St. Gallen. In about 40 trades, they will compare their skills in a peaceful competition. Roughly 1000 experts, jurors, and delegates from different countries will exchange their work experiences as well as valuable knowledge. This event has a long tradition.

After the World War II, Spain made great efforts to interest young people in professional educations and tried to encourage them to better performances e.g. through competitions. In 1950, there was the first international trade competition with Portugal. Ever since there have been 33 Olympics!

After Sidney '88, Birmingham '89, Amsterdam '91, Taipei '93 and Lyon '95, now St. Gallen '97.

From 4th to 7th July this year, Switzerland invites the professional youth of the world to a fair competition for the gold, silver or bronze medals (as it is expected of real Olympic Games) and a large, international festival of the youth.

Young people from Australia, Bermuda, Brazil, Germany, Finland, France, Gibraltar, Great Britain, India, Indonesia, Ireland, the Isle of Man, Italy - South Tyrol, Japan, Canada, Korea, Liechtenstein, Luxembourg, Malaysia, Macao, Mexico, New Zealand, the Netherlands, Norway, Austria, the Philippines, Portugal, Sweden, Singapore, South Africa, Taiwan, Thailand, and the U.S.A. will be our guests.

Never before has there been a bigger trade demonstration and a more comprehensive workplace presentation in our country!

There will be representatives of all trade groups from A to Z - amongst others CNC lathe operators, CNC milling operators, fine mechanics, machine fitters, mechatronic fitters, and tool makers demonstrating their skills.

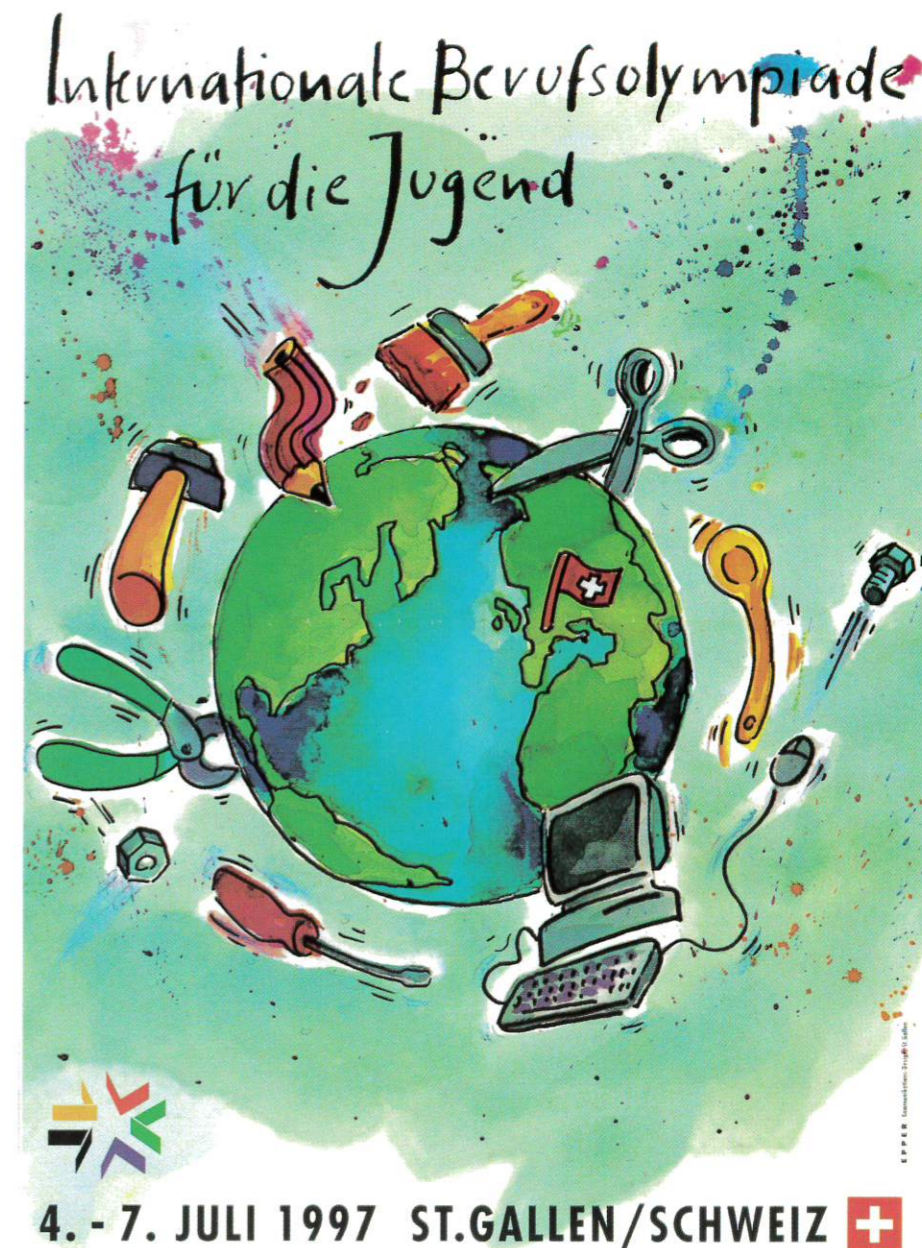
Our goal: to learn from each other!

The goal of the International Trade Olympics is to optimize the professional training by learning about, comparing and analyzing the training systems of other countries and thus gathering new ideas. The international contacts will lead to an exchange between young craftsmen as well as trainers of the member countries. We expect 100,000 visitors and hope that you will be one of them and profit as well from this unique event.

We are proud to be one of the main sponsors!

Future means, above all, to support and foster the youth. For this reason, we decided to become one of the main sponsors of this year's Olympics. We are proud to provide numerous P10, P18S, P20, and P51DC.

Please see also our half-page technical journal advertisement - on page 9 in this REPORT journal.



PICO MAX

Handy Precision Jig Boring and Milling Machine with a clear concept and extremely operator-friendly.

More than 30 years ago, the P 18 S was first introduced on the market. Thousands of these time-saving, economic machines have been in proven service since then!

The PICOMAX 20 is its successor with a promising future ahead: it is also a very handy, extremely robust and absolutely operator-friendly coordinate drilling and milling machine.

Versatility to meet all demands.

With its wide range of possible applications, the machine can be used in all mechanical and electrical departments of industry, for mould and tool manufacture, in repair shops, laboratories, technical schools, etc. It is especially suited for single-part and small batch production.

Choose the appropriate coordinate table!

You can choose between coordinate tables of different sizes with the tables either in standard design or with digital position display.

Special emphasis was laid on operator-friendliness, long-term precision, universality, and stability when constructing this machine.

The proverbial FEHLMANN precision.

The hardened and ground screw spindles have an accuracy in lead of 0.01/200 mm.

The torque was limited to an ideal value to prevent spindle overloads during milling. This ensures that the spindle will not be damaged and maintain its original precision even in case of a brief overload.

The rigid column with a non-positive housing clamping provides for high stability as well as a high working and repeating accuracy over the complete work range.

Operator-friendliness makes work enjoyable.

An integrated thread-cutting device is part of the standard equipment. The proven quick tool change system SF 32, the infinitely variable electronic speed adjustment as well as the smooth, vertical high-precision drilling head guideway are time-saving features and make work easier.

All mechanical and electric control elements are arranged clearly and within easy reach.

If you are interested in more information, please turn to page 6 or order our special leaflet.

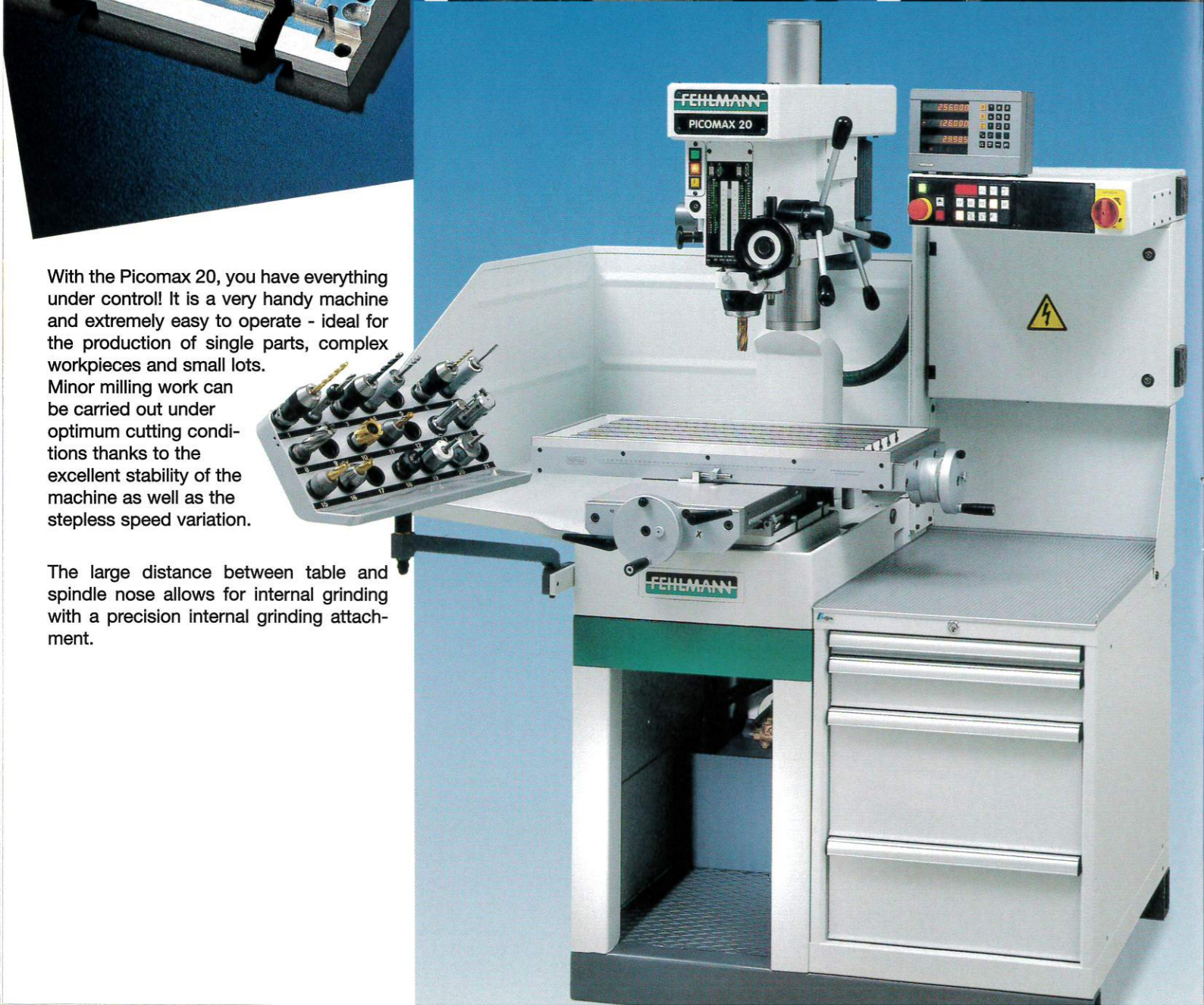
We believe that this machine should be basic equipment of every workshop and that it is ideal for apprentice shops and technical schools.



**Drilling, boring, thread-cutting, and milling.
Large range of workholding fixtures and
adapted special accessories.**

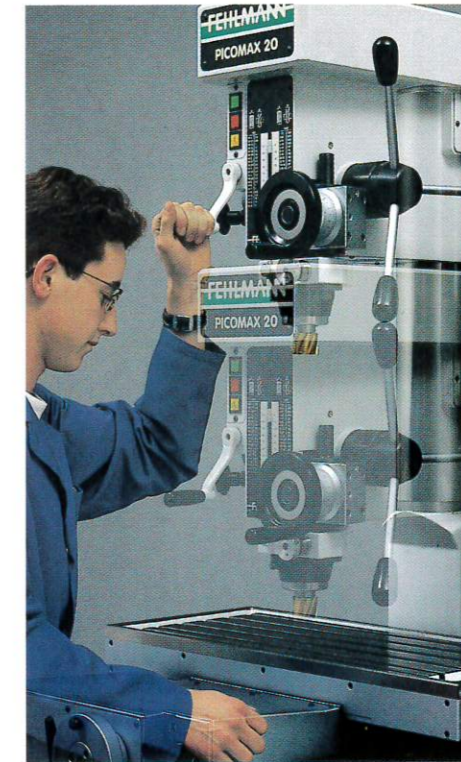
**For an economic production of
single parts and small lots.**

6



With the Picomax 20, you have everything under control! It is a very handy machine and extremely easy to operate - ideal for the production of single parts, complex workpieces and small lots. Minor milling work can be carried out under optimum cutting conditions thanks to the excellent stability of the machine as well as the stepless speed variation.

The large distance between table and spindle nose allows for internal grinding with a precision internal grinding attachment.



The height of the machine head can be adjusted with a crank handle. The high-precision guideway on the column provides for high torsional rigidity so that the original position on the X/Y axes can be repeated with an accuracy of ± 0.01 mm.

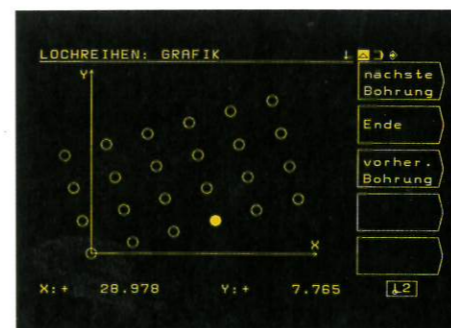
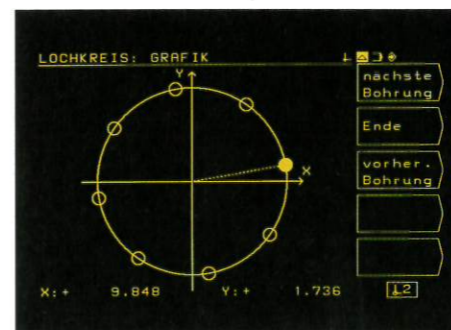
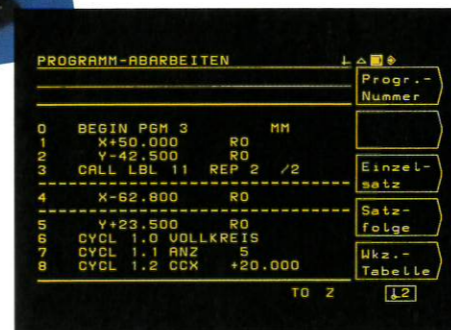
**PICOMAX 20-M with feed table:
quick, safe, easy to operate.**

By means of the attached DC motors, the table can either be positioned in rapid traverse or by means of the infinitely variable feed device. The table is equipped with electric limit switches for all axes.

Control unit with integrated table control and display monitor.

The position display offers many advantages such as programming 50 reference points, nine programs with 999 steps each, tool offsets, hole circle machining, etc.

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Hole circle or hole row machining with operator prompting.



FEHLMANN
INTERN

Our apprentices

We took on our first apprentice as early as 1939. Since then, we have trained more than 200 girls and boys in the mechanical-technical field as mechanics, engineering drawers, and electromechanics or in the commercial departments.

Experienced trainers - who are also called in as experts on canton level - make sure that the training is up-to-date, praxis-oriented and, above all, interesting and diversified. Our apprentices repaid us by achieving good marks in their final exams. We are proud to say that all our apprentices successfully finished their trainings!

The future belongs to the youth - the youth is our future! This has been our conviction ever since the foundation of our company. For this reason, we turn our special attention to all our apprentice departments.



For sales promotion:
A model of the PICOMAX 54 TOP (Touch Or Program) on a scale of 1:10. Made in the apprentice department of our workshop.

In the mechanical shop, our apprentices are taught the basic terms of filing and marking during the first two months and later on - on conventional machines - drilling, milling, and lathing. From the second year of apprenticeship, NC training on our own machines is on the schedule and our apprentices can gain valuable experiences in the CNC assembly department. Near the end of their apprenticeship, some of our young people will also have contact to our customers, sometimes even on trade fairs.

After their training, numerous opportunities open up to our apprentices!

For our commercial apprentices, there are various opportunities of further professional education. Mechanics often stay with our company and, depending on their skills, occupy key positions in the departments assembly, service, sales, demonstration or training of apprentices. Many apprentices take up their studies at a technical University after acquiring their professional maturity.



Often, our apprentices set up on their own and found their own mechanical workshop. When we went on a cycling tour with mountain bikes some years ago, a bicycle shop provided us with several bikes. The owner of this shop? One of our former apprentices!

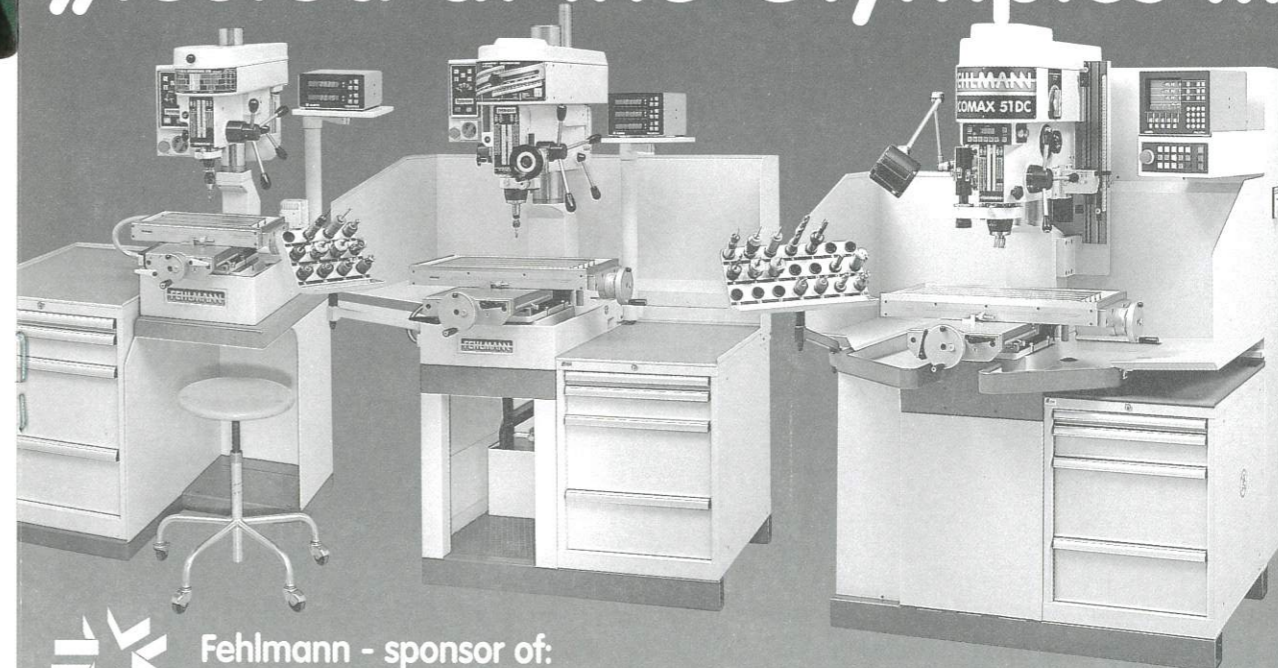
A photo of a part of our mechanical apprentice shop. In the foreground, a PICOMAX 80 CNC-W with automatic tool changer (right) and a P 51 CNC 3 for NC training. In the background (far left), the allround machine PICO-MAX 54 TOP.

Vorführ- und Schulungszentrum



„Tested at the Olympics“...

... and a special offer on top!



Fehlmann - sponsor of:
the 34th International Professional Olympics for the Youth in St. Gallen.

On the occasion of the International Professional Olympics for the Youth in St. Gallen from 4th - 7th July 1997, several of our precision coordinate drilling and milling machines will be in use.

After these four days, we intend to offer these machines which are as new on favourable conditions. There will be several P 10, P 18S and P 51DC machines.

Take this opportunity! One of these handy machines should be part of the basic equipment of every workshop anyway.

FEHLMANN

Die Praxis im Griff.

Ready for
take-off!

New possibilities open up in tool and electrode manufacturing.

We present:
The PICOMAX 82 HSC (High Speed Cutting) with Erowa Robot, Heidenhain TNC 426 continuous-path control and master computer MCM (Milling Center Manager).

To help you to face growing competition with the requirements on quality becoming higher and higher, we especially developed this machine

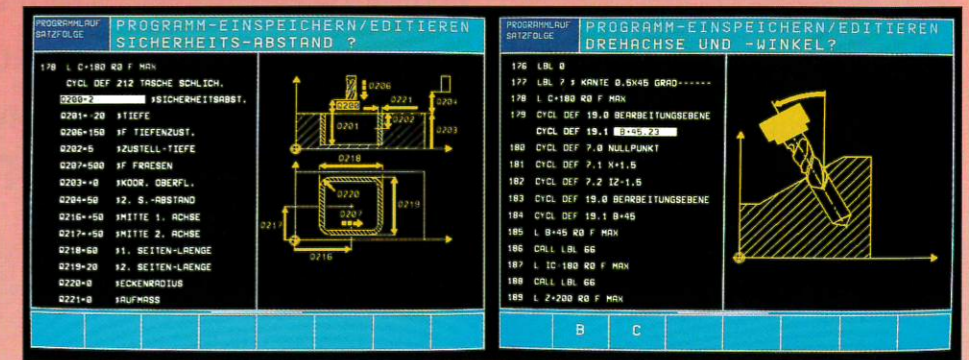
for economic machining of electrodes, single parts, smallest and small lots.

High Speed Cutting HSC
The machining times could be reduced significantly thanks to speeds up to max. 30,000 min⁻¹ allowing for higher feedrates while achieving a higher manufacturing quality at the same time! Thin-walled workpieces,

possibly with deep and/or thin pockets, can be machined without any problem as well as difficult parts with small diameters. Of course, the removal capacity of large cutting volumes is enormous: up to 1000 cm³/min for aluminium!

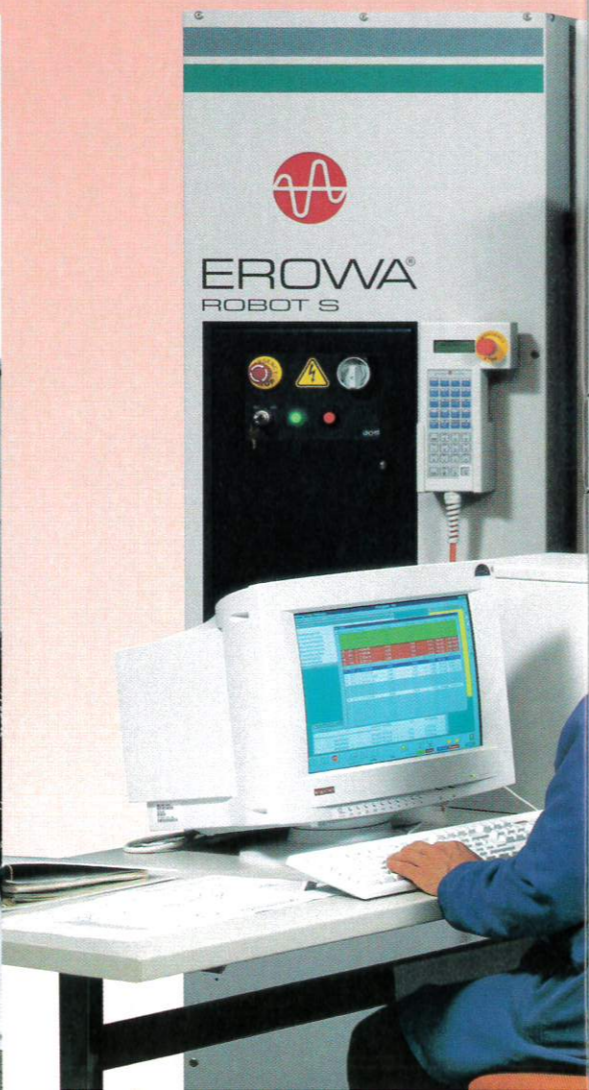
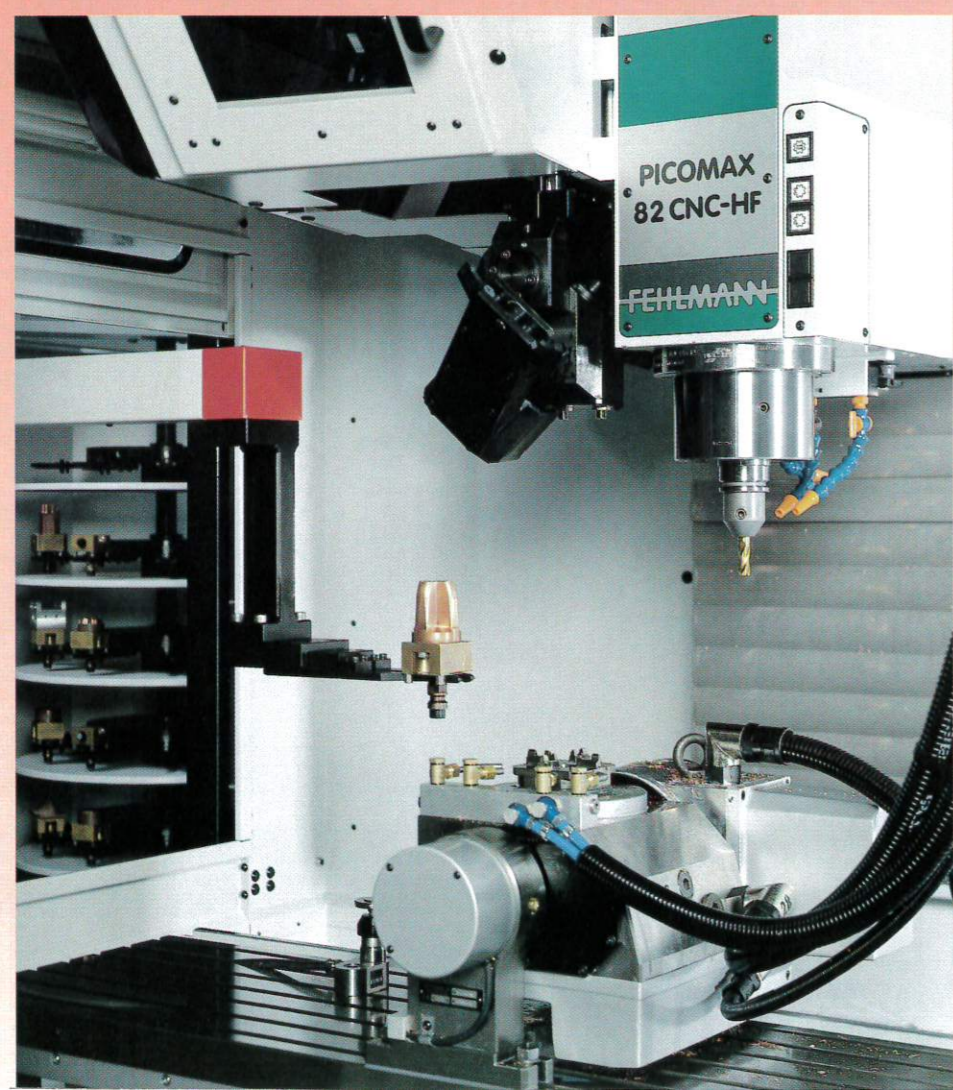
Erowa Robot
Extremely long and even unmanned shifts can be run with 120 workpiece holders. This means a significantly larger range of possible applications and thus a higher economic efficiency of the machine.

Heidenhain TNC 426
Three, four or five axes can be programmed. Manual operation with the TNC is very easy, by selecting „Free contour programming FK“. In case of central production planning - e.g. with a CAD/CAM system - you can choose between generating the programs in Heidenhain clear text format or in DIN/ISO format.



Milling Center Manager MCM
The main convincing feature of the MCM developed by us is its high flexibility which guarantees optimum adjustment to practically any case of application. It manages perfect loading and returning of the workpieces in the desired order. At the same time, the master computer searches for program errors and unloads the workpiece marked respectively. Records are kept on each workpiece and, if necessary, it can be machined further without any problem. The system is absolutely independent, however, it can also be integrated into an existing network.

Accessories
With a wide range of accessories, the PICOMAX 82 is a universal and extremely flexible high-speed machining center meeting all possible demands. As an example, the FEHLMANN dividing attachment and swivelling device ATS 160 CNC is shown below allowing for an easy and precise 4- or 5-axes CNC machining.



From P 51 DC-M to P 51 TNC

The proven Precision Coordinate Drilling and Milling Machines type PICOMAX 51 DC-M are now equipped with the Heidenhain TNC 124 control.

The flexible machine is extremely handy. It is ideal for single part and small lot production in tool and mould manufacturing, for test and prototype machining, for laboratories as well as for apprentice shops. Similar to the former PICOMAX 51 DC-M, the coordinate table of the PICOMAX 51 TNC can be moved either conventionally by handwheels or automatically. The programmable display device was replaced by the new Heidenhain linear path control TNC 124 facilitating easy, interactive programming.

The PICOMAX 51 TNC can thus be used for three different stages of machining - 1st manual, 2nd manual data input or 3rd in CNC mode.

For **manual operation**, no CNC knowledge is required. Positioning is carried out by handwheels or direction keys in digital display mode.

- For the manufacturing of simple parts or execution of single operations.

For **manual data input**, no CNC knowledge is required. You decide in how far you want to work conventionally.

- Hole circles, hole rows, etc. can be machined.

The third stage is the praxis-oriented **CNC mode** with simple interactive programming. Two axes (X/Y) are CNC-controlled with automatic program repetition after having finished a bore (Z).

- Ideal for small batch production.

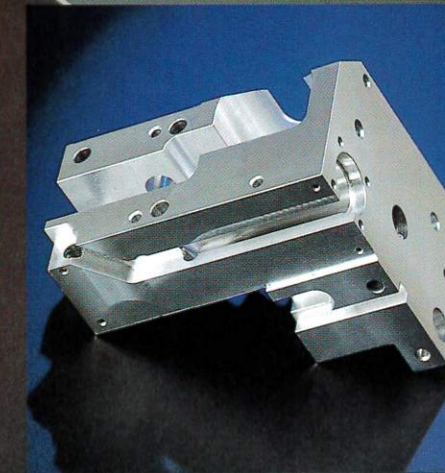
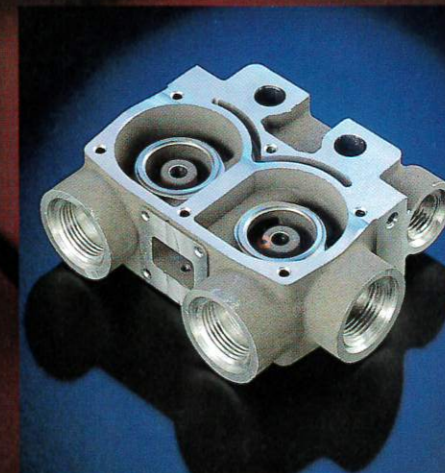
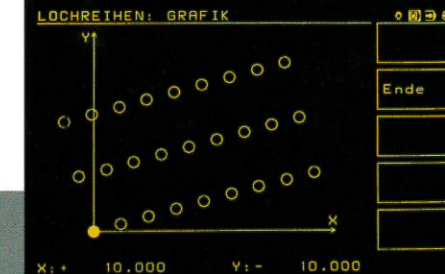
For more information on the P 51 TNC, please ask for our special leaflet.

Or call our field service representative who will be glad to help you.



PROGRAMMLAUF SATZFOLGE		Prog.- Nummer
1	F 9999	
2	M 3	
3	X+15	RO
4	Y+15	RO
S	M 52	
6	IX+24	RO
7	M 52	
8	IX+24	RO
IST	X - 13.665	Y - 61.285
	A + 0.000	Z + 7.775
T 1	A	S 182 F 0 M5/8 L3

WERKZEUG-TABELLE		Wkz.- Aufruf
Werkzeug-Nummer 7		
Werkzeug-Achse : A		
NR	Laenge	Radius
1	+ 12.000	+ 5.000
2	+ 6.500	+ 8.000
3	+ 17.300	+ 10.000
4	+ 3.650	+ 3.000
5	+ 12.500	+ 4.000
6	+ 0.000	+ 15.000
7	+ 5.800	+ 20.000
8	+ 7.900	+ 9.000
T 1	A	S 191 F 0 M5/8 L3





NEW ACCESSORIES



Throwaway plate drill

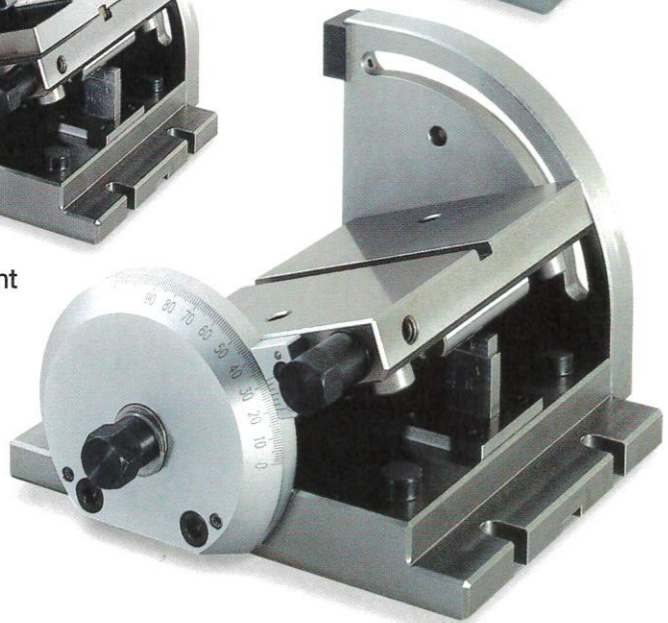
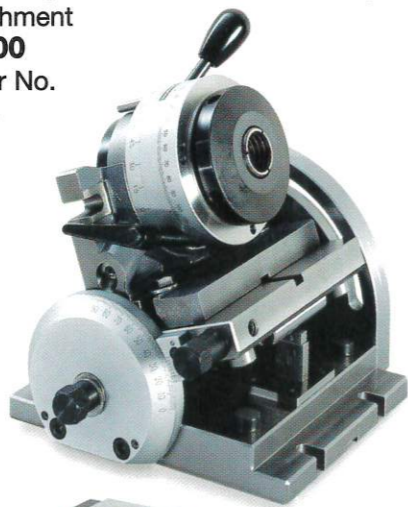
Designed for 19.5/25.5/29.5/34.5/39.5 mm. Two triangular throwaway plates form the cutting edges with the high stability of these edges allowing for extremely high feedrates. Helical chip slots ensure perfect chip removal. Excellent chip breaking characteristics for drilling from steel, cast iron, aluminium alloys, etc.
Order No. 7520-020/7520-040

Swivelling device SV 100

Manual swivelling device for dividing attachments AT 100 CNC and DT 100.

The angle can either be set directly on the scale or with gauge blocks (sine bar clamping table).
Order No. 4851-100

Swivelling device with direct dividing attachment
DT 100
Order No. 7015



Swivelling device with CNC dividing attachment
AT 100 CNC
Order No. 7015-000 and 4851-000

4th. - 7th. July 1997
International Professional Olympics for the Youth
9000 St.Gallen, Switzerland

10th - 17th September 1997
12. EMO 97
Hanover, Germany

1st - 4th October 1997
Journées techniques REPMO
931213 La Plaine-Saint-Denis / Paris, France

22nd - 25th October 1997
Home exposition FEHLMANN
5703 Seon, Switzerland

9th - 14th March 1998
SIMODEC
74800 La Roche sur Foron, France

24th - 28th March 1998
Techni-Show
Utrecht, Netherlands

30th March - 3rd April 1998
Machine-Outil 98
Paris, France

12th - 16th May 1998
Euro-Tech
Brussels, Belgium

26th - 30th May 1998
SIAMS 98
2740 Moutier, Switzerland

16th - 20th June 1998
METAV 98
Düsseldorf, Germany

15th - 19th September 1998
AMB 98
Stuttgart, Germany

1st - 6th October 1998
BI-MU
Milano, Italy

24th - 28th November 1998
FAWEM
Basel, Switzerland

Contouring



Please send us this fax!
We will send you the requested documentation in return.



Please turn over
Fax ++41 (62) 775 22 59