

## MANUAL AND CNC-OPERATED TOOLROOM MILLING MACHINES

## FNX30 FNE40



#### Fabryka Obrabiarek Precyzyjnych

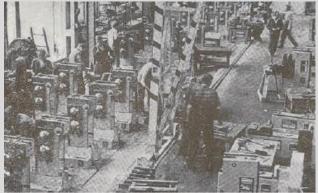


#### AVIA S. A.

Fabryka Obrabiarek Precyzyjnych AVIA S.A. Warsaw, Poland (Machine Tool Factory AVIA S.A.) was founded in 1902 and is one from the oldest Polish industrial plants. For the past 70 years, AVIA has been one of the leading Polish manufacturers of high-quality, precision machine tools. Today, our brand is widely recognized in Europe, especially in Germany, where we have over 4,500 installations.

The presence of machine tools manufactured by us in demanding and industrialized markets ensures constant and continuous growth of production and increases the competitiveness of our customers. Proven AVIA machine solutions, depending on favourable prices, are also successfully featured in emerging markets in Eastern Europe.

At present, AVIA offers in its product line Vertical machining centres 3, 4 and 5-axis, CNC and Manual universal milling machines and CNC inclined bed lathes. AVIA is also a manufacturer of key components for machine tools such as: spindles or precision ball screws. We supply ball screws to some of the world's leading machine tool manufacturers.



Assembly line AVIA – Manual Universal Milling Machines - 1970

Company management and production:

#### FABRYKA OBRABIAREK PRECYZYJNYCH AVIA S. A.

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New machine designs are based on our own development and research department. The unique combination of very talented young engineers and very experienced designers who have worked at AVIA for many years ensures an ideal environment for development and research processes. Design proposals are created by computer systems such as:

- Solid Modelling Design (CAD-3D),
- Finite Element Method optimization,
- Computer Aided Manufacturing (CAM).

Our goal is not only to develop the latest technologies and deliver them to customers, but also to provide adequate training, service and maintenance of machines, as well as the availability of spare parts for many years after the machine has been handed over.

Sales representation

#### PILART stroje a.s.

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## DISCOVER A WIDE RANGE OF MANUALS CNC AND TOOL MILLING MACHINES AVIA



## TOOLROOM MILLING MACHINES FNE40 SERIES

TRAVELS (X/Y/Z): 620x420x400 mm

SPINDLE (H/V) ISO40: 4.000 ot/min

TABLE: 400x800 mm

TABLE LOAD: 400 kg

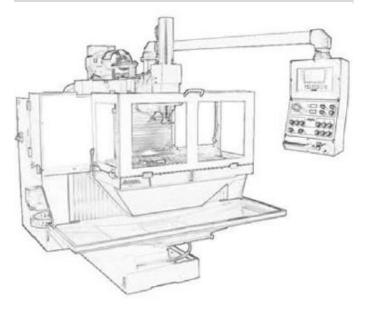
## TOOLROOM MILLING MACHINES FNX30 SERIES

TRAVELS (X/Y/Z): 400x315x350 mm

SPINDLE ISO40: 3.000 ot/min

TABLE: 315x710 mm

TABLE LOAD: 200 kg









Vertical spindle with movable quill



Horizontal spindle



Universal machining for prototyping, production of molds and tools



Steady rest for long milling arbors



Quality control of linear axes - special laser device



Box-type guideways for stability and rigidity



Manual handwheels



Electrical components from well-known European

# DISCOVER UNIVERSAL MILLING MACHINES

## **DESIGNED FOR YOUR NEEDS**

## **HEIDENHAIN TNC 620 HSCI**

- modern and reliable CNC systems from Heidenhain
- fully digital drives in version N
- processing time of one block 2 ms as standard
- 19 "touch screen for convenient operation
- workshop programming
- adjustable position of the control panel

### **DIGITAL READOUT ND 523**

- digital measuring ND523 from Heidenhain in version P
- linear rulers on all axes
- electronic hand wheel on the panel for easy control of the axes
- hand wheels for all axles as standard for the FNX30 and FNE40 series

## **STRAIGHT-CUT CONTROLLER TNC 128**

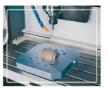
The TNC 128 is a compact and modern system that always controls one axis. Thanks to simple and intuitive operation via built-in cycles, the TNC 128 is the ideal solution for a universal milling machine.











## MOST COMMON APPLICATIONS OF AVIA MILLING MACHINES

- production of moulds, dies and tools
- tool shops, prototype production
- maintenance department
- educational purposes
- subcontracting industry



### **RELIABLE COMPONENTS**

- solid cast iron construction to achieve high precision of machined parts
- universal and solid construction with horizontal and vertical spindle, movable quill and tilting milling head
- continuous spindle speed control for all AVIA milling machines
- backlash-free, precision AVIA ball screws on all axes
- FNE series: backlash-free roller linear guide ensures stability and accuracy
- FNX series: sliding guide ensures stability and rigidity and accuracy for a long time
- FNX and FNE are equipped with separate modern AC motors for each axis
- the motors have low energy consumption and high overload capacity
- CE-certified electrical components are from well-known European manufacturers with easy access to the market



# **FNX30 SERIES**

milling machines suitable for education and to workshops



## **FNX30 SERIES**

#### The characteristic design includes:

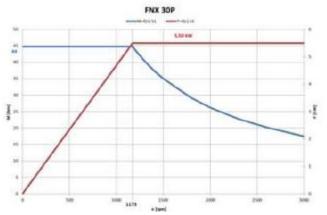
- solid cast iron construction to achieve high precision of machined parts
- Infinitely adjustable spindle speeds and feeds allow the setting of optimal parameters for modern tools
- separate motors for all axes with low energy consumption
- precision ball screws on all axes
- HIEDENHAIN TNC 620HSCI for version N or 128 for workshop programming
- backlash-free linear roller ensures stability and rigidity, eliminates stick-slip effect
- manual hand wheels for all 3 axles

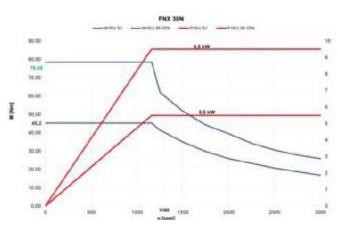
#### Friendly machine control:

- adjustable and centrally located ergonomic control panel for comfortable machine operation
- optional use of electronic hand wheel to facilitate movements
- movable quill for drilling and milling deep pockets
- tool holder according to DIN 2080
- tilting milling head ± 45 deg

#### Wide range of optional accessories:

- bezel for long milling mandrels for horizontal spindle
- machine vices and other clamping accessories
- partition head with tailstock, turntables and much more





HORIZONTAL TABLE:         mm         315 x 710         315 x 710           Table surface         mm         5/14 / 63         5/14 / 63         5/14 / 63           Table load         kg         200         200           Cross Y         mm         410         400         400           Cross Y         mm         350         350         350           Min max. spindle nose to table         mm         100 / 450         100 / 450           FEOS:         E         55 / 2,5         6 / 6 / 3           Rapid traverse X / Y / Z         m/min         2 / 2,2         6 / 6 / 3           Rapid traverse X / Y / Z         m/min         2 / 5 / 5,5 / 5,5 / 5         5 / 7 / 5           Spindle speed         rpm         3000         3000         3000           Spindle speed control         step less         step less         step less           Spindle speed control         type         manual         manual           <	Technical Data		FNX 30P / FNX 30P NC	FNX 30N	
Table spraface         mm         315 x 710         315 x 710           Tsiots: number / size / distance         mm         5/14 / 63         5/14 / 63           Table load         kg         200         200           TRAVELS:           315         315           Construction         mm         400         400            Cross Y         mm         315         315            Vertical Z         mm         100 / 450         100 / 450            Feed rate control         step less         step less         step less           Feed rate X / Y / Z         m/min         2 / 2 / 2         6 / 6 / 3           HORIZONTAL AND VERTICAL SPINDLES:         mm         3000         3000           Feed rate X / Y / Z         m/min         5 / 5 / 2, 5 / 5 / 2, 5 / 7, 5         5           Spindle taper         ISO         40         40         10           Tool holders         DIN         2080         2080           Spindle speed         rpm         3000         3000           Spindle speed         rpm         3000         3000           Spindle speed         type         manual         manual			FINA SUP / FINA SUP INC	FINA JUN	
T-slots: number / size / distance       mm       5 / 14 / 63       5 / 14 / 63         Table load       kg       200       200         TARVELS:        200       200         Cross V       mm       400       400         Cross V       mm       315       315         Vertical Z       mm       350       350         Min max. spindle nose to table       mm       100 / 450       100 / 450         Feed rate X / V / Z       m/min       2 / 2 / 2       6 / 6 / 3         Rapid traverse X / Y / Z       m/min       5 / 5 / 2 / 5       6 / 6 / 3         Bindie taper       ISO       40       40         Tool holders       DIN       2080       2080         Horizontal spindle speed       rpm       3000       3000         Spindle taper       ISO       40       40         Tool holders       mmaul       manual       spinale tape       5 / 5 / 7.5         Spindle toped S / S ( 52%)       KW       5 / 5 / 7.5       5 / 7 / 7.         Spindle toped S / S ( 52%)       Nm       47 / 7.       45 / 7 / 7.         Otol camping       manual       manual       manual         Spindle toped S / S ( 52%)		mm	215 v 710	215 v 710	
Table loadkg200200TRAVELS:Longitudinal Xmm400400Cross Vmm315315Vertical Zmm315315Min - max. spindle nose to tablemm100 / 450100 / 450FEEDS:step lessstep lessFeed rate controlstep lessstep lessFeed rate X / Y / Zm/min2 / 2 / 26 / 6 / 3Rapid traverse X / Y / Zm/min5 / 5 / 2.56 / 6 / 6 / 3HORIZOUTAL AND VENTICAL SPINDLES:40Spindle speedrpm30003000Yettical spindle speedrpm30003000Spindle speed controlstep lessstep lessSpindle speed controlstep lessstep lessSpindle speed controlmanualmanualSpindle power S1 / S6 (25%)KW5.5 / -5.5 / 7.5Main mototypeinverter controlleddigitavortrolledVertical spindle dightmm8080Swive lead angledeg.145145CONTROLThe C20HSCIThe C20HSCIVertical spindle dightaniatypeThe C20HSCIStraight-cut control HeidenhaintypeThe C30 / 300Swive lead angletype120 × 2130 x 19501520 × 2130 x 1950Straight-cut control Heidenhaintype120 × 2130 x 19501520 × 2130 x 1950Straight-cut control Heidenhaintype120 × 2					
TRAVELS:         orgitudinal X         mm         400         400           Longitudinal X         mm         315         315         315           Vertical Z         mm         315         315         350           Vertical Z         mm         350         350         350           Min. – max. spindle nose to table         mm         100 / 450         100 / 450           Feed rate X/Y / Z         m/min         2 / 2 / 2         6 / 6 / 3           Morizontal Spindle speet         X/Y Z         m/min         5 / 5 / 2.5         6 / 6 / 3           Morizontal Spindle speed         IPM         2080         2080         2080           Vertical Spindle speed         rpm         3000         3000         Spindle speed         rpm         3000         3000           Spindle speed control         step less         step less         step less         16 / 7.5         5 / 7.5           Spindle torget S / 56 (25%)         Nm         47.7 / .         45 / 7.8,3         Main motor         type         inverter controlled         digitally controlled           Spindle torget S / 56 (25%)         Nm         47.7 / .         45 / 7.8,3         Main motor         Step less         step less         step less <t< td=""><td></td><td></td><td></td><td></td></t<>					
Longitudinal X         mm         400         400           Cross Y         mm         315         315           Vertical Z         mm         350         350           Min, -max, spindle nose to table         mm         100 / 450         100 / 450           FEEDS:         step less         step less         step less           Feed rate X / Y / Z         m/min         2 / 2 / 2         6 / 6 / 3           Rapid traverse X / Y / Z         m/min         5 / 5 / 2,5         6 / 6 / 6 / 3           Rapid traverse X / Y / Z         m/min         5 / 5 / 2,5         6 / 6 / 6 / 3           HORIZONTAL AND VERTICAL SPINDLES:         50         40         40           Tool holders         DIN         2080         2080           Horizontal spindle speed         rpm         3000         3000           Spindle speed control         step less         step less         step less           Tool clamping         manual         manual         manual           Spindle torque S1 / S (5 (25%)         Nm         47,7 / -         45 / 78,3           Main motor         type         INDE23 (FINX 30P)         -         Straght-cut control Heidenhain           Vpertical spindle main         type         ND		кg	200	200	
Cross Ymm315315Vertical Zmm350350Min. – max. spindle nose to tablemm100 / 450100 / 450FEEDS:step lessstep lessFeed rate X / Y / Zm/min2 / 2 / 2 / 2 / 6 / 6 / 36 / 6 / 3Rapid traverse X / Y / Zm/min2 / 2 / 2 / 2 / 6 / 6 / 36 / 6 / 3Rapid traverse X / Y / Zm/min2 / 2 / 2 / 2 / 6 / 6 / 36 / 6 / 3Rapid traverse X / Y / Zm/min2 / 2 / 2 / 2 / 2 / 6 / 6 / 36 / 6 / 3Rapid traverse X / Y / Zm/min5 / 5 / 2 / 2 / 5 / 6 / 6 / 36 / 6 / 3Roll taberseStep less100 / 4004040Polot loidersJSO404040Spindle speedrpm300030003000Vertical spindle speed ootntolstep lessstep lessstep lessSpindle speed controltypemanualmanualSpindle speed ootntoltypemores100 / 450Spindle speed ootntoltypemores45245CodapsingkW5,5 / - 55,5 / 7,55Spindle topue S1 / 56 (25%)Nm47,7 /45 / 78,3Main motortypemb523 (FNX 30P)-5Stright-cut cortorl HeidenhaintypeTD523 (FNX 30P NC)-Cortos tortorl HeidenhaintypeTD523 (FNX 30P NC)1500 × 2130 × 1500 1500 × 2130 × 1500 1500 × 2130 × 1500 1500 × 2130 × 1500 1500 × 2130 × 1500 1500 × 2130 × 1500 1500 × 2130 × 1500 1500 × 2130 × 1500 1500 × 2130			400	400	
Vertical Zmm350350Min max. spindle nose to tablemm100/450100/450FEEDS:step lessstep lessFeed rate controlstep lessstep lessfeed rate controlRapid traverse X / Y / Zm/min2 / 2 / 2 / 2 / 5 / 6 / 6 / 3HORIZONTAL AND VERTICAL SPINDLES:V40Oto holdersDIN20802080HORIZONTAL AND VERTICAL SPINDLES:V40Vertical spindle speedrpm30003000Vertical spindle speed controlstep lessstep lessTool clampingstep lessstep lessstep lessTool clampingkW5,5 / -5,5 / 7,5Spindle torque S1 / S6 (25%)kW5,5 / -5,5 / 7,5Spindle torque S1 / S6 (25%)Nm47,7 / -45 / 78,3Main motortypeinvert controlleddigtally controlledVertical spindle orque S1 / S6 (25%)Nm8080Swivel head angledeg.445445CONTOLtypeTNC 128 (FNX 30P NC)-Digtal readout HeidenhaintypeTNC 128 (FNX 30P NC)-Straight-cut control Heidenhaintype-1000Net weightmm//.001Repeatability*mm-0.005Dimensions: X × X × Zmm1520 × 2130 × 19501520 × 2130 × 1950Net weightkg17001500 × 2130 × 1950Vertical and horizontal spindlekg<	-				
Min max. spindle nose to tablemm100 / 450100 / 450FEED :FEEd rate controlstep lessstep lessFeed rate x / Y / Zm/min2 / 2 / 26 / 6 / 3Rapid traverse X / Y / Zm/min2 / 2 / 26 / 6 / 3Rapid traverse X / Y / Zm/min2 / 2 / 26 / 6 / 3Rapid traverse X / Y / Zm/min2 / 2 / 26 / 6 / 3Rapid traverse X / Y / Zm/min5 / 5 / 2 / 26 / 6 / 3Rapid traverse X / Y / Zm/min2 / 2 / 26 / 6 / 3Control (apping)Sinole speedrpm30003000Spindle speedrpm30003000Vertical spindle speedrpm30003000Spindle optical spindle speedrpm30003000Spindle torge controlkW5,5 / -5,5 / 7,5Spindle torge S1 / 56 (25%)kW5,5 / -5,5 / 7,5Spindle torge S1 / 56 (25%)kW5,5 / -5,5 / 7,5Main motortypemm47,7 / -45 / 7,8,3Main motortypeND523 (FNX 30P NC)-ControcttypeThC 128 (FNX 30P NC)-Straight-cut control HeidenhaintypeND523 (FNX 30P NC)-Straight-cut control HeidenhaintypeND523 (FNX 30P NC)-Digital readout HeidenhaintypeND523 (FNX 30P NC)-Straight-cut control HeidenhaintypeND523 (FNX 30P NC)-Straight-cut control HeidenhaintypeND 2 / 2					
FEEDS:       step less					
Feed rate controlstep lessstep lessstep lessFeed rate X /Y / Zm/min2 / 2 / 26 / 6 / 3Repid traverse X // Zm/min5 / 5 / 2.56 / 6 / 3HORIZONTAL AND VERTICAL SPINDLES:5 / 5 / 2.56 / 6 / 3Spindle taperISO4040Tool holdersDIN20802080Horizontal spindle speedrpm30003000Vertical spindle speedrpm30003000Spindle speed controlstep lessstep lessTool chappingStep lessstep lessSpindle power S1 / S6 (25%)Nm47,7 / -45 / 78,3Main motortypeinverter controlleddigitally controlledVERTICAL HEAD:UMm8080Swivel head angledeg.445445CONTROCUTNC 128 (FNX 30P NC)-Straight-cut control HeidenhaintypeTNC 128 (FNX 30P NC)-Straight-cut control HeidenhaintypeTNC 128 (FNX 30P NC)-Straight-cut control HeidenhaintypeTNC 22 (FNX 30P NC)-CNC system HeidenhaintypeTNC 620HSCINSMiscourd positioning*mm-+/-0.01Repeatability*mm0,005Dimensions: X * X Zmm1520 x 2130 x 19501520 x 2130 x 1950Net weightNS23 (FNX 30P NC)Manual lubrication system-Single-axis control TNC 128 (FNX 30P NC)Manual lubrication system-		mm	100 / 450	100 / 450	
Feed rate X / Y / Z         m/min         2 / 2 / 2         6 / 6 / 3           Rapid traverse X / Y / Z         m/min         5 / 5 / 2,5         6 / 6 / 3           Rapid traverse X / Y / Z         m/min         5 / 5 / 2,5         6 / 6 / 3           Rapid traverse X / Y / Z         m/min         5 / 5 / 2,5         6 / 6 / 3           Spindle taper         ISO         40         40           Tool holders         DIN         2080         2080           Horizontal spindle speed         rpm         3000         3000           Spindle speed control         step less         step less         step less           Spindle power S1 / S6 (25%)         kW         5,5 / -         5,5 / 7,5           Spindle torque S1 / S6 (25%)         kW         5,5 / -         5,5 / 7,5           Spindle torque S1 / S6 (25%)         kW         5,5 / -         5,5 / 7,5           Spindle torque S1 / S6 (25%)         kW         5,5 / -         5,5 / 7,5           Spindle torque S1 / S6 (25%)         kW         mm         47,7 / -         45 / 545           Quill travel         mm         80         80         80           Sytical fleadout Heidenhain         type         ND523 (FNX 30P)         -           CNC syst				at an Isaa	
Rapid traverse X / Y / Z         m/min         5 / 5 / 2,5         6 / 6 / 3           HORIZONTAL AND VERTICAL SPINDLES:         50         40         40           Tool holders         DIN         2080         2080           Tool holders         DIN         2080         2080           Vertical spindle speed         rpm         3000         3000           Spindle speed control         step less         step less         step less           Tool clamping         manual         manual         manual           Spindle roque S1 / S6 (25%)         Nm         47,7 / -         45 / 78,3           Main motor         type         inverter controlled         digitally controlled           VERTICAL HEAD:         unit ravel         mm         80         80           Swivel head angle         deg.         ±45         205           CONTROL:         Unit ravel         mm         80         80           Swivel head angle         deg.         ±45         205           CONTROL:         Toc 208523 (FNX 30P)         -         NC 620HSC1           Digital readout Heidenhain         type         NDS23 (FNX 30P)         -           Rocaray of positioning*         mm         20 / 20 <t< td=""><td></td><td> ( t</td><td></td><td>-</td></t<>		( t		-	
HORIZONTAL AND VERTICAL SPINDLES:         Spindle taper       ISO       40       40         Spindle taper       ISO       40       40         Tool holders       DIN       2080       2080         Horizontal spindle speed       rpm       3000       3000         Vertical spindle speed control       step less       step less       step less         Tool clamping       manual       manual       manual         Spindle toped control       type       inverter controlled       digitally controlled         Spindle toped s1 / 56 (25%)       Nm       47,7 /-       45 / 78,3         Main motor       type       inverter controlled       digitally controlled         VERTICAL HEAD:       Ull travel       mm       80       80         Swivel head angle       deg.       ±45       ±45         CONTOL:       Digital readout Heidenhain       type       TNC 128 (FNX 30P)       -         Straight-cut control Heidenhain       type       TNC 128 (FNX 30P)       -         MISCELIAMEDUS:       mm       -       +/-0,01         Accuracy of positioning*       mm       -       +/-0,01         Repeatability*       mm       -       0.005		-			
Spindle taper         ISO         40         40           Tool holders         DIN         2080         2080           Horizontal spindle speed         rpm         3000         3000           Spindle speed control         step less         step less         step less           Tool clamping         manual         manual         manual           Spindle torque S1 / S6 (25%)         kW         5,5 / .         5,5 / .5           Spindle torque S1 / S6 (25%)         kW         5,5 / .         5,5 / .5           Spindle torque S1 / S6 (25%)         kW         5,5 / .         5,5 / .5           Spindle torque S1 / S6 (25%)         kW         5,5 / .         5,5 / .5           Spindle torque S1 / S6 (25%)         kW         5,5 / .         5,5 / .5           Main motor         type         invertor controlled digitally controlled <b>VERTICAL HEAD:</b>	-	m/min	5 / 5 / 2,5	6/6/3	
Tool holders         DIN         2080         2080           Horizontal spindle speed         rpm         3000         3000           Vertical spindle speed         rpm         3000         3000           Spindle speed control         step less         step less         step less           Spindle speed control         kW         5,5 / -         5,5 / 7,5           Spindle torque S1 / 56 (25%)         Nm         47,7 / -         45 / 78,3           Main motor         type         inverter controlled         digitally controlled           VERTICAL HEAD:         unverter controlled         digitally controlled           VERTICAL HEAD:         unverter control Heidenhain         type         ND523 (FNX 30P)         -           Straight-cut control Heidenhain         type         TNC 128 (FNX 30P NC)         -         NC 620HSCI           CNC system Heidenhain         type         TNC 128 (FNX 30P NC)         -         NC 620HSCI           CNC system Heidenhain         type         TNC 128 (FNX 30P NC)         -         NC 620HSCI           CNC system Heidenhain         type         TNC 128 (FNX 30P NC)         NC 620HSCI         NC 620HSCI           Straight-cut control Heidenhain         type         TNC 620HSCI         NC 20 x 2130 x 1950		160	40	40	
Horizontal spindle speedrpm30003000Vertical spindle speed controlrpm30003000Spindle speed controlstep lessstep lessTool clampingmanualmanualSpindle power S1 / S6 (25%)kW5,5 / -5,5 / 7,5Spindle torque S1 / S6 (25%)kW5,5 / -5,5 / 7,5Spindle torque S1 / S6 (25%)Nm47,7 / -45 / 78,3Main motortypeinverter controlleddigitally controlledVertical HEAD:Quill travelmm8080Swivel head angledeg.±45±45CONTROL:Usital readout HeidenhaintypeNDC 230 / FNX 30P)-CRC system HeidenhaintypeTNC 128 (FNX 30P NC)CRC system HeidenhaintypeTNC 620 HSC 120 x 2130 x 1950Standard colspan="2">Standard colspan="2">Standard colspan="2">Standard colspan="2">Standard systemStandard system <td< td=""><td></td><td></td><td></td><td></td></td<>					
Vertical spindle speed       rpm       3000       3000         Spindle speed control       step less       step less         Tool clamping       manual       manual         Spindle power S1 / S6 (25%)       kW       5,5 / -       5,5 / 7,5         Spindle torque S1 / S6 (25%)       Nm       47,7 / -       45 / 78,3         Main motor       type       inverte controlled       digitally controlled         VERTICAL HEAD:        45,7       5,5 / 7,5         Outli travel       mm       80       80         Swivel head angle       deg.       445       545         CONTROL:        TNC 128 (FNX 30P)       -         Digital readout Heidenhain       type       TNC 128 (FNX 30P)       -         Straight-cut control Heidenhain       type       TNC 128 (FNX 30P)       -         CNC system Heidenhain       type       TNC 128 (FNX 30P)       -         Repeatability*       mm       -       4/- 0,01         Repeatability*       mm       1520 x 2130 x 1950       1520 x 2130 x 1950         Dimensions: X x Y x Z       mm       1520 x 2130 x 1950       1520 x 2130 x 1950         Single-axic control TNC 128 (FNX 30P NC)       Manual lubrication system       Sin					
Spindle speed control         step less         step less         manual         manual           Spindle power S1 / S6 (25%)         kW         5,5 / -         5,5 / 7,5           Spindle torque S1 / S6 (25%)         Nm         47,7 / -         45 / 78,3           Main motor         type         inverter controlled         digitally controlled           VERTICAL HEAD:         um         80         80           Swivel head angle         deg.         ±45         ±45           CONTROL:         type         ND523 (FNX 30P)         -           Straight-cut control Heidenhain         type         TNC 128 (FNX 30P NC)         -           Straight-cut control Heidenhain         type         TNC 128 (FNX 30P NC)         -           CNSesytem Heidenhain         type         TNC 128 (FNX 30P NC)         -           CNSesytem Heidenhain         type         TNC 128 (FNX 30P NC)         -           CNSELANEOUS:         mm         -         -         0,005           Dimensions: X x Y xZ         mm         1520 x 2130 x 1950         1520 x 2130 x 1950           Net weight         kg         1700         +/- 0,01           *acc to PN-ISO 230-2, with linear scales         Manual lubrication system           Single-axit cont		•			
Tool clamping         manual         manual           Spindle power S1 / S6 (25%)         kW         5,5 / .5           Spindle torque S1 / S6 (25%)         Nm         47,7 / .         45 / 78,3           Main motor         type         inverter controlled         digitally controlled           VERTICAL HEAD:         mm         80         80           Swivel head angle         deg.         ±45         ±45           CONTROL         type         ND523 (FNX 30P)         -           Sträight-cut control Heidenhain         type         TNC 620HSCI         -           CNC system Heidenhain         type         TNC 28 (FNX 30P)         -           Straight-cut control Heidenhain         type         TNC 28 (FNX 30P)         -           Straight-cut control Heidenhain         type         TNC 28 (FNX 30P)         -           Straight-cut control Heidenhain         type         TNC 28 (FNX 30P)         -           Straight-cut control Heidenhain         type         TNC 28 (FNX 30P)         -           Straight-cut control Heidenhain         type         TNC 28 (FNX 30P)         -           MISCELLANEOUS:         mm         -         +/- 0,01           Correacy of positioning*         mm         -         -<		rpm			
Spindle power S1 / S6 (25%)         kW         5,5 / -         5,5 / 7,5           Spindle torque S1 / S6 (25%)         Nm         47,7 / -         45 / 78,3           Main motor         type         inverter controlled         digitally controlled           VERTICAL HEAD:           45         45           CONTROL:          445         45           Digital readout Heidenhain         type         ND523 (FNX 30P)         -           Straight-cut control Heidenhain         type         TNC 128 (FNX 30P NC)         -           CNC system Heidenhain         type         TNC 128 (FNX 30P NC)         -           Cut system Heidenhain         type         TNC 128 (FNX 30P NC)         -           Cut system Heidenhain         type         TNC 620HSCI         -           Accuracy of positioning*         mm         -         +/- 0,01           Repeatability*         mm         -         0,005           Dimensions: X x Y x Z         mm         1520 x 2130 x 1950         1520 x 2130 x 1950           Stact or PN-ISO 230-2, with linear scales          The cooling system         -           Single-axis control TNC 128 (FNX 30P NC)         Manual lubrication system         -         -	• •			-	
Spindle torque S1 / S6 (25%)         Nm         47,7 / -         45 / 78,3           Main motor         type         inverter controlled         digitally controlled           VERTICAL HEAD:           80           Quill travel         mm         80         80           Swivel head angle         deg.         ±45         ±45           CONTROL:           TNC 128 (FNX 30P)         -           Digital readout Heidenhain         type         ND523 (FNX 30P)         -         Straight-cut control Heidenhain         type         TNC 620HSCI           CNC system Heidenhain         type         TNC 128 (FNX 30P)         -         TNC 620HSCI           Keucarcy of positioning*         mm         -         -         0,005           Dimensions: X x Y x Z         mm         1520 x 2130 x 1950         1520 x 2130 x 1950           Net weight         kg         1700         1700           *acc to PN-ISO 230-2, with linear scales          Stanual Lubrication system           Single-axis control TNC 128 (FNX 30P NC)         Manual Lubrication system         Single-axis control TNC 128 (FNX 30P NC)         Manual Lubrication system           Vertical and horizontal spindle         Lighting with 24V lamp         Cercertificate	1 0				
Main motortypeinverter controlleddigitally controlledVERTICAL HEAD:Quill travelmm8080Swivel head angledeg.±45±45CONTROLtypeND523 (FNX 30P)-Straight-cut control HeidenhaintypeTNC 128 (FNX 30P NC)CONTROLCNC system HeidenhaintypeTNC 128 (FNX 30P NC)TNC 620HSCIMISCELLANGEOUS:TNC 620HSCITNC 620HSCIAccuracy of positioning*mm-+/- 0,01Repeatability*mm-0,005Dimensions: X x Y x Zmm1520 x 2130 x 19501520 x 2130 x 1950Net weightkg17001700*acc to PN-ISO 230-2, with linear scales17001700*act to PN-ISO 230-2, with linear scalesStandard colour systemSingle-axis control TNC 128 (FNX 30P NC)Manual lubrication system*act to PN-ISO 230-2, with linear scalesStandard colour RAL 7024/7035Single-axis control TNC 128 (FNX 30P NC)Enclosed workspace*etical and horizontal spindleLighting with 24V lampPrecision ball screws in all three axesStandard colour RAL 7024/7035Anaual hand wheels with rulers for all axesInstructions for use and programmingCovers on linesCE certificateOPTIONS:Enclosed workspaceChroson linesCE certificateCovers on linesStaady rest for long milling mandrelsLinear rulers for 3 axesStea					
VERTICAL HEAD:         mm         80         80           Quill travel         mm         80         80           Swivel head angle         deg.         ±45         ±45           CONTROL:           TOP            Digital readout Heidenhain         type         NDS23 (FNX 30P)         -           Straight-cut control Heidenhain         type         TNC 128 (FNX 30P NC)            CNC system Heidenhain         type         TNC 128 (FNX 30P NC)            MISCELLANEOUS:          TNC 620HSCI            Accuracy of positioning*         mm         -         +/- 0,01           Repeatability*         mm         -         0,005           Dimensions: X x Y x Z         mm         1520 x 2130 x 1950         1520 x 2130 x 1950           Net weight         kg         1700         1700         *           *act to PN-ISO 230-2, with linear scales         Single-axis control TNC 128 (FNX 30P NC)         Manual lubrication system         Single-axis control TNC 128 (FNX 30P NC)         Manual lubrication system           Single-axis control TNC 128 (FNX 30P NC)         Enclosed workspace         Vertical and horizontal spindle         Lighting with 24V lamp           Precision ball screws in all t	Spindle torque S1 / S6 (25%)	Nm	47,7 / -	45 / 78,3	
Quill travel         mm         80         80           Swivel head angle         deg.         ±45         ±45           CONTROL:              Digital readout Heidenhain         type         ND523 (FNX 30P)         -           Straight-cut control Heidenhain         type         TNC 128 (FNX 30P NC)         -           CNC system Heidenhain         type         TNC 620HSCI         MISCELLANEOUS:           MISCELLANEOUS:         mm         -         +/-0,01           Repeatability*         mm         -         +/-0,05           Dimensions: X x Y x Z         mm         1520 x 2130 x 1950         1520 x 2130 x 1950           Net weight         kg         1700         1700         *           *act o PN-ISO 230-2, with linear scales           Y         Y           Saxis digital measuring ND523 (FNX30P)         The cooling system         Single-axis control TNC 128 (FNX 30P NC)         Manual lubrication system           HEIDENHAIN TNC 620HSCI CNC system (FNX30N)         Enclosed workspace         Vertical and horizontal spindle         Lighting with 24V lamp           Precision ball screws in all three axes         Standard colour RAL 7024/7035         Linear roller guide on all three axes         Morking tools <tr< td=""><td>Main motor</td><td>type</td><td>inverter controlled</td><td>digitally controlled</td></tr<>	Main motor	type	inverter controlled	digitally controlled	
<table-container>Sinvel head angledeg.±45±45CONTROL:Usight car control HeidenhaintypeND523 (FNX 30P)-Straight-cut control HeidenhaintypeTNC 128 (FNX 30P NC)CNC system HeidenhaintypeTNC 620HSCICNC system HeidenhaintypeTNC 620HSCIONE Straight-cut control HeidenhaintypeTNC 620HSCIONE Straight-cut control HeidenhaintypeTNC 620HSCIAccuracy of positioning*mm-+/- 0,01Repeatability*mm-0,005Dimensions: X X Y X Zmm1520 x 2130 x 19501520 x 2130 x 1950Standard colspan="2"&gt;Standard colspan="2"&gt;Standard colspan="2"&gt;Standard colspan="2"&gt;Standard colspan="2"Not colspan="2"Standard colspan="2"<td colspan<="" td=""><td></td><td></td><td></td><td>_</td></td></table-container>	<td></td> <td></td> <td></td> <td>_</td>				_
CONTROL:Vertical and horizontal spindleDigital readout HeidenhaintypeND523 (FNX 30P)-Straight-cut control HeidenhaintypeTNC 128 (FNX 30P NC)CNC system HeidenhaintypeTNC 620HSCIMISCELLANEOUS:Accuracy of positioning*mm-+/- 0,01Repeatability*mm-0,005Dimensions: X x Y x Zmm1520 x 2130 x 19501520 x 2130 x 1950Net weightkg17001700*acc to PN-ISO 230-2, with linear scalesSThe cooling systemSingle-axis control TNC 128 (FNX 30P NC)Manual lubrication systemHEIDENHAIN TNC 620HSCI CNC system (FNX30N)Vertical and horizontal spindleLighting with 24V lampPrecision ball screws in all three axesWorking toolsManual hand wheels with rulers for all axesInstructions for use and programmingCovers on linesCE certificateOPTIONS:CNC MACHINESCNC MACHINESMANUAL AND CNC MACHINESLinear rulers for 3 axesSteady rest for long milling mandrelsLinear rulers for 3 axesSteady rest for long milling mandrelsLinear rulers for 3 axesSteady rest for long milling mandrelsLinear rulers for 3 axesSteady rest for long milling mandrelsLinear rulers for 3 axesSteady rest for long milling mandrelsLinear rulers for 3 axesSteady rest for long milling mandrelsLinear rulers for 3 axesSteady rest for long milling mandrelsLinear rulers for 3 axesSteady rest for lo	Quill travel	mm	80	80	
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Straight-cut control Heidenhain       type       TNC 128 (FNX 30P NC)         CNC system Heidenhain       type       TNC 620HSCI         MSCELLANEOUS:       mm       -       4/- 0,01         Repeatability*       mm       -       0,005         Dimensions: X x Y x Z       mm       1520 x 2130 x 1950       1520 x 2130 x 1950         Net weight       kg       1700       1700         *act to PN-ISO 230-2, with linear scales       r       Y       Y         Staxis digital measuring ND523 (FNX30P       The coling system       1700         Saxis digital measuring ND523 (FNX30P NC)       Stact 20 Nortspace       Standard colour RAL 7024/7035         Starie digital measuring ND523 (FNX30P NC)       Enclosed workspace       Standard colour RAL 7024/7035         Single-axis control TNC 128 (FNX 30P NC)       Enclosed workspace       Standard colour RAL 7024/7035         Vertical and horizontal spindle       Uighting with 24V lamp       Standard colour RAL 7024/7035         Standard colour RAL 7024/7035       Standard colour RAL 7024/7035       Standard colour RAL 7024/7035         Linear roller guide on all three axes       Standard colour RAL 7024/7035       Standard colour RAL 7024/7035         Covers on lines       C       C       C         Otrotonse       Standard colour RAL 7024/					
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MISCELLANEOUS:Accuracy of positioning*mm-+/- 0,01Repeatability*mm-0,005Dimensions: X x Y x Zmm1520 x 2130 x 19501520 x 2130 x 1950Net weightkg17001700*acc to PN-ISO 230-2, with linear scales17001700STANDARD:The cooling systemStatis digital measuring ND523 (FNX30P)Manual lubrication systemStatis digital measuring ND523 (FNX30P)Manual lubrication systemStatis control TNC 128 (FNX 30P NC)Manual lubrication systemHEIDENHAIN TNC 620HSCI CNC system (FNX30N)Enclosed workspaceVertical and horizontal spindleLighting with 24V lampPrecision ball screws in all three axesWorking toolsManual hand wheels with rulers for all axesInstructions for use and programmingCovers on linesCE certificateOPTIONS:CNC MACHINESLinear rulers for 3 axesSteady rest for long milling mandrelsMachine viceElectronic hand wheelDividing head with tailstockDrilling headTool probe3 and 4-jaw chuck for dividing headTool holder, milling mandrels and more	Straight-cut control Heidenhain	type	TNC 128 (FNX 30P NC)		
Accuracy of positioning*       mm       -       +/- 0,01         Repeatability*       mm       -       0,005         Dimensions: X x Y x Z       mm       1520 x 2130 x 1950       1520 x 2130 x 1950         Net weight       kg       1700       1700         *acc to PN-ISO 230-2, with linear scales       The coling system       1700         *acc to PN-ISO 230-2, with linear scales       The coling system       The coling system         Single-axis control TNC 128 (FNX 30P NC)       Manual lubrication system       Manual lubrication system         Single-axis control TNC 128 (FNX 30P NC)       Enclosed workspace       Vertical and horizontal spindle       Lighting with 24V lamp         Vertical and horizontal spindle       Standard colour RAL 7024/7035       Standard colour RAL 7024/7035         Linear roller guide on all three axes       Working tools       Manual hand wheels with rulers for all axes         Covers on lines       Cc certificate       Covers on lines       Cc certificate         OPTIONS:       Electronic hand wheel       Manual And wheels       Machine vice         Linear rulers for 3 axes       Steady rest for long milling mandrels       Machine vice         Electronic hand wheel       Dividing head with tailstock       Drilling head         Tool probe       3 and 4-jaw chuck for dividing hea	CNC system Heidenhain	type		TNC 620HSCI	
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Dimensions: X x Y x Z         mm         1520 x 2130 x 1950         1520 x 2130 x 1950           Net weight         kg         1700         1700           *acc to PN-ISO 230-2, with linear scales         The coling system         1700           *acc to PN-ISO 230-2, with linear scales         The coling system         1700           *acc to PN-ISO 230-2, with linear scales         The coling system         1700           *acc to PN-ISO 230-2, with linear scales         The coling system         1700           *acc to PN-ISO 230-2, with linear scales         Manual lubrication system         1700           Stands digital measuring ND523 (FNX30P)         Manual lubrication system         1800           Single-axis control TNC 128 (FNX 30P NC)         Manual lubrication system         1800           HEIDENHAIN TNC 620HSCI CNC system (FNX30N)         Enclosed workspace         1900           Vertical and horizontal spindle         Lighting with 24V lamp         1900           Precision ball screws in all three axes         Stand-d colour RAL 7024/7035         1900           Linear roller guide on all three axes         Instructions for use and programming         1900           Covers on lines         CE certificate         1900         1900           OPTIONS:         Enclosed workspace         1900         1900 <tr< td=""><td>Accuracy of positioning*</td><td>mm</td><td>-</td><td>+/- 0,01</td></tr<>	Accuracy of positioning*	mm	-	+/- 0,01	
kg       1700       1700         *act to PN-ISO 230-2, with linear scales       The color scales       The color scales         STANDARD       The color scales       The color scales         Sands digital measuring ND523 (FNX30P NC)       Manual lubrication system       Manual lubrication system         Single-axis control TNC 128 (FNX 30P NC)       Manual lubrication system       Manual lubrication system         KEIDENHAIN TNC 620HSCI CNC system (VX30N)       Enclored workspace       Manual lubrication system         Vertical and horizontal spindle       Standard colour RAL 7024/7035       Manual hand spindle         Precision ball screws in all three axes       Standard colour RAL 7024/7035       Manual hand wheels with rulers for axes         Govers on lines       Nature to spindle       Nature to spindle       The colour spindle         Covers on lines       Manual hand wheels with rulers for all type so and programming       Covers on lines       Standard colour RAL 7024/7035         Covers on lines       Manual hand wheels with rulers for all type so and programming       Covers on lines       Standard colour RAL 7024/7035         Covers on lines       Manual hand wheels with rulers for all type so and programming       Standard colour RAL 7024/7035       Standard colour RAL 7024/7035         Covers on lines       Manual hand wheels       Standard colour RAL 7024/7035       Standard colour RAL	Repeatability*	mm	-	0,005	
*acc to PN-ISO 230-2, with linear scalesSTANDARD:The coling system3-axis digital measuring ND523 (FNX30P)The coling systemSingle-axis control TNC 128 (FNX 30P NC)Manual lubrication systemHEIDENHAIN TNC 620HSCI CNC system (FNX30N)Enclosed workspaceVertical and horizontal spindleLighting with 24V lampYrecision ball screws in all three axesStandard colour RAL 7024/7035Linear roller guide on all three axesWorking toolsManual hand wheels with rulers for all axesNorking toolsCovers on linesCe certificateOPTIONS:CNC MACHINESLinear rulers for 3 axesSteady rest for long milling mandrelsMachine viceDividing head with tailstockDividing head with tailstockDivid	Dimensions: X x Y x Z	mm	1520 x 2130 x 1950	1520 x 2130 x 1950	
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Single-axis control TNC 128 (FNX 30P NC)Manual lubrication systemHEIDENHAIN TNC 620HSCI CNC system (FNX30N)Enclosed workspaceVertical and horizontal spindleLighting with 24V lampPrecision ball screws in all three axesStandard colour RAL 7024/7035Linear roller guide on all three axesWorking toolsManual hand wheels with rulers for all axesInstructions for use and programmingCovers on linesCE certificateOPTIONS:CNC MACHINESMANUAL AND CNC MACHINESLinear rulers for 3 axesSteady rest for long milling mandrelsMachine viceElectronic hand wheelDividing head with tailstockDrilling headTool probe3 and 4-jaw chuck for dividing headTool holder, milling mandrels and more	STANDARD:				
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Vertical and horizontal spindleLighting with 24V lampPrecision ball screws in all three axesStandard colour RAL 7024/7035Linear roller guide on all three axesWorking toolsManual hand wheels with rulers for all axesInstructions for use and programmingCovers on linesCE certificateOPTIONS:CNC MACHINESLinear rulers for 3 axesSteady rest for long milling mandrelsLinear rulers for 3 axesSteady rest for long milling mandrelsElectronic hand wheelDividing head with tailstockDrilling headTool probe3 and 4-jaw chuck for dividing headTool holder, milling mandrels and more	Single-axis control TNC 128 (FNX 30P NC)	le-axis control TNC 128 (FNX 30P NC)		Manual lubrication system	
Precision ball screws in all three axesStandard colour RAL 7024/7035Linear roller guide on all three axesWorking toolsManual hand wheels with rulers for all axesInstructions for use and programmingCovers on linesCE certificateOPTIONS:CNC MACHINESLinear rulers for 3 axesSteady rest for long milling mandrelsMachine viceElectronic hand wheelDividing head with tailstockDrilling headTool probe3 and 4-jaw chuck for dividing headTool holder, milling mandrels and more			Enclosed workspace		
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Manual hand wheels with rulers for all axesInstructions for use and programming CE certificateOPTIONS:CE CortificateCNC MACHINESMANUAL AND CNC MACHINESLinear rulers for 3 axesSteady rest for long milling mandrelsMachine viceElectronic hand wheelDividing head with tailstockDrilling headTool probe3 and 4-jaw chuck for dividing headTool holder, milling mandrels and more	Precision ball screws in all three axes		Standard colour RAL 7024	l/7035	
Covers on linesCE certificateOPTIONS:MANUAL AND CNC MACHINESCNC MACHINESMANUAL AND CNC MACHINESLinear rulers for 3 axesSteady rest for long milling mandrelsMachine viceElectronic hand wheelDividing head with tailstockDrilling headTool probe3 and 4-jaw chuck for dividing headTool holder, milling mandrels and more	Linear roller guide on all three axes		Working tools		
OPTIONS:CNC MACHINESMANUAL AND CNC MACHINESLinear rulers for 3 axesSteady rest for long milling mandrelsMachine viceElectronic hand wheelDividing head with tailstockDrilling headTool probe3 and 4-jaw chuck for dividing headTool holder, milling mandrels and more	Manual hand wheels with rulers for all axe	25	Instructions for use and p	rogramming	
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CNC MACHINESMANUAL AND CNC MACHINESLinear rulers for 3 axesSteady rest for long milling mandrelsMachine viceElectronic hand wheelDividing head with tailstockDrilling headTool probe3 and 4-jaw chuck for dividing headTool holder, milling mandrels and more					
Linear rulers for 3 axesSteady rest for long milling mandrelsMachine viceElectronic hand wheelDividing head with tailstockDrilling headTool probe3 and 4-jaw chuck for dividing headTool holder, milling mandrels and more		MANUAL AND CNC MACHINES			
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Tool probe3 and 4-jaw chuck for dividing headTool holder, milling mandrels and more					
		-	-	mandrels and more	
	CAD / CAM software				



# **FNE40 SERIES**

modern universal easy to use



## **FNE40 SERIES**

#### The characteristic design includes:

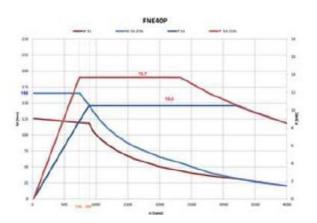
- solid cast iron construction to achieve high precision of machined parts
- Infinitely adjustable spindle speeds and feeds allow the setting of optimal parameters for modern tools
- separate motors for all axes with low energy consumption
- precision ball screws on all axes
- HIEDENHAIN TNC 620HSCI for version N or 128 for workshop programming
- sliding guide ensures stability and rigidity, TURCITE minimizes friction and eliminates contamination of the machine guide surfaces

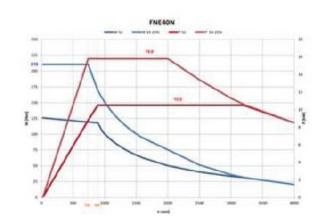
#### Operator friendly machines:

- All controls are ergonomically placed on the panel
- electronic hand wheel for easy movement
- automatic lubrication system included in version N
- push-button control of tool clamping

#### Wide range of optional accessories:

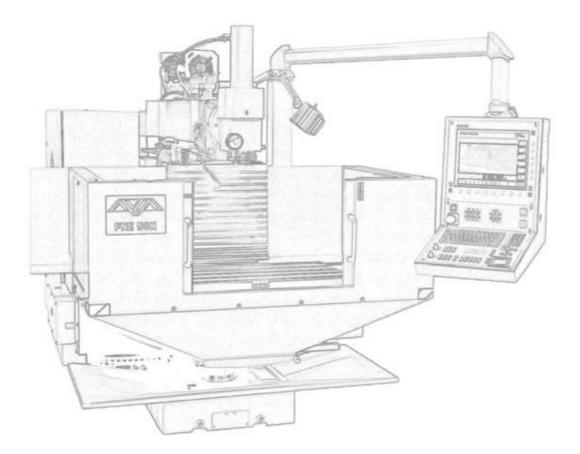
- high-speed milling head up to 8000 rpm
- linear rulers on all 3 axes, tool and workpiece probe
- grooving head, dividing head with tailstock, rotary tables and much more





Technical Data		FNE 40P / FNE 40P NC	FNE 40N
HORIZONTAL TABLE:			
Table surface	mm	400 x 800	400 x 800
T-slots: number / size / distance	mm	5 / 14 / 80	5 / 14 / 80
Table load	mm	400	400
TRAVELS:			
Longitudinal X	mm	620	620
Cross Y	mm	420	420
Vertical Z	mm	400	400
Min. – max. spindle nose to table	mm	100 / 500	100 / 500
FEEDS:		ŕ	, , , , , , , , , , , , , , , , , , ,
Feed rate control		step less	step less
Feed rate X/Y/Z	m/min	2/2/2	10/10/6
Rapid traverse X / Y / Z	, m/min	5/5/4	10/10/6
HORIZONTAL AND VERTICAL SPINDLES:	,	- , - ,	
Spindle taper	ISO	40	40
Tool holders	DIN	69871A	69871A
Pull stud	ISO	7388/2 type B	7388/2 type B
Horizontal spindle speed	rpm	4000	4000
Vertical spindle speed	rpm	4000 / 8000*	4000 / 8000*
Spindle speed control	· ۳· · ·	step less	step less
Tool clamping		hydraulic	hydraulic
Spindle power S1 / S6 (25%)	kW	5,5 / -	5,5 / 9,5
Spindle torque S1 / S6 (25%)	Nm	147 / -	145 / 252,5
Main motor	type	inverter controlled	digitally controlled
VERTICAL HEAD:	type	inverter controlled	digitally controlled
Quill travel	mm	80	80
Swivel head angle	deg.	±45	±45
CONTROL:	ucg.	±+ <b>5</b>	145
Digital readout Heidenhain	type	ND523 (FNE 40P)	-
Straight-cut control Heidenhain	type	TNC 128 (FNE 40P NC)	
CNC system Heidenhain	type	THE 128 (THE 40F HE)	TNC 620HSCI
MISCELLANEOUS:	type		1100 02011301
Accuracy of positioning**	mm	-	+/- 0,01
Repeatability**	mm	_	0,005
Dimensions: X x Y x Z	mm	2000 x 2760 x 2050	2000 x 2800 x 2320
Net weight	kg	1900	2000 × 2000 × 2020
* optional high-speed vertical spindle	кg	1900	2100
**acc to PN-ISO 230-2, with linear scales			
STANDARD:			
3-axis digital measuring ND523 (FNE 40P)		Cooling system for tools	
Single-axis control TNC 128 (FNE 40P NC)		Line covered	
HEIDENHAIN TNC 620HSCI CNC system (FI	IF 40N)	Steady rest for long milling	mandrels
Vertical and horizontal spindle		Enclosed workspace	manureis
Precision ball screws in all three axes		Pullers 3 pieces	
Sliding guide on all three axes		Instructions for use and pro	ogramming
Manual hand wheels with rulers for all axe	20	CE certificate	ogramming
OPTIONS:			
CNC MACHINES	MANUAL AND CNC MA	CHINES	
Linear rulers for 3 axes	High speed vertical hea		e vice
		•	
Electronic hand wheel	Dividing head with tails		
Workpiece probe	3 and 4-jaw chuck for d		
Tool probe	Bezel for long milling m		
CNC rotary table (4th axis) CAD / CAM software	Grooved flange	I ool hol	der, milling mandrels and more





Company management and production:

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