SAMAG Machine Tools GmbH · Hüttenstraße 21 · 07318 Saalfeld/Saale · GERMANY

Special Offer:

SAMAG
Machine Tools GmbH
Hüttenstraße 21
07318 Saalfeld/Saale
T +49 3671 585-0
F +49 3671 585-410
samag.de

Your Sign	Your Message from	Phone	Our Sign	Date
		+49 173 2016082	T.Löffler	2022.10.16

Special Offer for sale of a used, partially overhauled three-spindle, horizontal machining center SAMAG MFZ 2-3 Machine Number 53152

Based on our general SAMAG Terms and conditions of sale and delivery, we submit the following

Special OFFER

OFFER-Nr.:
Project Nr.:

for

1 Piece SAMAG MFZ 2-3 (Machine-Nr.: 53152)

with the following content:

Sitz: Saalfeld/Saale
Amtsgericht Jena
HRB 516361

Geschäftsführer:
Martin Hüttmann
Dr. Friedrich Wenzel-Lux

USt-IdNr.: DE 327 288 748
St.-Nr.: 161 / 118 / 12970

Commerzbank AG, Erfurt
IBAN DE58 8204 0000 0655 0776 00
BIC COBADEFFXXX

Deutsche Bank AG, Jena
IBAN DE32 8207 0000 0147 4287 00
BIC DEUTDE8EXXX

Customer:
Offer: MFZ2-3 (Machine No:53152)
Date: 2022.10.16
Offer No.:
Project No.:

1. Machine Data:

- Product name: MFZ 2-3 Update
- Machine number 53152
- Used 3-spindle horizontal 4-axis machining center
- Year of construction: 2009
- The machine produced until October 2020
- Sinumerik 840D Powerline control
- X-axis travel: 300 mm
- Y-axis travel: 500 mm
- Z-axis travel: 450 mm
- Spindle distance: 300 mm
- Rapid traverse X Y Z-axis 60000mm / min
- 3 motor milling spindles GMN, version with HSK63 tool holder

- Drive power (S1 / S6) 28 KW (constant)
- Torque (S1 / S6) 63/83 Nm
- Maximum speed 16,000 rpm
- Chip conveyor Knoll (scraper belt conveyor in the setting variant across the machine)
- Knoll coolant system with paper belt filter
- Flushing gun
- Complete housing
- Tool storage (3 x 30 tools)
- Operating voltage 400V 3 N ~
- Control voltage 24V DC

Working areas / axis dynamics

Working Area		
X-, Y- Z-Axis	300/500/450	mm
max. feed forces		
X-, Y-, Z-Axis	8.000	N
rapid traverse speeds		
X-, Y-, Z-Axis	60	m/min
axis accelerations		
X-, Z-Axis	10	m/s²
Y-Axis	8	m/s²

Spindle-box

with 3 water-cooled motor spindles
Spindle-box rinsing

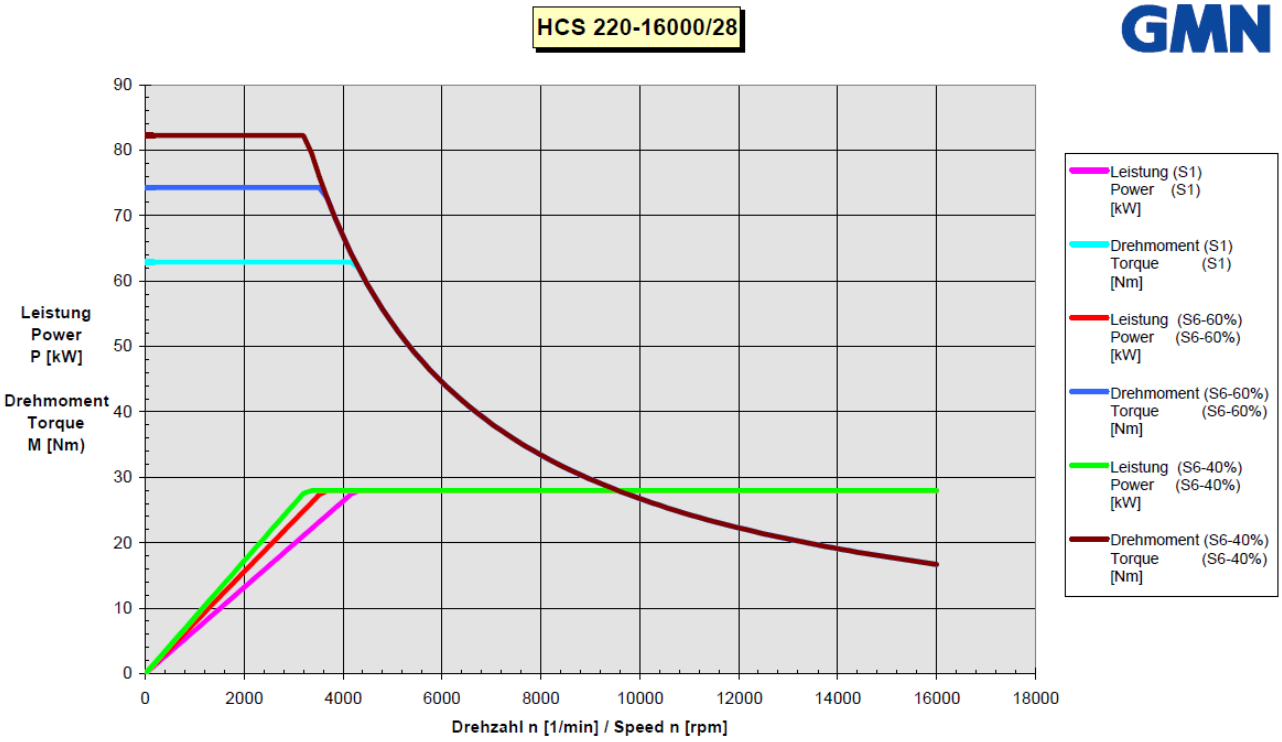
spindle-distance	300	mm
tool holder HSK-A63 according to DIN 69893		
OTT tool clamping system		
acceleration time (10,000 rpm)	approx. 1 s	
spindle bearing diameter	70	mm
speed range, infinitely variable	50 ... 16,000	rpm
spindle lubrication	lubricated for life	

pneumatic cleaning of the short taper and the flat contact surface of the HSK holder during automatic tool-change

Performance data of the motor spindles (torque performance curve see attachment)

base / nominal speed	4.200	rpm
max. drive power	28	kW (constant)
max. torque at 100% duty cycle	63	Nm
max. torque at 40% duty cycle	83	Nm

Customer:
Offer: MFZ2-3 (Machine No:53152)
Date: 2022.10.16
Offer No.:
Project No.:



1 piece horizontal 180° swing carrier (W-axis)

Faceplate diameter 500 mm (NC table) / 345 mm (counter bearing)
permissible tangential moment 15.000 Nm

2 piece horizontal 360° swing carriers (A1 and A2)

for holding the workpiece carrier with clamping devices
Energy supply per axis via 10 channels for hydraulic and pneumatic functions
(5 channels in the NC drive and 5 channels in the counter bearing)

Faceplate diameter (NC table, counter bearing)	345 mm
maximum transport load per workpiece carrier	ca. 600 kg
permissible tangential moment	5.000 Nm
Positioning accuracy (120 x 3°)	± 3 arc seconds

Approaching intermediate positions is possible.
Positioning accuracy in NC partial operation outside the 3-degree window
± 25 arc seconds
permissible tangential torque with NC position control 500 Nm

Tool magazine

for pick-up tool change 90 tool places (3 x 30)
10 cassettes, each with 9 tool places, are mounted on the carousel magazine with a vertical axis of rotation.
The tool magazine is loaded and unloaded by using a mechanical loading and unloading unit

Fast tool change lock (chip and splash water protection)

The HSK cones in the cassette above the work area are flushed in pulses during the tool change cycle.

maximum tool Ø all places occupied	85	mm
maximum tool Ø with free adjacent spaces	160	mm
maximum tool length from the HSK face	320	mm
maximum tool weight (standard holder)	6	kg
chip to chip time (within 1 cassette)	approx. 4,8	s

Measuring systems

absolute direct measuring systems in all linear axes
absolute rotary measuring systems in all rotary axes
accuracy according to VDI/DGQ 3441

Hydraulic unit

integrated into the enclosure, access via a service door,
designed for all hydraulic Machine functions.

content hydraulic unit	160	l
maximum operating pressure	160	bar
maximum delivery volume	12	l/min

Pneumatic equipment

Compressed air maintenance units for compressed and sealing air, easily accessible from the outside with timer after-blow unit for sealing air protection

required compressed air connection	6 ± 0,5 bar	
required air requirement (temporarily)	approx. 200	standard cubic meter/hour

air according to quality class 545 to DIN-ISO 8573-1

Automatic central lubrication

Liquid grease lubrication, low consumption, no coolant contamination, easily accessible from the outside, reservoir content approx. 2 Litre

Coolant system

Contents of coolant tank	max. 1.400	l
separate machine bed flushing	160	l/min at 2,6 bar
external tool cooling and various flushing functions	120	l/min at 3,5 bar
internal tool cooling through the spindles	40	l/min at 30 bar (optional 60 bar)

Paper band filter (deep bed filter)

Fineness of filtration between 30 and 50 µm

maximum filtration volume	approx. 500 l/min

SAMAG

Chip conveyor
Scraper belt conveyor, positioning variant across the machine
Chip ejection approx. 1,000 mm above ground
Flushing gun for manual cleaning of the loading area

Cooling unit
generously designed cooling capacity of 19.5 kW (CFC-free cooling medium) integrated in the housing to cool the motor spindles, the control cabinets and the hydraulic oil. Access via a Service door

Automatic loading door (2 parts)
automatic opening and closing of the loading door with viewing windows
designed according to the applicable guidelines of the German operating safety regulations (BSV) with electrical protection and locking the design of the housing front ensures excellent accessibility for automatic loading devices and the problem-free exchange of complete workpiece carriers.
Control panel for loading arranged directly next to the loading door

Preparation for suction
Connection piece Ø150 mm above the work area in the roof of the housing

suction volume	approx. 2,5 m^3

Paintwork

standard design	Red white

Machine plates
in German.
Machine plates of a safety-related nature in Polish

Installation and connection data
Machine dimensions (without chip conveyor and coolant system)

	length	x	broad	x	Height (without suction pipe)
approx.	5.250 mm	x	4.040 mm	x	2.800 mm

	length	x	broad	x	Height (with suction pipe)
approx.	5.250 mm	x	4.040 mm	x	3.030 mm

required installation space with the control cabinet and service doors open, including coolant system and chip conveyor

	length	x	broad
approx.	5.990 mm	x	6.550 mm

weight, incl. coolant system + chip conveyor	ap. 25.000	kg
weight machine	ca. 20.000	kg
operating voltage	400 V 3 N~ 50	Hz
control voltage	24	V DC

connected load machine	approx. 82	kVA
pre fuse before the main switch	3 x 160	A
electrical supply line	70	mm²

Connection designed for TN network according to DIN VDE 0100-part 300 electrical machine design according to EN 60 204

Levelling elements
for levelling the machine on the hall floor included in the scope of delivery

Documentation in Polish
commissioning Instructions
operation manual
maintenance and maintenance regulations
safety regulations
Interface of the SINUMERIK control
error messages of the control
masks of the control
machine plates of a safety-related nature

Documentation in German
hydraulic and pneumatic plans
coolant plans
circuit diagrams
geometry logs
assembly drawings of the assemblies
spare and wearing parts lists
supplier documentation
other machine plates

2. Existing special equipment

COOLANT SUPPLY
internal tool cooling 60 bar
additional button "Coolant OFF"
magnetic separator to relieve the paper band filter
fixture/workpiece rinsing device in the loading area

TOOL MONITORING
Drill breakage control with laser beam (make by “LEUZE”)

A1-A2-AXIS
design Counter bearing A1 and A2 axis with face gearing (Hirth Gear)
positioning and clamping of both A-axes with face gearing in the drive and counter bearing
increase in the tangential rigidity of both workpiece carrier axes (A1-and A2-Axis)
increase in the maximum tangential torque from 5,000 Nm to 7,500 Nm

Workpiece CLAMPING HYDRAULICS
A1 and A2 axle with identical hydraulic equipment
Max 5 double-acting hydraulic functions per A-axis

PNEUMATIC WORKPIECE CONTROL FUNCTIONS
on demand

OTHER EQUIPMENT
electro-mech. Emulsion mist extraction (make Air Fresh, volume flow 2,050 m3/h)
loading area light
Multifunctional light (3 levels)

CONTROL OPTIONS
program pre-processing
technological cycles drilling/milling
Tool life monitoring / automatic call of sister tools

Notice
Since the machine is a used machine, minor deviations in the technical data cannot be ruled out.

3. Scope of retrofit included in the purchase price

- assembly of the complete machine and accessories in the Samag factory in Saalfeld
- cleaning the machine
- measurement and adjustment of the machine geometry and the motor spindles
- preparation of an up-to-date geometry protocol
- replacing the moving parts and toothed belts of the Y-axis hydraulic counterbalance
- replacement of the pressure accumulator counterweight and hydraulic unit
- exchange of all tool holders on the tool magazine
- replacing the sheets on the tool magazine (if necessary)
- measurement and adjustment tool magazine
- replacement of all window panes
- replacement of the scrapers of the Z-axis (spindle box)
- replacement of all hydraulic hoses
- replacement of the piston distributors of the central lubrication

- replacement of the filter hydraulic, measuring systems and coolant system
- replacing the rubber seals on the control cabinet doors (if necessary)
- changing the oil of the rotary axes and checking for leaks
- Improvement of the colouring in the front area and in the work area (no repainting)
- Checking and maintenance of the “Schimpke” cooling unit by a specialist company

3.1 machine price including retrofit according to point 3
142.100,00 €

4. Condition of the machine components
Spindle 1 concentricity: guaranteed below 15 µm at 250 mm on the measuring mandrel
Spindle 2 concentricity: guaranteed below 15 µm at 250 mm on the measuring mandrel
Spindle 3 concentricity: guaranteed below 15 µm at 250 mm on the measuring mandrel

exchange NC-Drive A1 axis 07/2018

5. Retrofit and modification optional

5.1 Retrofit Kit guideways and runner blocks X-Y-Z axis on Demand

- exchange of guideways and runner blocks X-Y-Z axis
- measurement and adjustment of the geometry X-Y-Z-Axis and motor spindles
- preparation of an up-to-date geometry protocol

Notice
The price only applies if the work is carried out in the Samag factory in Saalfeld

5.2 Retrofit Kit ball screws, Bearings, Couplings X-Y-Z axis on Demand

- exchange of ball screws, bearings, couplings X-Y-Z axis

Notice
The price only applies if the work is carried out in the Samag factory in Saalfeld

Acceptance criteria
- Checking or checking the functionality and completeness of the equipment (scope of delivery)
- Handover of the geometry logs

6. Services

6.1 Training courses

- operator training in Saalfeld /Germany 800 € per day
- maintenance training in Saalfeld / Germany (electric, mechanic, hydraulic / pneumatic) 800€ per day
- programmer training in Saalfeld / Germany 800€ per day

Notice
The training courses take place during normal working hours and are based on 8 hours/day. The courses are held in German. The buyer provides translators on site free of charge for the duration of the training.

6.2 Commissioning of the machine and Instruction (on Demand)

The commissioning includes:
- assembly and adjustment of the machine
- complete functional test of the machine
- brief instruction of the operating personnel
- travel and subsistence expenses

Before commissioning, the following services are to be provided by the buyer:
- unloading and transport of the machine components to the installation site
- installation of the machine components in the floor pan or on the hall floor
- drilling the holes for the anchor/fixing rods according to the SAMAG installation plan
- Electrical and pneumatic connection of the machine in coordination with the assembly team
- Media filling in coordination with the assembly team

During commissioning, on request provide support staff and tools free of charge.

Delays for which the buyer is responsible will be charged at cost.

After the machine has been commissioned, a commissioning report is signed by both parties. The warranty period begins with the completion of commissioning.

Notice
SAMAG is not responsible for the provision of tools and fixtures.(possible on request)
SAMAG is not responsible for the technological Setup (possible on request)
SAMAG is not responsible for the machine Capability (possible on request)

7. Price overview

Chapter	Description	Price
3.	**Retrofit of the machine under point 3**	
3.1	Machine price including retrofit under point 3	**142.100,00 €**
5.	**Retrofit and modification optional at extra charge**	
5.1	Retrofit Kit guideways and runner blocks X-Y-Z axis	on Demand
5.2	Retrofit Kit Ballscrews, Bearings, Couplings X-Y-Z axis	on Demand
6.	**Services**	
6.2	Commissioning and instruction	on Demand
6.3	Packaging and shipping Packaging for truck transport and loading (FCA, Incoterms 2020)	**on Demand**
Total Price machine		**142.100,00 €**

8. Delivery Conditions:

Our general SAMAG Terms and conditions of sale and delivery (as at 09/2020) shall apply for this quotation and the contractual relationships resulting from it.
The deliveries and services (contract fulfillment) are subject to the reservation that the fulfillment does not conflict with national or international regulations, in particular export control regulations and embargos or other sanctions.

The contracting parties undertake to provide all information and documents which are required for the export/shipment/import.

Delays due to pending export or approval rulings shall invalidate deadlines and delivery times.

If the necessary approval is not granted, the contract relating to the relevant parts shall be deemed not to have been concluded; compensation claims will be excluded in this respect and for exceeding the deadline as aforementioned.

8.1 Warranty:

The warranty period of 12 Months begins on the day the handover protocol is signed, but no later than 2 months after the delivery has arrived.

The warranty extends exclusively to defects on the new parts and assemblies installed by SAMAG (see point 3. Retrofit) that occur after the warranty period has come into force.

Expressly excluded of the warranty are wear parts according to the list and all older and not from SAMAG exchanged parts and components.
The warranty extends to the elimination of identified construction, material, and Manufacturing defects. Wear parts are excluded. Claims for compensation for damage that did not occur on the delivery item itself do not exist.

For this offer and the resulting contractual relationships, our General Conditions of Sale in conjunction with the Conditions of VDW 502 apply.

8.2 Ownership, transfer of risk:

Our deliveries are always made subject to retention of title. Ownership is automatically transferred to you after full payment (including ancillary claims). As long as the goods are our property, the sale, renting, pledging, lending, or giving away requires our prior written consent.

8.3 Delivery time:

With the Retrofit Scope under point 3, delivery time 8 weeks after incoming order. Longer delivery times for further retrofit measures

8.4 Terms of payment:

30% down payment within 2 weeks after receipt of the order confirmation

60% - within 2 weeks after the machine is ready for delivery in Saalfeld / Germany

10% - within 2 weeks after commissioning the machine in Mexico against handover protocol, but no later than 2 months after dispatch

8.5 Validity of the offer:

The present offer is non-binding and subject to change.
It is valid for 8 weeks from the date of the offer. Subject to prior sale of the machine.

We hope that our offer meets your expectations.
We are very happy to answer any questions you may have.

Kind regards

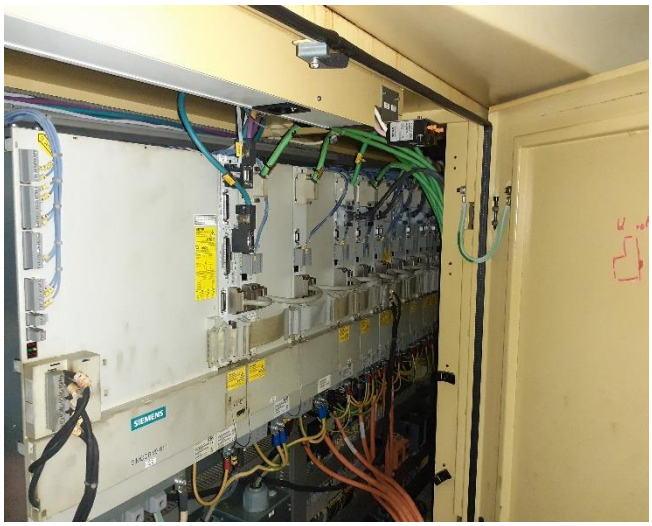
SAMAG
Machine Tools GmbH

Dr. Friedrich Wenzel-Lux Geschäftsführer COO / CFO	Peter Sukow Technical Sales	Thomas Löffler Responsible retrofit

SAMAG

ANNEX: Pictures of the machine

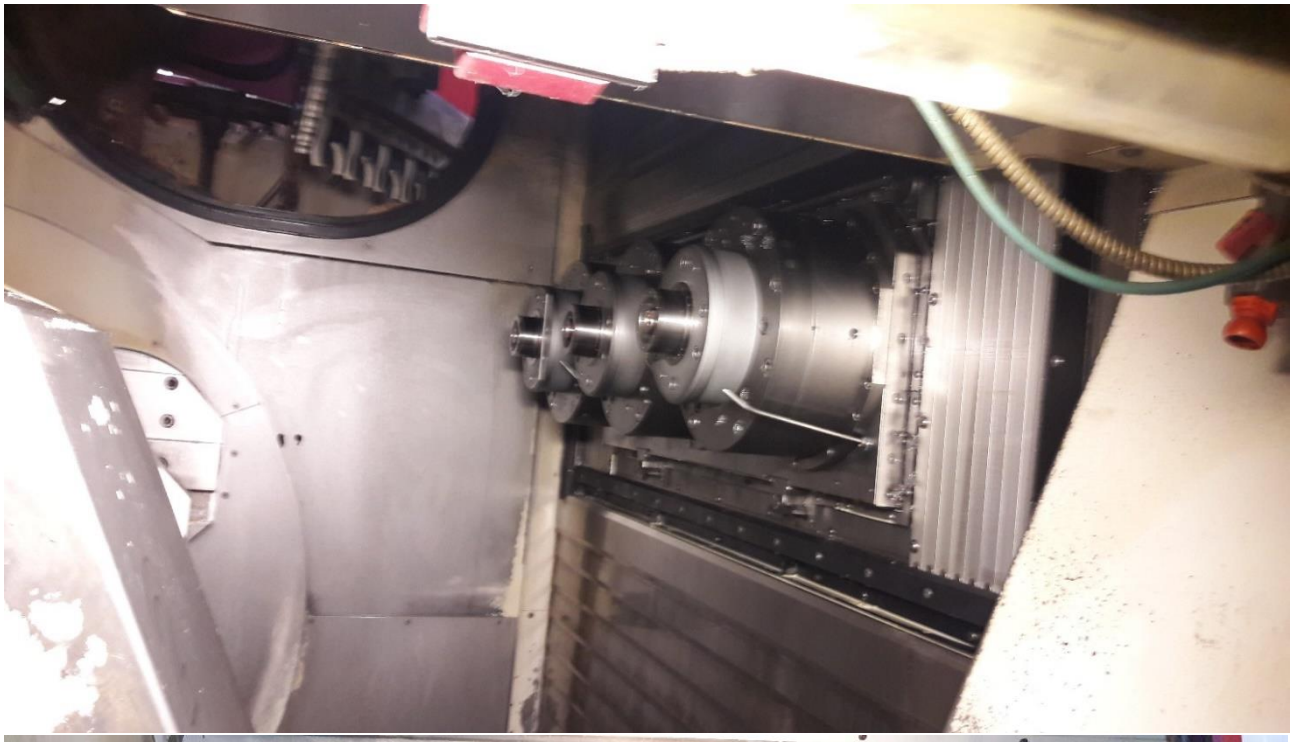
Control Sinumerik 840D Powerline PCU50 HMI Advanced



Electrical Cabinet

Customer:
Offer: MFZ2-3 (Machine No:53152)
Date: 2022.10.16
Offer No.:
Project No.:

Customer:
Offer: MFZ2-3 (Machine No:53152)
Date: 2022.10.16
Offer No.:
Project No.:



Hydraulic Device

Coolant device and chips conveyor