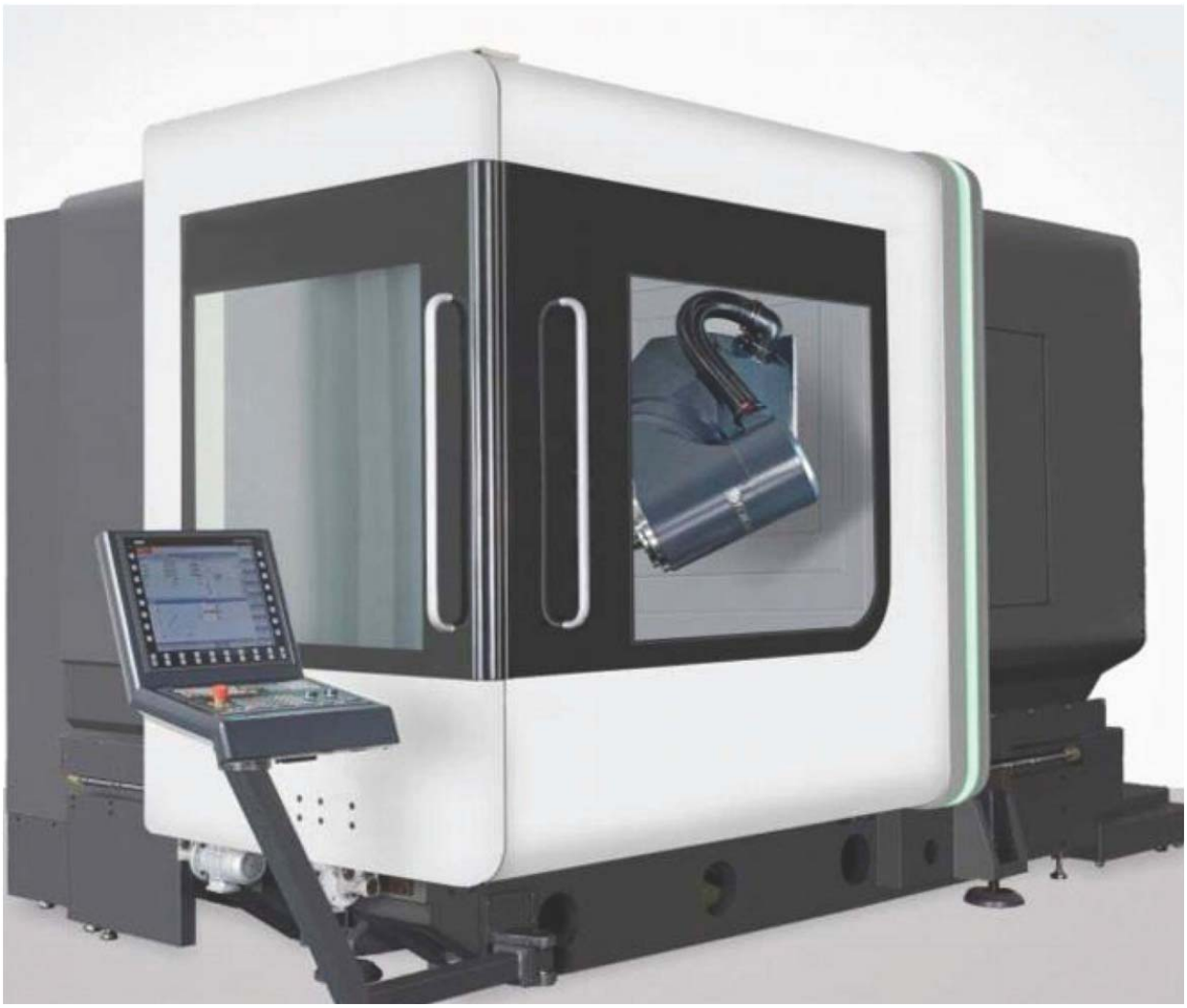


HUR – 60, HUR – 80, HUR – 100 PC Five-axis linkage machining center

XYZ linear axis hollow cooling screw drive

B\C rotary shaft DD direct drive transmission

Full closed loop absolute value measurement system

Scope of supply

Standard accessories function table (please refer to the controller function for the electric control part)

No	Item	Unit	Qty
1.	mainframe castings	tower	1
2.	Siemens840DSL control system	set	1
3.	Display: 19LCD	set	1
4.	FH five-axis multi-function swing head (B-axis)	set	1

Contact information
Modiin Technology GmbH (modiin-technology.com)
Steinklüftstraße,12, St.Gilgen, 5340, Austria

5.	HCS-190Lg Milling Spindle	Only	1
6.	X/Y/Z Axis Hollow Cooled Ball Screws	piece	3
7.	Mill/Turn Direct Drive Rotary Table (C-axis)	set	1
8.	B axis RCN8380 29 bits absolute encoder	Only	1
9.	C axis RCN2580 28 bits absolute encoder	Only	1
10.	BOSCH REXROTH Roller Linear Slides	set	7
11.	Electrical box temperature control device	set	1
12.	Spindle water cooling system	set	1
13.	Machine tool ring water spray	set	1
14.	Five-axis head crescent water spray, crescent blowing	set	1
15.	Front and side working door safety interlock system	set	1
16.	Waterproof work bin lighting	Only	2
17.	hydraulic station	set	1
18.	Central centralized feed lubrication device	set	1
19.	Operation side cleaning water gun and air gun	set	1
20.	Cutting fluid system	set	1
21.	Fully enclosed protective sheet metal	set	1
22.	Operation box	set	1
23.	Electrical Cabinet Cooling Unit	set	1
24.	Siemens electronic handwheel	Only	1
25.	Foot-operated spindle knife release switch	Only	1
26.	Machine tool tri-color light	set	1
27.	40 HSK-A63 tool magazines and servo automatic tool changing system	set	1

Contact information
Modiin Technology GmbH (modiin-technology.com)
Steinklüftstraße,12, St.Gilgen, 5340, Austria

28.	X/Y/Z three-axis absolute value grating scale	set	3
29.	Spiral Chip Roller and Rear Chip Conveyor Chip Carriage	set	1
30.	Renishaw RMP60 infrared probe unit	set	1
31.	Renishaw TS27R tool setter unit	set	1
32.	Foundation level pads and foundation bolts	set	1
33.	technical manual	set	1

Parameters

Model	Unit	60 P	80 P	100 P
Travel				
X axis travel	mm	600	800	1000
Y axis travel	mm	800	1050	1150
Z axis travel	mm	600	800	1000
Distance from spindle nose to work table surface	mm	150-750	162-962	160-1160
Horizontal milling head	mm	30-630	39-839	30-1030
Feed/fast moving speed	m/min	40	40	40
Feed force	KN	10	10	10
Rotary table (C axis)				
Working table size	mm	Ø630	Ø855	Ø1050
Max.table load (mill)	kg	2000	3000	4000
Max.table load (turning)	kg	1000	2000	3000
Minimum split angle	°	0.001	0.001	0.001

Contact information
Modiin Technology GmbH (modiin-technology.com)
Steinklüftstraße,12, St.Gilgen, 5340, Austria

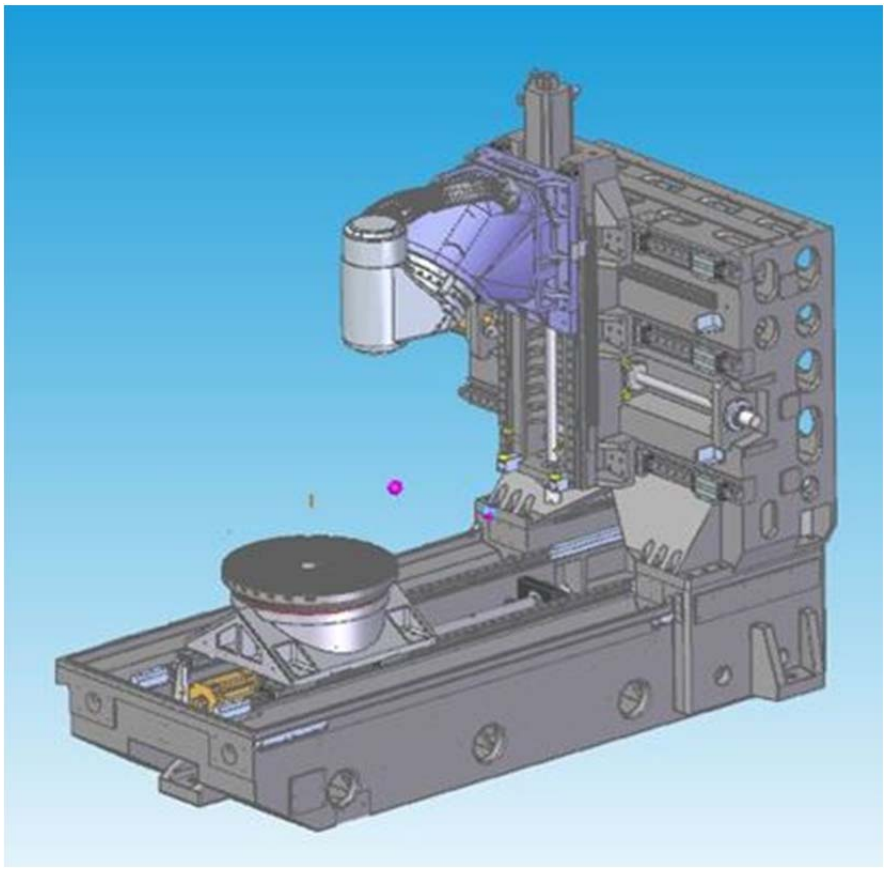
Rated torque	Nm	807	1140	1330
maximum torque	Nm	1430	1980	2630
CNC swing milling head (B axis)				
Swing range (0=vertical/180=horizontal)	°	-15～180	-15～180	-15～180
Rapid traverse and feed rate	rpm	80	50	103
Minimum split angle	°	0.001	0.001	0.001
Rated torque	Nm	743	743	1050
maximum torque	Nm	1320	1320	2130
Spindle				
Spindle speed	rpm	12000	16000	10000
Spindle power	Kw	34/42	31/36	42/58
Spindle torque	Nm	132/145	100.4/120.5	215/350
Spindle tapre		HSKA63	HSKA63	HSKA100
Tool magazine				
Tool interface		HSKA63	HSKA63	HSKA100
Tool magazine capacity	PCS	40	40	40
Maximum tool diameter/length/weight		Ø85/300/8	Ø85/300/8	Ø135/300/12
Tool change time (tool to tool)	S	1.8	1.8	2
Measuring device				
Infrared probe		Rensishaw RMP60	Rensishaw RMP60	Rensishaw OMP60

Contact information
Modiin Technology GmbH (modiin-technology.com)
Steinklüftstraße,12, St.Gilgen, 5340, Austria

Tool detection instrument in working processing area		NC4F230	Rensishaw TS27R	NC4F230
Position accuracy (ISO230-2 and VDI3441)				
X/Y/Z positioning accuracy	mm	0.005	0.008	0.006
X/Y/Z Repeat positioning accuracy	mm	0.004	0.005	0.004
B/C positioning accuracy		8"	10"	8"
B/C Repeat positioning accuracy		4"	4"	4"
CNC controller				
CNC system		Siemens840D	Siemens840D	Siemens840D
Other				
Machine weight	Kg	15000	20000	21000

3.1 Main Machine Specifications | Optimum Rigid Structure Configuration

Contact information
Modiin Technology GmbH (modiin-technology.com)
Steinklüftstraße,12, St.Gilgen, 5340, Austria



Design Features | Best Mechanical Wire Casting Analysis Design

◆Full box-type thermosymmetric casting structure, using Meehanna grade high-grade cast iron

◆Tempering and natural aging treatment to eliminate internal stress

◆Structural natural frequency vibration eliminates material processing stress

◆Comprehensive wall and large-area high-rigidity column design can effectively improve rigidity and static and dynamic accuracy

◆Three-axis hollow cooling screw drive

3.2 Electric Spindle

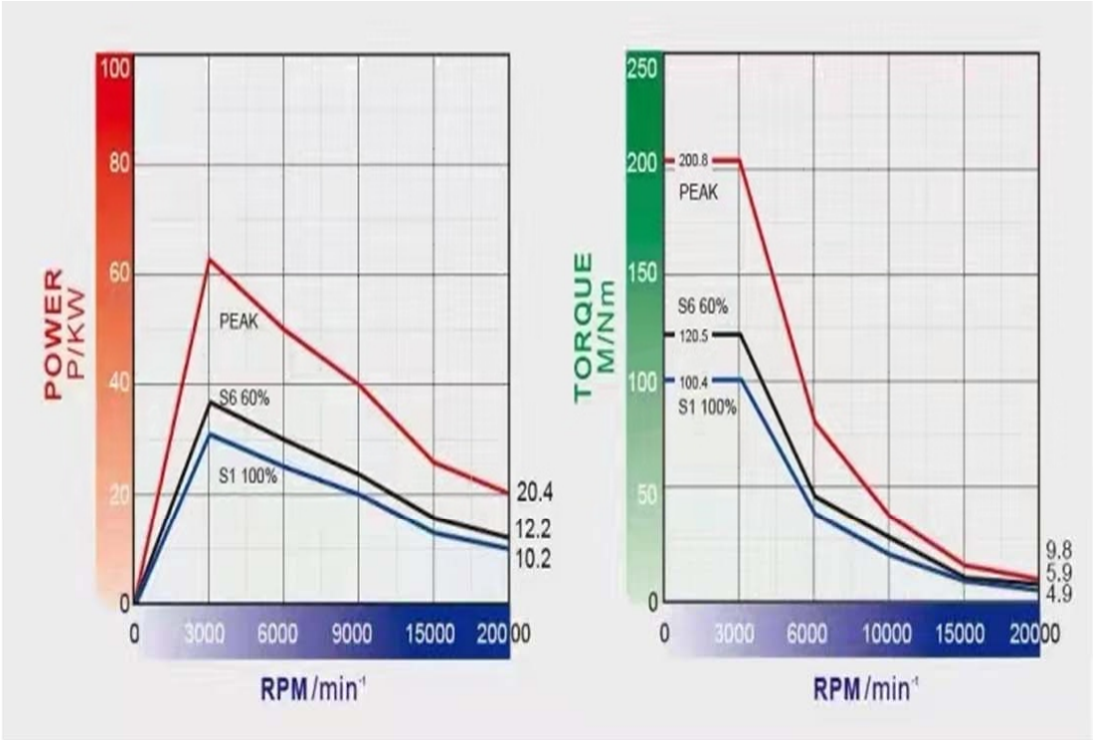
Contact information
Modiin Technology GmbH (modiin-technology.com)
Steinklüftstraße,12, St.Gilgen, 5340, Austria

Design Features

◆According to the characteristics of their own machines, independent research and development and production.

◆The taper hole of HSK-A63 is adopted in the 80P-C model.

◆Adopt external cooling system for circulating cooling, which can effectively ensure the application of electric spindle.



3.3 CNC swing milling head (B axis)

Contact information
Modiin Technology GmbH (modiin-technology.com)
Steinklüftstraße,12, St.Gilgen, 5340, Austria

Design Features

◆Independent design and production.

◆Built-in DD motor zero transmission chain no backlash design.

◆High acceleration characteristics.

◆The shortest span between the tool nose point of the spindle and the structural support point realizes the maximum rigidity of cutting.

◆Larger YRT bearing improves rigidity.

◆ Equipped with HEIDENHAIN RCN8380 series absolute rotary encoder measurement system, fully closed-loop control, to ensure the best accuracy.

◆B-axis cooling system design reduces heat transfer.

3.4 Rotary table (C-axis table)

Design Features

◆Independent design and production.

◆Built-in DD motor zero transmission chain no backlash design.

◆High acceleration and deceleration response characteristics.

◆Larger YRT bearing increases rigidity.

◆Large rated driving torque, positioning and processing with table positioning and clamping device

◆Meet the needs of milling, reduce workpiece handling and improve product accuracy.

Contact information
Modiin Technology GmbH (modiin-technology.com)
Steinklüftstraße,12, St.Gilgen, 5340, Austria

◆Equipped with HEIDENHAIN high-precision rotary encoder measurement system, fully closed-loop control to ensure the best accuracy.

◆Cooling system design to reduce heat transfer.

3.5 Control system

Selection features

◆Select the control host NCU730.3B for five-axis linkage (see the function table for details of the system configuration)

◆With RTCP function

◆Choose Siemens S120 drive with 3 times overload capacity and 1FT series motor with high kinematic characteristics

◆Select TCU30.3+ICP427E as HMI interactive host, IPC has higher computing speed and higher storage space

3.6 Automatic tool changing system

Contact information
Modiin Technology GmbH (modiin-technology.com)
Steinklüftstraße,12, St.Gilgen, 5340, Austria

Design Features

◆ Independent design and production.

◆Tool selection and tool change use servo motor to control the terminal action, which is more stable and accurate.

◆Combined with the tool management function of Siemens840DSL, more efficient tool management.

3.7 Liftable tool setter

Design Features

◆Equipped with Ransishaw TS27R tool setter with higher precision.

◆Automatic tool setting on the machine, automatic update of tool compensation.

◆The tool setting device can be raised and lowered to save the space of the processing surface.

◆Fully sealed sheet metal design to protect the tool setter from damage by water and iron filings during processing.

3.8 Infrared probe

Contact information
Modiin Technology GmbH (modiin-technology.com)
Steinklüftstraße,12, St.Gilgen, 5340, Austria

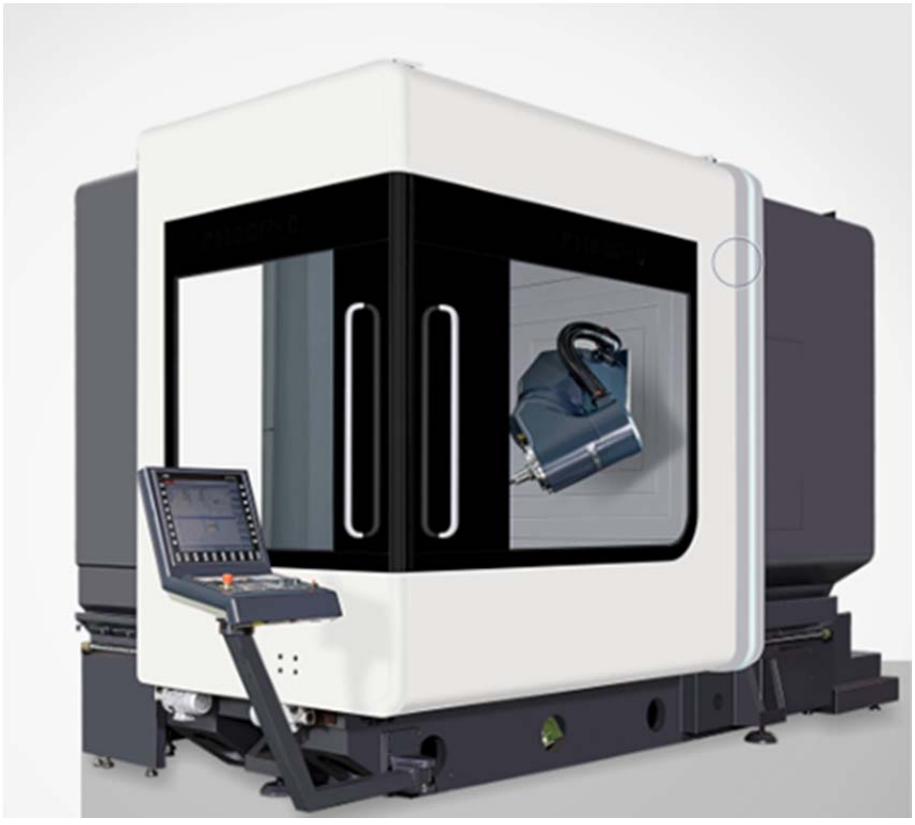
Design Features

◆Equipped with Ransishaw RMP60 trigger optical probe.

◆On-machine workpiece alignment and size inspection can reduce manual inspection errors and improve product accuracy and processing efficiency.

◆90% savings in on-board assistance time.

3.9 Safety protection sheet metal

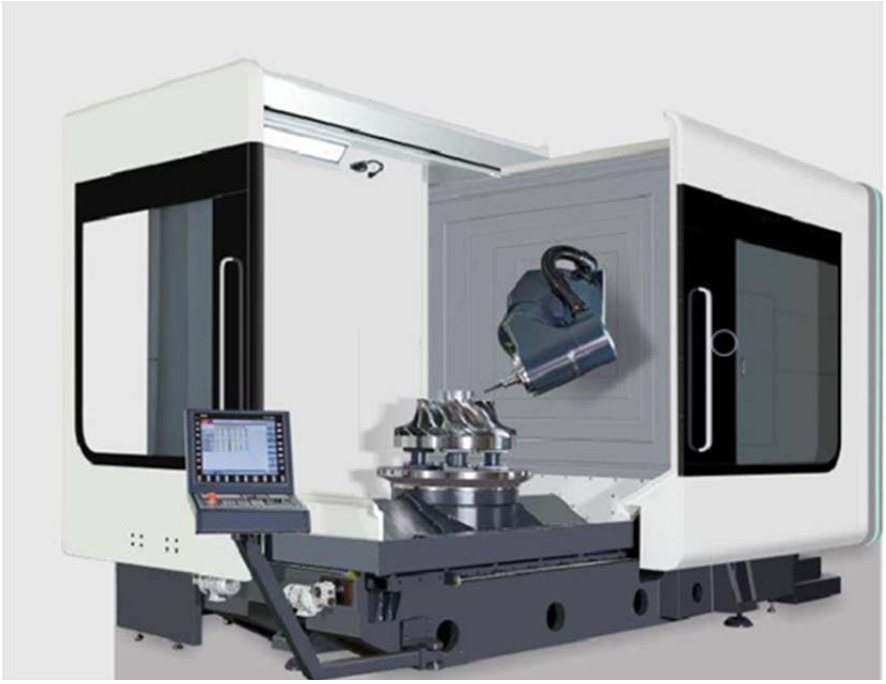


3.10 Appearance

Contact information
Modiin Technology GmbH (modiin-technology.com)
Steinklüftstraße,12, St.Gilgen, 5340, Austria

The cover design of the FH series five-axis machining center complies with the strict CE safety standards. The fully dense sheet metal prevents the operator from entering the work area by mistake during processing, and at the same time prevents the use of high-pressure cutting fluid or chips from the machine, except for the warning nameplate. , The operation door is also equipped with a safety switch to prevent accidents during operation or maintenance. And has a large peep window, which is convenient for the operator to understand the operation and processing of the machine.

3.11 Cleaning



Use the telescopic cover and protective sheet metal to protect the chips generated during operation, avoid cutting splashes and cause damage to other mechanisms

3.12 Lighting

The working area is equipped with two LED lights, and the illuminance of the lighting is maintained above 800LUX, providing a suitable bright working environment for the operator.

3.13 Operability

Contact information
Modiin Technology GmbH (modiin-technology.com)
Steinklüftstraße,12, St.Gilgen, 5340, Austria

The operation side is equipped with a split-type sliding door, which provides a large opening space, which is convenient for the workpiece to be freely loaded and unloaded from three directions using the crane.

4.1 Environmental parameters

project	Environmental parameter conditions	Remark
temperature	17℃～25℃ (during operation)	In order to keep the accuracy of the machine tool within the specified range, the optimum ambient temperature requires 17° C to 25° C, and the temperature difference does not exceed ±2° C/24h. Allowable range 15℃～40℃ Ideal operating ambient temperature ±2℃.
	0℃～60℃ (during transportation)	
humidity	40%～70% at 20℃	No condensation
vibration	Below 0.5G	

4.2 Installation site requirements

1) The device must not be installed in the range of radiation such as: microwaves, ultraviolet rays, lasers or X-rays.

2) In order to ensure the machining accuracy of the machine tool and reduce the temperature difference around the equipment, please do not install it in the following areas:

◆Direct sunlight

◆High humidity

◆Large temperature difference

◆Vibration

Contact information
Modiin Technology GmbH (modiin-technology.com)
Steinklüftstraße,12, St.Gilgen, 5340, Austria

◆Strong magnetic field

◆Dust

3) Avoid the following situations around the installation area of the equipment:

◆ Garage

◆A lane with frequent car traffic

◆Pressure or stamping equipment

◆ Electric welding, spot welding or hydrogen arc welding

◆Substation

◆High voltage line

◆Equipment or processing that easily generates dust

4) The foundation of the equipment installation site needs to be designed and constructed according to the provisions of GB 50040-1996 "Code for Design of Power Machine Foundation".

5) The installation site of the equipment must have a fixed power supply that meets the relevant requirements of the state, no temporary power supply is allowed, and the equipment must have good grounding protection. The machine tool should have reliable grounding: the grounding wire is copper wire, the wire diameter should not be less than 10mm2, and the grounding resistance should be less than 4Ω.

6) Power supply interface: The power supply provided by the equipment installation site must be a three-phase four-wire system (U, V, W, N), and the power line voltage is AC380V. Pay attention to the voltage regulation of the power supply, and ensure that the power supply voltage fluctuation does not exceed ± 5%. If the voltage in the area of use is unstable, the machine tool should be equipped with a special regulated power supply for numerical control to ensure the normal operation of the machine tool. The upper-level power switch of the equipment selects D-type 160A and no leakage type.

7) The installation site of the equipment must have a stable air source, and a set of air source purification devices (dehumidification, degreasing, and filtration) should be added before the air intake of the machine tool.

Contact information
Modiin Technology GmbH (modiin-technology.com)
Steinklüftstraße,12, St.Gilgen, 5340, Austria

8) Compressed air interface: p=4~6kgf/cm², Q=60m³/h, reserve ¢10 quick connector at the air source interface, and reserve ¢10~m for the temporary adjustment on site. The main line of compressed air must be equipped with main line filter and dryer. The air pressure is required to be 0.5~0.7Mpa. Pressure dew point -20° C to 0° C; oil content 1PPM; dust content <50μm.

9) Party A shall reserve enough space for installation according to the appearance size of the machine tool of the equipment sample provided by Party B, so as to facilitate the installation and maintenance of the machine tool.

Contact information
Modiin Technology GmbH (modiin-technology.com)
Steinklüftstraße,12, St.Gilgen, 5340, Austria