



CATALOGUE

KARA CNC PLATE DRILLING MACHINE





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KARA CNC PLATE DRILLING MACHINE

1. An Integrated, Stressed Relieved, Welded Structure.
2. All the Motion Axes under CNC Control.
3. Travel of X, Y Axes Using Servo Motor and Ball Screw on Linear bearings.
4. Z axis Forward Command under CNC Control Using Servo Motor and Ball Screw on Linear Ball bearings.
5. Z Axis Equipped with an Electric brake.
6. Spindle Equipped with Servo Spindle with Maximum Output Turning Speed 3000rpm.
7. Machine Programming Using G Code Generation (in office computer).
8. Input method of DXF Machine from TEKLA Structures or Power Mill and Solid Work 3D Software.
9. A Controller Equipped with the Most Commonly Used drilling Cycles as Default.
10. Possibility of Using Various Drill Bits including High Speed Steel (HSS), Carbide, tapping surface, Milling and Replaceable Diamond Core Drill Bits.
11. Tapping Cycle G84.
12. Drilling Cycle: Simple: G81; Metal Cutting: G82; and Deep: G83.
13. Drilling Cycle on a Circular Path: G34.
14. Drilling Cycle on an Angle Line with Similar Distances G35.
15. Drilling Cycle on a Sector of a Circle G36.
16. Possibility of Sub-Programming for Simple Repetitive Operations.
17. Possibility of Macro Programming for repetitive and complicated mathematical operations.
18. Possibility of Testing the Program through MPG Motion (Hand Wheel).
19. Possibility of Using 6 Auxiliary Zero for Changing the Work-Piece Specifications G54-G59.
20. Possibility of Continuing from the Preferred Line during Power Outage While Working.
21. Two Protection Groups against Axes extra Movement: Software, Hardware limit Switch.
22. Equipped with a Remote Controller for Fast Positioning (Hand Wheel), Wireless (Optional).
23. Equipped with Hydraulic Clamps for holding the Work-Piece on Work Table.





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24. Equipped with Work-Piece Holder Mid-Clamps.
25. Equipped with Internal and external coolant System with a Command Switch Including a mixer of Cooling Liquid and Compressed Air for Less Consumption of coolant.
26. Possibility of Discrete Loading/Unloading at Four Corners of the Table without the Need to Stop the Machine.
27. A Robust Metal Conveyor Using Steel Belt Transporter for chip removal.
28. Covered Spindle and Work Table to Avoid coolant splash and chip Dispersion.
29. Equipped with Water Proof Protective Covers on the Axes Exposed to Cooling coolant.
30. Equipped with a Wheeled Bucket for Discharging chips.
31. Safety Light of Machine Working Status: On/Off-Working/Stop-Alarm.
32. Equipped with an Air Blow Gun and a Water Gun for Cleaning the Machine.





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Main Technical Specifications (1.6 x 2.2) / Type B

1	Effective workpiece dimensions	Length: 2200 mm, Width: 1600 mm, Thickness: 8 - 100 mm
2	Number of spindles	1 Spindle - BT 40
3	Number of machine axes	3 AXES
4	Specifications and speed range of the spindle	AC Servo Motor: 15 kw Max Spindle Speed: 2400 Rpm Max Drilling Torque: 230 Nm - Spindle Taper: BT 40
5	Machine's control system	Gsk -China
6	Machine's Control system features	G Code Generation (External Software) - USB
7	Maximum linear velocity of Y axis (Longitudinal movement of the gate)	10000 mm/min
8	Maximum X-axis linear velocity (Transverse spindle motion)	10000 mm/min
9	Maximum Z axis linear velocity (Vertical spindle motion)	5000 mm/min
10	Z-axis motion course (vertical spindle motion)	650 mm
11	Machine's Movement accuracy	± 0.02 mm
12	Machine's Drilling accuracy	Depended to drill life and quality
13	Type of drills	HSS: Min: 6 mm / Max: 35 mm (direct) HSS: Max 40 mm (with leading drill) Drill insert (spade drill) HSS Min: 10 mm / Max: 35 mm Index-able U-Drill: Min 24mm / Max 30 mm
14	Tool change magazine (Optional)	Horizontal Disc Type Magazine / Capacity: 6 Tools Tool Model: BT 40 / Max Tool Length: 320 mm
15	Possibility of operating the hydraulic table of the device	Simultaneously from 4 sides of the table with separate hydraulic control
16	load capacity of machine's hydraulic table	1 Piece up to 6 Pieces (middle & corner)
17	coolant system	Misting Coolant, Internal & External
18	Y-axis motor and gearbox (Longitudinal movement of the gate)	AC Servo Motor: 2.3Kw - 1500 rpm Pulley and Timing Belt fixed Ball Screw + Linear Guide (2 sets)
19	X-axis motor and gearbox (Spindle transverse motion)	AC Servo Motor: 2.3Kw - 1500 rpm Direct Flexible Coupling / Ball Screw + Linear Guide
20	Z-axis motor and gearbox	AC Servo Motor: 2.3Kw - 1500 rpm Electrical Break Pulley and Timing Belt / Ball Screw + Linear Guide
21	Panel's degree of protection	IP 20
22	Machine's Electric Power Consumption (full load)	Nominal Current @ max. load = 380 V - 50 Hz - 3 Ph-90 A
23	Machine's collecting chip system	Belt chip transfer conveyer - steel - movable - equipped with wheeled unloading bucket
24	Operator's application equipment	Coolant Sprinkler Guns / compress air: Blower Guns
25	Overall Machine's Dimension (mm)	L: 6100 mm, W: 4100 mm, H: 2600 mm
26	Overall Machine's Weight (kg)	6500 Kg





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Main Technical Specifications (1.6 x 2.2) / Type C

1	Effective workpiece dimensions	Length: 2200 mm, Width: 1600 mm, Thickness: 8 - 100 mm
2	Number of spindles	1 Spindle - BT 40
3	Number of machine axes	3 AXES
4	Specifications and speed range of the spindle	AC Servo Motor: 15 kw Max Spindle Speed: 2400 Rpm Max Drilling Torque: 230 Nm - Spindle Taper: BT 40
5	Machine's control system	Gsk -China
6	Machine's Control system features	G Code Generation (External Software) - USB
7	Maximum linear velocity of Y axis (Longitudinal movement of the gate)	10000 mm/min
8	Maximum X-axis linear velocity (Transverse spindle motion)	10000 mm/min
9	Maximum Z axis linear velocity (Vertical spindle motion)	5000 mm/min
10	Z-axis motion course (vertical spindle motion)	650 mm
11	Machine's Movement accuracy	± 0.02 mm
12	Machine's Drilling accuracy	Depended to drill life and quality
13	Type of drills	HSS: Min: 6 mm / Max: 35 mm (direct) HSS: Max 40 mm (with leading drill) Drill insert (spade drill) HSS Min: 10 mm / Max: 35 mm Index-able U-Drill: Min 24mm / Max 30 mm
14	Tool change magazine (Optional)	Horizontal Disc Type Magazine / Capacity: 6 Tools Tool Model: BT 40 / Max Tool Length: 320 mm
15	Type of Table	Table Equipped With T slot
16	load capacity of machine's hydraulic table	1 Piece up to 6 Pieces (middle & corner)
17	coolant system	Misting Coolant, Internal & External
18	Y-axis motor and gearbox (Longitudinal movement of the gate)	AC Servo Motor: 2.3Kw - 1500 rpm Pulley and Timing Belt fixed Ball Screw + Linear Guide (2 sets)
19	X-axis motor and gearbox (Spindle transverse motion)	AC Servo Motor: 2.3Kw - 1500 rpm Direct Flexible Coupling / Ball Screw + Linear Guide
20	Z-axis motor and gearbox	AC Servo Motor: 2.3Kw - 1500 rpm Electrical Break Pulley and Timing Belt / Ball Screw + Linear Guide
21	Panel's degree of protection	IP 20
22	Machine's Electric Power Consumption (full load)	Nominal Current @ max. load = 380 V - 50 Hz - 3 Ph-90 A
23	Machine's collecting chip system	Belt chip transfer conveyer - steel - movable - equipped with wheeled unloading bucket
24	Operator's application equipment	Coolant Sprinkler Guns/ compress air: Blower Guns
25	Overall Machine's Dimension (mm)	L: 4100 mm, W: 3200 mm, H: 2400 mm
26	Overall Machine's Weight (kg)	4800 Kg





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Machine Control System

GSK (China)



* For CNC DRILL (1.6x2.2) / Type C

Man machine page

1. 8.4-inch true color LCD, 7 soft function keys
2. Support Chinese, English, Russian and other languages
3. The processing track is displayed, and the processing track is enlarged, reduced, translated and the viewing angle is switched in real time
4. Position, program, tool compensation, alarm, parameter, setting, graphics, diagnosis, ladder diagram

Operation management

1. Operation mode: edit, automatic, input, mechanical zero return, manual pulse single step, manual, DNC
2. Level 6 operation authority management; 32 time limited shutdown
3. Program switch, parameter switch





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Communication function

1. USB: USB disk file operation, direct processing of USB disk files, and support PLC program and system software USB disk upgrade
2. RS232: bidirectional transmission of part programs, parameters and other files, supporting PLC program update

Program storage and editing

1. Full screen editing; Program capacity: 40m, 10000 programs (including subroutines and macro programs)
2. MD | it is allowed to input and run 8 program segments
3. It supports macro program subroutine calling and allows 4-fold subroutine nesting
4. Calculator, online programming wizard

Simplify programming functions

1. Fixed cycle, compound cycle, drilling cycle, rigid tapping, automatic chamfering, sentence macro instruction programming, indexing function of indexing table

Compensation function

1. Reverse clearance compensation: 0mm-2mm (or 0inch-0.2inch). The reverse clearance compensation mode and frequency are set by parameters
2. Memory pitch error compensation: a total of 1024 compensation points, and the number of compensation points of each axis is set

Tool function

1. Tool length compensation (tool offset): 32 groups; Tool wear compensation: 32 groups
2. Tip radius compensation (type C)

Auxiliary function

1. Special m codes (M00, M01, M02, M30, M98, M99) · other m codes are defined by PLC

PLC function

1. Two level PLC program, 5000 steps at most, and the refresh cycle of level 1 program is 8ms
2. PLC program online display and real-time monitoring; Support PLC warning and PLC alarm
3. Multiple PLC programs can be stored, and the currently running PLC program is selected by parameters. The standard PLC program supports disc magazine and hat magazine
4. Basic I / O: 41 inputs 36 outputs
5. Expandable serial O unit (optional): I / oa-01t: 24 point input, 16 point output, 4-channel analog voltage output
6. IOA-02T: 40 point input, 24 point output, 8-Channel analog voltage output and 4-channel analog voltage input

Spindle function

1. Spindle speed: it can be given by s code or PLC signal, and the speed range is 0rpm-9999rpm





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2. Spindle magnification: 50% ~ 120%, a total of 8 levels of real-time repair and adjustment
3. 2 channels of 0V ~ 10V analog voltage output
4. Support analog spindle m-shift and τ Type shift function, flexible tapping, rigid tapping
5. 1 channel spindle encoder feedback, the number of spindle encoder lines can be set (0 or 100p / R ~ 5000P / R)

Control number axis

1. Maximum control axis: 5 axes
2. Maximum number of linkage axes: 5 axes (linear interpolation), 3 axes (spiral interpolation), 2 axes (arc interpolation)

Coordinate value (system) and size

1. Local coordinate system, machine tool coordinate system, workpiece coordinate system 1-6 (G54-G59), additional workpiece coordinate system (P1 ~ p48)
2. Position command range: ± 9999999999 x minimum input unit
3. Absolute / incremental programming, English / metric conversion, linear axis / rotary axis

Preparation function

1. eighty-five individual G instruction, including fast positioning, interpolation, automatic chamfering, tool
2. compensation, metric and British system input, coordinate rotation, scaling, mirroring, sentence macro instruction, macro program call, jump, cycle instruction, etc





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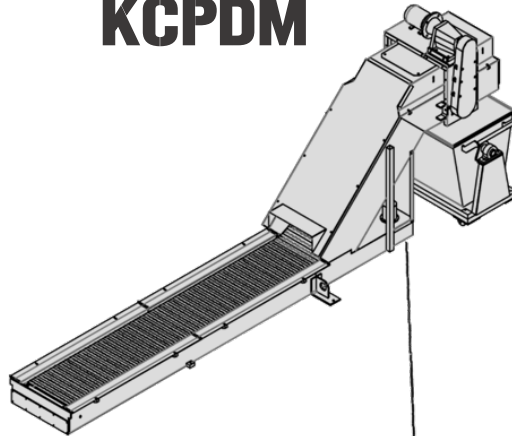
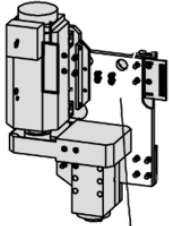
Spindle Unit

Tool type: BT ϵ ·

spindle motor power: 10 kW

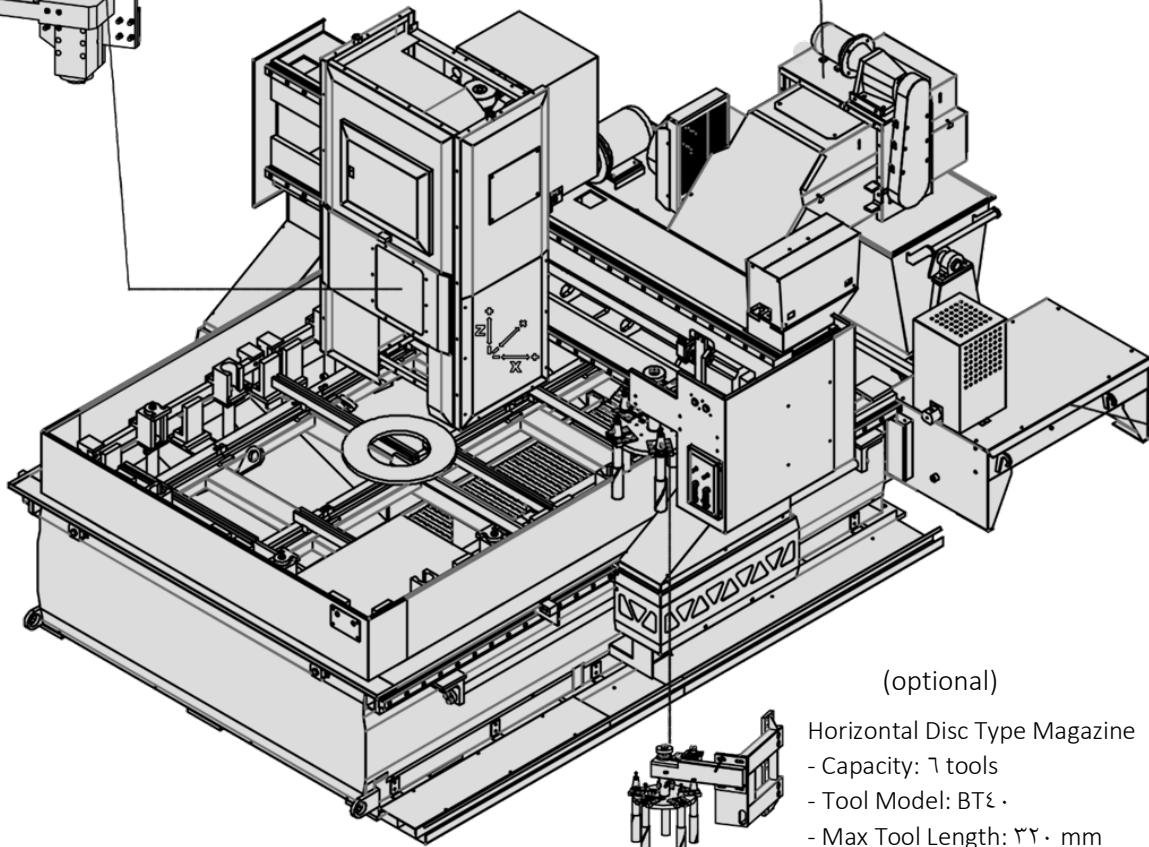
Spindle rotation speed: 3000 rpm

Belt driven timing, V or Poly-V belt misting coolant



chip conveyors, for chip collect and clean.

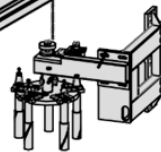
- Scraper Conveyor
- Conveyor speed: 0,1 m/min
- Chip Carriage Volume: 0,2 m³
- Coolant tank
- Drive left/right side
- Frequent control of velocity of the metal steel belt.



(optional)

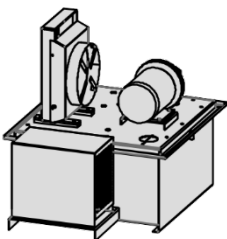
Horizontal Disc Type Magazine

- Capacity: 1 tools
- Tool Model: BT ϵ ·
- Max Tool Length: 320 mm



Hydraulic power unit

- Hydraulic pumps
- Hydraulic valves
- Hydraulic hoses & fittings
- Hydraulic oil cooler with fan
- Hydraulic oil tank

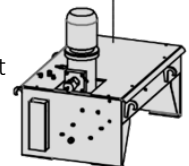


Linear guide pair

- HIWIN(Taiwan)
- T TBI(Taiwan)

Coolant Tanks

- application using water / oil-based coolant
- Liquid level gauges
- Cartridge and/or cyclonic filters
- Float switches
- Coolant pumps- Cartridge and/or cyclonic filters
- Float switches
- Coolant pumps





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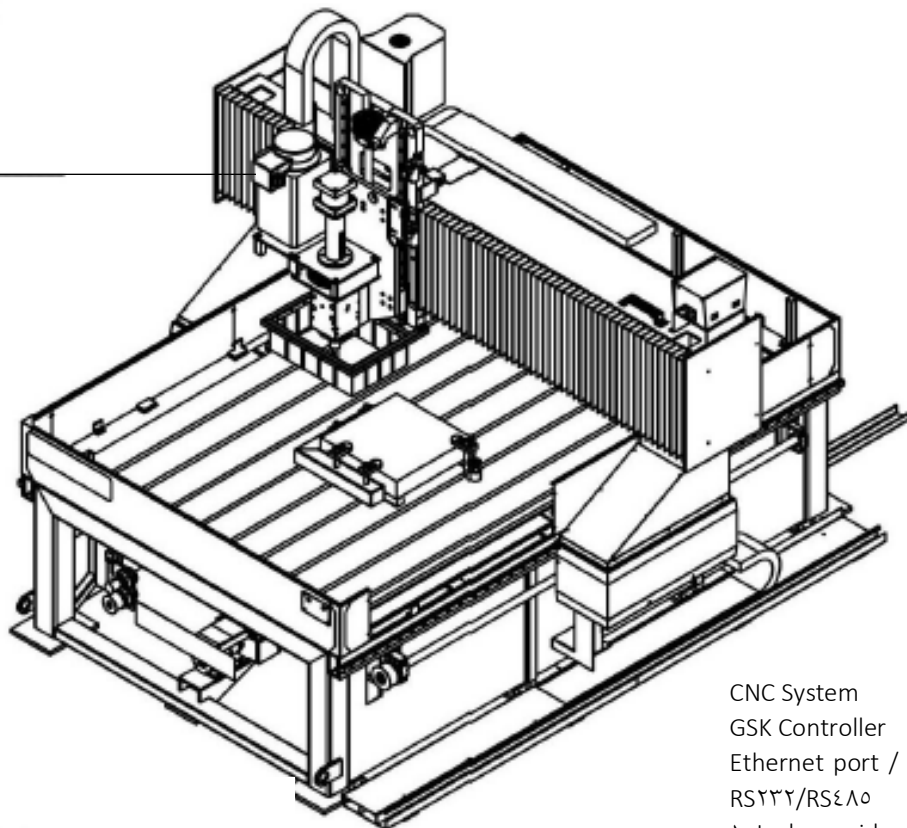
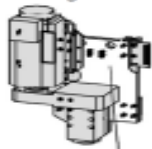
Spindle Unit

Tool type: BT ϵ · & BTS ·

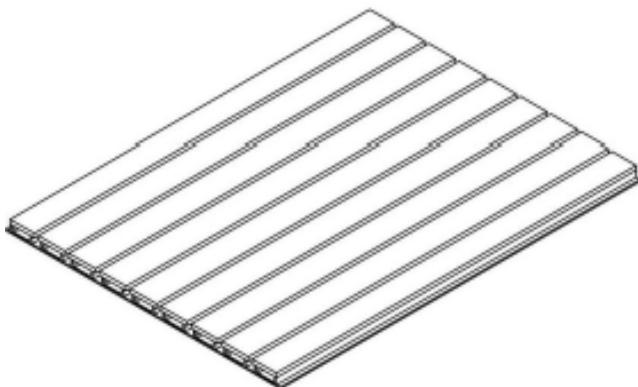
spindle motor power: 10 kW

Spindle rotation speed: 2 ϵ · · rpm

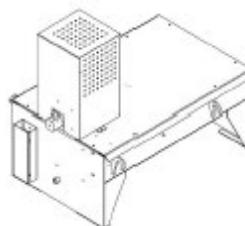
Belt driven timing, V or Poly-V belt
misting coolant



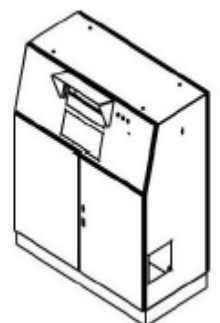
T Slot Table
7 Rows of T slot
T Grooves 25 mm in Width & 2296mm in length



Coolant Tank
using water/ oil based coolant
liquid level gauge
cartridge and/ or cyclonic filters]
float stiches
coolant pump

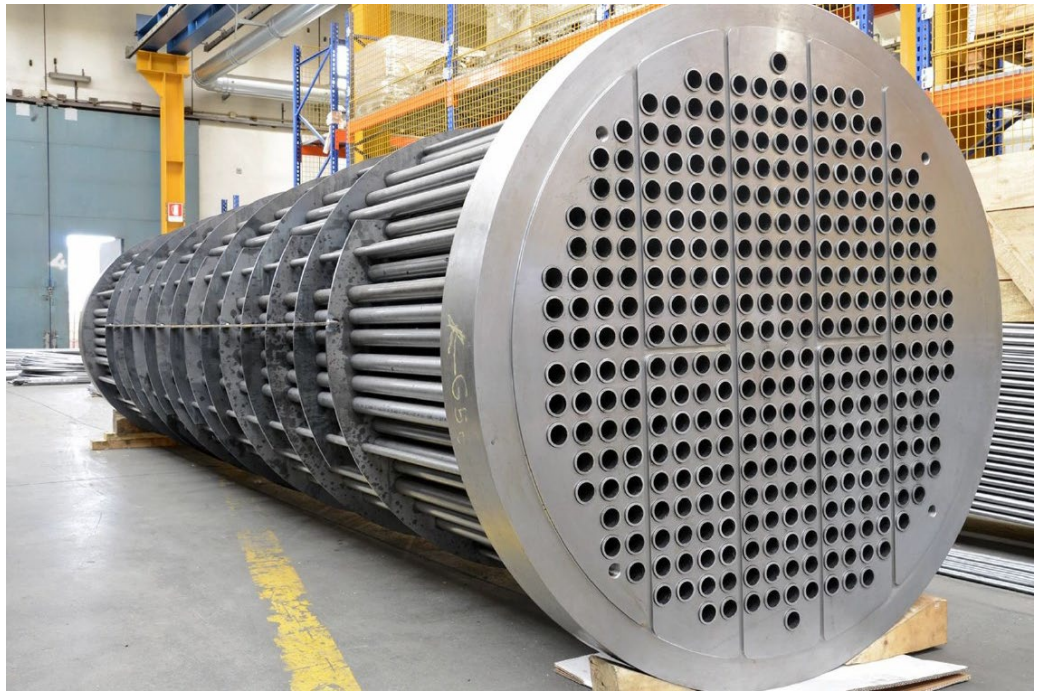
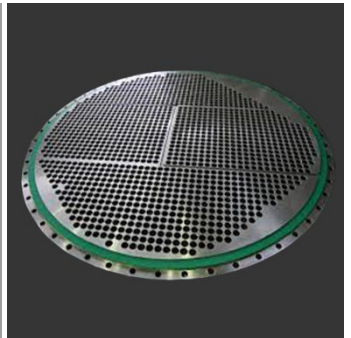
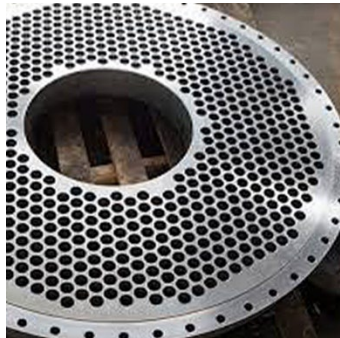
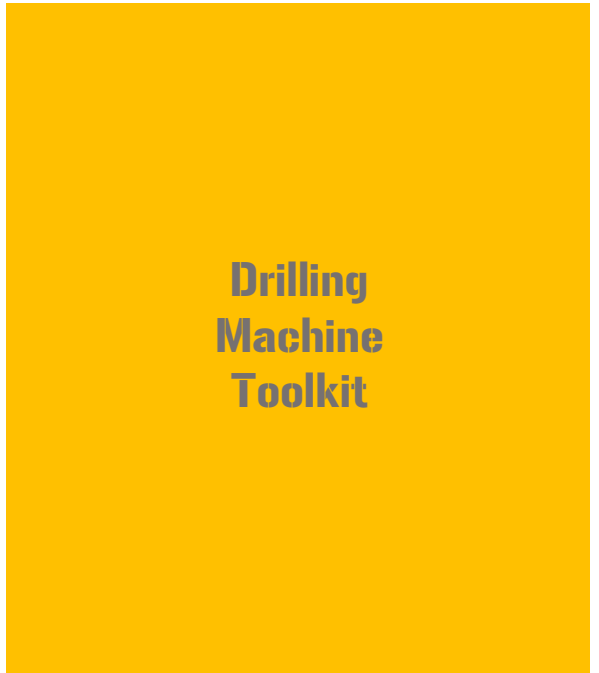
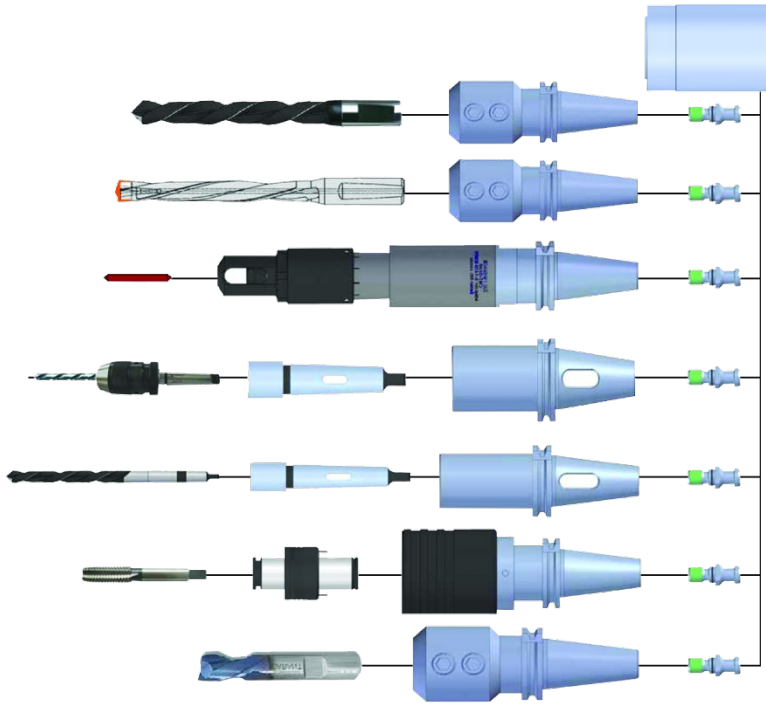


CNC System
GSK Controller
Ethernet port / USB 2.0 / CAN BUS
RS232/RS485
10-Inch - wide touch screen color
monitor Electrical switchboard box
Industrial keyboard





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KARA Quality Certificates



Contact US

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