

DELTATEC 4500

The **DELTATEC** sets new standards in terms of flexibility and precision for thermal cutting with oxy-fuel and / or dry plasma and marking of individual plates with up to 4 tool stations. The machine provides the use of various processes and assemblies as pure oxy fuel cutting machine or in combination with one plasma cutting device. Optional there are also different marking tools available.

The **DELTATEC** is a flexible, rigid and compact construction in sturdy portal design with the latest control technology and integrated differential compensation for precise guidance and harsh working environments. Double-sided rack drives with brushless AC servo axes provide excellent dynamic properties at high contouring precision for best cutting results with a positioning speed up to 24.000 mm/min.

The electrical equipment as safety devices, emergency stop, servo systems and controls are installed in a dust-tight cabinet. The energy supply (cable and hose package) in longitudinal direction will be installed in the basic configuration in a cable drag chain on floor level on the left hand side.

The **DELTATEC** can be delivered in various sizes up to a working width of max 4.000 mm to meet customer requirements. Precision plasma cutting tools allow quality cuts in materials up to 70 mm thickness. The effective working width of the machine depends on the installed type, quantity and combination of the working tools.

The precise Koike SmartLift ensures superior cutting performance. The SmartLift provides reliable tactile initial height setting height as well as precise tracking control of the torch distance by measuring the arc voltage during operation.

The **DELTATEC** comes with a **KATANA CNC**, as described hereafter with control panel fixed to the left hand side of the machine.

The delivery includes, beside the online help screen on the Katana CNC, a set of electrical and mechanical documentation and an operator manual on CD-ROM.





Machine Configuration

Signal Light with 3 Colours

Shows actual status of the machine:

Red : machine error summaryYellow : machine ready to operateGreen : machine under operation

CNC panel - left

Katana operating panel fixed, left side of the machine.

Bracket Arm - Left

Energy chain with C channel to be installed on the left hand side of the machine on floor

Steel Band System - 30 mm

With guide rollers in transverse direction per meter track width. This system enables congruent or mirror image operation of the tool stations, depending on the selected clamping.



E-Cabinet Air Conditioning

A cooling and heating system for the electrical cabinet. The AC unit is integrated in the **cabinet's** door.

- For ambient temperatures of max. minus 10° C up to plus 55° C
- Automatic control by thermostat

Network Cable

A network cable is necessary to connect the Katana control to LAN. We provide a cable per meter track length plus an additional 15 meter. The network cable is suitable for cable drag chains.



Rail and End Stopper

The machine's rail is of the industrial standard SS49 type (49 kg/mtr) and has a top width of 55 mm. The rail is mounted on rail beds which must be welded to the rail sub structure, both sides (H-Beams HE-B 300). Rail accessories for side and height adjustment, including mounting plates and DIN parts are included.

Rail is delivered in segments of 2 meter. The sub structure including fastening material is not included in our delivery and has to be supplied by



the customer according to our drawings. Detailed pre installation documents will be provided by for.

Portal Frame Compensation: Important for Middle East Market

The saddles of the Deltatec have a built-in Portal Frame Compensation system that enables the gantry to expand due to heat caused by the cutting processes and still keep the clearance between the rack and pinion constant on both sides of the drive systems. This will ensure a smoother cut surface and less wear on the rack and pinion systems.

At start-up, the machine will automatically measure and calibrate the **portal's** squareness using two sensors where the actual portal position will be compared with the initial CNC settings when the machine was assembled.

The Katana will show an on-screen message that warns the operator if the portal is out of spec and readjustment is required.



Technical Specifications

Model offered : Deltatec 4500

Rail length : 1400 mm

Effective cutting length: 12100 mm

Rail span : 4500 mm

Effective cutting width : 3500 mm

Machine Parking : 1900 mm

Cutting speed : minimum 50 ~ maximum 20000 mm/min

Positioning speed : 24000 mm/min

Drives system : maintenance-free brushless AC drives

Guiding system : in longitudinal direction accurate machined rails and

hardened precision racks

in transverse direction linear guide rails and hardened

precision racks

Offered Stations : 2 oxy fuel and 1 plasma station

Offered Oxy fuel capacity : 05-150 mm offered

Plasma Station : Kjellberg Germany Make Smart Focus 300

Cutting Capacity plasma: 40 mm Production 70mm with edge start

Plasma Marking and Plasma Punch marking for holes drilling by manual drill is included in offer

Drag chain : left side of the machine

Machine width : track width + 1.000 mm

Machine Rail : highly precise machined rails including mounting bolts and

rail beds (must be welded to the beams). HEB 300 beam

for Foundation not included.

Machine air connection: 7 bar (100psi) oil and water free required

Machine supply voltage : 230 VAC, +/- 10% **Frequency** : **50/60 Hz +/- 2%**

Power consumption : ca. 2000 VA

Relative Humidity : 10 % to 85 % (no condensation)

Standards : DIN EN ISO 9013 / DIN 2310-6, EN 28206 (ISO 8206),

VDE 0100 and DIN EN 60204-1, DIN EN ISO 12100 Part 1

and 2, DIN EN ISO 14121-1, IEC62061



Katana-Advance CNC Controller

The KATANA-ADV Control is a networkable numerical control for cutting processes like Plasma, Gas, Waterjet, Laser and other cutting devices, and all related Marking systems such as powder, ink-jet or Plasma marking.

The hardware is designed to work in rough industrial environments such as shipyards and heavy engineering. The Software is modular and flexible structured for easy implementation of new functions and the integration of customer-specific solutions.

The operating concept with its intuitive menus using touch screen is clearly structured and provided with symbols, graphics and photos. The operation was perfectly adapted to the needs of operators to reduce downtime and prevent operating errors. The integrated cutting database and wizards provide also inexperienced operator the opportunity to produce parts within a few steps. Wear parts are displayed as images for better identification.

The KATANA-ADV Touch Screen Control with advanced data bus technology provides fast and precise input, and errors are avoided. During the control and regulation of drives and cutting tools, speed and processes will be optimized. This allows a higher productivity with lower material consumption, and this will cut costs.





Technical Specifications KATANA CNC Controller

Control : Industrial PC with fast PLC

Intel Celeron Dual Core 1.6 GHz 4GB DDR-3-RMA, 8GB CFast Flash

Cycle time 1 Milli second

High-speed EtherCAT Control bus

Operating temperature 0-55 ° C

Operating system : Windows 7 Pro

Monitor : 15" TFT Display touch panel 1024x768 pixels built

in Aluminum enclosure (IP 65)

Operating temperature 0-55 ° C

Panel control : 8 Position joystick

Station select buttons 6 up/down toggle switches

Free definable keys: e.g. for process on/off

Feed rate potentio meter Emergency-stop button

Connections : 1 USB-Port front side for program import

1 USB-Port back side for keyboard Ethernet (Customer Network)

EtherCAT (Control, Servo- and I/O Communication)

Basic Software Features

Data import : DXF Import and editing of 2D DXF files

Free definable keys : e.g. for recurring operating sequences

CNC- Program : EIA-or ESSI Program format "DIN 66025" with

automatic switching from ESSI to "EIA"

Smart shapes : 64 with variable lead-in and lead-out parameter

settings

Macros : Processing of subroutines within a part program

Technology Data : Allows complete automation of cutting and marking

processes

Auto Reference : Automatic referencing of the machine

Gantry axis : Control of a slave axis (gantry axis) assigned to

the guiding axis. During operation the position distance (lag) between master and slave axis is monitored and the machine stops when the differences exceed a predefined value

Gantry control : The module gantry control monitors the

squareness of the gantry axis to each other during

machine movement

Multiple Work areas : Allows the assignment of up to six working areas

with individual working area limit switches and

home positions



Manual Operations

Absolute Start Position : Allows the manual entry of the program zero

(GRID)

NC Off-Path : Possibility to execute e.g. scrap cut

Program Parking : To interrupt and at a later stage continue the

current program

Multi-Level-Return to Start : Facilitates to cut omitted parts again or to return to

program start point

Manual Plate Alignment : To teach in the actual position of the plate and

align the part program accordingly

Job Control : To simplify the saving and calling of all data

necessary for a cut (part program, technology data

etc.)

Zoom while Running : Keep the running point in the focus while

increasing the graphic view of program

representation during execution

Kerf on the Fly : Permits a change of the kerf value by the operator

during the program execution

Display of Comments : From the part program to inform the operator

Timers and Counters : To record e.g. distances, timers and ignition

procedure. When reaching definable threshold values, requests can be indicated to maintenance work or to the change of consumables and so on

Maintenance intervals : To determine and request a machine service as

displayed on screen

Manuals

Operation manual, technical documentation, parts list, assembly drawings, electrical drawings and supply drawings in English language.



Smart Flow Gas Distribution for Oxy Fuel (Automatic gas control system)

The oxy fuel torch stations are equipped with electronically controlled proportional valves to establish a stable increase of the gas flow during piercing. The required parameters are pre-set in the Katana CNC.

Specifications

- Pressure gauge and pressure regulator representation on the Katana Panel
- Hi/Lo pressure switch for faster pre-heating
- With automatic hole piercing by continuously increasing cutting oxygen up to 130 mm material thickness (depending on gas and material)
- Gas distribution block for up to max. 4 torch stations
- Setting of all necessary parameters and ramps are stored and can be adjusted in the cutting charts on the Katana control panel
- Maximum cutting thickness 150 mm (depending on the machine configuration)









Smart Lift OXY220 Height control system for Oxy Fuel: 2 Pcs

The Koike Smart Lift with Variable Torch Holder for Oxy fuel, Capacitive Height Sensing and electrically controlled Automatic Ignition is designed for rough environments where fast and effective Torch Height Control is required to achieve optimum productivity and quality of cutting and marking processes.

The in the Katana CNC control integrated Wizard provides all required characteristics for an optimum performance depending on the material, thickness and desired cut quality to adjust the entire system with the correct parameters for perfect processing parameters.

The Smart Lift comes with a brushless maintenance free AC motor and precision linear guidance system for smooth, reliable and accurate torch motion. The lifter runs at a fast stroke speed of 100 mm/sec through ball-screw spindle which provides more production time.



Electronics

The lifter is connected with the Koike EtherCAT bus to the Katana CNC controller that operates the movement of the lifter.

Technical specifications

Correction speed : 6.000 mm/min

Maximum stroke : 220 mm

Processing Motor : brushless 200W AC motor

Torch guidance : precision ball screw & linear guide rails Bevels : can be manually set for V+ and V-

Automatic Ignition ensures the igniting of the torch through the path control or by pressing a button on the control panel. Individual Solenoid Valves allow choice and switching off of the cutting torch by CNC.

With the Capacitive Height Sensing the initial height and control of the accurate stand-off during cutting offers an improved cut quality for vertical cutting.

Swivel Unit

The Swivel Unit is an option for the oxyfuel torch station and can be used for plate edge preparations in longitudal directions. Precise angle settings of +/- 45 °C can be achieved with little operator adjustments. Also front and back adjustment for alignment of multiple oxyfuel torches is possible.



Heat Protection Shield

For a single oxyfuel torch mounted at the bottom of the tool station. Each torch will be configured with a heat protection shield.



Smart Lift Oxy Tool Station: 2 pcs

The Koike Smart Lift with Variable Torch Holder for Oxy fuel, Capacitive Height Sensing and electrically controlled Automatic Ignition is designed for rough environments where fast and effective Torch Height Control is required to achieve optimum productivity and quality of cutting and marking processes. The in the Katana control integrated Wizard provides all required characteristics for an optimum performance depending on the material, thickness and desired cut quality to adjust the entire system with the correct parameters for perfect processing parameters. The Smart Lift comes with a brushless maintenance free AC motor and precision linear guidance system for smooth, reliable and accurate torch motion. The lifter runs at a fast stroke speed of 100 mm/sec through ball-screw spindle which provides more production time.



Electronics:

The lifter is connected with the Koike EtherCAT bus to the Katana controller that operates the movement of the lifter.

Technical Specifications:

Positioning speed: 6.000 mm/min

Maximum stroke: 120 mm or 220 mm (optional)
Processing Motor: brushless 200W AC motor
Torch guidance: precision ball screw & linear

quide rails

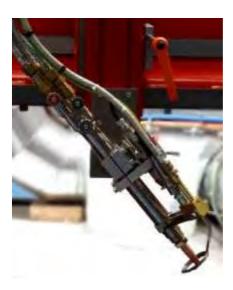
Bevels : can be manually set for

V+ and V- (for X&Y axis)

The Variable Torch Bracket allows panning and tilting of the machine cutting torch at all directions, as well as Plate Edge Alignment.

Automatic Ignition ensures the igniting of the torch through the path control or by pressing a button on the control panel. Individual Solenoid Valves allow choice and switching off of the cutting torch by CNC.

With the standard Capacitive Height Sensing the initial height and control of the accurate stand-off during cutting offers an improved cut quality for vertical cutting.





Smart Lift ARC220 for Plasma height control: 1 pc

The Koike SmartLift with magnetic torch holder for collision protection and initial height sensing is designed for Precision Plasma Systems where a fast and extremely accurate torch height control is required to increase both productivity and cut quality.

The in the KATANA control integrated wizard provides all required characteristics for a precise cut depending on material, thickness and desired cut quality from to adjust the entire system with the correct parameters for perfect processing

The SmartLift comes with a maintenance free AC motor and precision linear guidance system for smooth, reliable and accurate motion.

Initial Height Sensing (IHS) with Collision Protection

Exact initial height sensing, using nozzle contact by electrical or mechanical triggering, ensures precise control of the accurate stand-off during piercing and cutting.

Improved cut quality and extended consumable wear due to re-tracking of torch to piercing distance in encoder increments and the built-in ARC voltage control system.

The integrated collision protection with magnetically positioned torch holder for fast and precise replacement of the holder allows simple visual inspection and nozzle exchange.



Correction speed : 6.000 mm/min

Maximum stroke : 220 mm Processing
motor : brushless AC motor

Torch guidance : precision ball screw & linear guide rails

Plasma Shield Curtain

A plasma shield curtain for dry plasma cutting protects the operators from direct UV radiation while plasma cutting.

Manual Plate Alignment

A spot laser is used for manual plate alignment to teach in the actual position of the plate and align the part program accordingly as well as for repositioning of the machine after e.g. a cutting break.

The Katana provides for plate alignment up to 8 different measure routines at left and right hand side, as well as in front of the plate. The installed diode laser is designed for tough industrial applications and projects depending on visual points, lines or crosses, which are clearly visible on the plate even in daylight.







Kjellberg Germany Make Smart Focus 300 Plasma System





Moderne Komponenten Modern Components

Brenner & Gassteverung – intelligente Neventwicklung

Für die Smart Focus-Reihe stehen neu entwickelte Gaskonsolen zur Verfügung, wahlweise manuell oder vollautomatisch. Mit diesen optimierten Gassteuerungen werden beste Schneidergebnisse mit höchster, reproduzierbarer Qualität erzielt. Die neuen Brenner PerCut 2000 und PerCut 4000 sind in Aufbau und Funktionsweise verbessert worden und ermöglichen präzise Schnitte und höchste Schneidgeschwindigkeiten. Ihre einzigartige Flüssigkeitskühlung garantiert höchste Lebensdauer der Kjellberg-Verschleißteile, reduziert den Gasverbrauch und damit auch die Schnittmeterkosten.

Torches & gas control - intelligent redevelopment

Newly developed gas supply units are available for the Smart Focus series, either manual or fully automated. With these the user achieves best cutting results with highest, reproducible quality. The new torches PerCut 2000 and PerCut 4000 have been improved as well. They provide precise cuts and highest cutting speeds. Their unique cooling system guarantees longest consumable life and reduces the gas consumption and cutting costs per metre.



Per Cut-Brenner: auch für Fasenschnitte bis 50 ° I Per Cut torches: also for bevel cutting up to 50 °



Verschleißteile mit langer Lebensdauer Consumables with brig life



Gasversorgungm anuell: PGE-380, automatisch: PGV-380 Gas supplym anual: PGE-380, automated: PGV-380



■abhängig vom Material I depending ommaterial

■ Einstechregime beachten I observe pierding capability

| Brenner Torches | PerCut 2000, 4000 | | |
|--|---|--|--|
| Schnellwechselkopf Quick-change head | PerCut 4000 | | |
| Einspanndurchmesser Clamping diameter | 50.8 mm 12 inches | | |
| Plasmagase Plasmagases | O _s Ar/H ₂ N ₂ air | | |
| Markiergase Marking gases | Ar, N ₂ | | |
| Wirbelgase I Swirl gases | O₂ N₂ F5®, air | | |
| Forminggas F5(95 % N ₄ , 5 % H ₂) | | | |

Einsatzgebiete

Metall- & Maschinenbau Lohnzuschnitt Stahl- & Hallenbau Anlagen- & Behälterbau Nutzfahrzeug- & Kranbau Rohrleitungs- & Lüftungsbau Schiff- & Automobilbau

Application areas

Metal construction & engineering
Job shop production
Steel & hall construction
Plant & tank construction
Commercial vehicle & crane
construction
Pipeline & ventilation construction
Shipbuilding & automotive
engineering



| Technische Daten Technical Data | Smart Focus | Smart Focus 200 | Smart Focus 300 | Smart Focus | |
|-------------------------------------|---------------------------|---------------------------|---------------------------|---------------------------|--|
| Netzspannung Mains voltage* | 3x 400 V, 50 Hz | |
| Sicherung, träge Fuse, slow | 50 A | 80 A | 125 A | 180 A | |
| Anschlussleistung Connected load | max. 28 kVA | max. 51 kVA | max. 79 kVA | max. 116 kVA | |
| Schneidstrom Cutting current | 35 - 130 A | 35 - 200 A | 35 – 300 A | 35 - 400 A | |
| Markierstrom Marking current | 10 - 50 A | 10 - 50 A | 10 - 50 A | 10 – 50 A | |
| Einschaltdauer Duty cycle** | 100 % | 100 % | 100 % | 100 % | |
| Abmessung Dimensions (LxWxH) | 1,030 x 570 x 1,260 mm | 1,030 x 680 x 1,450 mm | 1,030 x 680 x 1,450 mm | 1,030 × 680 × 1,450 mm | |
| Masse I Mass | 266 kg | 388 kg | 488 kg | 563 kg | |

Auszug Schneiddaten | Extract operating data

| Dicke Thickness mm | Baustahl Mild steel | | Edelstahl Stainless steel | | Aluminium Aluminium | |
|--------------------------|-----------------------|-------------|-----------------------------|-----------|-----------------------|-------------|
| | Α | mm/min | Α | mm/min | А | mm/min |
| 1 | 35 | 3,400 | 55 | 5,500 | 55 | 4,500 |
| 2 | 35 | 2,800 | 55 | 4,000 | 55 | 4,000 |
| 5 | 60 | 3,100 | 55 | 2,000 | 55 | 2,700 |
| 6 | 90 | 3,700 | 130 | 1,600 | 130 | 3,500 |
| 8 | 130 | 3,700 | 130 | 1,500 | 130 | 1,400 |
| 10 | 130 | 3,000 | 130 | 1,400 | 130 | 1,300 |
| 12 | 160 | 3,400 | 130 | 1,200 | 130 | 1,200 |
| 15 | 200 | 2,800 | 200 | 1,200 | 200 | 1,500 |
| 20 | 200/300 | 1,800/2,600 | 200/300 | 850/1,200 | 200/300 | 1,300/2,800 |
| 30 | 200/300 | 1,000/1,500 | 200/300 | 600/860 | 200/300 | 600/1,800 |
| 40 | 300/400 | 800/1,200 | 300/400 | 570/750 | 300/400 | 1,200/1,600 |
| 50 | 300/400 | 500/800 | 300/400 | 480/550 | 300/400 | 880/1,200 |
| 60 | 300/400 | 300/550 | 300/400 | 410/480 | 300/400 | 550/1,000 |
| 70 | 300/400 | 150/300 | 300/400 | 280/380 | 300/400 | 450/800 |
| 80 | 300/400 | 100/210 | 300/400 | 250/330 | 300/400 | 400/600 |
| 100 | 400 | 150 | 400 | 180 | 400 | 250 |



Sigma Nest Companion Offline Nesting Software

This SigmaNest software is modular and can be delivered in a wide range of varieties and options. Below is our suggestion that in most cases fills all your needs perfectly.

Software

Normally, a complete SigmaNest nesting package consists of:

a main software package depending on the requirements

a post processor

on-site installation and training by a Koike Middle East engineer

optional post processors to drive other, mostly existing, cutting machines

SigmaNest is the most advanced solution available for laser, plasma and oxyfuel machines. It maximizes material efficiency and machine through-put using advanced nesting and NC functions, including common line cutting, bridge cutting and chain cutting.

SNX300A SigmaNest Companion

Machine control based nesting with:

SigmaNest Post Processor

The post processor is necessary to produce the NC data which the Katana can use.



Sigma NEST Companion Automatic Nesting software Included in offer



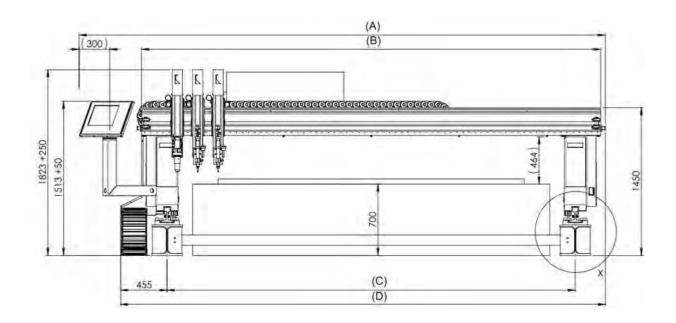


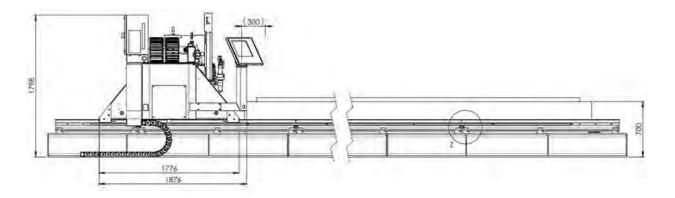
Overview

| Item | Description | Q'ty | Unit | Net Price |
|--------------|---|------|---------|------------------|
| | Deltatec 4500 - 14 meter Rail | | | |
| 580000004008 | Deltatec 4500 | 1 | Рс | |
| 580000010010 | Katana-ADV CNC - Windows 7 | 1 | Рс | |
| 580000004078 | Bracket Arm CNC, fixed, left side machine | 1 | Рс | |
| 580000004054 | Steel band System - 30 mm - DT4500 | 1 | Set | |
| 580000004106 | Signal Light - 3 colors | 1 | Pc | |
| 580000004116 | Safety Stop-rope, front and back side Machine | 1 | Set | |
| 580000004140 | Rails and racks (both sides, per meter), including mounting plates and fixing bolts | 14 | Mtr | |
| 580000004077 | Cable Tracks, wall mounted, right side machine | 1 | Рс | |
| 580000004900 | Cable Track Oxy fuel / Plasma < 300 Amps, per meter Rail length | 14 | Mtr | |
| 580000004022 | Station Cabinet - 3 stations | 1 | Рс | |
| 580000004153 | Smart Flow Gas distribution with Proportional Valves (2 Torches) | 1 | Set | |
| 580000004162 | Compressed Air Manifold | 1 | Pc | |
| 580000004191 | Smart Lift OXY220 (incl. capacitive height control, automatic ignition, variable torch bracket and torch heat shield) | 2 | Pc | |
| 580000004216 | Oxy fuel torch bracket for precise angle adjustment in lateral direction (+/- 45°) | 2 | Pc | |
| 590000002110 | Oxy fuel Torch (5 - 150 mm) LPG/MAPP | 2 | Set | |
| 580000004261 | Smart Lift ARC220 plasma Height control | 1 | Pc | |
| 580000004370 | Manual Plate Alignment / Laser Spot | 1 | Pc | |
| 90000005002 | Smart Focus 300 with automatic Gas console | 1 | Set | |
| 90000001000 | Ohmic Touch Sensing - Kjellberg | 1 | Pc | |
| 580000004103 | E-cabinet Air Conditioning | 1 | Pc | |
| 580000004910 | Oxy fuel Hose package (LW16), (L= 20 meter) | 1 | Set | |
| 580000004915 | Hose O2 / Air (ID16), (L= 20 meter) | 1 | Pc | |
| 580000004905 | Power cable Machine (Rail length + 15 meter) | 29 | Mtr | |
| 580000010040 | Network Cable for LAN connection to Katana (Rail length + 15 meter) | 29 | Mtr | |
| 580000014100 | Documentation machine | 1 | Set | |
| 700000050002 | INT Packing | 1 | Set | |
| SN-SNX300-A | Sigma Nest Offline nesting software for 2D cutting systems, including Post Processor | 1 | License | included |



Deltatec Machine Dimensions





Machine width : track width + 1.000 mm

Track width : 4500 mm

Effective cutting width : 3600 mm

Machine height : 2100 mm (approximately)

Table height : 700 mm

Beam height : 300 mm

Total Rail length : 14000 mm

Effective cutting length : 12100 mm

^{*} Koike Europe BV and Koike-Engineering GmbH reserve all rights to make changes to the final machine design without prior notice.