isel®

successful with
CNC TECHNOLOGY

CNC SYSTEMS

including accessories & software

iselGermanyAG

isel®

successful with
CNC TECHNOLOGY

Status: April 2023

Contents

CNC systems

Accessories

Software

Do you have any questions to our CNC systems?
Then get in touch with our technical sales department. This will give you all the information about the available options. If you wish, our sales department will also prepare a personal offer for you!

Phone: +49 (0) 6659 / 981-0
Email: info@isel.com

Individual free milling pattern

How to find your perfect CNC machine!

There are many CNC machines. But which one suits my company or my application?

You can do lots of research on the web, at trade fairs and in the specialist press. When you have filtered out a few providers, the best thing you can do is to test them out.

This is the reason why the company isel Germany AG has set up the often used "Application Center Eiterfeld". Simple production processes from reading in the data to the finished product can be demonstrated in this centre. The aspects which can be shown are the user-friendliness of the software, the noise development and cleanliness of the system, the handling and the finished product.

For people with a long journey, the process can also be documented through a logged video. After that, the components can be measured so to show their process reliability as well.

Plant in Eichenzell

36124 Eichenzell, Hesse
Total area: approx. 30,000 m²

Plant in Eiterfeld

36132 Eiterfeld, Hesse
Total area: approx. 52,000 m²

aalberts advanced mechatronics

isel Germany is part of the stocklisted company Aalberts since february 2022. Since the inception in 1975, Aalberts is where technology matters and real progress can be made - humanly, financially and environmentally.

Greatness is made of shared knowledge

Just like isel Germany, all Aalberts companies stand their ground in the engineering and technology world. As the world is changing rapidly and innovation cycles are reduced dramatically, the open and pragmatic internal culture at Aalberts helps us to exchange fresh thinking and to embrace new technologies.

Frank Schneider

Sales Manager, national

Phone: +49 (0) 6659 / 981-489
Fax: +49 (0) 6659 / 981-776
frank.schneider@isel.com

Andreas Trabert

Sales Manager, international

Phone: +49 (0) 6659 / 981-769
Fax: +49 (0) 6659 / 981-776
andreas.trabert@isel.com

Dear Business Partner,

We are pleased to present our latest CNC machine systems in our new catalogue.

Our ambitions to make the tried and tested in the field of automation even better for you, to tackle new things innovatively and to track down trends drive us forward in the development of the isel product range - every day anew and for more than five decades!

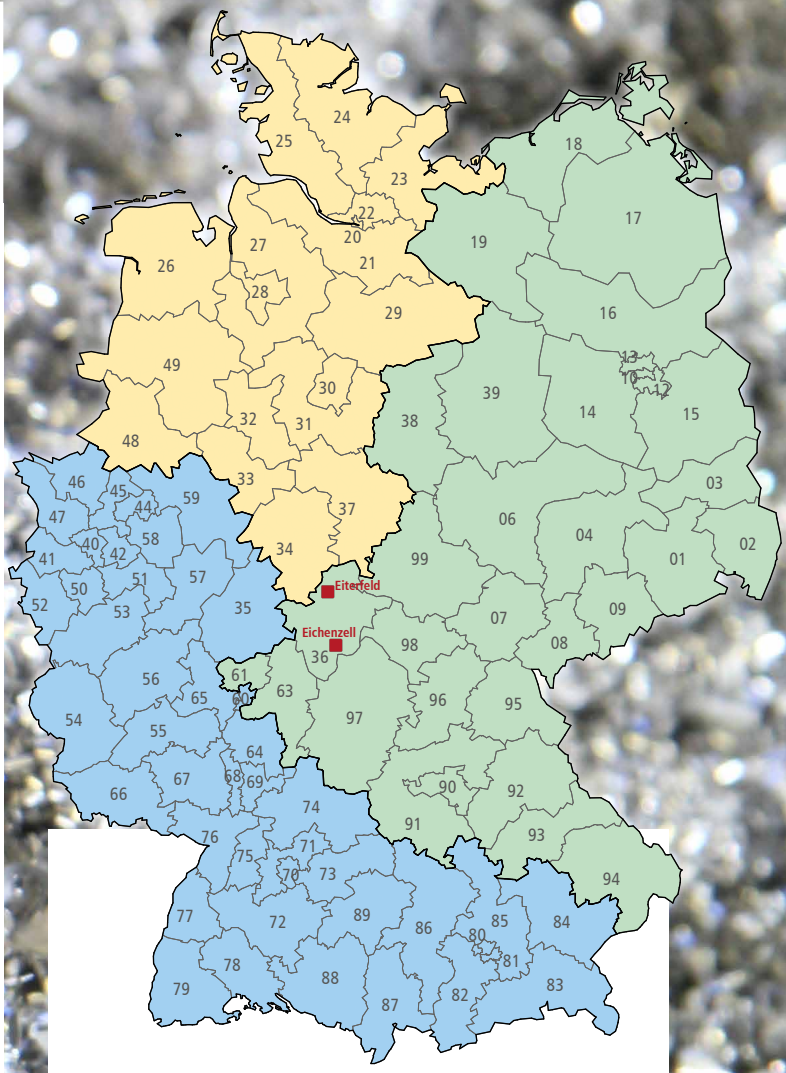
For you, we always want to have our finger on the pulse. In addition to our tried and tested CNC systems, you will find a number of new products in our range - always geared to the wishes and requirements of our customers.

It is very important to us to help you achieve long-term success. Particularly with a view to the „**turn of the times**“, we have positioned ourselves well with our system solutions.

In machine tool manufacturing, topics such as **domestic sourcing**, i.e. the procurement of important company resources from the geographically close environment, will continue to gain in importance in order to be able to ensure a more **sustainable supply** in the future. For this reason, isel Germany AG has long been committed to creating as much value as possible in-house. Thanks to our high vertical range of manufacture and numerous suppliers from the regional environment, we can react flexibly to any bottlenecks and keep our delivery times comparatively short.

The entire industry is working diligently to advance the **digitalisation** of the industry. Our contribution to this is called „OPC-UA“ - simply put, the interface standard is a common language for machines. It ensures that machines that are networked with each other exchange information in a uniform manner. We have already successfully implied this interface, which is integrated in our software, in numerous projects.

Special requirements always call for special solutions. We are therefore pleased to be able to present you with the **iMG series** of new CNC milling machines that, in addition to easily machinable materials, can also machine high-strength materials such as **steel, titanium, ceramics and stainless steel**, and do so with the highest precision and excellent surface quality. This is made possible by a system of surge cooling, a machine frame with high rigidity and state-of-the-art drive technology. The iMG series thus meet the core of our philosophy of continuously realising new, industry-specific solutions that are optimally tailored to the requirements of our customers.



The compact and powerful **iMG 1010** and **PREMIUM 5030** versions are predestined for **micro-machining**. The 5-axis milling systems also offer the possibility of connecting automation systems for unmanned production.

As a new technology, we have waterjet cutting systems in our range. With our **iWS 1000 series**, you can cut your material almost burr-free in the smallest working space. The machines are excellently suited for small series production, for educational institutions, as well as for workshop operation. This process does not produce any toxic gases, so that environmental protection is also taken into account here.

But no matter what your requirements are - we are ready for them! Our most important goal is your satisfaction.
This is our incentive and our daily claim.

Thank you for your trust. We hope you enjoy browsing through our catalogue and look forward to your enquiry.

Frank Schneider and Andreas Trabert

Frank Schneider Andreas Trabert

Contact | Advice | Support

Plant in Eiterfeld
isel Germany AG
Sachsenweg 8
D-36132 Eiterfeld

Plant in Eichenzell
isel Germany AG
Bürgermeister-Ebert-Straße 40
D-36124 Eichenzell

Headquarters in Eichenzell
Phone: +49 (0) 6659 / 981-800
Fax: +49 (0) 6659 / 981-776
info@isel.com

Customer Support
Phone: +49 (0) 6659 / 981-790
Fax: +49 (0) 6659 / 981-570
support@isel.com

Sales, Production CNC and service
Mon to Thu 7:30 a.m. - 4:30 p.m.
Friday 7:30 a.m. - 2:00 p.m.

Distribution, production robotics, receiving and shipping
Mon to Thu 7:00 a.m. - 3:00 p.m.
Friday 7:00 a.m. - 12:30 p.m.

Self-collector
Mon to Thu 8:00 a.m. - 1:00 p.m.
Friday 8:00 a.m. - 11:00 a.m.

Application technique
Phone: +49 (0) 6659 / 981-790
Fax: +49 (0) 6659 / 981-564
anwendungstechnik@isel.com

Sales team Germany

Jürgen Balzer
Technical sales

Phone: +49 (0) 6659 / 981-774
Fax: +49 (0) 6659 / 981-776
juergen.balzer@isel.com

Stefan Koch
Technical sales

Phone: +49 (0) 36964 / 84-526
Fax: +49 (0) 6659 / 981-777
stefan.koch@isel.com

Steffan Gärth
Technical sales

Phone: +49 (0) 6659 / 981-773
Fax: +49 (0) 6659 / 981-776
steffan.gaerth@isel.com

Katja Henkel
Technical sales

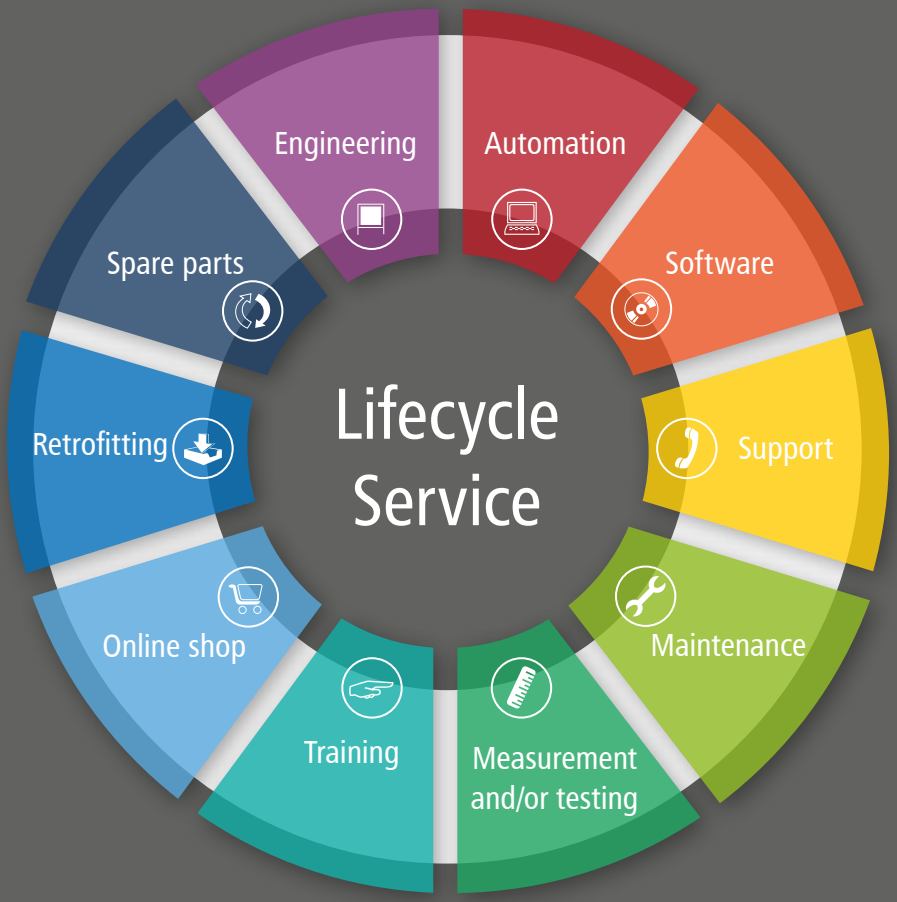
Phone: +49 (0) 6659 / 981-744
Fax: +49 (0) 6659 / 981-777
katja.henkel@isel.com

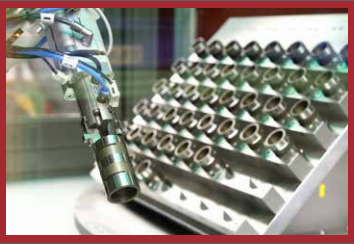
Jessica Gatterdam
Team assistant

Phone: +49 (0) 6659 / 981-751
Fax: +49 (0) 6659 / 981-776
jessica.gatterdam@isel.com

Vanessa Irrgang
Team assistant

Phone: +49 (0) 36964 / 84-563
Fax: +49 (0) 6659 / 981-777
vanessa.irrgang@isel.com





Excellent automation...

Thanks to the industrial communication protocol OPC - UA with its interface to our in-house software proNC we will guide you on the way to Industry 4.0. By means of this interface, automation solutions by isel offer a completely automated remote control solution, intelligent data modelling and integrated security and authentication mechanisms.

From generation to generation...

we develop individual solutions for your automation-related tasks. Since every single automation solution is based on a high-performance software, by which the task at hand can be implemented quickly and conveniently. Thanks to our in-house post-processors by isel, we offer options in the field of the machine code generation by using a wide variety of CAD/CAM systems.

Competent care...

In addition to the free service with competent advice and, if needed, the quickest possible troubleshooting, we offer you inexpensive maintenance contracts, phone customer support, on-site troubleshooting as well as training and maintenance of your CNC machine by isel. Would you like your system to be commissioned on site? We are at your disposal with our service.

We know your machine...

and are professionals in the fields of care and maintenance, because nobody can afford a production downtime. We ensure that your isel product will always run in a reliable manner. The regular maintenance by our qualified service technicians ensures maximum accuracy and reliability - for the entire lifetime of the machine. We maintain your machine professionally, safely, and reliably.

Quality in industry & mechanical engineering

Over 45 years of experience in the field of automation and the exclusive production in Germany speak for the outstanding quality of all components manufactured by isel. The "Made by isel" creates trust and security, by minimising downtimes and by ensuring an elevated level of machine throughput.

Training from a specialist...

for a smooth workflow with your CNC machine. We familiarise you with the software as well as with the system. In this manner, you can prevent downtimes and work in an efficient way. Train in our application centre on an identical CNC machine and get to know new functions and applications.

Open for you around the clock!

From A (Aluminiumprofil, aluminium profile) to Z (Zahnriemenantrieb, toothed beltdrive): The isel online shop offers not only components for automation, but also complete CNC systems. Free download of CAD data, technical data sheets and operating instructions complete our range - just take a look on our website www.isel.com

We are upgrading...

so that your CNC machines remain state-of-the-art at any time. We would be very glad to offer you upgrade options which are individually tailored to your CNC system.

If a replacement is required...

Our specialists will be glad to support you with your spare parts order. We supply you with the mechanical, electronic, and pneumatic spare parts for your machine in an uncomplicated and cost-effective manner. If you need any help for the installation, just give us a call.

Engineering

Our engineering team is very glad to implement mechanical and electronic special designs as well as software adaptations. Mechanical adaptations to axis and rotation units, as well as control cabinet configurations with risk assessments and documentation services do not pose a problem for us. In addition, our team carries out special programming operations in CNC and PLC environments based on the respective requirements.

The industrial CNC machines

FlatCom®

The all-rounders

- small footprint with large processing area
- many fields of application due to individualization
- ready for use on any floor thanks to modular design
- in 3 versions with different sizes

„FlatCom XL“ on page 12
„FlatCom L“ on page 16
„FlatCom M“ on page 20

OverHead®

The space miracle

- optimal use of space, free processing area
- the best possible chip protection thanks to overhead axes
- particularly suitable for tall and bulky components
- available in four sizes

„OverHead“ on page 24

EuroMod®

The compact one

- high stability in the X-axis
- large passage height
- movable Y-axis, optimal material change
- available in three sizes

„EuroMod“ on page 28

PREMIUM5030

The precision

- steel granite body with linear motors
- fast change from 3 to 5 axes
- high frequency spindle up to 2 kW / 50,000 rpm
- high path accuracy due to digital length measuring system

„Premium5030“ on page 32

iMG SERIE

The steely ones

- steel processing
- wet processing with chip evacuation
- EtherCAT control technology
- axis compensation option

„iMG series“ on page 36

iWS1000

Water jet cutting machine

- no thermal stresses
- no hardenings
- no tensions
- no dust or smoke emission
- almost burr-free cuts
- direct piercing at any position

„iWS 1000“ on page 44

FlatCom® XL

The allrounder

- heavy milling process
- windows-based software
- gantry drive with large travels
- available in five sizes
- complete with motors, controls, PC and monitor

PILZ
THE SPIRIT OF SAFETY
INSIDE

Fig. FlatCom® XL 142/252 equipped with control panel iOP-19

FlatCom® XL | The allrounder

Do you mainly want to machine non-ferrous metals such as aluminum, brass and bronze?
Do you need travels of more than 2,000 mm? In this case, our allrounder will come into play.

The travel unit is mounted on the table surface. This is why it has a high level of stability, since it is connected to the stiffened machine frame. The machine remains vibration-free even at higher speeds.

Features

- various portal passages with an extended Z-axis
- powerful isel control with maintenance-free servomotors
- reliable LES units with steel ball screws installed as drives
- PILZ security technology
- easy to use thanks to the height-adjustable CNC panel
- network-compatible control PC with WIN 10
- sliding/folding door
- clamping of the workpieces by means of a T-slot plate

Options

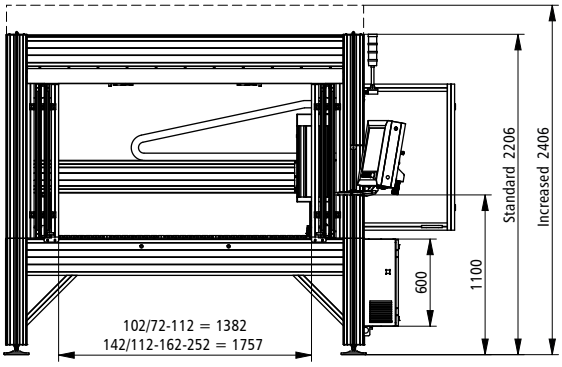
- iSA milling spindles and water-cooled HF milling spindles
- round and linear tool changing stations
- cooling spray device
- cold air cooling, cool-min
- automatic tool length measurement
- mill breakage control
- electronic handwheel
- pneumatic sliding door
- rotation units
- a maximum of 6 interpolating axes + 6 handling axes
- safety light curtain
- closed and/or light-tight hood for laser applications
- hood attachment with increased portal passage
- workpiece clamping systems (hand lever, vacuum clamping tables, etc.)
- extraction systems
- LED engine room lighting
- RAL colour selection
- PC control panel with free PCI slots (for the use of external PCI hardware)
- interface adjustments
- CAD/CAM software

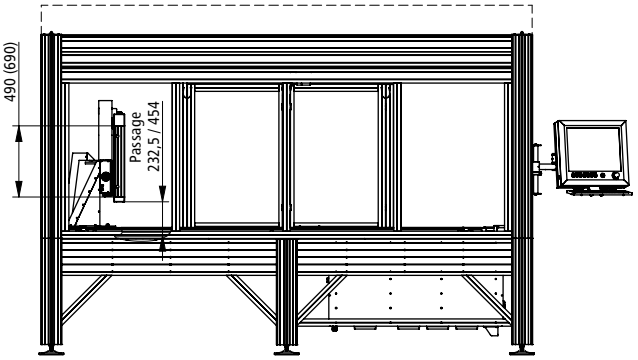
Technical data

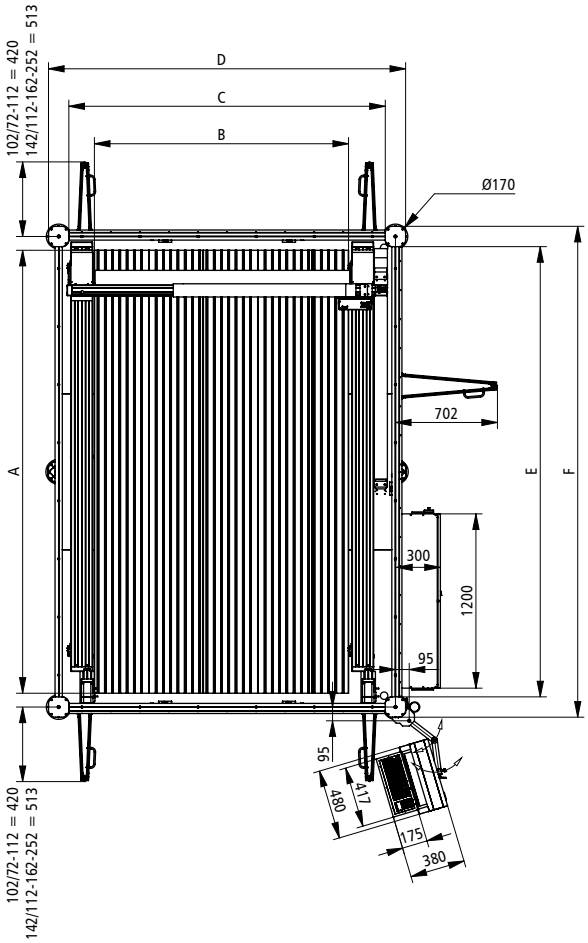
FlatCom®	XL102/72	XL102/112	XL142/112	XL142/162	XL142/252
Travel ranges X/Y [mm]	1125/720	1125/1100	1500/1100	1500/1600	1500/2500
Z stroke [mm]*	210 (optional: 410, each without processing unit)				
Z passage [mm]*	230 (optional 450, each without processing unit)				
Table clamping area WxD [mm]	1375 x 1300	1375 x 1700	1750 x 1700	1750 x 2200	1500 x 3100
Dimensions WxDxH [mm]	2114 x 1614 x 2206	2114 x 2014 x 2206	2489 x 2014 x 2206	2489 x 2514 x 2206	2489 x 3410 x 2206
Equipped with control cabinet & open doors	2338 x 1949 x 2206	2338 x 2684 x 2206	2713 x 2871 x 2206	2713 x 3371 x 2206	3106 x 4267 x 2206
Travel speed X/Y/Z	max. 15 m/min.				
Drive motors	Maintenance-free EC/AC servomotors				
Drive elements X/Y/Z	Ball screw drive, set without clearance				
Control	CAN controller iMD equipped with 3 drive controllers which are expandable to 12 axes (max. 6 interpolated & 6 handling axes), PC, I/O module, safety circuit equipped with standstill monitoring, power supply 48 V / 1000 W, PILZ safety technology inside				
Operation	Control panel iOP-19 touchscreen equipped with keyboard and touchpad				
Software	WinRemote (optional: ProNC, isy-CAM)				
Weight [kg]	approx. 680	approx. 730	approx. 840	approx. 930	approx. 1,180
Electrical specifications	400V, 16A				
Part No. (Z stroke: 210 mm)	**278040 232443***	**278041 232443***	**278042 232443***	**278043 232443***	**278044 232443***

*without installed components on the axes.

FlatCom®XL | Dimensional drawing [dimensions in mm]

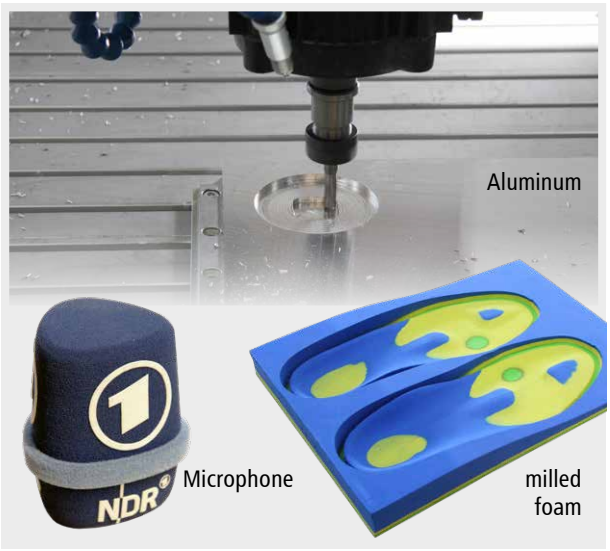






FlatCom®XL	102/72	102/112	142/112	142/162	142/252
A	1300	1700	1700	2200	3050
B	1375	1375	1750	1750	1750
C	1804	1804	2179	2179	2179
D	2084	2084	2459	2459	2459
E	1304	1704	1704	2204	3100
F	1584	1984	1984	2484	3380

FlatCom® XL | The all-in-one solution



Typical materials:

- aluminum
- brass
- wood
- plexiglass
- foam and milled plastics
- and many more

Application areas:

- automotive supplier
- model and mold making
- orthopaedic technology
- measurement and testing procedures
- dispensing applications

Option: automatic tool changer equipped with suction device

our "reliable ones" - the LES axis series

FlatCom ® XL 102/72 and 142/252
in size comparison

FlatCom® L

Large travel gantry machine

- large table clamping surface; up to 5.85 m²
- large working area; up to 2.5 x 1.7 m
- high gantry clearance, up to 470 mm
- fixed table, movable gantry
- complete with motors, controls, PC and monitor

PILZ
THE SPIRIT OF SAFETY
INSIDE

Fig. FlatCom® L 250
equipped with control panel iOP-19

FlatCom® L | Large travel gantry machine

The FlatCom® L is ideally suited for panel processing for various materials such as aluminum, non-ferrous metals, wood, and plastics. With a maximum travel range of 2500 x 1700 mm, the FlatCom® L is the largest serial CNC machine by isel. The structure of the machine is a typical structure for the FlatCom series. A moving portal, a fixed table and a gantry drive make the machine stable and dynamic. The mechanical basis is formed by stable, low-vibration components made of aluminum-steel connections.

The ball screw drives without clearance used in the linear axes ensure high accuracy levels. A special feature of the FlatCom® L is the option of a double Z axis permitting the execution of parallel machining. The FlatCom® L is available in various designs or handling systems from the isel robotics area.

Features

- various portal passages with an extended Z-axis
- powerful isel control with maintenance-free servomotors
- reliable LES units with steel ball screws installed as drives
- PILZ security technology
- easy to use thanks to the height-adjustable CNC panel
- network-compatible control PC with WIN 10
- sliding/folding door
- clamping of the workpieces by means of a T-slot plate

Options

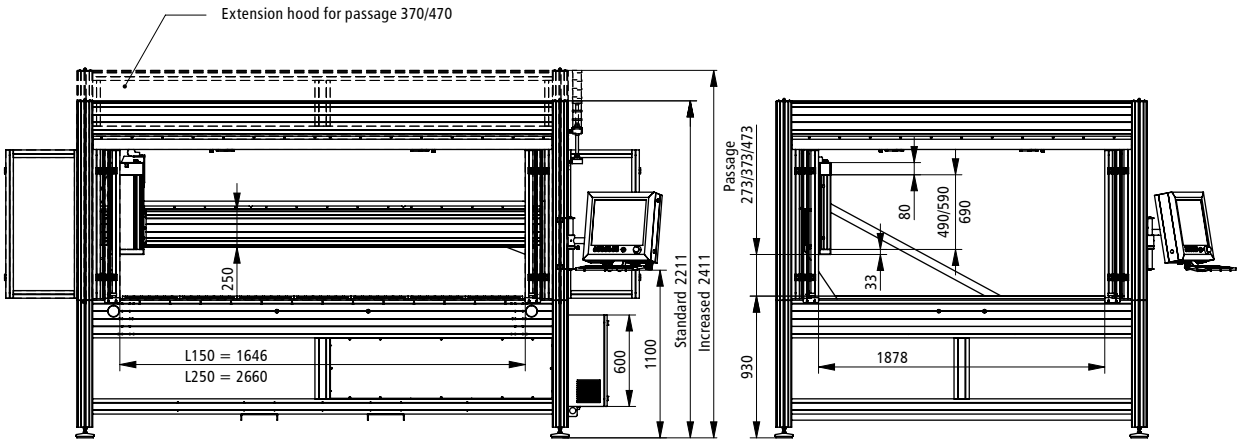
- iSA milling spindles and water-cooled HF milling spindles
- round and linear tool changing stations
- cooling spray device
- cold air cooling, cool-min
- automatic tool length measurement
- mill breakage control
- electronic handwheel
- pneumatic sliding door
- rotation units
- a maximum of 6 interpolating axes + 6 handling axes
- safety light curtain
- closed and/or light-tight hood for laser applications
- hood attachment with increased portal passage
- workpiece clamping systems (hand lever, vacuum clamping tables, etc.)
- extraction systems
- LED engine room lighting
- RAL colour selection
- PC control panel with free PCI slots (for the use of external PCI hardware)
- interface adjustments
- CAD/CAM software

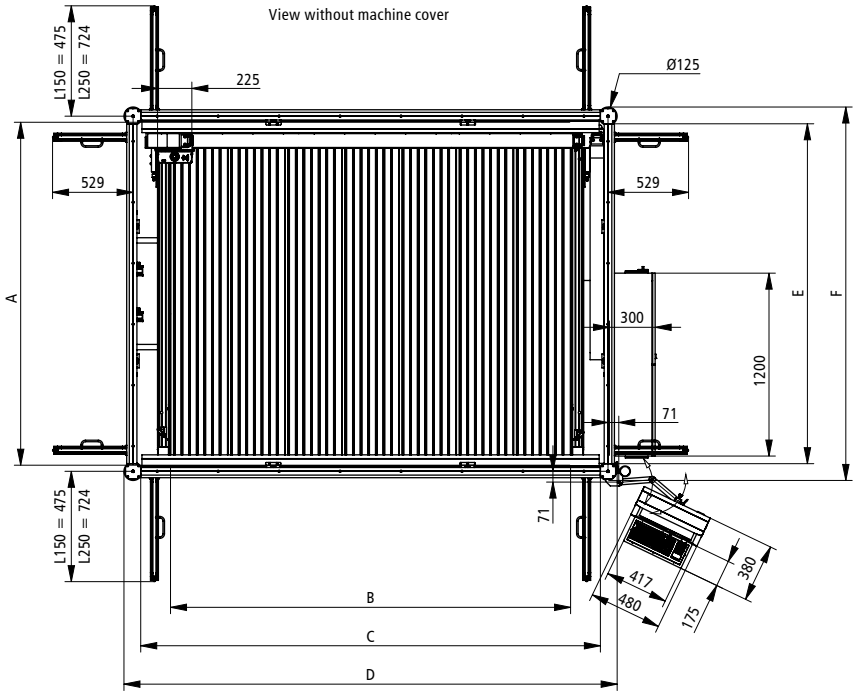
Technical data

FlatCom®	L150	L250
Travel ranges X/Y [mm]	1500/1700	2500/1700
Z stroke [mm]*	210 (optional 310; 410)	
Z passage [mm]*	270 (optional 370; 470)	
Table clamping area WxD [mm]	1600 x 2250	2600 x 2250
Dimensions WxDxH [mm]	2241 x 2455 x 2211	3488 x 2455 x 2211
Equipped with control cabinet & open doors	2488 x 3280 x 2211	4173 x 3778 x 2211
Travel speed X/Y/Z	max. 15 m/min.	
Drive motors	Maintenance-free EC/AC servomotors	
Drive elements X/Y/Z	Ball screw drive, set without clearance	
Control	CAN controller iMD equipped with 3 drive controllers which are expandable to 12 axes (max. 6 interpolated & 6 handling axes), PC, I/O module, safety circuit equipped with standstill monitoring, power supply 48 V / 1000 W, PILZ safety technology inside	
Operation	Control panel iOP-19 touchscreen equipped with keyboard and touchpad	
Software	WinRemote (optional: ProNC, isy-CAM)	
Weight [kg]	approx. 590	approx. 690
Electrical specifications	400V, 16A	
Part No. (Z-stroke: 210 mm)	**278030 302443***	**278031 373443***

*without installed components on the axes.

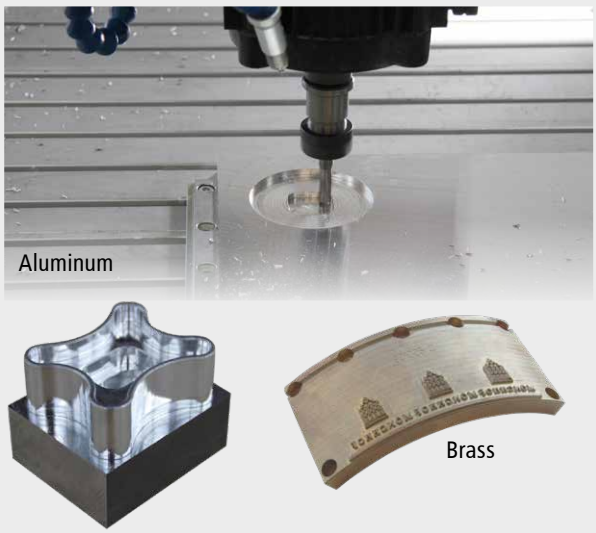
FlatCom® L | Dimensional drawing [dimensions in mm]





FlatCom®L	150	250
A	2250	2250
B	1625	2625
C	2016	3016
D	2216	3216
E	2230	2230
F	2430	2430

FlatCom® L | The all-in-one solution



Typical materials:

- light and non-ferrous metals
- foam and milled plastics
- wood
- plexiglass
- and many more

Application areas:

- model and mold making
- orthopaedic technology
- measurement and testing procedures
- dispensing applications

Option: suction device equipped with suction head

FlatCom ® L150 and L250
in size comparison

FlatCom® M

The versatile one

- for milling, dispensing, measuring, and testing
- inexpensive machine equipped with a moving portal
- entry into the rack machine
- available in four sizes

PILZ
THE SPIRIT OF SAFETY
INSIDE

Fig. FlatCom® M 40-LES with optional equipment: milling spindle, suction and tool changer.

FlatCom® M | The versatile one

The FlatCom ® M series is used for milling as well as for dispensing applications. All linear axes run on ground steel shafts equipped with linear ball bearings. Ball screws adjusted without clearance are used as drives. Powerful brushless servomotors in service-friendly drive modules drive the linear axes. Thanks to the own servocontrol by isel, equipped with track function (look ahead), a solution can be found for a wide range of customer requirements.

Features

- closed hood
- portal passage of 250mm (optional 350mm)
- prepared for digital and analog I/O modules
- powerful isel control with maintenance-free servomotors
- peliable LES units with steel ball screws installed as drives
- PILZ security technology
- easy to use thanks to the height-adjustable CNC panel
- network-compatible control PC with WIN 10
- sliding/folding door
- clamping of the workpieces by means of a T-slot plate

Options

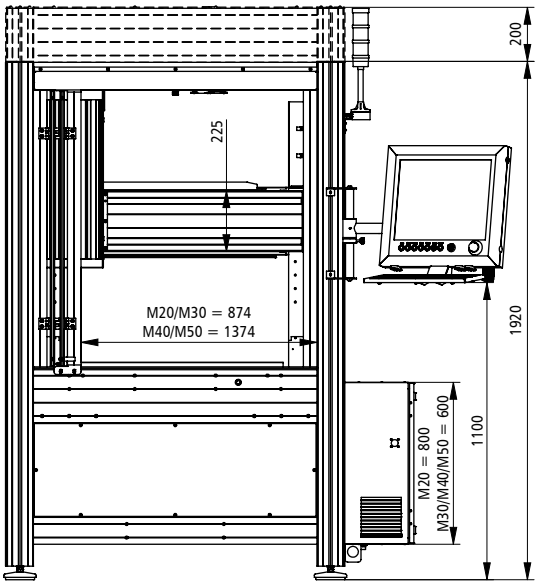
- iSA milling spindles and water-cooled HF milling spindles
- round and linear tool changing stations
- cooling spray device
- cold air cooling, cool-min
- automatic tool length measurement
- mill breakage control
- electronic handwheel
- pneumatic sliding door
- rotation units
- a maximum of 6 interpolating axes + 6 handling axes
- safety light curtain
- hood attachment with increased portal passage
- workpiece clamping systems (hand lever, vacuum clamping tables, etc.)
- extraction systems
- LED engine room lighting
- RAL colour selection
- PC control panel with free PCI slots (for the use of external PCI hardware)
- interface adjustments
- CAD/CAM software

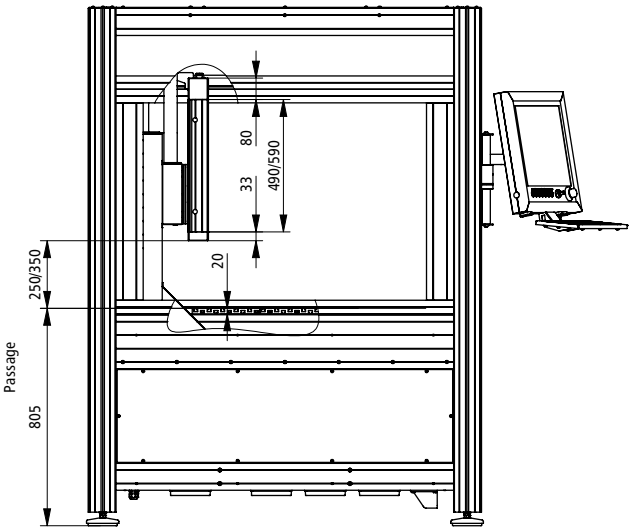
Technical data

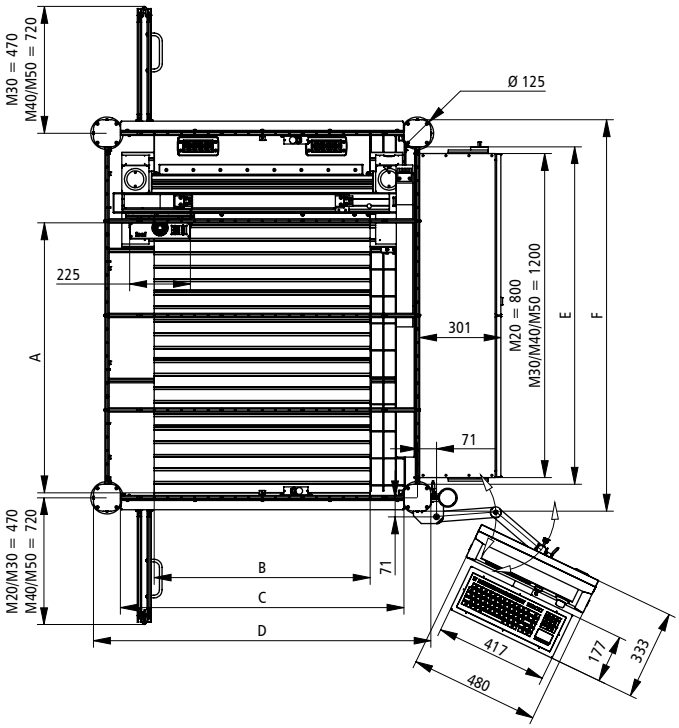
FlatCom®	M20-LES	M30-LES	M40-LES	M50-LES
Travel ranges X/Y [mm]	710/500	710/750	1210/750	1210/1250
Z stroke [mm]*	210 (optional 310, each without processing unit)			
Z passage [mm]*	250 (optionally 350, each without processing unit)			
Table clamping area WxD [mm]	800 x 750	800 x 1000	1300 x 1000	1300 x 1500
Dimensions WxDxH [mm]	1275 x 1175 x 1920	1275 x 1475 x 1920	1775 x 1475 x 1920	1775 x 1975 x 1920
Equipped with control cabinet & open doors	1522 x 1583 x 1920	1522 x 2290 x 1920	2022 x 2790 x 1920	2022 x 3290 x 1920
Travel speed X/Y/Z	max. 15 m/min.			
Drive motors	Maintenance-free EC/AC servomotors			
Drive elements X/Y/Z	Ball screw drive, set without clearance			
Control	CAN controller iMD equipped with 3 drive controllers which are expandable to 12 axes (max. 6 interpolated & 6 handling axes), PC, I/O module, safety circuit equipped with standstill monitoring, power supply 48 V / 1000 W, PILZ safety technology inside			
Operation	Control panel iOP-19 touchscreen equipped with keyboard and touchpad			
Software	WinRemote (optional: ProNC, isy-CAM)			
Weight [kg]	approx. 590	approx. 670	approx. 770	approx. 820
Electrical specifications	230V, 16A		400V, 16A	
Part No. (Z-stroke: 210 mm)	**278000 252443***	**278001 252443***	**278002 252443***	**278003 252443***

*without installed components on the axes.

FlatCom® M | Dimensional drawing [dimensions in mm]







FlatCom®M	M 20-LES	M 30-LES	M 40-LES	M 50-LES
A	750 mm	1000 mm	1000 mm	1500 mm
B	800 mm	800 mm	1300 mm	1300 mm
C	1050 mm	1050 mm	1550 mm	1550 mm
D	1250 mm	1250 mm	1750 mm	1750 mm
E	950 mm	1250 mm	1250 mm	1750 mm
F	1150 mm	1450 mm	1450 mm	1950 mm

FLATCOM® M | Diversity in a small space

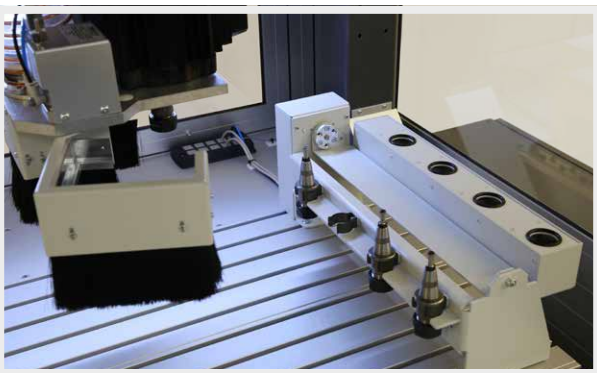
Wooden recorder

Foam micro-phone

Milled plastic

Brass

Option: suction device equipped with suction head



Option: tool changer

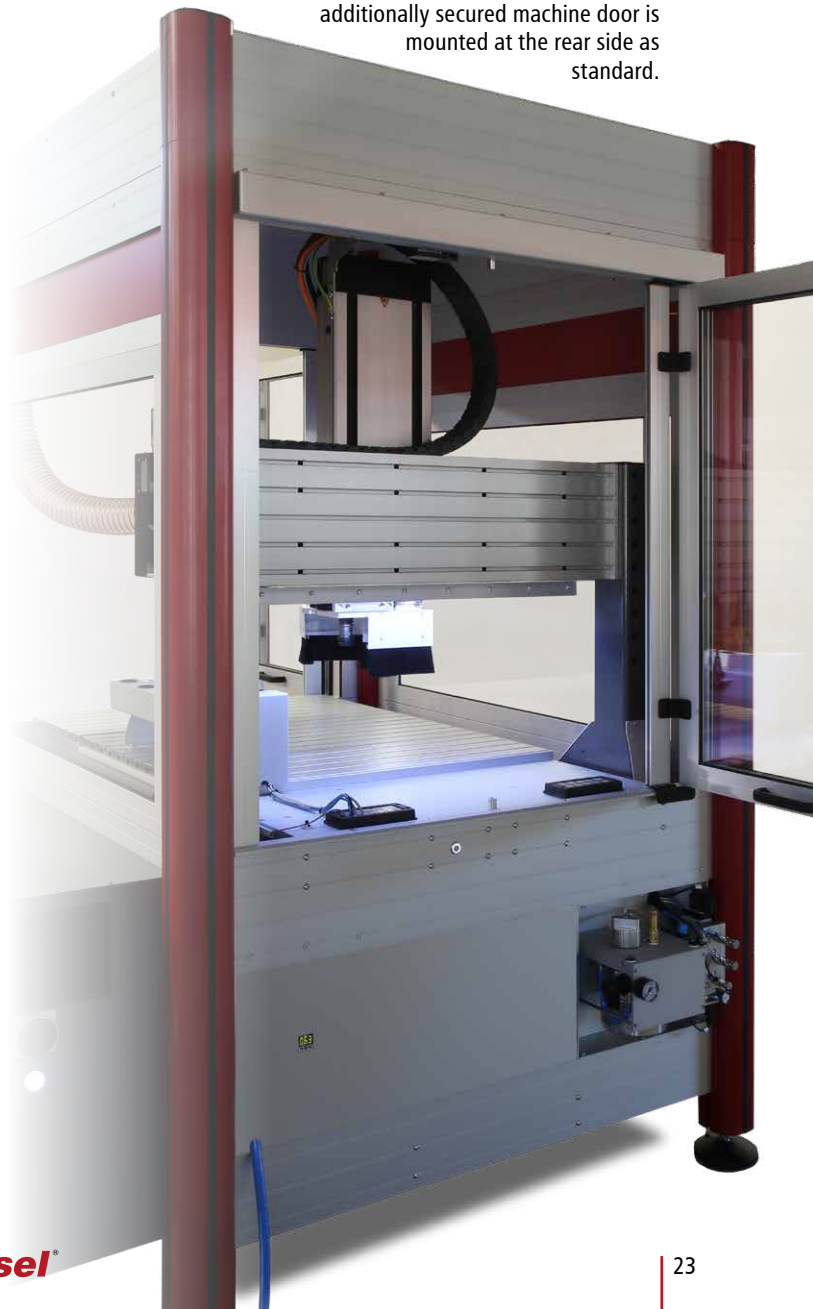
Typical materials:

- light and non-ferrous metals
- foam and milled plastics
- wood
- plexiglass
- and many more

Application areas:

- model and mold making
- advertising technology
- plate processing
- orthopaedic technology
- dispensing applications
- measurement and testing procedures

From the machine size Flatcom M40, an additionally secured machine door is mounted at the rear side as standard.



OverHead®

The space miracle

- optimal use of space, free processing area
- the best possible chip protection thanks to overhead axes
- particularly suitable for tall and bulky components
- available in four sizes

Fig. OverHead® M20 equipped with control panel iOP-19

OverHead® | The space miracle

Do you still need a maximum travel even if you have a limited space? If this is the case, we have the solution for you.
Our overhead machine series offer maximum travels with compact footprints. All drives are positioned in the upper part of the machine. So you have the machine table completely free for your individual applications.

Features

- completely free table clamping surface
- powerful isel control with maintenance-free servomotors
- reliable LES units with steel ball screws installed as drives
- PILZ security technology
- easy to use thanks to the height-adjustable CNC panel
- network-compatible control PC with WIN 10
- parallel sliding door
- clamping of the workpieces by means of a T-slot plate
- variable portal passages according to the respective customer application

Options

- iSA milling spindles and water-cooled HF milling spindles
- round and linear tool changing stations
- cooling spray device
- cold air cooling, cool-min
- automatic tool length measurement
- mill breakage control
- electronic handwheel
- pneumatic sliding door
- rotation units
- a maximum of 6 interpolating axes + 6 handling axes
- safety light curtain
- closed and/or light-tight hood for laser applications
- hood attachment with increased portal passage
- workpiece clamping systems (hand lever, vacuum clamping tables, etc.)
- extraction systems
- LED engine room lighting
- RAL colour selection
- PC control panel with free PCI slots (for the use of external PCI hardware)
- interface adjustments
- CAD/CAM software

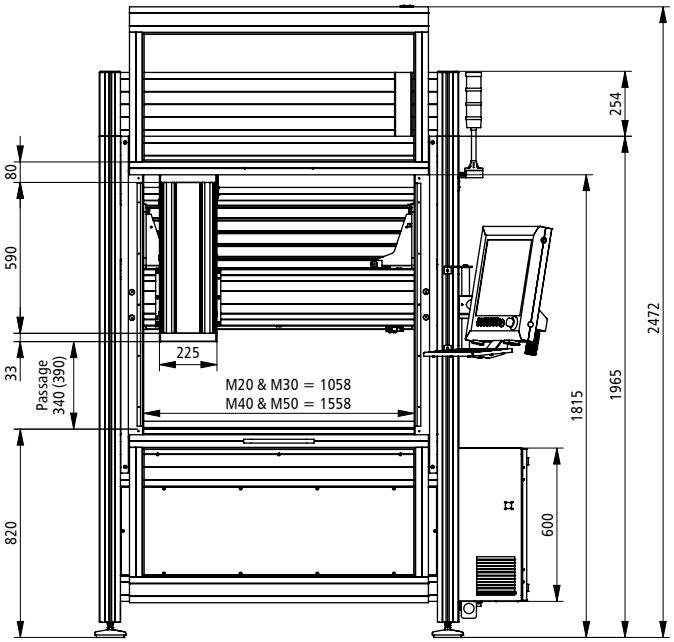
Technical data

OverHead®	M20	M30	M40	M50	M60
Travel ranges X/Y [mm]	710/610	710/910	1210/910	1210/1410	1510 x 1710
Z stroke [mm]*	310 (optional 410; 510)				
Z passage [mm]*	340/390 (optional 440/490; 540/590)				
Table clamping area WxD [mm]	1100 x 1000	1100 x 1300	1600 x 1300	1600 x 1800	1750 x 2000
Dimensions WxDxH [mm]	1445 x 1245 x 2219	1445 x 1545 x 2219	1945 x 1545 x 2219	1945 x 2045 x 2219	2290 x 2445 x 2224
Equipped with switch cabinet & open door	1728 x 1245 x 2472	1691 x 1545 x 2472	2192 x 1545 x 2472	2228 x 2045 x 2472	3153 x 3267 x 2424
Travel speed X/Y/Z	15 m/min.				
Drive motors	Maintenance-free EC/AC servomotors				
Drive elements X/Y/Z	Ball screw drive 16 x 10 / 16 x 10 / 16 x 5 mm, set without clearance				
Control	CAN controller iMD equipped with 4 drive controllers which are expandable to 12 axes (max. 6 interpolated and 6 handling axes), PC, I/O module, safety circuit equipped with standstill monitoring, power supply of 48 V / 1000 W				
Operation	Control panel iOP-19 touchscreen equipped with keyboard and touchpad				
Software	WinRemote (optional: ProNC, isy-CAM)				
Weight [kg]	approx. 690	approx. 710	approx. 750	approx. 910	approx. 1150
Electrical specifications	400 V / 16 A				
Part No.	**278020 343443***	**278021 343443***	**278022 343443***	**278023 343443***	**278024 343443***

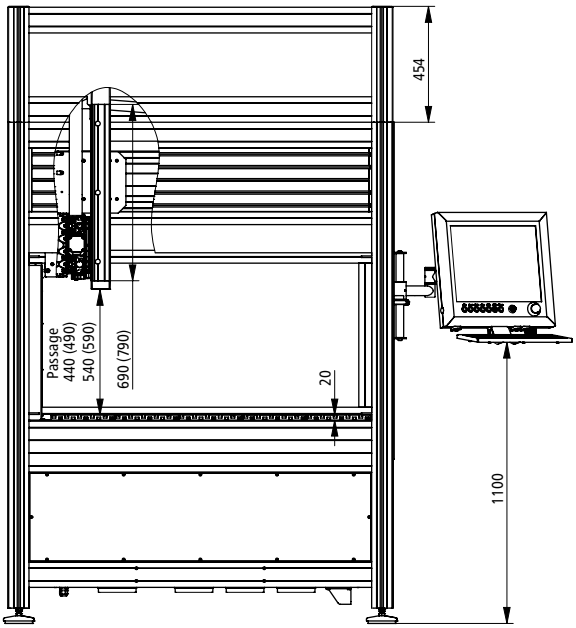
*without installed components on the axes.

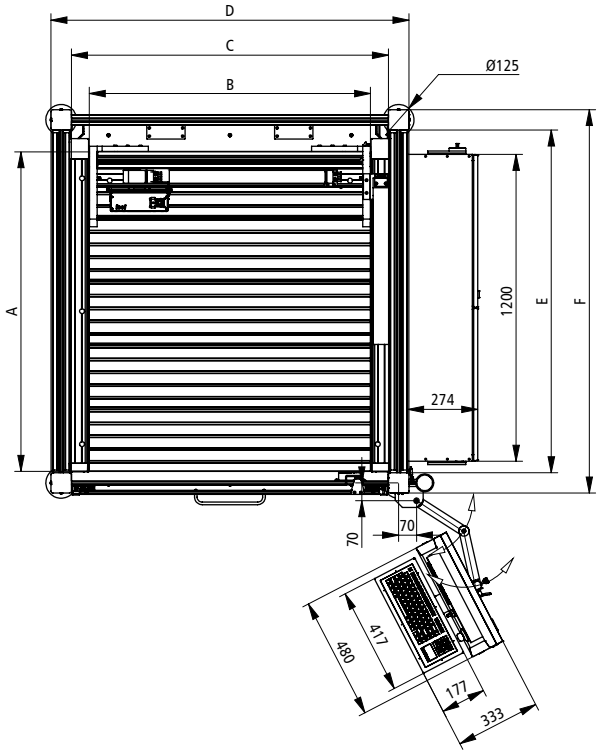
OverHead® | Dimensional drawing [dimensions in mm]

Standard passage



Increased passage

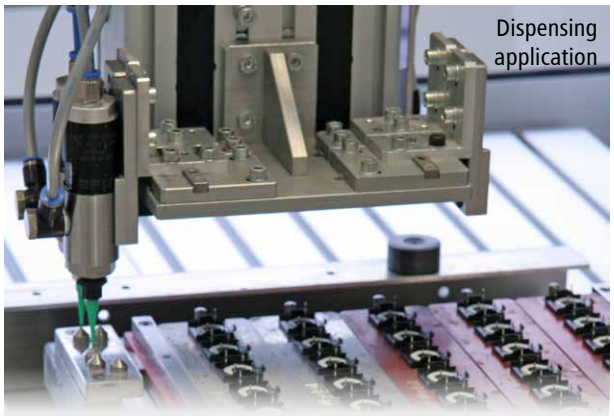




OverHead®	M20	M30	M40	M50	M60*
A	1000	1250	1250	1750	2000
B	1100	1100	1600	1600	1750
C	1240	1240	1740	1740	2150
D	1400	1400	1900	1900	2400
E	1040	1340	1340	1840	1995
F	1200	1500	1500	2000	2245

*Dimensional drawing M60 upon request.

OverHead® | More like just a system


Dispensing application


Plastic

Aluminum sheet

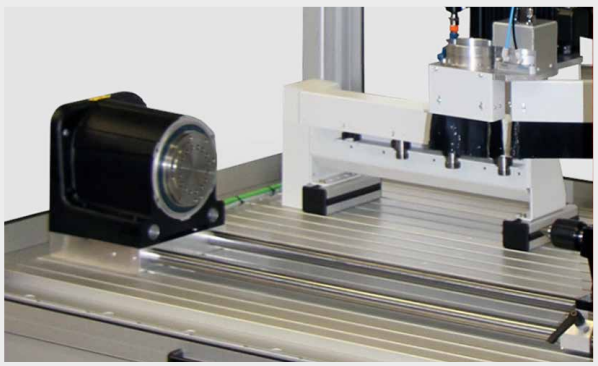
Typical materials:

- light and non-ferrous metals
- foam and milled plastics
- ceramics
- plexiglass
- and many more

Application areas:

- gluing and dispensing
- laser applications
- welding
- handling


Option: side fitting for integration in production lines


Option: rotation unit, RDH series, can be integrated as a 4th axis

EuroMod®

The compact one

- high stability in the X-axis
- large passage height
- movable Y-axis, optimal material change
- available in three sizes

Fig. OverHead ® M40 equipped with control panel iOP-19

EuroMod® | The compact one

The CNC milling machine EuroMod is a ready-to-connect CNC system offering a high operating comfort for a variety of tasks and applications. The mechanical basis is formed by stable, low-vibration components made of aluminum-steel connections. The ball screw drives without clearance used in the linear axes ensure a high levels of accuracy. During the development of the EuroMod CNC milling machine, special emphasis was placed on a small footprint.

The maintenance-free servomotors used are ideally matched to the mechanics, power electronics, and controls. A number of powerful milling spindles from our range are available for the EuroMod. The milling spindles are used in standard 3-axis applications, but 3 + 2-axis machining equipped with a turn-swivel unit is no problem for the EuroMod.

Features

- powerful isel control with maintenance-free servomotors
- reliable LES units with steel ball screws installed as drives
- PILZ security technology
- easy to use thanks to the height-adjustable CNC panel
- network-compatible control PC with WIN 10
- parallel sliding door
- clamping of the workpieces by means of a T-slot plate

Options

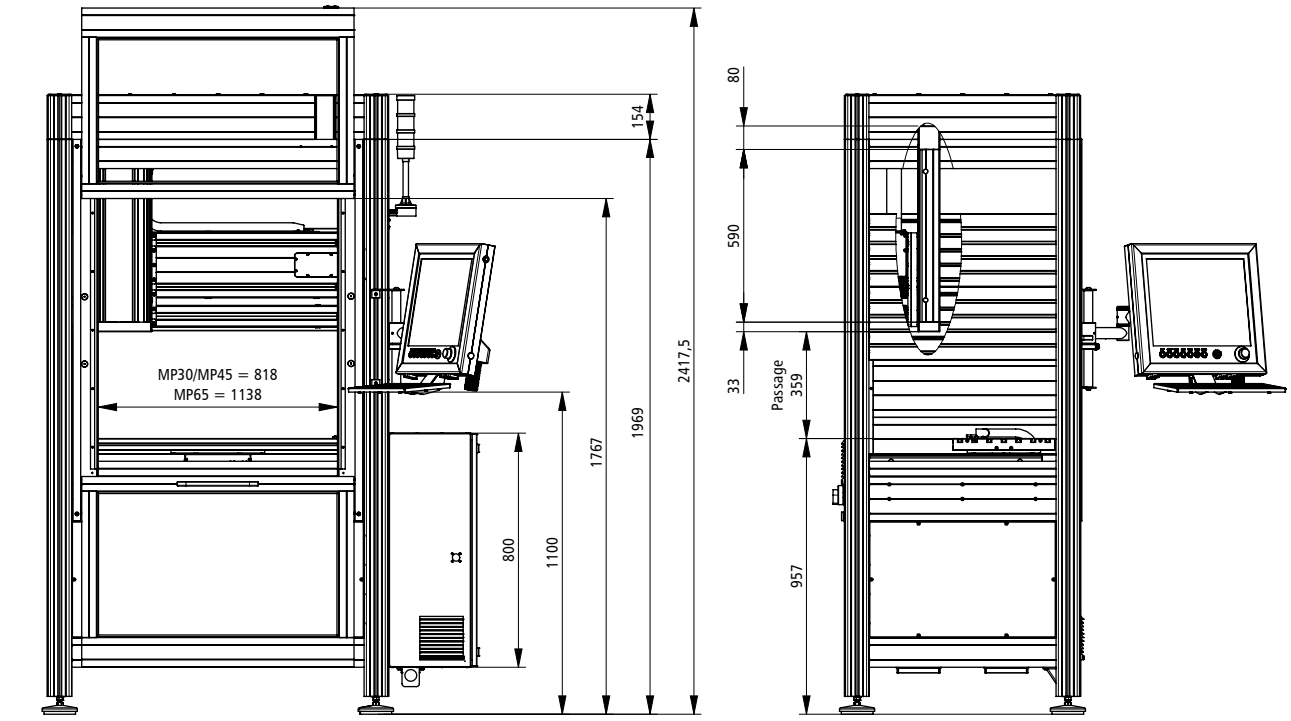
- iSA milling spindles and water-cooled HF milling spindles
- round and linear tool changing stations
- cooling spray device
- cold air cooling, cool-min
- automatic tool length measurement
- mill breakage control
- electronic handwheel
- pneumatic sliding door
- rotation units
- safety light curtain
- closed and/or light-tight hood for laser applications
- hood attachment with increased portal passage
- workpiece clamping systems (hand lever, vacuum clamping tables, etc.)
- extraction systems
- LED engine room lighting
- RAL colour selection
- PC control panel with free PCI slots (for the use of external PCI hardware)
- interface adjustments
- CAD/CAM software

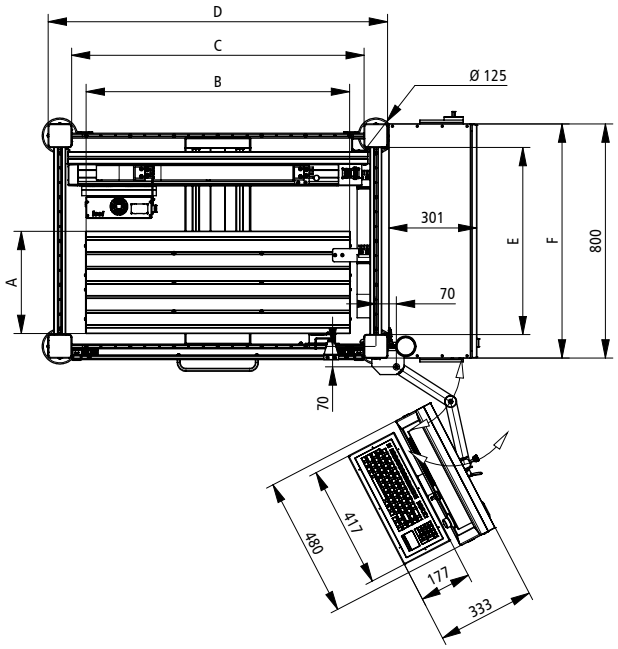
Technical data

EuroMod®	MP30	MP45	MP65
Travel ranges X/Y [mm]	610/300	610/470	910/650
Z stroke [mm]*		300	
Z passage [mm]*		365	
Table clamping area WxD [mm]	900 x 350	900 x 500	1200 x 700
Dimensions WxDxH [mm]	1205 x 845 x 2123	1205 x 1155 x 2123	1525 x 1555 x 2123
with switch cabinet & open door	1488 x 845 x 2418	1452 x 1155 x 2418	1772 x 1555 x 2418
Travel speed X/Y/Z		max. 15 m/min.	
Drive motors		Maintenance-free EC/AC servomotors	
Drive elements X/Y/Z		Ball screw drive, set without clearance	
Control		CAN controller iMD equipped with 3 and/or 4 drive controllers which are expandable to 12 axes (max. 6 interpolated & 6 handling axes), PC, I/O module, safety circuit equipped with standstill monitoring, power supply 48 V / 1000 W	
Operation		Control panel iOP-19 touchscreen equipped with keyboard and touchpad	
Software		WinRemote (optional: ProNC, isy-CAM)	
Weight [kg]	approx. 500	approx. 550	approx. 650
Electrical specifications		230V, 16A	
Part No.	**278010 363443***	**278011 363443***	**278012 363443***

*without installed components on the axes.

EuroMod® | Dimensional drawing [dimensions in mm]





EuroMod	MP 30-LES	MP 45-LES	MP 65-LES
A	350 mm	500 mm	700 mm
B	900 mm	900 mm	1200 mm
C	1000 mm	1000 mm	1320 mm
D	1160 mm	1160 mm	1480 mm
E	640 mm	950 mm	1350 mm
F	800 mm	1110 mm	1510 mm

EuroMod® | At your service

Buffalo horn glasses

Foam micro-phone

Brass

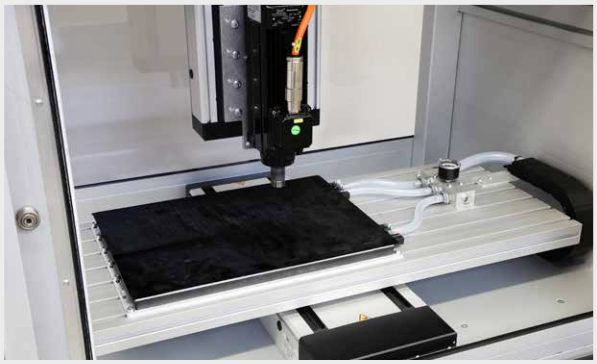
Typical materials:

- light and non-ferrous metals
- foam and milled plastics
- wood
- plexiglass
- and many more

Application areas:

- model and mold making
- orthopaedic technology
- measurement and testing procedures
- rapid prototyping

Two LES units ensure stability in the X-axis



Option: vacuum clamping table for vibration-free clamping

PREMIUM5030

Granite, steel and linear motors for highest machining quality!

The precision

- steel-granite structure with linear motors
- high frequency spindle up to 6 kW / 50,000 rpm
- Heidenhain TNC 640 control
- small footprint with large traverse paths, fast change from 3 to 5 axes

PREMIUM5030 | The precision

The PREMIUM 5030 is a 3- to 5-axis HSC milling system specially designed for the requirements of high-precision machining of small precision mechanical parts, micromachining and milling of graphite/copper electrodes. In order to meet this demand for precision, all essential points for process-reliable manufacturing have been integrated into the machine concept. The solid machine base, consisting of a natural hard stone granite gantry with decoupled Y-axis, guarantees high rigidity and long-term stability. The individual granite elements are manufactured to DIN 876 / grade 00 accuracy. The pioneering linear motor technology and the incremental measuring method guarantee highest positioning accuracies at highly dynamic feed rates. The fastest control technologies (high-speed cutting) ensure harmonious path movements with maximum precision and simple user guidance, the control used here is the Heidenhain® TNC 640.

Features

- solid and stable machine structure made of ground granite components
- small footprint due to compact design
- high-frequency spindle with up to 2 kW power and 50,000 rpm
- HSK-E 25 change system
- HSC control technology with a block processing time in real time < 1 ms
- high path accuracies due to digital length measuring system
- high-load linear guides
- low-maintenance linear motors in X, Y, Z
- Heidenhain® TNC 640 control system
- zero point clamping system in the granite table for fast changeover from 3 to 5 axes

Options

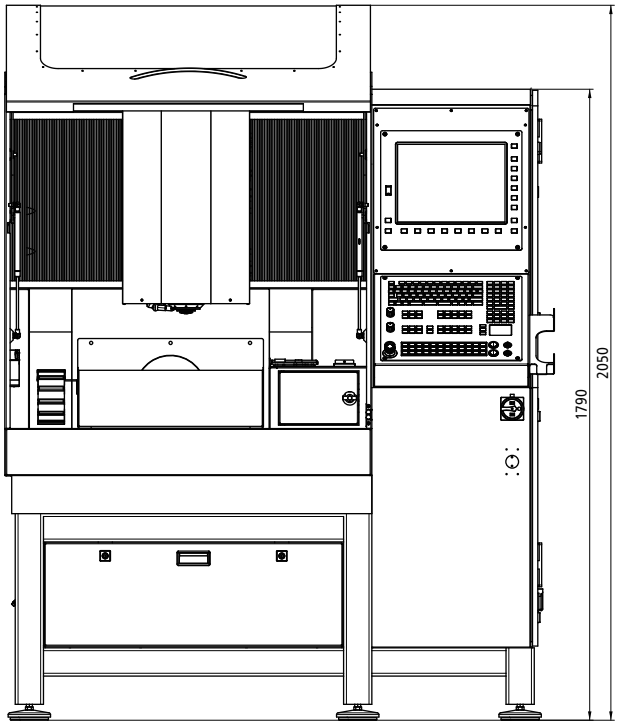
- 3D measuring probe for recording the workpiece zero points or remeasurement of workpieces
- laser for non-contact tool control
- high frequency spindles up to 100,000 rpm
- 4th/5th axis as rotary/swivel axis
- minimum quantity cooling lubrication system
- various control systems from Heidenhain
- manual control unit
- professional CAD/CAM solutions

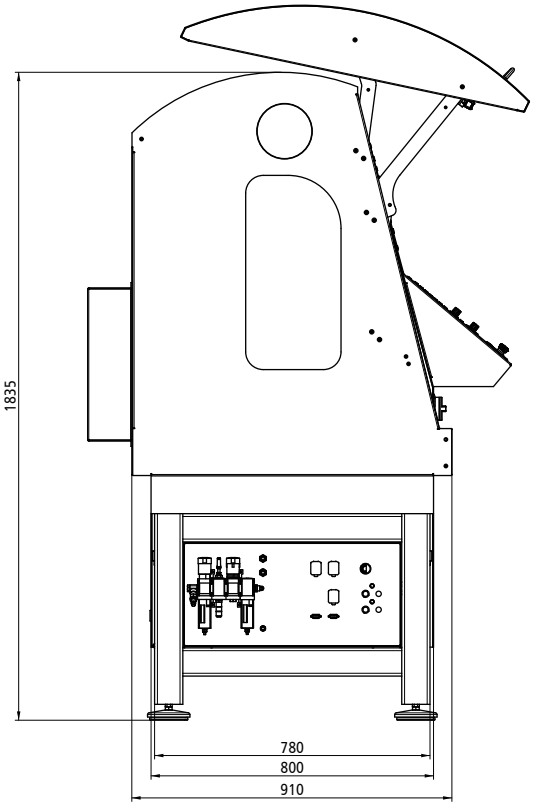
Technical data

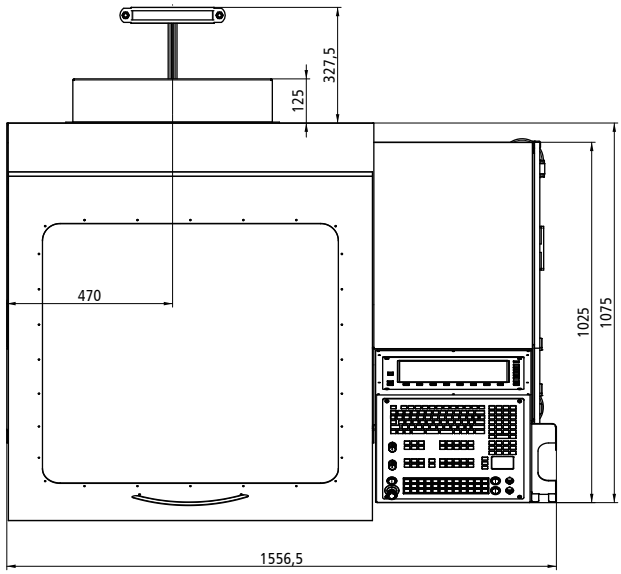
Premium5030	
Travel ranges X/Y/Z [mm]*	500 / 350 / 180
Table clamping surface WxD [mm]	450 x 350
Table load capacity [kg]	200
Dimensions WxDxH [mm]	1560 x 1200 x 2050
Type	Steel granite superstructure
Drive motors	Linear motors
Travel speed [m/min]	20
Milling spindles	High frequency spindle up to 2 kW / 50,000 rpm (optionally up to 100,000 rpm)
Repeatability [µm]	± 3
Positioning accuracy [µm]	± 5
Resolution measuring system [µm]	0,5
Operation	Heidenhain® operator terminal with 24" full HD touchscreen
Control	Heidenhain®
Software	Heidenhain® / isyCAM 2.8 (optional isyCAM 3.6)
Weight [kg]	ca. 1000
Electrical specifications	32 A / 400 V
Part No. 3-Achs	**282023 9300**
Part No. 5-Achs	**282023 9350**

Machine dimensions without control panel or additional accessories. Travel ranges without machining unit and other attachments (tool changer, length measuring probe, etc.).

PREMIUM5030 | Dimensional drawing [dimensions in mm]







PREMIUM5030 | highest machining quality

Typical materials:

- stainless steel
- graphite
- copper
- steel
- titanium
- aluminum
- brass
- hardened steel
- ceramics
- special materials

Application areas:

- micromachining
- precision machining
- medical Technology
- electronics Industry
- watch and jewelry industry
- automotive supply industry
- tool/mold making
- electrode production

iMG SERIE

The power packages

- steel processing
- wet processing with chip evacuation
- EtherCAT control technology
- axis compensation option

iMG SERIE | The power package

Thanks to the IMG machine series, a 3/4/5-axis milling machine equipped with a solid mineral cast machine frame, the machining of all materials, from metals to **steel**, will be possible. The IMG milling machines not only convince with their elegant design, but also with their compact and at the same time stable construction, enabling economical work in the smallest of spaces.

Thanks to covered linear guides and large recirculating ball screws, the requirements for machining steel are met. Thanks to the external 15-fold tool changer, the work area is not restricted. Consequently, larger workpieces can also be processed without any restriction.

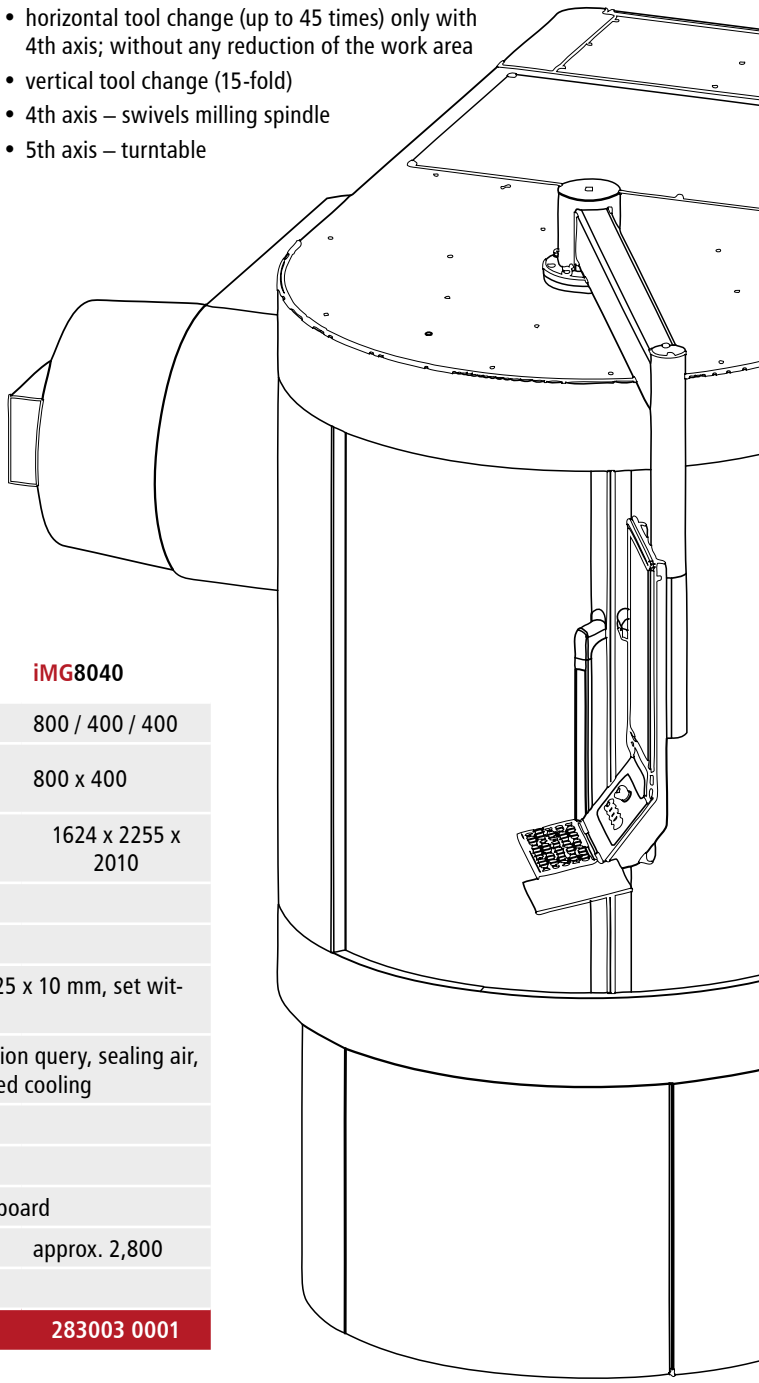
Proven components made by isel, such as the isel spindle drives consisting of recirculating ball spindles and preloaded linear bearings, have been integrated into the all-round successful combination of size and functionality.To gain a lot of machining space while at the same time requiring as little space as possible, the IMG milling machines were developed ton ensure a high level of capacity, productivity, and flexibility. An extensive range of accessories predestines the machine for many areas of application, from the prototype construction to the manufacture of small series. The solid mineral cast substructure offers a stable and solid platform.

Features

- control panel with 21“ touchscreen for easy operation
- electronic handwheel for setup mode
- integrated lighting in the work area
- ball screws in all linear axes, all guides covered
- rotary swivel axes equipped with cast iron block guides
- air-cooled milling spindle with SK30 tool holder
- large-sized recirculating ball bearing guides in all linear axes
- chip collecting tray including cleaning flap
- coolant pump integrated
- settling basin for coolant with cleaning opening
- solid machine bed made of mineral casting

Options

- horizontal tool change (up to 45 times) only with 4th axis; without any reduction of the work area
- vertical tool change (15-fold)
- 4th axis – swivels milling spindle
- 5th axis – turntable

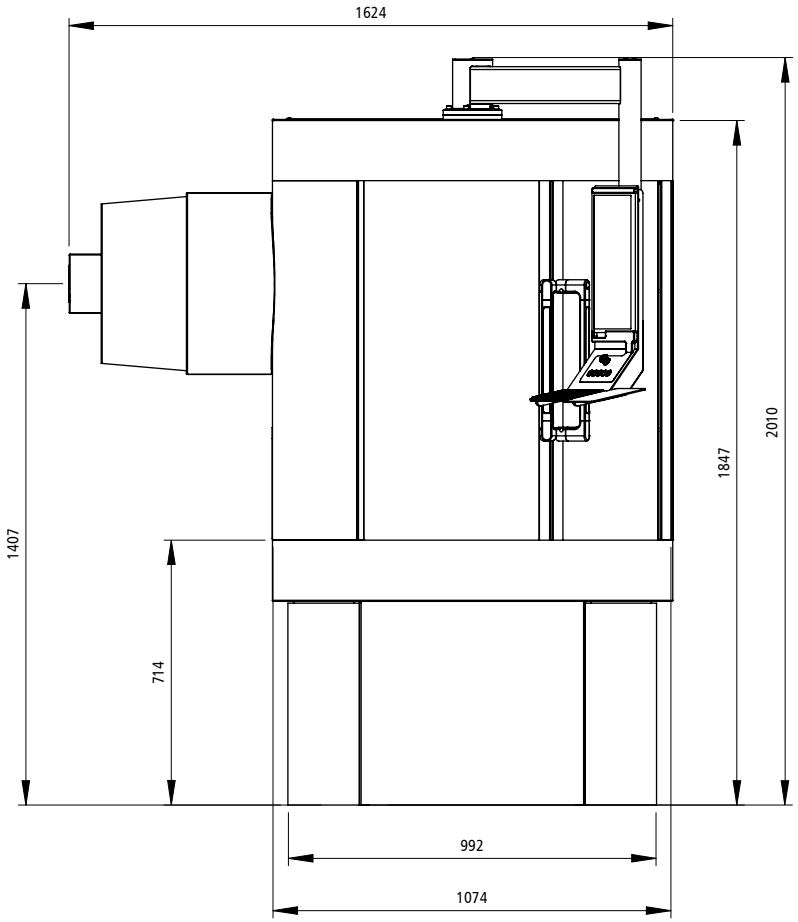


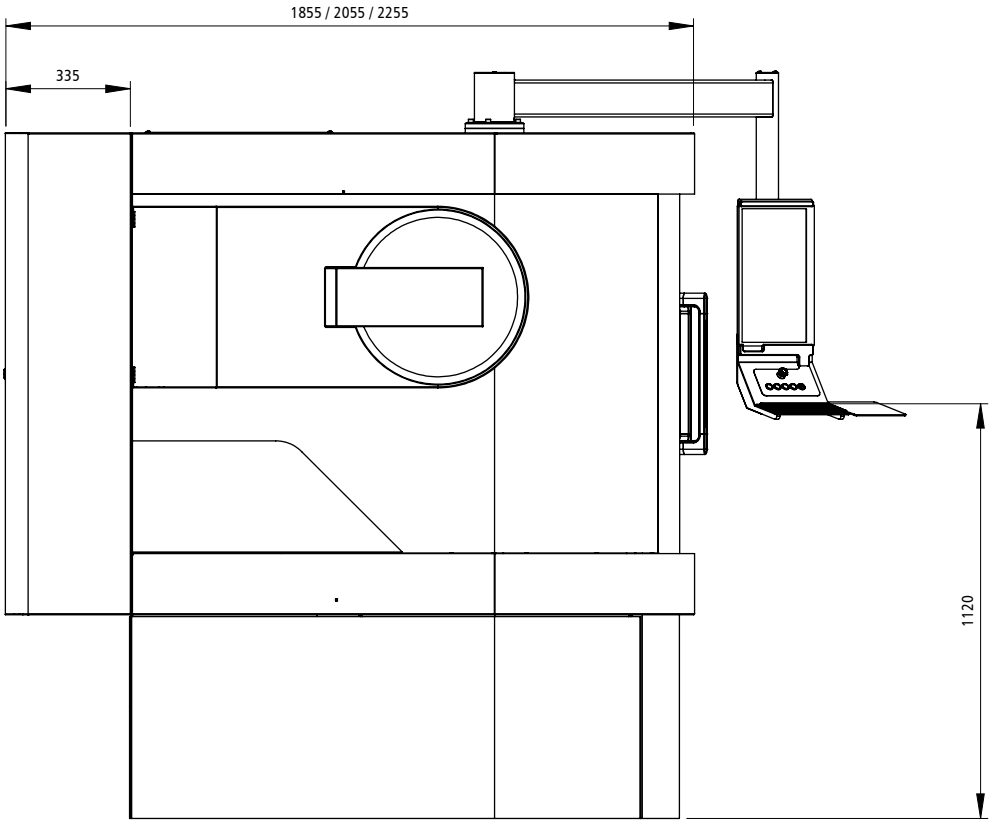
Technical data

iMG serie	iMG4040	iMG6040	iMG8040
Travel ranges X/Y [mm]*	400 / 400 / 400	600 / 400 / 400	800 / 400 / 400
Table clamping surface W x D [mm]	400 x 400	600 x 400	800 x 400
Dimensions WxDxH [mm]**	1624 x 1855 x 2010	1624 x 2055 x 2010	1624 x 2255 x 2010
Travel speed X/Y/Z	max. 20 m/min		
Drive motors	Servo motors		
Drive elements X/Y/Z	Ball screw drive 25 x 10 / 25 x 10 / 25 x 10 mm, set without clearance		
Milling spindle	From 6,000 to 24,000 rpm with position query, sealing air, and temperature-controlled cooling		
Tool holder	SK30		
Control	PC-based		
Operation	21“ touchscreen, keyboard		
Weight [kg]	approx. 2,500	approx. 2,600	approx. 2,800
Electrical specifications	400V / 16A		
Part No.	**283002 0001**	**283001 0001**	**283003 0001**

*without installed components on the axes. **equipped with control cabinet and hood

iMC-SERIE | Dimensional drawing [dimensions in mm]





iMC-SERIE | Strong components

Milling pattern

Typical materials:

- steel
- granite
- non-ferrous metals
- titanium

Application areas:

- steel processing
- wet machining
- splash cooling
- workshop operation

Electronic handwheel

Tool changer with external lateral position

iMG1010

5 axes simultaneous milling machine for wet and dry machining

- 5 axes simultaneous CNC machine
- wet/dry machining
- workpiece zero point clamping system
- servo drives equipped with absolute encoder
- integrated control equipped with touch screen

iMG1010 | Efficient to the power of 5

The IMG1010 is a compact solution for processing workpieces up to a size of 100x100x100 mm. It enables numerous materials such as titanium, steel, CoCr, ceramics, sapphire, zirconium or aluminum to be accurately machined. Particularly noteworthy is the arrangement of the Y-axis that thanks to its installation positions ensures high stability and a very elevated vibration dampening. Almost all positions on the workpiece may be reached without any reclamping. The selection of workpiece clamping devices and holders in connection with the zero point clamping system makes the machine a versatile machining centre. Their structure enables wet and/or dry processing without any time-consuming conversion. The CNC machine can be expanded with an optional handling system intervening in the machine room from the right, left or upper side.This means that workpieces can be changed automatically.

The zero point clamping system serves as an interface by guaranteeing the precise and repeatable positioning of the workpiece. The system can be integrated into network-controlled automated manufacturing processes by making use of software interfaces. The maintenance-friendly design and the long-life direct spindle drives save service costs and time and offer a reliable machining system. During the construction process, care was taken to ensure that all elements are easily accessible and yet protected from any external influences so to guarantee a long service life. The mature system offers many expansion options.

Options

- machine base
- various zero point clamping devices: T-slot plate, four-jaw chuck, precision vice and blank holder
- automatic assembly system
- 3D measuring pushbutton

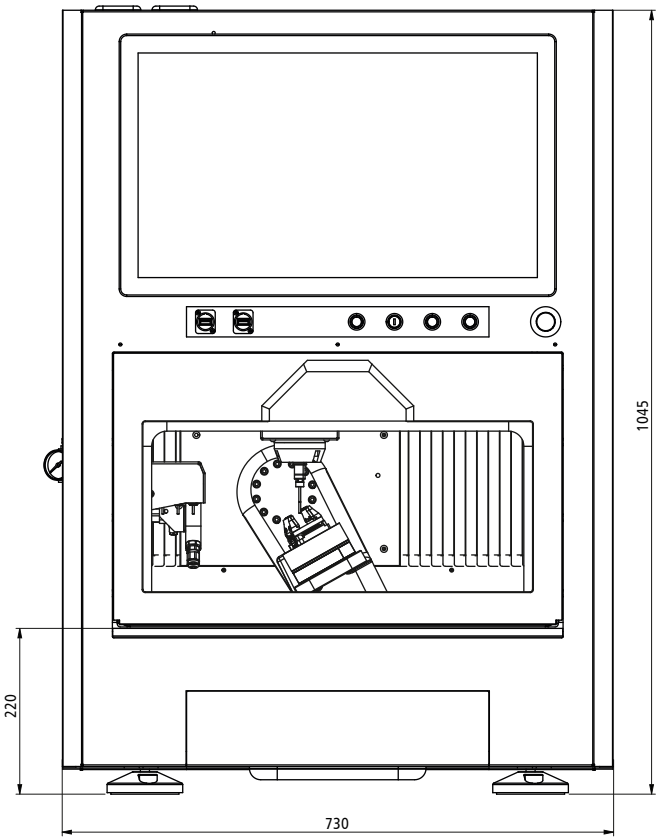
Technical data

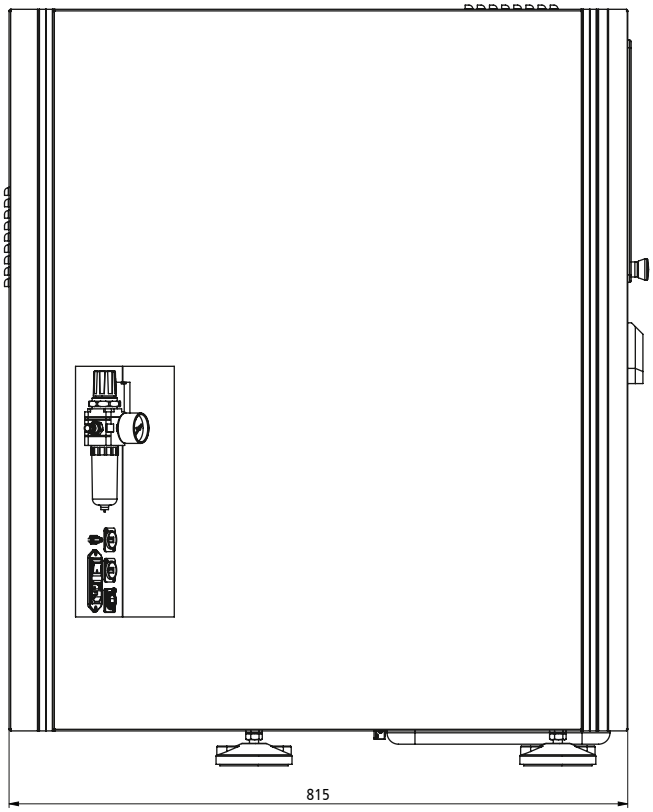
iMG1010

Travel ranges X/Y [mm]*	215 (including the tool changer) x 115 x 120
Rotary swivel unit A/B	A = endless B = 130° (-30° + 100°)
Workpiece dimensions [mm]	Ø 100 x L 100
Dimensions WxDxH [mm]	730 x 815 x 1045
Drive motors	AC servo of 200 watts equipped with absolute encoders
Drive elements X/Y/Z	16 mm recirculating ball screw without clearance
Tool changer	15-fold with length measuring pushbutton
Milling spindles	1 kW 60,000 rpm
Pressure compressed air supply	6-8 bar
Coolant tank	5 litres
Operation	Touch screen display
Software	WIN 10 / CNC Workbench / remoteNC
Weight [kg]	approx. 310
Electrical specifications	110V / 240V 16A
Part No.	**283004 0001**

*without installed components on the axes.

iMG1010 | Dimensional drawing [dimensions in mm]





iMG1010 | Areas of application

The machine can be used flexibly for a wide variety of materials. Metals and plastics may be processed under wet and dry conditions without retooling. The zero point clamping system facilitates the handling of the workpieces.

Typical materials:

- titanium
- steel
- CoCr
- aluminum / light metals

Application areas:

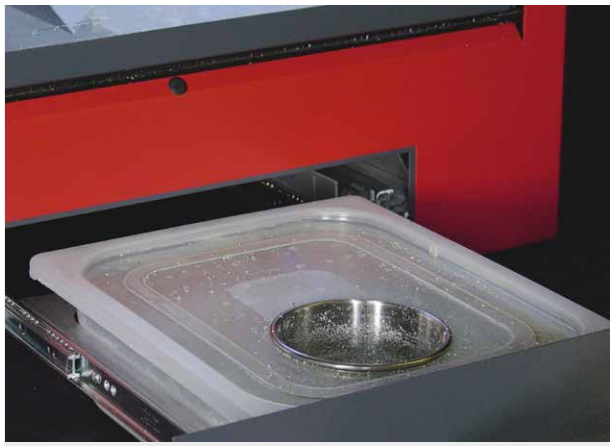
Precision components for the areas:

- medical technology
- precision engineering
- micro-machining
- mold and prototype construction
- dental technology
- jewellery industry

Thanks to the massive construction and the high quality-level of the used components, the machine enables high precision.

By means of the control integrated in the housing and the high-quality servo drives, excellent surface qualities are achieved on all materials.

Accessories

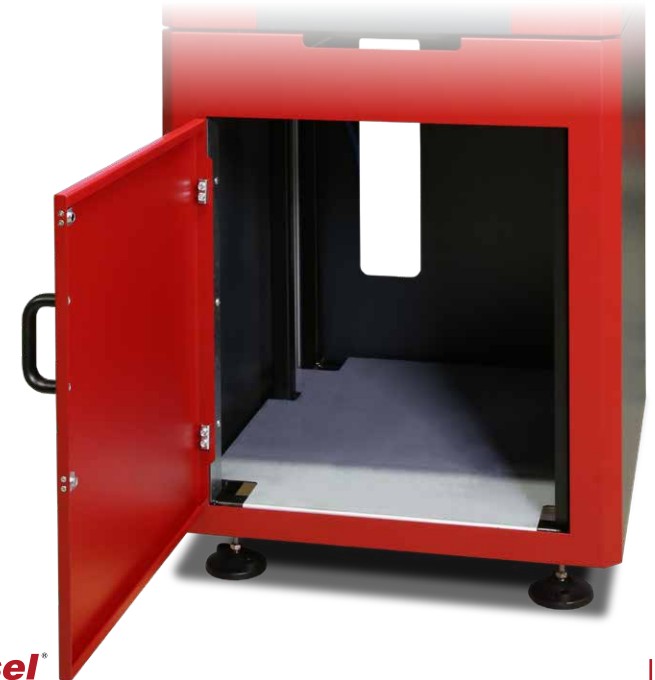


The practical coolant container has a capacity of five liters.

For cleaning and filling, it can simply be pulled out and removed through a drawer positioned under the machine. The multi-stage filter system prepares the cooling lubricant for the system cycle by reliably holding back chips and particles. The removal and cleaning of the filter system is very easy.

Base table for iMG 1010

- stable base table
- dimensions [WxDxH]: 728 x 680 x 814 mm
- storage space for suction & cooling lubricant system
- storage volume: ≈ 0.25 m³
- integrated levelling elements



iWS1000

Water jet cutting machine

- no thermal stresses
- no hardenings
- no tensions
- no dust or smoke emission
- almost burr-free cuts
- direct piercing at any position

iWS1000 | Water jet cutting machine

The iWS 1000 is the first choice for small series, educational institutions as well as in the workshop. Our goal was to realize a compact and inexpensive waterjet system that can be set up, maintained and operated with as little effort as possible. The machine can be connected to a regular 16 A power connection and works cleanly and quietly due to its enclosure. Designed and manufactured in Germany, the pump is fully integrated into the machine. On the iWS 1000+ model, an external pump of up to 22 kw can multiply the cutting power even further.

Features iWS 1000

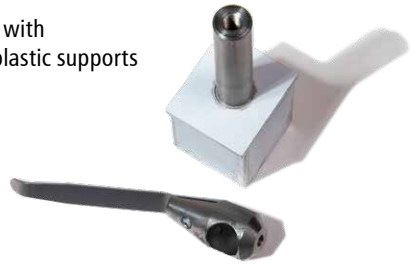
- machine & pump "Made in Germany"
- including completely integrated cutting pump
- operator protection (enclosure made of break-proof acrylic glass)
- 3-plunger high-pressure pump with an efficiency of 90
- abrasive cutting possible without pressure vessel
- compact design
- settling tank for waste water pre-cleaning integrated
- power supply through standard 16 A connection
- low weight (only 800 kg incl. water)
- low noise level (only < 78 dB in cutting mode)
- easy to operate control software

iWS 1000+

- machine „Made in Germany“
- operator and splash water protection by an acrylic glass hood
- compact design with a cutting performance like a a "big" waterjet machine
- low weight of the guiding machine (only 750 kg incl. water)
- free choice of external pumps with power from 15 - 22kw by well-known brand manufacturers such as ThyssenKrupp UHDE, KMT or BFT
- easy to use control software
- integration into an existing pump park is possible
- pump and machine can be placed independently of each other in a completely variable way
- no space-consuming whip construction, the high-pressure piping is directly integrated into the machine

Options

- pure water equipment with sapphire nozzles and plastic supports
- material tensioner

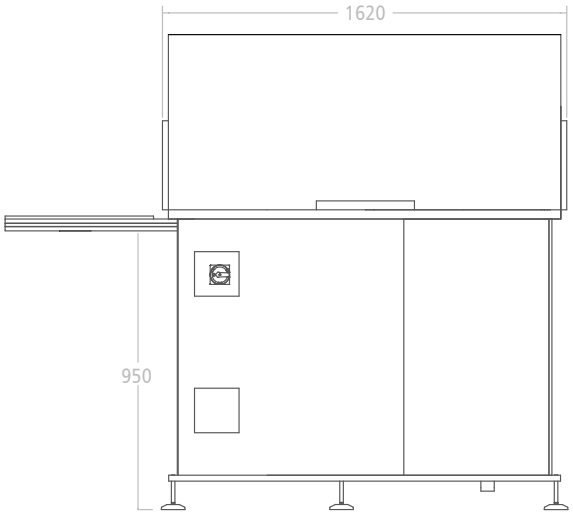


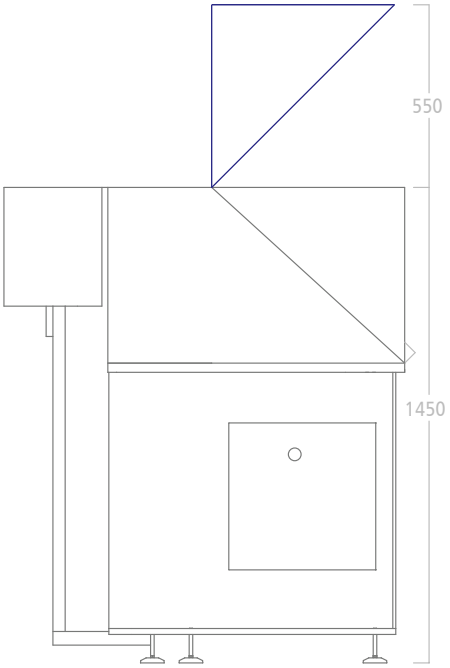
Technical data

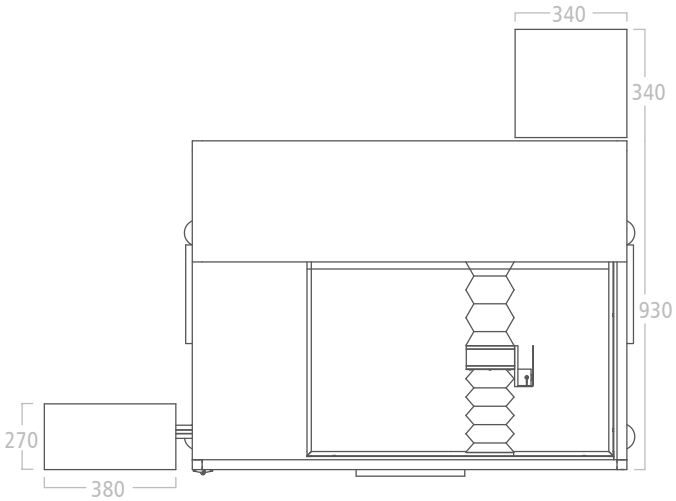
	iWS1000	iWS1000+
Travel ranges X/Y [mm]*	1000 x 500	
Dimensions WxDxH [mm]	1620 x 930 x 1450 (2000 opened) incl. pump	1620 x 930 x 1450 (2000 opened) plus pump
Drive system	Ball screw precision class C7	
Travel speed [mm/min]	0 - 4,000	
High-pressure pump	7,5 kw	bis zu 22 kw
Repeatability [µm]	< 0.04 mm/m	
Positioning accuracy [µm]	+/- 0,08 (20°C) mm/m	
Weight [kg]	ca. 800 incl. pump	750 kg plus pump
Electrical specifications	16 A / 400 V	63 A / 400 V
Part No.	**444630 80502**	**444630 80503**

Machine dimensions without control panel or additional accessories. Travel ranges without machining unit and other attachments (tool changer, length measuring probe, etc.).

iWS1000 | Dimensional drawing [dimensions in mm]







iWS1000 | Application areas

Typical materials iWS 1000

up to 10 mm	stainless steel / steel, titanium, composites (various designs)
up to 12 mm	brass
up to 15 mm	copper, plastics (various types), natural wood, plexiglas
up to 20 mm	aluminum, glass / laminated glass, marble / ceramic tiles
up to 25 mm	marble, rubber
up to 40 mm	various foams

iWS 1000+

up to 40 mm	stainless steel / steel, titanium, composites (various designs)
up to 40 mm	brass
up to 40 mm	copper, plastics (various types), natural wood, plexiglas
up to 40 mm	aluminum, glass / laminated glass, marble / ceramic tiles
up to 40 mm	marble, rubber
up to 40 mm	various foams

Application examples

- micro machining
- precision machining
- medical technology
- electronic industry
- watch industry
- jewelry industry
- automotive supply industry
- tool/mold making
- electrode production
- training and apprenticeship
- prototype construction
- tensile specimen production
- universal workshop machine
- auxiliary machine for contract manufacturing
- semi-finished product production

iWS 1000+ with 22 kw high-pressure pump with space-saving 4000 bar piping and remote pump control via laptop.

The compact CNC machines

ICV4030EC

The compact desktop CNC machine

- CNC machine ready for mains connection
- low noise thanks to the maintenance-free servomotors
- prepared for the connection for a fourth axis
- ergonomically slim design

„ICV4030EC“ on page 50

ICP4030

The basis - third generation optimisation

- 4-axis stepper motor control
- more than 20,000 systems sold
- optimised Z-axis and increased passage
- ideally suited for vocational schools & training

„ICP4030“ on page 54

iBL4525

The lasering machine

- small space saving ergonomic laser
- writing speed up to 8m/s
- electrically height adjustable Z-axis
- economical low energy costs
- complies with the high EU safety regulations
- easy to use marking software

„iBL 4525“ on page 58

FB2

The universal automation platform

- modular isel building block system
- universal fields of application & use
- easy to use
- ideally suited for the laboratory, model making and workshop area

„Flat bed system FB2“ on page 62

ICV 4030 EC

The compact desktop CNC machine

- CNC machine ready for mains connection
- low noise thanks to the maintenance-free servomotors
- prepared for the connection for a fourth axis
- ergonomically slim design

PILZ
THE SPIRIT OF SAFETY
INSIDE

ICV4030EC | The compact desktop CNC machine

The ICV 4030 EC is a compact table machine with a tried and tested, optimised chassis design. A practical base table equipped with monitor and integrated keyboard is optionally available. The CNC machine has a modular structure; all control components, including the isel CNC control, the control computer, and the high-quality safety technology by PILZ, are installed on the rear side so to be easily accessible in the event of service.

All linear axes installed in the machine come from the isel program; they run with linear ball bearings on ground precision steel shafts. Ball screw drives without clearance having various spindle pitches are used as drives. The machine table made of plane-milled T-slot profiles offers a wide range of clamping options for individual workpiece holders and for clamping devices.

The ICV 4030 EC is suitable for numerous areas of application and industries; experience has shown that it is preferred for the machining process. The range is rounded off by a wide range of accessories tailored to your application.

Features

- powerful isel control with maintenance-free servomotors
- reliable linear units with steel ball screws are installed as drives
- PILZ security technology
- easy to use thanks to the height-adjustable display
- network-compatible control PC with WIN 10
- user-friendly soft-lift hood
- clamping of the workpieces by means of a T-slot plate

Highlights

- little space required for installation

Options

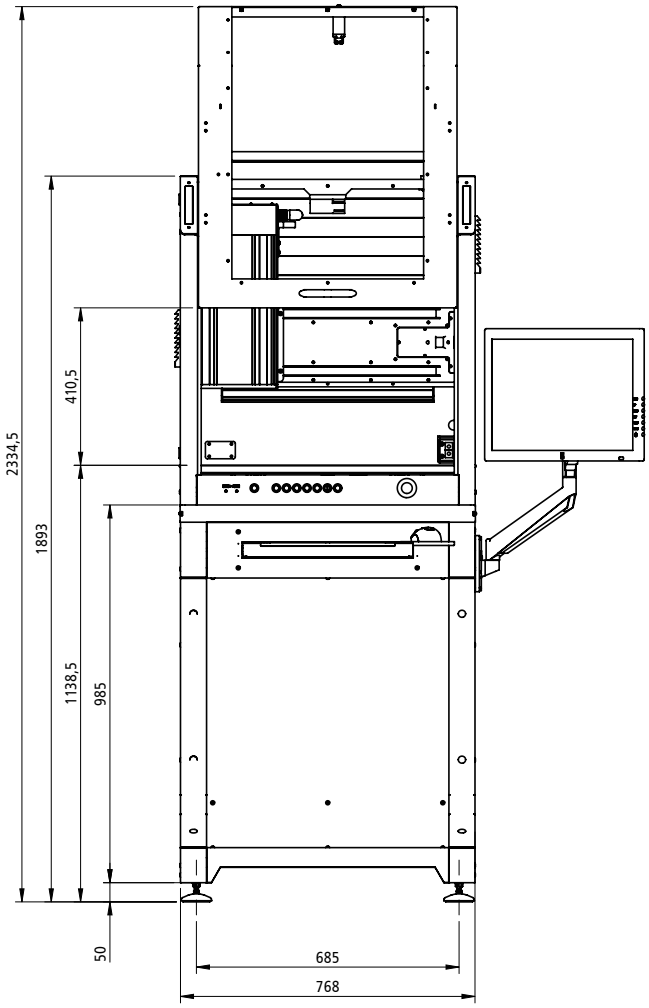
- milling spindle from 500W to 1200W
- linear tool changing station
- tool cooling as a cooling, spray, or air version (CoolMin)
- length measuring pushbutton
- vacuum clamping table
- maintenance unit equipped with a valve terminal
- base table equipped with swivelling screen and integrated keyboard
- the base table is used to install the vacuum pump, cooling device and other peripheral devices
- automatic hood opening
- safety light curtain
- light-tight protective glass for laser applications

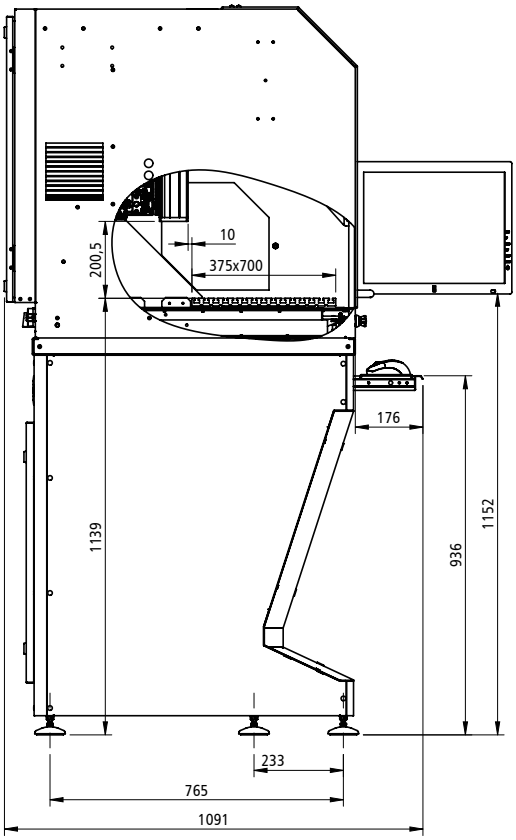
Technical data

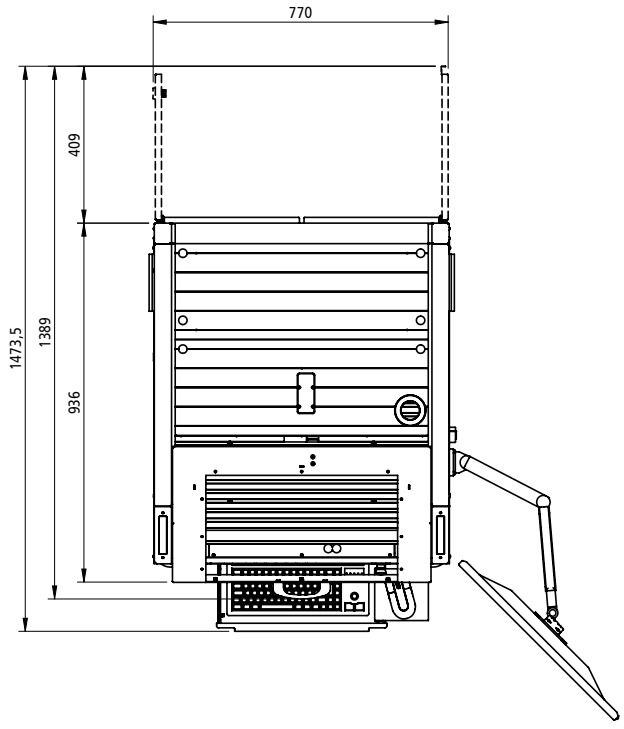
ICV4030EC	
Travel ranges X/Y [mm]	400/300/140
Table clamping area WxD [mm]	700 x 375
Passage* [mm]	200
Dimensions WxDxH [mm]	769 x 836 x 901
Travel speed X/Y/Z	max. 12 m/min.
Drive motors	Servo motors
Drive elements X/Y/Z	Ball screw drives 16x10 / 16x10 / 16x5 mm, set without clearance (optional 16x4 mm in X/Y/Z)
Guides	Linear units equipped with precision steel shafts and recirculating ball slides, set without clearance
Control	CAN controller with 3 drive controllers (expandable to 4), integrated control computer, I/O module, safety circuit with standstill monitoring, power supply 48 V / 1000 W
Operation	Function keys and emergency-stop
Software	WinRemote (optional: ProNC, isy-CAM)
Weight* [kg]	approx. 210 (plus approx. 110 kg base table)
Electrical specifications	230V, 16A
Part No.	**280261 0001***

*without installed components on the axes.

ICV4030EC | Dimensional drawing [dimensions in mm]







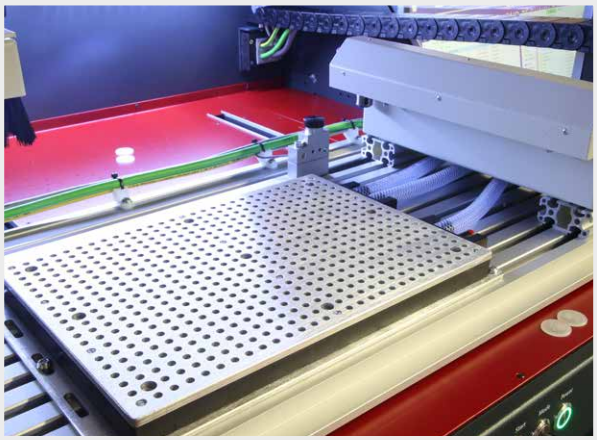
ICV 4030 EC | Diverse - expandable - functional

Typical materials:

- light and non-ferrous metals
- foam and milled plastics
- wood
- plexiglass
- and many more

Application areas:

- model and mold making
- orthopaedic technology
- measurement and testing procedures
- rapid prototyping



Option: vacuum clamping table and linear changer

Pull-out keyboard compartment with fold-out mouse tray

Base table
for ICV 4030 EC

- ergonomic design
- rear storage space
- optional: monitor and monitor bracket

ICP4030

The basis - third generation optimisation

- 4-axis stepper motor control
- more than 20,000 systems sold
- optimised Z-axis and increased passage
- ideally suited for vocational schools & training

ICP4030 | The basis

Thanks to the revised chassis, the third generation of the table-top machine ICP 4030 has become more service-friendly. The CNC machine is prepared for four-axis control.

The ICP 4030 offers the best conditions for the processing of plastic, wood and circuit board materials. For this reason, it is ideal for vocational schools, training companies, small series production and fabLabs.

Features

- powerful isel control with stepper motor technology
- reliable LES units with steel ball screws installed as drives
- network-compatible control PC with WIN 10
- user-friendly soft-lift hood
- clamping of the workpieces by means of a T-slot plate

Highlights

- little space required for installation

Options

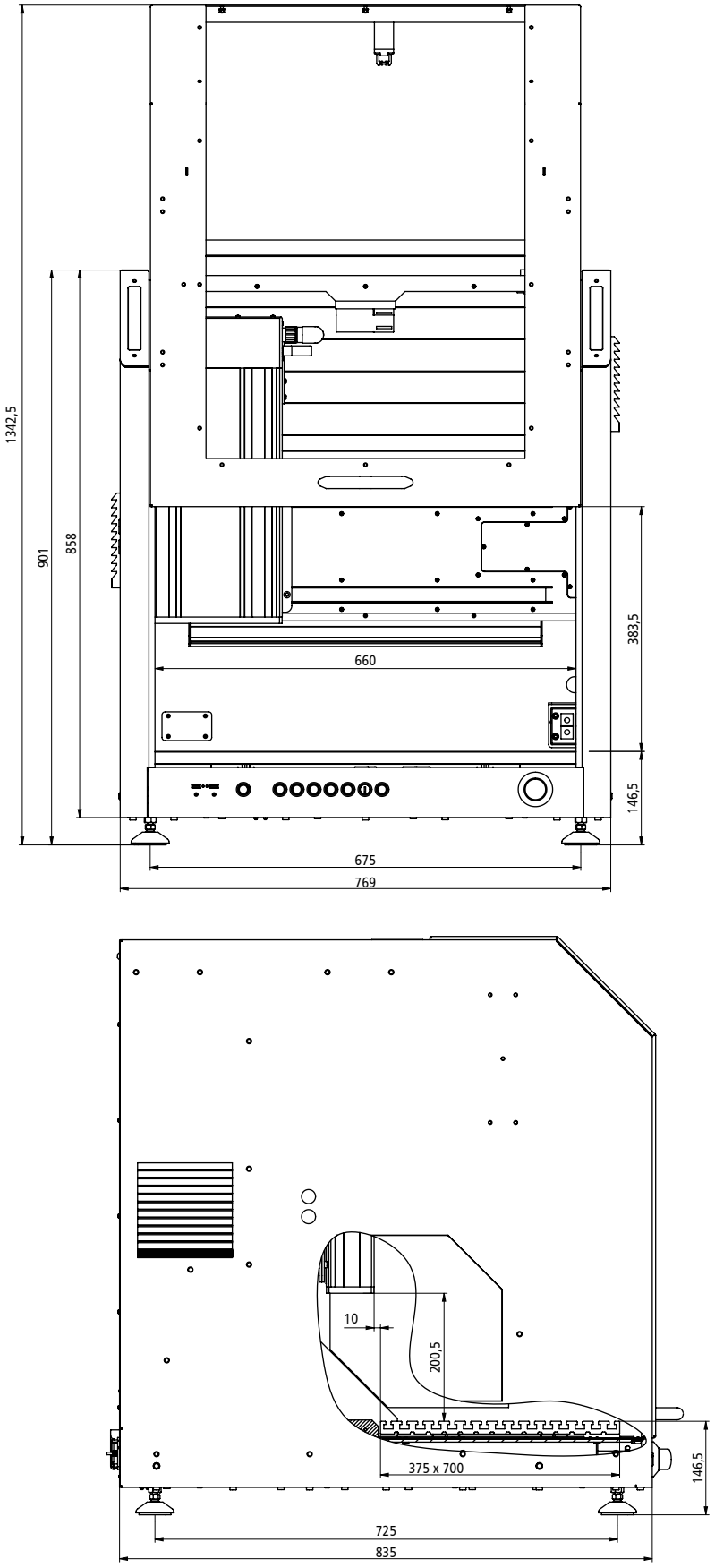
- milling spindle from 500W to 1200W
- tool cooling as a cooling, spray, or air version (CoolMin)
- length measuring pushbutton
- tool breakage control
- vacuum clamping table
- maintenance unit equipped with a valve terminal
- base table equipped with swivelling screen and integrated keyboard
- the base table is used to install the vacuum pump, cooling device and other peripheral devices
- light-tight protective glass for laser applications

Technical data

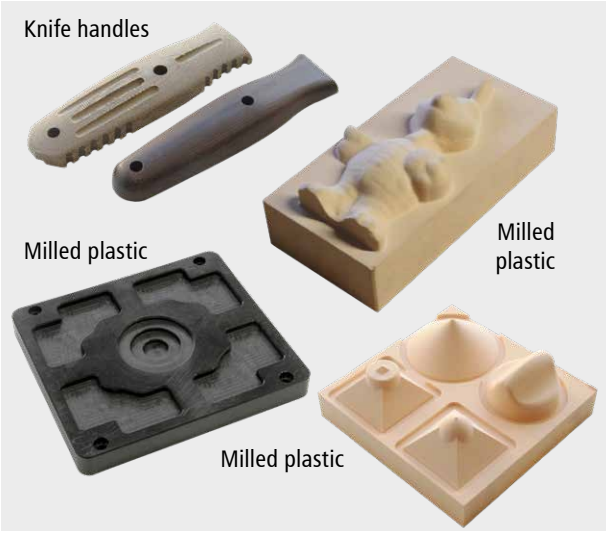
ICP4030	
Travel ranges* X/Y/Z [mm]	400/300/140
Table clamping area WxD [mm]	700 x 375
Passage* [mm]	200
Dimensions WxDxH [mm]	769 x 836 x 901
Travel speed X/Y/Z [mm/s]	max. 6 m/min. (for KG drive 16x10) max. 3.6 m/min. (for KG drive 16x4)
Drive motors	Stepper motors
Drive elements X/Y/Z	Ball screw drives 16x10 / 16x10 / 16x10 mm, set without clearance (optional 16x4 mm in X/Y/Z)
Guides	Linear units equipped with precision steel shafts and recirculating ball slides, set without clearance
Control	Step controller iMC-P with 4 output stages 48V/4.2A, with an integrated control computer and power supply of 500 W with processor board
Operation	Function keys and emergency-stop
Software	WinRemote (optional: ProNC, isy 2.8), compatible with Windows ® 10
Weight* [kg]	approx. 190 (plus approx. 110 kg base table)
Electrical specifications	230V, 16A
Scope of delivery	Mechanical accessories (including hand lever clamping device, stop rails, triangular, single-jaw, hook, Allen key, a 6-way table socket, connecting cable, and power supply)
Part No.	**280270 0001***

*without installed components on the axes.

ICP4030 | Dimensional drawing [dimensions in mm]



ICP4030 | The base



Typical materials:

- foam and milled plastics
- wood, cork, wax
- plexiglass
- printed circuit boards
- and many more

Application areas:

- school and education
- prototypes and model making
- small batch production
- test equipment construction

ICP 4030 equipped with open cover and turntable as 4th axis

Pull-out keyboard compartment with fold-out mouse tray

iBL4525

The lasering machine

- small space saving ergonomic laser
- writing speed up to 8m/s
- electrically height adjustable Z-axis
- economical low energy costs
- complies with the high EU safety regulations
- easy to use marking software

iBL4525 | The lasering machine

The iBL 4525 allows cost-effective marking, labeling and engraving of serial parts with marking areas up to 150x150mm. The galvo scanner head is designed for very high marking speeds. Due to the compact dimensions as a table machine, the laser marking system finds its place everywhere.

Features

- clamping area of 500 x 500 mm
- working area up to 150 x 150 mm
- speed: up to 8m/s (480m/min)
- machine with complete enclosure
- marking speeds up to 8 m/s with galvo scanner
- height adjustable Z-axis
- no post-processing necessary
- smallest space requirement
- no clamping necessary
- contactless
- no tool costs
- manual Z-adjustment
- marking software included

Options

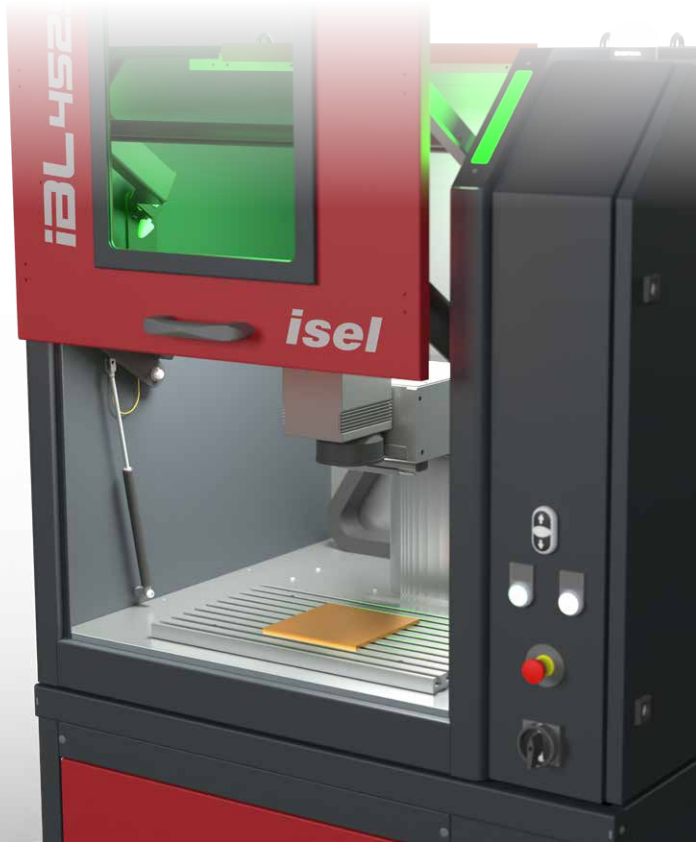
- different lenses:
  - 110/110mm
  - 150/150mm
  - 200/200mm
- suction device
- camera for adjustment and display
- visible pilot laser for fine adjustment
- different laser sources
- controlled Z-axis
- controlled X-Y axis
- controlled rotary axis for engraving of round parts
- extraction system
- laptop

Technical data

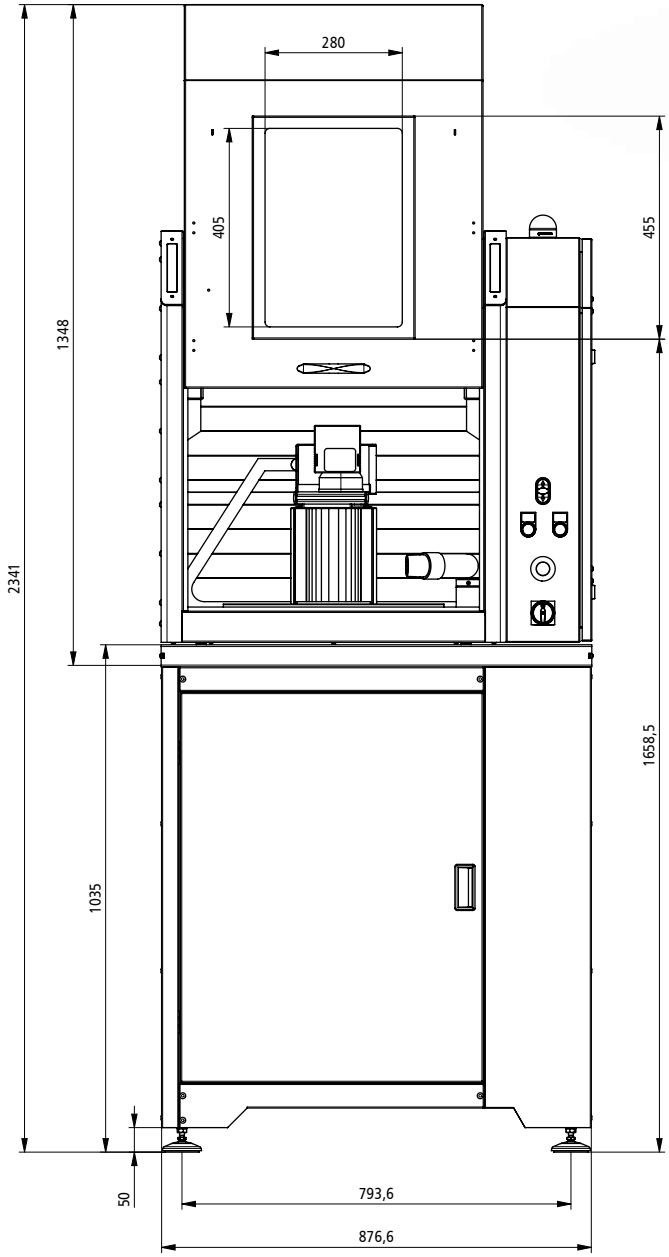
iBL4525

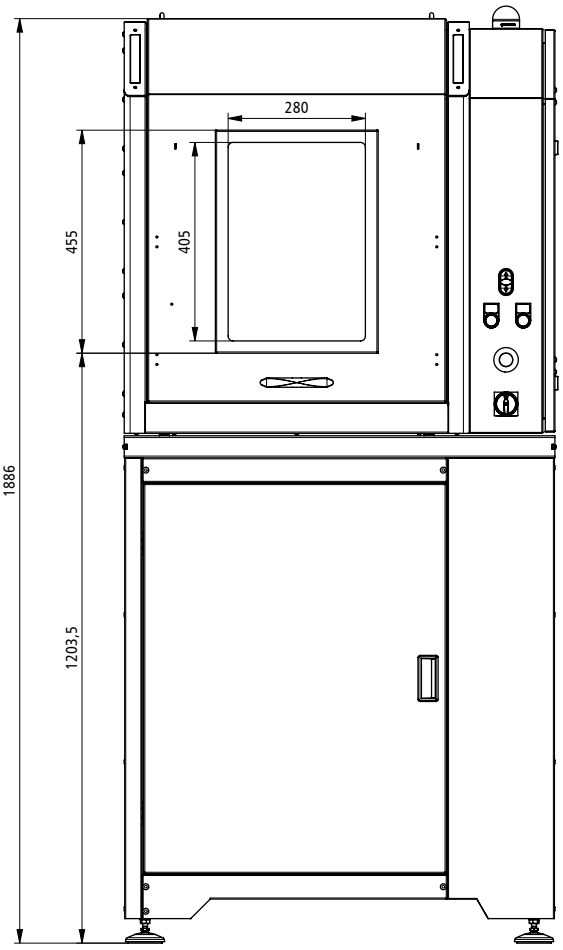
Table clamping area WxD [mm]	450 x 250
Laser	Fiber Laser
Repeatability [mm]	0,01
Wavelength [nm]	1070
Speed [m/s]	8
Max. Power [watts]	20 - 100
Modulation frequency [Mhz]	zu 1
Modulation frequency [Khz]	35
Cooling	air-cooled
Weight* [kg]	approx. 60 (plus approx. 100 kg base table)
Electrical specifications	240V, 16A
Part No. without underframe	**244100 0001**
Part No. with underframe	**244100 00011**

*without installed components on the axes.



iBL4525 | Dimensional drawing [dimensions in mm]



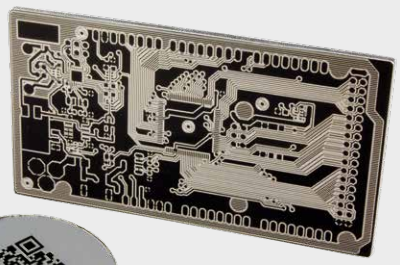


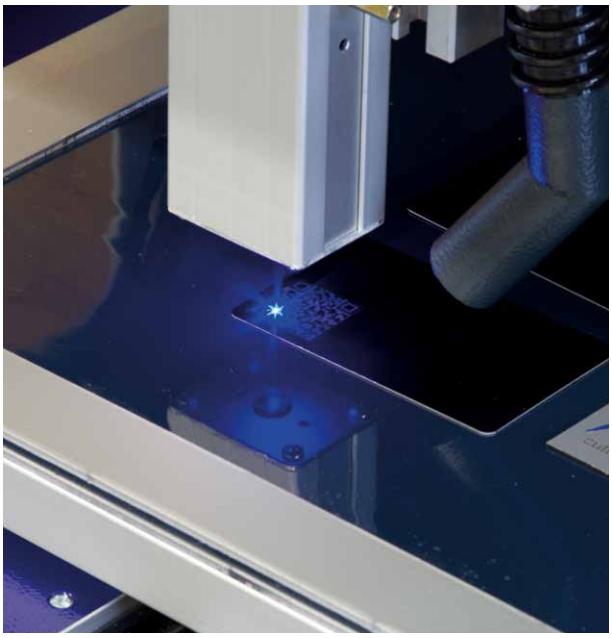
iBL4525 | Typical materials:

- metals
- wood, paper, cardboard
- ceramics
- leather
- plastics

PCB on stainless steel

QR code on aluminum





FB2

The universal automation platform

- 6 standard sizes from 11" x 13" to 40" x 49"
- Z axis and rotary axis available
- 3 different gantry clearances
- stepper, servo or no motors

FB2 | The universal automation platform

The flat bed unit FB2 is very suitable for the entry into the CNC technology and is excellent in the fields of model making and leisure work. The FB2 is also often used in industry for measuring and dispensing technology, because it offers extensive expansion options. The unit also has access to the isel modular system. Different sizes of travels from 530 x 500 mm to 1030 x 1250 mm and extensions such as underframe and housing are available and can be combined individually.

Features

- long-life stepper motors in the 200W range
- reliable LES units with steel ball screws installed as drives
- clamping of the workpieces by means of a T-slot plate
- available with and without protective cover
- variable portal passages according to the respective customer application

Options

- iSA milling spindles and water-cooled HF milling spindles
- cooling spray device
- cold air cooling, cool-min
- automatic tool length measurement
- rotation units
- workpiece clamping systems (hand lever, vacuum clamping tables, etc.)
- extraction systems
- LED engine room lighting
- RAL colour selection
- CAD/CAM software
- passages 190 mm, 300 mm or 500 mm
- powerful 4-axis control controller
- underframe
- housing equipped with sliding/folding door

Technical data

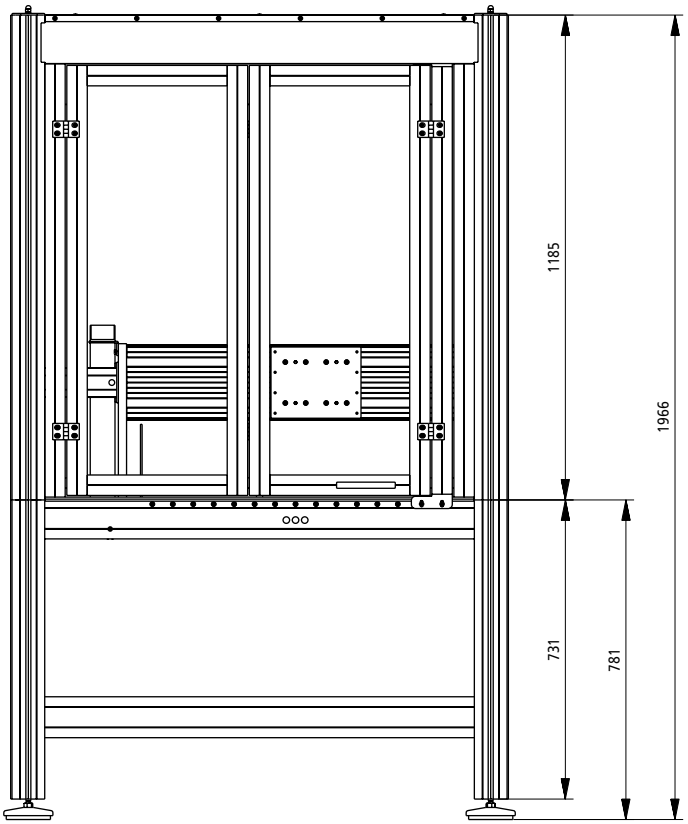
with a Z passage of 190 mm					
Clamping area A x B [mm]	850 x 750	1100 x 750	1350 x 750	1350 x 1000	1750 x 1250
Travel X x Y [mm]	500 x 530	750 x 530	1000 x 530	850 x 780	1250 x 1030
Frame D x F [mm]	1210 x 946	1210 x 1196	1210 x 1446	1460 x 1446	1710 x 1846
Part No.	**246203 M**	**246203 2040 M**	**246203 2054 M**	**246203 2067 M**	**246203 2130M**
with a passage Z of 300 mm					
Clamping area A x B [mm]	850 x 750	1100 x 750	1350 x 750	1350 x 1000	1750 x 1250
Travel X x Y [mm]	500 x 530	750 x 530	1000 x 530	850 x 780	1250 x 1030
Frame D x F [mm]	1210 x 946	1210 x 1196	1210 x 1446	1460 x 1446	1710 x 1846
Part No.	**246203 3027 M**	**246203 3040 M**	**246203 3054 M**	**246203 3067 M**	**246203 3130 M**
with a passage Z of 500 mm					
Clamping surface AxB [mm]	850 x 750	1100 x 750	1350 x 750	1350 x 1000	1750 x 1250
Travel XxY [mm]	500 x 530	750 x 530	1000 x 530	850 x 780	1250 x 1030
Frame DxF [mm]	1210 x 946	1210 x 1196	1210 x 1446	1460 x 1446	1710 x 1846
Part No.	**246203 5027 M**	**246203 5040 M**	**246203 5054 M**	**246203 5067 M**	**246203 5130 M**

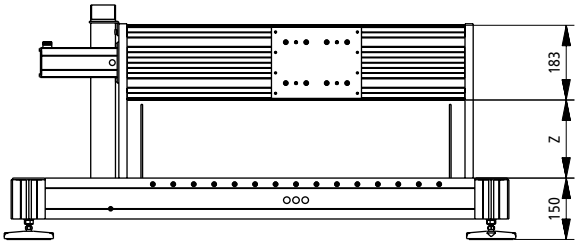
All flat bed units are equipped with ball screws 16 x 4 mm as standard.

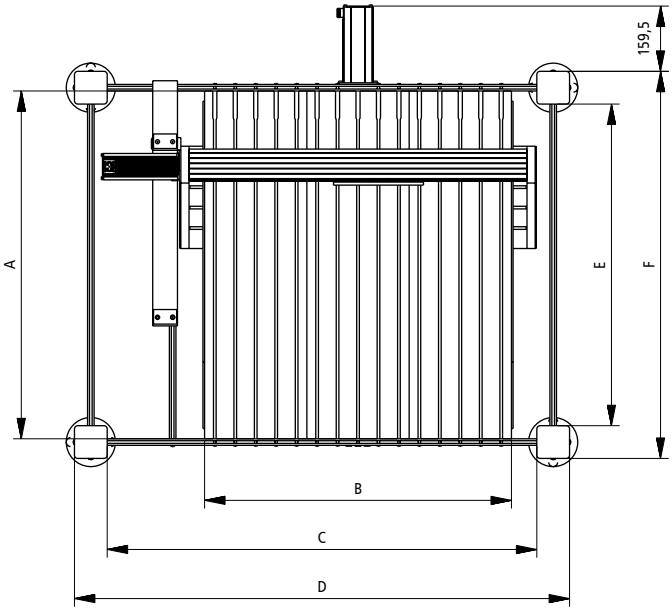
Chassis					
suitable for variant	750 x 850	750 x 1100	750 x 1350	1000 x 1350	1250 x 1750
Part No.	**248500 0027**	**248500 0040**	**248500 0054**	**248500 0067**	**248 500 0130**
Enclosure					
suitable for variant	750 x 850	750 x 1100	750 x 1350	1000 x 1350	1250 x 1750
Part No.	**248200 0000**	**248200 2040**	**248200 2054**	**248200 2067**	**248200 2130**

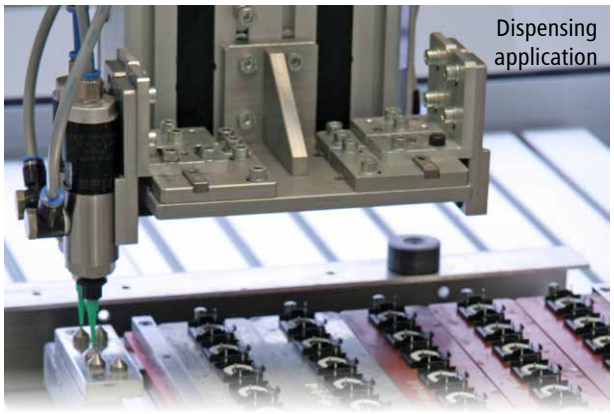
Accessories	Z axis stroke of 75 mm	Z axis stroke of 160 mm	Cable carrier chain
	Equipped with magnetic brake 24 V		
Part No.	**230514 M**	**230514 0400 M**	**219200 0001**

FB2 | Dimensional drawing [dimensions in mm]









Dispensing application

Flat bed unit with Z-axis, underframe and housing

Flat bed unit with Z-axis

FB2 | The universal one

Typical materials:

- foam and milled plastics
- wood
- plexiglass
- and many more

Application areas:

- model and mold making
- orthopaedic technology
- measurement and testing procedures
- rapid prototyping

Flat bed unit with Z-axis and underframe

Individual CNC SPECIAL SOLUTIONS for your AUTOMATION TASK

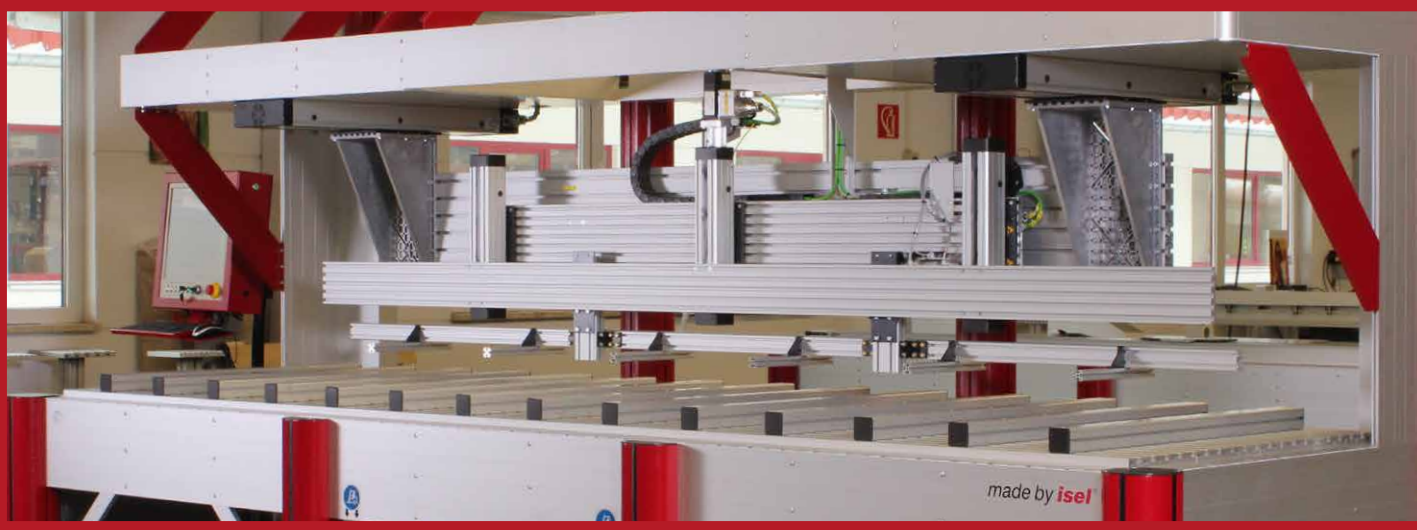
Tailored perfectly to your requirements, we will rapidly implement your customer-specific special solution.
From individual drives to complete automation solutions, you will get everything from a single source.
From consulting to commissioning and beyond, we are at your side worldwide.
We look forward to your ennquiries and the implementation of exciting and innovative projects.

The company isel Germany AG specialises in the planning, design and manufacture of production systems, industrial and special machines.

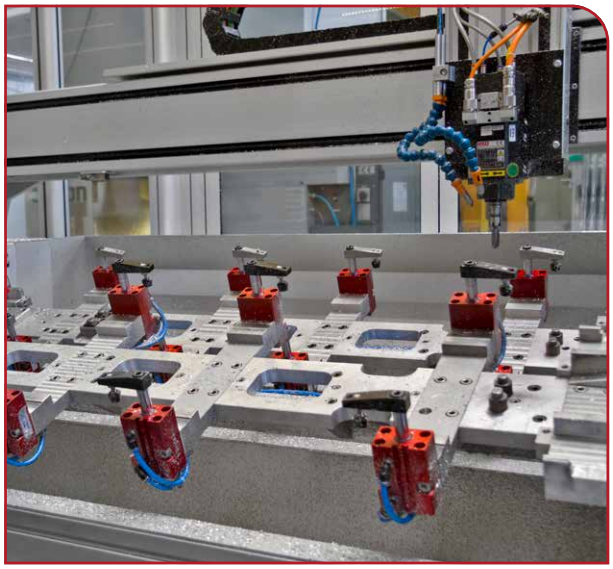
Benefit from our flexible machine concept.

isel®

successful with
CNC TECHNOLOGY



Examples of individual CNC special machines



Solution for the automotive supplier industry

A powerful **HSK25 high-frequency spindle** and an **automated clamping device** are used on this 4-axis milling machine for machining aluminum. The solution was combined with a tool change station comprising tool places arranged in a circle. For dry machining, Cool-Min was used to **cool** tools and materials. Cool-Min is a patented cooling method which does not generate any moisture. Consequently, the chips can be easily extracted.

Solution for the automotive supplier industry

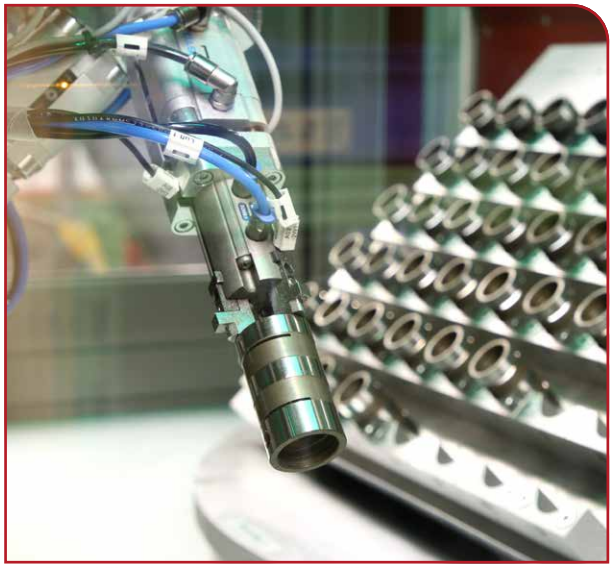
The **5-axis machining centre** is equipped with **two high-frequency spindles HSK 32** and a highlydynamic **turning and swivelling unit** as well as an automatic **12-fold** round **tool** changing station. Due to the high requirements, the CNC special machine was designed to be correspondingly massive. To permit a reliable detection of tool breakages and to avoid consequential damage, the automatic **tool breakage control** is used in the CNC machining centre by a modern measuring mechanism.

Fully automatic insole production

For what concerns the CNC special machine, equipped with a 4 KW spindle motor, the **fully automatic production** of orthopaedic insoles is exected at the highest level. The standardised software interface connection **OPC UA** is used for the manufacturer-independent communication making all data available between all systems within the company. The milling blanks can be clamped rapidly and easily by using a **vacuum clamping device**. The blanks are fed in by means of a 6-axis robot.

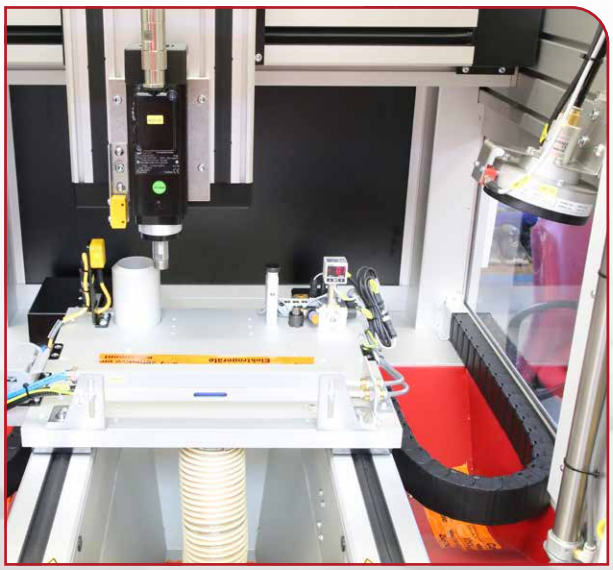
Semi-automatic insole production

The production system for orthopaedic insoles is a semi-automatic CNC milling machine with a vertical stacking magazine shaft **for** 20 milling blanks. To permit that the pairs of orthopaedic insoles can be reliably assigned to the customer, the machine is equipped with a **barcode scanner** processing the orders reliably. The milling blanks can be clamped rapidly and easily by using a **vacuum clamping device**.



Machining of recirculating ball nuts

The final deburring and **fine grinding** for perfect surfaces of recirculating ball nuts is executed by this complex 9-axis **machining** centre equipped with a highly dynamic **turning and swivelling unit**. A **robot** carries out the loading and unloading processes to increase the performance and quality of the processes.



Sprue separation

Specially developed for the **sprue separation of injection moulded components**, the 3-axis CNC unit equipped with an integrated extraction system is a customised solution. The cast parts are clamped by using a **customer-specific vacuum clamping device**, equipped with several sensors to permit the monitoring of the process.

CNC machine accessories

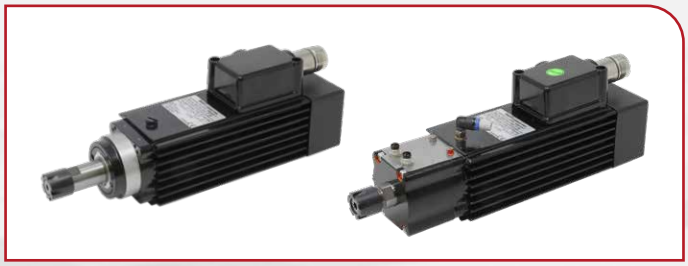
- Tailstock units
- OPC UA
- Milling spindles
- High-frequency spindles
- Rotary changer
- Linear changer
- Minimum quantity lubrication system
- Edge-finder
- Extraction systems
- Hand-wheel
- Vacuum clamping plates
- Rotary indexing tables

Accessories for first-class and creative construction solutions

Milling spindles, spindle motors, dust extraction, tool cooling, frequency converters, changing stations, collets and sets of collets or tool measurement technology - the accessories for CNC machines are manifold. At isel you get all components for your CNC systems from a single source, made in Germany and specially adapted for use on a CNC machine by isel.

For every kind of application you will receive the suitable accessories!
Special specifications possible.

Milling spindle at a glance



iSA 750 / iSA 750 S

equipped with manual tool changer

- nominal power of 0.75 kW
- speed range between 3,000 rpm and 28,000 rpm

iSA 900 W / iSA 900 WS

equipped with automatic tool changer

- nominal power of 0.9 kW
- speed range between 6,000 rpm and 24,000 rpm

All about the spindle

In the course of the development of our spindle motors, a lot of emphasis was placed on functionality, quality, and optimal pricing. In addition, our spindle motors are particularly durable. Thanks to the particularly slim design and the square housing cross-section, the spindle motors can be stacked in series with minimal spacing.

As far as the electrical structure is concerned, our motors are three-phase squirrel cage rotors equipped with 2-pole windings, designed according to the standard DIN EN 60034. The insulation materials of the windings are manufactured according to the thermal class F. The motors are dynamically precision balanced so that good running properties can be achieved even at high speeds. Overall, they cover a speed range between 1,000 and 50,000 rpm.

All spindle motors are completely manufactured in Europe, meet the minimum requirements of protection class IP54. For this reason, they are also approved for the wood dust area.

In our offer you will not only find the spindle motors themselves, but also all the required cables in various lengths and preset, reliable frequency converters to permit the connection of the control. The programming of these frequency converters is also carried out by isel. The same is the case for the coordination of all pneumatic components. This simplifies the commissioning for the customer and results in time saving.

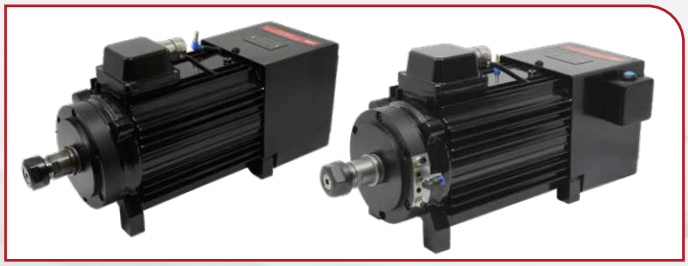
By the integration of development, manufacturing, sales and service under one roof, we have very short distances compared to many of our competitors and have our own year-round repair service.

SENSOR TECHNOLOGY: All milling spindles with the designation S are equipped with sensors for the standstill monitoring. In addition, the milling spindles with automatic tool changers are equipped with sensors for clamped or loose tool holders positioned on the motor shaft and with a button for the manual tool change.

The iSA spindle motors and the high-frequency HFS spindles are air-cooled by means of an integrated fan. This enables an easy installation for quick use of the milling spindle in your CNC system.

Extensive accessories such as dust extraction, minimum quantity lubrication technology, collets, SK holders, tool changers, and our unique CoolMin® system patented by isel for the optimal and economical tool cooling without residues rounds off our product range.

The high-frequency spindles of the HFS series offer good performance and torque behavior for small and medium-sized systems. They are driven by a three-phase asynchronous motor equipped with a squirrel cage rotor. This type of motor permits an extremely smooth running and a uniform torque curve. With the matching frequency converter equipped with an integrated EMC filter and the standard communication functions, you get a compact complete solution for many applications.



iSA 1500 WL / iSA 1500 WLS

equipped with automatic tool changer

- nominal power of 1.5 kW
- speed range between 1,000 rpm and 20,000 rpm

iSA 2200 W / iSA 2200 WS

equipped with automatic tool changer

- nominal power of 2.2 kW
- speed range between 5,000 rpm and 20,000 rpm

HFS 300 C

equipped with manual tool changer

- nominal power of 0.3 kW
- speed range between 5,000 rpm and 60,000 rpm

HFS 800

equipped with manual tool changer

- nominal power of 0.8 kW
- speed range between 5,000 rpm and 24,000 rpm

HFS 1500

equipped with manual tool changer

- nominal power of 1.5 kW
- speed range between 5,000 rpm and 24,000 rpm

More milling spindles in the online store.

3D edge finder and length measuring probe

Electronic 3D edge finder for the main spindle, equipped with cable or radio connection.

- optimised for CNC machines by isel in connection with proNC by isel, starting from its version 1.46.10.2
- complete integration in proNC by isel with integrated measuring functions
- high measurement and repeat accuracy

QR code to the YouTube video

Functions:

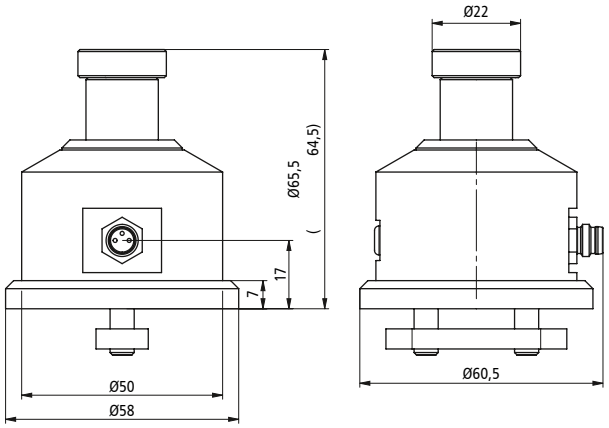
- creation of your own measuring routines through script programming in proNC possible
- fully automated determination of edges and corner points as well as centres and measuring points.
- geometries: edges, bores, grooves, cylinders, angles, corners, etc.
- integrated calibration routines in proNC by isel

Length measuring pushbutton / Z zero point pushbutton

The pushbutton is used for the measurement of tool lengths by also offering an LED as a display for the operating status as well as a cable connection through an M8 connector. If used in connection with a magnetic plate, the pushbutton can also be used as a Z zero point pushbutton. This function is possible with the proNC software.

Order data	Part No.
3D edge finder, cable connection	239099 0018
3D edge finder, radio connection	239099 0017
Length measuring pushbutton LMT 2	239099 0015

LMT 2



Electronic handwheel

Electronic handwheel for machines equipped with the CAN-CNC control by isel

This portable control unit should not be missing on any CNC machine! It represents the ideal addition to your CNC machine by isel for teaching and manual movement of the axes.

The CNC handwheel is characterised by its ease of use and by its unrestricted freedom of movement. The machine operator can concentrate optimally on what is going on in the work area.

Control unit for easy setup of your CNC machine

- ideal for larger machines
- ready for connection through CAN bus, without any additional hardware
- convenient set-up, perfect for detecting and setting the zero point
- freely configurable feed rates and freely available function keys
- continuous or step-by-step process, step size adjustable

Features

- robust, ergonomic plastic housing, H 223 mm, W 91 mm, D 92 mm
- rubberised magnetic holder positioned on the rear side
- emergency-stop and enabling button
- dirt-repellent membrane keyboard equipped with 15 keys (each with status LED to display the selection and operational readiness display)
- spiral cable: 18 x 0.25 mm² shielded, 1.5 m helical length, 3.5 m straight length
- robust and industrial grade stainless steel connector
- high protection category (IP65)

Order data

Part No. 359010 0002

Linear changer
SK 16, SK 20 and SK 30

5-way linear changer
for SK 16

4-way linear changer
for SK 20

5-way linear changer
for SK 30

Features

- simple and functional tool changer for SK 16, SK 20 and SK 30
- pneumatic rotary cylinder and end position monitoring for a safe change
- control through 5/2-way valve with integration in the safety circuit
- low-maintenance and rust-free design (powder-coated aluminum)
- variable positioning on the machine table

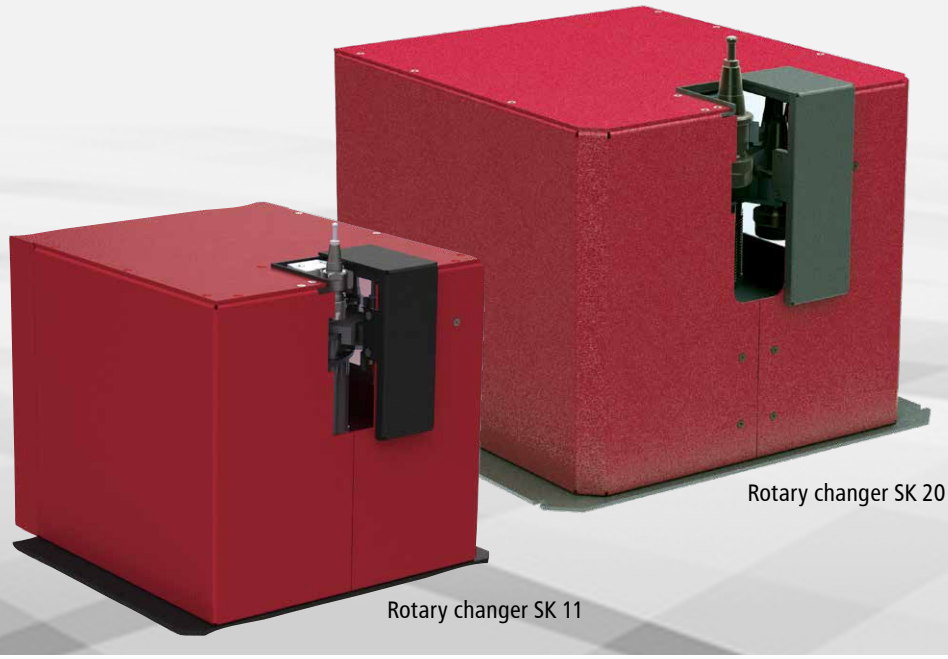
Dimensions WxDxH [mm]	SK 16	SK 20	SK 30
4-fold	–	500 x 224 x 253	869.5 x 240 x 320
8-fold	–	900 x 224 x 253	–
5-fold	451 x 178 x 208	985 x 224 x 302	1055.5 x 240 x 320
10-fold	–	1825 x 224 x 302	–

Tool holders and maximum shaft diameter:

SK 16 Ø10 mm | SK 20 Ø13 mm | SK 30 Ø20 mm

Order data			Part No.
Linear changer	SK 16	4-fold (grid 72 mm), with cover & pneumatics / for EuroMod, FlatCom, raised portal, iSA 1200 W	239016 0041
		5-fold (grid 72 mm), with cover & pneumatics / for EuroMod, FlatCom, raised portal, iSA 1200 W	239016 0051
	SK 20	4-fold (grid 100 mm), with cover & pneumatics / for EuroMod, FlatCom, raised portal, iSA 2200 W	239011 0041
		8-fold (grid 100 mm), with cover and pneumatics / for FlatCom XL, iSA 2200 W	239011 0081
		5-fold (grid 170 mm), with cover and pneumatics / for FlatCom XL, iSA 2200 W	239011 0050
		10-fold (grid 100 mm), with cover and pneumatics / for FlatCom XL, iSA 2200 W	239011 0103
		10-fold (grid 170 mm), with cover and pneumatics / for FlatCom XL, iSA 2200 W	239011 0100
	SK 30	4-fold, with cover and pneumatics / for FlatCom XL, iSA 4000 (raised portal required)	239011 0045
		5-fold, with cover and pneumatics / for FlatCom XL, iSA 4000 (raised portal required)	239011 0055
Tool holder	SK 16	for collets of the type ER 16	239116 0001
	SK 20	for collets of the type ER 20	239172 0020
	SK 20-C	for collets of the type ER 20, version for internal tool cooling	239172 0021
	SK 30	for collets of the type ER 32	239131

Rotary changer
SK 11 and SK 20



Rotary changer SK 20

Rotary changer SK 11

Features

- compact, space-saving design thanks to circularly arranged tool positions
- powder-coated aluminum housing (RAL 3011)
- integrated power electronics for control through isel CNC commands via RS232 interface
- monitoring of the tool position and changer opening by means of sensors
- linear movements of the tool holder and the changer opening by means of switchable solenoid valves (5/2-way valve)
- option of a modular use with all servo CNC machines by isel
- service-friendly
- cannot be used in combination with the suction by isel

Rotary changer	SK 11	SK 20
Tool places	12	14
max. Tool places [mm]	60	75
min. Passage height [mm]	250	350
Suitable spindle motor	iSA 900	iSA 2200
Interface	RS 232	
Supply voltage	+24 VCD	
Dimensions W x D x H [mm]	224 x 222 x 228	360 x 340 x 271

Tool holders and maximum shaft diameter:

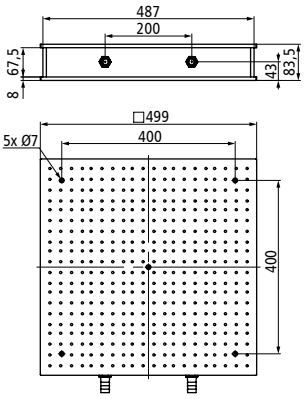
SK 11 Ø7 mm | SK 20 Ø13 mm

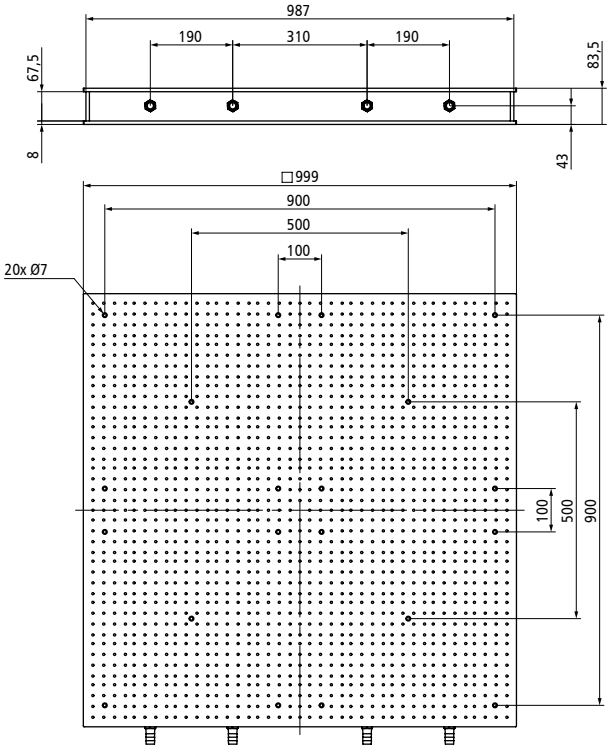
Order data		Part No.
Rotary changer	SK 11, suitable for iSA 900	239100 0030
	SK 20, suitable for iSA 2200	239100 0030
Tool holder	SK 11, for collets of the type ER 11	239111 0001
	SK 20, for collets of the type ER 20	239172 0020

Vacuum clamping tables

VST 500 and VST 1000

The vacuum clamping tables by isel are a very user-friendly clamping device for workpieces. The vacuum clamping technology is a simple method of clamping thin and elastic materials without additional mechanical clamping elements. The material firmly sucked in over the whole surface guarantees a vibration-free hold, which is gentle on the tools and significantly improves the milling quality.

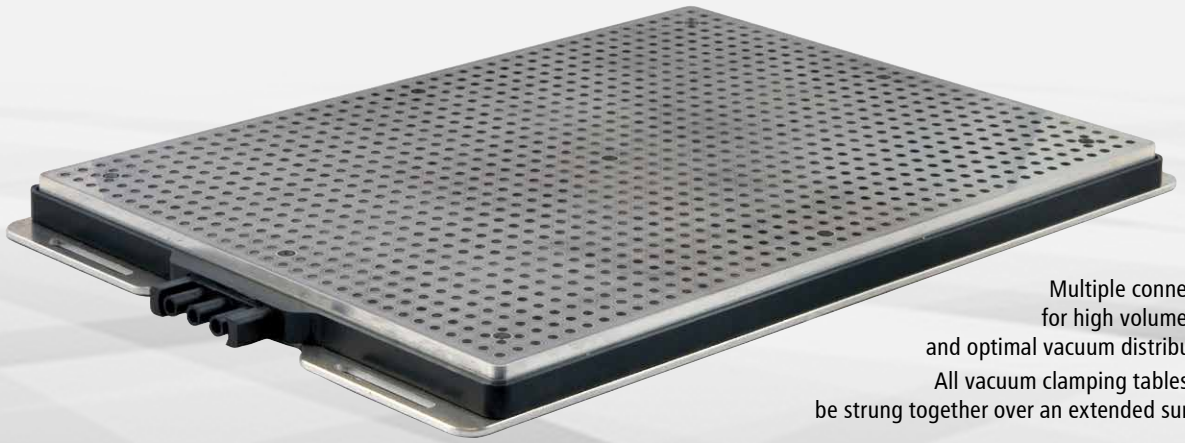




The workpiece can be clamped very rapidly by switching the chambers and covering the remaining bores around the workpiece through the vacuum distributor (4-fold or 8-fold) with pressure monitors. The open bores of the switched clamping chambers are closed with an adapter mat. Our rotary vane vacuum pumps are suitable for the generation of the vacuum.

As the manufacturer of the VST vacuum clamping tables, we have a direct influence on production and may offer you special sizes as well.

Order data		Part No.
Rotary vane vacuum pump 50Hz, 40 m³/h ready for installation and wired	≤ 0.5 m²	216601 0037
Rotary vane vacuum pump 50Hz, 100 m³/h ready for installation and wired	> 0.5 m² to 2.0 m²	216601 0039
Vacuum clamping table 500 x 500		216601 5260
Vacuum clamping table 1000 x 1000		216601 5450
4-way vacuum distributor equipped with a pressure monitor		216601 5515
8-way vacuum distributor equipped with a pressure monitor		216601 5276



Multiple connection
for high volume flow
and optimal vacuum distribution.
All vacuum clamping tables may
be strung together over an extended surface.

VakuFit – L

The perforated grid plates for vacuum clamping have low demands on the vacuum pump. The plates are almost warp-free; for this reason, they are well suited for the engraving and clamping of plate material.

In contrast to other vacuum clamping variants, the material millings up to a certain proportion of the total surface are not a problem and the components remain securely clamped. Material stops can be easily implemented by means for dowel pins of 5 mm in the hole pattern holes. The perforated rubber mats serve as wear material and may be used several times.

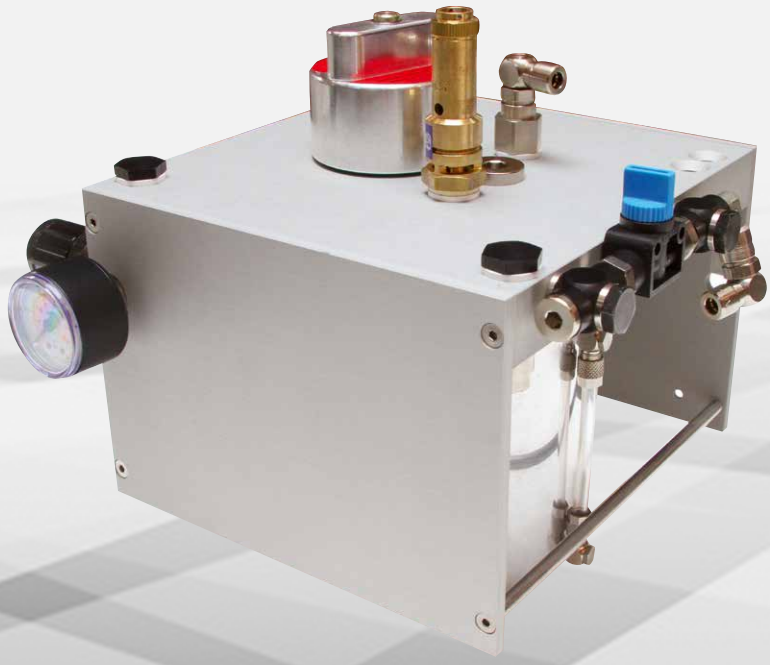
In addition to our standard panels, we offer special customer requests for special tasks as well, and this right up to a complete package.

Note: The holding force is proportional to the covered area, to the coefficient of friction as well as to the differential pressure. A perforated rubber mat is included in the scope of delivery in order to increase the coefficient of friction.

Scope of delivery: connection adapter, wrench of 68 mm, perforated rubber mat, cover rubber mat to cover the free holes, and operating instructions

Order data			Part No.
Vacuum chuck	VT 2115	DIN A5, clamping area 210 x 150 mm	216601 0017
	VT 3021	DIN A4, clamping area 300 x 210 mm	216601 0018
	VT 4230	DIN A3, clamping area 420 x 300 mm	216601 0019
	VT 6042	DIN A2, clamping area 600 x 420 mm	216601 0020
Vacuum pump	220 m^3/h		216600 0015
Perforated rubber mat	for vacuum clamping table A5		616601 2115
	for vacuum clamping table A4	D = 1mm, PU = 1 piece	616601 3021
	for vacuum clamping table A4	D = 3 mm, PU = 5 pieces	616601 3022
	for vacuum clamping table 1200 x 900 mm		616601 3023

Minimum quantity lubrication system



The minimum quantity lubrication (MQL), also called minimal quantity cooling lubrication (MQL) works according to the principle "less is more". A cooling lubricant-air mixture is used to prevent the generation of frictional heat through optimal lubrication. The remaining heat is dissipated through the tool and the chip.

The cooling lubricant must be dosed in a reliable manner and then fed to the tool. This requires high-precision nozzle technology enabling the application of minimum quantities of lubricant.

The minimum quantity lubrication system reduces the consumption of lubricant to an absolute minimum level by considering the least possible impact on the environment.

Features

- aluminum pressure vessels
- equipped with one and/or two adjustable nozzles, including one litre of spray oil
- level control
- valve unit equipped with special solenoid valves
- precision coaxial spray head
- flexible ball joint extension
- nozzle connection package equipped with fine grid screw connections for spray air and medium
- pressure reducer for the setting of the tank pressure

Advantages

- increase in productivity
- improvement of the tool lives
- clean workpieces with better surfaces
- environmentally friendly technology
- lower storage costs for the media
- lower cleaning costs for machines and workplaces

Areas of application

- drilling
- milling
- engraving
- high-speed machining
- deep hole drilling

Order data		Part No.
Minimum quantity cooling spray system	with an adjustable nozzle, including one litre of cooling lubricant	429116 1000
	with two adjustable nozzles, including one litre of cooling lubricant	429116 2000

Dust extraction
for iSA motors

Suction head (antistatic brush made of horsehair)

Air hose with an inside Ø of 80 mm

Suction device

Dust cover closed

Dust cover open

Suction device and suction head

The isel dust and chip extractors are accessory components for milling spindles manufactured by the company isel Germany AG. They are used for the extraction of light dusts and chips during dry machining.

Order data	for spindle motor		Part No.
Extraction device	iSA 750	prepared for hose 38 mm, manual opening	239012 0000
	iSA 900 W	prepared for hose 50 mm, automatic opening	239012 0004
	iSA 900 W	prepared for hose 50 mm, for CoolMin®, automatic opening	239012 0014
	iSA 900 WS	prepared for hose 50 mm, for CoolMin®, automatic opening	239012 0022
	iSA 1200 W		on request
	iSA 1500	prepared for hose 80 mm, manual opening	239012 0001
	iSA 1500L	prepared for hose 80 mm, manual opening	239012 0009
	iSA 1500 WL	prepared for hose 80 mm, automatic opening	239012 0002
	iSA 2200 W	prepared for hose 80 mm, automatic opening	239012 0002
		with external CoolMin, prepared for hose 80 mm, manual opening	239012 0003
	ES 325 HSK 25	prepared for hose 80 mm, automatic opening	239012 0016
Extraction head	iSA 750	with external CoolMin, prepared for hose 50 mm, manual opening	239012 0012

Extraction systems of the series iAG

iAG 200 | Extraction system

- portable and therefore universally applicable
- compact and space-saving design
- low operating costs thanks to cleanable permanent filter cartridge of the dust class M
- integrated compressed air cleaning nozzle

Areas of application

- single-place extraction on machines
- free-flowing (not carcinogenic) dusts
- dry dusts / chips
- low generation of dusts/chips

iAG 600 | Extraction system

- small footprint and simple operation
- cleanable and durable pocket filter
- low operating costs
- cleanable pocket filter by means of a crank mechanism
- special designs equipped with various filter materials, exhaust air nozzle and special voltage (optional)

Areas of application

- single-place extraction in industry and trade, mechanical workshops
- free-flowing (not carcinogenic) dusts/chips
- medium volume of dust/chips

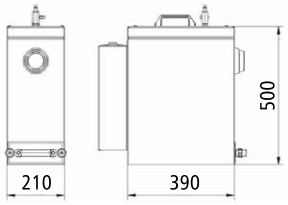
iAG 720 | Extraction system

- low operating costs due to cleanable permanent filter cartridge of the dust class M
- mobility in connection with an elevated suction power
- tiltable filter housing for an easy dust disposal
- suitable for almost all dust types
- manual brush cleaning
- cleanable permanent filter cartridge
- special designs equipped with various filter cartridges
- exhaust air nozzle (optional)
- special voltages (optional)
- floor and machine cleaning set possible

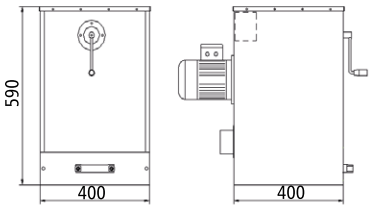
Areas of application

- single-place extraction at machine and manual workstations
- free-flowing (not carcinogenic) dusts
- dry dusts / chips
- dusts which are hazardous to health
- high amount of chips/ dust

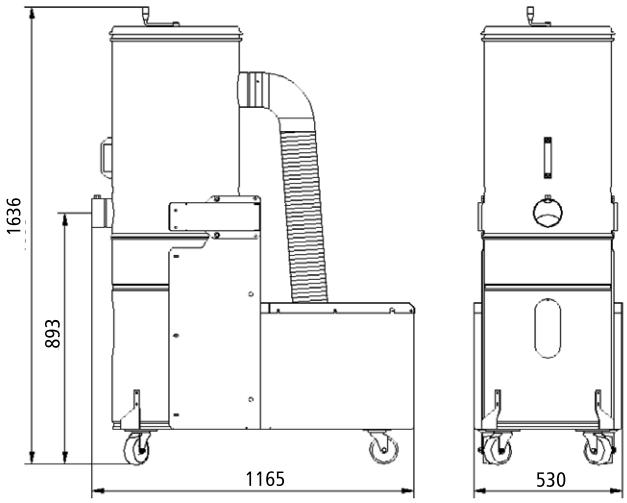
Dimensioned drawing



iAG 200



iAG 600



iAG 720

Technical and order data

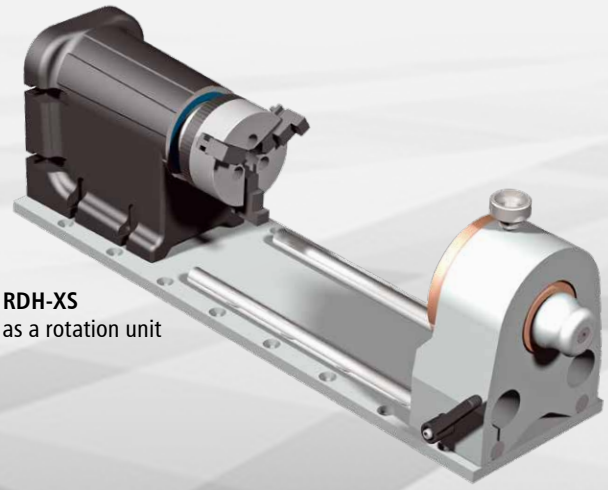
	iAG 200	iAG 600	iAG 720
Connection voltage [V]	230	400	230
Drive power [kW]	1.1	0.55	1.3
max. Negative pressure [Pa]	19,000	1,400	2,800
max. Air volume flow [m3/h]	200	600	720
Sound level [dB (A)]	66	68	73
Filter area [m^2]	0.8	1	3.5
Number of filter elements	1		
Filter material	Dust class "M"		
Cleaning of filter cartridge	Compressed air cleaning nozzle	Manual knocking device	Manual brush
Weight [kg]	15	30	120
Intake port [mm]	50	80	100
Dust container [l]	approx. 3	approx. 10	approx. 100
Dimensions L x W x H [mm]	390 x 210 x 500	400 x 400 x 590	1,165 x 530 x 1,636
Scope of delivery	Including a hose of 50 mm (L = 5 m) and mounting clamps	Including a hose of 80 mm (L = 5 m) and mounting clamps	Including a hose of 80 mm (L = 5 m) , reducer and fastening clamps
Part No.	239012 0031	239012 0032	239012 0030

Accessories

Hose	Ø 50 mm, L = 5m Part No.: 639012 0005	Ø 80 mm, L = 5m Part No.: 639012 0004	
Fastening clamp	40 – 60 mm Part No.: 639012 0007	up to 170 mm, Part No.: 639012 0008	
Reduction	–	–	(Ø 100/80 mm) Part No.: 639012 0006

Rotary axes
RDH and DSH-S

RDH-M as a rotary table in use with Ø150 mm aluminum T-slot plate



RDH-XS
as a rotation unit

The solution for complex CNC applications

The CNC turning and rotation units by isel easily permit the conversion of your 3-axis system into a 4/5-axis machine. Process complex components with your CNC machine by making use of a turning or turning/swiveling unit.

For 360-degree machining, you can use the axes vertically as a rotary axis or horizontally as a turntable. Our turning and rotation units are ready-to-plug-in components suitable for your CNC machines. Developed and manufactured in Germany - made by isel.

Features

- equipped with precision gear- heavy duty and stiff output bearing- high torsional rigidity
- stepper or servo motor
- aluminum T-slot plate, optional
- maintenance-free

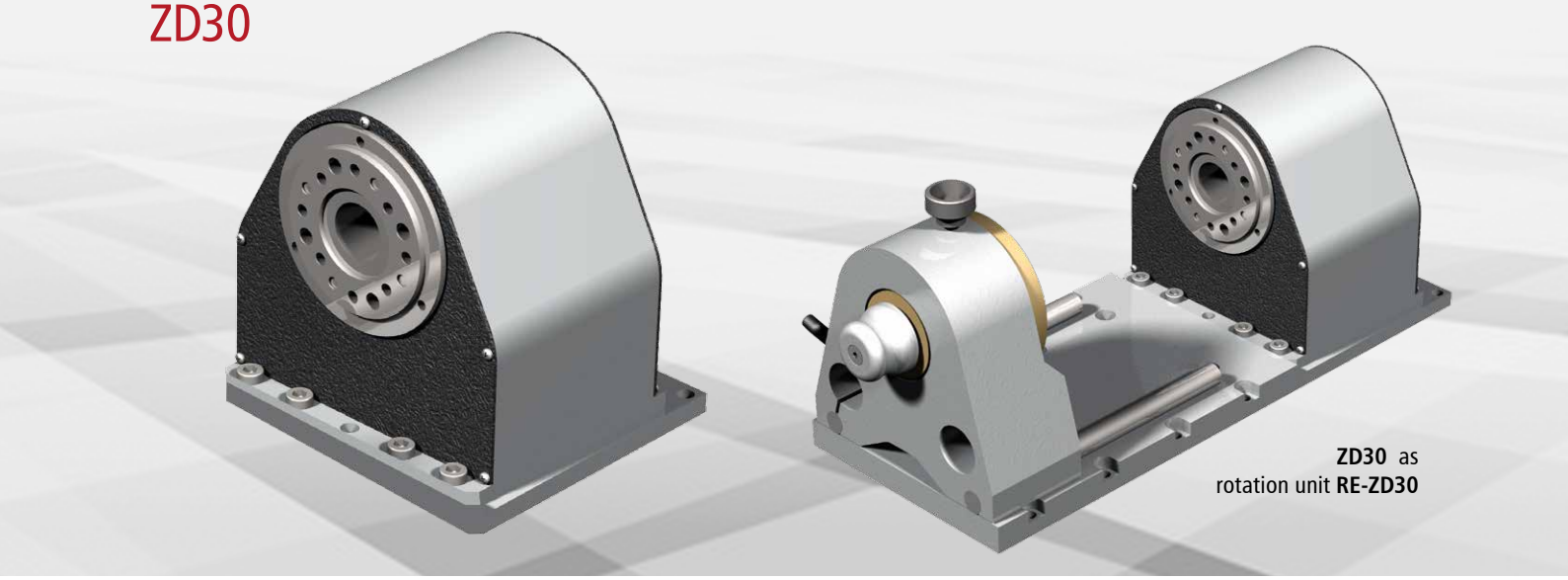
Technical data	RDH-M	RDH-S	RDH-XS
Gear support	1:51 or 1:101		1:50 or 1:100
Degree of protection	IP 65		
Transmission accuracy	<1 arcmin	<1.5 arcmin	<2.0 arcmin
Repeat accuracy	<± 6 arcsec		<± 1.0 arcmin
Flanged shaft	Solid shaft or hollow shaft design		–

Rotary swivel unit **DSH-M**

Rotary swivel unit **DSH-S**

For further technical data, dimensional drawings, accessories as well as connection assignment and transport loads, see the website **www.isel.com**

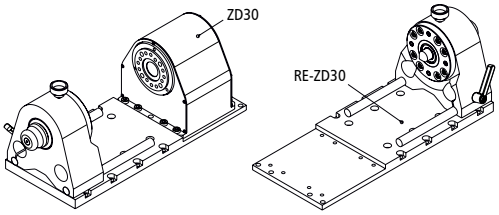
Rotary axis
ZD30



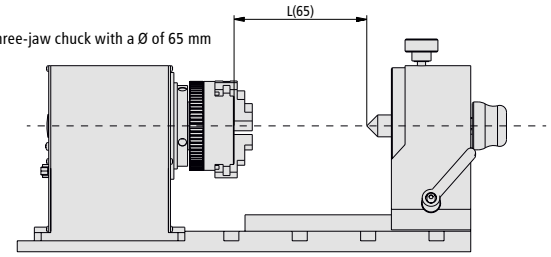
ZD30 as
rotation unit **RE-ZD30**

Rotary axis ZD30

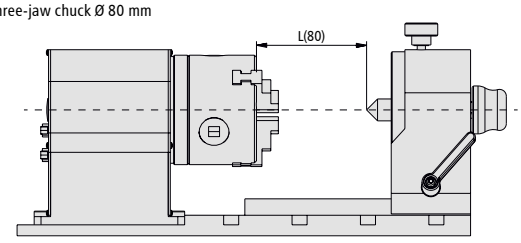
- low toothed belt drive without clearance and equipped with a stepper motor
- mounting flange equipped with internal cone SK 20



Three-jaw chuck with a Ø of 65 mm



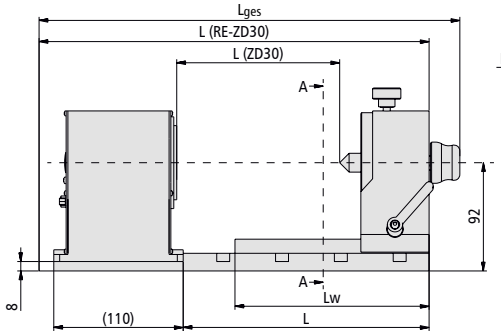
Three-jaw chuck Ø 80 mm

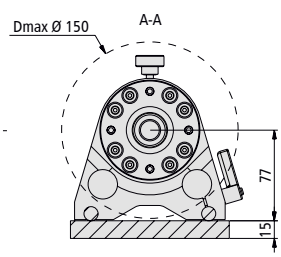


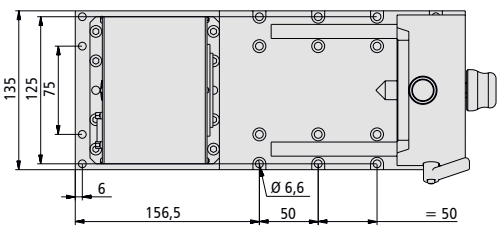
Technical data	Rotary axis ZD30
Gear reduction	1 : 30
Shaft with through hole [mm]	Ø 15
Weight [kg]	2.9

RE-ZD30	200 mm	300 mm	400 mm	500 mm
L_{total}	358	458	558	658
L	209	309	409	509
L (ZD30)	138.5	238.5	338.5	438.5
L (RE-ZD30)	331.5	431.5	531.5	631.5
LW	165	265	365	465
L (65)	97	197	297	397
L (80)	80.5	180.5	280.5	380.5

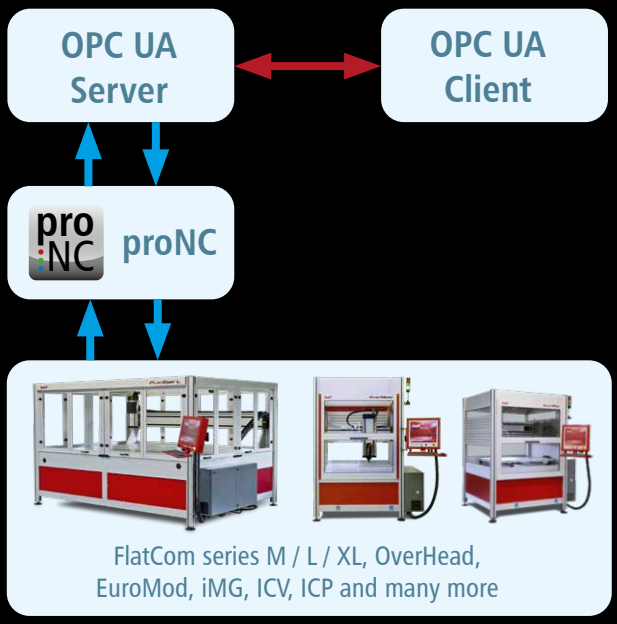
Dimensional drawing RE-ZD30







Software extension module



OPC UA (Open Platform Communication, Unified Architecture)

... is a communication protocol for Industrie 4.0 and the Internet of Things (IoT). This protocol enables standardized data exchange between machines, devices and components used in the industrial sector. The interface standard is independent of manufacturers or system suppliers of an application, of the programming language in which a software was programmed and of the operating system on which the OPC UA application is finally executed.

Features

- OPC UA software extension module for isel machines.
- recommended hardware: Intel Core i3/i5, AMD Ryzen 3/5 or higher
- runs under Windows 7 / Windows 10
- connection of already existing systems and machines possible (update of ProNC may be required)
- integration of almost all machine models possible
- continuous expansion and supplementation of the information models provided
- compatible with common clients (more details on request)

Scope of functions

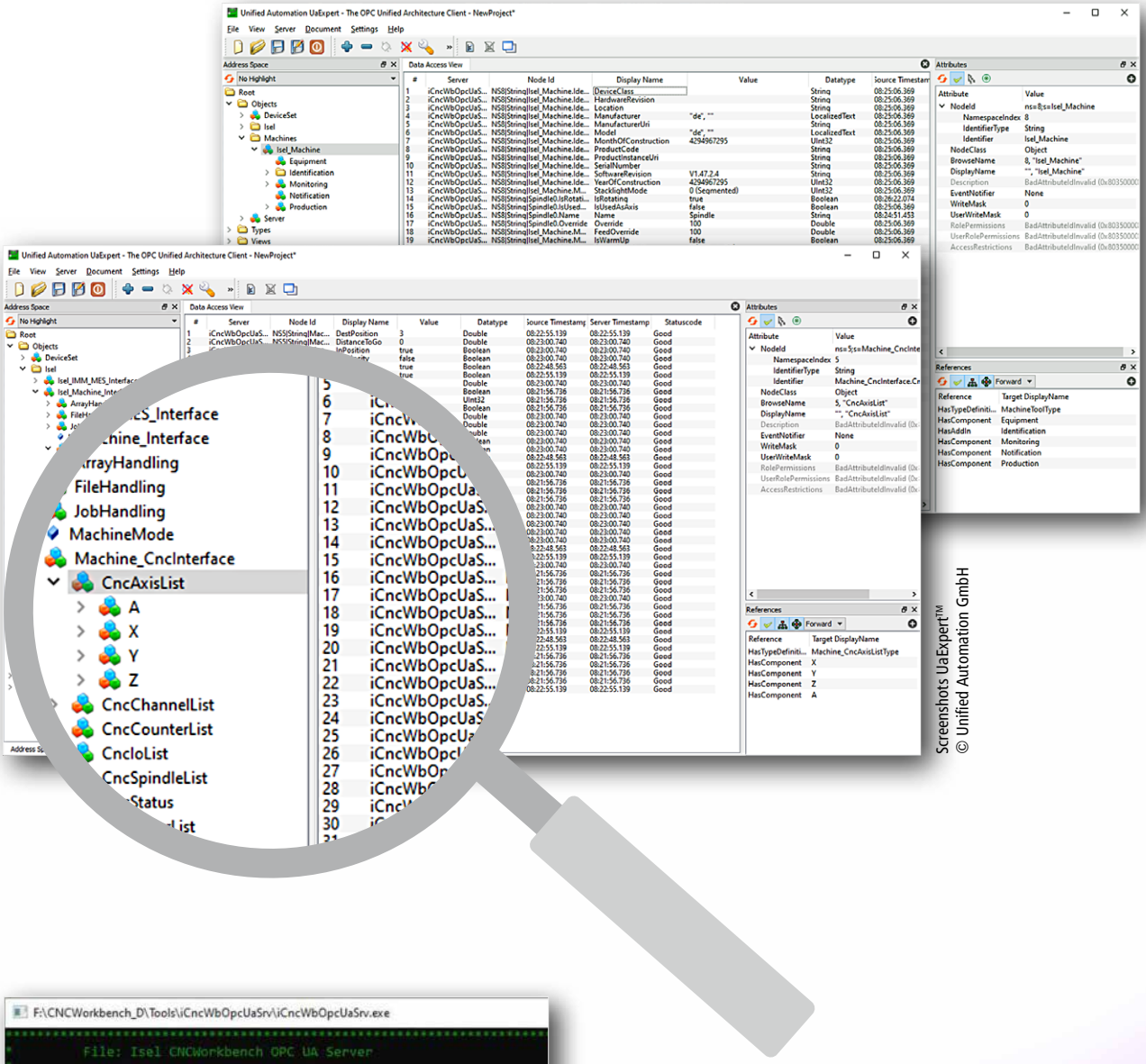
With a view to the usability of the isel machine series in an automation environment, useful functions from various information models were implemented in the isel OPC UA server application, which support the use of the machine by an OPC UA client. The functions provided enable the easy integration of almost all machine series offered by isel into OPC UA-based automation processes.

The following information models were implemented with the specified information:

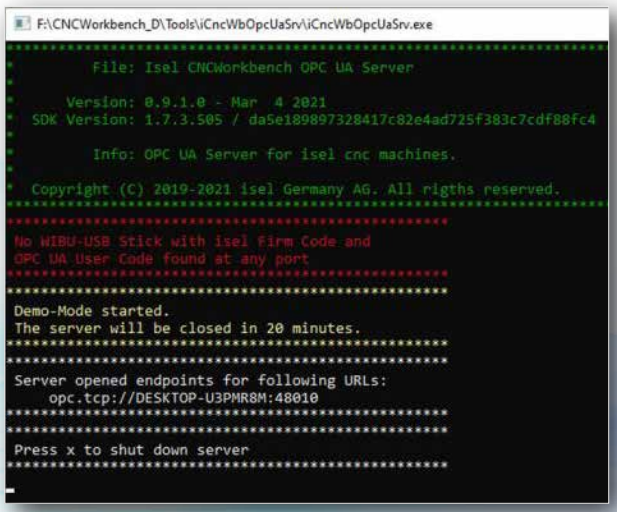
- Euromap 77
  Job management, machine configuration, machine information, machine status

- Umati
  (universal machine technology interface)
  Machine identification, machine monitoring (Machine-Tool), production information (ActiveProgram)

- Manufacturer-specific isel
  Access to machine and control parameters, access to variables, reading and writing of digital and analog inputs and outputs, job management via flag signaling, querying of process data, and much more.

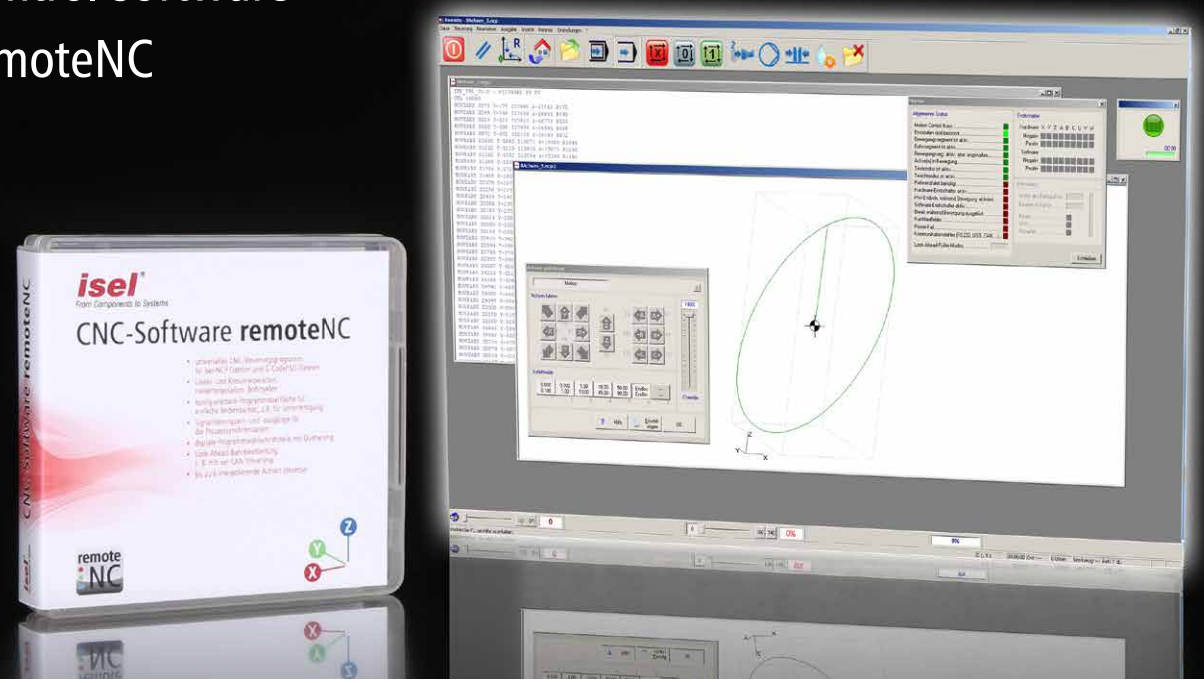


Screenshots UaExpert™
© Unified Automation GmbH



Order data	Part No.
OPC UA Software extension module for isel machines	z11-333500-0002

Control software remoteNC



Function scope

- support of digital joysticks
- panel "Quick File Selection" for the batch production
- utility milling machines/multiple output with shifts
- graphic representation of the processing file with zero point and dimensions

File formats isel-NCP, DIN66025 / G-code

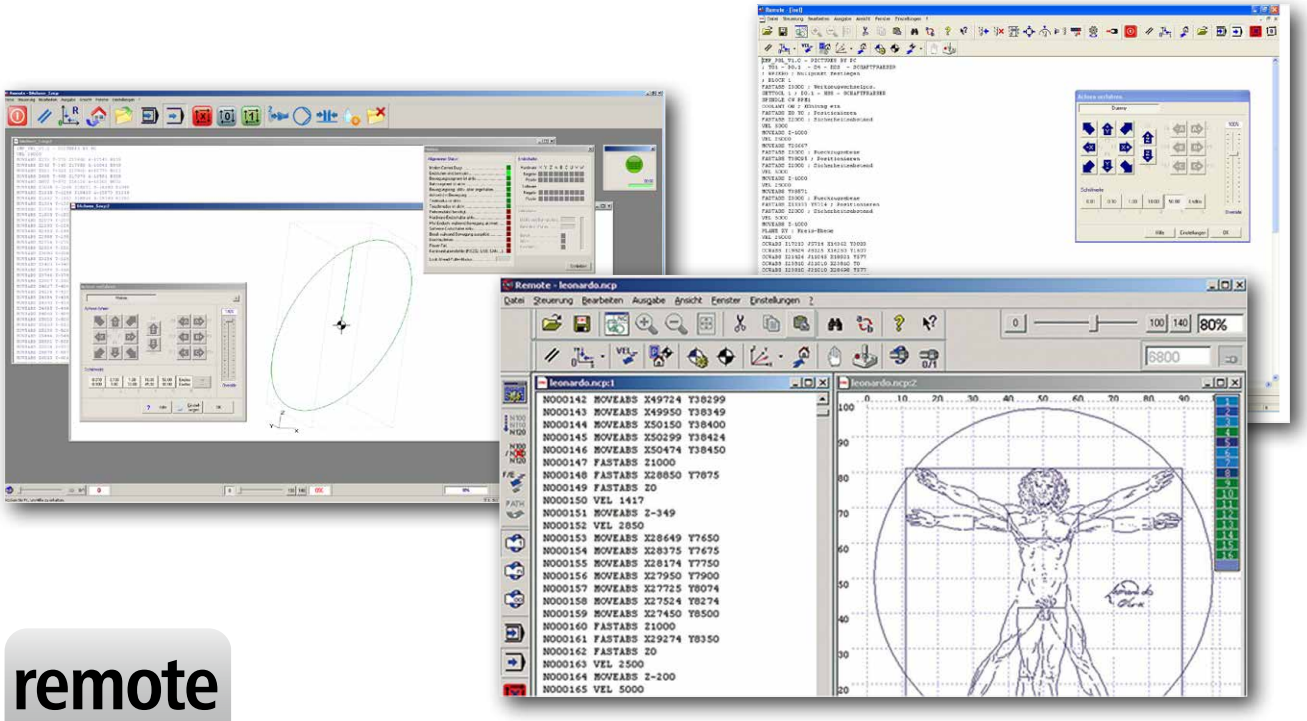
- linear, circular, and helix interpolation, and drilling cycles
- access to digital and analog inputs and outputs
- in case of the use of a CAN control: input/output “On-The-Fly” (without movement stop) for dispensing applications
- message window, messages in the status line, time delay, input of variable values
- definition and use of machine positions (workpiece zero point, parking position, home position, ...)

Additional functions for the isel-CNC file format (ProNC output format)

- repeating and counting loops,
- branches
- arithmetic and trigonometric functions
- subprogram technique
- integrationof real and string variables
- loading and saving of process variables
- access to user-specific extensions, option of calling up user software

Features

- compatibility with earlier versions of the program
- processing of the file formats DIN66025 (G-code), NCP or CNC
- immediate processing without conversion, translation or transformation of the file
- integrated text editor with many functions for rapid corrections to the existing NC program
- use of up to 6 interpolating axes (cartesian coordinate system and 3 auxiliary axes)
- look-ahead path processing by means of CAN control
- management of a milling spindle
- 2 E/A units may be used (maximum of 64 inputs, 64 outputs)
- signalling inputs and outputs for the process synchronisation
- manual axis movement with joystick, keyboard, and mouse
- step-by-step processing and system monitoring for commissioning operations
- user interface, configurable for ease of use, series production, handshake equipped with master PLC, ...
- control panels for motion control, input/output, spindles, and tool change by means of buttons
- available in several languages (German, English, French, Hungarian)



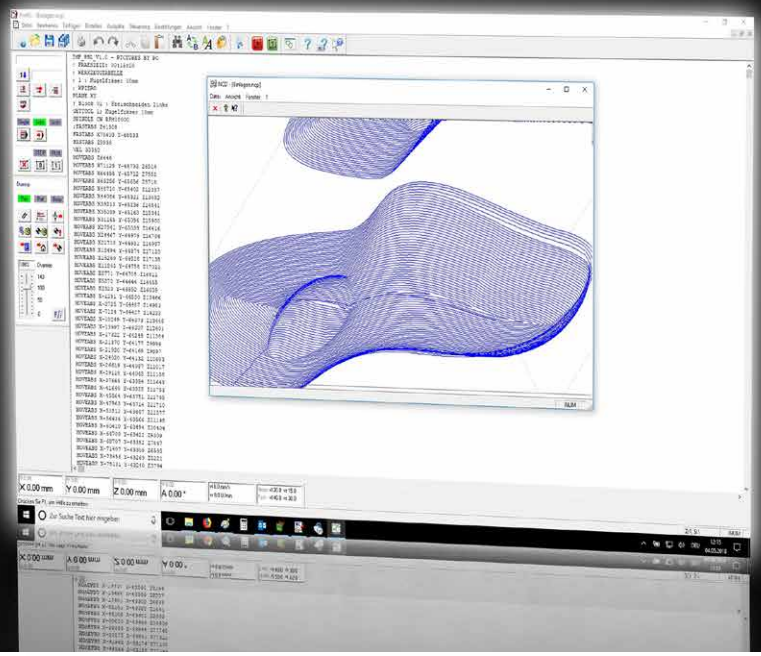
remoteNC is a universal control program for the output of files during the machining processes of milling, drilling, gluing, engraving, applying as well as in the field of water jet cutting or laser cutting/welding. Supported file formats are the isel-specific NCP format (ASCII file with machining data created by a CAM post-processor), the isel-specific CNC format (the ASCII files in an extended format for universal use in the field of process automation, created by ProNC) as well as the G-code format in accordance with the standard DIN 66025. remoteNC is primarily used for the control of CNC machines for a wide variety of tasks and processing. This is why flexibility is a main feature of the program. A wide selection of options enables the simple adaptation to the respective requirements.

Control software remoteNC

- can be run with the Windows operating systems (Windows 2000, XP, Vista, Win7 and Win8, Win10 (administrator rights required)
- universal CNC control program for NCP files and G-code
- for additive and subtractive methods; water jet and laser cutting
- linear, circular, and helix interpolation, and drilling cycles
- configurable user interface for ease of use, series production, handshake equipped with master PLC
- look-ahead path processing by means of CAN control
- up to 6 interpolating axes may be controlled

Order data	Part No.
Software remoteNC for CAN-CNC controls (Windows)	Z12-334500

Automation software proNC

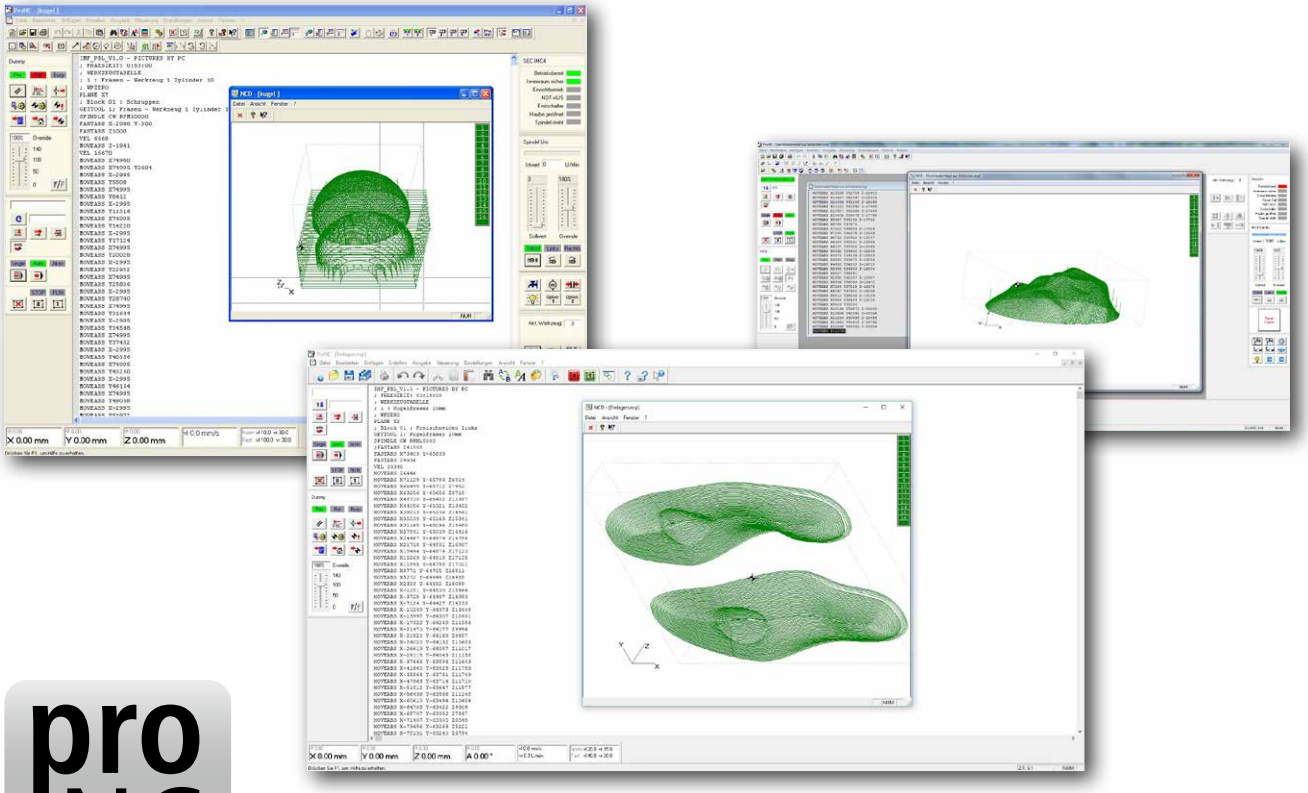


Function scope

- path commands for the relative and absolute positioning of the interpolating axes
- programming of additional axes in the handling mode
- circular and helix interpolation, and drilling cycles
- repeating and counting loops, and branches
- numerous math and trigonometric functions
- subroutine technology, and symbolic variable
- integrationof real and string variables
- message window, messages in the status line
- loading and saving of process variables
- access to digital and analogue inputs and outputs
- "On-The-Fly" input/output (without movement stop) for dispensing applications
- access to the user-specific extension DLLs (Dynamic Link Libraries)
- comfortable debug support (breakpoints, monitoring for status and variables)

Features

- programming in accordance with the standard DIN66025 (G-codes) or isel-PAL
- compatibility with earlier program versions (ProDIN, ProPAL)
- integrated text editor with numerous functions for rapid and efficient editing of the source code
- import of geometry data (NCP, such as for example by isy-CAD/CAM)
- use of up to 6 interpolating axes and up to 6 handling axes (equipped with a CAN control)
- look-ahead path processing equipped with CAN control
- up to 4 spindle motors may be used
- up to 4 E/A units may be used (maximum of 64 inputs, 64 outputs)
- signalling inputs and outputs for the process synchronisation
- teach-in with joystick, keyboard, and mouse
- offline programming with simulation modules
- step-by-step processing, breakpoints, and system monitoring for commissioning operations
- may be individually expanded with software libraries
- control panels for motion control, input/output, spindles, and tool change by means of buttons
- control panel for a maximum of 6 handling axes independent of the interpolating axes
- available in the German and English language



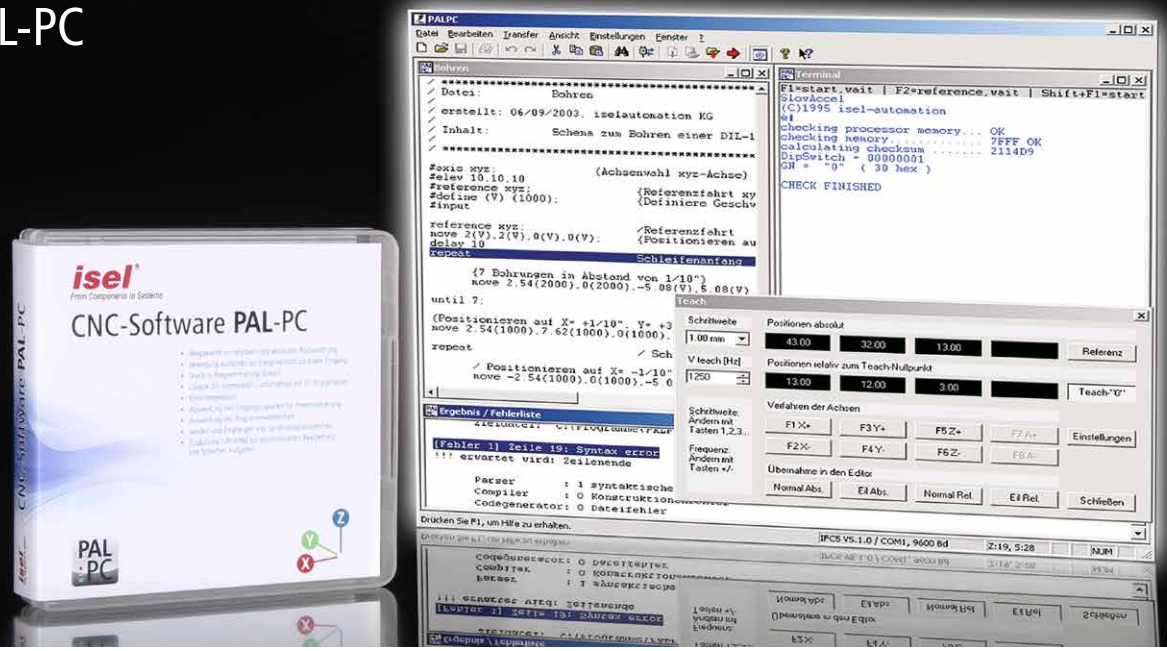
Every single automation solution is based on high-performance software, by means of which the tasks at hand can be rapidly and conveniently converted into a practical solution. In this context, the proNC operating and programming interface is the ideal solution.

Programming software proNC

- runs under the operating systems Windows 2000, XP, Vista, Win7/8, Win10 (administrator rights required)
- available for current controls and controllers by isel
- applications can be created in accordance witht the isel-PAL or DIN66025 proNC is ideally suited for automation solutions in the fields of milling, drilling, standard dispensing applications, assembly, handling, loading and quality testing, where the user programs are predominantly textual using teach-in functions, as well as the import of contour data sets (such as for example NCP format).

Order data	Part No.
Software proNC for CAN-CNC controls (Windows)	Z11-333500

Automation software PAL-PC



Function scope

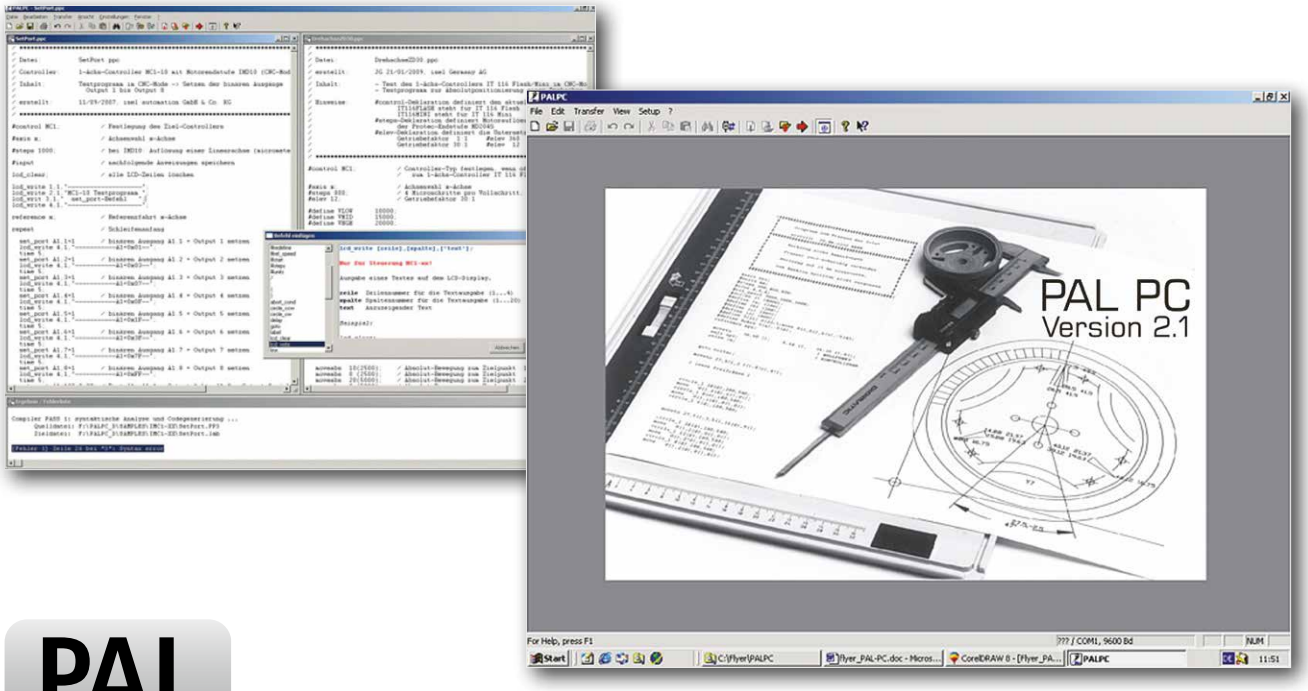
- travel commands for relative and absolute positioning
- execution of the movement until an event occurs at an input
- (linear) teach-in programming
- linear 2D interpolation, switchable to 3D interpolation
- circular interpolation
- evaluation of input signals for the process control
- loops for the reptition of instruction blocks
- unconditional and conditional branches
- evaluation of the program selection unit
- output of messages on a display
- transmission and receipt of synchronisation characters
- additional tools for the automated processing of typical tasks

Program development environment for CNC stepper motor controller

- programming in accordance with isel-PAL
- 2D and 3D interpolation
- teach-in programming
- memory mode (CNC mode)
- operating systems Windows 32/64bit

Features

- compatible with previous versions (PAL-PC programs created with an earlier version of PAL-PC may be used without any adaptation)
- programming in accordance with isel-PAL
- integrated editor: rapid and comfortable editing of source texts, editor functions such as "search", "replace", "copy" and "paste", automated code generation, multiple undo/redo for efficient program creation
- the PAL-PC may (depending on the type of control in use) control controllers with up to 4 axes
- terminal for direct communication by means of the controller
- download of externally created CNC programs
- automatic determination of the type and transmission rate of the connected controller
- display of syntax errors and navigation to errors in the source code
- rapid overview of commands with optional insertion into the program
- teach-in programming by means of keyboard or mouse
- integration of the target positions as formatted source code into the editor
- live display of the current status at the inputs/outputs
- setting of outputs during program creation
- available in the German and English language



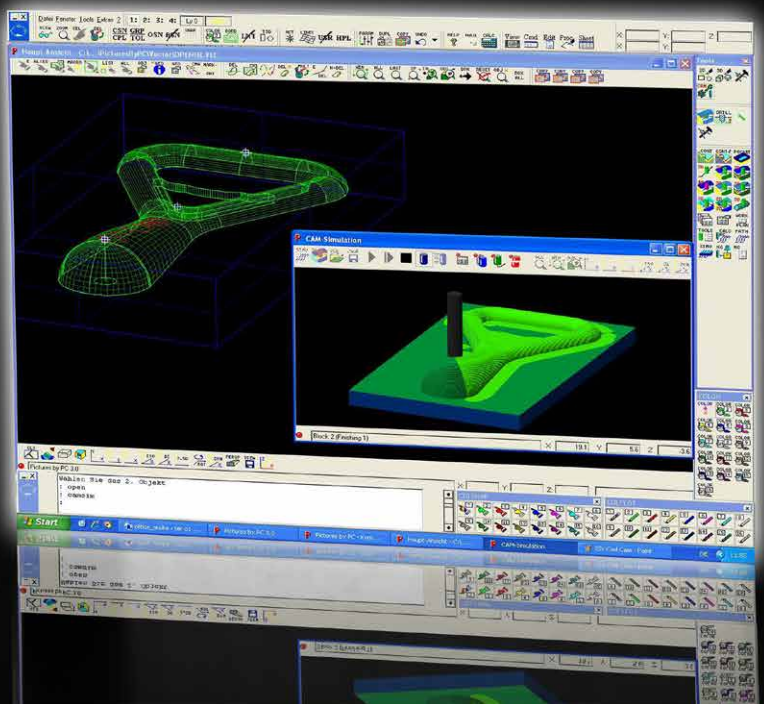
PAL-PC enables the rapid, simple, and inexpensive implementation of automation projects such as handling systems, automatic drilling machines, cycle devices, measuring and testing systems, automatic machines for individual and series processing and much more ...

Process automation software PAL PC

- can be run with the Windows operating systems (Windows 2000, XP, Vista, Win7 and Win8, Win10 (administrator rights required)
- the PAL-PC is a modern program development environment for CNC stepper motor controllers and for CNC machines.
- the PAL-PC uses the memory mode (CNC mode) of the target controller. By means of the PAL-PC, automation solutions are created where the controller works in a stand-alone mode, i.e. independently of a control computer

Order data	Part No.
PAL-PC - software for process automation (Windows)	Z11-331810

CAD-CAM software isy-CAM 2.8



Function scope

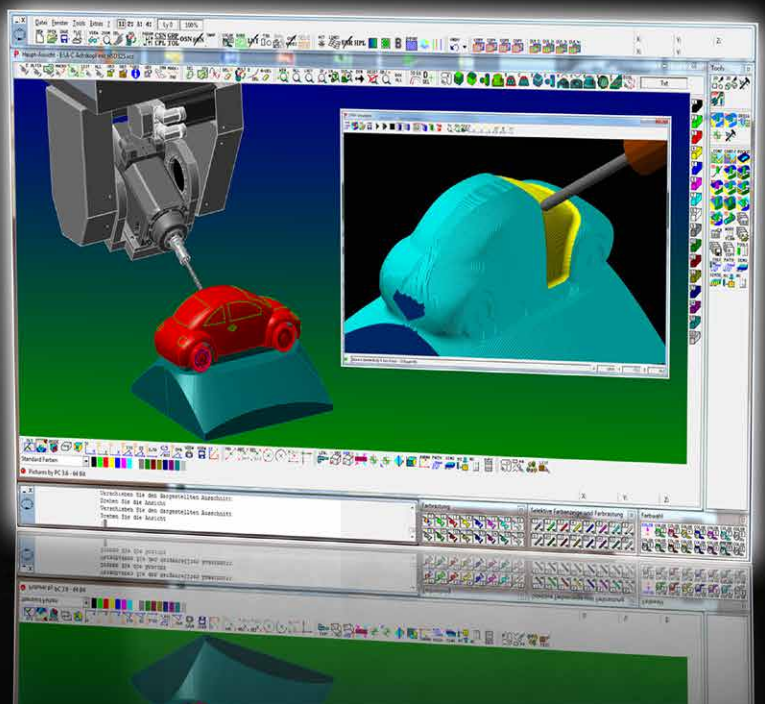
- MultiCore support
- dynamic rotating simulation
- freely definable line types and colours
- integrated online support and configurable user interface
- parallel and independent work on several drawings
- geometricalelements such as points, lines, ellipses, circles, curves (polygons, splines, Bézier curves, NURBS), polygons and much more.
- direct use of Windows fonts
- professional number and text editing functions
- hatching, and freely definable hatching types
- automatic arrangement and alignment functions
- sketch contours and their interactive modification
- numerical input options for absolute, relative, and polar coordinates
- extensive DIN/ISO-compliant measuring and dimensioningfunctions
- trimming, separating and drawing curves, converting various geomtry types
- geometry manipulation by moving and copying as translation, rotation, scaling, and mirroring
- smart object snap
- ideal control of the calculated NCP data through integrated online simulation of the tool paths
- generation of machining data for all typical 2D and 2.5D manufacturing tasks
- output format: NCP format

Features of isy-CAM 2.8 and 3.6

- CAD functionalities (without volume modeller)
- runs under Windows 7, 8 and 10 (version of 32/64 bit)
- import: DXF / EPS / AI / 3D-STL data
- export: NCP format
- proven CAM strategies for drilling / contour / pocket milling
- engraving with gouge
- 4-axis cylinder machining
- 3D roughing and finishing of STL data (for example, scan models in 3D)
- direct call of REMOTE from the isy-CAM

Order data	Part No.
isy CAM 2.8 - basic version	Z13-337070
Update to isy CAM 2.8	Z13-337070-0001
Basic version with training	Z13-337070-0002
Second license for isy CAM 2.8	Z13-337070-0003

CAD-CAM software isy-CAM 3.6



Function scope

- MultiCore support
- dynamic rotating simulation
- freely definable line types and colours
- integrated online support and configurable user interface
- parallel and independent work on several drawings
- geometricalelements such as points, lines, ellipses, circles, curves (polygons, splines, Bézier curves, NURBS), polygons and much more.
- direct use of Windows fonts
- professional number and text editing functions
- hatching, and freely definable hatching types
- automatic arrangement and alignment functions
- sketch contours and their interactive modification
- numerical input options for absolute, relative and polar coordinates
- extensive DIN/ISO-compliant measuring and dimensioning functions
- trimming, separating and drawing curves, converting various geomtry types
- geometry manipulation by moving and copying as translation, rotation, scaling, and mirroring
- smart object snap
- ideal control of the calculated NCP data through integrated online simulation of the tool paths
- generation of machining data for all typical 2D and 2.5D manufacturing tasks
- output format: NCP format features
- extended mesh manipulation
- version of 32/64 bit
- hybrid milling (steep and flat areas in the course of one work step)
- trochoidal milling
- improved residual material detection and processing
- multi-sided machining (3+2 axes, inclined milling)
- expandable to 5 simultaneously movable axes

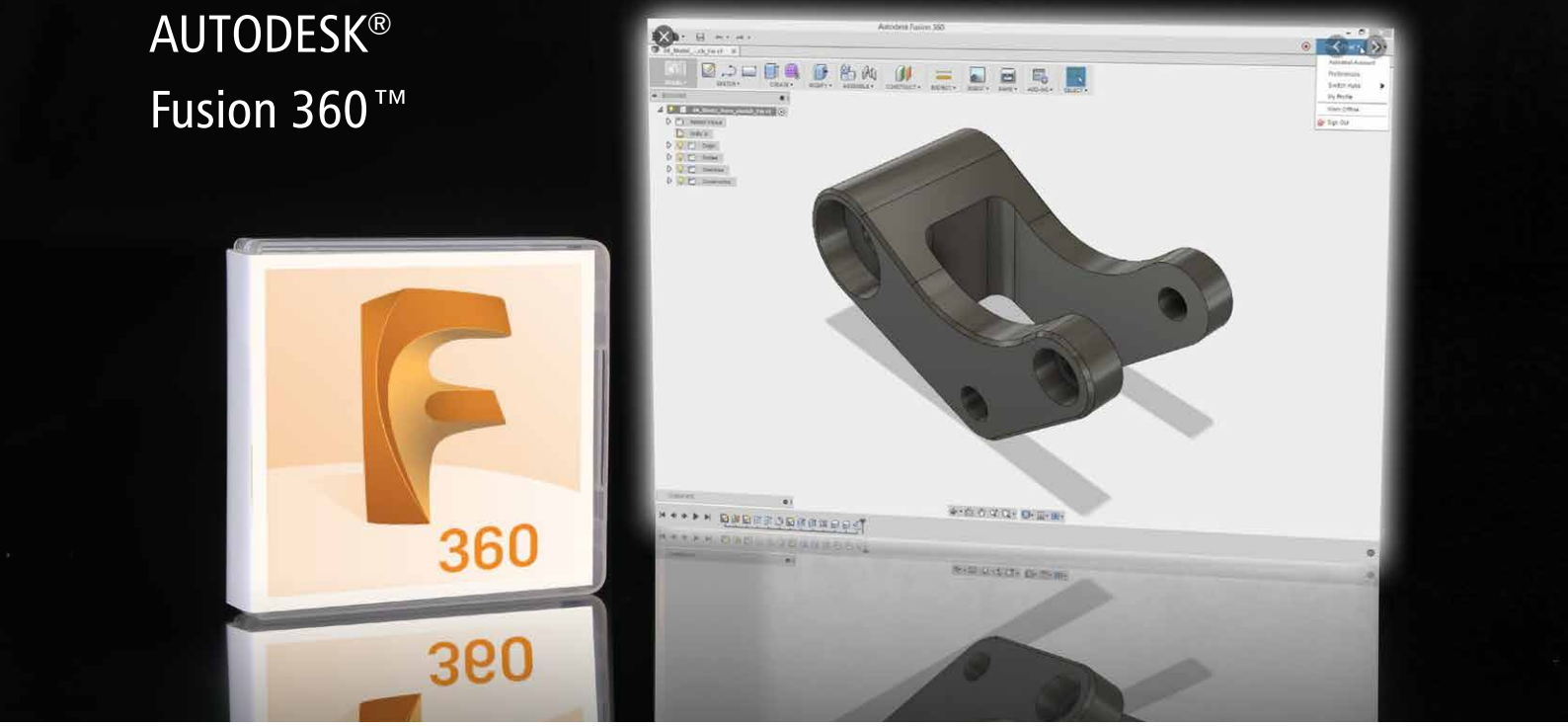
System requirement isy-CAM 3.6

- intel Quad Core i5, i7 or i9 processor (or comparable)
- Windows 8 or 10 (64Bit)
- 8GB RAM
- NVIDIA graphics card (e.g. GeForce GTX 1060)
- sufficiently large monitor

Order data	Part No.
isy CAM 3.6 - basic version with training for 1 person	Z13-337071
Update from 2.0 / 2.5 / 2.5 plus to isy CAM 3.6 without training	Z13-337071-0001
Update from 3.0 / 3.2 to isy CAM 3.6 without training	Z13-337071-0002
Update from 3.4 to isy CAM 3.6 without training	Z13-337071-0003
Update from 2.8 to isy CAM 3.6 without training	Z13-337071-0004
Second license for isy CAM 3.6	Z13-337071-0005

Exchange Package	Part No.
Exchange Package 3.6 (IGES, VDA, STEP)	Z13-337071-0006
Exchange Package 2.0 to 3.6 (IGES, VDA, STEP)	Z13-337071-0007
Exchange Package 3.0 to 3.6 (IGES, VDA, STEP)	Z13-337071-0008
Exchange Package 3.2 / 3.4 to 3.6 (IGES, VDA, STEP)	Z13-337071-0009

AUTODESK®
Fusion 360™



Autodesk HSM was particurlary developped for the use with Autodesk® Inventor®/ SolidWorks®/ Fusion360™ and represents a logical addition to CAD software for the CAM sector. Experienced CAD users feel at home when working with Autodesk HSM and can create toolpaths of the highest quality-level within a couple of minutes. The new users benefit from the unsurpassed 2D and 3D functionalities of the CAD solution and can rapidly and easily expand the know-how acquired through the CAM process. The result consists of a qualitatively improved design and of shorter product development times.

Optimal toolpaths

The toolpath strategies by Autodesk HSM are designed for the generation of the smoothest and most efficient toolpath possible in order to reduce machining time, improve the surface quality, and reduce the wear level of the tools.

Function scope

- certified post-processor for isel CNC machines equipped with 3/4/5 axis
- the first cloud-based CAD/CAM solution of the world
- excellent 2D/3D CAD functionality
- very easy to use
- short processing times/reduced level of tool wear
- networking - communication - better cooperation

Try Fusion360™ for free

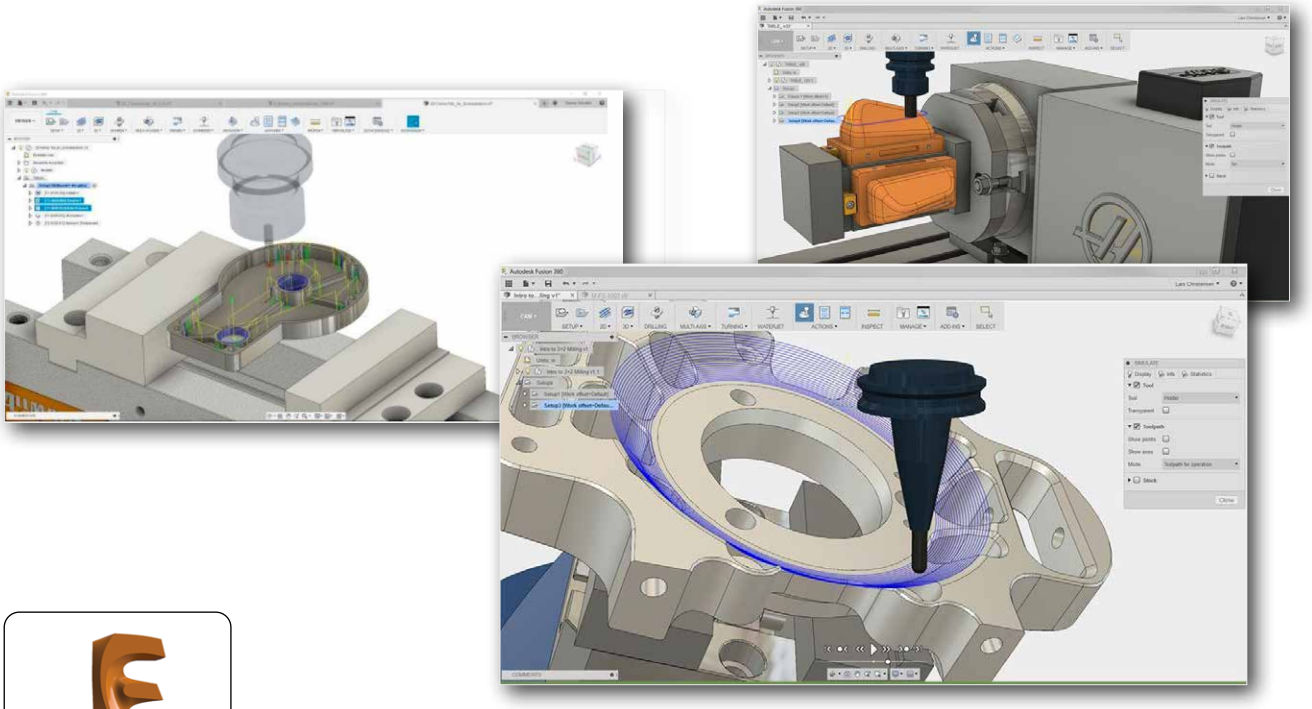
Are you a start-up entrepreneur with a yearly turnover under € 100,000 or you a leisure user?

Then you may possibly take advantage of a free usage.

Find out more directly from the Autodesk reseller, the company HSMTEC GmbH

Features

- excellent 2D/3D CAD functionality achieved through the combination with Autodesk® Fusion 360™
- consistency from the CAD model to the NC file
- very easy to use, resulting in extremely short training and familiarisation times
- extremely short calculation times thanks to the use of the most recent technologies (multi-core, 64 bit)
- extremely short machining times/less toolwear thanks to innovative strategies (like for example adaptive clearing, and HSC machining)
- integration of numerous interfaces:
  2D: DXF, DWG
  3D: IGES, STEP, STL, Parasolid, ACIS, JT
  Direct: Pro/E, Autodesk, SolidEdge, SolidWorks, Catia etc.



AUTODESK® FUSION 360™

Adaptive Clearing - HSC roughing:

By means of Adaptive Clearing you can reduce the processing time by up to 40%!
Uniform cutting volume, constant feed, and uniform cross infeed

The HSC roughing strategy "Adaptive Clearing" is currently the trochoidal roughing method especially designed for machining machinable materials. Compared to conventional pocket roughing strategies, HSC roughing consistently remains in up-cut or down-cut operation **without performing full cuts**. Each cut - even in corner areas - is only made with the maximum specified transverse infeed.

Due to the special arrangement and the internal rounding of the traversing movements, a complete looping of the tool is avoided and the specified feed rate on the machine is kept on a constant level. Since the transverse infeed is constant as well, this results in a uniform cutting volume reducing the tool vibration by **significantly increasing the service life**.

HSMTEC cad/cam solutions

Our CAD/CAM partner, the company HSMTEC GmbH, www.hsmtec.de

New definition of CAD/CAM

Fusion 360™ is the CAM solution combining CNCprogramming, simulation, and design with real-time collaboration as well as online project and data management in a single and easy-to-use product. Directly integrated with Autodesk® Fusion 360™ modelling, the users are able to rapidly complete routine tasks such as the model preparation and adaptation. You will be able to work with all major CAD formats so to be productive from the start.

Real-Time Collaboration

Fusion 360™ is also excellent for the collaboration. It helps to bring people and ideas together through a uniform interface controlled by the designer/programmer. Invite team members or partners and cooperate on important tasks as you are used to in social networks.

Flexibility

Autodesk® Fusion 360™ breaks the boundaries of the traditional CAD/CAM applications by providing access to professional CNC programming tools whereby this is possible regardless of the existing CAD data format. Whether 2D/3D data, the software Autodesk® Inventor® or Solidworks® on Mac or PC Fusion 360™ covers it all.

Quality

Fusion 360 uses the same proven HSM CAM Kernel HSMWorks and Inventor CAM does. In this manner, you are able to generate toolpaths very quickly, by reducing cycle times, machine and tool wear and by consequently producing components of the highest quality.

Our customers as well as the projects we carry out for our customers are as varied as our services.
Here you can find a small selection of our references:

Branches of the company isel

With branches in China, France, Austria, Hungary and the USA as well as numerous partners in Germany, Europe and worldwide, we are close by at any time.

isel USA, Inc.

69 Bloomingdale Road
USA, Hicksville, New York 11801
Phone: +1 516 / 595 7497
Fax: +1 516 / 595 7498
www.isel.com/en

isel-France

ZAC de la Prévauté
4, Rue des Côtes d'Orval BP 41
F-78550 Houdan
Phone: +33 130 / 461 201
Fax: +33 130 / 596 932
www.isel.com/fr

isel (Suzhou) Automation Co,.Ltd

No.411 Jianlin Road SND,
CN-215151 Suzhou
Phone: +86 512 / 684 191 25
Fax: +86 512 / 666 735 56
www.isel.com/cn

isel Austria GmbH & Co. KG

Maria-Theresia-Str. 53 / 1.1
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iselGermanyAG
Bürgermeister-Ebert-Straße 40
D-36124 Eichenzell
Tel: +49 (0) 66 59 / 981 - 700
E-Mail: info@isel.com
www.isel-germany.com