syste

SYSTEMS

The CNC machines from isel Germany AG

furnishes plant manufacturers and users a fit occasion.

Efficient mass production in the machinery and plant sector is desirable for each manufacturer, however not invariably realizable in reference to the increasingly specialized areas of application of the customers. We, the isel Germany AG, have set ourselves the claim to successfully realize your requirements with our machines - be it in the form of a plug-and-play version or as an open system in various sizes, in which you can integrate your application easily later.

Modular structure with light frame construction, isel linear axes, precision steel shafts and patented linear bearings have proved themselves over the years and are subject to continuous optimization. Our clearance-free ball screw drives with hardened and polished ball screw spindles in different diameters and pitches, step and servo motor operation or direct drive with linear and torque motors allows you to tailor your system technically to your needs - a scope which sometimes hosts price advantages.

In addition to established programming and interpreter software, you can refer the 3D CAD / CAM software isy 2.8 and 3.6, for which we also offer individual training at our plant or at your place. Our slogan "From Components to Systems" underlines how important it is for us, to know our machines to the smallest detail and give you the opportunity to purchase all from one source.

The CNC machines from isel Germany AG

A wide range of accessories such as speed-controlled spindle motors, tool changing stations in various designs, patented tool cooling and handling systems from our area isel Robotics complete our range of products. In the new development and manufacture of our systems, security plays an important role. All systems are subject to the Machinery Directive 2006/42EG.

Do you have questions about your application? Contact us!

Our trained staff from the technical sales can advise you and submit a detailed quotation on request. Planning, realization and completion of your project in the form of design and manufacture of special machines belongs to the same extent to our offered services such as a customer-oriented after-sales service. Feel free to contact us!

phone: +49 (0) 6659 / 981 790
or **sales@isel.com**

Special design of the FlatCom XL
for milling of foams for the orthopedic industry

Leasing / Financing

Our financing partners at MMV Leasing know how important a quick and professional completion of financing agreements is for our customers. We work closely with you to get the right financial package to suit your individual business objectives. Whether you opt for a new model or a used machine from isel: together we will draw up the finance quote that suits you.

Your benefits

- longstanding experience with top financiers
- short response time with secure and quick credit assessment

systems

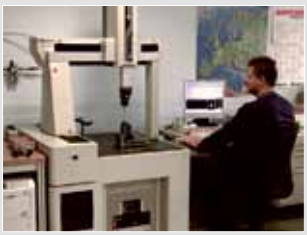
Life Cycle Service

... to ensure, that you can use your CNC machine every day without any worries

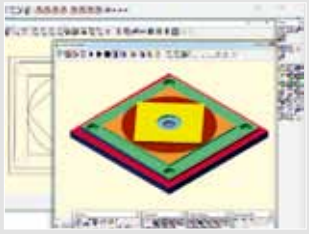
Maintenance

Refurbished machines

Automation



Measurement / testing



Software

Life Cycle Service

Webshop

Service

Spare parts

Retrofitting

Training

Maintenance packages

Similarly, a remote maintenance by our trained employees and over the Internet (TeamViewer) is possible.

Hotline

You can reach us from
Monday – Thursday between 7:30 a.m. and 4:30 p.m.,
Friday from 7:30 a.m. til 2:00 p.m.

as well as for the free maintenance via Internet (TeamViewer)
Monday – Thursday between 7:30 a.m. and 4:30 p.m.,
Friday from 7:30 a.m. til 2:00 p.m.

Nobody can afford a production stoppage and we ensure the reliability of your isel product at all times. Regular maintenance by our highly qualified service technicians guarantees the greatest precision and reliability – for the lifetime of the machine. We maintain your machine in a professional, safe and reliable manner. Ask your isel contact if you are interested in a maintenance package.

The maintenance packages are available in the following versions:

	STANDARD	COMFORT	EXCELENT
services included	1x annual maintenance, inspection and execution of small repairs	2x annual maintenance, inspection and execution of small repairs	
	1 x driving	2 x driving	
	1 x working time during the annual maintenance	2 x working time during the annual maintenance	
	1 x cleaning of the mechanical components including lubrication of the axes	2 x cleaning of the mechanical components including lubrication of the axes	
	1 x update of the firmware in the controllers and of the software	2 x update of the firmware in the controllers and of the software	
	1 x visual inspection and, where appropriate, renewal of the safety warnings and other labels in accordance with the Machinery Directive	2 x visual inspection and, where appropriate, renewal of the safety warnings and other labels in accordance with the Machinery Directive	
	1 x testing, adjustment of the belt tension and measuring of the system	2 x testing, adjustment of the belt tension and measuring of the system	
	Service within 72 hours from Monday - Friday, except bridging days and public holidays (in Hesse and Thuringia)	Service within 48 hours from Monday - Friday, except bridging days and public holidays (in Hesse and Thuringia)	Service within 24 hours from Monday - Friday, except bridging days and public holidays (in Hesse and Thuringia)
Item-No.:	**991000 0039**	**991000 0040**	**991000 0041**

CNC machines

Overview

systems

CNC machine
with servo motor drive

OverHead®

UNSER TOP-SELLER!

Features

- Compact footprint size
- Free floor standing design
- Large open machining area
- High Z-axis clearance for deep tool machining

We offer FINANCING!

MADE IN GERMANY – MECHANICS – ELECTRONICS – SOFTWARE – SYSTEMS – DISPLAY – LIFESTYLE –

Interesting application videos can be found on our YouTube channel. Just take a look!

OverHead M40
with control panel iOP-19-TFT

Technical specifications

	OverHead M20	OverHead M30	OverHead M40	OverHead M50	OverHead M60
Processing areas X/Y/Z [mm]	710 / 610 / 310	710 / 910 / 310	1210 / 910 / 310	1210 / 1410 / 310	1510 / 1710 / 310
Bench clamping area WxD [mm]	1100 x 1000	1100 x 1300	1600 x 1300	1600 x 1800	1750 x 2000
Gap [mm]	340 (590)				
Dimensions WxDxH [mm]	1400 x 1200 x 1960	1400 x 1500 x 1960	1900 x 1500 x 1960	1900 x 2000 x 1960	2245 x 2400 x 1970
Processing speed X/Y/Z [mm/s]	250				
Drive motors	EC servo motors				
Drive elements X/Y/Z	Recirculation ball screws 16 x 10 / 16 x 10 / 16 x 5 mm, adjustable for no play				
Controller	iMD CAN controller with 4 drive controllers, expandable to 12 axes (max. 6 interpolated & 6 handling axes), PC, I/O module, safety circuit with rest state monitoring, power supply unit 48 V / 1,000 W				
Operation	control panel iOP-19-TFT				
Weight (kg)	appr. 525 kg	appr. 600 kg	appr. . 700 kg	appr. 800 kg	appr. 1100 kg
Software	Windows, WinRemote (optional: ProNC)				
Connection values	400 V / 16 A				
Part-no.	276223 56165	276233 56165	276243 56165	276253 56165	276263 56165

CNC machine
with servo motor drive

OverHead®

Features

- twin Y-axis gantry fully synchronised with Software ProNC
- CAN-bus control system with brushless servo motors for all axes
- T-slot table top for easy clamping of workpieces and accessories
- gantry clearance options from 340mm to 590mm
- maximum spindle motor size iSA 2200
- linear motion upto 250mm/sec.
- control panel i0P-19-TFT
- control PC iPC 25 including PCI card Win 7/64 bit

Options

- cooling spray device
- blade tray
- tool length sensor
- spindle motors (up to iSA2200 applicable)
- round changing systems SK 11 and SK 20
- linear changing systems SK 11 and SK 20
- 4th axis with tailstock unit
- 4th + 5th axis as rotary tilting unit
- LED-lighting

Overview machine configuration see page E-21

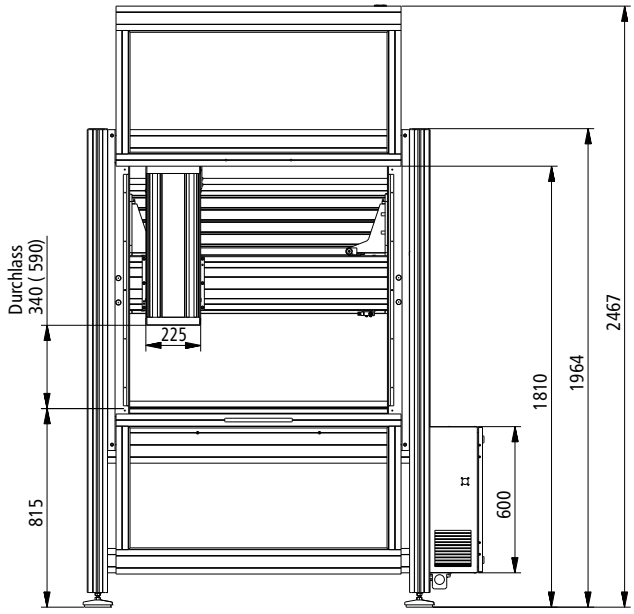
Areas of application

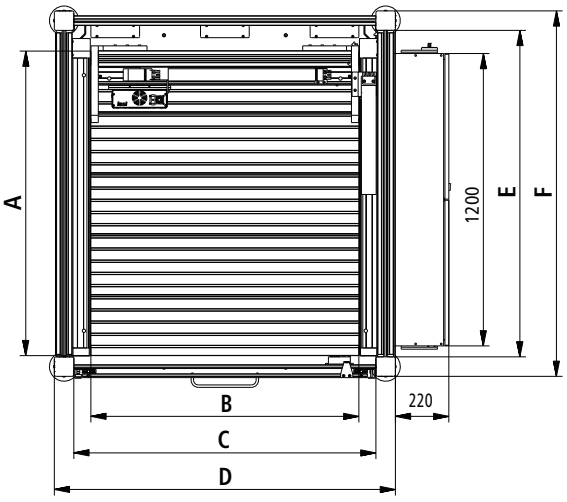
- machining
- testing and measuring
- glue dispensing

For the machining of:

- light metals
- non-ferrous metals (brass, bronze etc…)
- CFRP
- ceramic
- platics
- wood

Dimensioned drawings





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

Technical specifications subject to change.

systems

CNC machine
with servo motor drive

FlatCom® XL

Features

- Windows-based software
- Gantry drive
- Mobile portal, fixed bench

FlatCom XL with control pult iOP-19

Interesting application videos can be found on our YouTube channel. Just take a look!

Technical specifications

	FlatCom® 102/72	FlatCom® 102/112	FlatCom® 142/112	FlatCom® 142/162	FlatCom® 142/252
Processing areas X/Y[mm] *	1,020 / 720	1,020 / 1,120	1,420 / 1,120	1,420 / 1,620	1,420 / 2,520
Z lift [mm]	210 (optional: 410, in each case without processing unit)				
Bench clamping area W x D[mm]	1,125 x 1,300	1,125 x 1,700	1,500 x 1,700	1,500 x 2,200	1,500 x 3,050
Z gap[mm] *	235 (optional 435, in each case without processing unit)				
Dimensions WxDxH[mm]	2,084/1,584/1,990	2,084/1,984/1,990	2,459/1,984/1,990	2,459/2,484/1,990	2,459/3,384/1,990
Processing speed X/Y/Z	max. 250				
Repeat accuracy[mm]	± 0.02				
Drive motors	Servo motors				
	Recirculating ball drive, adjustable for no play				
	iMD CAN controller with 4 drive controllers, expandable to 12 axes (max. 6 interpolated & 6 handling axes), PC, I/O module, safety circuit with rest state monitoring, power supply unit 48V/1000 W				
Operation	Control pult iOP-19-CPU				
Weight[kg]	approx. 550	approx. 600	approx. 700	approx. 800	approx. 1000
Software	Windows, WinRemote (optional: ProNC, isy 2.8)				
Connection values	400 V, 16 A				
Part-no. (Z lift = 210 mm)	276552 0013E	276553 0013E	276554 0013E	276555 0013E	276556 0013E

*** without mounted components on the axes !**

CNC machine
with servo motor drive

FlatCom® XL

Features

- portal gap: 235mm optional 435mm (for bigger workpieces)
- maintenance-free servo motors
- particularly suitable for the whopping editing (aluminium, non-ferrous metals, ceramics etc…)
- installation of spindle motors up to 3.6 KW, SK 30 tool holders
- available with or without protective hood
- ideal for multi-shift operation
- control pult i0P-19-CPU
- control PC iPC 25 including PCI card Win 7/64 bit

Areas of applications

For the machining of:

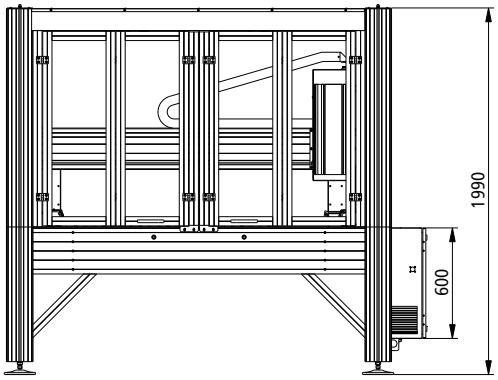
- light metals
- non-ferrous metals (brass, bronze etc…)
- CFRP
- ceramic
- platics
- wood

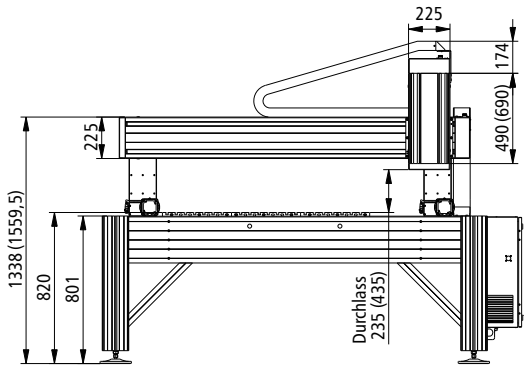
Options

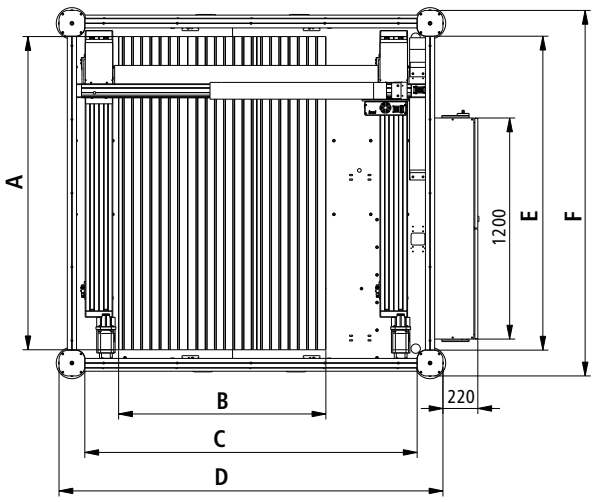
- PC control console with free PCI plug-ins (for use by external PCI hardware)
- safety light curtain
- milling and engraving spindles
- SK11/SK20 automatic tool change stations
- minimum quantity lubrication or CoolMin cooling system
- vacuum clamping benches
- suction device
- 4th axis e. g. RDH series installation
- version without hood
- maximum 6 interpolated axes + 6 handling axes
- portal gap 435 mm

Overview machine configuration see page E-21

Dimensioned drawings







	A	B	C	D	E	F
FlatCom XL 102/72	1,300	1,125	1,804	2,084	1,304	1,584
FlatCom XL 102/112	1,700	1,125	1,804	2,084	1,704	1,984
FlatCom XL 142/112	1,700	1,500	2,179	2,459	1,704	1,984
FlatCom XL 142/162	2,200	1,500	2,179	2,459	2,204	2,484
FlatCom XL 142/252	3,050	1,500	2,179	2,459	3,100	3,380

Technical specifications subject to change.

systems

CNC machine
with servo motor drive

EuroMod®

Features

- Space-saving
- fixed portal, moving bench
- also available with gantry drive

EuroMod MP 65
with control panel iOP-19-TFT
and closed sliding door

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Interesting application videos can be found on our YouTube channel. Just take a look!

Technical specifications

Processing areas X/Y/Z [mm] *	650 / 300 / 250	650 / 450 / 250	1,000 / 650 / 250
Bench clamping area W × D [mm]	900 x 350	900 x 500	1,200 x 700
Gap [mm] *	350		
Dimensions WxDxH [mm]	1,160 x 800 x 1,960	1,160 x 1,110 x 1960	1,480 x 1,510 x 1,960
Processing speed X/Y/Z	max. 250 mm/s		
Repeat accuracy [mm]	± 0.02		
Drive motors	Servo motos		
Drive elements X/Y/Z	Recirculating ball drive, adjustable for no play		
Controller	iMD CAN controller with 3 or 4 drive controllers, expandable to 12 axes (max. 6 interpolated & 6 handling axes), PC, I/O module, safety circuit with rest state monitoring, power supply unit 48V/1000 W		
Operation	Control panel iOP-19-TFT		
Weight (kg)	approx. 275	approx. 300	approx. 400
Software	Windows, WinRemote (optional: ProNC, isy 2.8)		
Connection values	230V, 16A		
Part no.	276133 53655E	276143 53655E	276153 73655E

*** without mounted components on the axes !**

CNC machine
with servo motor drive

EuroMod®

Features

- portal gap: 350mm
- maintenance-free servo motors
- maximum spindle motor size up to 1.5 kW
- available with or without protective hood
- ideal for multi-shift operation
- control panel i0P-19-TFT
- control PC iPC 25 including PCI card Win 7/64 bit

Areas of applications

For the machining of:

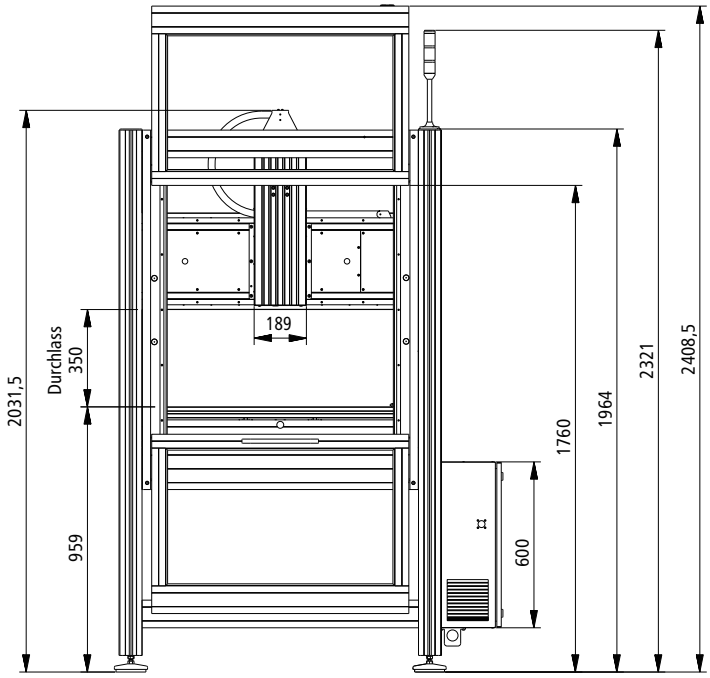
- light metals
- plastics
- wood
- foams
- plexiglas

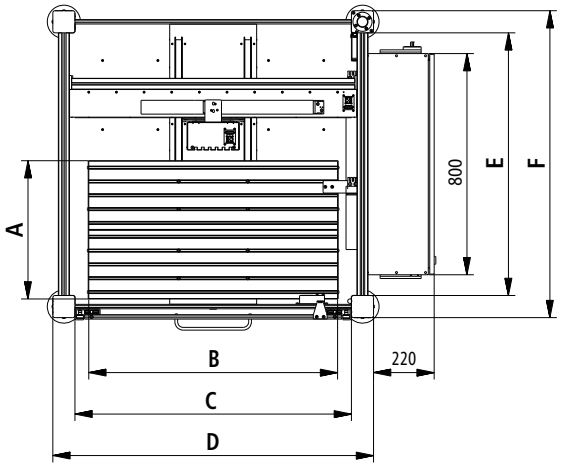
Options

- PC control console with free PCI plug-ins (for use by external PCI hardware)
- stainless steel keyboard
- safety light curtain
- milling and engraving spindles
- SK11/SK20 automatic tool change stations
- minimum quantity lubrication or CoolMin cooling system
- vacuum clamping benches
- suction device
- 4th axis e. g. RDH series installation
- pneumatic sliding door

Overview machine configuration see page E-20

Dimensioned drawings





	A	B	C	D	E	F
EuroMod MP30	350	900	1000	1160	640	800
EuroMod MP45	500	900	1000	1160	950	1110
EuroMod MP65	700	1200	1320	1480	1350	1510

Technical specifications subject to change.

systems

CNC machine
with servo motor drive

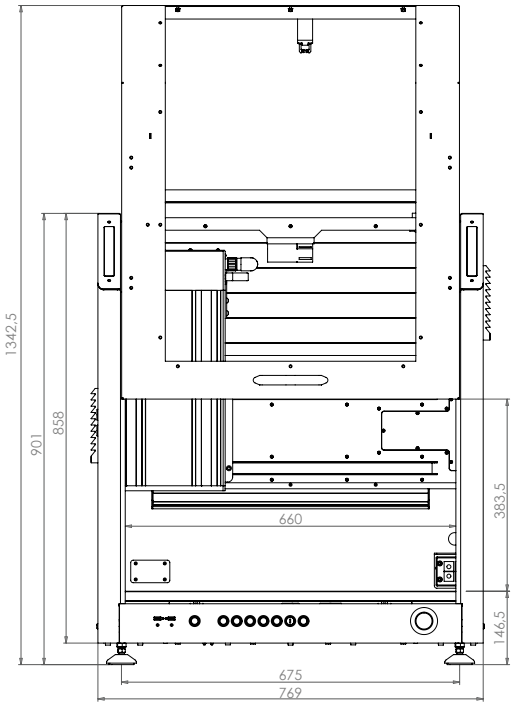
ICV 4030 EC

Features

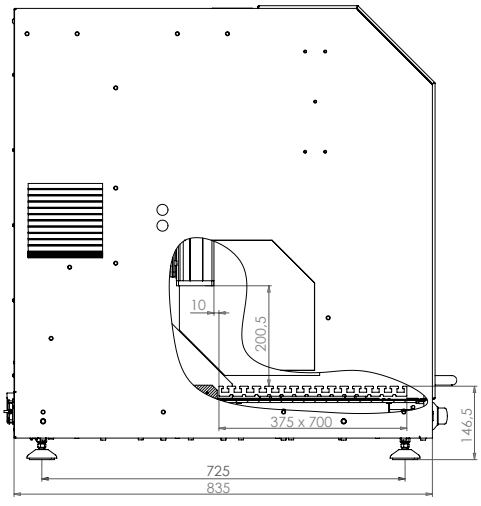
- compact entry-level model in the servo area
- low maintenance
- Control with integrated PC controller
- Complete machine from € 10,000

ICV 4030 EC with machine stand

Dimensioned drawings



front view



side view

CNC machine
with servo motor drive

ICV 4030 EC

Our ready-to-use desktop machine ICV 4030 EC has been proven for years in practice and will be presented now in a completely new design. The newly designed machine door with improved hood opening allows a longer travel range in the Z-axis, and therefore a higher passage. Due to the redesigned machine hood and the resulting greater access opening, a 4th axis can now be integrated easily. Maintenance-free EC servo motors are used as drive, the reliable linear unit LES 5 is used in the X-axis. Furthermore, the universal control PC iPC 25 is installed. The central lubrication makes the machine overall more service-friendly. Also additional signal lamps were integrated.

Technical specifications

	ICV 4030 EC
Processing areas X/Y/Z [mm]	400 x 300 x 140
Bench clamping area WxD [mm]	700 x 375
Gap [mm]	200
Dimensions WxDxH [mm]	769 x 836 x 901
Guides	linear units with precision steel shafts and ball recirculation carriage, adjustable for no play
Processing speed X/Y/Z [mm/s]	max. 200
Repeat accuracy [mm]	± 0.02
Drive motors	servo motors
Drive elements X/Y/Z	Ball screws 16 x 10 / 16 x 10 / 16 x 5 mm adjustable for no play
Controller	CAN-Controller iMC with 3 drive control modules, integrated controll computer, I/O module, safety circuit and standstill monitoring, power supply 48 V / 1,000 Watt
Operation	function keys and emergency stop
Software	WinRemote (optionally: ProNC, CAD/CAM isy 2.8)
Weight (kg)	approx. 150
Item-No.	280260 0001

Accessories

Overview machine configuration see page E-20

680670 9300V02	machine stand, RAL 7016/3003
442107	monitor support - WLB511, VESA 100 x 100, wall mounting / gas spring
442057	23.6" LED-monitor
370321 2003	metal industrial keyboard with touchpad and 105 Keys, USB-interface, IP68
310704 1631	spindle motor iSA 500 with frequency converter
310707 1631	spindle motor iSA 750 with frequency converter
310709 3612	spindle motor iSA 900 with frequency converter
239170 0001	collets ER 11 for iSA 500 and iSA 900, 13-piece, Ø 1-7 mm
239171 0001	collets ER 16 for iSA 750, 10-piece, Ø 1-10 mm
239011 0053	tool changing station 5-fold linear changer, for SK 11 tool holders
239111 0001	tool holder SK 11 for collets ER 11
280120 9010	length measuring sensor
239012 0000	dust extraction for iSA 500 / 750, opened manually
239012 0004	dust extraction for iSA 900, opening pneumatically
429116 1000	cooling spraying system with one nozzle
266000 0200	rotation unit RDH-XS, HD transmission U=1:101, full-wave design, servo drive
269100 0030	tailstock unit RE-XS for rotary unit RDH-XS
269060 4065	three-jaw chucks
216601 0017	vacuum clamping plates VakuFit L, 210 x 150 mm, with hole grid system
290014	clamping elements set, mechanically
Z13-337070	isy-CAM 2.8
Z11-333500	ProNC Software

systems

CNC machine
with step motor drive

ICP4030

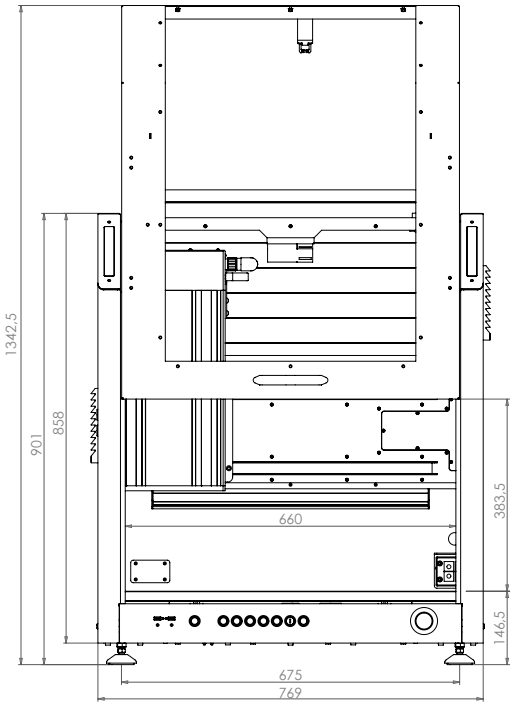
ICP 4030 with hood open

Features

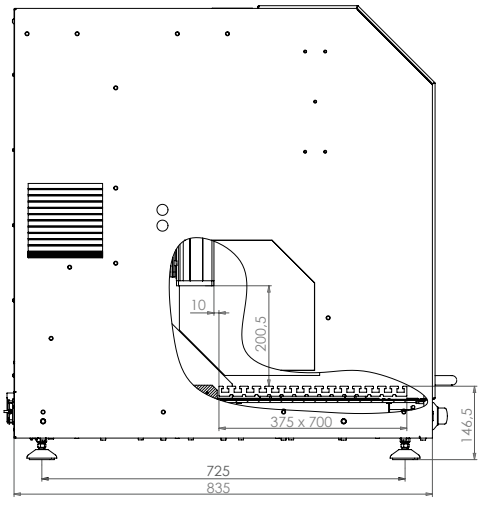
- tried-and-tested technology
- for over 20 years
- over 2,000 systems sold
- Operation possible without a connection to a PC
- suitable for school and training

ICP 4030
with hood closed

Maßzeichnungen



front view



side view

CNC machine
with step motor drive

ICP4030

CNC machines in the ICP series have been developed from the proven CPM series. By introducing a sliding door, the machines can now be operated in a sitting position which, inter alia, leads to shorter cycle times when opening the hood. The chassis is completely bolted instead of being welded like its predecessors. This produces higher precision when building the machine and makes servicing easier. In addition, it was possible to optimise the resonance and vibration behaviour and therefore lower noise build-up has been achieved. The universal control PC iPC 25 is installed.

Technical specifications

	ICP 4030
Traverse path X/Y/Z [mm]	400 x 300 x 140
Clamping table surface W × D [mm]	700 x 375
Throughput [mm]	200
Dimensions W × D × H [mm]	769 x 836 x 901
Guides	Linear units with precision steel shafts and recirculating ball slots, clearance free adjustable
Process speed X/Y/Z [mm/s]	100 (for Ball screw drives 16x10) 60 (for Ball screw drives 16x4)
Repeatability [mm/s]	± 0.02
Drive motors	Stepper motors
Drive elements X/Y/Z	Ball screw drives 16 x 10 / 16 x 10 / 16 x 4 mm Clearance free adjustable (optional: 16 x 4 mm in X/Y/Z)
Controller	iMC-P step controller with 4 final stages 48V/4.2A, integrated control computer, and 500W power supply unit with processor board
Operation	Function keys and emergency shutdown
Software	WinRemote (optional: ProNC, isy CAM 2.8)
Weight [kg]	appr. 150
Part-no.:	**280270 0001***

* The deliverables include an accompanying pack with mechanical accessories (inter alia Hand lever clamping device, stop rails Triangle wrench, open jaw wrench, hook wrench, Allen key, one 6-socket bench extension, connection lead, power lead)

Overview machine configuration see page E-20

Accessories

680670 9300V02	machine stand, RAL 7016/3003
442107	monitor support - WLB511, VESA 100 x 100, wall mounting / gas spring
442057	23.6" LED-monitor
370321 2003	metal industrial keyboard with touchpad and 105 Keys, USB-interface, IP68
280220 9012	Cooling/spray device for ICP 4030
280120 9010	Length measuring button for ICP 4030
280110 9004	Workspace lighting for ICP 4030
420003 0500	Milling motor UFM 500, 500 W, 11,000...25,000 r.p.m.
280110 9001	Suction device for UFM 500
Z13-337070	isy-CAM 2.8
Z11-333500	ProNC software
310704 1611	iSA 500 spindle motor up to 30,000 rpm, 500 W, with frequency converter, ER 11 clamping ring and motor lead
310707 1611	iSA 750 spindle motor up to 24,000 rpm, 750 W, with frequency converter, ER 16 clamping ring and motor lead
280210 9001	Suction device for iSA 500 / 750
280000 0046	Fixing plate for main spindle drive iSA 500 / 750
290055	Vice 1 (W 130 x H 45 x L 152 mm)
290056	Vice 2 (W 180 x H 75 x L 215 mm)

Flat bed units

Flat bed unit with Z-axis

Flat bed unit with Z-axis and underframe

Flat bed unit with Z-axis, underframe and housing

General note

Flatbed units as defined in the machine guidelines as incomplete machines according to the modular system with processing paths of 250 to 1250 mm. Step motors (MS200HT), set for no-play, are used as spindle drives Recirculating ball drives with a repeatability of ± 0.02 mm (positioning reproducibility) are used. The linear guides used are the isel double track feeds, proven over many years, with no-play pre-stressed linear ball bearings and recirculating ball spindles with a repeatability of ± 0.02 mm. All units are equipped with two limit switches per spindle. The machining and positioning units are available in a number of versions and are characterised by smooth running and high process speeds. The use of high quality aluminium components with flat-milled surfaces achieves low weight and high accuracy. isel X/Y/Z units are the ideal basis for setting up machines and systems for fitting and assembling, pressing and engraving, drilling and milling, milling and screwing, shaping and modelling, bonding and casting, soldering and welding, measuring and checking, sawing and cutting, etc.

Ordering information

X/Y flatbed units FB2

Part no.	Chassis A × B (mm)	Clamping surface X × Y (mm)	process travel X × Y (mm)	Z gap (mm)
246203M	1,210 x 946	750 x 850	530 x 500	190
246203 2040M	1,210 x 1,196	750 x 1,100	530 x 750	
246203 2054M	1,210 x 1,446	750 x 1,350	530 x 1,000	
246203 2067M	1,460 x 1,446	1,000 x 1,350	780 x 850	
246203 2130M	1,710 x 1,846	1,250 x 1,750	1,030 x 1250	

All flatbed units are fitted with **16 x 4 mm recirculating ball** drives as standard.
Side protection covers included in smallest version (530 x 500 mm).

Z-axes for flatbed units

Part no.	Lift (mm)	
230514M	75	with magnet brake 24 V
230514 0400M	160	with magnet brake 24 V

Underframes

Part no.	suitable for flatbed unit With clamping surface:
248500 0027	750 x 850
248500 0040	750 x 1,100
248500 0054	750 x 1,350
248500 0067	1,000 x 1,350
248500 0130	1,250 x 1,750

Housings

Part no.	suitable for flatbed units with clamping surface:
248200 0000	750 x 850
248200 2040	750 x 1,100
248200 2054	750 x 1,350
248200 2067	1,000 x 1,350
248200 2130	1,250 x 1,750

Flat bed units

Options

- appropriate Controller (e.g.: iMC-S8)
- software modules for operating in CAM, CNC and SPS applications
- underframe
- housing
- spindle motors (see pages E-24 et seq.)
- gap: 300 and 500 mm respectively

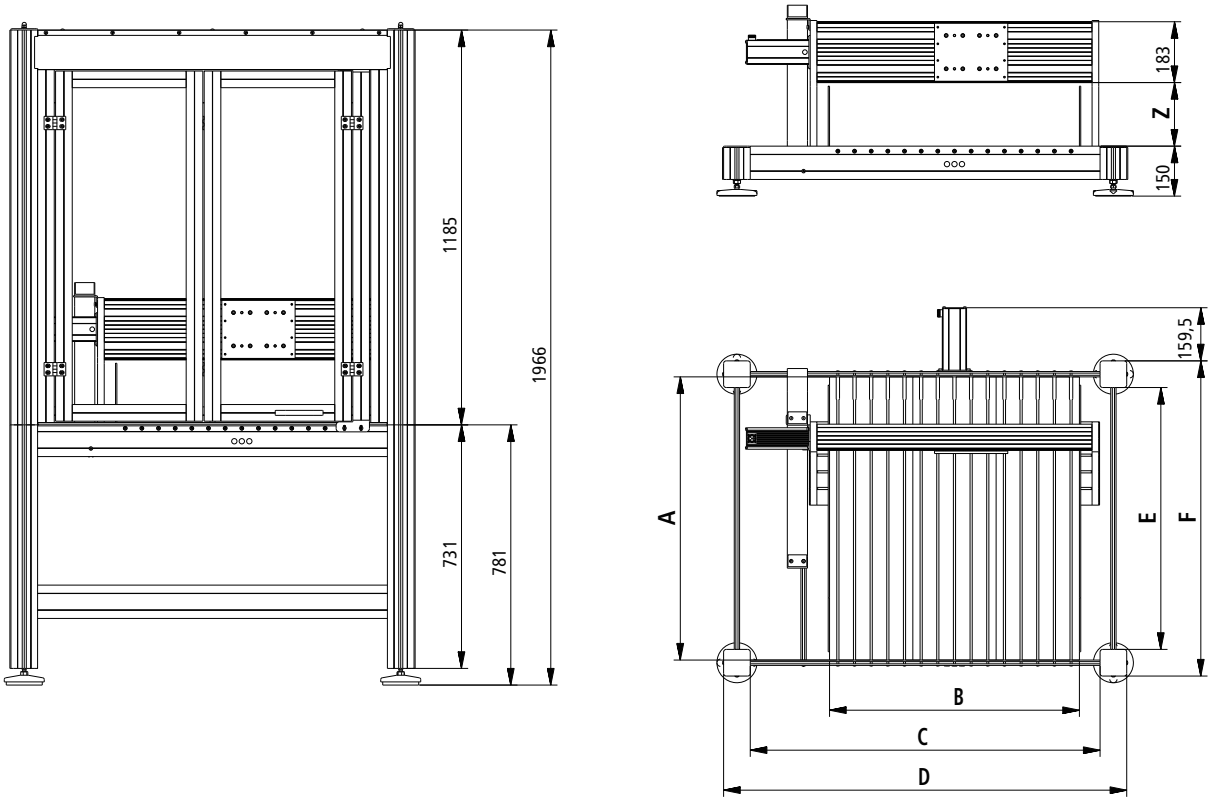
Accessories

Part no.	
219200 0001	Energy guidance chain
645201 0073	Set of side protection covers, L 1050 mm
645201 00731	Set of side protection covers, L 1300 mm
645201 00732	Set of side protection covers, L 1700 mm

Software

Part-no.	
Z11 - 333 500 **Z13 - 337 070**	ProNC Software isy-CAM 2.8

Dimensioned drawings



Part-no.	Travel [mm]		Bench clamping area						
	X	Y	A	B	C	D	E	F	Z
246203M	530	500	850	750	1,050	1,210	786	946	190
246203 2040M	530	750	1,100	750	1,050	1,210	1,036	1,196	
246203 2054M	530	1,000	1,350	750	1,050	1,210	1,286	1,446	
246203 2067M	780	850	1,350	1,000	1,300	1,460	1,286	1,446	
246203 2130M	1,030	1,250	1,750	1,250	1,550	1,710	1,686	1,846	

Technical specifications subject to change.

Machine configuration

	ICP4030	ICV4030EC	EuroMod® MP30	EuroMod® MP45	EuroMod® MP65
main spindle drive iSA 500	•	•	•	•	•
dust exhaust system ASV 5075	•	•	•	•	•
main spindle drive iSA 500 (CoolMin internal)	•	•	•	•	•
dust exhaust system ASV 5075					
main spindle drive iSA 750	•	•	•	•	•
dust exhaust system ASV 5075	•	•	•	•	•
main spindle drive iSA 750 (CoolMin internal)	•	•	•	•	•
dust exhaust system ASV 5075					
main spindle drive iSA 900		•	•	•	•
dust exhaust system ASV 900		•	•	•	•
linear tool change station SK 11, 5x		•	•	•	•
linear tool change station SK 11, 8x			• 1	•	•
turned tool change station SK 11, 12x			• 4	• 4	• 4
main spindle drive iSA 1500			•	•	•
dust exhaust system ASV 1500			•	•	•
main spindle drive iSA 1500 (CoolMin internal)			•	•	•
dust exhaust system ASV 1500					
main spindle drive iSA 1500 L			•	•	•
dust exhaust system ASV 1500 L			•	•	•
main spindle drive iSA 1500 WL / iSA 2200			•	•	•
dust exhaust system ASV 2200			•	•	•
linear tool change station SK 20, 4x (Raster 100)				•	•
linear tool change station SK 20, 8x (Raster 100)					• 1
linear tool change station SK 20, 5x (Raster 170)					
linear tool change station SK 20, 10x (Raster 170)					
turned tool change stationSK 20, 14x				• 4	• 4
main spindle drive iSA 2200 (CoolMin internal)			•	•	•
dust exhaust system ASV 2200					
main spindle drive iSA 3600			• 3	• 3	• 3
dust exhaust system ASV 3600			•	•	•
linear tool change station SK 30, 4x (Raster 185)					• 1
linear tool change stationSK 30, 5x (Raster 185)					• 1
linear tool change station SK 30, 8x (Raster 185)					
linear tool change stationSK 30, 10x (Raster 185)					

1 rear mounting only
2 increased flow only
3 pitch 2,5 mm in Z-axis only
4 without the dust exhaust system

Machine configuration

	OVERHEAD®					FLATCOM® XL				
	M20	M30	M40	M50	M60	102/72	102/112	142/112	142/162	142/252
main spindle drive iSA 500	●	●	●	●	●	●	●	●	●	●
dust exhaust system ASV 5075	●	●	●	●	●	●	●	●	●	●
main spindle drive iSA 500 (CoolMin internal)	●	●	●	●	●	●	●	●	●	●
dust exhaust system ASV 5075										
main spindle drive iSA 750	●	●	●	●	●	●	●	●	●	●
dust exhaust system ASV 5075	●	●	●	●	●	●	●	●	●	●
main spindle drive iSA 750 (CoolMin internal)	●	●	●	●	●	●	●	●	●	●
dust exhaust system ASV 5075										
main spindle drive iSA 900	●	●	●	●	●	●	●	●	●	●
dust exhaust system ASV 900	●	●	●	●	●	●	●	●	●	●
linear tool change station SK 11, 5x	●	●	●	●	●	●	●	●	●	●
linear tool change station SK 11, 8x	●	●	●	●	●	●	●	●	●	●
turned tool change station SK 11, 12x	● 4	● 4	● 4	● 4	● 4	● 2,4	● 2,4	● 2,4	● 2,4	● 2,4
main spindle drive iSA 1500	●	●	●	●	●	●	●	●	●	●
dust exhaust system ASV 1500	●	●	●	●	●	●	●	●	●	●
main spindle drive iSA 1500 (CoolMin internal)	●	●	●	●	●	●	●	●	●	●
dust exhaust system ASV 1500										
main spindle drive iSA 1500 L	●	●	●	●	●	●	●	●	●	●
dust exhaust system ASV 1500 L	●	●	●	●	●	●	●	●	●	●
main spindle drive iSA 1500 WL / iSA 2200	●	●	●	●	●	●	●	●	●	●
dust exhaust system ASV 2200	●	●	●	●	●	●	●	●	●	●
linear tool change station SK 20, 4x (Raster 100)										
linear tool change stationSK 20, 8x (Raster 100)										
linear tool change station SK 20, 5x (Raster 170)	● 1	●	●	●	●		●	●	●	●
linear tool change station SK 20, 10x (Raster 170)					● 4				● 4	●
turned tool change station SK 20, 14x	● 4	● 4	● 4	● 4	● 4	● 2,4	● 2,4	● 2,4	● 2,4	● 2,4
main spindle drive iSA 2200 (CoolMin internal)	●	●	●	●	●	●	●	●	●	●
dust exhaust system ASV 2200										
main spindle drive iSA 3600	● 3	● 3	● 3	● 3	● 3	● 3	● 3	● 3	● 3	● 3
dust exhaust system ASV 3600	●	●	●	●	●	●	●	●	●	●
linear tool change station SK 30, 4x (Raster 185)	● 1	●	●	●	●		● 2	● 2	● 2	● 2
linear tool change station SK 30, 5x (Raster 185)		● 4	● 4	●	●		● 2	● 2	● 2	● 2
linear tool change station SK 30, 8x (Raster 185)				● 4	● 4				● 2	● 2
linear tool change station SK 30, 10x (Raster 185)										● 2

1 rear mounting only
2 increased flow only
3 pitch 2,5 mm in Z-axis only
4 without the dust exhaust system

Accessories

spindle motors and more

When developing our spindle motors, our main emphasis was on functionality, quality, and the optimum price structure. Our spindle motors are also particularly easy to maintain. The particularly slim lines and square housing cross-section allow installation in rows with minimum separation. Our approach to electrical construction is to use an AC short circuit rotor with 2-pole windings in our motors, designed to DIN EN 60034.

The insulation of the windings is produced according to heat class F. The motors are dynamically balanced to very fine tolerances, so that good running properties are achieved even at high speeds. In all, they cover a range of speeds from 3,000 to 30,000 rpm. All spindle motors are produced entirely in Germany, meet at least the criteria for IP54 protection class and are therefore approved even for areas where wood dust is present. In our product portfolio, in addition to spindle motors, you'll find all the leads you will need in various lengths and preset, reliable frequency converters for connecting to the controller. By integrating development, production, sales and service under one roof, we have very short procedures and have our own repair service which operates year-round, unlike many of our competitors.

An extensive range of accessories, such as vacuum cleaning systems, minimum amount greasing systems, collets, SK housings, tool changers and our unique, patented Coolmin system for optimum and economical tool cooling, without residues, round off our product portfolio.

Accessories

Overview

Spindle motors iSA-series

Spindle motors HSD-series

High frequency spindles HFS-series

Additional accessories

systems

Spindle motor
with manual tool changer

iSA 500

iSA 500 with manual tool change

iSA 500 with manual tool change and **CoolMin®** tool cooling system

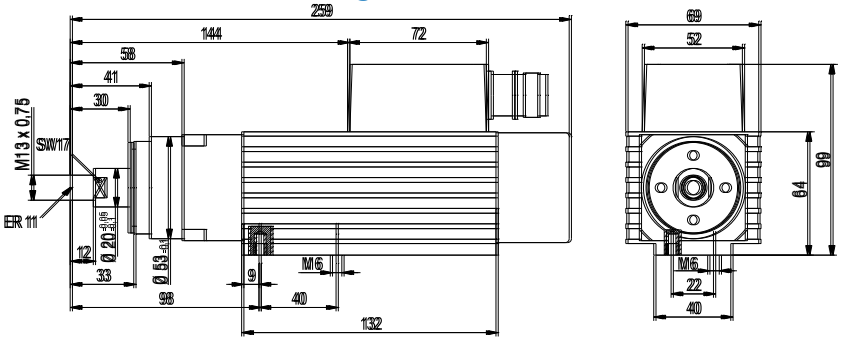
Features

- robust 2-pole AC motor (asynchronous motor)
- square shape, protection class IP54, isolation class F
- cast bearing apron A-side, aluminium extrusion B-side
- motor shaft to take ER 11 collets
- rated output 0.5 kW (S6-40% operation)
- speed range 5,000 rpm. - 30,000 rpm.
- manual tool change
- M23 plug connection
- incl. ER 11 collet, Ø 6 mm
- clamping range Ø 1 mm – Ø 7 mm
- intrinsic ventilation B-side
- controlled by frequency converter
- spindle bearing: 2 bearings A-side
  1 bearing B-side
- optional:
  - CoolMin® (internal and external)
  - frequency converter
  - various collets, mounting plates, lead lengths
  - suction device

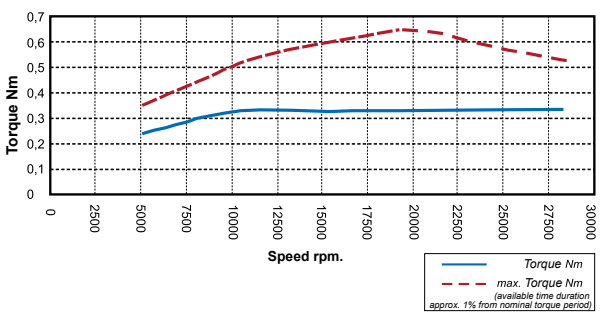
Technical specification

Description		iSA 500
Torque at rated speed 18,000 rpm	[Nm]	0.28
Speed	[rpm]	5,000 to 30,000
Cut-off frequency	[Hz]	300
Number of poles		2
Rated voltage	[V]	230
Rated current	[A]	2.6
cos ϕ		0.75
S 6 = 40% rated output	[kW]	0.5
Concentricity	[mm]	0.01
Weight	[kg]	2.8

Dimensioned drawings



Torque curves



Ordering information

iSA 500 spindle motor
Part no.: **477004 3130**

iSA 500 spindle motor with converter* and lead (8m)
Part no.: **310704 1611**

iSA 500 spindle motor with CoolMin®
Part no.: **477004 5130**

iSA 500 spindle motor with converter*, lead (8 m) and CoolMin®
Part no.: **310704 1631**

LES 5 / ICV mounting plate
Part no.: **277014**

LES 6 / FB 2 mounting plate
Part no.: **277028 0008 / 277013**

ICP/ICV mounting plate
Part no.: **280000 0046**

EuroMod/FlatCom mounting plate
Part no.: **277028**

- M23 motor side leads
  see page **E-43**
- suction device for 38 mm hose
  see page **E-43**
- collet set, ER11 type
  see page **E-44**

***converter pre-set for spindle**

Technical specifications subject to change.

Spindle motor
with manual tool changer

iSA 750

iSA 750 with manual tool change

iSA 750 with manual tool change and **CoolMin®** tool cooling system

Features

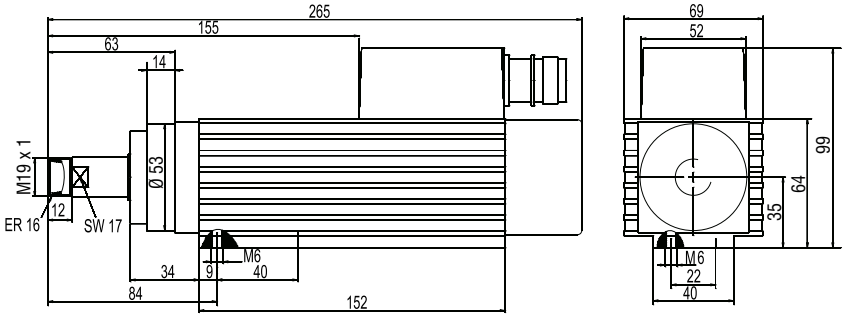
- robust 2-pole AC motor (asynchronous motor)
- square shape, Protection class IP54, insulation class F
- aluminium extrusion A and B sides
- motor shaft to take ER 16 collets
- rated output 0.75 kW (S6-40% operation)
- speed range 3,000 rpm. - 24,000 rpm.
- manual tool change
- M23 plug connection
- incl. ER16 collet, Ø 6 mm
- clamping range Ø 1 mm – Ø 10 mm
- intrinsic ventilation B-side
- two precision bearings
- controlled by frequency converter

- optional:
  - CoolMin® (internal and external)
  - frequency converter
  - various collets, mounting plates, lead lengths
  - suction device

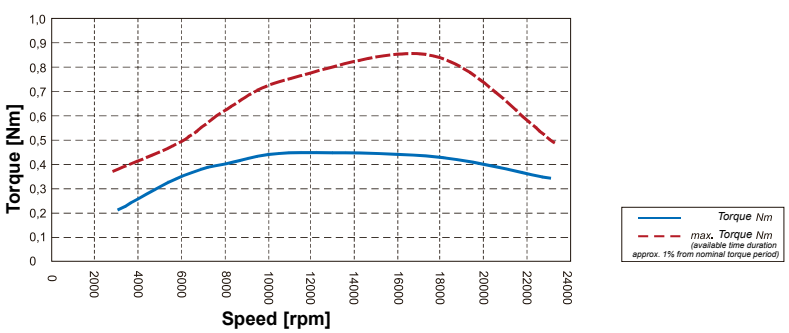
Technical specification

Description		iSA 750
Torque at rated speed 22,000 rpm	[Nm]	0.34
Speed	[rpm]	3,000 to 24,000
Cut-off frequency	[Hz]	300
Number of poles		2
Rated voltage	[V]	230
Rated current	[A]	3.4
cos ϕ		0.79
S 6 = 40% rated output	[kW]	0.75
Concentricity	[mm]	0.01
Weight	[kg]	2.6

Dimensioned drawings



Torque curves



Ordering information

iSA 750 spindle motor
Part no.: **477008 3124**

iSA 750 spindle motor with converter* and lead (8 m)
Part no.: **310708 1611**

iSA 750 spindle motor with CoolMin®
Part no.: **477008 5124**

iSA 750 spindle motor with converter*, lead (8 m) and CoolMin®
Part no.: **310707 1631**

LES 5 / FB 2 mounting plate
Part no.: **277014 / 277013**

LES 6 mounting plate
Part no.: **277028 0008**

ICP/ICV mounting plate
Part no.: **280000 0046**

EuroMod/FlatCom mounting plate
Part no.: **277028**

- M23 motor side leads see page **E-43**
- suction device for 38 mm hose see page **E-43**
- collet set, ER16 type see page **E-44**

***converter pre-set for spindle**

Technical specifications subject to change.

systems

Spindle motor
with automatic tool changer

iSA 900

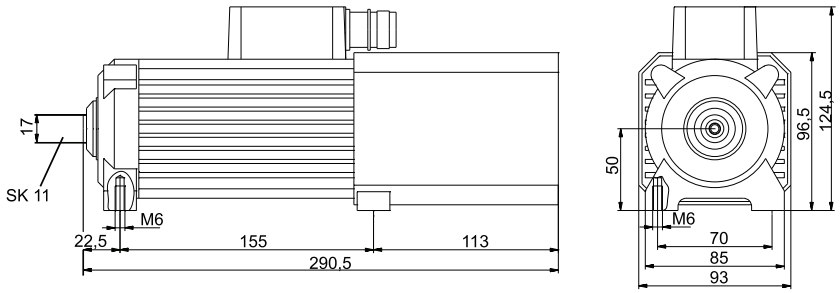
iSA 900 with automatic tool change

The spindle motor iSA 900 is suitable for machining light aluminum, wood and plastic.

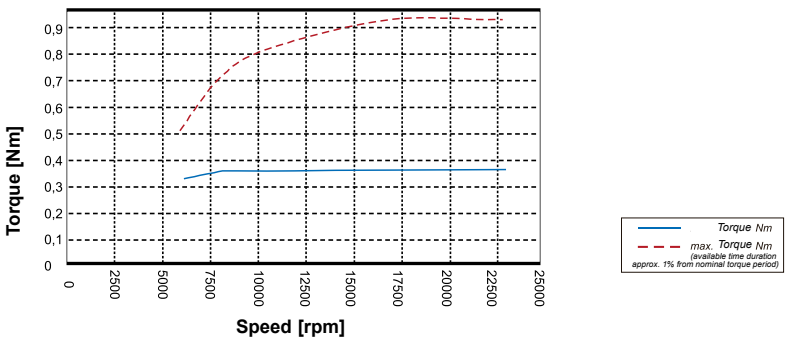
Technical specification

Description		iSA 900
Torque at rated speed 18,000 rpm	[Nm]	0.37
Speed	[rpm]	6,000 to 24,000
Cut-off frequency	[Hz]	400
Number of poles		2
Rated voltage	[V]	230
Rated current	[A]	3.25
cos ϕ		0.84
S 6 = 40% rated output	[kW]	0.9
Concentricity	[mm]	0.01
Weight	[kg]	5.8

Dimensioned drawings



Torque curves



Technical specifications subject to change.

Features

- robust 2-pole AC motor (asynchronous motor)
- square shape, Protection class IP55, insulation class F
- cast bearing apron A and B sides
- rated output 0.9 kW (S6-40% operation)
- speed range 6,000 rpm. - 24,000 rpm.
- automatic tool change with SK 11 tool holder and ER 11 collet, Ø 6 mm
- M23 plug connection
- clamping range Ø 1 mm – Ø 7 mm
- separately driven fan B-side
- controlled by frequency converter
- two precision bearings
- SK 11 tool changer, pneumatic (7.5 bars)
- max. Tool diameter: 3 mm
- max. Tool length : Ø x 3
- recommended tool: 2-cutter

- optional:
  - CoolMin® (external)
  - frequency converter
  - tool changing station
  - various collets, mounting plates, lead lengths

Ordering information

iSA 900 spindle motor
Part no.: **477009 3324**

iSA 900 spindle motor
with converter* and lead (8m)
Part no.: **310709 3612**

LES 5 / EuroMod / FlatCom / ICV 4030
mounting plate
Part no.: **277028 0003**

ICP mounting plate
Part no.: **277028 0010**

- Cooling system® external with hose
  see pages **E-38**
- 5× SK 11 tool change stations
  see pages **E-40**
- 8× SK 11 tool change stations
  see pages **E-40**
- SK 11 tool holder
  see pages **E-40**
- M23 motor side connecting leads
  see pages **E-43**
- collet set, ER11 type
  see pages **E-44**

***converter pre-set for spindle**

Spindle motor
with manual tool changer

iSA 1500

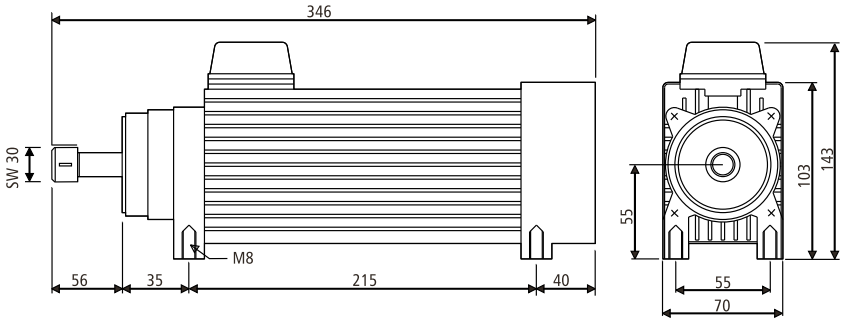
iSA 1500 with manual tool change

iSA 1500 with manual tool change and **CoolMin®** tool cooling system

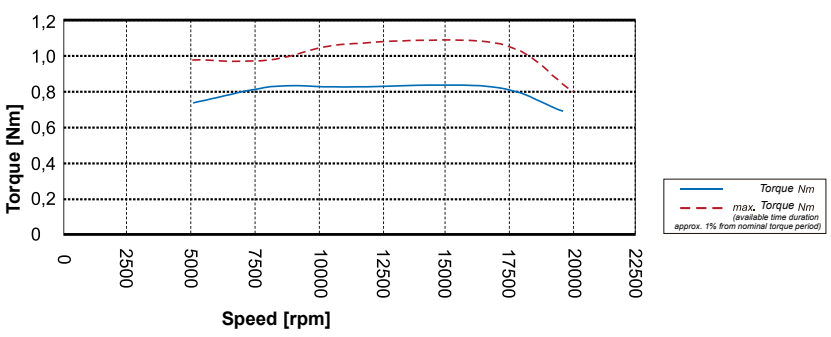
Technical specification

Description		iSA 1500
Torque at rated speed 20,000 rpm	[Nm]	0.72
Speed	[rpm]	5,000 to 20,000
Cut-off frequency	[Hz]	300
Number of poles		2
Rated voltage	[V]	230
Rated current	[A]	7
cos ϕ		0.85
S 1 = 100% rated output	[kW]	1.5
Concentricity	[mm]	0.01
Weight	[kg]	6.4

Dimensioned drawings



Torque curves



Technical specifications subject to change.

Features

- robust 2-pole AC motor (asynchronous motor)
- square shape, protection class IP54, insulation class F
- cast bearing apron A and B sides
- motor shaft to take ER 20 collets
- rated output 1.5 kW (S1-100% operation)
- speed range 5,000 rpm. - 20,000 rpm.
- manual tool change
- M23 plug connection
- incl. ER20 collet, Ø 6 mm
- clamping range Ø 2 mm – Ø 13 mm
- intrinsic ventilation B-side
- controlled by frequency converter
- spindle bearing: 2 bearings A-side 1 bearing B-side

- optional:
  - CoolMin® (internal and external)
  - frequency converter
  - various collets, mounting plates, lead lengths
  - suction device
  - 4-pole motor version to order

Ordering information

iSA 1500 spindle motor
Part no.: **477510 3120**

iSA 1500 spindle motor with converter* and connecting lead (8 m)
Part no.: **310610 3614**

iSA 1500 spindle motor with CoolMin®
Part no.: **477510 5120**

iSA 1500 spindle motor with converter* and CoolMin®
Part no.: **310610 3634**

LES 5 mounting plate
Part no.: **277028 0003**

EuroMod/FlatCom mounting plate
Part no.: **277028 0002**

- CoolMin® external with hose see page **E-38**
- M23 motor side connecting leads see page **E-43**
- suction device for 80 mm hose see page **E-43**
- collet set, ER20 type see page **E-44**

***converter pre-set for spindle**

systems

Spindle motor
with manual tool changer

iSA 1500 L

iSA 1500 L with manual tool change

Features

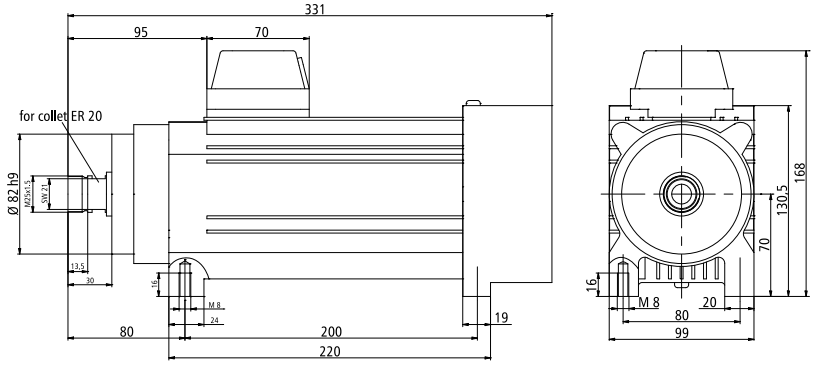
- robust 2-pole AC motor
- protection class IP54, insulation class F
- motor shaft to take ER 20 collets
- cast bearing apron A and B sides
- rated output 1.5 kW (S6-40% operation)
- rotational speed range 2,500 rpm – 6,000 rpm
- torque 2.37 Nm (at 6,000 rpm)
- rated voltage 200 V
- manual tool change
- clamping range Ø 2 mm – Ø 13 mm
- intrinsic ventilation B-side
- controlled by frequency converter
- spindle bearing:
  A-side (milling side) double,
  B-side (ventilation side) single
- concentricity: 0.01 mm
- weight: 10.5 kg

- optional:
  - CoolMin® Tool and material cooling, external
  - frequency converter
  - collets

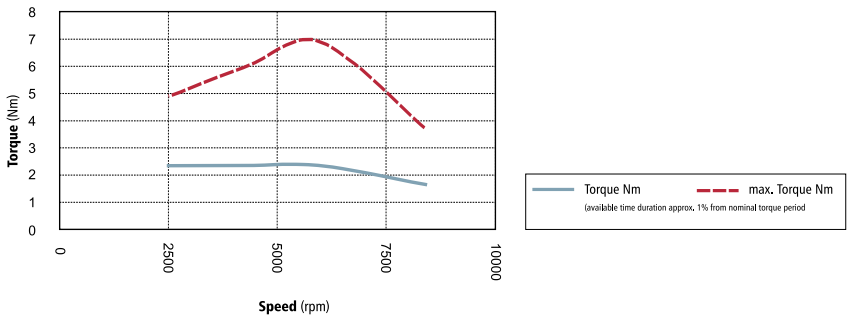
Technical specification

Description		iSA 1500 L
Torque at rated speed 6,000 rpm	[Nm]	2.37
Speed range	[rpm]	2,500 to 6,000
Cut-off frequency	[Hz]	107
Number of poles		2
Rated voltage	[V]	200
Rated current	[A]	6.5
cos ϕ		0.84
Rated power (S 6 = 40% operation)	[W]	1500
Concentricity	[mm]	0.01
Weight	[kg]	10.5

Dimensioned drawings



Torque curves



Ordering information

iSA 1500 L spindle motor
with collet ER 20 (6 mm), clamping key ER 20, jaw key SW 22, Interconnectron connection
Part no.: **477510 3106**

iSA 1500 L spindle motor with converter*
with collet ER 20 (6 mm), clamping key ER 20, jaw key SW 22, Interconnectron connection
Connecting leads 8 m
Part no.: **310610 3615**

CoolMin® external
Part no.: **239011 0119**

Suction device for EuroMod / FlatCom
prepared for 38 mm diameter hose
Part no.: **239012 0001**

Clamping set ER 20
2.0 / 3.0 / 4.0 / 5.0 / 6.0 / 7.0 / 8.0 / 9.0 / 10.0 / 11.0 / 12.0 / 13.0 mm
Part no.: **239172 0001**

Mounting plate isel System (Z axis)
EuroMod / FlatCom (LES 21)
Part no.: **277028 0011**

Mounting plate isel System (Z axis)
Linear unit LES 5
Part no.: **277028 0005**

***converter pre-set for spindle**

Technical specifications subject to change.

Spindle motor
with automatic tool changer

iSA 1500WL

iSA 1500WL

iSA 1500WL with **CoolMin®** tool cooling system

Features

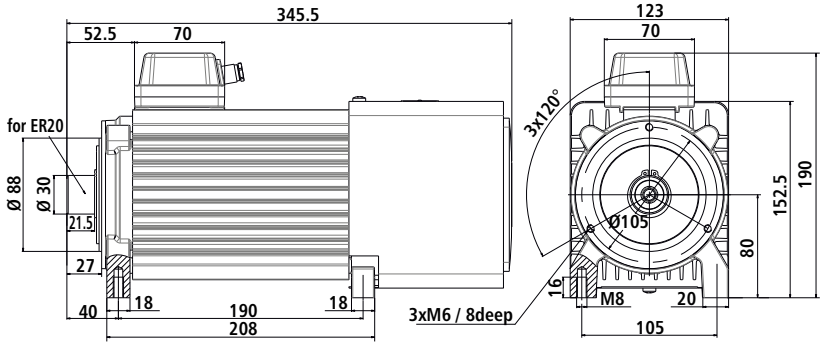
- robust 2-pole AC motor (hardened motor shaft)
- protection class IP55, Isulation class F
- cast bearing apron A and B sides
- rated output 1.5 kW (S6-40% operation)
- rotational speed range 6,000 rpm / 100 Hz
- rated torque 2.5 Nm (at 6,000 rpm)
- specific torque rating for drilling and lowering in the speed range 1,000-20,000 rev / min
- rated voltage 3 x 230 V
- automatic tool change
- clamping range Ø 2 mm – Ø 13 mm
- separartely driven fan B-side
- controlled by frequency converter
- double precision bearings
- SK 20 tool changer pneumatic (7,5 bar)
- concentricity: 0.01 mm
- weight: 14.0 kg

- optional:
  - CoolMin® Tool and material cooling (external and internal)
  - frequency converter
  - tool changer
  - collets

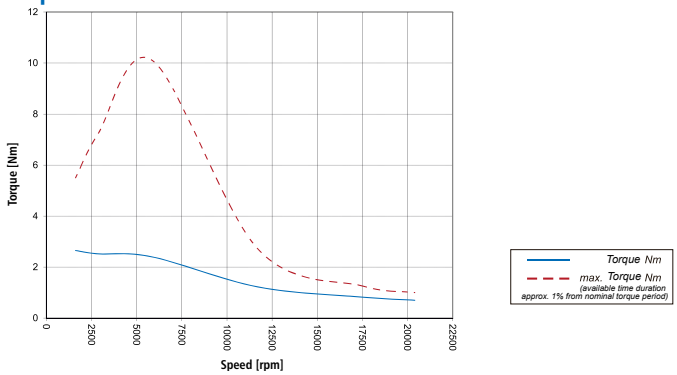
Technical Data

Description		iSA 1500WL
Torque at nominal speed 6,000 rpm	[Nm]	2,5
Max. Speed	[rpm]	1,000 - 20,000
Cut-off frequency	[Hz]	100
Number of poles		2
Rated voltage	[V]	3 x 230 /star connection
Rated current	[A]	6
cos ϕ		0.35
Rated power (S6 = 40% operation)	[W]	1,500
Concentricity	[mm]	0.01
Weight	[kg]	14.0

Dimensioned drawings



Torque curves



Ordering information

Spindle motor iSA 1500WL
with collets ER 20 (6 mm), nut ERM 20,clamping key ER 20 M, jaw key SW 22, Interconnectron connection
Part no.: **477015 3320**

Spindle motor iSA 1500WL as above, plus frequency converter* SKC 1500, motor connecting cable 8 m
Part no.: **310715 3621**

SK20 tool change station 4-fold with hood
Part no.: **239011 0041**

SK 20 tool holder
Part no.: **239172 0020**

CoolMin® (external)
Part no.: **239011 0119**

Clamping set ER 20
2 / 3 / 4 / 5 / 6 / 7 / 8 / 9 / 10 / 11 / 12 / 13.0 mm
Part no.: **239172 0001**

Mounting plate isel systems (Z-axis) LES 5
Part no.: **277028 0019**

***converter pre-set for spindle**

Technical specifications subject to change.

systems

Spindle motor
with automatic tool changer

iSA 2200

iSA 2200 with automatic tool change

iSA 2200 with **CoolMin®** for internal tool cooling

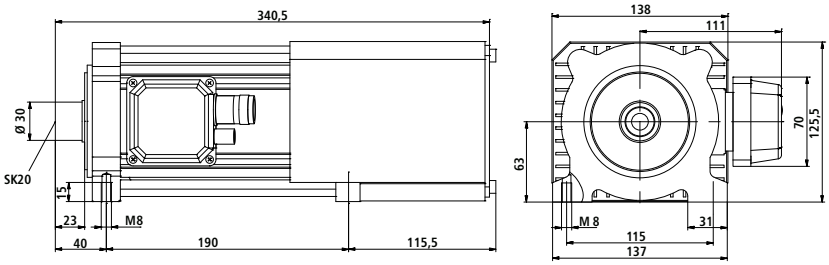
Features

- robust 2-pole AC motor
- protection class IP55, insulation class F
- cast bearing apron A and B sides
- rated output 2.2 kW (S6-40% operation)
- rotational speed range 5,000 rpm – 20,000 rpm
- torque 1.26 Nm (at 18,000 rpm)
- rated voltage 3 x 230 V
- automatic tool change
- clamping range Ø 2 – Ø 13 mm
- separately driven fan B-side
- controlled by frequency converter
- two precision bearings
- SK 20 tool changer, pneumatic (7.5 bars)
- concentricity: 0.01 mm
- weight: 14.6 kg
- optional:
  - CoolMin® Tool and material cooling, external
  - CoolMin® internal with **internal tool cooling**
  - frequency converter
  - tool changer, collets

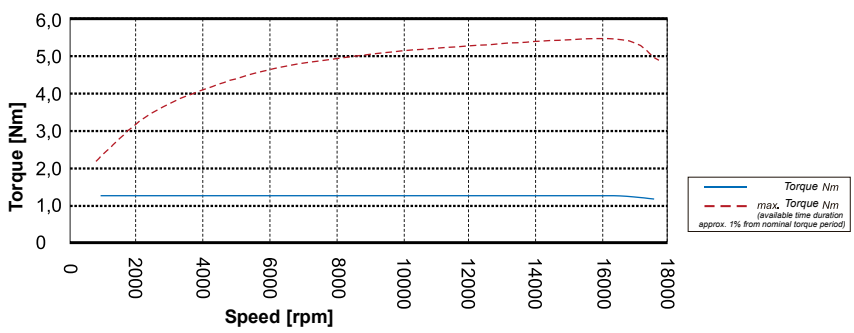
Technical specification

Description		iSA 2200
Torque at rated speed 18,000 rpm.	[Nm]	1.26
Speed range	[rpm]	5,000 to 20,000
Cut-off frequency	[Hz]	300
Number of poles		2
Rated voltage	[V]	3 x 230
Rated current	[A]	7.6
cos ϕ		0.84
Rated power (S 6 = 40% operation)	[W]	2.2
Concentricity	[mm]	0.01
Weight	[kg]	14.6

Dimensioned drawings



Torque curves



Ordering information

iSA 2200 spindle motor
with collets ER 20 (6 mm), nut ERM 20, clamping key ER 20 M, jaw key SW 22, Interconnectron connection
Part no.: **477022 3320**

iSA 2200 spindle motor as above, plus frequency converter* SKC 1500, motor connecting cable 8 m
Part no.: **310722 3621**

iSA 2200 spindle motor+CoolMin® (internal)
with collets ER 20 (6 mm), nut ERM 20, clamping key ER 20 M, jaw key SW 22, Interconnectron connection
Part no.: **477022 5320**

iSA 2200 with converter*+CoolMin® (internal)
as above, plus frequency convertor SKC 1500, motor connecting cable 8 m Part no.: **310722 3631**

SK 20 tool change station 4-fold with hood
Part no.: **239011 0041**

SK 20 tool holder
Part no.: **239172 0020**

Suction device for EuroMod/FlatCom, prepared for hose Ø 80 mm, pneumatic opening
Part no.: **239012 0002**

Suction device with CoolMin® (external)
for EuroMod/FlatCom, prepared for hose Ø 80 mm, pneumatic opening
Part no.: **239012 0003**

CoolMin® (external)
Part no.: **239011 0119**

Clamping set ER 20 2.0/3.0/4.0/5.0/6.0/7.0/8.0/9.0/10.0/11.0/12.0/13.0 mm Part no.:**239172 0001**

Mounting plate isel System (Z axis)
FlatCom / EuroMod Part no.: **277028 0004**
LES 5 Part no.: **277028 0005**

Technical specifications subject to change.

*converter pre-set for spindle

Spindle motor
with automatic tool changer

iSA 3600

iSA 3600 with automatic tool change

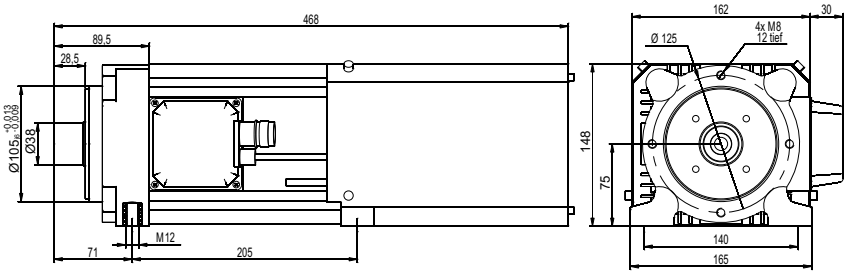
Features

- robust 2-pole AC motor
- square shape, protection class IP54, insulation class F
- cast bearing apron A-side, aluminium extrusion B-side
- motor shaft to take ER 32 collets
- rated output 3.6 kW (S6-40% operation)
- speed range 6,000 rpm. - 18,000 rpm.
- automatic tool changer with SK 30 tool holder and ER 32 collet, Ø 6 mm
- clamping range Ø 3 mm – Ø 20 mm
- intrinsic ventilation B-side
- two precision bearings
- controlled by frequency converter
- optional:
  - CoolMin® (external)
  - frequency converter
  - tool changing station
  - various collets, mounting plates and lead lengths

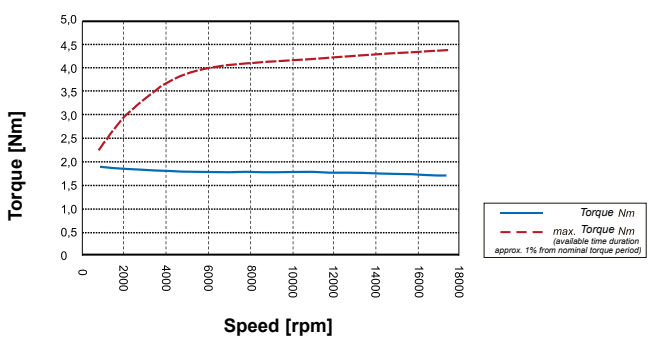
Technical specification

Description		iSA 3600
Torque at rated speed 18,000 rpm	[Nm]	4.5
Speed	[rpm]	6,000 to 18,000
Cut-off frequency	[Hz]	300
Number of poles		2
Rated voltage	[V]	3 x 400
Rated current	[A]	5.4
cos ϕ		0.87
S 6 = 40% rated output	[kW]	3.6
Concentricity	[mm]	0.01
Weight	[kg]	23.0

Dimensioned drawings



Torque curves



Ordering information

iSA 3600 spindle motor
Part no.: **477822 3600**

iSA 3600 spindle motor with converter* and connecting lead (8 m)
Part no.: **310736 3615**

mounting plates LES 5 / FlatCom XL
Part no.: **277028 0009**

- CoolMin® external with hose see page **E-38**
- 4× SK 30 tool change stations see page **E-40**
- 5× SK 30 tool change stations see page **E-40**
- SK 30 tool holder see page **E-40**
- M23 motor side leads see page **E-43**
- collet set, type ER 32 see page **E-44**

***converter pre-set for spindle**

Technical specifications subject to change.

systems

Milling spindle
HSD-series

ES 325 HSK 25

Features

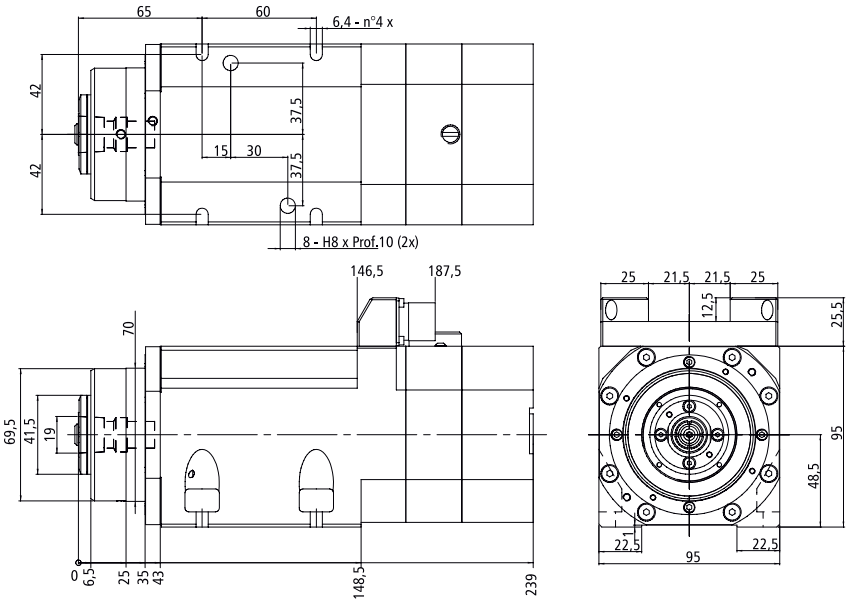
- automatic tool locking with pneumatic piston
- front ceramic bearing
- rear ceramic bearing
- lifetime lubrication
- max. speed: 40.000 rpm
- spindle housing aluminium alloyed
- cooling = air cooled up to 40.000 rpm or water cooled up to 50.000 rpm
- weight: 7 kg

- optional
  - linear tool changer HSK 25
  - clamp for HSK 25 and HSK 32
  - tool holders
  - CoolMin external

Technical specification

Description		ES 325 HSK 25
Rated speed	[min^{-1}]	40.000
Rated voltage	[V]	380
Rated current	[A]	4,0
max. rated output	[kW]	2,0
Weight	[kg]	7,0

Dimensioned drawings



Technical specifications subject to change.

Ordering information

Milling spindle ES 325 HSK 25
Part no.: **478015 1340**

Milling spindle ES 325 HSK 25 with converter* Maintenance unit and connection line 8 m, Collet EX 16, 6 mm, air or water cooled
Part no.: **310815 3511**

Frequency converter SKC 4000
Part no.: **311740 6500**

CoolMin® (extern)
Part no.: **239011 0119**

Tool holders HSK 25
Part no.: **477125**

Collets Ø 1,0 / 1,5 / 2,0 / 2,5 / 3,0 / 4,0 / 5,0 / 6,0 / 7,0 / 8,0 / 9,0 / 10,0
Part no.: **477125 80XX**

Clamps
for holding HSK 25 Part no.: **639100 0043**
for holding HSK 32 Part no.: **639100 0044**

Linear tool change station HSK 25
5x Part no.: **239011 0051**
10x Part no.: **239011 0101**

Mounting plate LES 5 and LES 21
Art.-Nr.: **277028 0001**

Cooling unit 16 S for milling spindle ES 325
Art.-Nr.: **492015 2001**

Storage rack for cooling unit 16 S
Art.-Nr.: **274507 6300**

Compressed air with a purity according to ISO 8573-1, of classes 2 4 3

*converter pre-set for spindle

made by isel®

High frequency spindle
for manual tool changing

HFS 800

Features

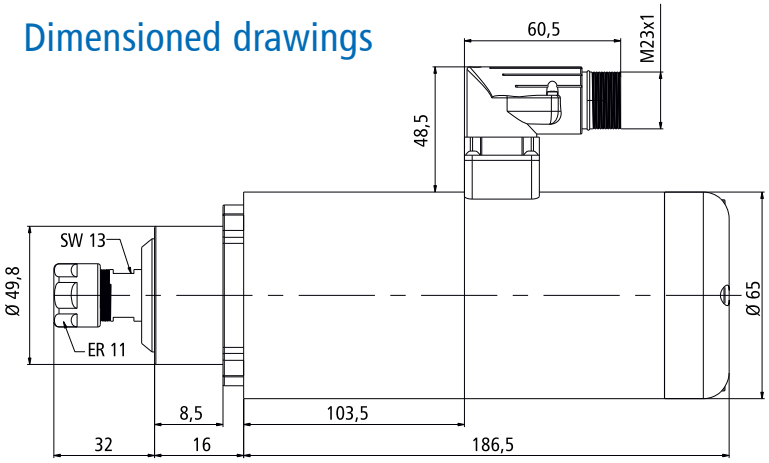
- solid 2-pole three-phase motor
- round design
- protection class IP 54, insulation class F, CE
- motor shaft for holding ER 11 clamping jaws
- rated power 0,8 kW
- speed range 5.000 - 24.000 rpm
- torque 0,32 Nm (at 24.000 rpm)
- rated voltage 220 V
- manual tool changer
- clamping range Ø 0,5 - 7,0 mm
- self ventilated at B side
- connection M23
- speed control by frequency converter
- concentricity: 0,01 mm
- weight: 2,9 kg

- optional
  - clamping block
  - frequency converter
  - brake resistor
  - exhaust system
  - range of different collets ER 11
  - various lengths of connection leads

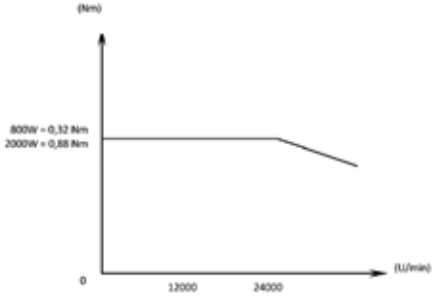
Technical specification

Desciption		HFS 800
Torque at rated speed 24.000 U/min.	[Nm]	0,32
Speed	[rpm.]	5.000 ... 24.000
cut-off frequency	[Hz]	400
Number of poles		2
Rated voltage	[V]	220
Rated current	[A]	2,5
cos ϕ		0,9
Rated power	[kW]	0,8
Concentricity	[mm]	0,01
Weight	[kg]	2,9

Dimensioned drawings



Torque curves



Ordering information

HFS 800
Asynchronous spindle 0,8 kW
with collet ER 11 (3 mm and 6 mm)
Part no.: **477008 30240**

HFS 800 with converter*
with collet ER 11 (6 mm), connection lead 8 m
Part no.: **310802 2014**

Hedy frequency converter
vector controlled, 750 VA (1-phase)
Part no.: **311802 1000**

Clamping set ER 11
1,0 / 1,5 / 2,0 / 2,5 / 3,0 / 3,5 / 4,0 / 4,5 / 5,0 / 5,5 / 6,0 / 6,5 / 7,0 mm
Part no.: **239170 0001**

Clamping block SB 65
with slide nuts and screws
Part no.: **290904 0065**

***converter pre-set for spindle**

Technical specifications subject to change.

systems

High frequency spindle
for manual tool changing

HFS 1500

Features

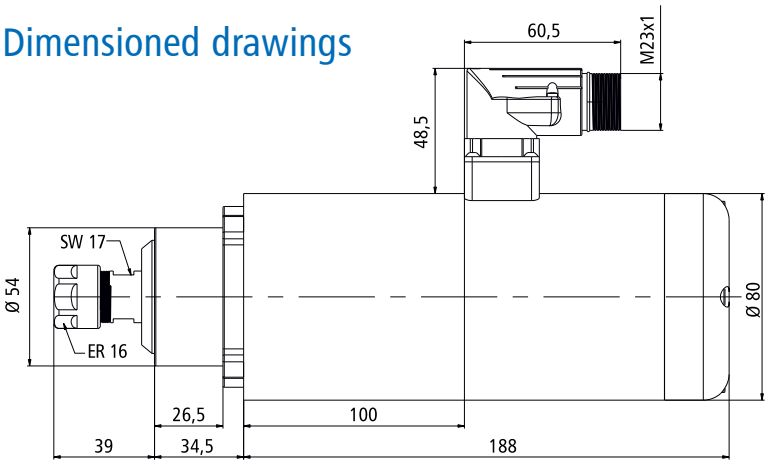
- solid 2-pole three-phase motor
- round design
- protection class IP 54, insulation class F, CE
- motor shaft for holding ER 16 clamping jaws
- rated power 1,5 kW
- speed range 5.000 - 24.000 rpm
- torque 0,6 Nm (at 18.000 rpm)
- rated voltage 220 V
- manual tool changer
- clamping range Ø 0,5 - 10,0 mm
- self ventilated at B side
- connection M23
- speed control by frequency converter
- concentricity: 0,01 mm
- weight: 4,4 kg

- optional
  - clamping block
  - frequency converter
  - brake resistor
  - exhaust system
  - range of different collets ER 16
  - various lengths of connection leads

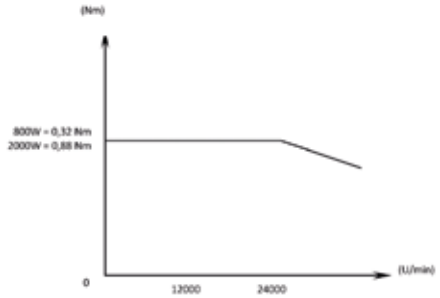
Technical specification

Desciption		HFS 1500
Torque at rated speed 24.000 U/min.	[Nm]	0,6
Speed	[rpm.]	5.000 ... 24.000
cut-off frequency	[Hz]	400
Number of poles		2
Rated voltage	[V]	220
Rated current	[A]	5,0
cos ϕ		0,9
Rated power	[kW]	1,5
Concentricity	[mm]	0,01
Weight	[kg]	4,4

Dimensioned drawings



Torque curves



Ordering information

HFS 1500
Asynchronous spindle 1,5 kW
with collet ER 16 (6 mm)
Part no.: **477015 3024**

HFS 1500 with converter*
with collet ER 16 (6 mm), connection lead 8 m
Part no.: **310815 2014**

Hedy frequency converter
vector controlled, 1500 VA (1-phase)
Part no.: **311802 2000**

Clamping set ER 16
1,0 / 2,0 / 3,0 / 4,0 / 5,0 / 6,0 / 7,0 / 8,0 / 9,0 / 10,0 mm
Part no.: **239171 0001**

Clamping block SB 80
with slide nuts and screws
Part no.: **290904 0080**

***converter pre-set for spindle**

Technical specifications subject to change.

High frequency spindle
for manual tool changing

HFS 2200

Features

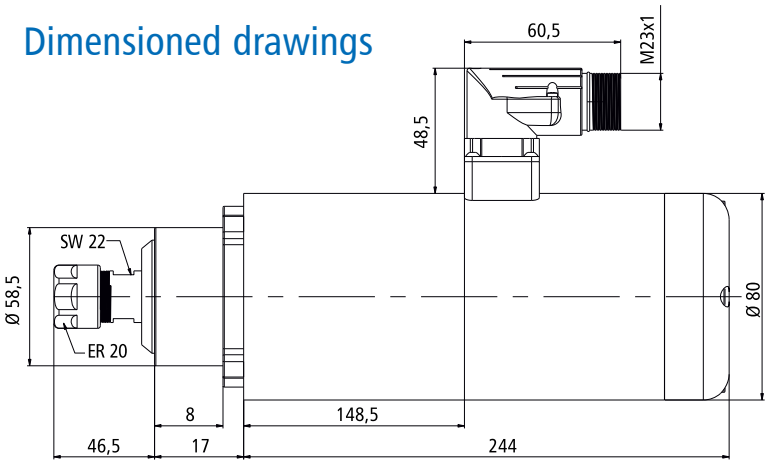
- solid 2-pole three-phase motor
- round design
- protection class IP 54, insulation class F, CE
- motor shaft for holding ER 20 clamping jaws
- rated power 2,2 kW
- speed range 5.000 - 24.000 rpm
- torque 0,88 Nm (at 24.000 rpm)
- rated voltage 220 V
- manual tool changer
- clamping range Ø 0,5 - 10,0 mm
- self ventilated at B side
- connection M23
- speed control by frequency converter
- concentricity: 0,01 mm
- weight: 5,6 kg

- optional
  - clamping block
  - frequency converter
  - brake resistor
  - exhaust system
  - range of different collets ER 16
  - various lengths of connection leads

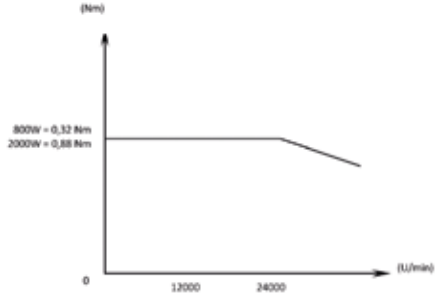
Technical specification

Bezeichnung		HFS 2200
Torque at rated speed 24.000 U/min.	[Nm]	0,88
Speed	[rpm.]	5.000 ... 24.000
cut-off frequency	[Hz]	400
Number of poles		2
Rated voltage	[V]	220
Rated current	[A]	8,0
cos ϕ		0,9
Rated power	[kW]	1,5
Concentricity	[mm]	0,01
Weight	[kg]	5,6

Dimensioned drawings



Torque curves



Bestellangaben

HFS 2200
Asynchronous spindle 1,5 kW
with collet ER 20 (6 und 12 mm)
Part no.: **477022 30240**

HFS 2200 with converter*
with collet ER 20 (6 mm), connection lead 8 mArt.-Nr.:
Part no.: **310822 2014**

Hedy frequency converter
vector controlled, 1500 VA (1-phase)
Part no.: **311802 2000**

Clamping set ER 20
2,0 / 3,0 / 4,0 / 5,0 / 6,0 / 7,0 / 8,0 / 9,0 / 10,0 / 11,0 / 12,0 / 13,0 mm
Part no.: **239172 0001**

Clamping block SB 80
with slide nuts and screws
Part no.: **290904 0080**

***converter pre-set for spindle**

Technical specifications subject to change.

systems

Dust extraction systems
in different versions

iAG

Extraction devices iAG 720

Area of application:
- individual workplace exhaustion at machines and manual workstations
- free-flowing dusts (non-carcinogenic)
- dry dusts / blades
- hazardous to health dusts
- high blade / dust generation

Features iAG 720
- low maintenance costs
- long life cleanable filter cartridges class M
- highly mobile unit fitted on movable castors combined with high extraction output
- tilt-back filter housing for ease of dust disposal
- suitable for most dust collection applications
- supplied complete with hose 80mm, L+5m adaptors and mounting clamps

Specific characteristics:
- manual cleaning
- cleanable long life cartridge filters
- special versions supplied with modified filter cartridges to suit application
- vent connections (optional)
- special voltage on request
- floor cleaning kit and machine cleaning kit (optional)

Extraction devices iAG 600

Area of application:
- individual workstation extraction for industrial and craft applications
- small mechanical workshops
- free – flowing dust / wood chips (non-carcinogenic)

Features iAG 600
- suitable for small work areas
- ease of use
- cleanable, long life filter bags
- low operating costs
- supplied complete with hose 80mm, L+5m and mounting clamps

Specific charcateristics:
- cleanable filter bags cleaned with crank handle system
- special versions with filter cartridges air vent and power supply to suit application

Extraction devices iAG 200

Area of application:
- direct individual workplace extraction
- free – flowing dust (non-carcinogenic)
- dry dust and wood chips
- low dust and wood chip volume

Features iAG 200
- portable with multi-use applications
- compact, space-saving design
- cleanable, long life filter bags dust class M
- low operating costs
- supplied complete with hose 50mm, L+5m and mounting clamps

Specific characteristics:
- integrated compressed air cleaning nozzle

Accessories

Hose, length= 5m
Part-No. 639012 0004
... Ø 80 mm, for iAG 720 and iAG 600
Part-No. 639012 0005
... Ø 50 mm, for iAG 200

Mounting clamp
Part-No. 639012 0008
... up to 170 mm, for iAG 720 and iAG 600
Part-No. 639012 0007
... 40-60 mm, for iAG 200

Reduction
for iAG 720
(Ø 100 / 80 mm)
Part-No.
639012 0006

Technical specifications subject to change.

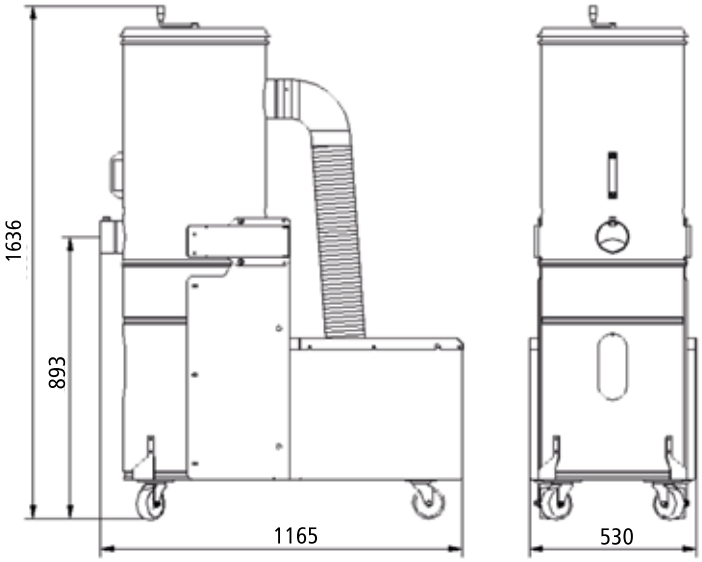
Dust extraction systems
in different versions

iAG

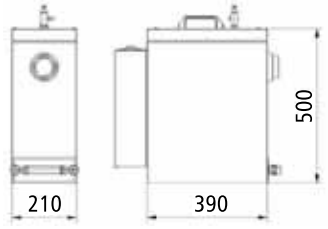
Technical Data

Description		iAG 720	iAG 600	iAG 200
Voltage	[V]	230	400	230
Motor	[kW]	1.3	0.55	1.1
Max. negative pressure	[Pa]	2,800	1,400	19,000
Max. airflow	[m³/h]	720	600	200
Sound emission	[dB (A)]	73	68	66
Filter surface	[m²]	3.5	1	0.8
Number of filter elements		1	1	1
Filter material		„M“-classified	„M“-classified	„M“-classified
Filter cleaning		manual brush cleaning	manual knock off appliance	Compressed air cleaning nozzle
Weight	[kg]	120	30	15
Intake diameter	[mm]	100	80	50
Dust collection bin	[Liter]	appr. 100	appr. 10	appr. 3
Dimensions L x W x H	[mm]	1,165 x 530 x 1,636	400 x 400 x 590	390 x 210 x 500
Part-No.		239012 0030	239012 0032	239012 0031

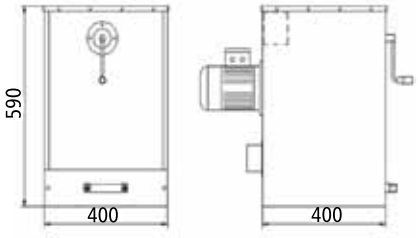
Dimensioned drawings



iAG 720



iAG 200



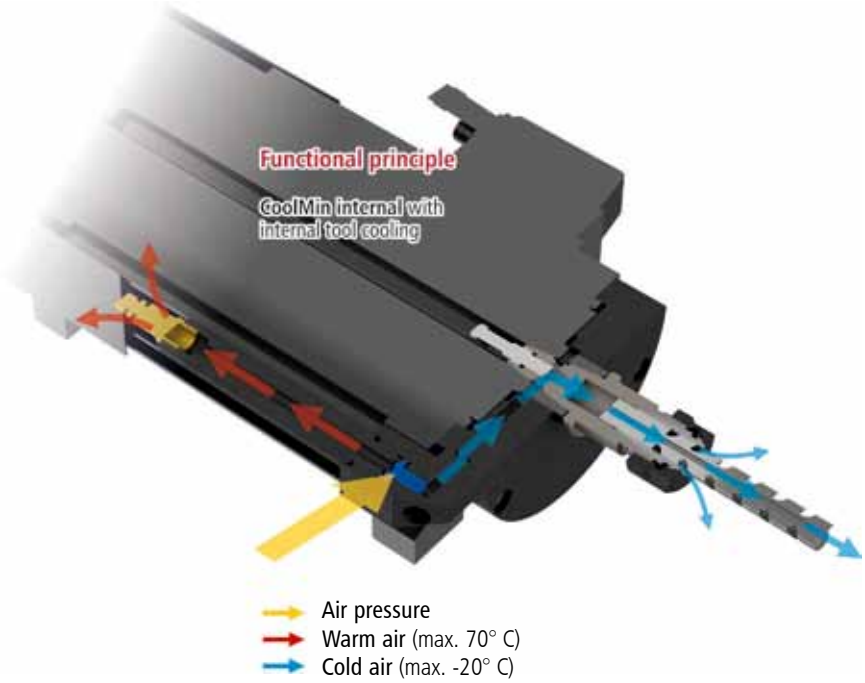
iAG 600

Technical specifications subject to change.

Tool cooling system

CoolMin

Functional principle



1. Spindle motor
2. Temperature controller
3. Hot air exhaust
4. Vortex nozzle with cold air exhaust
5. Compressed air feed
6. Cold air blower in synthetic material
7. Tool holder for internal cooling
8. Milling cutter for internal cooling

Tool and material cooling

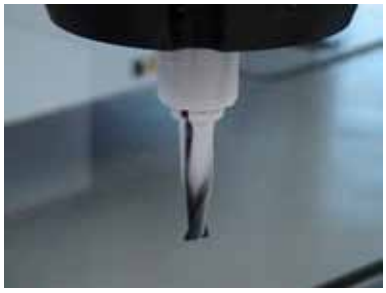
Dry cutting is today the first choice for many machining tasks.

Hitherto, materials, tool wear and surface finish have often necessitated cooling with appropriate coolants / greases. This always means moisture. Even minimal moisture spray cooling causes unwanted effects such as the build-up of dirt and the adhesion of swarf to the cutting tool or to the working surface and can lead to the deterioration of the material surface structure, depending on the material being machined.

Our patented cooling method ensures adequate tool and surface cooling and reduces such effects to negligible levels. This keeps the swarf dry and, depending on the material, easy to remove by either blowing or vacuuming. Surfaces are therefore protected and, as a result of direct tool cooling, tool life is significantly increased (also suitable for tools with integrated cooling).

The main component of our cooling method is a cold air nozzle, which operates on the eddy current principle and separates warm air from cold.

The system is powered by air pressure alone (6 to 10 bar).



Tool, cooled by CoolMin internal

Technical specifications subject to change.

Tool cooling system

CoolMin

Functional principle

CoolMin external

CoolMin internal without tool cooling system

1. Compressed air feed
2. Flexible mating hose
3. Spindle motor
4. Temperature controller
5. Hot air exhaust
6. Vortex nozzle with Cold air exhaust
7. Cold air supply in synthetic material
8. Collet

Diagram: CoolMin external with mating hose

Diagram: CoolMin internal

Technical specification

Compressed air feed	6 – 10 bar
Cold air exhaust	up to max. -25° C
Hot air exhaust	up to max. 70° C
Air consumption	approx. 150 l/min.

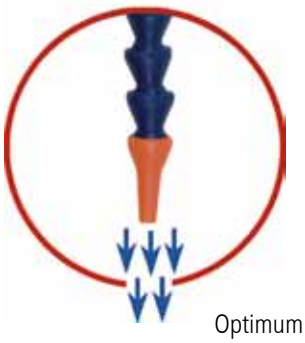


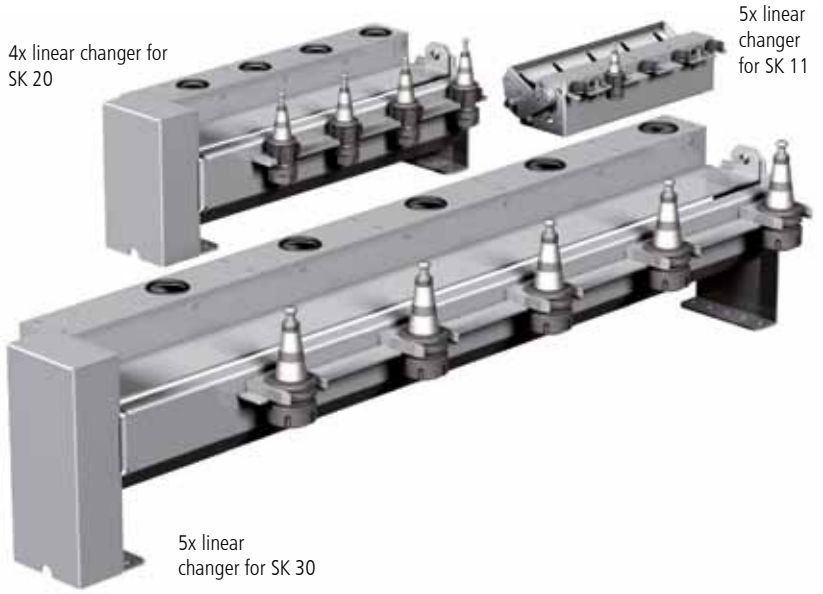
Diagram: Optimum cold air flow (up to -25°C) for tool cooling and chip evacuation

Ordering information

Description		Part number
CoolMin external	with mating hose, incl. servicing kit and shut-off tap (manual)	239011 0119
CoolMin external	incl. servicing kit and electrically-powered valve	239011 0117
CoolMin internal		see individual motors

Technical specifications subject to change.

Linear tool change stations SK 11 / 20 / 30



Features

- simple, functional tool changer for SK 11, SK 20 and SK 30
- pneumatic rotary cylinder and end position monitoring for safe changing
- control via 5/2-way valve with integration in the safety circuit
- low-maintenance, stainless steel design (powder-coated aluminium)
- variable positioning on the machine bench

Ordering information

SK 11 tool change station
...for iSA 900

5x, with hood + pneumatics
Part-no.: **239011 0053**

8x, with hood + pneumatics
Part-no.: **239011 0083**

SK 20 tool change station
...for iSA 2200

4x (in steps of 100mm), with hood + pneumatics
Part-no.: **239011 0041**

8x (in steps of 100mm), with hood + pneumatics
Part-no.: **239011 0081**

5x (in steps of 170mm), with hood + pneumatics
Part-no.: **239011 0050**

10x (in steps of 170mm), with hood + pneumatics
Part-no.: **239011 0100**

SK 30 tool change station
...for iSA 3600

4x, with hood + pneumatics
Part-no.: **239011 0045**

5x, with hood + pneumatics
Part-no.: **239011 0055**

8x, with hood + pneumatics
Part-no.: **239011 0082**

Tool holders

SK 11 SK 20 SK 30

SK 11 for collets Type ER 11
Part-no.: **239111 0001**

SK 20 for collets Type ER 20
Part-no.: **239172 0020**

SK 30 for collets Type ER 32
Part-no.: **239130**

Collets see page **E-44.**

Length measurement sensor

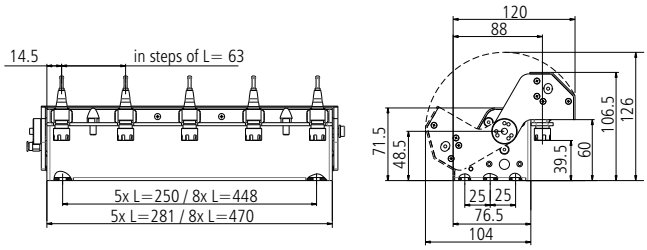
Length measuring sensor for measuring tool lengths
Part no.: **239099 0001**

Technical specifications subject to change.

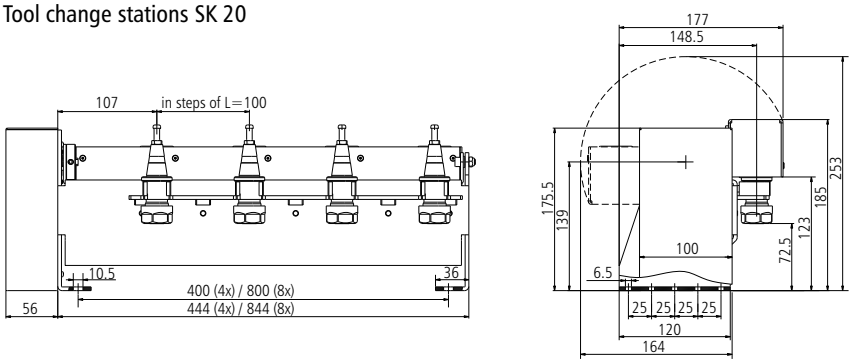
Linear tool change stations SK 11 / 20 / 30

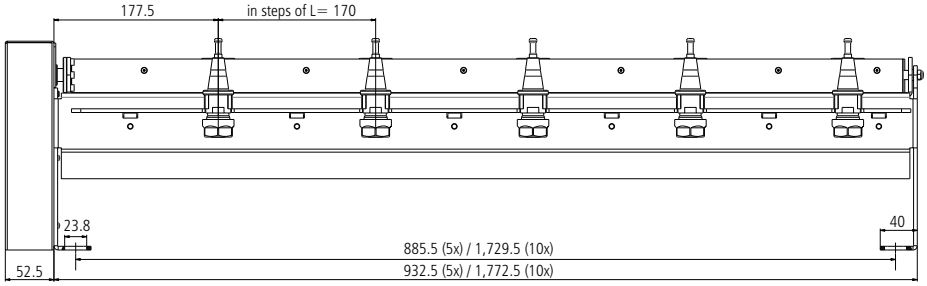
Dimensioned drawings

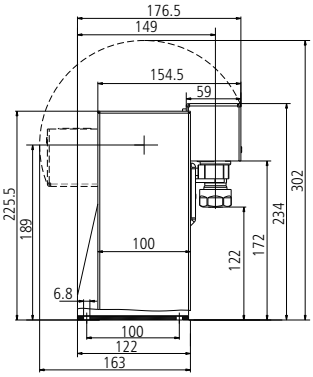
Tool change stations SK 11



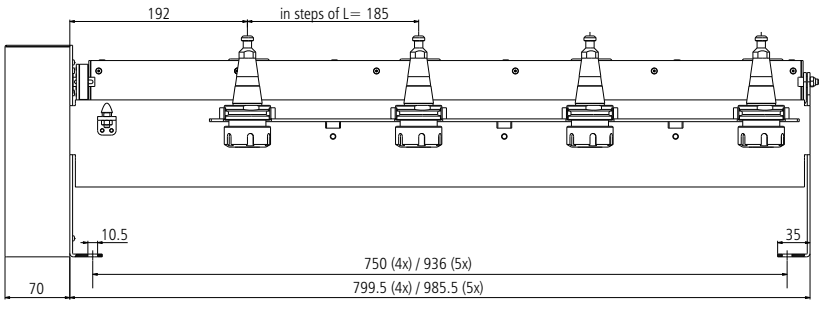
Tool change stations SK 20

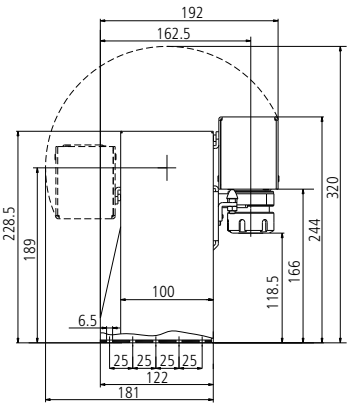






Tool change stations SK 30





Technical specifications subject to change.

Turned tool change stations SK 11 / 20

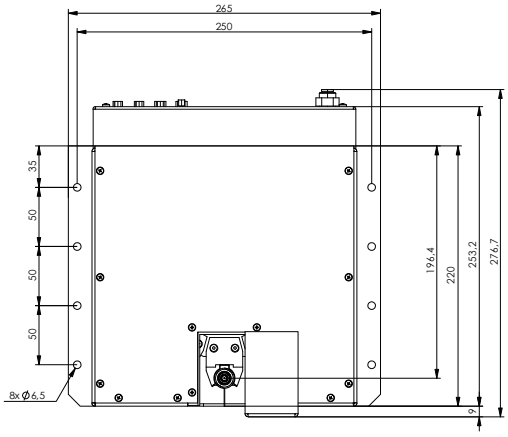
Interesting application videos can be found on our YouTube channel. Just take a look!

Features

- compact, space-saving design by circular tool positions
- powder-coated aluminium housing (RAL 3011)
- integrated power electronics for controlling via isel CNC commands via RS232 interface
- monitored tool positions and tool opening via sensors
- linear movement of the tool holder and the opening changer via switchable solenoid valves (5/2-way valve)
- used on all common isel Servo CNC machines
- easy to service

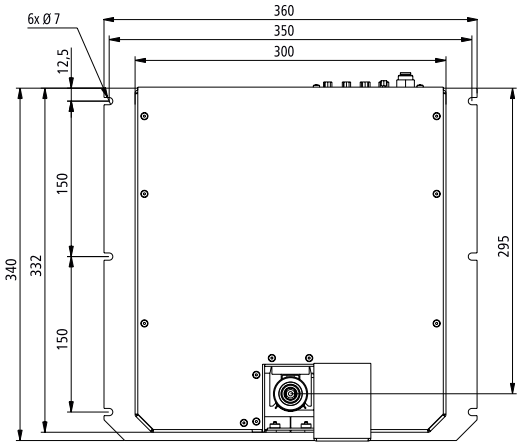
Dimensioned drawings

Turned tool change station SK 11



View from above

Turned tool change station SK 20



View from above

Technical data and ordering information

	turned tool change station SK 11	turned tool change station SK 20
Tool places	12	14
max. tool length [mm]	60	75
min.gap height [mm]	250	350
Suitable spindle motor	iSA 900	iSA 2200
Interface	RS 232	
Supply voltage	+24 VDC	
Dimensions W x D x H [mm]	265 x 277 x 224	360 x 340 x 271
Part-no.	**239100 0030**	**239100 6630**

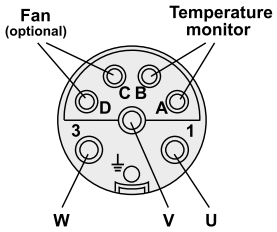
Technical specifications subject to change.

Motor leads and dust extraction devices

Motor leads

- 8-wire (3x 0.75 mm² +1x PE + 2x(2 × 0.34 mm²))
- drag chain compatible
- external braiding and separately shielded pairs
- pre-fabricated

Circular connector (7-pole + PE)



Motor side - M23 plug
Converter side - wire end bushings
Part no.:**392306 0300** (3 m)
Part no.:**392306 0500** (5 m)
Part no.:**392306 0800** (8 m)

Motor side - direct connection
Converter side - wire end bushings
Part no.:**392301 0300** (3 m)
Part no.:**392301 0500** (5 m)
Part no.:**392301 0800** (8 m)

Section	Wire	Wire Cross	Frequency converter
Motor connection	SW 1	0.75 mm²	U
	SW 2	0.75 mm²	V
	SW 3	0.75 mm²	W
	green / yellow	0.75 mm²	PE
Separately driven fan	green	0.34 mm²	L1
	yellow	0.34 mm²	L2 / N
Temperature monitoring	brown	0.34 mm²	T1
	white	0.34 mm²	B7

Dust extraction devices

Dust cover closed

Air hose inside diameter 80 mm

Dust cover open

Extraction head (brush of horse-hair)

Description	for spindle motor		Part-no.
Extraction device	iSA 500 / 750	prepared for hose 38 mm, manual opening	239012 0000
	iSA 900	prepared for hose 50 mm, manual opening	239012 0004
	iSA 1500	prepared for hose 80 mm, manual opening	239012 0001
	iSA 1500L	prepared for hose 80 mm, manual opening	239012 0009
	iSA 2200	prepared for hose 80 mm, automatic opening	239012 0002
		with external CoolMin, prepared for hose 80 mm, automatic opening	239012 0003
	iSA 3600	prepared for hose 80 mm, automatic opening	239012 0005
		with external CoolMin, prepared for hose 80 mm, automatic opening	239012 0006
Extraction head	iSA 500	prepared forexternal CoolMin, prepared for hose 50 mm, manual opening	239012 0013
	iSA 750	prepared for external CoolMin, prepared for hose 50 mm, manual opening	239012 0012

Technical specifications subject to change.

Collets for iSA-series

ER 11

ER 16

ER 20

Collets
for HSD-series
see page **E-32**

Collet set
for HFS-series
see pages **E-33, E-34, E-35**

The following collets are also able to clamp shafts reduced in diameter by 0.5 mm:

Collets type ER 11
for iSA 500 and iSA 900

Ø (mm)	Part no.
1,0	**239170 1000**
1,5	**239170 1500**
2,0	**239170 2000**
2,5	**239170 2500**
3,0	**239170 3000**
3,5	**239170 3500**
4,0	**239170 4000**

Ø (mm)	Part no.
4,5	**239170 4500**
5,0	**239170 5000**
5,5	**239170 5500**
6,0	**239170 6000**
6,5	**239170 6500**
7,0	**239170 7000**

Collet set

for spindle motor	Type	Ø (mm)	Part no.
iSA 500/iSA 900	ER 11	1.0 - 7.0	**239170 0001**

Clamping nuts

Type	Part no.
ERM 11	**239170**
ERM 16	**239171**
ERM 20	**239172**

The following collets are also able to clamp shafts reduced in diameter by 1.0 mm:

Collets type ER 16
for iSA 750

Ø (mm)	Part no.
1.0	**239171 1000**
2.0	**239171 2000**
3.0	**239171 3000**
4.0	**239171 4000**
5.0	**239171 5000**
6.0	**239171 6000**
7.0	**239171 7000**
8.0	**239171 8000**
9.0	**239171 9000**
10.0	**239171 0100**

Collets type ER 20
for iSA 1500 and iSA 2200

Ø (mm)	Part no.
2.0	**239172 2000**
3.0	**239172 3000**
4.0	**239172 4000**
5.0	**239172 5000**
6.0	**239172 6000**
7.0	**239172 7000**
8.0	**239172 8000**
10.0	**239172 0100**
11.0	**239172 0110**
12.0	**239172 0120**
13.0	**239172 0130**

Collets type ER 32
for iSA 3600

Ø (mm)	Part no.
3.0	**239130 3000**
4.0	**239130 4000**
5.0	**239130 5000**
6.0	**239130 6000**
7.0	**239130 7000**
8.0	**239130 8000**
9.0	**239130 9000**
10.0	**239130 0100**
11.0	**239130 0110**
12.0	**239130 0120**
13.0	**239130 0130**
14.0	**239130 0140**
15.0	**239130 0150**
16.0	**239130 0160**
17.0	**239130 0170**
18.0	**239130 0180**
19.0	**239130 0190**
20.0	**239130 0200**

Collet sets

for spindle motor	Type	Ø (mm)	Part no.
iSA 750	ER 16	1.0 - 10	**239171 0001**
iSA 1500 / iSA 2200	ER 20	2.0 - 13	**239172 0001**
iSA 3600	ER 32	3.0 - 20	**239130 0000**

Technical specifications subject to change.

Vacuum clamping plates

VakuFit®

Sample diagram

Multiple connections for high volume flow and optimal vacuum distribution.

All our vacuum plates can be arranged to fit together to cover large areas.

Other dimensions up on request.

Part number	Description	DIN	Clamping surface
216601 0017	VT 2115	A5	210 x 150 mm
216601 0018	VT 3021	A4	300 x 210 mm
216601 0019	VT 4230	A3	420 x 300 mm
216601 0020	VT 6042	A2	600 x 420 mm
216601 0030	Rotary vane pump (10.0 m³/h) for DIN A4 und A5		
216600 0028	Servicing kit for rotary vane pump 10.0 m³/h		
216601 0010	Connection set vacuum plate to rotary vane pump		
616601 2115	Rubber matting for vacuum plates A5		
616601 3021	Rubber matting for vacuum plates A4, T=1 mm, QTY 1 piece		
616601 3022	Rubber matting for vacuum plates A4, T=3 mm, QTY 5 piece		
616601 3023	Rubber matting for vacuum plates 1200 x 900 mm		

Technical specifications subject to change.

VakuFit - L

The raster plates for the vacuum clamping makes little demand on the vacuum pump. The plates are almost totally warp free and the material is therefore suitable for engraving operations when clamped.

In contrast to other vacuum clamping methods, surfaces can be milled over large areas without problem, with parts remaining securely clamped.

Material stops can be easily effected by inserting 5 mm dowelling pins into the raster plate holes. The board rubber matting is a consumable with a variety of uses. In addition to our standard plates, we offer customised variants and complete plate packages for special applications.

Note

Retaining force is proportional to the area covered, the coefficient of friction and the differential pressure.

In order to increase the coefficient of friction, rubber matting is included within the scope of delivery.

Scope of delivery

- 1x connection adapter
- 1x screw key 68 mm
- 1x rubber matting for holes
- 1x rubber matting for covering unused holes
- Operating instructions

Coolant misting system

Coolant misting system

Minimum volume
coolant misting system

Coolant misting system

Features

- electro-pneumatically controlled
- plastic container, capacity 1 liter, including valve unit
- rotary throttle valves for reproducible fine adjustment of the medium and spray air volume
- coaxial spraying head which generates a round 15° spray angle
- includes a 4 m hose for each medium and spray air, as well as 300 mm ball joint extension

Minimum volume coolant misting system

Features

- aluminium pressure vessel
- with 1 or 2 adjustable nozzles, includes 1 liter of spray oil
- liquid level control
- valve unit with solenoid valves
- precision coaxial spray head
- ball joint extension
- nozzle connection package with fittings for medium and spray air
- pressure reducer to adjust the container pressure

Ordering information

Description		Part-no.
Coolant misting system	with flexible nozzle, 24 V, includes container and 1 l spray oil	429111 1000
Minimum volume coolant misting system	with one flexible nozzle, includes 1 l spray oil	429116 1000
	with two flexible nozzle, includes 1 l spray oil	429116 2000

Space for your notes

Robotik

As a division within isel Germany AG , isel Robotik presents a cross-section of its product portfolio of automation components for robots, wafer-handler, prealigners, linear units, end effectors and accessories for the semiconductor industry, made in Germany. The company's Robotics Division has been operating for more than 10 years within the semiconductor sector. Sales began in 2004 with just a few types of robot and prealigner. Today the range of components for the semiconductor industry covers the needs of all OEM customer within the semiconductor sector. Since 2004, over 1000 robot systems have been successfully put into service. For these processes, in addition to clean room compatibility, high precision and reliability are paramount. Since these requirements affect the entire production process in the chip industry, stringent specifications also apply with regard to component handling. Handling components exemplify isel Germany's market reputation: very high quality, short delivery times, the best possible service and a very good price-performance ratio. Ask for an appointment with one of our applications engineers. We look forward to your visit and an opportunity to serve your automation, robotic and handling needs.

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