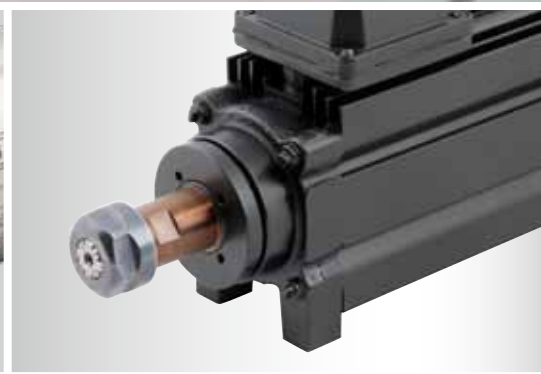




**isel**<sup>®</sup> *From Components to Systems*

## SPINDLE MOTORS and accessories



*...for best quality and price...*

## isel spindle motors are eminently suited for applications in non-metal, aluminium, plastic and wood processing.

In developing our spindle motors, we place a great deal of importance on functionality, quality and optimum pricing. In addition, our spindle motors are particularly easy to maintain.

Series arrangements with minimum spacing can be realized through the slim design and the square cross-section of the housing.

In terms of the electrical construction, our motors have three-phase squirrel cage motors with 2-pole windings, laid out according to DIN EN 60034. The insulating material of the windings is manufactured according to Insulation Class F.

The motors are finely balanced dynamically, so that good running characteristics are attained even at high speeds. They cover a speed range of 3,000 to 30,000 rpm overall.

All spindle motors are completely manufactured in Germany, fulfil the minimum requirements of Protection Class IP54 and are therefore also permitted for the wood dust area I wonder if this should be the "woodpulp industry" or "wood dust areas".

In our product range, you will find not only the spindle motors themselves, but also all required cables in different lengths and preset, reliable frequency converters for the controller connection.

We are an easy-to-use service in comparison to many of our competitors and possess our own year-round repair service, due to the integration under one roof of our development, production, sales and service departments.

Our product palette is completed by comprehensive accessories, such as dust collectors, minimum quantities - lubrication technology, collet chucks (Swiss quality), SK-collets, tool changers and our unique, patented CoolMin system for optimum and economic mould cooling without residue.





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page 6

## iSA 500

with manual tool changer

- rated output 0.5 kW
- speed range 5,000 rpm – 30,000 rpm



page 8

## iSA 750

with manual tool changer

- rated output 0.75 kW
- speed range 3,000 rpm – 24,000 rpm



page 10

## iSA 1500

with manual tool changer

- rated output 1.5 kW
- speed range 5,000 rpm – 20,000 rpm



page 12

## iSA 1500 L

with manual tool changer

- rated output 1.5 kW
- speed range 2,500 rpm – 6,000 rpm



page 14

## iSA 900

with automatic tool changer

- rated output 0.9 kW
- speed range 6,000 rpm – 24,000 rpm



page 16

## iSA 2200

with automatic tool changer

- rated output 2.2 kW
- speed range 5,000 rpm – 20,000 rpm



page 18

## iSA 1500 WL

with automatic tool changer

- rated output 1.5 kW
- speed range 1,000 rpm – 20,000 rpm



page 20

## iSA 3600

with automatic tool changer

- rated output 3.6 kW
- Speed range 6,000 rpm – 18,000 rpm



page 22

## ES 325 HSK 25

with automatic tool changer

- rated output 2.0 kW
- speed range 6,000 rpm – 40,000 rpm



page 24

## HFS 300

with manual tool changer

- rated output 0.3 kW
- speed range 5,000 rpm – 50,000 rpm



page 26

## HFS 800

with manual tool changer

- rated output 0.8 kW
- speed range 5,000 rpm – 24,000 rpm



page 28

## HFS 1500

with manual tool changer

- rated output 1.5 kW
- speed range 5,000 rpm – 24,000 rpm



page 30

## HFS 2200

with manual tool changer

- rated output 2.2 kW
- speed range 5,000 rpm – 24,000 rpm

If you need further information, please contact our technical sales department.

phone: +49 (0) 6659 / 981 - 0  
 mail: [automation@isel.com](mailto:automation@isel.com)

# iSA 500



iSA 500



iSA 500  
with CoolMin®



Frequency converter  
SKC 750  
(see page 32)



CoolMin® external  
(see page 42)

Collet ER 11  
(see page 40)



## 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 - max. 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
- concentricity: 0.01 mm
- weight: 2.8 kg

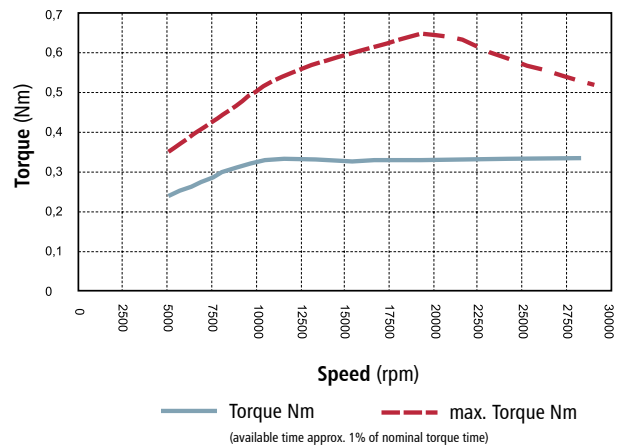
## OPTIONAL

- CoolMin® (internal and external)
- frequency converter SKC 750
- suction device
- various collets ER 11, mounting plates, lead lengths
- sealing air connection possible

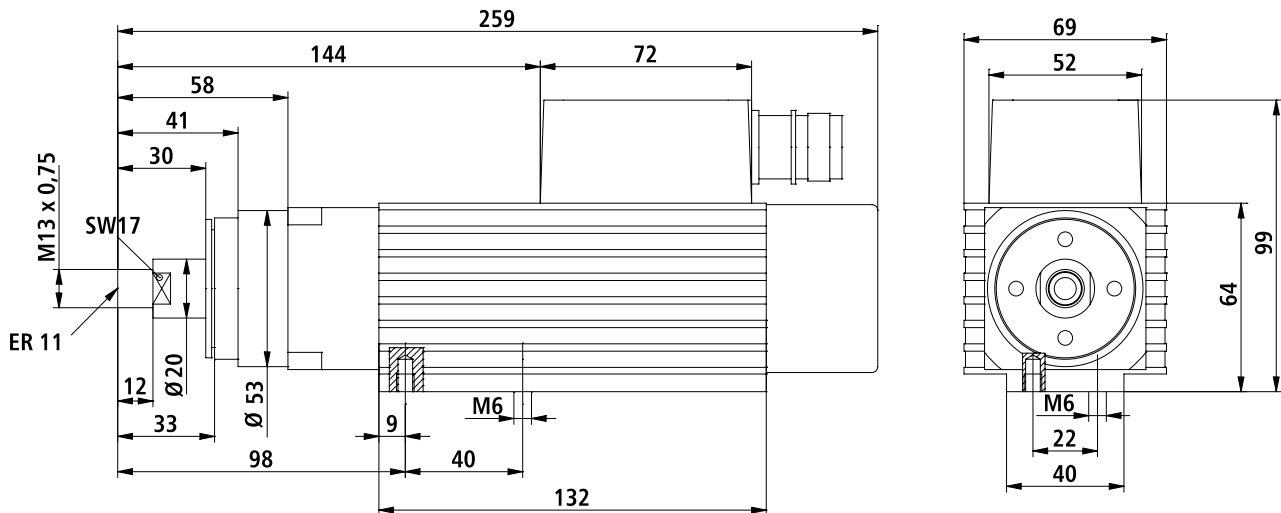
## TECHNICAL SPECIFICATION

Torque at rated speed (18.000 rpm)	Nm	0.28
Speed range	rpm	5,000 ... max. 30,000
Cut-off frequency** / Speed	Hz / rpm	300 / 18,000
Number of poles		2
Rated voltage	V	230
Rated current	A	2.6
cos Φ		0.75
Rated power (S6 = 40% operation)	kW	0.5
Concentricity	mm	0,01
Weight	kg	2.8

## TORQUE CURVES



## DIMENSIONED DRAWINGS



## ORDERING INFORMATION

Item name		Part no.
iSA 500	with collet ER 11 (6 mm), chuck key ER 11, spanner SW 17, Interconnectron connector	477004 3130
iSA 500 with converter*	with collet ER 11 (6 mm), chuck key ER 11, spanner SW 17, Interconnectron connector, connecting cable 8 m	310704 1611
iSA 500 with CoolMin® (internal)	with collet ER 11 (6 mm), chuck key ER 11, spanner SW 17, Interconnectron connector	477004 5130
iSA 500 with CoolMin® (internal) and converter*	with collet ER 11 (6 mm), chuck key ER 11, spanner SW 17, Interconnectron connector, connecting cable 8 m	310704 1631
Frequency converter	SKC 750	311707 6000
Collet 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	239170 0001
Exhaust device for EuroMod / FlatCom	prepared for Ø 38 mm hose	239012 0000
Extraction head AK 500 for CoolMin®	prepared for Ø 50 mm hose	239012 0013
Exhaust device for ICP / ICV 4030	prepared for cold air nozzle	239012 SDZ6495
Mounting panels for isel Systems (Z axis)	EuroMod / FlatCom	277028
	Linear unit LES 6	277028 0008

\*converter pre-set for spindle    \*\*cut-off frequency = frequency to which the motor effect is designed

# iSA 750



iSA 750

iSA 750  
with CoolMin®



Frequency converter  
SKC 750  
(see page 32)

CoolMin® external  
(see page 42)

Collet ER 16  
(see page 40)

## 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. – max. 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
- concentricity: 0.01 mm
- weight: 2.6 kg

## OPTIONAL

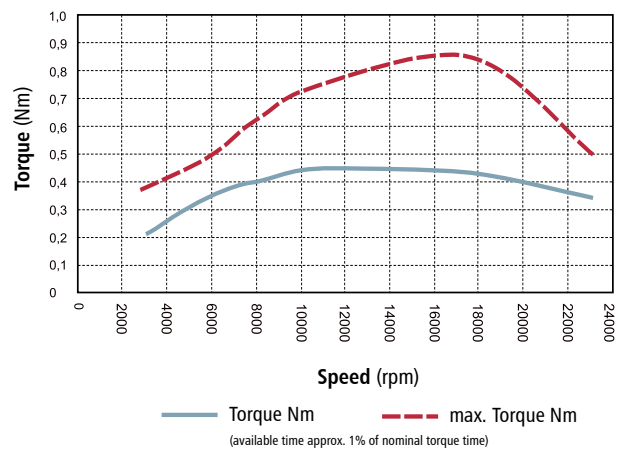
- CoolMin® (internal and external)
- frequency converter SKC 750
- suction device
- various collets ER 16, mounting plates, lead lengths
- sealing air connection possible



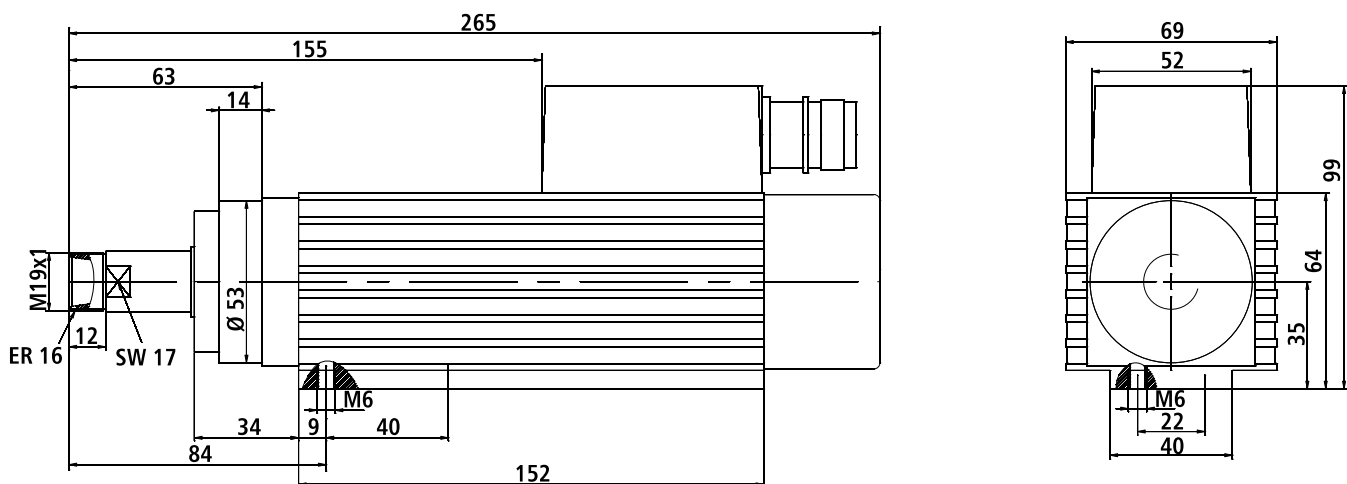
## TECHNICAL SPECIFICATION

Torque at rated speed (22.000 rpm)	Nm	0.34
Speed range	rpm	3,000 ... max. 24,000
Cut-off frequency** / Speed	Hz / rpm	300 / 18,000
Number of poles		2
Rated voltage	V	230
Rated current	A	3.4
cos $\Phi$		0.79
Rated power (S6 = 40% Operation)	kW	0.75
Concentricity	mm	0.01
Weight	kg	2.6

## TORQUE CURVES



## DIMENSIONED DRAWINGS



## ORDERING INFORMATION

Item name		Part no.
iSA 750	with collet ER 16 (6 mm), chuck key ER 16, spanner SW 17, Interconnectron connector	477008 3124
iSA 750 with converter*	with collet ER 16 (6 mm), chuck key ER 16, spanner SW 17, Interconnectron connector, connecting cable 8 m	310708 1611
iSA 750 with CoolMin® (internal)	with collet ER 16 (6 mm), chuck key ER 16, spanner SW 17, Interconnectron connector	477008 5124
iSA 750 with CoolMin® (internal) and converter*	with collet ER 16 (6 mm), chuck key ER 16, spanner SW 17, Interconnectron connector, connecting cable 8 m	310707 1631
Frequency converter	SKC 750	311707 6000
Collet set ER 16	1.0 / 2.0 / 3.0 / 4.0 / 5.0 / 6.0 / 7.0 / 8.0 / 9.0 / 10.0 mm	239171 0001
Exhaust device for EuroMod / FlatCom	prepared for $\varnothing$ 38 mm hose	239012 0000
Extraction head AK 750 for CoolMin®	prepared for $\varnothing$ 50 mm hose	239012 0012
Exhaust device for ICP / ICV 4030	prepared for $\varnothing$ 21 mm, with cold air nozzle	280211 9001
Mounting panels for isel Systems (Z axis)	EuroMod / FlatCom	277028
	Linear unit LES 6	277028 0008

\*converter pre-set for spindle

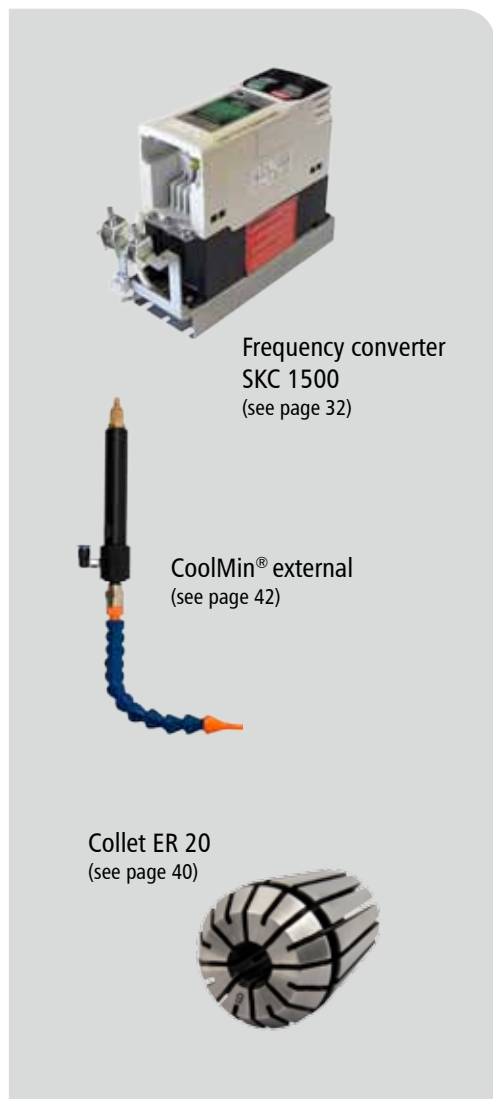
\*\*cut-off frequency = frequency to which the motor effect is designed

# iSA 1500



iSA 1500

iSA 1500  
with CoolMin®



Frequency converter  
SKC 1500  
(see page 32)

CoolMin® external  
(see page 42)

Collet ER 20  
(see page 40)

## 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. – max. 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
- concentricity: 0.01 mm
- weight: 6.4 kg

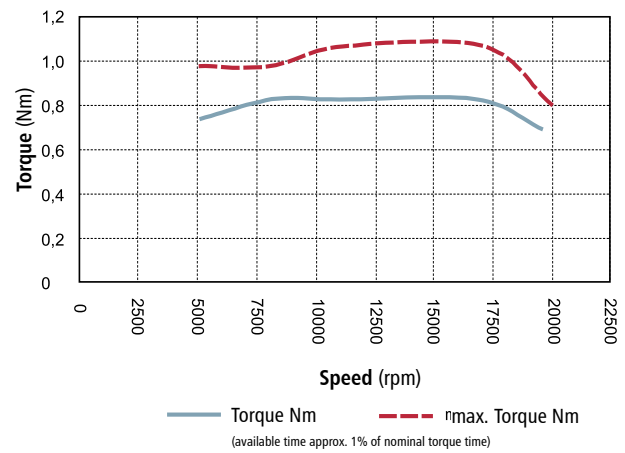
## OPTIONAL

- CoolMin® (internal and external)
- frequency converter SKC 1500
- suction device
- various collets ER 20, mounting plates, lead lengths
- sealing air connection possible

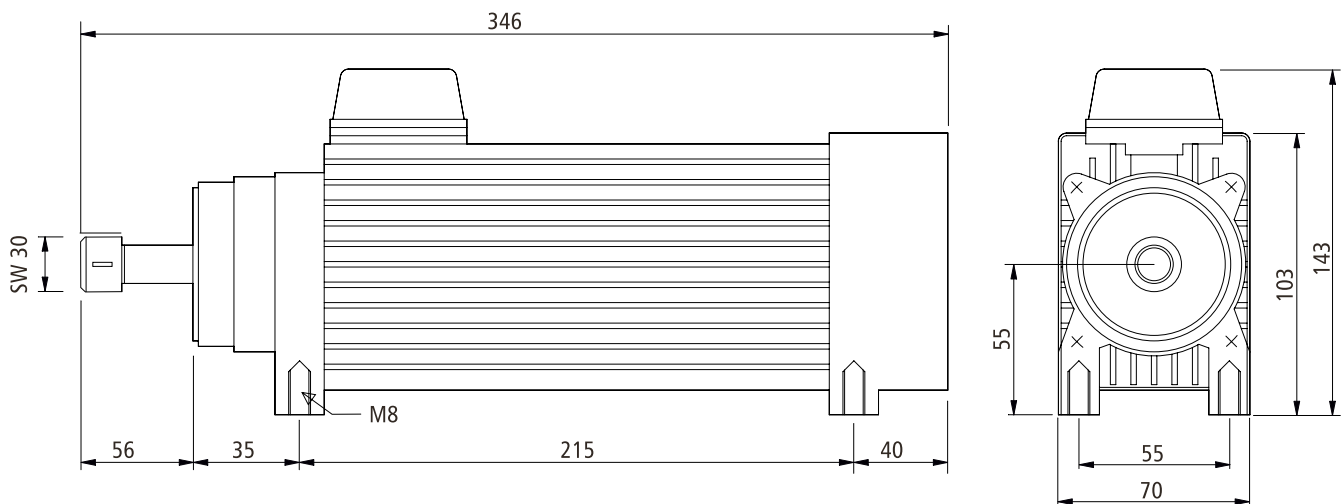
## TECHNICAL SPECIFICATION

Torque at rated speed (20.000 rpm)	Nm	0.72
Speed range	rpm	5,000 ... max. 20,000
Cut-off frequency** / Speed	Hz / rpm	300 / 18,000
Number of poles		2
Rated voltage	V	230
Rated current	A	7.0
cos Φ		0.85
Rated power (S1 = 100% Operation)	kW	1.5
Concentricity	mm	0.01
Weight	kg	6.4

## TORQUE CURVES



## DIMENSIONED DRAWINGS



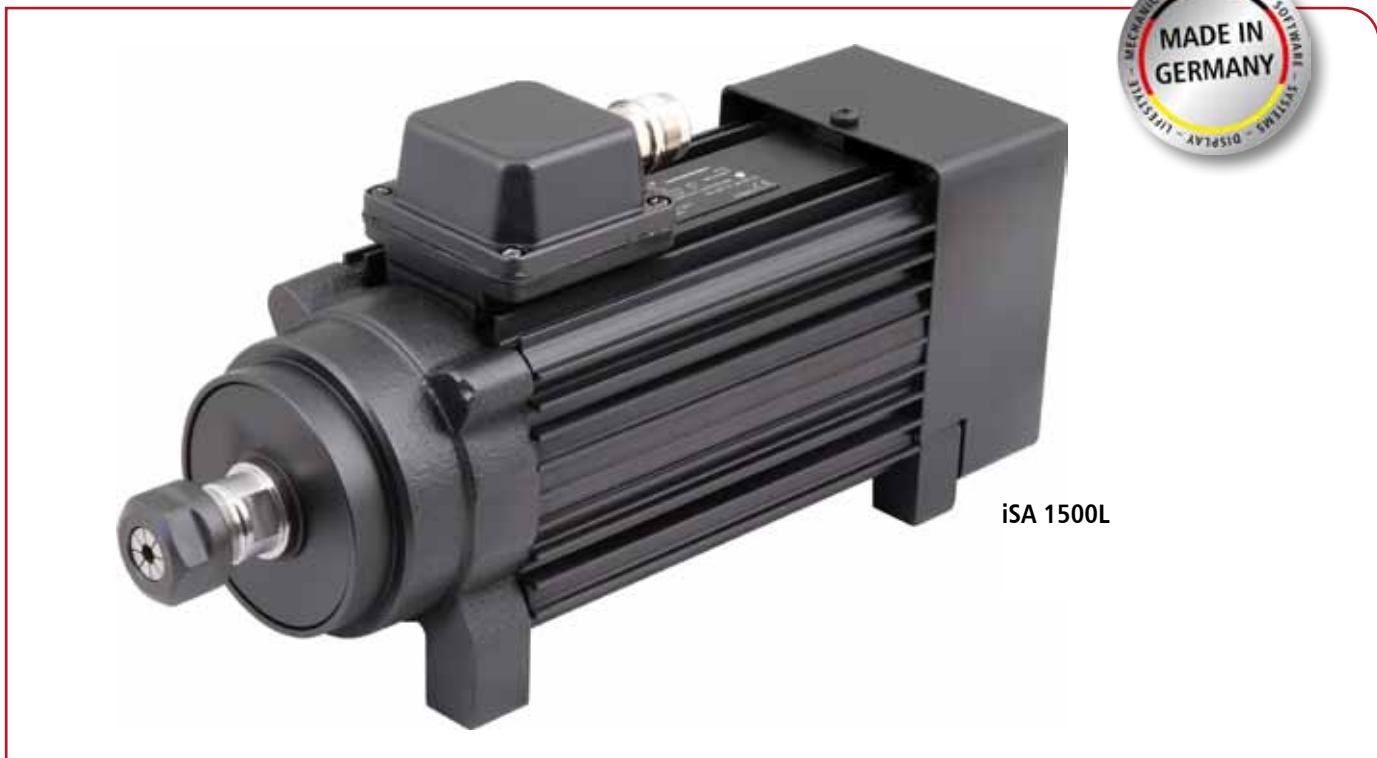
## ORDERING INFORMATION

Item name		Part no.
iSA 1500	with collet ER 20 (6 mm), chuck key ER 20, spanner SW 22, Interconnection connector	477510 3120
iSA 1500 with converter*	with collet ER 20 (6 mm), chuck key ER 20, spanner SW 22, Interconnection connector, connecting cable 8 m	310610 3614
iSA 1500 with CoolMin® (internal)	with collet ER 20 (6 mm), chuck key ER 20, spanner SW 22, Interconnection connector	477510 5120
iSA 1500 with CoolMin® (internal) and converter*	with collet ER 20 (6 mm), chuck key ER 20, spanner SW 22, Interconnection connector, connecting cable 8 m	310610 3634
Frequency converter	SKC 1500	311715 6000
Collet 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	239172 0001
Exhaust device	prepared for Ø 80 mm hose	239012 0001
	prepared for Ø 80 mm hose, for CoolMin®	239012 0011
	prepared for Ø 70 mm hose	239012 0015
Mounting panels for isel Systems (Z axis)	EuroMod / FlatCom	277028 0002
	Linear unit LES 5	277028 0003

\*converter pre-set for spindle

\*\*cut-off frequency = frequency to which the motor effect is designed

# iSA 1500L



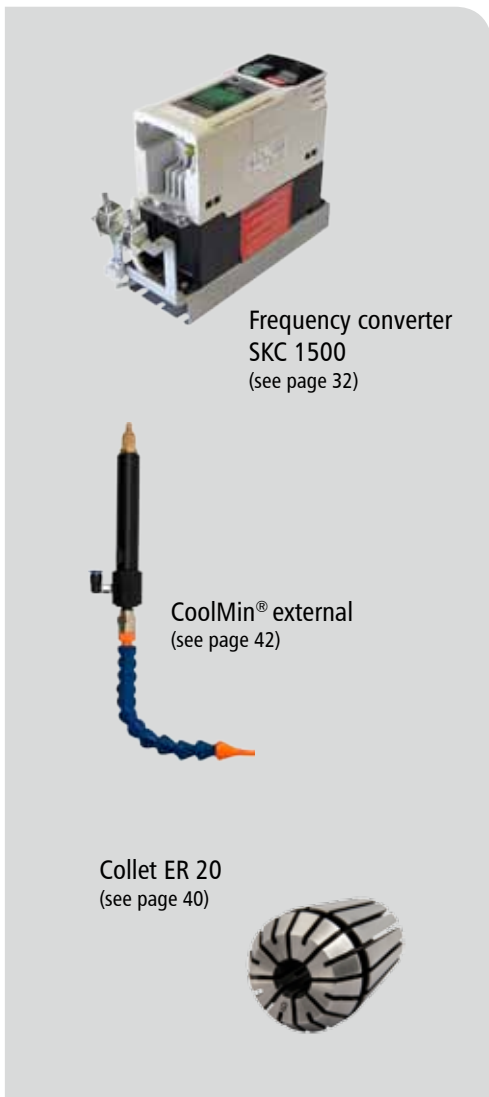
iSA 1500L

## 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 – max. 6,000 rpm
- torque 2.37 Nm (at 6,000 rpm)
- rated voltage 200 V
- manual tool change
- clamping range  $\varnothing$  2 mm –  $\varnothing$  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® (external)
- frequency converter SKC 1500
- suction device
- various collets ER 20, mounting plates, lead lengths
- sealing air connection possible



Frequency converter  
SKC 1500  
(see page 32)



CoolMin® external  
(see page 42)

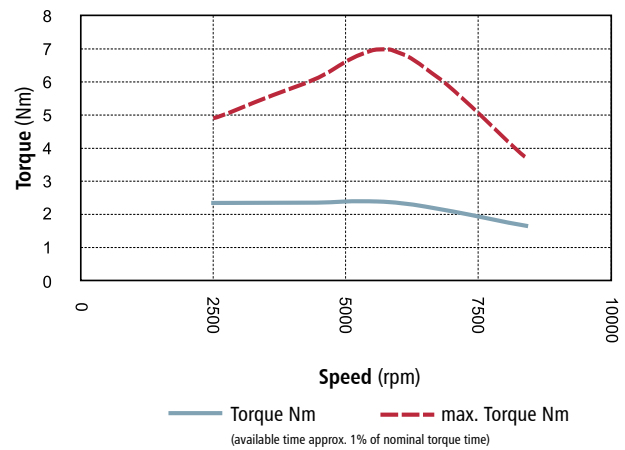
Collet ER 20  
(see page 40)



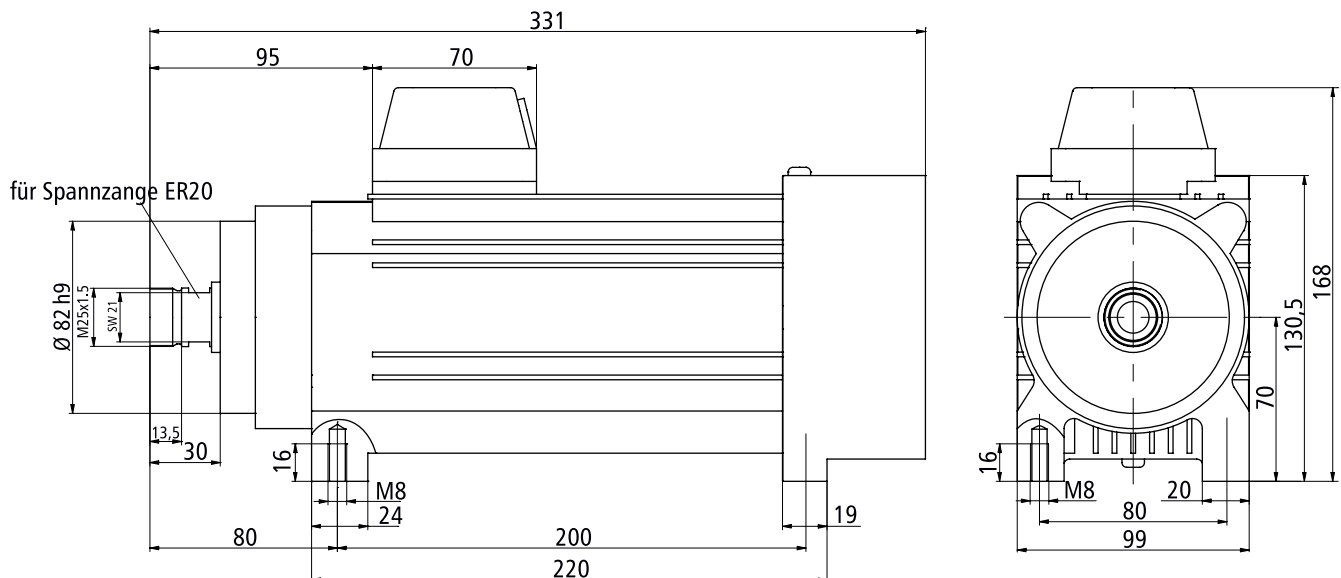
## TECHNICAL SPECIFICATION

Torque at rated speed (6.000 rpm)	Nm	2.37
Speed range	rpm	2,500 ... max. 6,000
Cut-off frequency** / Speed	Hz / rpm	100 / 6,000
Number of poles		2
Rated voltage	V	200
Rated current	A	6.5
cos Φ		0.84
Rated power (S6 = 40% Operation)	kW	1.5
Concentricity	mm	0.01
Weight	kg	10.5

## TORQUE CURVES



## DIMENSIONED DRAWINGS



## ORDERING INFORMATION

Item name		Part no.
iSA 1500L	with collet ER 20 (6 mm), chuck key ER 20, spanner SW 22, Interconnectron connector	477510 3106
iSA 1500L with Converter*	with Collet ER 20 (6 mm), Spannschlüssel ER 20, Maulschlüssel SW 22, Interconnectronanschluss, Verbindungsleitung 8 m	310610 3615
Frequency converter	SKC 1500	311715 6000
CoolMin®	external	239011 0119
Collet 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	239172 0001
Exhaust device	prepared for Ø 80 mm hose	239012 0009
	prepared for Ø 80 mm hose, for CoolMin®	239012 0010
Mounting panels for isel Systems (Z axis)	EuroMod / FlatCom	277028 0011
	Linear unit LES 5	277028 0005

\*converter pre-set for spindle

\*\*cut-off frequency = frequency to which the motor effect is designed

# iSA 900



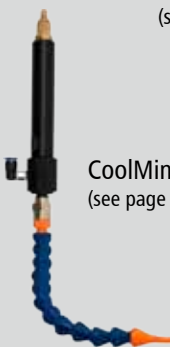
iSA 900

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

with automatic tool change



Frequency converter SKC 750 (see page 32)



CoolMin® external (see page 42)

Collet ER 11 (see page 40)



Tool holder SK 11

## 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. – max. 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
- concentricity: 0.01 mm
- weight: 5.8 kg

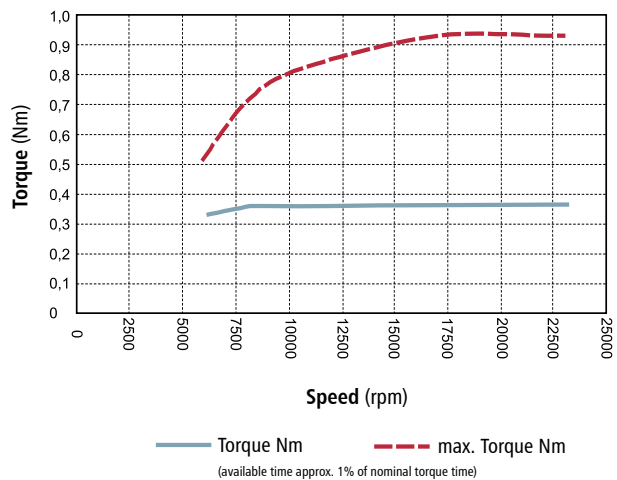
## OPTIONAL

- CoolMin® (external)
- frequency converter SKC 750
- tool changing stations
- suction device
- various collets ER 11, mounting plates, lead lengths
- sealing air connection possible

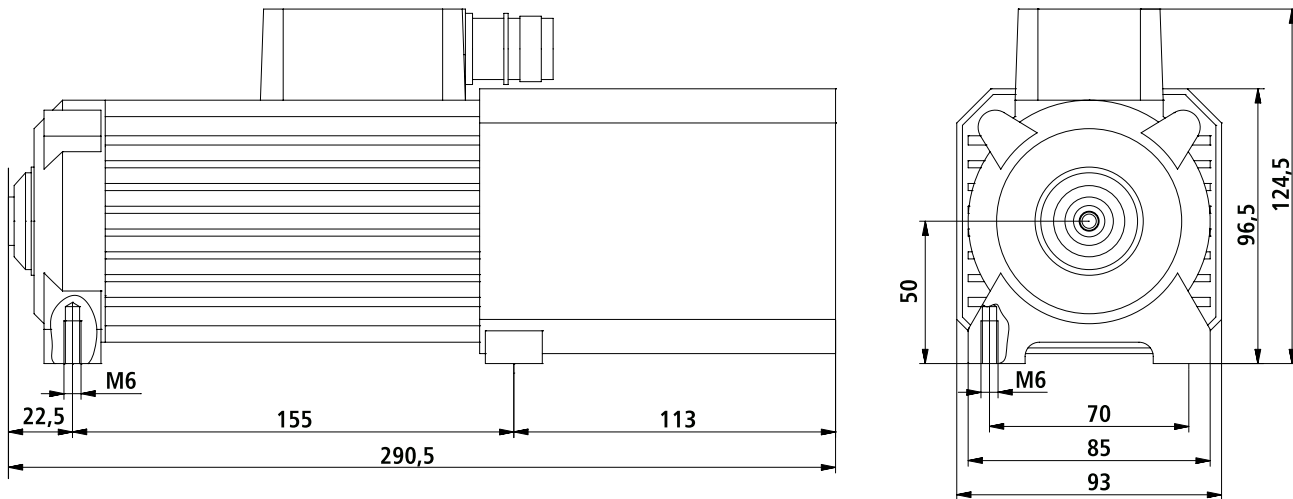
## TECHNICAL SPECIFICATION

Torque at rated speed (18.000 rpm)	Nm	0.37
Speed range	rpm	6,000 ... max. 24,000
Cut-off frequency** / Speed	Hz / rpm	400 / 24,000
Number of poles		2
Rated voltage	V	230
Rated current	A	3.25
cos Φ		0.84
Rated power (S6 = 40% Operation)	kW	0.9
Concentricity	mm	0.01
Weight	kg	5.8

## TORQUE CURVES



## DIMENSIONED DRAWINGS



## ORDERING INFORMATION

Item name		Part no.
iSA 900	with collet ER 11 (6 mm), clamping nut ERM 11, chuck key ER 11 M, spanner SW 17, Interconnectron connector	477009 3324
iSA 900 with Converter*	with collet ER 11 (6 mm), clamping nut ERM 11, chuck key ER 11 M, spanner SW 17, Interconnectron connector, motor connection cable 8 m	310709 3612
CoolMin®	external	239011 0119
Frequency converter	SKC 750	311707 6000
Collet 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	239170 0001
Linear tool change station SK 11	5x	239011 0053
	8x	239011 0083
Turned tool change station SK 11	12x	239100 4900
Tool holder SK 11	for collet ER 11	239111 0001
Exhaust device	prepared for Ø 50 mm hose	239012 0004
	prepared for Ø 50 mm hose, for CoolMin®	239012 0014
Mounting panels for isel Systems (Z axis)	EuroMod / FlatCom	277028 0003
	ICP / ICV	277028 0010
	Linear unit LES 6	277028 0008

\*converter pre-set for spindle

\*\*cut-off frequency = frequency to which the motor effect is designed.

# iSA 2200



iSA 2200

iSA 2200 with CoolMin®

with automatic tool change

## 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 – max. 20,000 rpm
- torque 1.26 Nm (at 18,000 rpm)
- rated voltage 3 x 230 V
- automatic tool change
- clamping range  $\varnothing 2 - \varnothing 13$  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® (external)
- CoolMin® (internal) with internal tool cooling
- frequency converter SKC 1500
- tool changing stations
- suction device
- various collets ER 20, mounting plates
- sealing air connection possible



Frequency converter SKC 1500 (see page 32)

CoolMin® external (see page 42)

Collet ER 20 (see page 40)

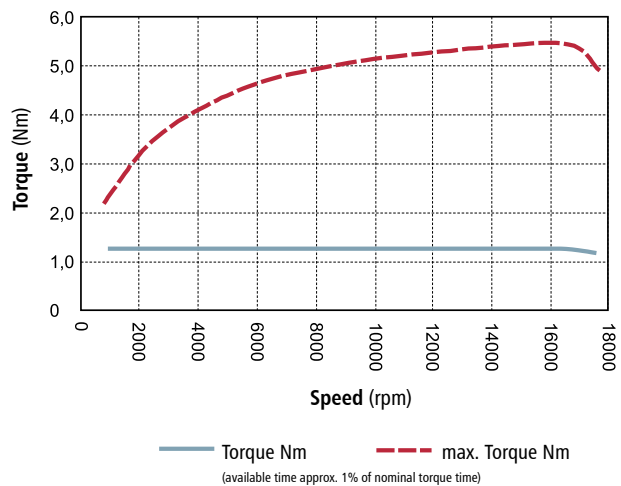
Tool holder SK 20



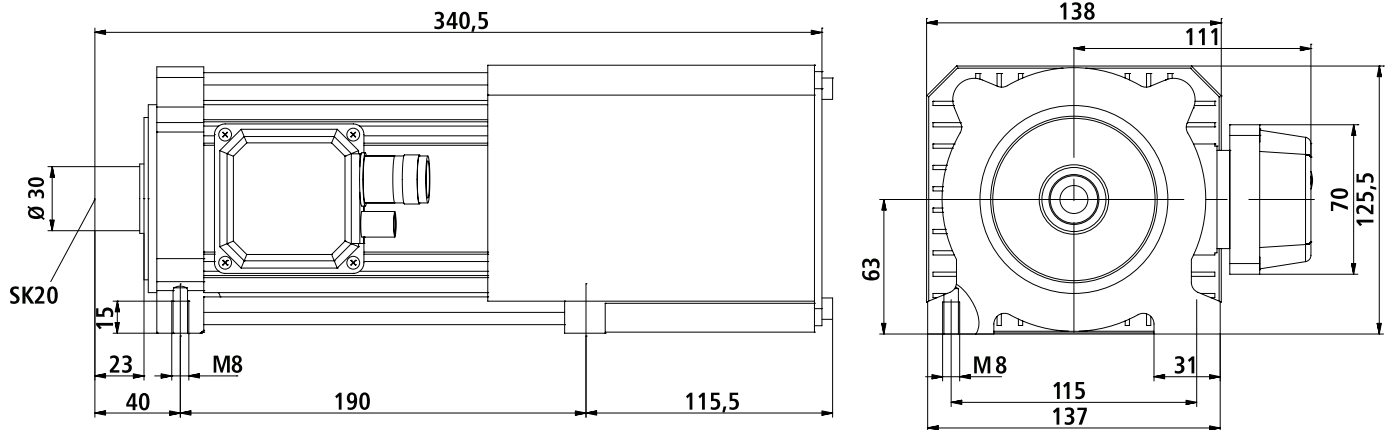
## TECHNICAL SPECIFICATION

Torque at rated speed (18.000 rpm)	Nm	1.26
Speed range	rpm	5,000 ... max. 20,000
Cut-off frequency** / Speed	Hz / rpm	300 / 18,000
Number of poles		2
Rated voltage	V	3 x 230
Rated current	A	3.25
cos Φ		7.6
Rated power (S6 = 40% Operation)	kW	2.2
Concentricity	mm	0.01
Weight	kg	14.6

## TORQUE CURVES



## DIMENSIONED DRAWINGS



## ORDERING INFORMATION

Item name		Part no.
iSA 2200	with collet ER 20 (6 mm), clamping nut ERM 20, chuck key ER 20 M, spanner SW 22, Interconnection connector	477022 3320
iSA 2200 with Converter*	with collet ER 20 (6 mm), clamping nut ERM 20, chuck key ER 20 M, spanner SW 22, Interconnection connector, motor connecting cable 8 m	310722 3621
iSA 2200 with CoolMin® (internal)	with collet ER 20 (6 mm), clamping nut ERM 20, chuck key ER 20 M, spanner SW 22, Interconnection connector	477022 5320
iSA 2200 with CoolMin® (internal) and Converter*	with collet ER 20 (6 mm), clamping nut ERM 20, chuck key ER 20 M, spanner SW 22, Interconnection connector, motor connecting cable 8 m	310722 3631
CoolMin®	external	239011 0119
Frequency converter	SKC 1500	311715 6000
Collet 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	239172 0001
Linear tool change station SK 20	4x	239011 0041
	8x	239011 0081
Turned tool change station SK 20	14x	239100 6630
Tool holder SK 20	for Collet ER 20	239172 0020
Exhaust device	prepared for Ø 80 mm hose	239012 0002
	prepared for Ø 80 mm hose, with external tool cooling	239012 0003
Mounting panels for isel Systems (Z axis)	EuroMod / FlatCom	277028 0004
	Linear unit LES 5	277028 0005

\*converter pre-set for spindle

\*\*cut-off frequency = frequency to which the motor effect is designed.

# iSA 1500WL



for processing in the low speed range



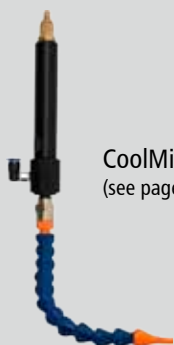
iSA 1500WL

iSA 1500 with CoolMin®

with automatic tool change



Frequency converter SKC 1500 (see page 32)



CoolMin® external (see page 42)

Collet ER 20 (see page 40)



Tool holder SK 20

## 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 1,000 rpm. – max. 20,000 rpm.
- rated torque 2.5 Nm (at 6,000 rpm)
- specific torque rating for drilling and lowering in the lower speed range
- rated voltage 3 x 230 V
- automatic tool change
- clamping range  $\varnothing$  2 mm –  $\varnothing$  13 mm
- separatly 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

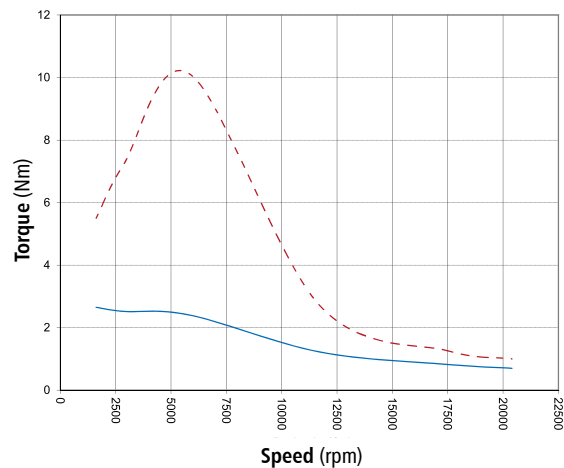
## OPTIONAL

- CoolMin® (external and internal)
- frequency converter SKC 1500
- tool changing stations
- various collets ER 20, mounting plates
- sealing air connection possible

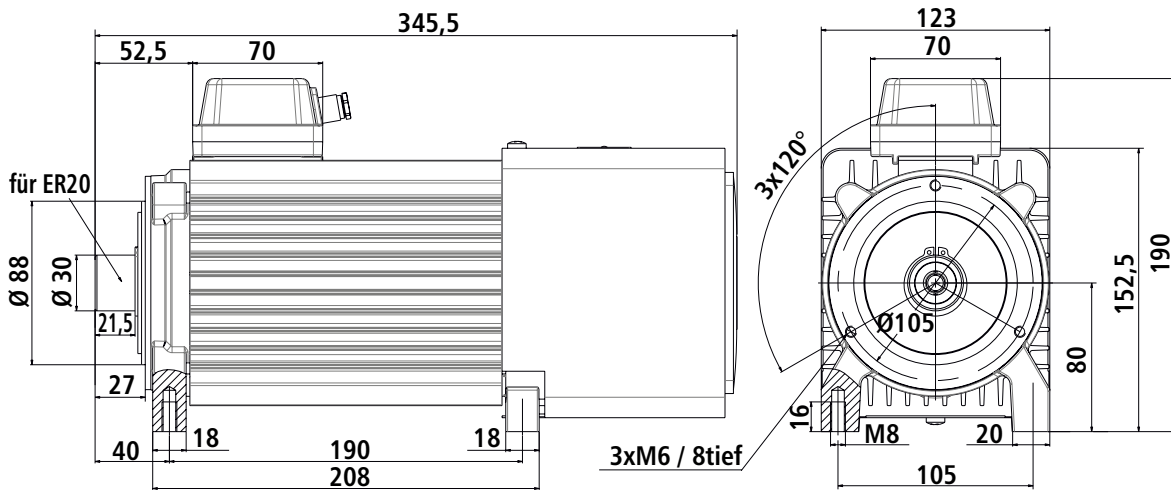
## TECHNICAL SPECIFICATION

Torque at rated speed (6.000 rpm)	Nm	2.5
Speed range	rpm	1,000 ... max. 20,000
Cut-off frequency** / Speed	Hz / rpm	100 / 6,000
Number of poles		2
Rated voltage	V	3 x 230 (star connection)
Rated current	A	6.0
cos Φ		0.35
Rated power (S6 = 40% Operation)	kW	1.5
Concentricity	mm	0.01
Weight	kg	14.0

## TORQUE CURVES



## DIMENSIONED DRAWINGS



## ORDERING INFORMATION

Item name		Part no.
iSA 1500WL	with collet ER 20 (6 mm), chuck key ER 20 M, spanner SW 22, Interconnectron connector	477015 3320
iSA 1500WL with Converter*	with collet ER 20 (6 mm), chuck key ER 20 M, spanner SW 22, Interconnectron connector, motor connecting cable 8 m	310715 3621
CoolMin®	external	239011 0119
Frequency converter	SKC 1500	311715 6000
Collet 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	239172 0001
Linear tool change station SK 20	4x	239011 0041
	8x	239011 0081
Turned tool change station SK 20	14x	239100 6630
Tool holder SK 20	for Collet ER 20	239172 0020
Mounting panels for isel Systems (Z axis)	EuroMod / FlatCom	277028 0019
	Linear unit LES 5	277028 0018

\*converter pre-set for spindle

\*\*cut-off frequency = frequency to which the motor effect is designed

# iSA 3600



## 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. – max. 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
- concentricity: 0.01 mm
- weight: 23.0 kg

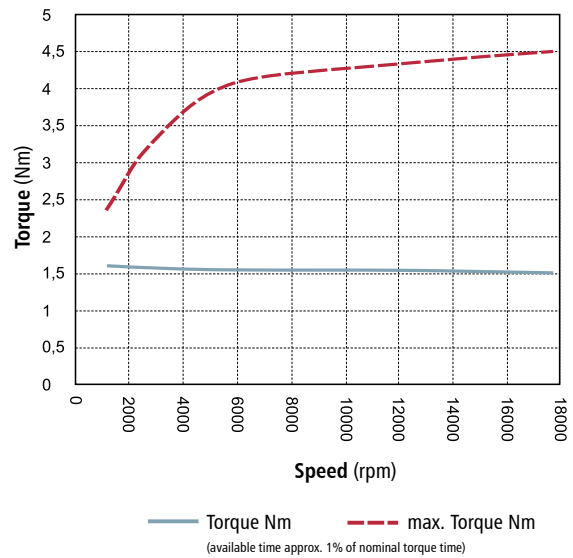
## OPTIONAL

- CoolMin® (external)
- frequency converter SKC 4000
- tool changing stations
- suction device
- various collets ER 20, mounting plates, lead lengths
- sealing air connection possible

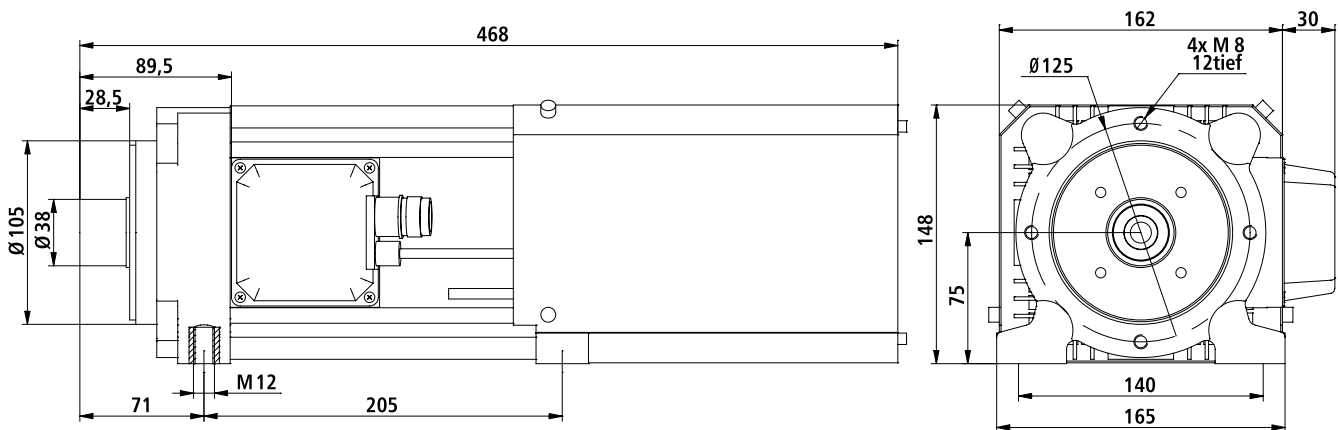
## TECHNICAL SPECIFICATION

Torque at rated speed (18.000 rpm)	Nm	4.5
Speed range	rpm	6,000 ... max. 18,000
Cut-off frequency** / Speed	Hz / rpm	300 / 18,000
Number of poles		2
Rated voltage	V	3 x 400
Rated current	A	5.4
cos Φ		0.87
Rated power (S6 = 40% Operation)	kW	3.6
Concentricity	mm	0.01
Weight	kg	23.0

## TORQUE CURVES



## DIMENSIONED DRAWINGS



## ORDERING INFORMATION

Item name		Part no.
iSA 3600	with collet ER 32 (6 mm), clamping nut ERM 32, chuck key ER 32 M, spanner SW 47, Interconnectron connector	477822 3600
iSA 3600 with Converter*	with collet ER 32 (6 mm), clamping nut ERM 32, chuck key ER 32 M, spanner SW 47, Interconnectron connector, motor connecting cable 8 m	310736 3615
CoolMin®	external	239011 0119
Frequency converter	SKC 4000	311740 6500
Collet set ER 32	3.0 / 4.0 / 5.0 / 6.0 / 7.0 / 8.0 / 9.0 / 10.0 / 11.0 / 12.0 / 13.0 / 14.0 / 15.0 / 16.0 / 17.0 / 18.0 / 19.0 / 20.0 mm	239130 0000
Linear tool change station SK 20	4x	239011 0045
	5x	239011 0055
Tool holder SK 30	for Collet ER 32	239130
Exhaust device	prepared for Ø 80 mm hose	239012 0005
	prepared for Ø 80 mm hose, for CoolMin® external	239012 0006
Mounting panels for isel Systems (Z axis)	Linear unit LES 5	277028 0009

\*converter pre-set for spindle

\*\*cut-off frequency = frequency to which the motor effect is designed

# MILLING SPINDLE ES 325 HSK 25



Milling spindle  
ES 325 HSK 25



Frequency converter  
SKC 4000  
(see page 32)



Collet EX 16  
(see page 40)



CoolMin® external  
(see page 42)

## 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

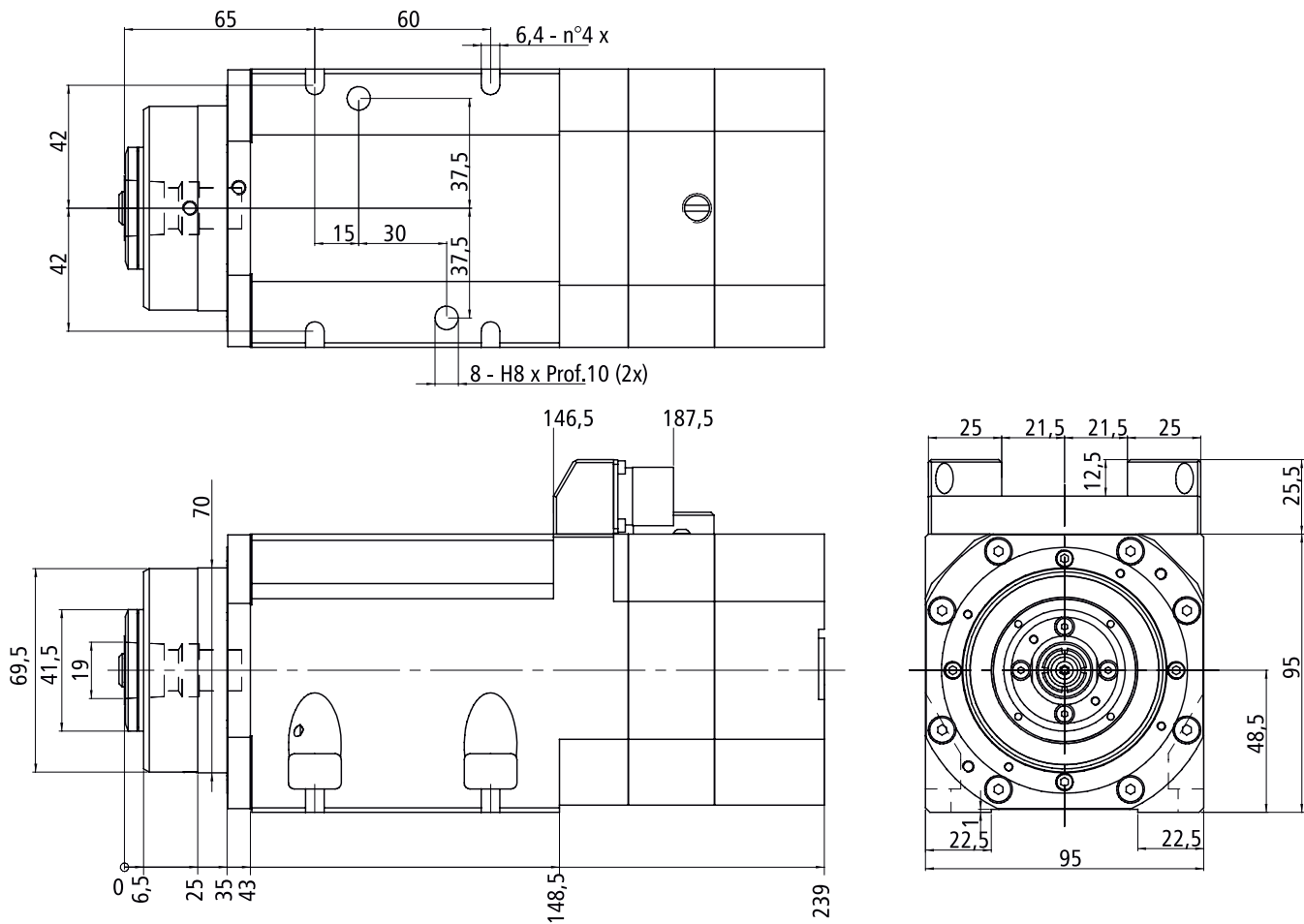
## OPTIONAL

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

## TECHNICAL SPECIFICATION

Rated speed	min <sup>-1</sup>	40,000
Rated voltage	V	380
Rated current	A	4.0
max. rated output	kW	2.0
Weight	kg	7.0

## DIMENSIONED DRAWINGS



## ORDERING INFORMATION

Item name		Part no.
Milling spindle ES 325 HSK 25		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	310815 3511
Frequency converter	SKC 4000	311740 6500
CoolMin®	external	239011 0119
Tool holder	HSK 25	477125
Collet	in 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 (see also page 40)	477125 80XX
Clamps	for holding HSK 25	639100 0043
	for holding HSK 32	639100 0044
Linear tool change station	5x	239011 0051
	10x	239011 0101
Mounting plate	for linear unit LES 5 and LES 21	277028 0001
Cooling unit 16 S	for milling spindle ES 325	492015 2001
Storage rack	for cooling unit 16 S	274507 6300

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

\*converter pre-set for spindle

# HFS 300



HFS 300



Hedy frequency converter 750 VA  
(see page 33)



connection lead  
3 m or 5 m

Collet und  
clamping nut ER 8  
(see page 40)



Clamping block  
SB 50  
(see page 47)

## FEATURES

- solid 2-pole three-phase motor
- round design
- protection class IP 54, insulation class F, CE
- motor shaft for holding ER 8 collet
- rated power 0.3 kW
- speed range 5,000 – max. 50,000 rpm
- torque 0.058 Nm (at 50,000 rpm)
- rated voltage 100 V
- manual tool changer
- clamping range  $\varnothing$  0.5 - 5.0 mm
- self ventilated at B side
- connection M23
- speed control by frequency converter
- concentricity: 0.01 mm
- weight: 1.2 kg

## OPTIONAL

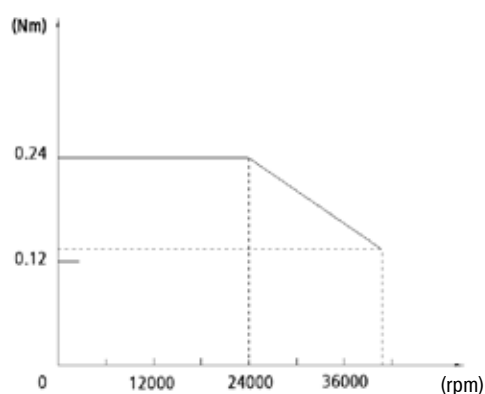
- clamping block
- frequency converter
- brake resistor
- exhaust system
- range of different collets ER 8
- various lengths of connection leads



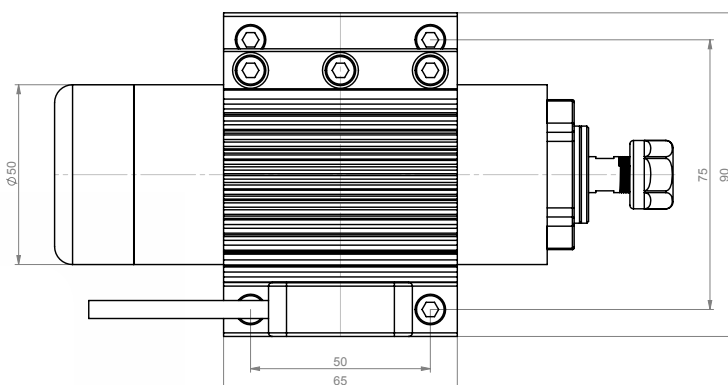
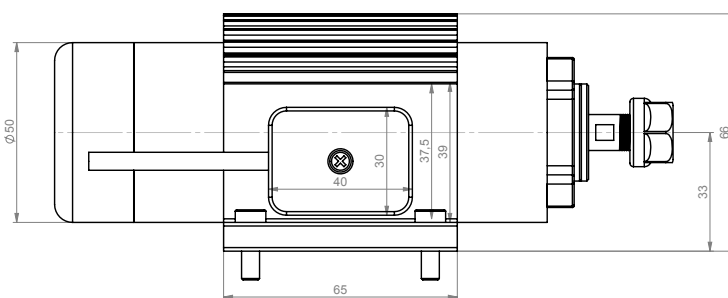
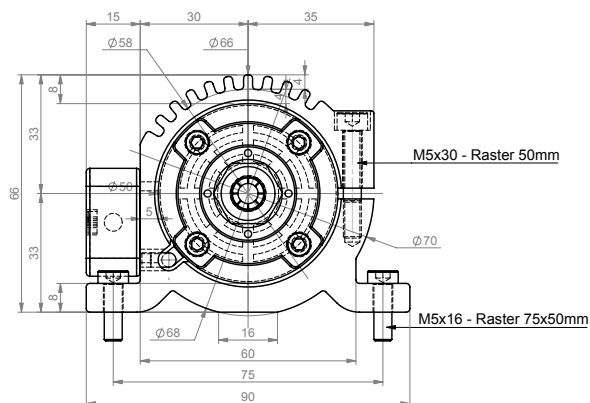
## TECHNICAL SPECIFICATION

Torque at rated speed (50.000 rpm)	Nm	0.058
Speed range	rpm	5,000 ... max. 50,000
Cut-off frequency** / Speed	Hz / rpm	400 / 24,000
Number of poles		2
Rated voltage	V	100
Rated current	A	2.0
cos $\Phi$		0.8
Rated power	kW	0.3
Concentricity	mm	0.01
Weight	kg	1.2

## TORQUE CURVES



## DIMENSIONED DRAWINGS



## ORDERING INFORMATION

Item name		Part no.
HFS 300	asynchronous spindle 0,3 kW with collet ER 11 (3 mm)	477003 3150
HFS 300 with Converter*	with collet ER 11 (3 mm), connection lead 3 m	310803 2014
Hedy frequency converter	vector controlled, 750 VA (1-phase)	311802 1000
Clamping block SB 50	with slide nuts and screws	290904 0050

\*converter pre-set for spindle

\*\*cut-off frequency = frequency to which the motor effect is designed

# HFS 800



HFS 800



Hedy frequency converter 750 VA  
(see page 33)



connection lead  
3 m or 5 m

Collet  
ER 11  
(see page 40)



Clamping  
block SB 65  
(see page 47)

## 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 – max. 24,000 rpm
- torque 0.32 Nm (at 24,000 rpm)
- rated voltage 220 V
- manual tool changer
- clamping range  $\varnothing$  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

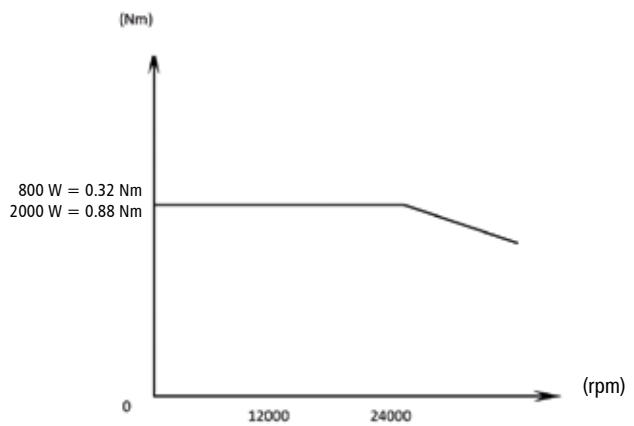
## OPTIONAL

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

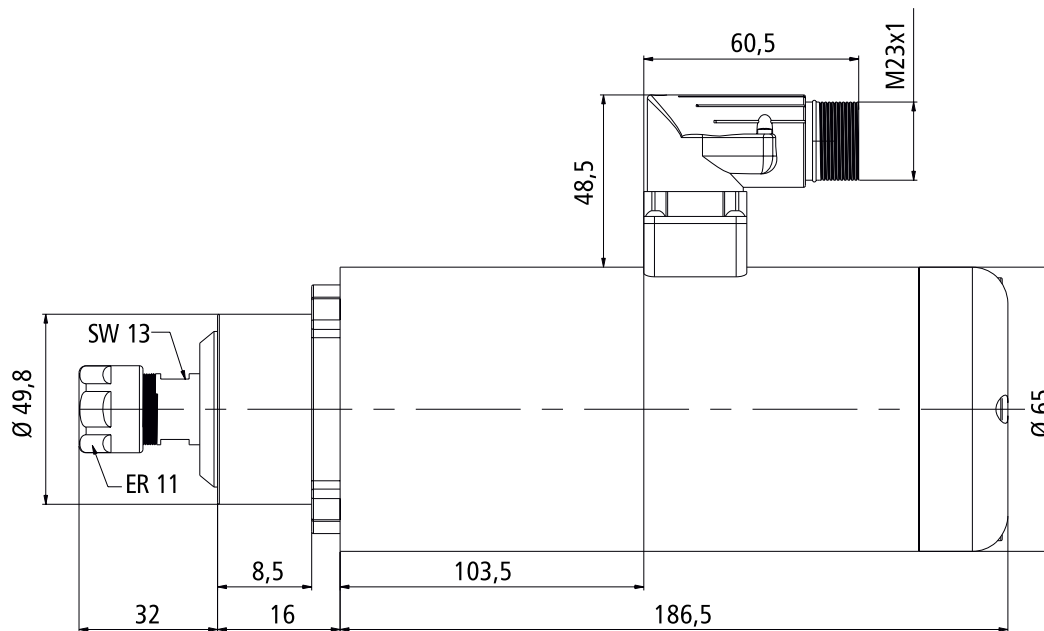
## TECHNICAL SPECIFICATION

Torque at rated speed (24.000 rpm)	Nm	0.32
Speed range	rpm	5,000 ... max. 24,000
Cut-off frequency** / Speed	Hz / rpm	400 / 24,000
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

## TORQUE CURVES



## DIMENSIONED DRAWINGS



## ORDERING INFORMATION

Item name		Part no.
HFS 800	asynchronous spindle 0,8 kW with collet ER 11 (3 mm and 6 mm)	477008 30240
HFS 800 with converter*	with collet ER 11 (6 mm), connection lead 8 m	310802 2014
Hedy frequency converter	vector controlled, 750 VA (1-phase)	311802 1000
Collet 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	239170 0001
Clamping block SB 65	with slide nuts and screws	290904 0065

\*converter pre-set for spindle

\*\*cut-off frequency = frequency to which the motor effect is designed

# HFS 1500



HFS 1500



Hedy frequency converter 1500 VA  
(see page 33)



connection lead  
3 m or 5 m

Collet ER 16  
(see page 40)



Clamping  
block SB 80  
(see page 47)

## 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 – max. 24,000 rpm
- torque 0.6 Nm (at 18,000 rpm)
- rated voltage 220 V
- manual tool changer
- clamping range  $\varnothing$  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

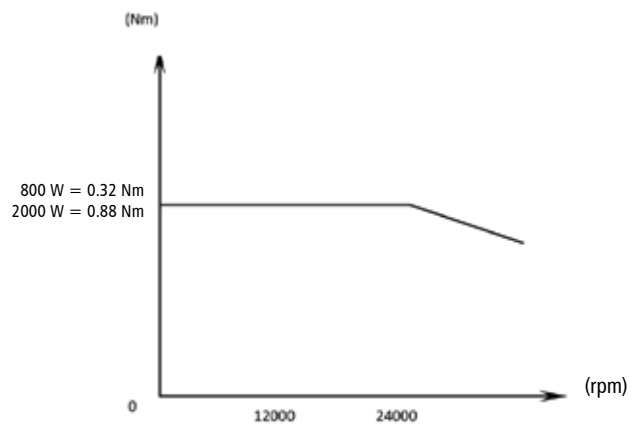
## OPTIONAL

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

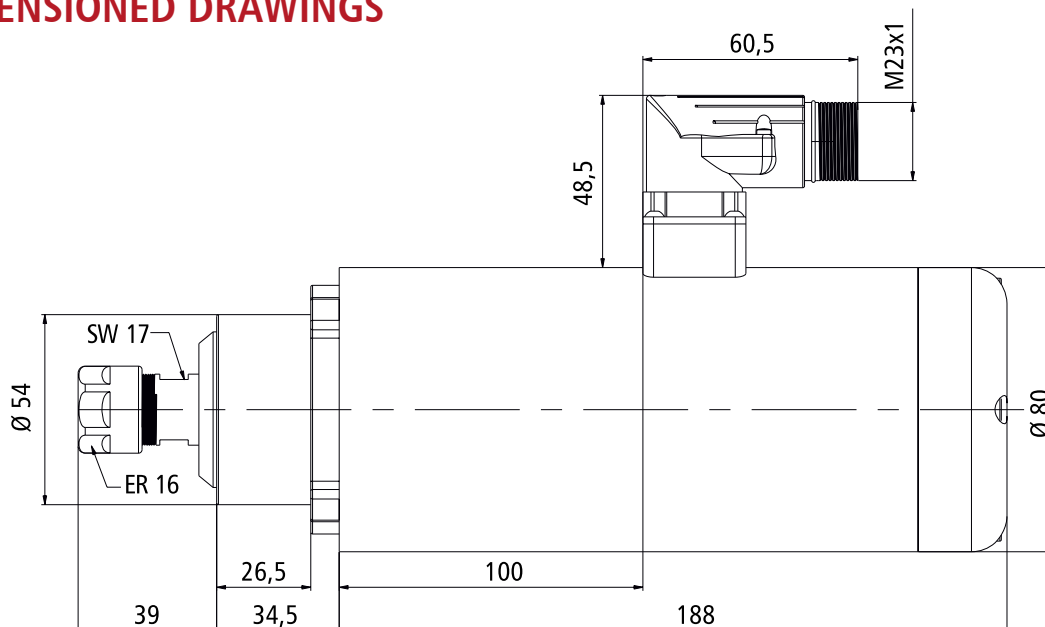
## TECHNICAL SPECIFICATION

Torque at rated speed (24.000 rpm)	Nm	0.6
Speed range	rpm	5,000 ... max. 24,000
Cut-off frequency** / Speed	Hz / rpm	400 / 24,000
Number of poles		2
Rated voltage	V	220
Rated current	A	5.0
cos $\Phi$		0.9
Rated power	kW	1.5
Concentricity	mm	0.01
Weight	kg	4.4

## TORQUE CURVES



## DIMENSIONED DRAWINGS



## ORDERING INFORMATION

Item name		Part no.
HFS 1500	asynchronous spindle 1,5 kW with collet ER 16 (6 mm)	477015 3024
HFS 1500 with converter*	with collet ER 16 (6 mm), connection lead 8 m	310815 2014
Hedy frequency converter	vector controlled, 1500 VA (1-phase)	311802 2000
Collet set ER 16	1.0 / 2.0 / 3.0 / 4.0 / 5.0 / 6.0 / 7.0 / 8.0 / 9.0 / 10.0 mm	239171 0001
Clamping block SB 80	with slide nuts and screws	290904 0080

\*converter pre-set for spindle

\*\*cut-off frequency = frequency to which the motor effect is designed

# HFS 2200



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 - max. 24,000 rpm
- torque 0.88 Nm (at 24,000 rpm)
- rated voltage 220 V
- manual tool changer
- clamping range  $\varnothing$  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



Hedy frequency converter 1500 VA  
(see page 33)



connection lead  
3 m or 5 m

Collet ER 20  
(see page 40)

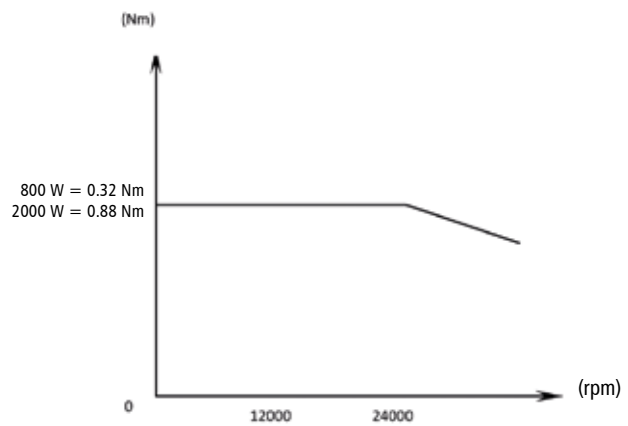


Clamping  
block SB 80  
(see page 47)

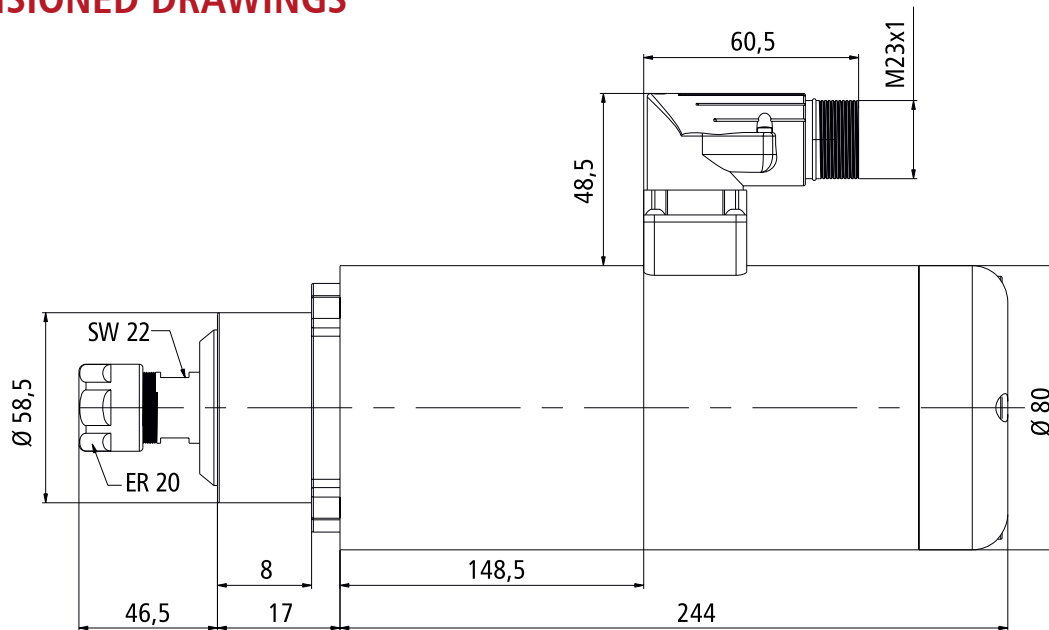
## TECHNICAL SPECIFICATION

Torque at rated speed (24.000 rpm)	Nm	0.88
Speed range	rpm	5,000 ... max. 24,000
Cut-off frequency** / Speed	Hz / rpm	400 / 24,000
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

## TORQUE CURVES



## DIMENSIONED DRAWINGS



## ORDERING INFORMATION

Item name		Part no.
HFS 2200	asynchronous spindle 1,5 kW with collet ER 20 (6 und 12 mm)	477022 30240
HFS 2200 with converter*	with collet ER 20 (6 mm), connection lead 8 m	310822 2014
Hedy frequency converter	vector controlled, 1500 VA (1-phase)	311802 2000
Collet 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	239172 0001
Clamping block SB 80	with slide nuts and screws	290904 0080

\*converter pre-set for spindle

\*\*cut-off frequency = frequency to which the motor effect is designed

# FREQUENCY CONVERTER | M300-SERIE

## FOR iSA MOTORS



### connection lead

various lengths as accessories



- 8-wire
- drag chain compatible
- external braiding and separately shielded pairs
- pre-fabricated

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)

## FEATURES

- pulse width modulated devices with safety technology, three performance classes, compact design
- STO input (safe torque cut-off, in a case of failure the motor provides no torque)
- input voltage single-phase 230 VAC (SKC 750/1500) / three-phase 400VAC (SKC 4000)
- high load capacity 150 % overload for 60 sec.
- three-phase, vector-controlled control voltage, frequency 0 up to 1500 Hz
- fast deceleration of the spindle due to integrated brake resistor in the base
- disconnect able the EMC filter
- programmable inputs and outputs, relay outputs
- easy-to-use control unit to parameterize the spindle
- 95 operating and display parameters such as energy reduction of the spindle at idle run
- protection IP20
- type of control: PLC; 0 ... 10V; 0 ... 20 mA; with control panel; CAN-Bus (additional module required)
- licence CE; C-Tick; UL

## ORDERING INFORMATION

Item name		Part no.
M300 / 750	for spindle motors iSA 500, iSA 750 und iSA 900	311707 6000
M300 / 1500	for spindle motors iSA 750, iSA 1500, iSA 1500L, iSA 1500 WL, iSA 1500W and iSA 2200	311715 6000
M300 / 4000	for spindle motor iSA 3600	311740 6500



# FREQUENCY CONVERTER | HEDY-SERIE

## FOR HFS MOTORS



**FU 750**  
for HFS 300 and HFS 800



**FU 1500**  
for HFS 1500 and HFS 2200

### connection lead

various lengths as accessories



- shielded PVC motor lead for HFS spindle
- 4-wire (3 x 0,75 mm<sup>2</sup> + 1 x PE), metal connector M23
- drag chain compatible
- pre-fabricated

Part no.: **392406 0300** (3 m)

Part no.: **392406 0500** (5 m)

## FEATURES

- torque control V / F, (vector) with open loop
- 100 % starting torque at 0.5 Hz
- high load capacity 150 % overload for 60 sec.
- programmable inputs / outputs, relay output, analog input / output
- 5-digit, detachable LED control unit
- single-phase input voltage 230 VA e
- fast deceleration of the spindle do to external braking resistor
- RS-485 modbus integrated
- switchable EMC filter
- interface for PC programming
- protection class IP 20
- license CE; UL, RoHS
- options: profibus module DP (SELV), additional I / O module, external control panel, mounting kit for front panel mounting, LED control console, USB programming cable, brake resistor 68R / 80W

## ORDERING INFORMATION

Item name		Part no.
FU 750	750 VA (1-phase), for spindle motors HFS 300 and HFS 800	311802 1000
FU 1500	1500 VA (1-phase), for spindle motors HFS 1500 and HFS 2200	311802 2000

# TURNED TOOL CHANGE STATIONS SK 11/20



Turned tool change station SK 11

Turned tool change station SK 20



Tool holder SK 11



Tool holder SK 20

## FEATURES

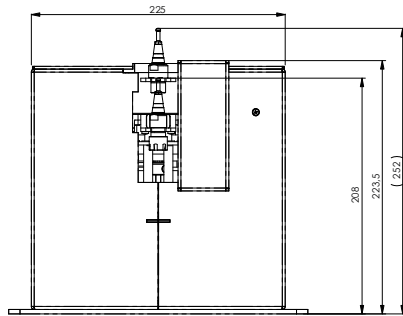
- compact, space-saving design by circular tool positions
- powder-coated aluminium housing (RAL 3011)
- integrated power electronics for controlling via isel CNC commands via RS232 interface
- monitored tool positions and tool opening via sensors
- linear movement of the tool holder and the opening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



For detailed information on the iSA 900 and iSA 2200 spindle motors, see page 14ff.

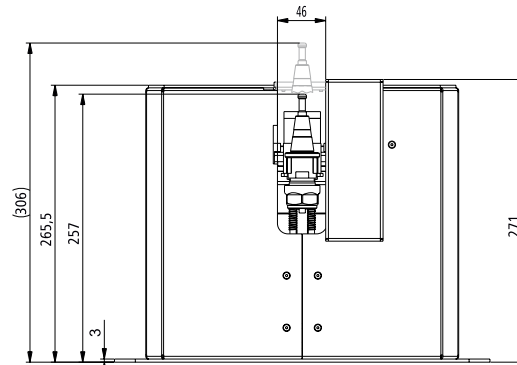
## DIMENSIONED DRAWINGS

Turned tool change station SK 11

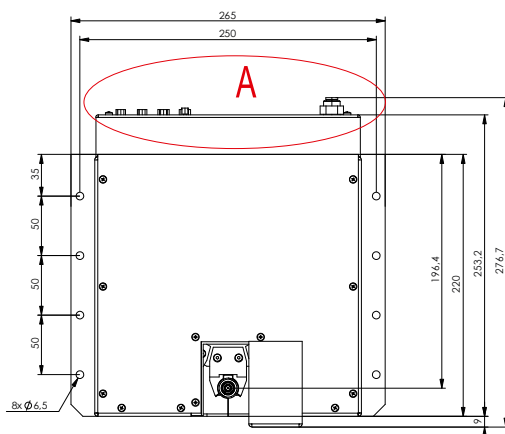


front view

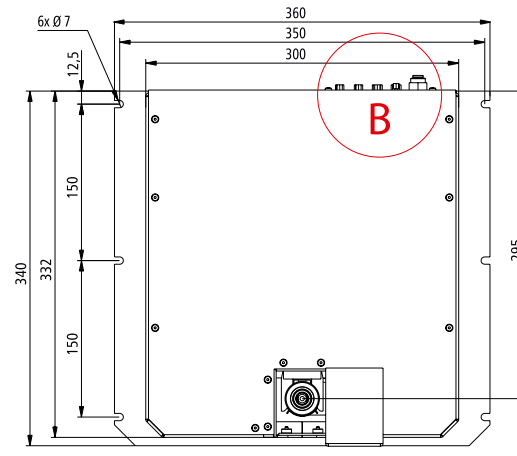
Turned tool change station SK 20



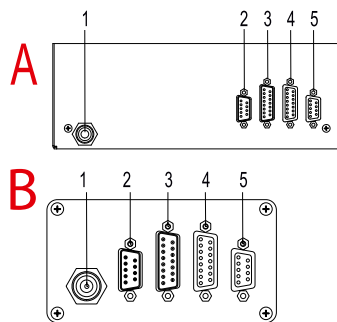
front view



view from above



view from above



connection	function
1	compressed air connection
2	serial interface RS 232 1
3	voltage supply
4	further options, 2nd tool changer
5	I/O for linear measuring system, light barrier ect.

## TECHNICAL SPECIFICATION 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 VCD	
Dimensions W x D x H [mm]	265 x 277 x 224	360 x 340 x 271
Part no.	239100 0030	239100 6630

# HSK TOOL CHANGE STATION



Linear tool change station  
HSK 25



Clamp claws HSK 25 und HSK 32



Tool holder HSK 25

## FEATURES

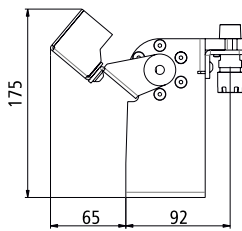
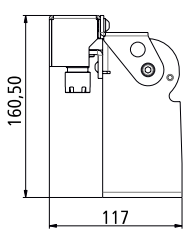
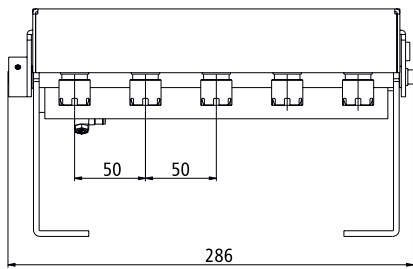
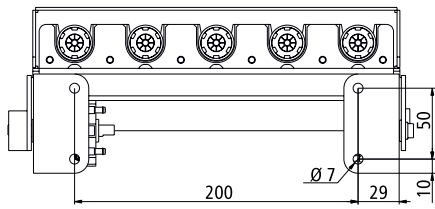
- simple, functional tool changer for HSK 25 und HSK 32
- pneumatic rotary cylinder and end position monitoring for safe changing
- control via 5/2-way valve with integration in the safety circuit
- low-maintenance, stainless steel design (powder-coated aluminium)
- variable positioning on the machine bench

### Scope of delivery:

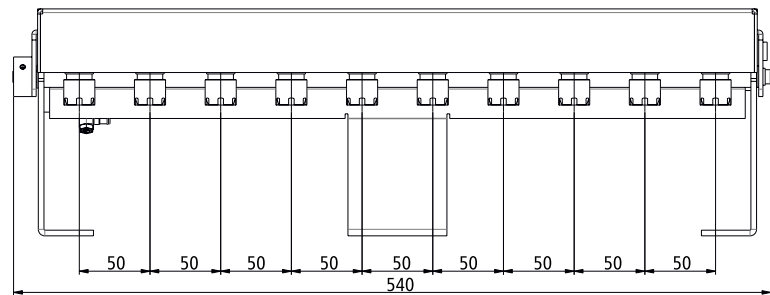
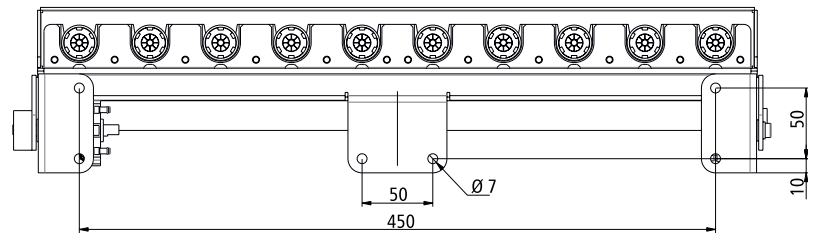
- pneumatic connection panel
- 3 m hose
- tool change station (without tool holder)

## DIMENSIONED DRAWINGS

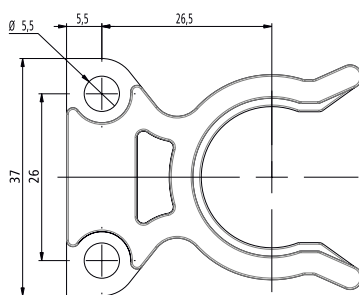
5x linear changer



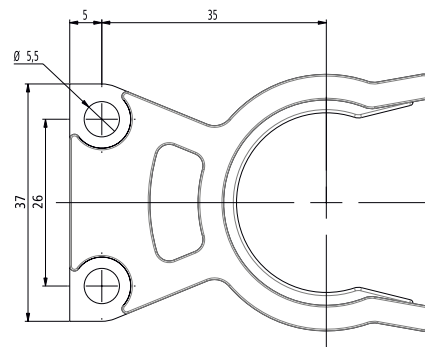
10x linear changer



HSK 25 clamp claw



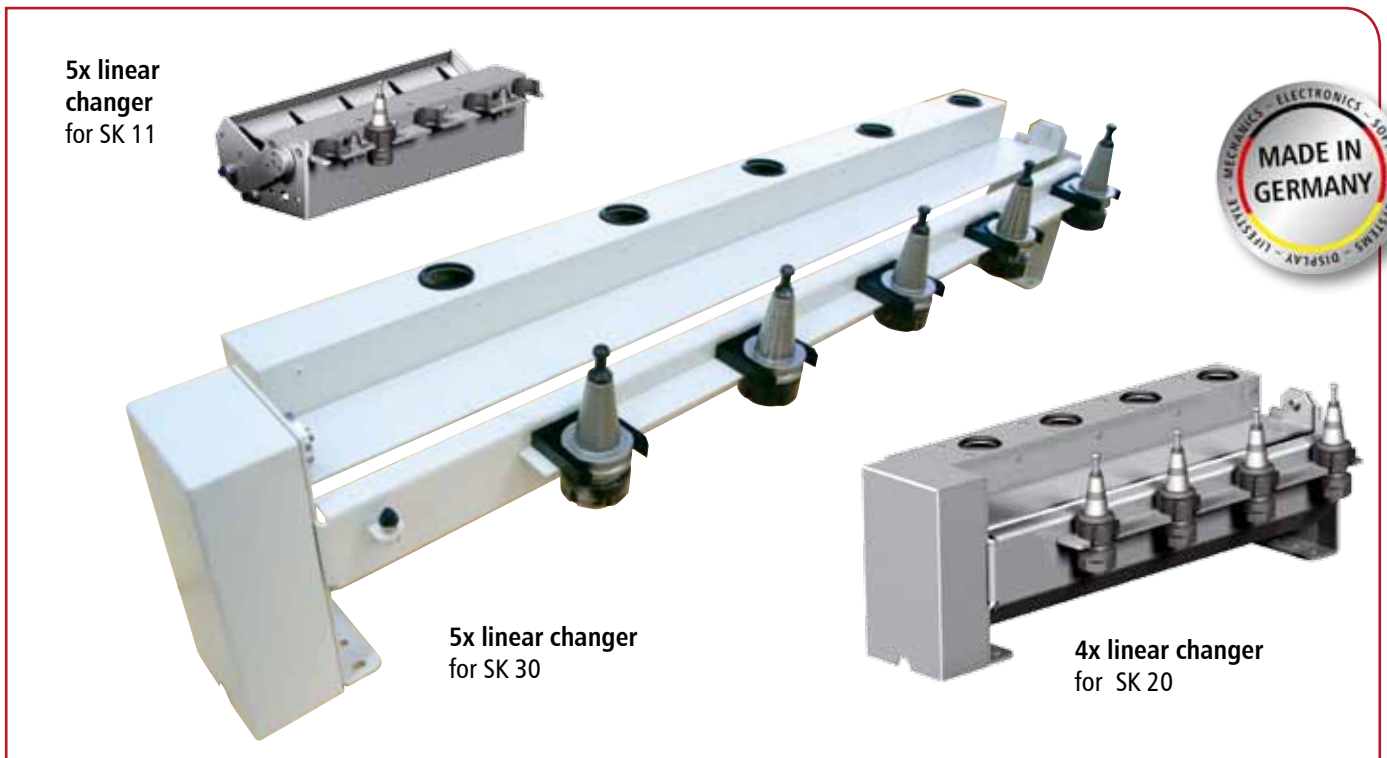
HSK 32 clamp claw



## ORDERING INFORMATION

Item name		Part no.
HSK tool changer	5x	239011 0052
	10x	239011 0102
HSK clamp claw	HSK 25	239100 0043
	HSK 32	239100 0044
Tool holder	HSK 25	477125

# LINEAR TOOL CHANGE STATION SK 11/20/30



## FEATURES

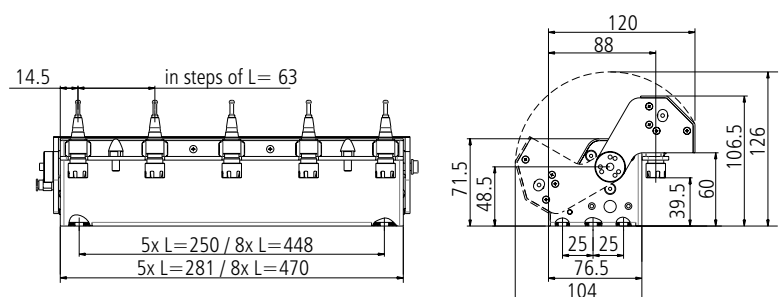
- simple, functional tool changer for SK 11, SK 20 and SK 30
- pneumatic rotary cylinder and end position monitoring for safe changing
- control via 5/2-way valve with integration in the safety circuit
- low-maintenance, stainless steel design (powder-coated aluminium)
- variable positioning on the machine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

### Scope of delivery:

- pneumatic connection panel
- 3 m hose
- tool change station (without tool holder)

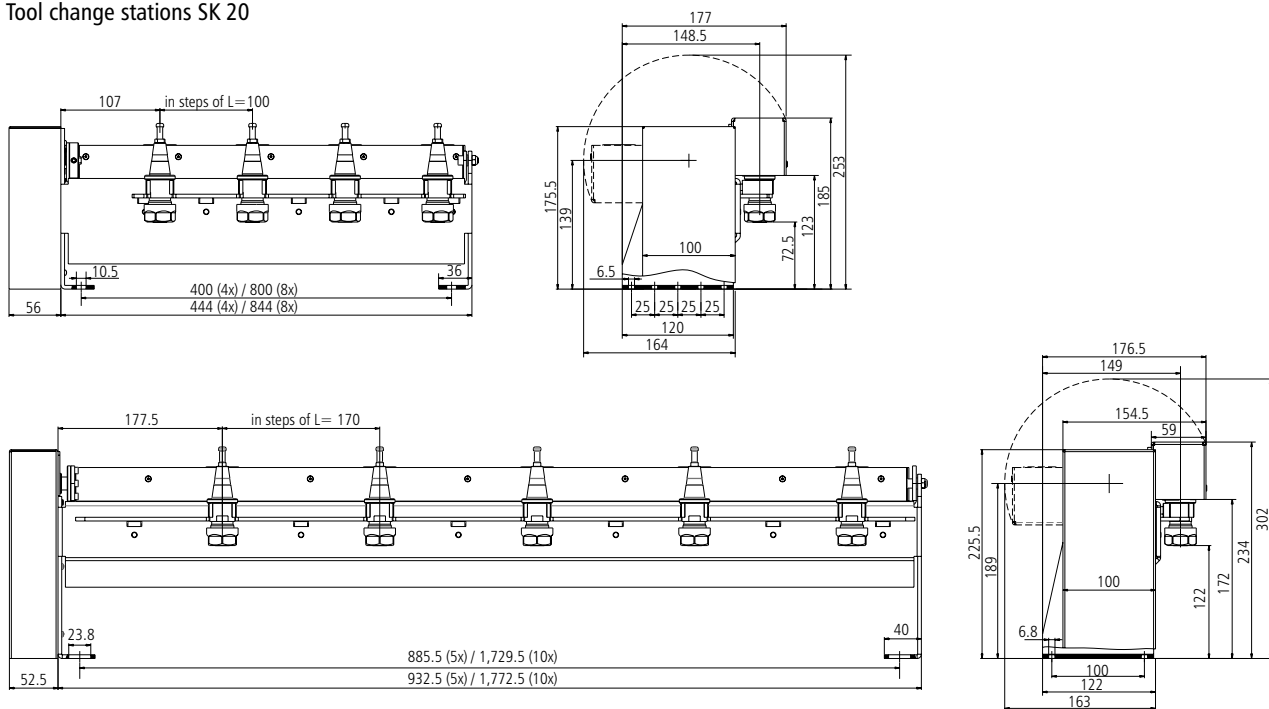
## DIMENSIONED DRAWINGS

Tool change stations SK 11

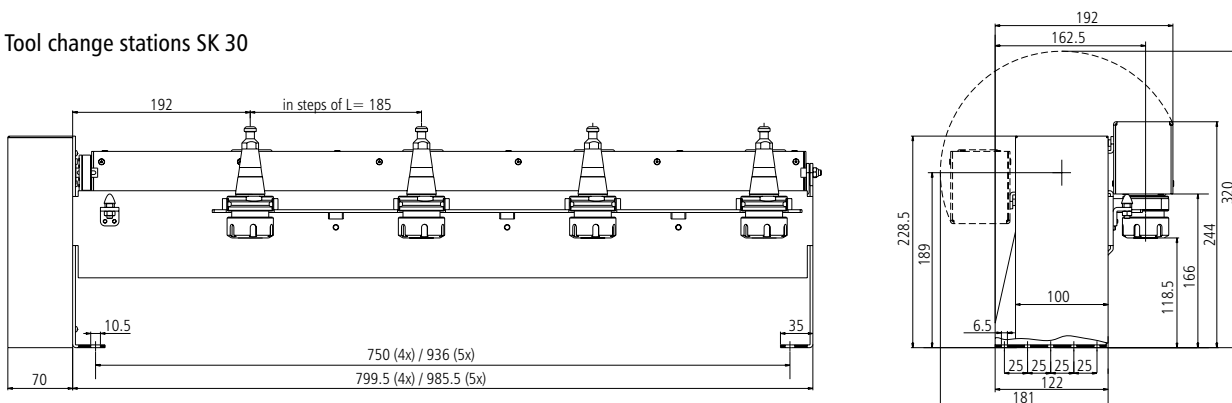


## DIMENSIONED DRAWINGS

Tool change stations SK 20



Tool change stations SK 30



## ORDERING INFORMATION

Item name		Part no.
SK 11 tool change station	5x, with hood + pneumatics / for EuroMod, FlatCom, iSA 900	239011 0053
	8x, with hood + pneumatics / for EuroMod, FlatCom, iSA 900	239011 0083
SK 20 tool change station	4x (in steps of 100mm), with hood + pneumatics / for EuroMod, FlatCom, erh. Portal, iSA 2200	239011 0041
	8x (in steps of 100mm), with hood + pneumatics / for FlatCom XL, iSA 2200	239011 0081
	5x (in steps of 170mm), with hood + pneumatics / for FlatCom XL, iSA 2200	239011 0050
	10x (in steps of 170mm), with hood + pneumatics / for FlatCom XL, iSA 2200	239011 0100
SK 30 tool change station	4x, with hood + pneumatics / for FlatCom XL, iSA 3600 (increased portal required)	239011 0045
	5x, with hood + pneumatics / for FlatCom XL, iSA 3600 (increased portal required)	239011 0055
Tool holder SK 11	for collet type ER 11	239111 0001
Tool holder SK 20	for collet type ER 20	239172 0020
Tool holder SK 20-C	for collet type ER 20, version for internal cooling	239172 0021
Tool holder SK 30	for collet type ER 32	239130

# COLLETS

Swiss quality



## COLLET SETS

Type	for spindle motor	Ø (mm)	Part no.
ER 11*	iSA 500 / iSA 900 HFS 800	1.0 - 7.0	239170 0001
ER 16**	iSA 750 HFS 1500	1.0 - 10.0	239171 0001
ER 20**	iSA 1500 / iSA 2200 HFS 2200	2.0 - 13.0	239172 0001
ER 32**	iSA 3600	3.0 - 20.0	239130 0000

\* These collets are also able to clamp shafts reduced in diameter by 0.5 mm.

\*\* These collets are also able to clamp shafts reduced in diameter by 1.0 mm.

### EX16 for Collet ES325

Ø	Part no.
1.0	477125 8010
1.5	477125 8015
2.0	477125 8020
2.5	477125 8025
3.0	477125 8030
4.0	477125 8040
5.0	477125 8050
6.0	477125 8060
7.0	477125 8070
8.0	477125 8080
9.0	477125 8090
10.0	477125 8100

## COLLETS

### Type ER 11 for iSA 500 / 900, HFS 800

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
4.5	239170 4500
5.0	239170 5000
5.5	239170 5500
6.0	239170 6000
6.5	239170 6500
7.0	239170 7000

### Type ER 20 for iSA 1500 / 2200, HFS 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

### Cutting end mills Ultra-N



Cutter box small // 6-piece  
(1.5 / 2 / 3 / 4 / 5 / 6 mm)  
Part no.: 239200 0003

Cutter box big // 6-piece  
(3 / 4 / 6 / 8 / 10 / 12 mm)  
Part no.: 239200 0004

### Type ER 16 for iSA 750, HFS 1500

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

### Type ER 32 for iSA 3600

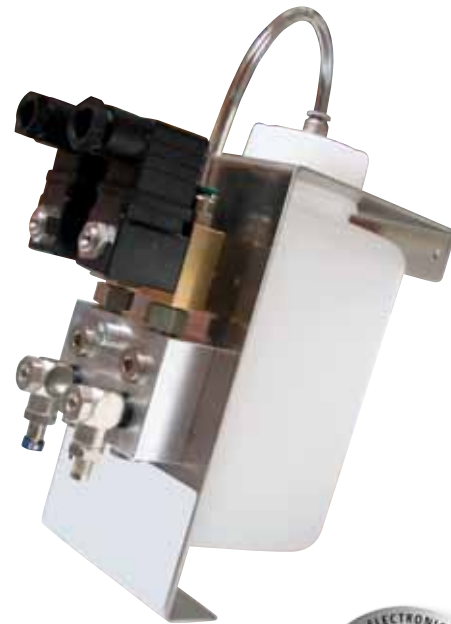
Ø (mm)	Part no.
3.0	239130 3000
4.0	239130 4000
5.0	239130 5000
6.0	239130 6000
7.0	239130 7000
8.0	239130 8000
9.0	239130 9000
10.0	239130 0100
11.0	239130 0110
12.0	239130 0120
13.0	239130 0130
14.0	239130 0140
15.0	239130 0150
16.0	239130 0160
17.0	239130 0170
18.0	239130 0190
19.0	239130 0200



# COOLANT MISTING SYSTEM



Minimum volume  
coolant misting system



Coolant misting system



Hose connection coolant misting  
system (included)

Hose connection minimum volume  
coolant misting system (included)

## COOLANT MISTING SYSTEM

- 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

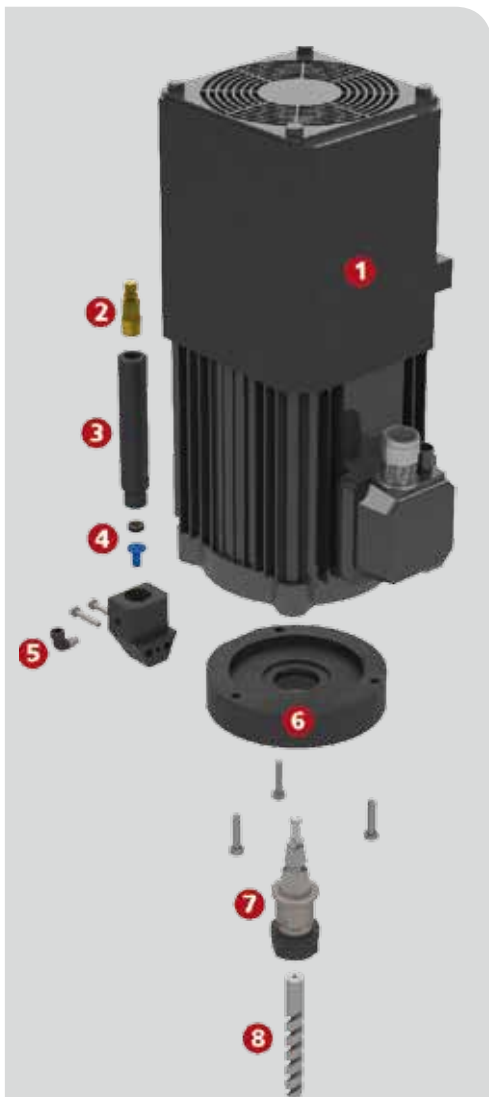
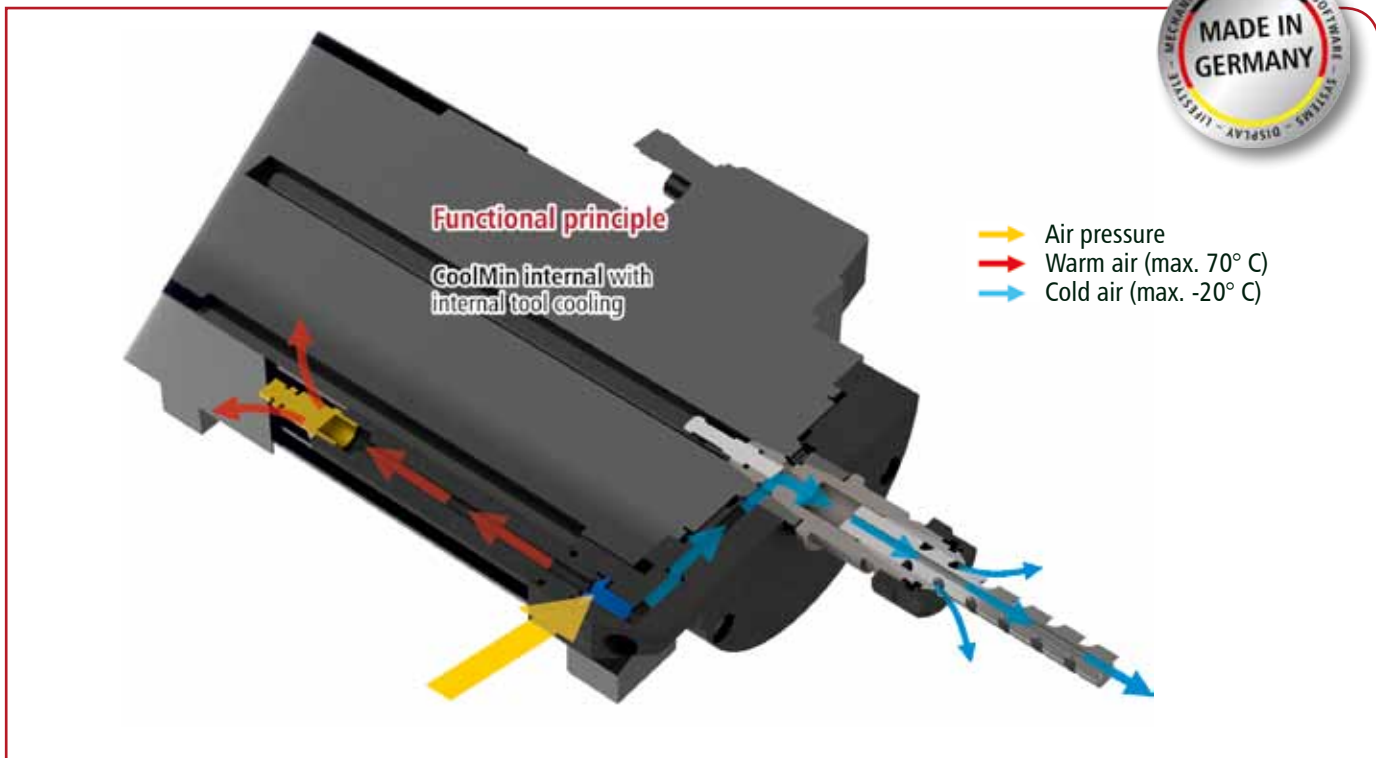
## MINIMUM VOLUME COOLANT MISTING SYSTEM

- 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

Item name		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

# CoolMin®



## 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).

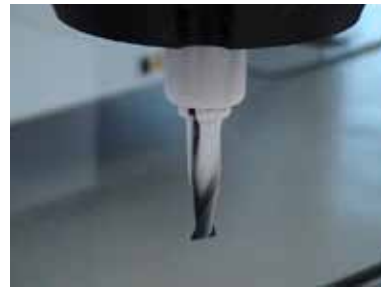
The main component of our cooling method is a cold air nozzle, which operates on the eddy current principle and separates warm air from cold.

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

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

## TECHNICAL SPECIFICATION

Compressed air feed	6 - 10 bar
Cold air exhaust	bis max. -25°C
Hot air exhaust	bis max. 70°C
Air consumption	appr. 150 l/min.



Tool, cooled by CoolMin® internal

## FUNCTIONAL PRINCIPLE

CoolMin® external  
CoolMin® internal with tool cooling system

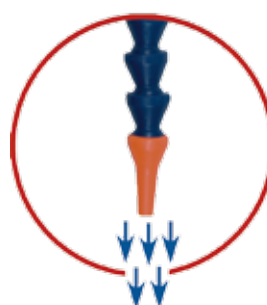
- 1 Compressed air feed
- 2 Flexible mating hose
- 3 Spindle motor
- 4 Temperature controller
- 5 Hot air exhaust
- 6 Vortex nozzle with cold air exhaust
- 7 Cold air supply in synthetic material
- 8 Collet



CoolMin® external  
with mating hose



CoolMin® internal



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

## ORDERING INFORMATION

Item name		Part no.
CoolMin® internal		see individual motors
CoolMin® external	with mating hose, incl. servicing kit and shut-off tap (manual)	239011 0119
	incl. servicing kit and electrically-powered valve	239011 0117

# DUST EXTRACTION SYSTEMS | IAG-SERIES



Hose, L = 5m  
 Ø 50 mm, for iAG 200  
**Part no.: 639012 0005**  
 Ø 80 mm, for iAG 720 / 600  
**Part no.: 639012 0004**

Mounting clamp  
 40-60 mm, for iAG 200  
**Part no.: 639012 0007**  
 bis 170 mm, for iAG 720 / 600  
**Part no.: 639012 0008**

Reduction  
 for iAG 720  
 (Ø 100 / 80 mm)  
**Part no.: 639012 0006**

## 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)

## 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 characteristics:

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

## 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

## DIMENSIONED DRAWINGS

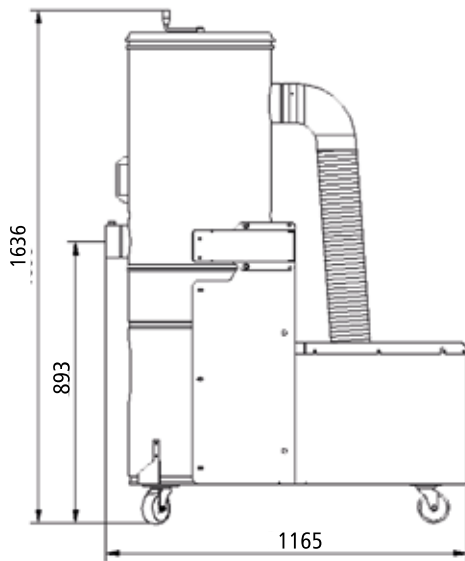


Figure: iAG 720

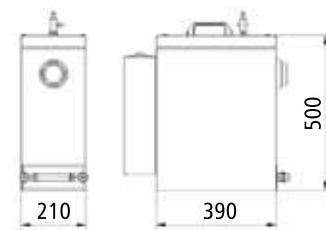


Figure: iAG 200

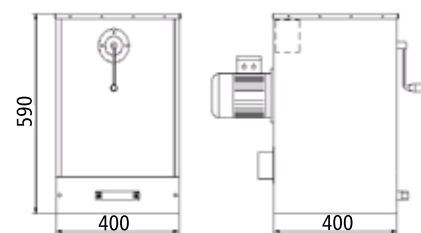


Figure: iAG 600

## TECHNICAL SPECIFICATION and ORDERING INFORMATION

	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 (m <sup>3</sup> /h)	720	600	200
Sound emission (dB (A))	73	68	66
Filter surface (m <sup>2</sup> )	3.5	1	0.8
Number of filter elements		1	
Filter material		„M“-classified	
Filter cleaning	manual brush cleaning	manual knock off appliance	Compressed air cleaning nozzle
Area of application	<ul style="list-style-type: none"> <li>• individual workplace extraction at machines and manual workstations</li> <li>• free-flowing dusts (non-carcinogenic)</li> <li>• dry dusts / blades</li> <li>• hazardous to health dusts</li> <li>• high blade / dust generation</li> </ul>	<ul style="list-style-type: none"> <li>• individual workstation extraction for industrial and craft applications</li> <li>• small mechanical workshops</li> <li>• free-flowing dust / wood chips (non-carcinogenic)</li> </ul>	<ul style="list-style-type: none"> <li>• direct individual workplace extraction</li> <li>• free-flowing dust (non-carcinogenic)</li> <li>• dry dust and wood chips</li> <li>• low dust and wood chip volume</li> </ul>
Weight (kg)	120	30	15
Intake diameter (mm)	100	80	50
Dust collection bin (l)	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

# DUST EXTRACTION DEVICES



for our iSA spindle motors  
opening: manual, automatic, pneumatic

## ORDERING INFORMATION

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
Extraction head	iSA 500	prepared for external 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

## LENGTH MEASURING SENSOR



Length Measuring  
Sensor

to measure tool lengths  
Part no.: 239099 0001

## MOUNTING PLATES



### (Z-AXIS) FOR ISA- AND HFS-SPINDLES

for FlatCom / EuroMod / ICP / ICV / LES 5 / LES 6  
For ordering information, see individual motors.

## CLAMPING BLOCKS



### FOR HFS-SPINDLE MOTORS

- aluminum clamping block with cooling fins
- clamping diameter 50 / 65 / 80 mm
- flange 90 / 100 / 125 mm
- height 66 / 83 / 103 mm

Part no.: 290904 0050 (SB 50)

Part no.: 290904 0065 (SB 65)

Part no.: 290904 0080 (SB 80)

# MOTOR LEADS



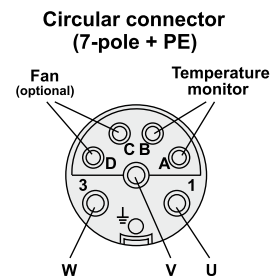
Motor lead  
8-wire

### Motor lead

- 8-wire (3 x 0.75 mm<sup>2</sup> + 1 x PE + 2 x (2 x 0.34 mm<sup>2</sup>))
- drag chain compatible
- external braiding and separately shielded pairs
- pre-fabricated

## TECHNICAL SPECIFICATION

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



## ORDERING INFORMATION

Cable Type	Length	Item Number
Motor side: M23 plug connection // converter side: ferrule	3 m	392306 0300
Motor side: M23 plug connection // converter side: ferrule	5 m	392306 0500
Motor side: M23 plug connection // converter side: ferrule	8 m	392306 0800
Motor side: direct connection // converter side: ferrule	3 m	392301 0300
Motor side: direct connection // converter side: ferrule	5 m	392301 0500
Motor side: direct connection // converter side: ferrule	8 m	392301 0800



MK 3000

## MK 3000

- shielded PVC motor lead for HFS spindle
- 4-wire (3 x 0,75 mm<sup>2</sup> + 1 x PE), metal connector M23
- drag chain compatible
- pre-fabricated

## ORDERING INFORMATION

Part no.: 392406 0300 (MK 3000, L= 3m)  
 Part no.: 392406 0500 (MK 3000, L= 5m)







**Plant Dermbach** (36466 Dermbach, Thuringia)  
total space: approx. 41.000 m<sup>2</sup>



**Plant Eichenzell** (36124 Eichenzell, Hesse)  
total space: approx. 35,000 m<sup>2</sup>



**Plant Eiterfeld** (36132 Eiterfeld, Hesse)  
total space: approx. 53,000 m<sup>2</sup>



**Plant Berlin** (13627 Berlin-Charlottenburg)  
total space: approx. 22,000 m<sup>2</sup>

## THE ISEL-GROUP

The international isel group of companies was founded in 1972 as a one-man operation in Eiterfeld (Hesse) under the company name isert electronics. The company dealt with the manufacture and distribution of equipment „around the conductor board“ in the first few years. Object of the company today is the development, production, sales and service of components and systems for automation.

The product range from components to systems made by isel includes CNC units, CNC machines, automation, handling and robotics with step, servo, linear and torque motors including controls.

Members in Germany are the companies isel GmbH & Co.KG, isel Germany AG, imes-icore GmbH and isel Facility GmbH. Other offices are located in Austria, Hungaria, France, Great Britain and the USA.

## ISEL GERMANY AG

The isel Germany AG is a hundred percent company of the isel group and located in Germany in Eichenzell (Hesse) and Dermbach (Thuringia) with a total of 25,000 m<sup>2</sup> of production, warehouse and office space.

Main area of business of the isel Germany AG is the provision of components from MECHANICS, ELECTRONICS and SOFTWARE. Furthermore CNC units and CNC machines are available with extensive accessories. This includes also commissioned work and project planning for OEM customers in all sectors.

In addition to an expert advice, the isel Germany AG also offers services like trainings and project planning.

Benefit from our years of experience on the market! We deliver from components to system from a single source.

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[www.brotomatic.es](http://www.brotomatic.es)

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**isel**<sup>®</sup> *From Components to Systems*



MECHANICS



ELECTRONICS



SOFTWARE



SYSTEMS



DISPLAY



LIFESTYLE

## PROGRAM OF THE *isel*-GROUP

development, production and sales of components and systems in the sectors  
mechanics, electronics, software, systems, display and lifestyle



71020510-01\_TK\_Spindelmotoren  
Technical specifications subject to change.

Collets



Turned tool change station



Extraction head



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