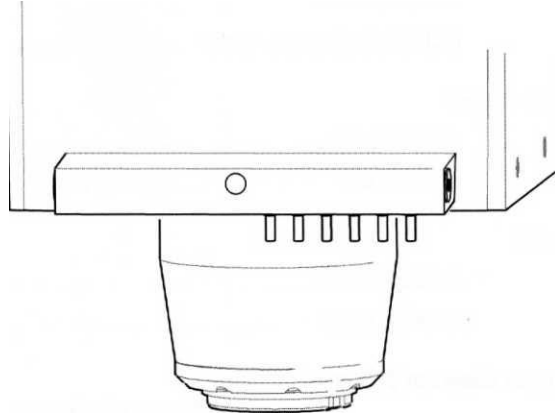


Technical data

4.1 Vertical milling spindle 8 000<sup>-1</sup>  
min



Specifications

Speed SK40.....	rpm.....	20 - 8000
Driving power,max.	40% ED.....	13 kW
Rated power .....	100%.....	8,4 kW
Max.spindle torque	40 % ED.....	83 Nm
Rated torque.....	100% ED.....	57 Nm
Tool pocket .....		SK40
Tool clamping force SK 40.....	kN .....	10

Technical data

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4.2 Main drive 8 000 rpm SK 40

Direct drive through speed-controlled asynchronous motor

Torque

at the spindle,

including efficiency factor

kW

see diagram

Motor power

at 100% ED

kW.....see diagram

at 40 % ED.

kW.....see diagram

Speed

variable input

rpm.....20-8 000

. in setup

rpm..... 20-800

mode.

Torque diagram 2730862

Drehzahl-/Leistungsdiagramm

Motor 2702219 1PH7107-2NF...

Performance diagramm

Spindle torque / power / rpm - rating

20-8000 1/min

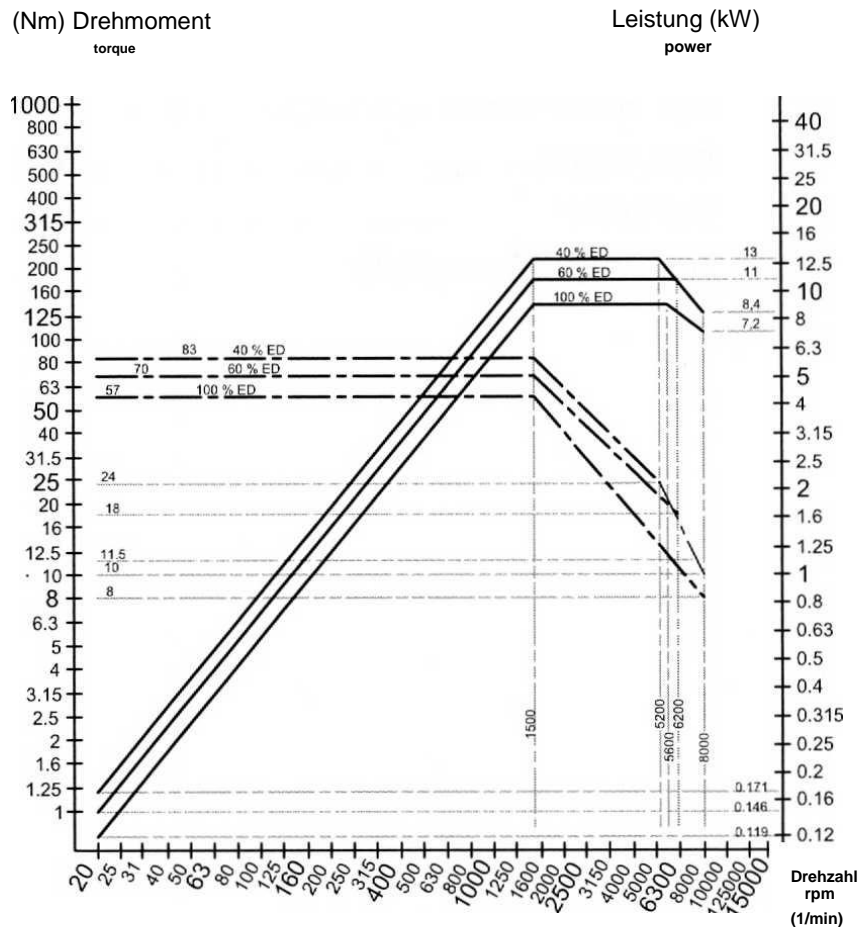


Illustration 4-1

### 4.3 Feed drive

AC servo motors ..... for axis .....X,Y,Z

#### Feed rate

X, Y, Z axis

infinitely programmable..... mm/min .....up to 20 000

#### Rapid traverse

X, Y, Z axis ..... m/min .....25

#### Setup mode (operating mode 2)

X, Y, Z axis ..... mm/min ..... 20 - 2 000

C, B axis ..... rpm.....2,6

#### Setup mode (operating mode 3)

X, Y, Z axis ..... mm/min .....20 -5 000

A, C axis ..... rpm.....6,6

**4.4 Moving directions**

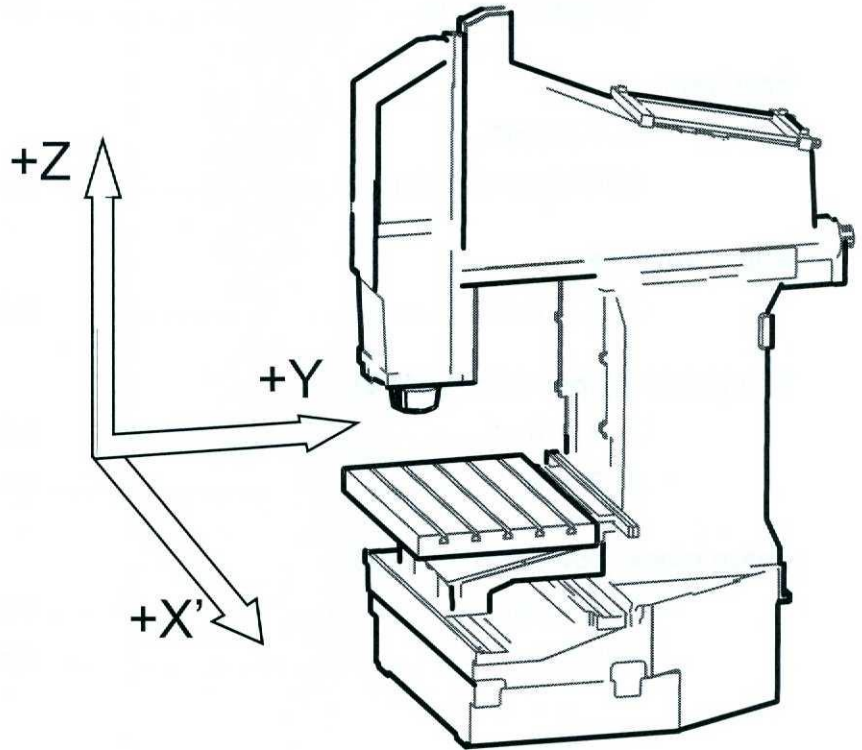


Illustration  
4-2

**4.5 Path measuring system**

Resolution

X, Y, Z axis	um	0,01
--------------	----	------

Positioning uncertainty

P (according to VDI/DGQ 3441) X / Y / Z axis urn ..... < 20

The precision is strongly affected by the external thermal influences. The highest precision is reached in the temperature range of 20° +/- 2°.

Direct sunlight, strong draft, vibrations caused by external-units and heat accumulation are to be avoided.

Please observe the requirements for machines with an increased precision.

Input sensitivity

X, Y, Z axis	um
--------------	----

**4.6 Work range**

Travelling distance

X axis	mm	635
....	mm	510
Y axis		
....		
Z axis .....		

635 510  
460

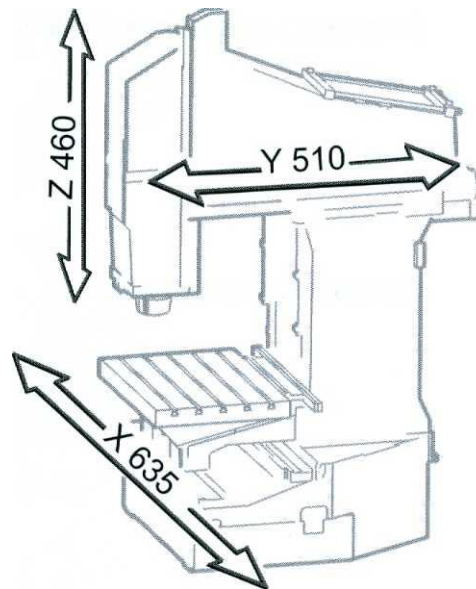


Illustration 4-3

**4.7 Main drive**

**4.7.1 Workspindle 8 000 rpm**

**Tool holder**

Steep taper shaft.....  
ISee "Tools" in this  
chapter.

SK-A 40.....DIN  
69871-1

Illustration 4-4

**Tool clamping system**

Pneumatically / mechanically

**Clamping pin**

ISO 7388/2, type A or  
DIN 69 872, form A for SK-AD (with through  
hole) DIN 69 872, form B for SK-A (without

Illustration 4-5

ISO/DIS 7388/2, type B (option)

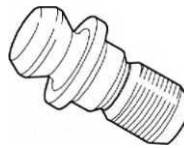
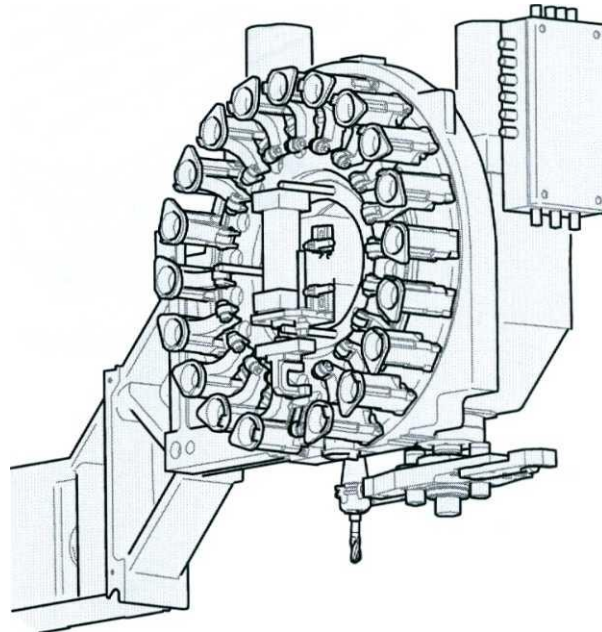


Illustration 4-6

through hole)

**4.8 Tool changer with double gripper**

Magazine stations .....	pes.	20
max. tool diameter without free places.....	mm	80
max. tool diameter with free places.....	mm	130
max. tool length from spindle nose .....	mm	300
max. tool weight for automatic tool change .....	kg .	
max. overall tool weight in magazine Magazine stations 20 .....	kg .	60

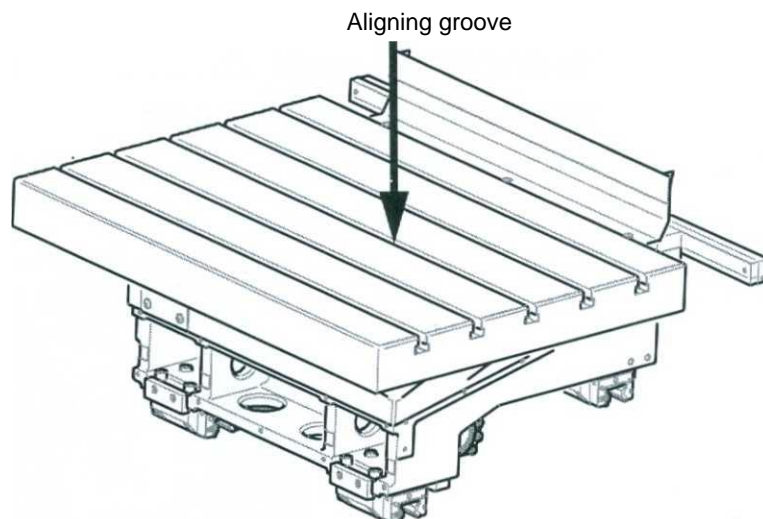


Illustration

**DECKEL MAHO**  
Seebach GmbH

**4.9 Working tables**

Clamping surface.....	mm.....	<b>790 x 560</b>
T groove distance .....	mm .....	<b>100</b>
Number of Tgrooves/size .....	pee .....	<b>4/H12</b>
Aligning groove / size .....	pee .....	<b>1 /14 H7</b>
Max. load (table center).....	approx. kg.....	<b>600</b>
Charging height (Bottom-upper edge table) .....	mm .....	<b>720</b>



Illustration

DMC635Veco-si-ba-  
en

Page  
**4-10**



4.10

**Cooling lubricant tank**

Tank volume.....	1	.....	120
Discharge rate.....	/min.....	.....	22
Discharge pressure.....	bar	.....	3,7

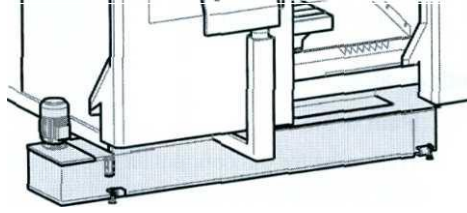


Illustration 4-9

4.11

**Chip conveyor (scraper-type option)**

Tank volume.....	J	.....	■	.....	200
Discharge rate.....	/min.....	.....	.....	.....	22
Discharge pressure.....	bar	.....	.....	.....	3,7
Dumping height.....	mm	.....	.....	.....	800
Dumping height					
Chip discharge funnel dismounted.....	mm	.....	.....	.....	1 100

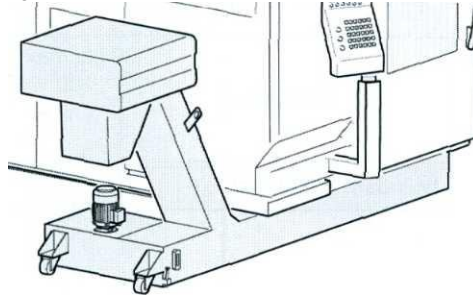


Illustration 4-10



In case of a dismounted chip discharge funnel, a chip collecting tank with intervention protection must be used! Without intervention protection, the chip conveyor must not be switched on.

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4.12

**Installation data**

Electrical supply

Care should be taken during the electrical installation to ensure that EN 60 204, part 1, section 6.3.3 "Protection by automatic interruption of the power supply" is complied with.

**Connecting values**

**Main drive:**

The mains for the connection of the machine or parts of the system must be of type TN-S with 3 conductors (L1, **12**, L3) as well as a neutral conductor (N) and an earth conductor (PE).

Mains connection. . . . 3 phases (L1, L2, L3), neutral conductor and earth  
 .....conductor, 50/60 Hz 400/230 VAC with  
 tolerance±10%

**A** The actual supply voltage must not deviate from the rated voltage by more than the permissible tolerance even under load.

Cross-section of connecting cable in accordance with DIN 57100 / VDE 0100 or other standards applicable locally!

Execution	I <sub>n</sub> max. at 100% ED A	Power consumption at 100% ED, kVA	Max. fusing A
Standard 8 000 rpm	28	17	35

**Isolating transformer:**

Rated voltage .....	3/400 V 50/60 Hz
Isolating transformer at rated efficiency DIN .....	V . . 200, 220, 420, 440, 500
Isolating transformer at rated efficiency CSA/UL .....	V ..... 208, 230, 460, 575
Nominal capacity 8 000 rpm .....	kVA ..... 20
I <sub>n</sub> max. induced (400 V) 8 000 rpm .....	31
Fusing 8 000 rpm .....	A ..... 3 x 35 slow

**Primary dimensions**

• 200 V 8 000 rpm .....	A .....	58
• 220 V 8 000 rpm .....	A .....	53
• 400 V 8 000 rpm .....	A .....	30
• 420 V 8 000 rpm .....	A .....	28
• 440 V 8 000 rpm .....	A .....	27
• 500 V 8 000 rpm .....	A .....	24
Free cable length above ground .....	m .....	0,8
Connecting cable section .....	according DIN5710/VDE 0100	

**Pneumatic supply**

The compressed air must fulfil the following conditions at the output point:

- free from condensation air cooling to 2-5°C is recommended (e.g. by air dryer)
- free from dust: recommendation: air filter immediately in front of the machine (customer side) filter mesh= 50 u,m, filter size matched to air consumption of the machine

**Furthermore, the following conditions must be met:**

Pneumatic connection..... SMC no..... KK 6S-03 F

Hose nozzle ..... Legris no ..... 01361417

Compressed air connection,

Minimum nominal value ..... 0 mm ..... 12

corresponds to SMC no.

Available

Prepared on the machine side:

Pneumatic connection ..... SMC no.....KK6P-03MS

**Amount of air consumption**

- In case of a tool change ..... approx. ltr ..... 15

- Flow rate (peak value)..... without options max. ltr. / min ..... 580

- Flow rate ..... (with all options) ltr. / min ..... 1 000

**Terminal end values**

- air pressure, min ..... bar..... 6,5

- air pressure, max ..... bar..... 8,0

Set value at pressure gauge.....bar .....6,0

Keep compressed air incoming line (customer side) as short as possible!

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**Room temperature**

The room temperature must lie within the following range

- Workspindle 8 000 rpm ..... °C..... +15 to +35

At temperatures below resp. above, the admissible room temperature special measures must be taken.

**Humidity**

Relative humidity ..... %. 2 0 - 8 0

**Installation height**

- The electrical equipment can be used for operating perfectly in height levels of up to 1 000 m above sea level.

- If the physical ambience or operating conditions differ from these specifications, an agreement between the supplier and the operator may be necessary.

- In case of an installation height of > 1 000 m, the load currents must be reduced according to the following diagram.

Max. installation height ..... ml 000 above mean sea level

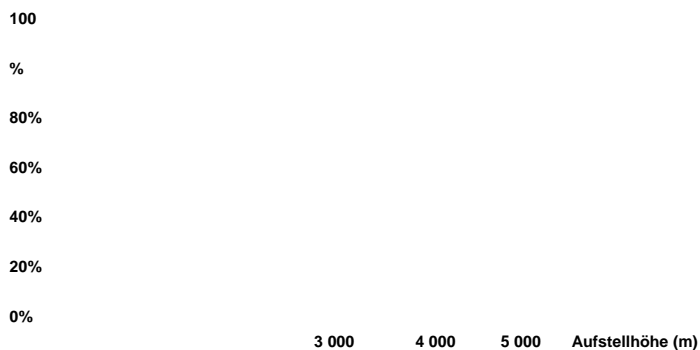


Illustration 4-11



The current reduction must be drawn from  $I_n$  and  $I_{max}$  in the same way.

- $I_n^{Height} = \frac{X_H \cdot I_n 1\,000\text{ m}}{100\%}$

- $I_s 6^{Height} = \frac{X_H \cdot I_s 6\,1\,000\text{ m}}{100\%}$

- $I_{max}^{Height} = \frac{X_H \cdot I_{max} 1\,000\text{ m}}{100\%}$

Example: LT 50 A: with HSA analogous adjustment: selected inverter cycle frequency 6.3 kHz; installation height 2 000 m.

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Noise emission

Measuring surface sound pressure level according to  
DIN 45635-16-K1.2 in idling ..... db (A)..... <78

Floor conditions

See "Weight".



Additionally, escape routes and safety areas in accordance with the local regulations, laws and instructions must be observed.



Observe "Planning" see chap. 10.

If one of these values is exceeded at the place of installation of the machine or in case of special operating conditions, e.g.:

- installation in rooms with major dust portions or corrosive components in the atmosphere
- effects of strong electrical or magnetic fields
- effects of extreme temperatures, e.g. sunlight
- installation in areas endangered by explosions or by explosive materials
- occurrence of strong vibrations or impacts
- contact your DMG representative.

**4.13 Weight**

**Machine weight**

Machine with 20 tools and  
 table (standard) ..... approx. kg ..... 3 700

**Installation weight**

Machine with max. weight for part, 20 tools and fluids, cooling  
 lubricant system ..... approx. kg ..... 4 400

**Support**

**Static**

Load on support

A / B ..... max. kN ..... 12,5

C ..... max. kN ..... 17,5

**Dynamic**

Table loaded with ..... kg ..... 600

Tool changer loaded with ..... kg ..... 90

100 % feed

rate Load on

support

A ..... max. kN ..... 19,0

B ..... max. kN ..... 17,5

C ..... max. kN ..... 24,5

Installation elements

Number ..... 3

Type ..... GS41 + TK8

Manufacturer ..... Messrs. Nivell AG