

Product information PI 54 en

Machining unit 0.5.030.xxx

Slide unit 0.2.200.xxx

2016-03-01



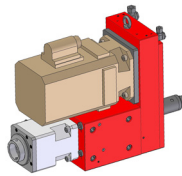


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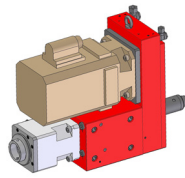
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NOTE:

The information contained in this product information is based on the knowledge available at the time of printing. We expressly reserve the right to make changes which occur in line with continuous development.

Our guarantee demands observance of the information provided in the project planning instructions!

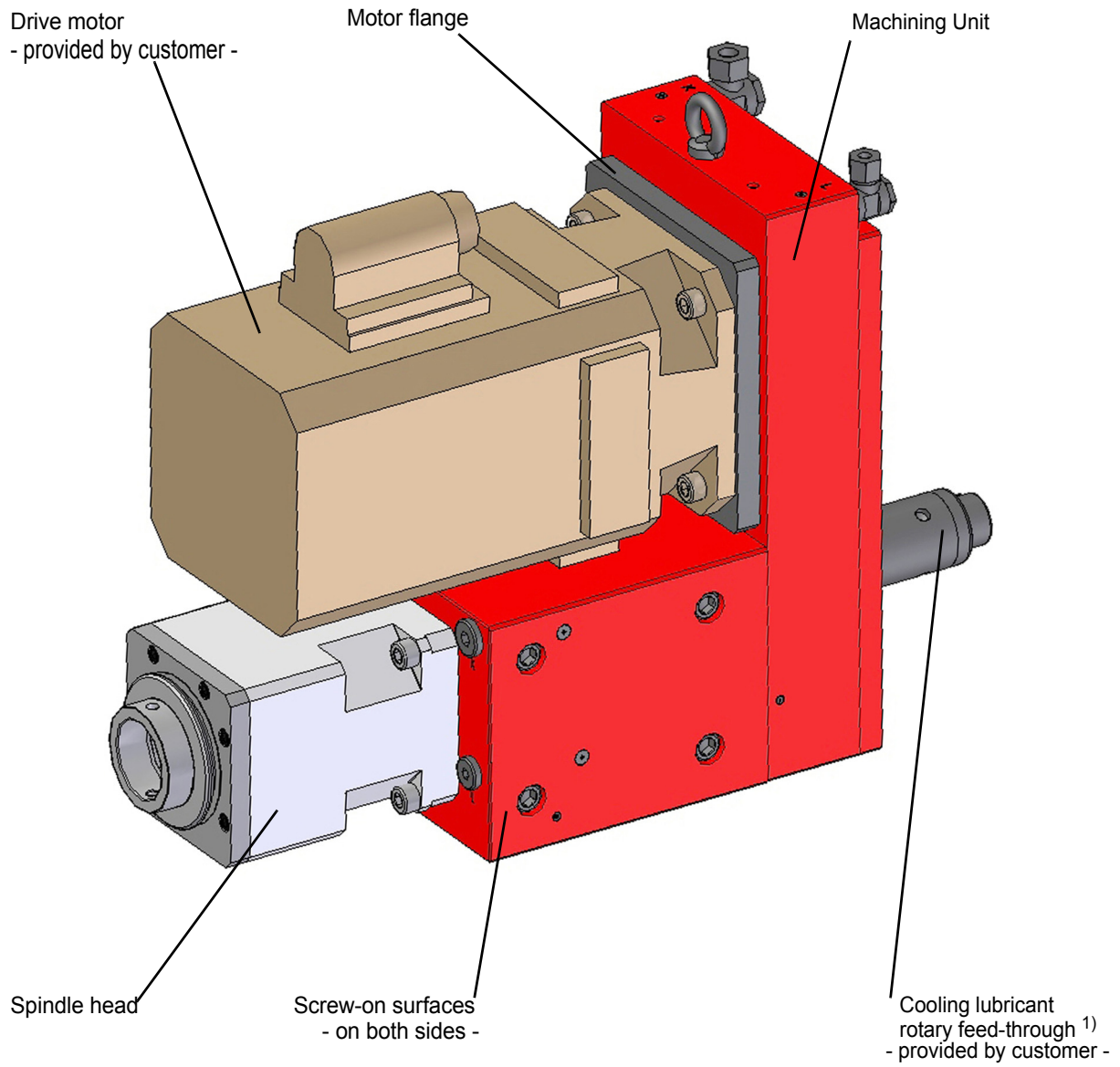
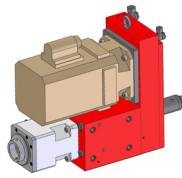


Brief description of machining unit

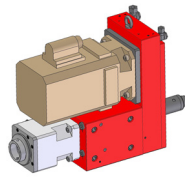
Machining units are used particularly for machining stations of transfer lines, revolving transfer machines and for turning machines.

Features

- Prepared for high-power servomotors
- High torque capacity.
- Protection of all tool spindles against swarf and cooling lubricant by labyrinth seals supported by sealing air
- Cooling lubricant supply
 - externally by the spindle head housing or
 - internally by the tool spindle (suitable for dry running)
 - Minimal quantity lubrication (optional)
- Universal installation
- Expansion of the application areas of your machine
- Other versions on request



1.) e.g. Deublin, GAT, etc.



Technical Data of Machining Unit

Series		Size	
Machining unit 0.5.030.0xx			06
Max. permitted drive speed ^{1.)}		min ⁻¹	6000
Max. permitted drive torque ^{3.)}		Nm	100
Max. permitted output torque		Nm	150
Max. permitted drive rating		kW	12
Transmission ratio ^{2.)} (Options)		$i = n_1/n_2$	2,4 (1,0 / 1,5 / 2,0)
Mass (machining unit without motor and without spindle head)		kg	70
Operating pressure			
Sealing air		bar	0.4 - 0.8 (filtering $\leq 5\mu\text{m}$)
Cooling lubricant			
• for external supply through the spindle head housing		bar	≤ 25 (filtering $\leq 100\mu\text{m}$)
• for internal supply through the tool spindle		bar	≤ 100 (filtering $\leq 50\mu\text{m}$)
• for minimal quantity lubrication		bar	On request
Recommended drive motors			
SIEMENS 1FT6 086			
rpm	n_{max}	min ⁻¹	6000
Torque	$M_{\text{max 60\% DC}}$	Nm	35
Power	$P_{\text{max 60\% DC}}$	kW	12
Mass		kg	26
FANUC Alpha 30 / 4000HVis			
rpm	n_{max}	min ⁻¹	4000
Torque	$M_{\text{max 60\% DC}}$	Nm	38
Power	$P_{\text{max 60\% DC}}$	kW	12
Mass		kg	23
For this purpose SAUTER spindle heads			0.5.934.1.. 0.5.934.2..

1.) Higher rpm on request

2.) Other transmissions on request.

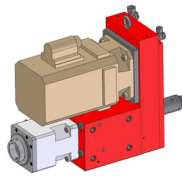
3.) M_{adm} is the admissible peak load for the gearbox.



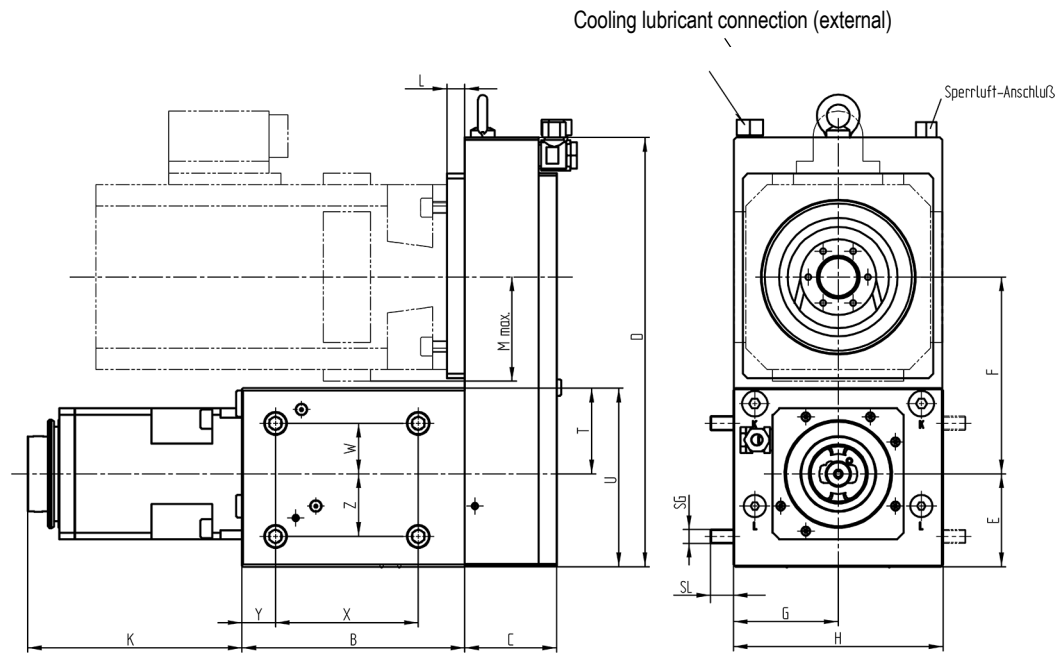
The torque must be reduced to the indicated value on the motor inverter. Also consider the gear ratio.

The usable performance data depends on the performance characteristic of the motor type used.

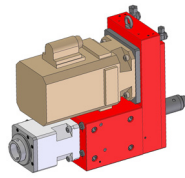
The permitted torque can be used for shock-free machining. For high-shock machining – e.g. cutter head milling, etc. – the drive torque must be reduced considerably to prevent an overload of the gearbox.



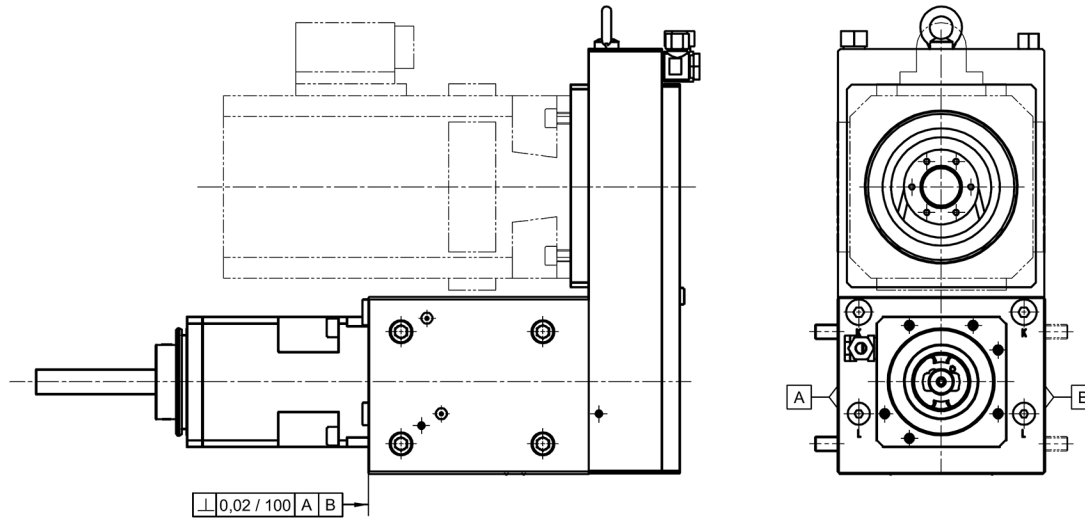
Dimensions of Machining Unit



Series		Size
Machining unit 0.5.030.0xx		06
B	mm	187
C	mm	77
D	mm	360,5
E	mm	78
F	mm	depending on transmission ratio
G	mm	88
H	mm	176
L	mm	depending on motor manufacturer and motor type
K	mm	depending on spindle head length
M _{max.}	mm	87,5
U	mm	146
T	mm	72
SG		M12
SL	mm	20
Y	mm	28
X	mm	120
Z	mm	45
W	mm	45



Precision of Machining Unit



Positioning accuracy

- Spindle head location hole

- Positioning accuracy

$\oplus 0,02$

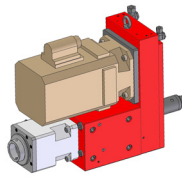
- Bore tolerance

H6

Spindle head contact surface

$\square 0,01 / 100$

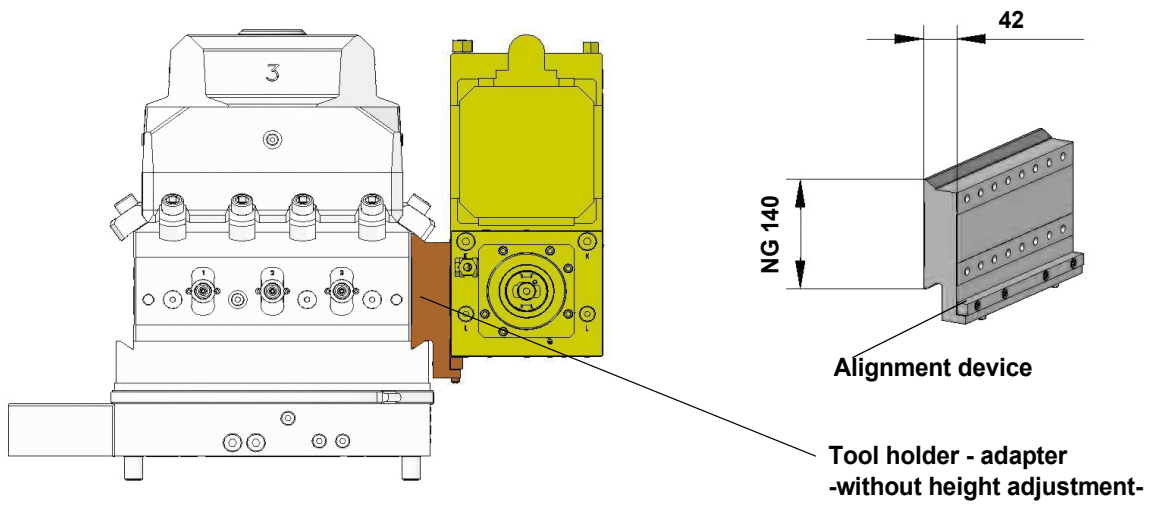
To determine the positioning accuracy of the tool tip, the accuracy of the spindle head and tools must also be considered



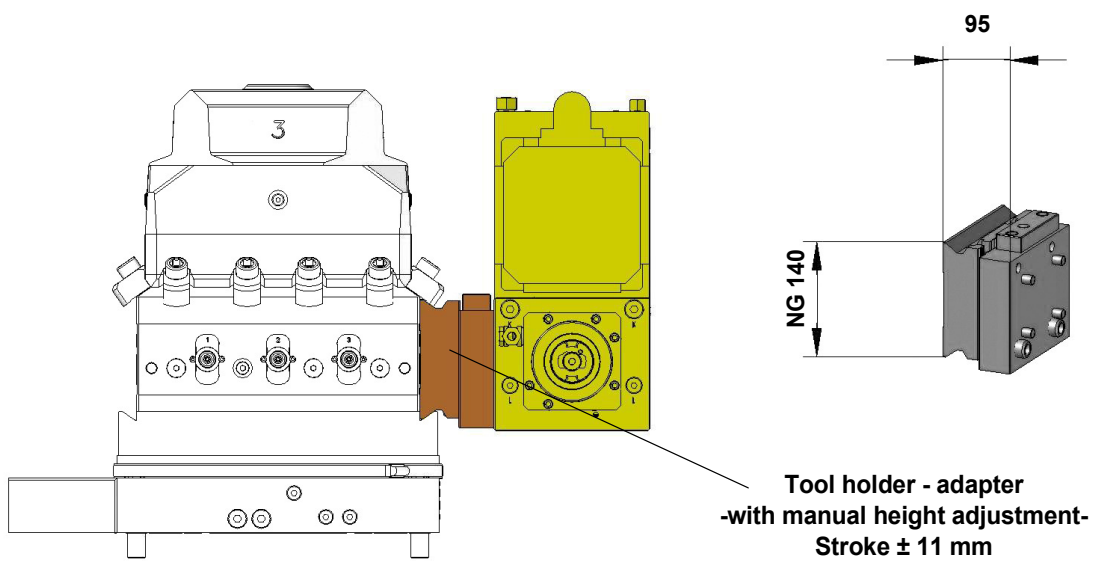
Installation options

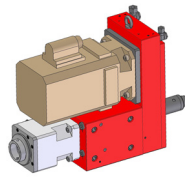
Adjustment parts for installation on the head turret 0.5.320.xxx with tool holder in accordance with DIN 69881

Installation option 1



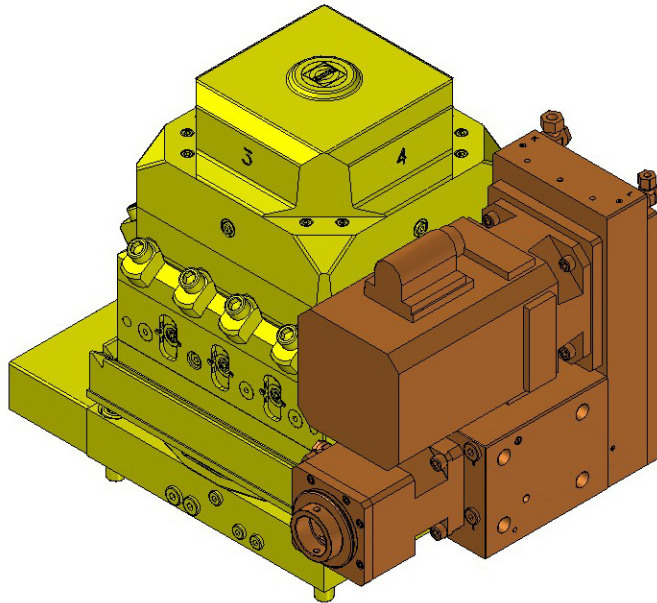
Installation option 2



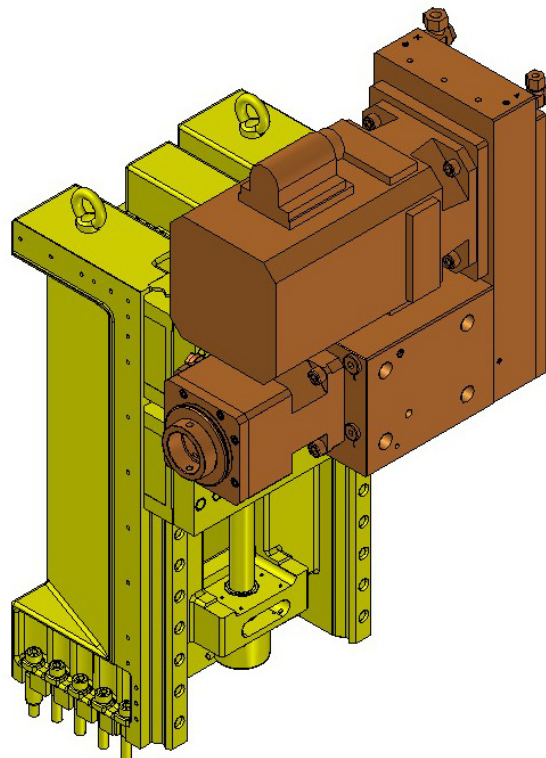


Application examples:

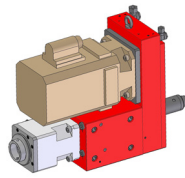
Head turret 0.5.320.xxx



Slide unit 0.2.201.036



Other installation options on request

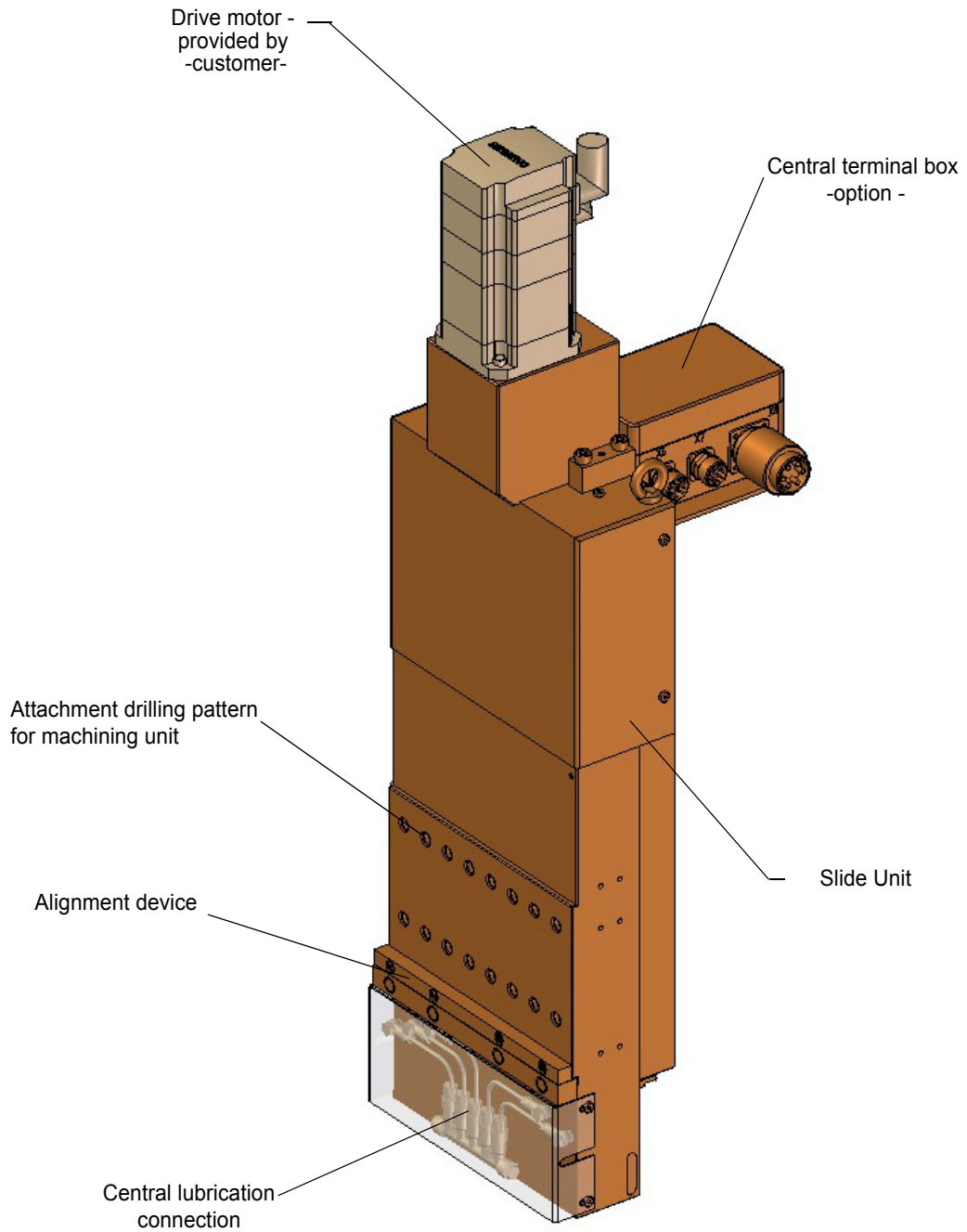
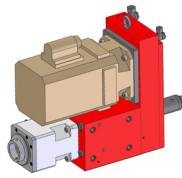


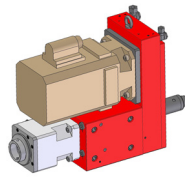
Brief description of slide unit

These slide units are particularly suitable for accommodating machining units.
Installation is e.g. on a bidirectional head turret.

Features

- Slide unit designed as a compact dovetail guide.
- Central lubrication connection.
- Cooling lubricant supply via the interface DIN 69881.
- Slide position via motor encoder.
- Expansion of the application area of your machine.
- Quick installation by precision quick-change system. (e.g. SPEEDY metec)
- High repeating accuracy by alignment device.
- Other versions on request.

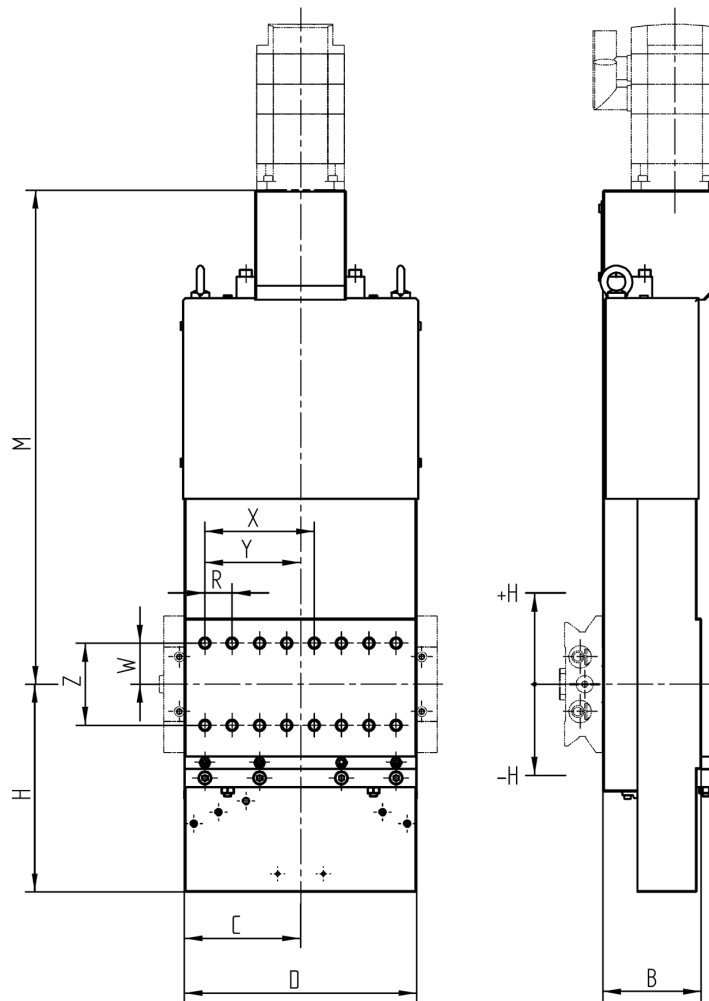
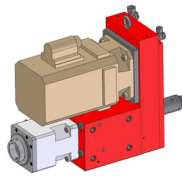




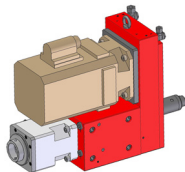
Technical Data of Slide Unit

Series		Size
Slide unit 0.2.200.0xx		25
Gearing ratio	i	1
Gradient of the ball roller spindle	mm	5
Adm. rapid feed rate	m/min	10
Working stroke	mm	±100
Adm. feed force	kN	1
Adm. motor drive speed	min ⁻¹	2000
Adm. motor drive torque	Nm	3
Length measuring system		Motor encoder
Achievable positioning accuracy	µm	10
Mass (slide unit without machining unit, without spindle head and without motor)	kg	125
Recommended drive motors		
SIEMENS 1FK7 042 with brake		
Speed ^{1.)}	n _{max}	min ⁻¹ 3000
Torque ^{1.)}	M _{max} 60% DC	Nm 3,2
Mass	kg	5,4
FANUC Alpha 2 / 5000 is with brake FANUC Alpha 2 / 5000 HVis with brake		
Speed ^{1.)}	n _{max}	min ⁻¹ 5000
Torque ^{1.)}	M _{max} 60% DC	Nm 2,6
Mass	kg	3,8

1.) Limit motor to adm. values of the slide unit.

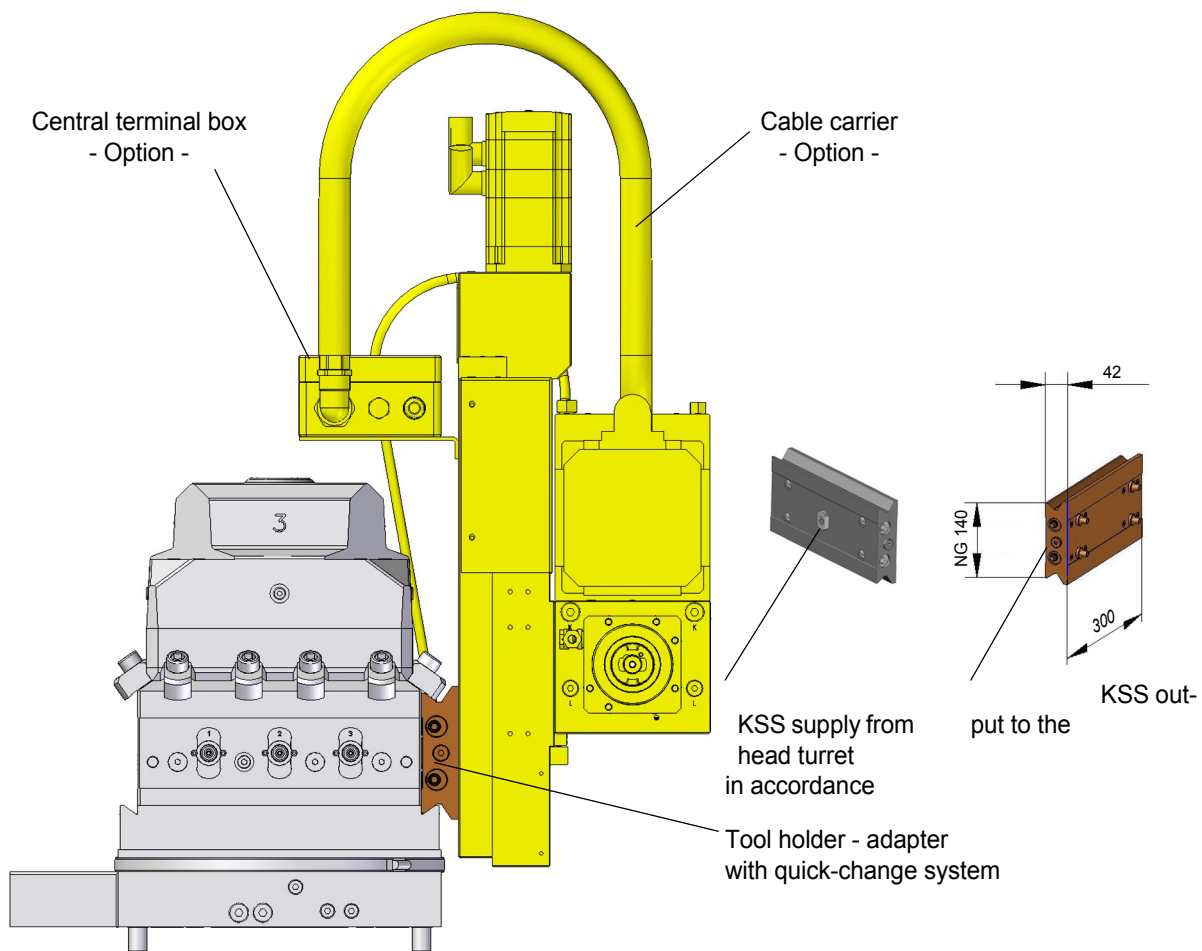


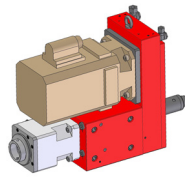
Series		Size
Slide unit 0.2.200.0xx		25
B	mm	108
C	mm	130
D	mm	260
H	mm	228
±H	mm	100
M	mm	542
Y	mm	105
X	mm	120
R (Grid)	mm	30
Z	mm	90
W	mm	45



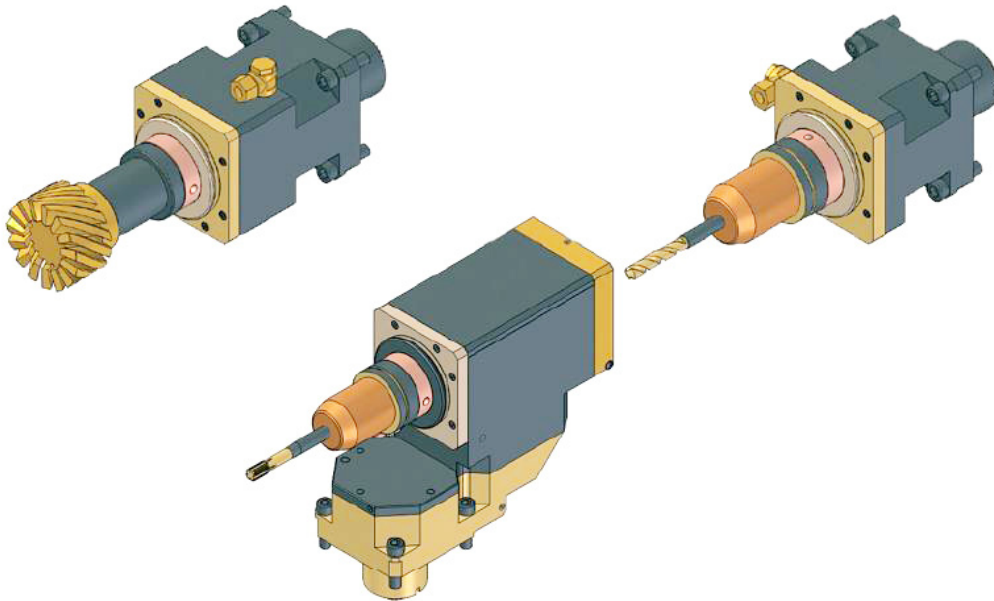
Adjustment parts for installation on the head turret 0.5.320.xxx with tool holder

Installation options





Spindle heads of series 0.5.934.xxx

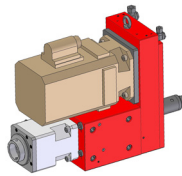


Features

- Bearing assembly via precision spindle bearings in -O- or tandem-O-arrangement, moderate preload
- Service life grease lubrication
- Wear-free labyrinth seal with sealing air support
- Cooling lubricant supply:
 - externally by the spindle head housing or
 - internally by the tool spindle
- Very high concentricity and degree of balance
- Tool holder in the spindle: for HSK/Mapal clamping system
- Transmission $i = 1$

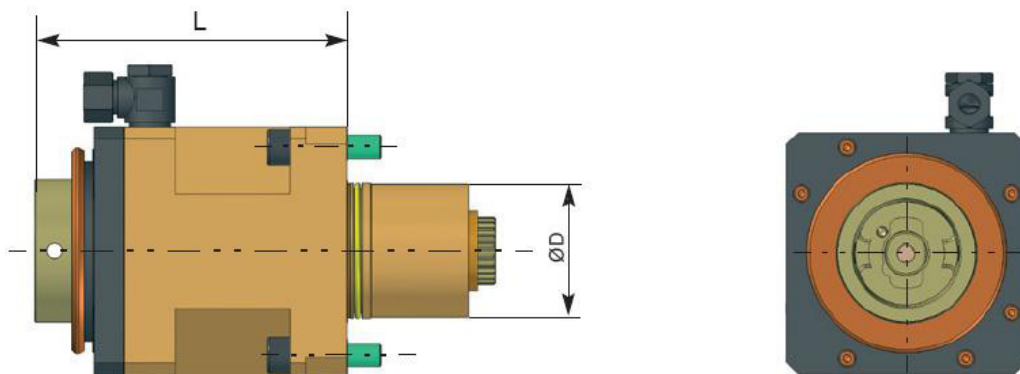
Options

- Special tool holders
- Spindle bearings (selection):
 - for high speed
 - for high load
 - for special requests
- Other options on request:
- Spindle heads with transmission $i \neq 1$
 - Multi-spindle drill heads
 -
 -
 -



Spindle head 0° selection		0.5.934.xxx		
Shaft diameter D	Tool holder ¹⁾	Arrangement of bearings	Size	Length L
60	HSK 50-C	< O >	106	138
	HSK 63-C	< O >	106	138
	HSK 63-C	<< O >	106	138
	HSK 63-C	<< O >	106	180
	HSK 63-C	<< O >>	106	-

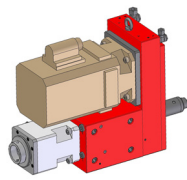
1) Including clamping unit from Mapal, type KS...07 clamping unit and guard ring.



Application recommendation:

Bearing arrangement << O > – for higher loads.

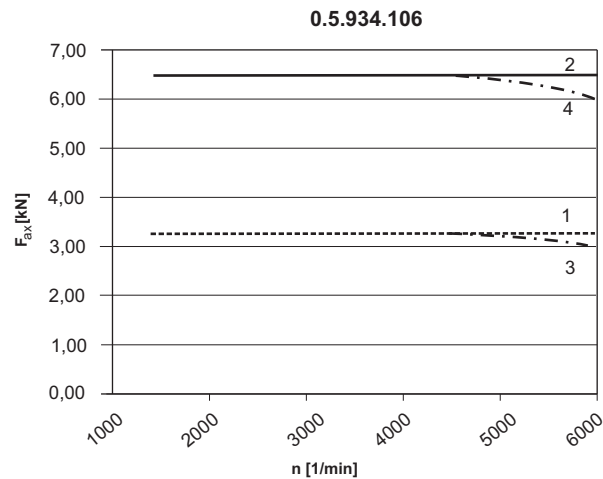
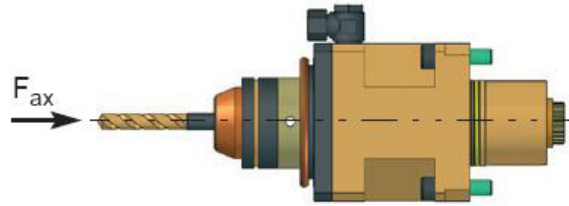
Internal cooling lubricant supply – suitable for dry running.



Admissible Loads

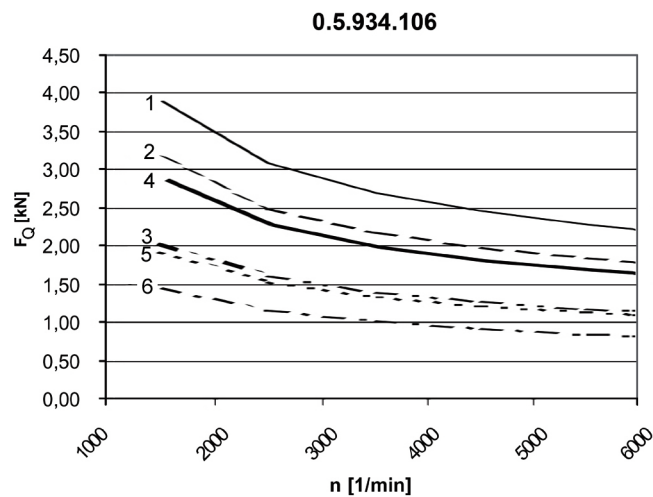
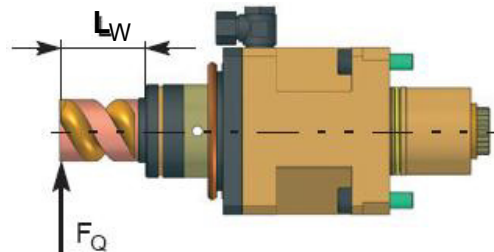
Permitted axial force during drilling

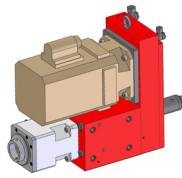
Characteristic no.	Bearing arrangement	Nominal bearing service life L_h [h]
1	Standard	4000
2	Tandem	4000
3	Standard	8000
4	Tandem	8000



Permitted transverse force during milling

Characteristic no.	Bearing arrangement	Bearing spacing	L_W [mm]
1	Tandem	Long	80
2	Tandem	Standard	
3	Standard	Standard	
4	Tandem	Long	160
5	Tandem	Standard	
6	Standard	Standard	





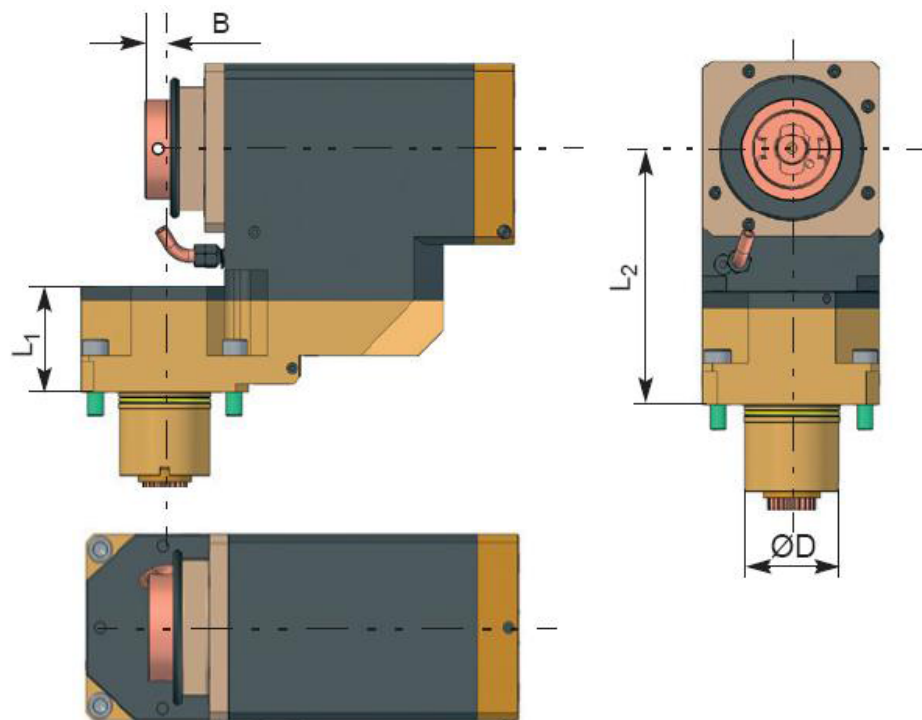
Spindle head 90° selection

0.5.934.xxx

Shaft diameter D	Tool holder ¹⁾	Arrange- ment of bearings	Size	L1	L2	B
60	for collet DIN 6499-40	<< O >	206	-	160	118
	for collet DIN 6499-40	<< O >	206	-	250	118
	HSK 63-C ^{1) 2)}	<< O >	206	70	160	0
	HSK 63-C ^{1) 2)}	<< O >	206	70	250	0
	HSK 63-C ^{1) 2)}	<< O >>	206	-	-	-

1) Including clamping unit from Mapal, type KS..-07 clamping unit and guard ring.

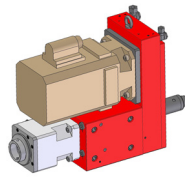
2) High speeds in short time operation only. (= 10% DC - 5 min.)



Operating pressure for cooling lubricant for internal and external supply: $p_{max} = 25 \text{ bar}$.

Internal cooling lubricant supply – suitable for dry running.

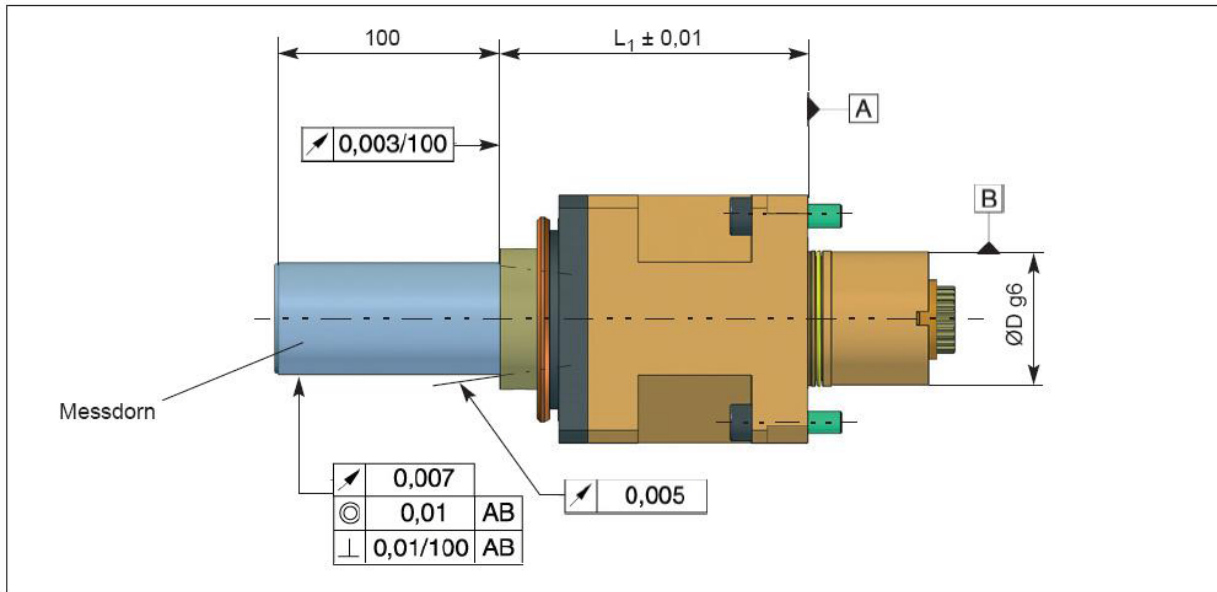
Other versions of tool holding system, bearing types, etc. on request.



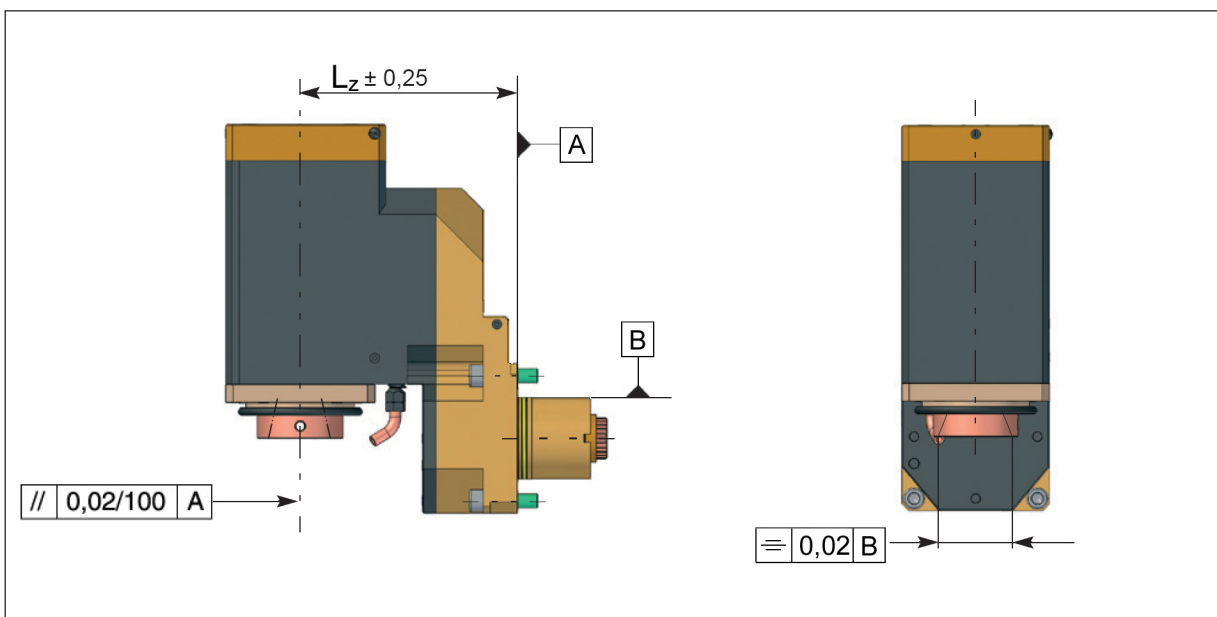
Precision - Spindle Head

- Spindle with HSK tool holder
- Bearing quality P2 = ABEC 9

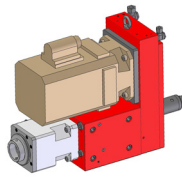
Spindle head 0°







Spindle head 90°



Dimensions in mm

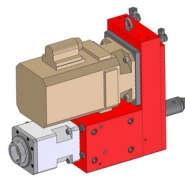


 ++49 (0) 7123-926-190
 ++49 (0) 123-926-0
 info@sauter-feinmechanik.com
 Sauter Feinmechanik GmbH
 Postfach 1551
 D-72545 Metzingen
 Germany

Firma: _____
 Straße: _____
 PLZ, Ort: _____
 Name: _____
 Tel.: _____
 Fax: _____
 E-Mail: _____

SAUTER machining unit 0.5.030.0xx

Ordering details	Possible configurations	Your selection	Installation position
Size:	06	06	
Drive motor used	See page 6		
Transmission	$i = n_1/n_2 = 1.0 / 1.5 / 2.0 / 2.4$		
Features: Machining type	Drilling		
	Milling		
	Tapping		
Special requirements: e.g. cutting depth, drill diameter, feed values			
Quantity:			



SAUTER spindle heads 0.5.934.xxx

Ordering details	Possible configurations	Your selection	
Size:	06		
Tool holder:	HSK 50		
	HSK 63		
	including Mapal clamping unit		
	Special		
Bearing spacing/bearing arrangement:	Standard / -O-		
	Standard / Tandem -O-		
	Standard / Special		
	Long / Tandem -O-		
	Long / Special		
Application features:	Drilling	$n_{\max} = \dots$	min^{-1}
	Milling	$M_d = \dots$	Nm
	Other	
Transmission:	$i = \dots$		
Special requirements:	Sketch is enclosed		
Quantity:			

SAUTER slide unit 0.2.200.xxx

Ordering details	Possible configurations	Your selection	Installation position
Size:	025		
Working stroke	± 100		
Drive motor used	See page 14		
Quantity:			