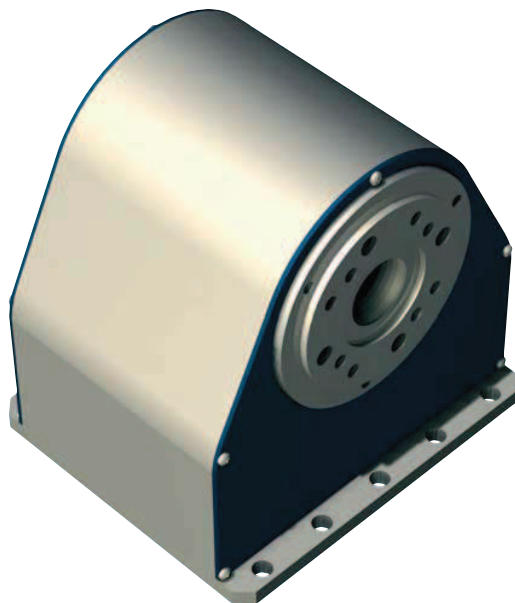


# Rotary unit

# ZD 30



## Features

- Low play toothed belt drive with Stepper motor
- Reduction 1 : 30
- Shaft with Ø 15 mm boring
- Housing flange with inner cone SK 20
- Weight: 2,9 kg

For pin assignment see page **B-122**  
For transport loads, see page **B-123**

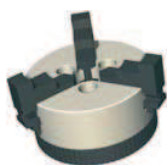
### Options:

- CNC controller via Sub D

## Ordering data

ZD 30 rotary unit  
Part no.: **261100 0000**

## Accessories



**Chuck assembly**  
3-jaw chuck Ø 65  
Part no.: **269060 2065\***



**Chuck assembly**  
3-jaw chuck Ø 80  
Part no.: **269063 3080\***



**Collet holder**  
Clamping ring housing SK 20  
for tools Ø 3 - 13 mm, with  
installation ring  
Part no.: **239122 9001**



**Tailstock unit RE-ZD30**  
200 mm Part no.: **269 100 1060** L 331  
300 mm Part no.: **269 100 1070** L 431  
400 mm Part no.: **269 100 1080** L 531  
500 mm Part no.: **269 100 1090** L 631

\* including flange

Clamping rings are on  
page E-38.

# Rotary unit

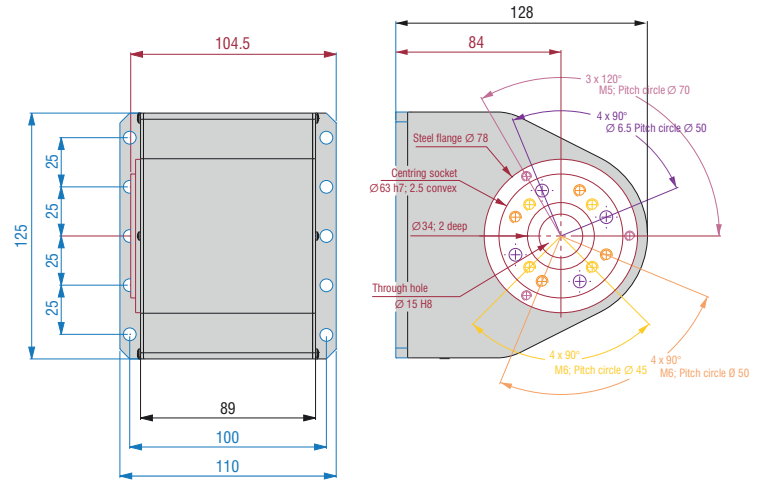
# ZD 30

## Technical specification

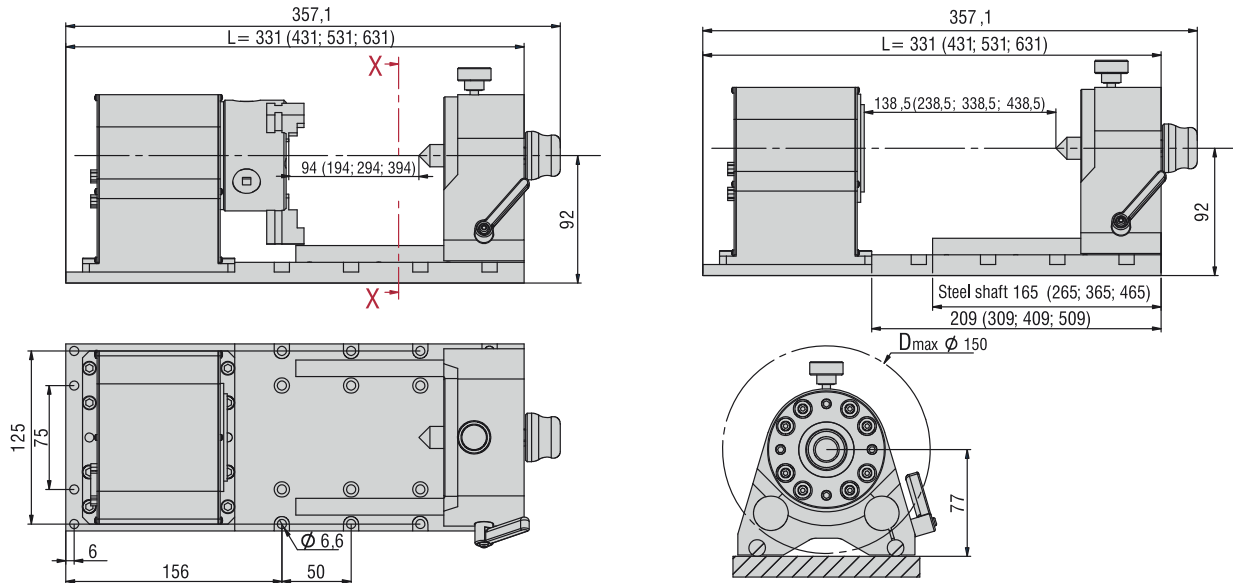
		stepper motor MS 045 HT *
Reduction ratio		0.0625
Output speed	[1/min]	0 - 40
Operating torque (0 - 1600 Hz)	[Nm]	12
Rated holding torque (static load)	[Nm]	20
Min. step (positional accuracy)	[arcmin]	2.5
Weight	[kg]	2.9

\* Values for half-step operation

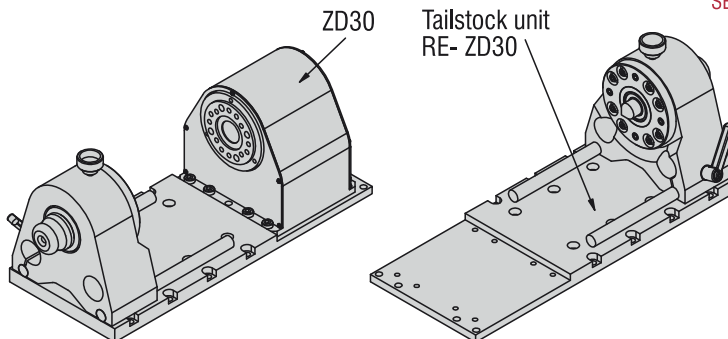
## Dimensioned drawings



## Tailstock unit RE-ZD30

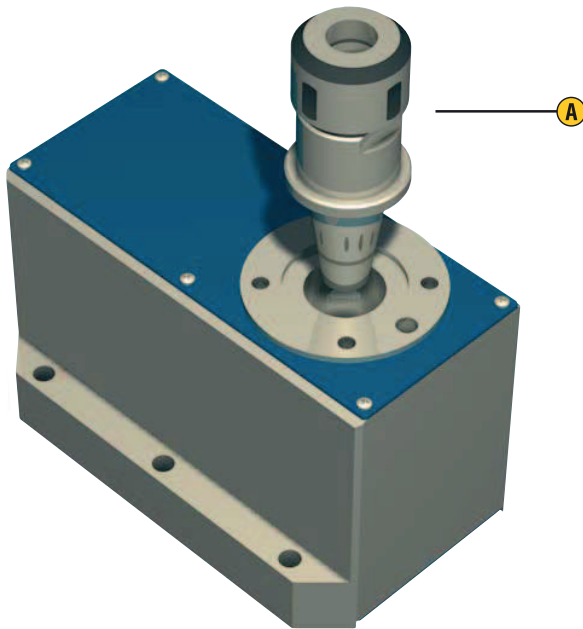


SECTIONAL DRAWING X-X



## Indexing table

## ZR 20



## Features

- Low play toothed belt drive with stepper motor
- Reduction 1 : 20
- Shaft with  $\varnothing$  15 mm boring
- Housing flange with inner cone SK 20•  
Weight: 2,1 kg

For pin assignment see page B-122  
For transport loads, see page B-123

## Options:

- CNC controller via Sub D

- **A** Collet holder SK 20  
(Accessories)

## Ordering data

ZR 20 Indexing table  
Part no.: **260300 0000**

## Technical specification

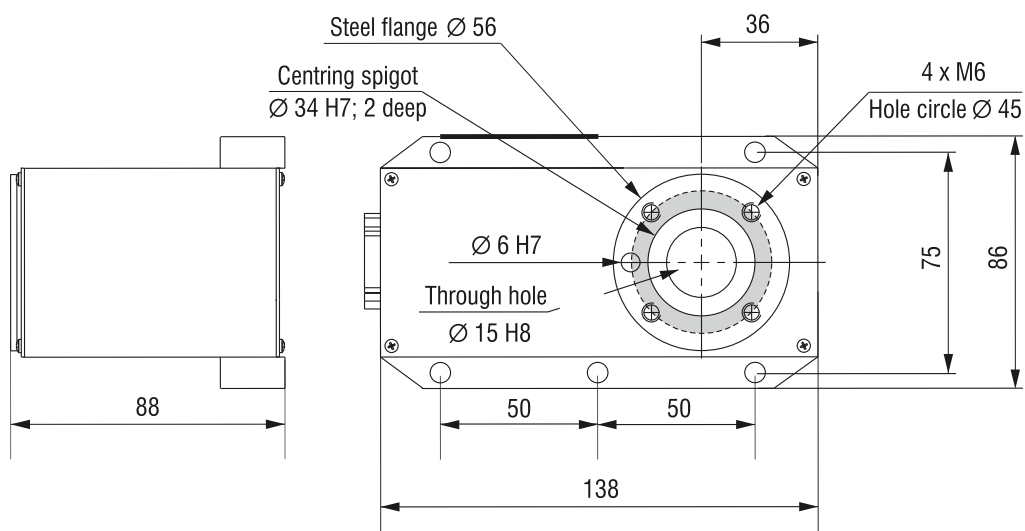
		stepper motor MS 045 HT *
Reduction ratio		1:20
Abtriebsdrehzahl	[1/min]	0 - 60
Operating torque (0 - 1600 Hz)	[Nm]	8
Rated holding torque (static load)	[Nm]	14
Min. step (positional accuracy)	[arcmin]	3.5
Weight	[kg]	2.1

\* Values for half-step operation

## Accessories

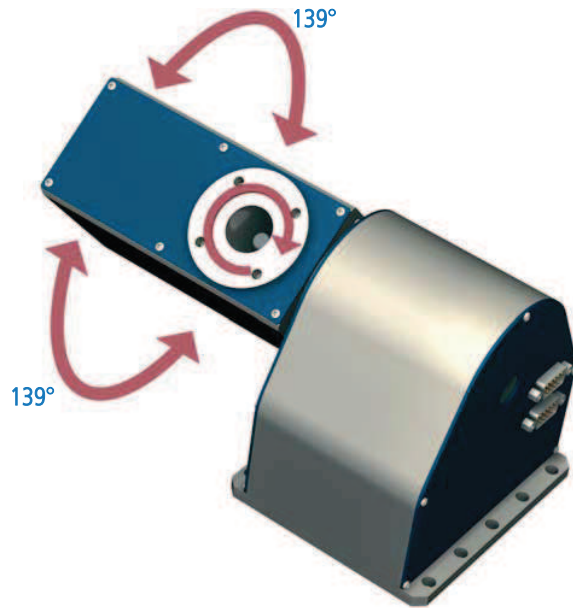
see rotary tilting unit ZDS 2030

## Dimensioned drawing



# Rotary tilting unit

# ZDS 2030



## General

The **rotary tilting unit ZDS 2030** can be used as a 4th/5th axis in CNC machines for fine workshops or in the handling area.

It is a combination of ZD 30 and the modified version of ZR 20.

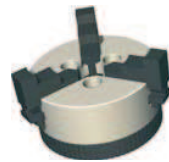
ZDS 2030 enables 5-side machining or free-form surface machining on a conventional 3-axis system of easily machinable materials (e.g. plastic).

The tilting angle is 139° in both directions.

## Ordering data

Rotary tilting unit ZDS 2030  
Part no.: **265000 0000**

## Accessories



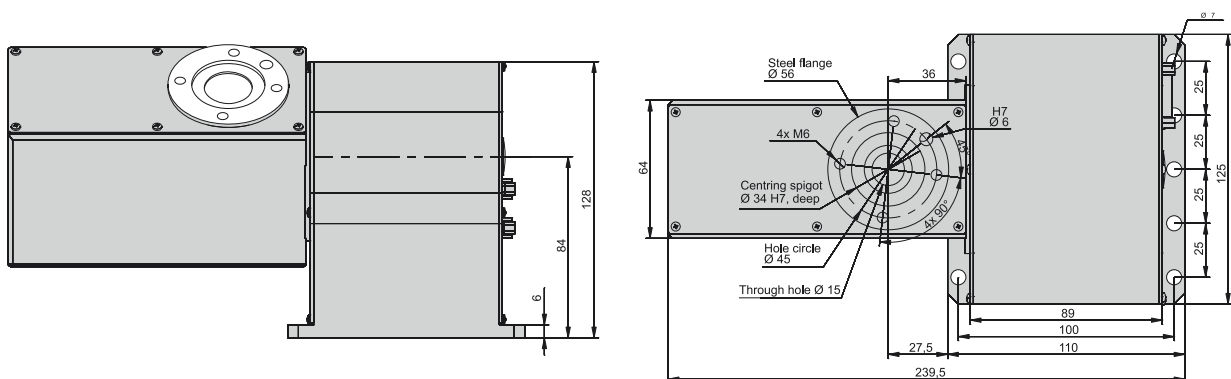
**Chuck assembly**  
3-jaw chuck Ø 65  
Part no.: **269060 2065\***

\* including flange



**Clamping ring housing**  
SK 20 clamping ring housing for tools Ø 3 - 13 mm, with installation ring  
Part no.: **239122 9001**  
Clamping rings are on page E-38.

## Dimensioned drawing

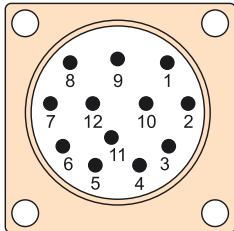


# Motor pin assignments

## Pin assignment for 12-pin stepper motors

(for RDH, DSH-S)

Motor connection



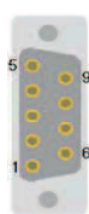
Plug side view of pin insert

M23 12-pin Pin	
1	Motor phase 1A
2	Motor phase 1B
3	Motor phase 2A
4	Motor phase 2B
5	+24V switch
6	+24V brake
7	GND switch
8	GND brake
9	Limit switch 1
10	Limit switch 2
11	---
12	---
Housing - cable shield	

## Pin assignment for 9-pin stepper motors

(for RF1, iZD 54, MD 1, ZD 30, ZR 20, ZDS 2030)

Motor connection



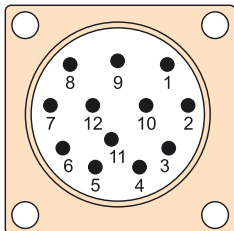
Plug side view of pin insert

Sub-D 9-pin Pin	
1	Motor phase 1A
2	Motor phase 1B
3	Motor phase 2A
4	Motor phase 2B
5	+24V switch
6	+24V brake
7	Limit switch 2
8	GND brake
9	Limit switch 1
Housing - cable shield	

## Pin assignment for stepper motors with encoder

(for RDH)

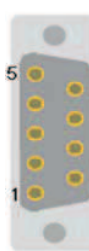
Motor connection



Plug side view of pin insert

M23 12-pin Pin	
1	Motor phase 1A
2	Motor phase 1B
3	Motor phase 2A
4	Motor phase 2B
5	+24V switch
6	+24V brake
7	GND switch
8	GND brake
9	Limit switch 1
10	Limit switch 2
11	---
12	---
Housing - cable shield	

Encoder connection

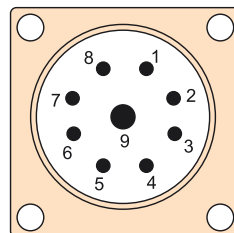


Plug side view of pin insert

Sub-D 9-pin Pin	
1	+5V encoder
2	Encoder track A
3	Encoder track B
4	Encoder track Z
5	---
6	GND encoder
7	Encoder track/A
8	Encoder track/B
9	Encoder track/Z
Housing - cable shield	

## Pin assignment for DC servo motors with brushes (BDC)

Motor connection

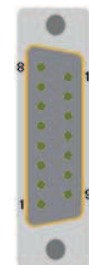


Plug side view of pin insert

M23 9-pol. (8+1) pin	
1	Motor phase 1 (V+)
2	Motor phase 1 (V-)
3	Motor phase 1 (V+)*
4	Motor phase 1 (V-)*
5	+24V brake
6	GND brake
7	---
8	---
9	Earthing lead
Housing - cable shield	

\* Part motor phase connection over 2 wires.

Encoder connection

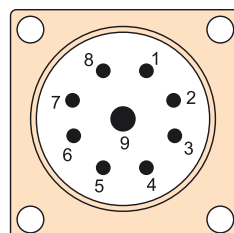


Plug side view of pin insert

Sub-D 15-pin Pin	
1	---
2	+5V encoder
3	Encoder track/Z
4	Encoder track/B
5	Encoder track/A
6	+24V switch
7	Limit switch 1
8	GND switch
9	---
10	GND encoder
11	Encoder track Z
12	Encoder track B
13	Encoder track A
14	Reference switch
15	Limit switch 2
Housing - cable shield	

## Pin assignment for brushless EC servomotors (BLDC) 48V

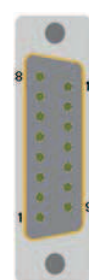
Motor connection



Plug side view of pin insert

M23 9-pol. (8+1) pin	
1	Motor phase U
2	Motor phase V
3	Motor phase W
4	---
5	+24V brake
6	GND brake
7	---
8	---
9	Earthing lead
Housing - cable shield	

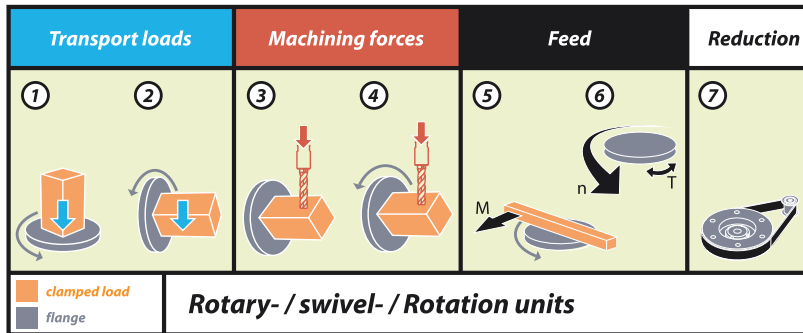
Encoder connection



Sub-D 15-pin Pin	
1	Hall signal A
2	+5V encoder/Hall
3	Encoder track/Z
4	Encoder track/B
5	Encoder track/A
6	+24V switch
7	Limit switch 1
8	GND switch
9	Hall signal B
10	GND encoder
11	Encoder track Z
12	Encoder track B
13	Encoder track A
14	Hall signal C
15	Limit switch 2
Housing - cable shield	

Turn/tilt/rotation units:

# Transport loads, machining forces, feed



Rotary or tilting units	1*	2*	3	4	5	6	7
RDH-M (step)	100 kg	45 kg	55 Nm	24 Nm	24 Nm	4 rpm	1:51
RDH-M (step)	160 kg	70 kg	108 Nm	45 Nm	45 Nm	2 rpm	1:101
RDH-M (EC-servo, brushless)	110 kg	50 kg	26 Nm	9 Nm	9 Nm	22 rpm	1:51
RDH-M (EC-servo, brushless)	180 kg	80 kg	51 Nm	17 Nm	17 Nm	11 rpm	1:101
RDH-S (step)	30 kg	15 kg	7 Nm	7 Nm	7 Nm	4 rpm	1:51
RDH-S (step)	48 kg	24 kg	11 Nm	11 Nm	11 Nm	2 rpm	1:101
RDH-S (EC-servo, brushless)	30 kg	15 kg	7 Nm	4.6 Nm	4.6 Nm	22 rpm	1:51
RDH-S (EC-servo, brushless)	48 kg	24 kg	11 Nm	4.6 Nm	9.2 Nm	11 rpm	1:101
RDH-S (DC-servo)	25 kg	13 kg	7 Nm	4.6 Nm	4.6 Nm	22 rpm	1:51
RDH-S (DC-servo)	40 kg	20 kg	11 Nm	8.7 Nm	8.7 Nm	11 rpm	1:101
RDH-XS (step)	30 kg	10 kg	5 Nm	5 Nm	5 Nm	24 rpm	1:50
RDH-XS (step)	30 kg	10 kg	7 Nm	7 Nm	7 Nm	12 rpm	1:100
RDH-XS (EC-servo, brushless)	30 kg	10 kg	5 Nm	5 Nm	5 Nm	59 rpm	1:50
RDH-XS (EC-servo, brushless)	30 kg	10 kg	7 Nm	7 Nm	7 Nm	30 rpm	1:100
RDH-XS (DC-servo)	30 kg	10 kg	5 Nm	5 Nm	5 Nm	70 rpm	1:50
RDH-XS (DC-servo)	30 kg	10 kg	7 Nm	7 Nm	7 Nm	35 rpm	1:100
RF 1 (step)	60 kg	30 kg	37 Nm	17.5 Nm	17.5 Nm	50 rpm	1:24
RF 1 (step)	100 kg	50 kg	75 Nm	38 Nm	38 Nm	23 rpm	1:52
RF 1 (step)	150 kg	75 kg	75 Nm	75 Nm	75 Nm	12 rpm	1:100
RF 1 (DC servo/EC servo)	70 kg	35 kg	7 / 12 Nm	6 / 10 Nm	6 / 10 Nm	125 rpm	1:24
RF 1 (DC servo/EC servo)	110 kg	55 kg	16 / 26 Nm	13 / 22 Nm	13 / 22 Nm	58 rpm	1:52
RF 1 (DC servo/EC servo)	160 kg	80 kg	30 / 50 Nm	25 / 42 Nm	25 / 42 Nm	30 rpm	1:100
MD 1 (step)	5 kg	2.5 kg	14 Nm	8 Nm	8 Nm	60 rpm	1:20
MD 1 (DC servo)	6 kg	3 kg	3.9 Nm	3 Nm	3 Nm	175 rpm	1:20
MD 1 (EC servo, brushless)	6 kg	3 kg	4 Nm	3.2 Nm	3.2 Nm	150 rpm	1:20
ZR 20 (step)	10 kg	5 kg	14 Nm	8 Nm	8 Nm	60 rpm	1:20
ZD 30 (step)	14 kg	8 kg	20 Nm	12 Nm	12 Nm	40 rpm	1:30

\*) Guideline values will vary according to application !!