

## Play compensating measuring gear Model ZRS

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- Special design for play compensation (utility model protection - Gebrauchsmuster Nr. 20 2007 016 135.2)
- Excellent for long time use at temperatures up to 150°C
- Long lasting elastic plastic
- Module  $m = 8$  to 14
- Crown circle up to 320 mm
- Applicant specific dimensions can be realized

### Design and Function

The measuring gear (ZRS) is made out of a long lasting elastic plastic which enables rotary encoders to measure play free. Thereby false measuring values are avoided when the rotating direction is reversed. The teeth shape is derived from the involute gear profile.

The play compensating measuring gear was developed for applications in cranes, wind turbines and mobile machinery.

The ZRS is generally used in combination with robust encoders from the T-series with Analog or Digital interface.

## Play compensating measuring gear ZRS

### Technical data

#### Mechanical data

- Material: plastic
- Temperature range: - 40 °C to 150 °C
- Tensile strength: ca. 110 N/mm<sup>2</sup>
- Colour: red-brown
- Pressure angle: 20°
- Shaft adapter: ø 12 mm flat to 11 mm, other diameters on request (6, 8, 10 mm)
- Load cycle: 2x10<sup>6</sup> at 50 rpm

### Order code format

ZRS	-	12	-	10	-	A	01	
								Variation *
						A	01	standard
				10	Number of teeth ZRS:			
				Module:				
		12		5 to 24				
		Model:						
ZRS	Measuring gear							

\* Standard versions carry the number 01. Deviating variants are identified with a different number.

With complete parameter table specific customer applications can be taken.

#### Parameter table

No.:	Name	Abb.	Gear 1	Gear 2
1	External tooth		x	
2	Internal tooth		-	
3	Number of teeth	z		
4	Transmission ratio	i		
5	Module	m [mm]		
6	Normal pressure angle on the reference circle	αt [°]	20	
7	Facewidth	b [mm]		
8	Reference diameter	d [mm]		
9	Tip diameter	da [mm]		
10	Root diameter	df [mm]		
11	Profile shift (x x m)*	[mm]		
12	Tip alteration (k x m)*	[mm]		
13	Centre distance	[mm]		

\* signed

#### Scope of ZRS delivery includes

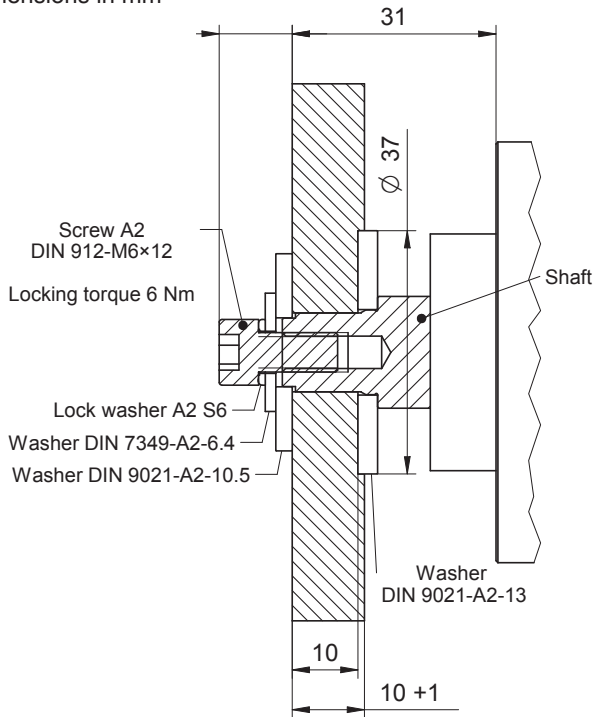
- ZRS Measuring gear
- Mounting material:
 

Lfd.-Nr.	Description	Quantity
1	Washer DIN 9021-A2-13	1
2	Washer DIN 9021-A2-10,5	1
3	Washer DIN 7349-A2-6,4	1
4	Lock washer A2 S6	1
5	Screw A2 DIN 912 - M6x12	1

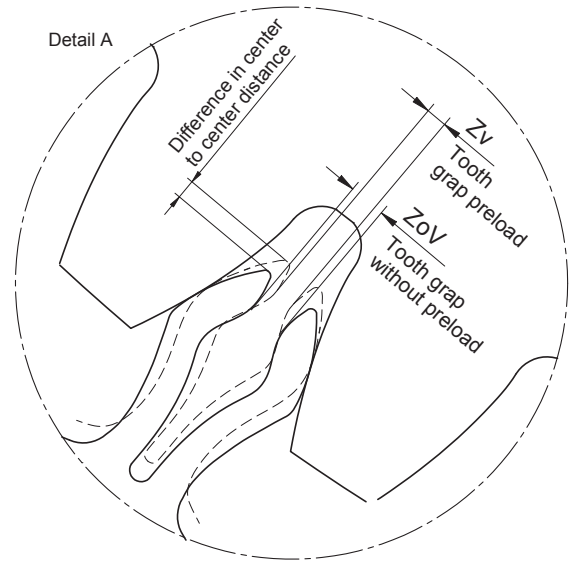
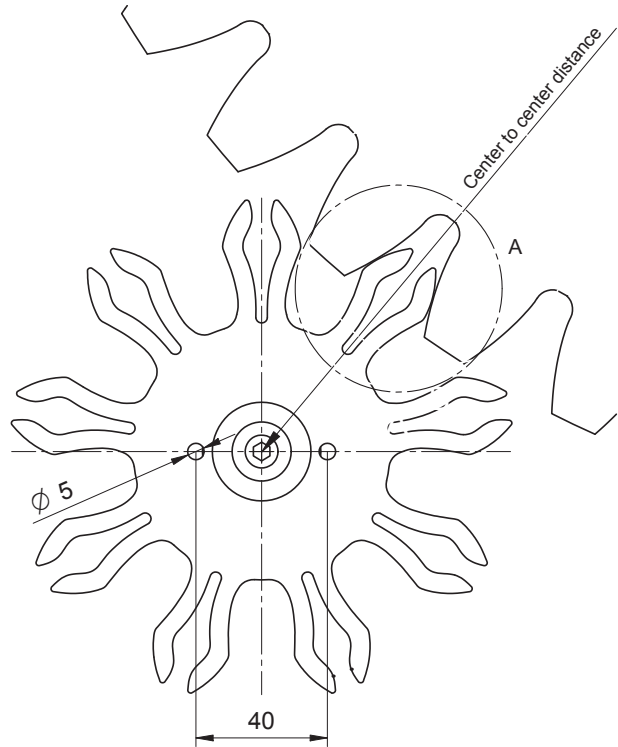
# Play compensating measuring gear ZRS

## Installation drawing

Dimensions in mm



Cross section A-A



### Assembly

1. Implementation of the Measuring gear ZRS in the drive gear until tooth flanks touch each other (ZoV).
2. Further insertion of the measuring gear ZRS until the tooth gap preload (Zv) is reached.

The measuring gear is now adjusted and ready for use.

Modul [m]	Zov = Tooth without preload	Zv = Tooth gap preload	Difference in center to center distance
5	2.14	1.1	1.4
7	3.00	1.5	2.0
8	3.40	1.7	2.3
10	4.29	2.1	2.9
12	5.14	2.6	3.4
14	6.00	3.0	4.0
16	6.86	3.4	4.6
18	7.72	3.9	5.1
20	8.57	4.3	5.7
22	9.43	4.7	6.3
24	10.29	5.1	6.9