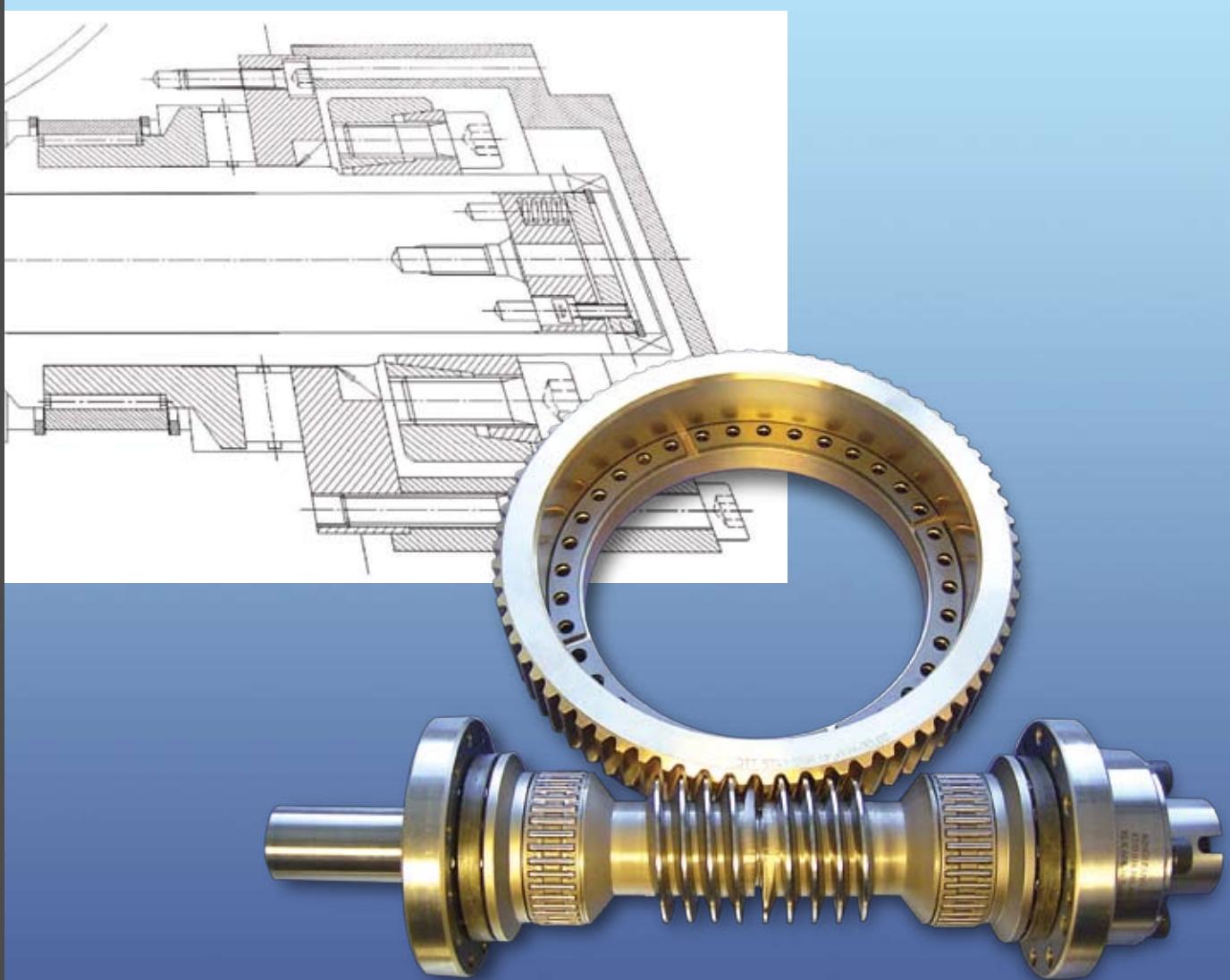


...toothed  
innovations!

# Zahnradfertigung OTT

## OTT - Worm Gears

PATENTED PRECISION WORM GEAR



### Type G1 Catalogue

Zahnradfertigung OTT GmbH & Co. KG

Blöhsteinstraße 20  
D-72411 Bodelshausen

[www.zahnrad-ott.de](http://www.zahnrad-ott.de)  
[info@zahnrad-ott.de](mailto:info@zahnrad-ott.de)

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Last updated: 2007

## **Company profile**

Zahnradfertigung Ott is a family business founded in 1957.

Top quality, reliability and expert advice are basic values for our company. At Ott, our top priority is to implement such aims in daily business with our customers. This applies not just to standard manufacturing processes, but also to customised designs.

Our services include the cutting of your gears, shafts, coupling components and hollow gears, and the complete manufacture of these components to your drawing or sample. You will find our manufacturing options in the manufacturing programme.

With our range of worm gear pairs, we can offer you very special solutions and manufacturing designs.

We can supply any conceivable power transmissions in this field - from "standard" worm gear pairs to duplex models, to OTT worm gears with adjustable flank clearances.



**Zahnradfertigung Ott GmbH & Co.KG  
72411 Bodelshausen**

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## OTT worm gear classification

OTT worm gears are characterised by their extremely high rotational accuracy. To achieve this requirement, the gear must have a high contact factor. That means many teeth and faces on the gear and worm parts being in contact. This is achieved in gear manufacturing by choosing a low pressure angle and high tooth flanks (high toothing).

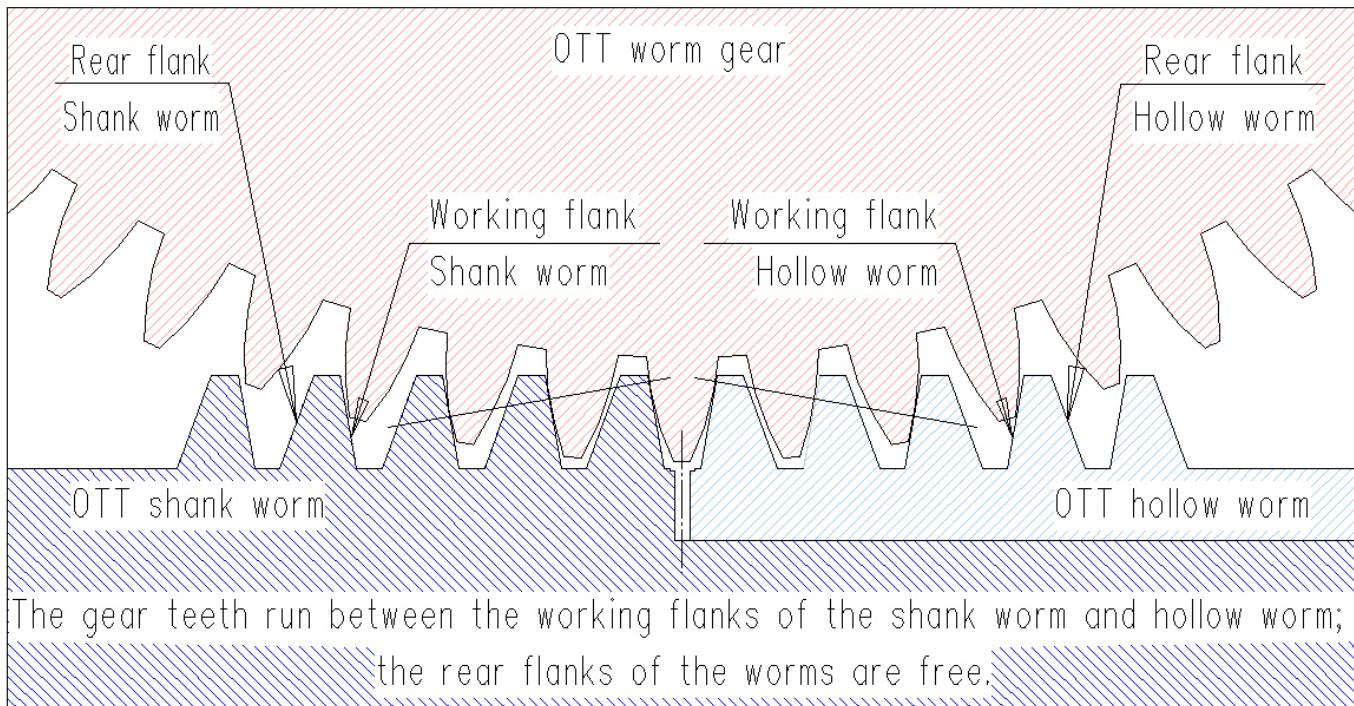
The flank clearance of OTT worm gears is also easy to adjust during new installation or after flank wear, without changing the centre distance.

The worm in OTT worm gears consists of 2 parts, the shank worm and the hollow worm. The tooth flanks of the worm gear have a very positive addendum modification coefficient. This allows the lines of action of the shank worm and hollow worm to disengage. The shank worm adopts the direction of rotation of the worm gear, and the hollow worm the opposite direction. One half of the worm drives, while the other half absorbs the return stroke on the gear, something that is very important in many rotational processes, especially in machine tool manufacture.

Only the working flanks of the worms make contact with the gear flanks. The rear flanks of the worms do not make contact and remain free. The back angle of the worm is much greater than that of the working flank, and serves to strengthen the helix. See section in plane of rotation of worm gear.

Rotating the shank worm in relation to the hollow worm and subsequently locating it in position allows the tooth flank clearance to be changed over a wide range.

Strong and rigid teeth are obtained as a result of the large positive addendum modification coefficient and the large back angle of the worm. The large contact factor of the teeth means that high torques are possible on the worm gear.



#### Section in plane of rotation of worm gear with line of action

#### OTT worm gears materials in this catalogue

The shank worm and hollow worm are machined in 31CrMoV9 steel and are plasma nitrided.

The worm gears themselves are generally made of GZ-CuSn12Ni bronze.

**Note:** In the case of larger centre distances, especially, the worm bearings limit the permitted load on the gears. If this is the case, appropriate worm shanks and bearings need to be developed.

#### YRT gear bearings

**Important:** In this catalogue, gear bearings are based on the YRT bearing from INA. Before selecting a YRT bearing, please check on availability and delivery.



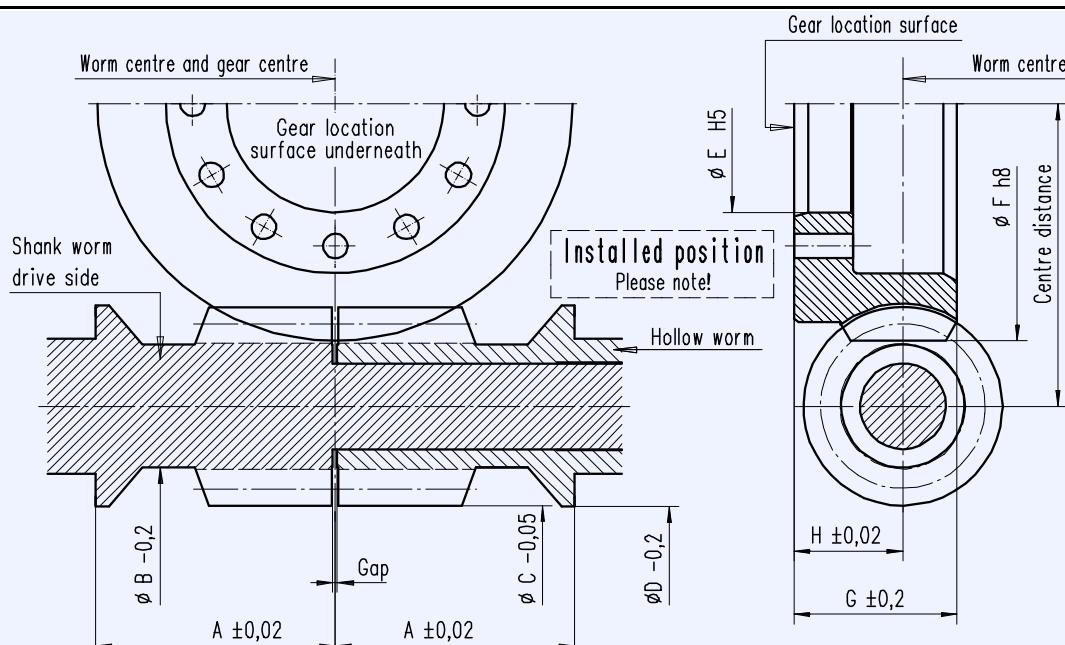
## Type G1 Gear Catalogue

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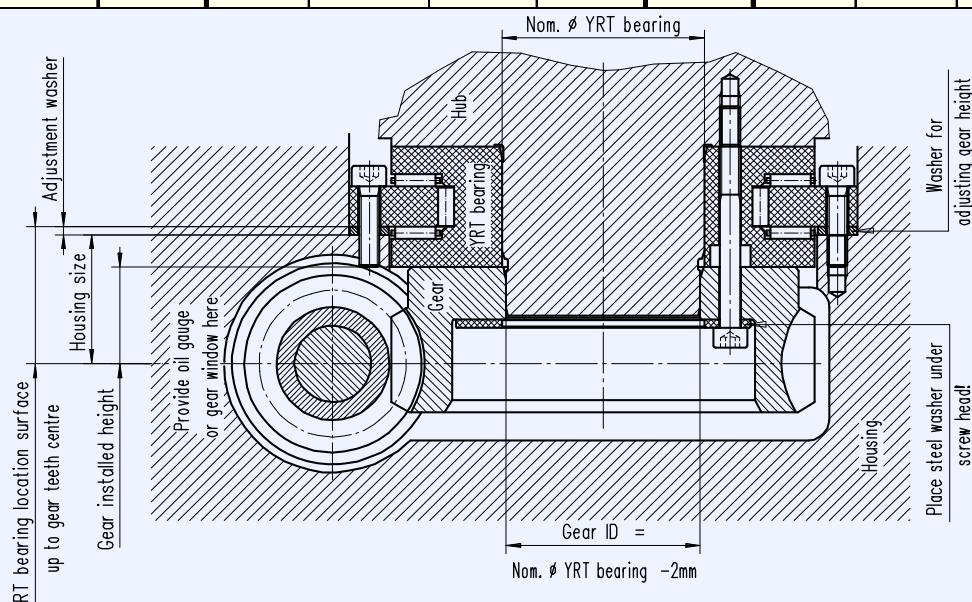
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## OTT worm gears - centre distance 67 mm

### Main dimensions

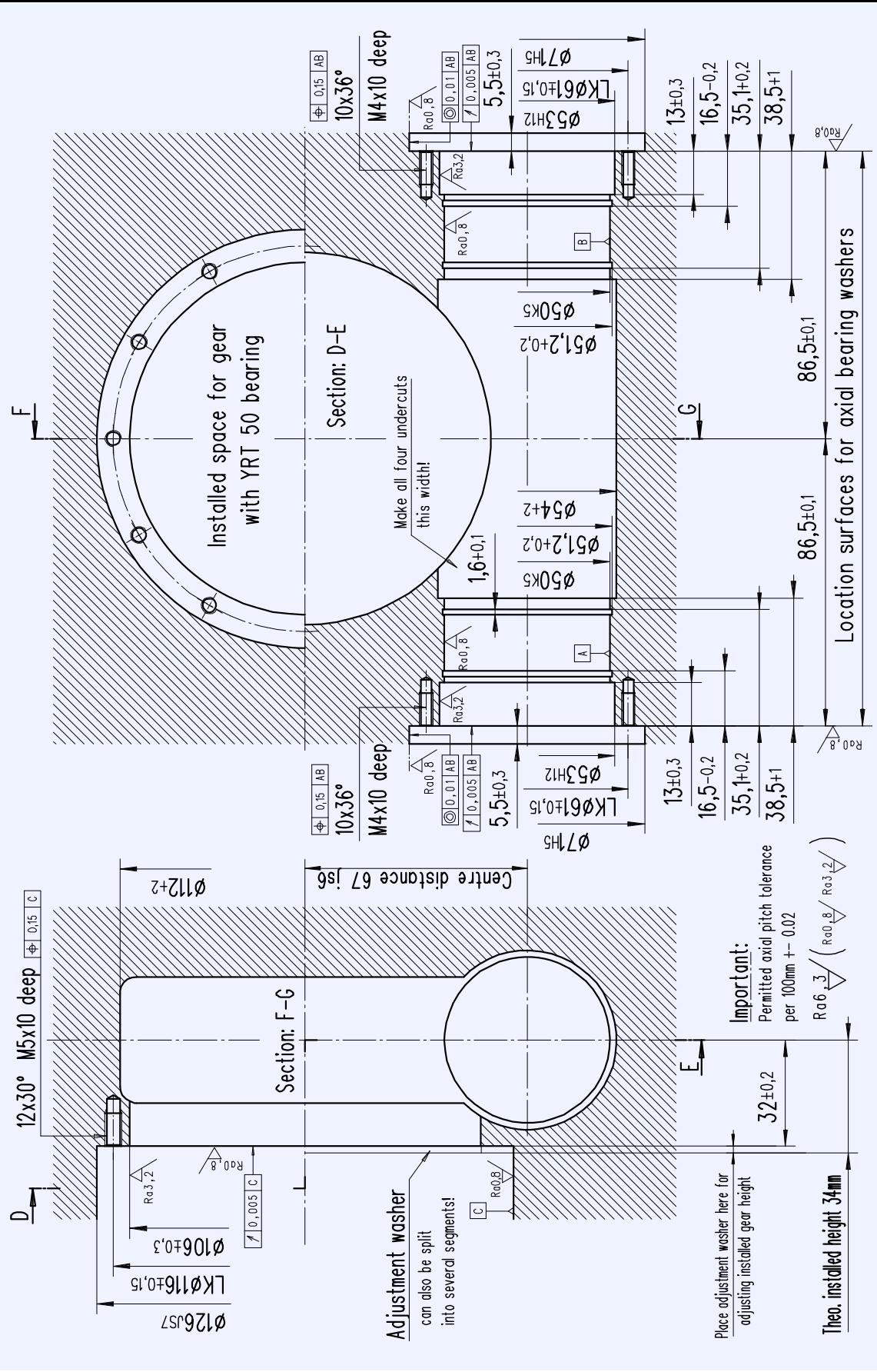


OTT gear no.	Ratio		Worm				YRT gear bearing	Gear			
	No. starts Z1	No. teeth Z2	Distance A	Undercut Ø B	Head Ø C	Collar Ø D		Internal Ø E	Head Ø F	Width G	Height H
4849 SSR	1	36	53	27,2	44,0	44,6	50	48	105	36	24
4866 SSR	1	45		27,5	41,0						
4859 SSR	1	60		27,8	38,8						
4830 SSR	1	72		28,0	37,4						
4812 SSR	1	90		28,2	36,0						
4831 SSR	1	120		28,4	34,2						
							See comments page 5!				



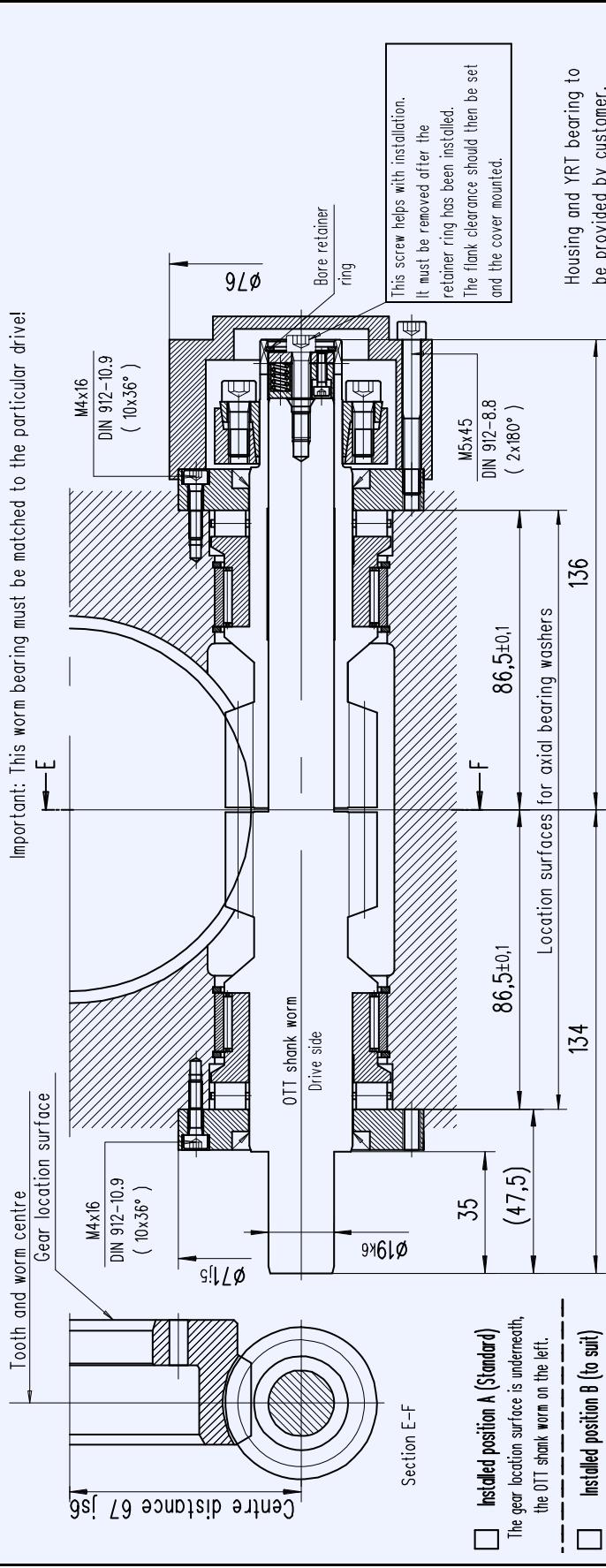
**Gear housing - required internal contour**

**Required internal contour of gear housing for centre distance 67 mm**

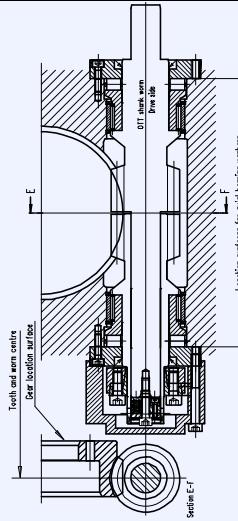


## Worm bearings

### Worm bearing for centre distance 67 mm



OTT worm gear		Bearing parts per gear				
OTT no.	Worm gear	Shank worm	Hollow worm	Qty	Name	Typ/Dwg no.
4849 SSR	T00407-G-RAO	T00237-G-SSC	T00238-G-HSC	2	Axial cylinder roller bearing	K812 06 TV
4866 SSR	T00408-G-RAO	T00239-G-SSC	T00240-G-HSC	2	Radial needle bearing	RNAO 40x50x17
4859 SSR	T00409-G-RAO	T00241-G-SSC	T00242-G-HSC	2	Shaft seal	30x40x5
4830 SSR	T00410-G-RAO	T00243-G-SSC	T00244-G-HSC	1	Shrink disc	HSD 24-22
4812 SSR	T00411-G-RAO	T00245-G-SSC	T00246-G-HSC	4	Circlip	SB 50
4831 SSR	T00412-G-RAO	T00247-G-SSC	T00248-G-HSC	20	Cylinder bolt DIN 912	M4x16 - 10.9
				2	Cylinder bolt DIN 912	M5x45 - 8.8
				1	Cylinder bolt DIN 912	M5x25 - 8.8
				1	Retainer ring DIN 472	19
				2	Bearing sleeve	T00220-G-L-HÜ
				2	Axial bearing washer	T00231-G-L-DX
				1	Cover	T00214-G-ADH
				1	Thrust piece	B00007-G-DST



- Order using ..... set of OTT worm gears  
 Gearset incl. thrust piece without bearing parts  
 Gearset incl. all bearing parts

- REQUEST      Date: \_\_\_\_\_ Name: \_\_\_\_\_  
 ORDER

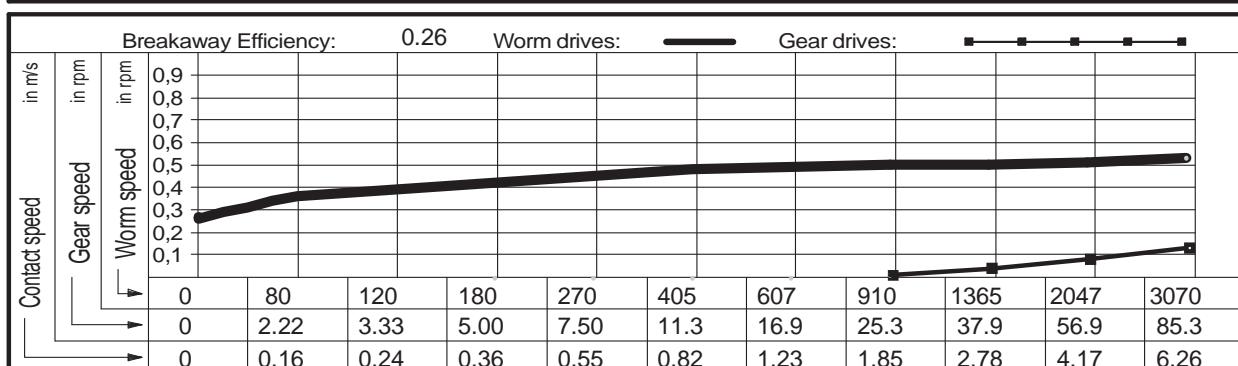
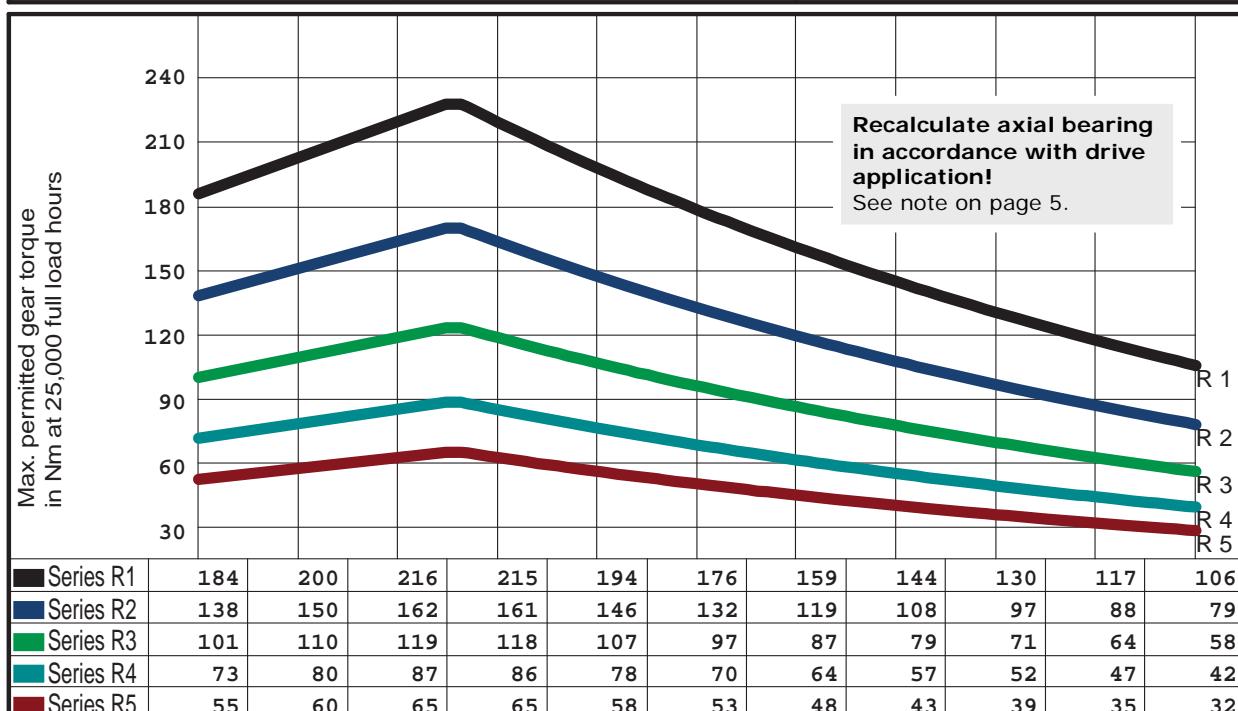


## Type G1 Gear Catalogue

Zahnradfertigung Ott  
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D-72411 Bodelshausen

### Operational characteristics

Centre distance	67.00	mm	Material, gear	GZ-CuSn12Ni	Operating characteristics	
Outer Ø worm	44.00	mm	Material, worm	31CrMoV9	Ott worm gear	
Outer Ø gear	105.00	mm	Pressure angle in NS	10 °	OTT no: 4849 SSR	
No. starts, worm	1		Back angle in NS	20 °		
Worm direction	right		Calculated circle Ø	38.90 mm		
No. teeth, gear	36		Lead angle at Bks	3.7522 °		



Gear selection by load type and application										Lubricant: Synthetic oil
Series R1	a) random even load around gear b) absolutely smooth operation c) minimal acceleration and deceleration moments d) maximum 1 start per minute (60 per hour) e) up to 10% operating time per hour (6 minutes)	Series R4	a) segmental varying load on gear b) with uneven shock loads c) large acceleration and deceleration moments d) maximum 60 starts per minute (3600 per hour) e) up to 75% operating time per hour (45 minutes)							
Application:	Measurement and test machinery drives, CNC axes	Application:	Rotary tables with unfavourable cutting conditions. Trunion axes, CNC axes, milling spindles							
Series R2	a) random even load around gear b) absolutely smooth operation c) minimal acceleration and deceleration moments d) maximum 6 starts per minute (360 per hour) e) up to 25% operating time per hour (15 minutes)	Series R5	a) loads limited only to eccentric gear segment b) heavy, uneven shock loads c) largest acceleration and deceleration moments d) maximum 180 starts per minute (10,800 per hour) e) up to 100% operating time per hour (60 minutes)							
Application:	Index tables, circular feed drives and CNC axes for mainly smooth, controlled applications	Application:	Heavy milling and trunion drives, CNC axes with unfavourable conditions							
Series R3	a) random changing load on gear b) small shock loads c) large acceleration and deceleration moments d) maximum 20 starts per minute (1200 per hour) e) up to 50% operating time per hour (30 minutes)	Zahnradfertigung OTT	Blöhssteinstraße 20 D-72411 Bodelshausen www.zahnrad-ott.de	Tel. 07471 - 705 0 Fax. 07471 - 705 39 Email. Info@zahnrad-ott.de						
Application:	Index tables, rotary tables for circular milling with relatively favourable cutting conditions, CNC axes									

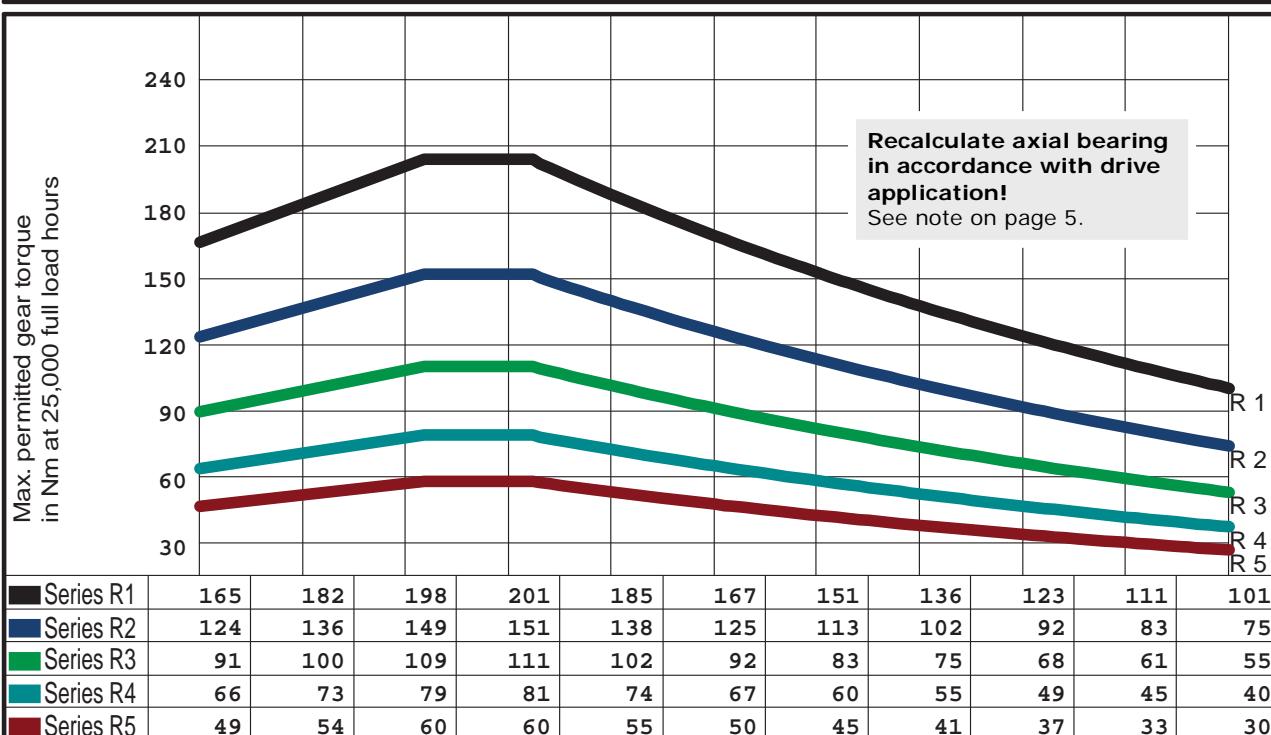
Centre distance	<b>67.00</b>	mm
Outer Ø worm	<b>41.00</b>	mm
Outer Ø gear	<b>105.00</b>	mm
No. starts, worm	<b>1</b>	
Worm direction	<b>right</b>	
No. teeth, gear	<b>45</b>	

Material, gear	<b>GZ-CuSn12Ni</b>
Material, worm	<b>31CrMoV9</b>
Pressure angle in NS	<b>10 °</b>
Back angle in NS	<b>20 °</b>
Calculated circle Ø	<b>36.68</b> mm
Lead angle at Bks	<b>3.2778</b> °

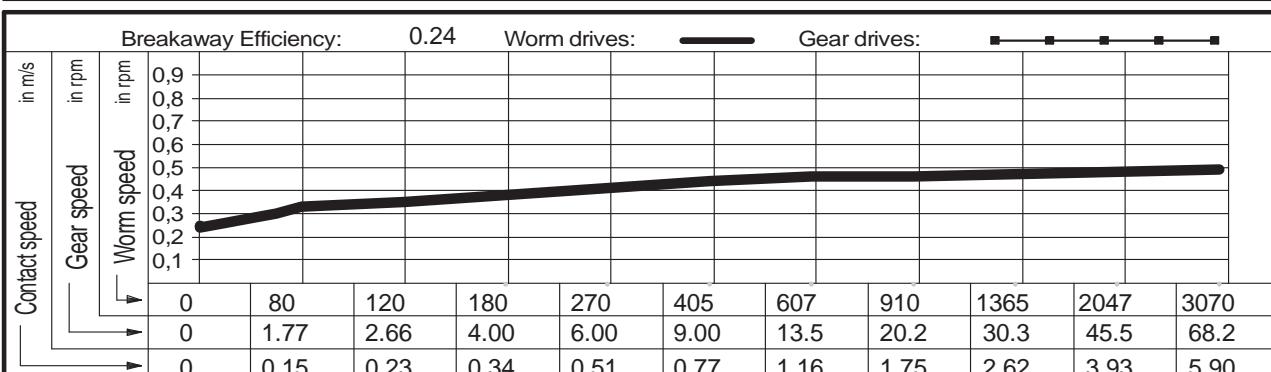
## Operating characteristics

Ott worm gear

**OTT no: 4866 SSR**



Recalculate axial bearing  
in accordance with drive  
application!  
See note on page 5.



Gear selection by load type and application														
Series R1	a) random even load around gear b) absolutely smooth operation c) minimal acceleration and deceleration moments d) maximum 1 start per minute (60 per hour) e) up to 10% operating time per hour (6 minutes)						Series R4	a) segmental varying load on gear b) with uneven shock loads c) large acceleration and deceleration moments d) maximum 60 starts per minute (3600 per hour) e) up to 75% operating time per hour (45 minutes)						
Application:	Measurement and test machinery drives, CNC axes						Application:	Rotary tables with unfavourable cutting conditions. Trunion axes, CNC axes, milling spindles						
Series R2	a) random even load around gear b) absolutely smooth operation c) minimal acceleration and deceleration moments d) maximum 6 starts per minute (360 per hour) e) up to 25% operating time per hour (15 minutes)						Series R5	a) loads limited only to eccentric gear segment b) heavy, uneven shock loads c) largest acceleration and deceleration moments d) maximum 180 starts per minute (10,800 per hour) e) up to 100% operating time per hour (60 minutes)						
Application:	Index tables, circular feed drives and CNC axes for mainly smooth, controlled applications						Application:	Heavy milling and trunion drives, CNC axes with unfavourable conditions						
Series R3	a) random changing load on gear b) small shock loads c) large acceleration and deceleration moments d) maximum 20 starts per minute (1200 per hour) e) up to 50% operating time per hour (30 minutes)						Zahnradfertigung OTT							
Application:	Index tables, rotary tables for circular milling with relatively favourable cutting conditions, CNC axes						Blöhsteinstraße 20 D-72411 Bodelshausen <a href="http://www.zahnrad-ott.de">www.zahnrad-ott.de</a>	Tel. 07471 - 705 0 Fax. 07471 - 705 39 Email. <a href="mailto:Info@zahnrad-ott.de">Info@zahnrad-ott.de</a>						

Lubricant:  
Synthetic oil



## Type G1 Gear Catalogue

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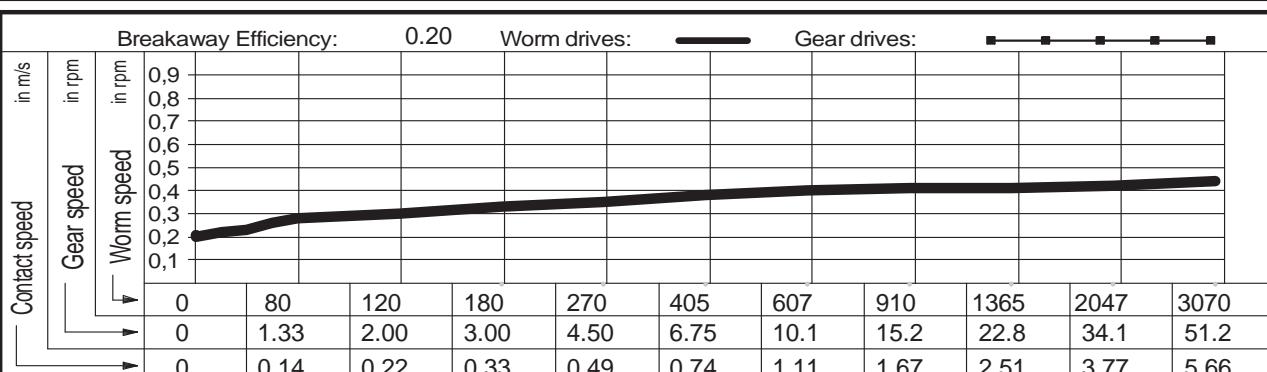
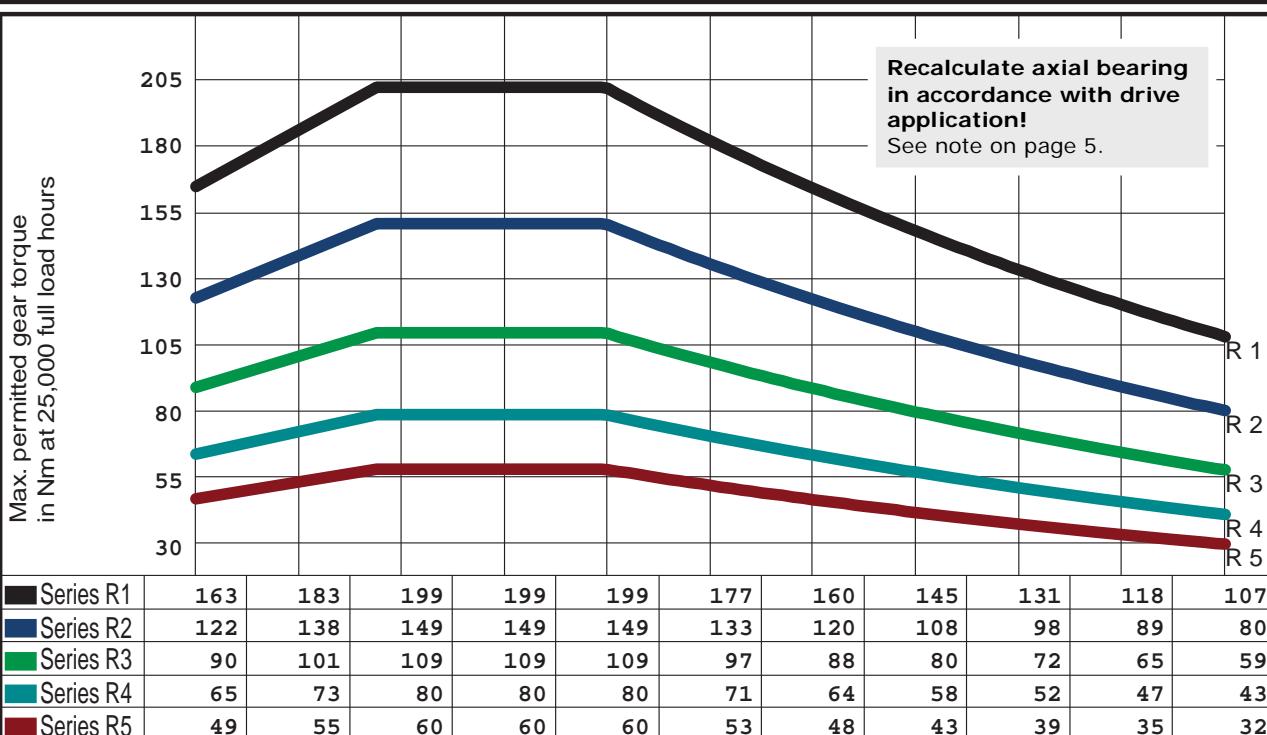
Centre distance	<b>67.00</b>	mm
Outer Ø worm	<b>38.80</b>	mm
Outer Ø gear	<b>105.00</b>	mm
No. starts, worm	<b>1</b>	
Worm direction	<b>right</b>	
No. teeth, gear	<b>60</b>	

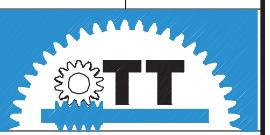
Material, gear	<b>GZ-CuSn12Ni</b>
Material, worm	<b>31CrMoV9</b>
Pressure angle in NS	<b>10 °</b>
Back angle in NS	<b>20 °</b>
Calculated circle Ø	<b>35.18 mm</b>
Lead angle at Bks	<b>2.6142 °</b>

### Operating characteristics

#### Ott worm gear

**OTT no: 4859 SSR**



Gear selection by load type and application											
Series R1	a) random even load around gear b) absolutely smooth operation c) minimal acceleration and deceleration moments d) maximum 1 start per minute (60 per hour) e) up to 10% operating time per hour (6 minutes)					Series R4	a) segmental varying load on gear b) with uneven shock loads c) large acceleration and deceleration moments d) maximum 60 starts per minute (3600 per hour) e) up to 75% operating time per hour (45 minutes)				
Application:	Measurement and test machinery drives, CNC axes					Application:	Rotary tables with unfavourable cutting conditions. Trunion axes, CNC axes, milling spindles				
Series R2	a) random even load around gear b) absolutely smooth operation c) minimal acceleration and deceleration moments d) maximum 6 starts per minute (360 per hour) e) up to 25% operating time per hour (15 minutes)					Series R5	a) loads limited only to eccentric gear segment b) heavy, uneven shock loads c) largest acceleration and deceleration moments d) maximum 180 starts per minute (10,800 per hour) e) up to 100% operating time per hour (60 minutes)				
Application:	Index tables, circular feed drives and CNC axes for mainly smooth, controlled applications					Application:	Heavy milling and trunion drives, CNC axes with unfavourable conditions				
Series R3	a) random changing load on gear b) small shock loads c) large acceleration and deceleration moments d) maximum 20 starts per minute (1200 per hour) e) up to 50% operating time per hour (30 minutes)					Zahnradfertigung OTT	Blöhsteinstraße 20 Tel. 07471 - 705 0 D-72411 Bodelshausen Fax. 07471 - 705 39 www.zahnrad-ott.de Email. Info@zahnrad-ott.de				
Application:	Index tables, rotary tables for circular milling with relatively favourable cutting conditions, CNC axes										

Centre distance	<b>67.00</b>	mm
Outer Ø worm	<b>37.40</b>	mm
Outer Ø gear	<b>105.00</b>	mm
No. starts, worm	<b>1</b>	
Worm direction	<b>right</b>	
No. teeth, gear	<b>72</b>	

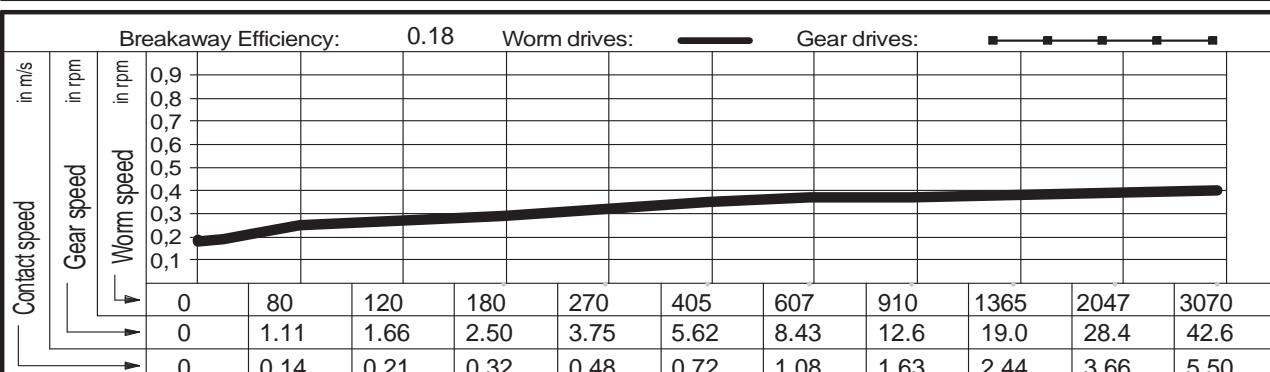
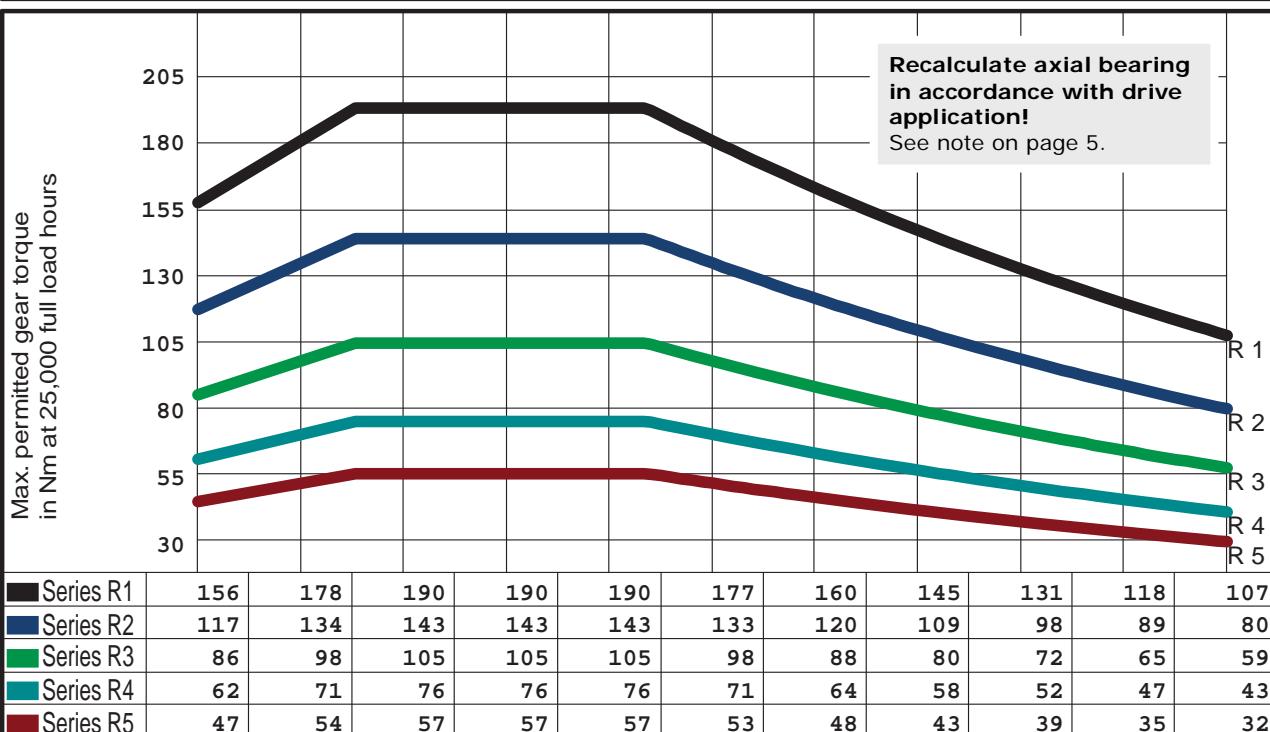
Material, gear  
 Material, worm  
 Pressure angle in NS  
 Back angle in NS  
 Calculated circle Ø  
 Lead angle at Bks

**GZ-CuSn12Ni**  
**31CrMoV9**  
 10 °  
 20 °  
 34.21 mm  
 2.2689 °

## Operating characteristics

Ott worm gear

**OTT no: 4830 SSR**



Gear selection by load type and application														
Series R1	a) random even load around gear b) absolutely smooth operation c) minimal acceleration and deceleration moments d) maximum 1 start per minute (60 per hour) e) up to 10% operating time per hour (6 minutes)						Series R4	a) segmental varying load on gear b) with uneven shock loads c) large acceleration and deceleration moments d) maximum 60 starts per minute (3600 per hour) e) up to 75% operating time per hour (45 minutes)						
Application:	Measurement and test machinery drives, CNC axes						Application:	Rotary tables with unfavourable cutting conditions. Trunion axes, CNC axes, milling spindles						
Series R2	a) random even load around gear b) absolutely smooth operation c) minimal acceleration and deceleration moments d) maximum 6 starts per minute (360 per hour) e) up to 25% operating time per hour (15 minutes)						Series R5	a) loads limited only to eccentric gear segment b) heavy, uneven shock loads c) largest acceleration and deceleration moments d) maximum 180 starts per minute (10,800 per hour) e) up to 100% operating time per hour (60 minutes)						
Application:	Index tables, circular feed drives and CNC axes for mainly smooth, controlled applications						Application:	Heavy milling and trunion drives, CNC axes with unfavourable conditions						
Series R3	a) random changing load on gear b) small shock loads c) large acceleration and deceleration moments d) maximum 20 starts per minute (1200 per hour) e) up to 50% operating time per hour (30 minutes)						Zahnradfertigung OTT						Lubricant: Synthetic oil	
Application:	Index tables, rotary tables for circular milling with relatively favourable cutting conditions, CNC axes						Blöhsteinstraße 20 D-72411 Bodelshausen <a href="http://www.zahnrad-ott.de">www.zahnrad-ott.de</a>	Tel. 07471 - 705 0 Fax. 07471 - 705 39 Email. <a href="mailto:Info@zahnrad-ott.de">Info@zahnrad-ott.de</a>						



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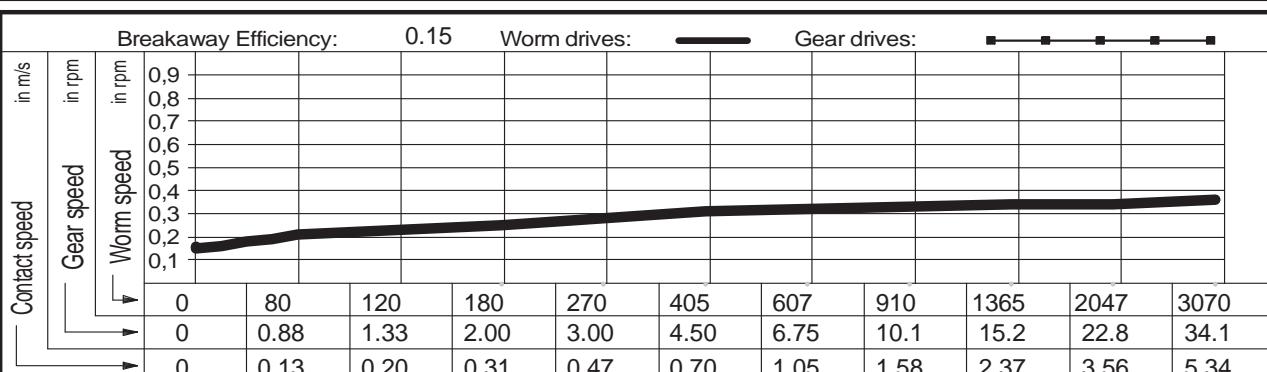
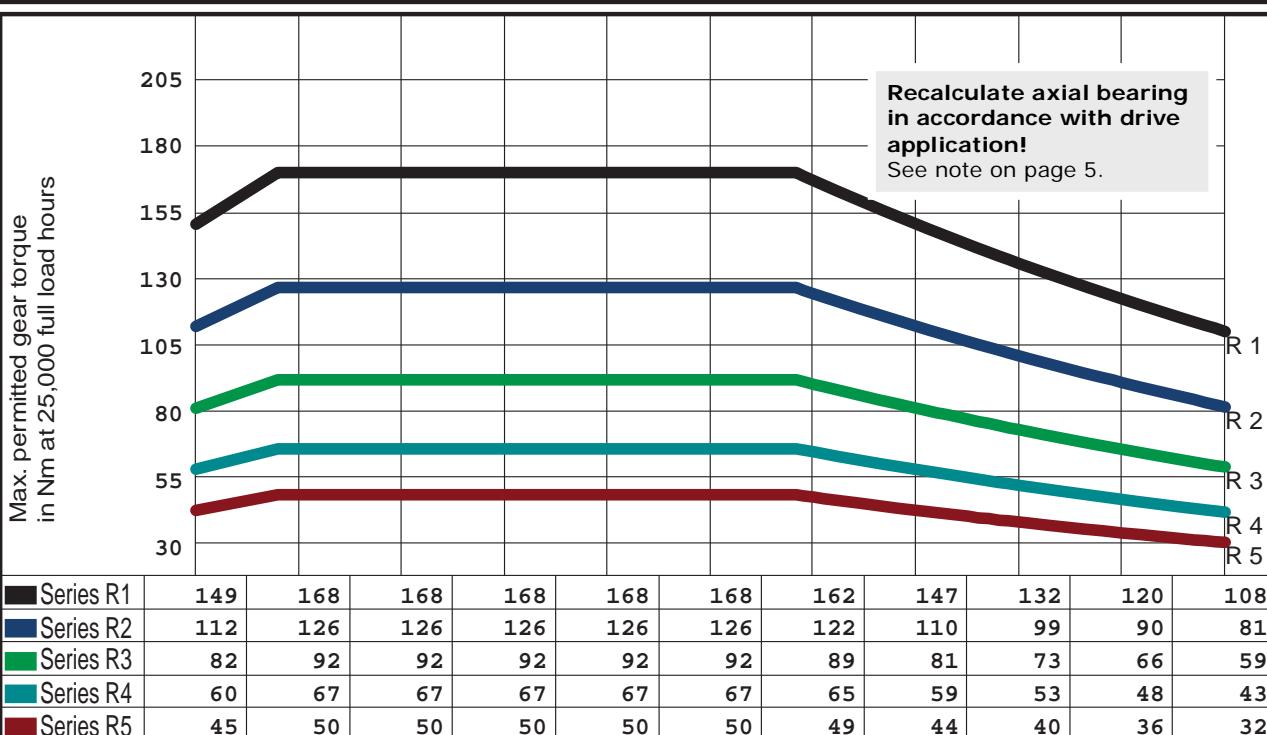
Centre distance	<b>67.00</b>	mm
Outer Ø worm	<b>36.00</b>	mm
Outer Ø gear	<b>105.00</b>	mm
No. starts, worm	<b>1</b>	
Worm direction	<b>right</b>	
No. teeth, gear	<b>90</b>	

Material, gear	<b>GZ-CuSn12Ni</b>
Material, worm	<b>31CrMoV9</b>
Pressure angle in NS	<b>10 °</b>
Back angle in NS	<b>15 °</b>
Calculated circle Ø	<b>33.26</b> mm
Lead angle at Bks	<b>1.8904</b> °

### Operating characteristics

#### Ott worm gear

**OTT no: 4812 SSR**



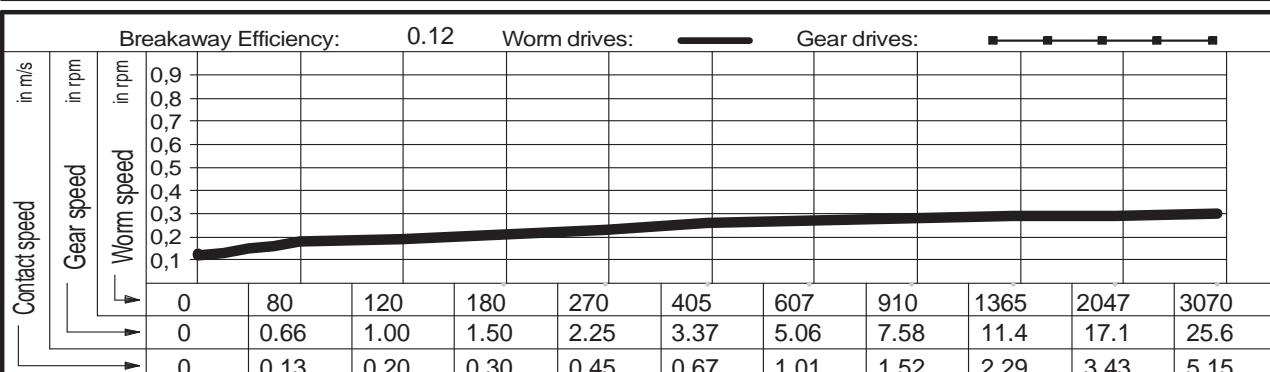
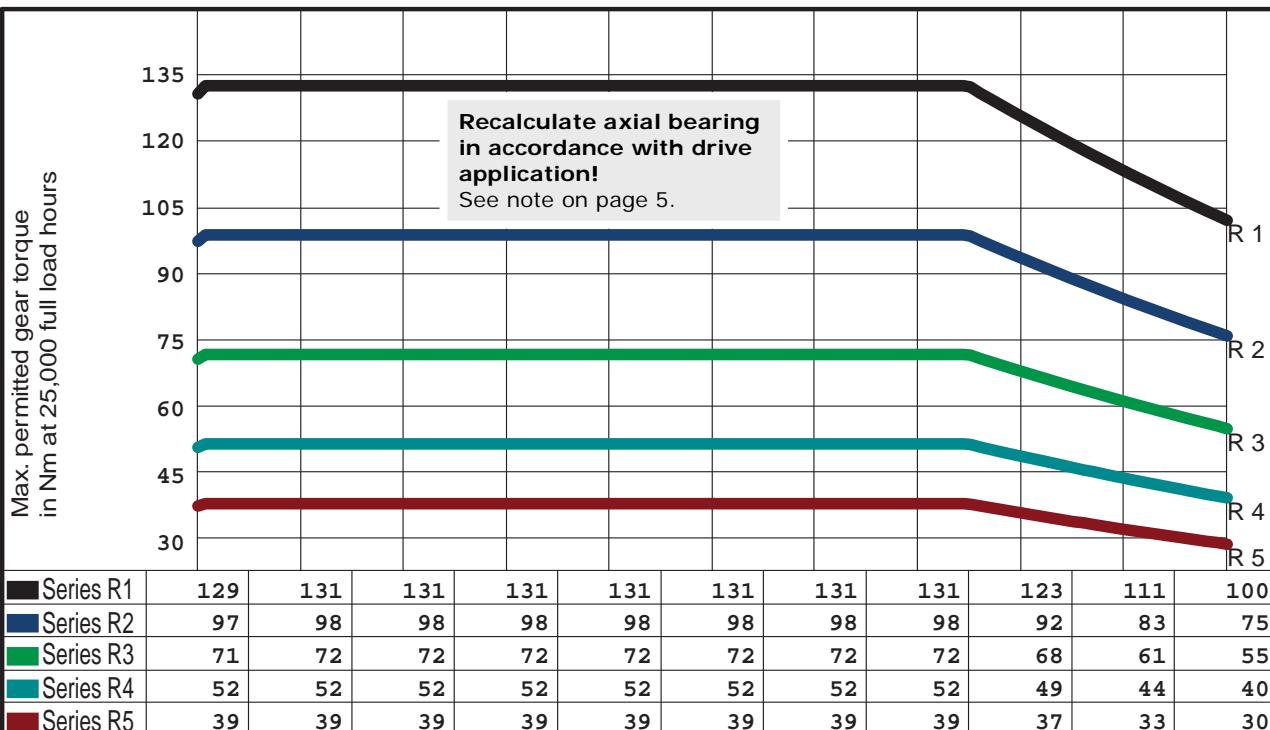
#### Gear selection by load type and application

Series R1	a) random even load around gear b) absolutely smooth operation c) minimal acceleration and deceleration moments d) maximum 1 start per minute (60 per hour) e) up to 10% operating time per hour (6 minutes)	Series R4	a) segmental varying load on gear b) with uneven shock loads c) large acceleration and deceleration moments d) maximum 60 starts per minute (3600 per hour) e) up to 75% operating time per hour (45 minutes)	Lubricant: <b>Synthetic oil</b>
Application:	Measurement and test machinery drives, CNC axes	Application:	Rotary tables with unfavourable cutting conditions. Trunion axes, CNC axes, milling spindles	
Series R2	a) random even load around gear b) absolutely smooth operation c) minimal acceleration and deceleration moments d) maximum 6 starts per minute (360 per hour) e) up to 25% operating time per hour (15 minutes)	Series R5	a) loads limited only to eccentric gear segment b) heavy, uneven shock loads c) largest acceleration and deceleration moments d) maximum 180 starts per minute (10,800 per hour) e) up to 100% operating time per hour (60 minutes)	
Application:	Index tables, circular feed drives and CNC axes for mainly smooth, controlled applications	Application:	Heavy milling and trunion drives, CNC axes with unfavourable conditions	
Series R3	a) random changing load on gear b) small shock loads c) large acceleration and deceleration moments d) maximum 20 starts per minute (1200 per hour) e) up to 50% operating time per hour (30 minutes)	Zahnradfertigung OTT	Blöhsteinstraße 20 D-72411 Bodelshausen www.zahnrad-ott.de	Tel. 07471 - 705 0 Fax. 07471 - 705 39 Email. Info@zahnrad-ott.de
Application:	Index tables, rotary tables for circular milling with relatively favourable cutting conditions, CNC axes			

Centre distance	<b>67.00</b> mm	Material, gear	<b>GZ-CuSn12Ni</b>	Operating characteristics	
Outer Ø worm	<b>34.20</b> mm	Material, worm	<b>31CrMoV9</b>		
Outer Ø gear	<b>105.00</b> mm	Pressure angle in NS	<b>10 °</b>		
No. starts, worm	<b>1</b>	Back angle in NS	<b>15 °</b>		
Worm direction	<b>right</b>	Calculated circle Ø	<b>32.04</b> mm		
No. teeth, gear	<b>120</b>	Lead angle at Bks	<b>1.4958 °</b>		

## Ott worm gear

**OTT no: 4831 SSR**



Gear selection by load type and application					
Series R1	a) random even load around gear b) absolutely smooth operation c) minimal acceleration and deceleration moments d) maximum 1 start per minute (60 per hour) e) up to 10% operating time per hour (6 minutes)	Series R4	a) segmental varying load on gear b) with uneven shock loads c) large acceleration and deceleration moments d) maximum 60 starts per minute (3600 per hour) e) up to 75% operating time per hour (45 minutes)	Application:	Lubricant: <b>Synthetic oil</b>
Application:	Measurement and test machinery drives, CNC axes	Application:	Rotary tables with unfavourable cutting conditions. Trunion axes, CNC axes, milling spindles		
Series R2	a) random even load around gear b) absolutely smooth operation c) minimal acceleration and deceleration moments d) maximum 6 starts per minute (360 per hour) e) up to 25% operating time per hour (15 minutes)	Series R5	a) loads limited only to eccentric gear segment b) heavy, uneven shock loads c) largest acceleration and deceleration moments d) maximum 180 starts per minute (10,800 per hour) e) up to 100% operating time per hour (60 minutes)	Application:	
Application:	Index tables, circular feed drives and CNC axes for mainly smooth, controlled applications	Application:	Heavy milling and trunion drives, CNC axes with unfavourable conditions		
Series R3	a) random changing load on gear b) small shock loads c) large acceleration and deceleration moments d) maximum 20 starts per minute (1200 per hour) e) up to 50% operating time per hour (30 minutes)	Zahnradfertigung OTT	Blöhsteinstraße 20 D-72411 Bodelshausen <a href="http://www.zahnrad-ott.de">www.zahnrad-ott.de</a>	Tel. 07471 - 705 0 Fax. 07471 - 705 39 Email. <a href="mailto:Info@zahnrad-ott.de">Info@zahnrad-ott.de</a>	
Application:	Index tables, rotary tables for circular milling with relatively favourable cutting conditions, CNC axes				



## Type G1 Gear Catalogue

Zahnradfertigung Ott  
Blöhsteinstraße 20  
D-72411 Bodelshausen

## OTT worm gears - centre distance 75 mm

### Main dimensions

The technical drawing illustrates the assembly of a worm gear. It shows a cross-section of the worm gear assembly with various dimensions labeled: A ±0,02, B ±0,02, C ±0,05, D ±0,2, E H5, F h8, and G ±0,2. A note indicates the 'Installed position Please note!' and 'Gear location surface underneath'. The drawing also shows the 'Shank worm drive side' and 'Hollow worm'.

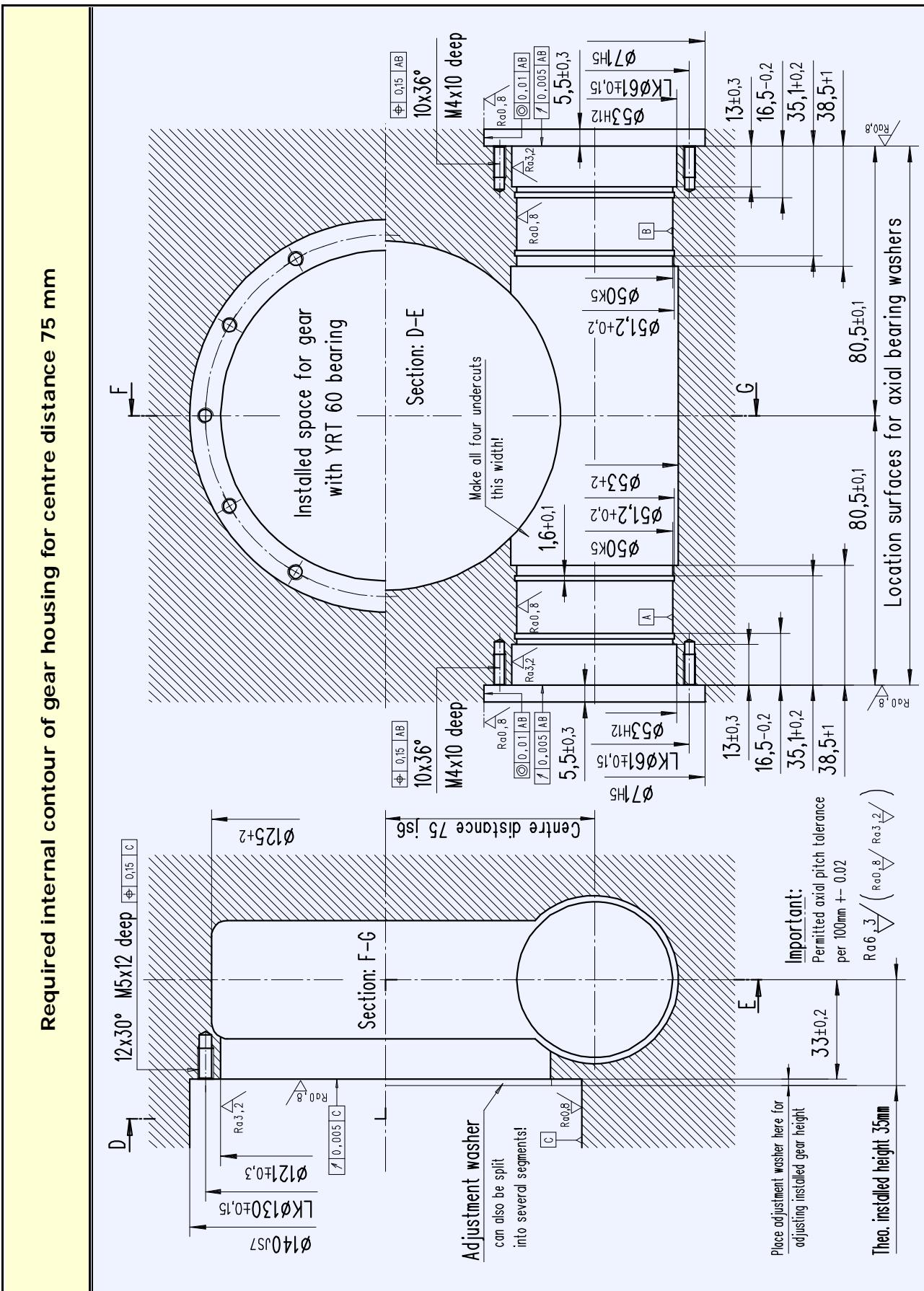
OTT gear no.	Ratio		Worm				YRT gear bearing	Gear			
	No. starts Z1	No. teeth Z2	Distance A	Undercut Ø B	Head Ø C	Collar Ø D		Internal Ø E	Head Ø F	Width G	Height H
4863 SSR	2	60	47	28,7	41,2	44,6	60	58	120	37	25
5422 SSR	2	72		28,9	39,6						
4885 SSR	2	90		29,1	38,0						
4871 SSR	1	60		28,7	41,2						
4872 SSR	1	72		28,9	39,6						
4873 SSR	1	90		29,1	38,0						
4813 SSR	1	120		29,3	35,8						

See comments page 5!

The cross-sectional diagram shows the gear assembly installed in a housing. Labels include: YRT bearing location surface, up to gear teeth centre, Housing size, Gear installed height, Provide oil gauge or gear window here, Hub, YRT bearing, Gear, Nom. Ø YRT bearing -2mm, Nom. Ø YRT bearing, Washer for adjusting gear height, Place steel washer under screw head!, and Housing.

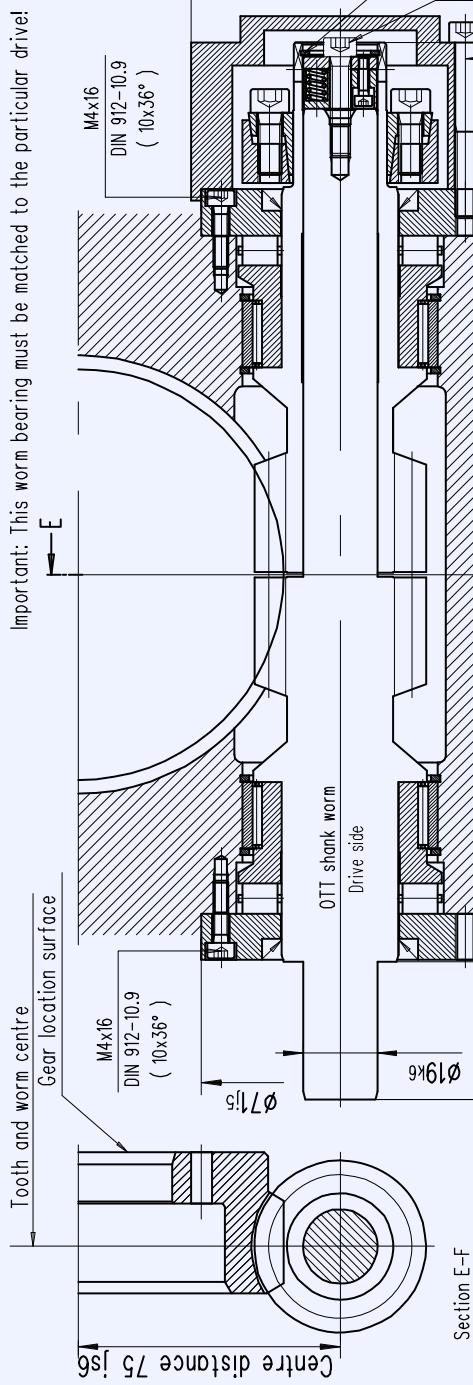
**Gear housing - required internal contour**

**Required internal contour of gear housing for centre distance 75 mm**

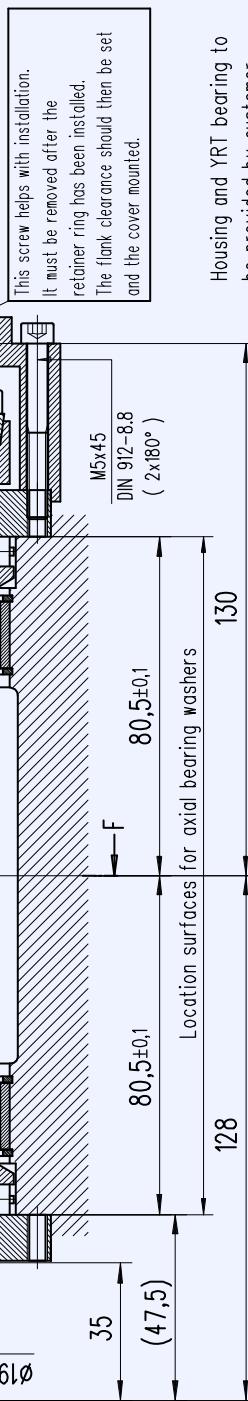


## Worm bearings

### Worm bearing for centre distance 75 mm



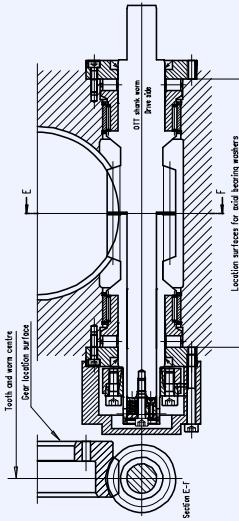
- Installed position A (Standard)**  
The gear location surface is underneath,  
the OTT shank worm on the left.
- Installed position B (to suit)**  
The gear location surface is underneath,  
the OTT shank worm on the right.



Housing and YRT bearing to be provided by customer.

#### OTT worm gear

OTT no.	Worm gear	Shank worm	Hollow worm	Q'ty	Bearing parts per gear	Name	Typ/Dwg no.
<b>4863 SSR</b>	T00413-G-RAO	T00249-G-SSC	T00250-G-HSC	2	Axial cylinder roller bearing	K812 06 TV	
<b>5422 SSR</b>	T00414-G-RAO	T00251-G-SSC	T00252-G-HSC	2	Radial needle bearing	RNAO 40x50x17	
<b>4885 SSR</b>	T00415-G-RAO	T00253-G-SSC	T00254-G-HSC	2	Shaft seal	30x40x5	
<b>4871 SSR</b>	T00416-G-RAO	T00255-G-SSC	T00256-G-HSC	1	Shrink disc	HSD 24-22	
<b>4872 SSR</b>	T00417-G-RAO	T00257-G-SSC	T00258-G-HSC	4	Circlip	SB 50	
<b>4873 SSR</b>	T00418-G-RAO	T00259-G-SSC	T00260-G-HSC	20	Cylinder bolt DIN 912	M4x16 - 10,9	
<b>4813 SSR</b>	T00419-G-RAO	T00261-G-SSC	T00262-G-HSC	2	Cylinder bolt DIN 912	M5x45 - 8,8	
				1	Cylinder bolt DIN 912	M5x25 - 8,8	
				1	Retainer ring DIN 472	19	
				2	Bearing sleeve	T00220-G-LHÜ	
				2	Axial bearing washer	T00231-G-LDX	
				1	Cover	T00214-G-ADH	
				1	Thrust piece	BO0007-G-DST	



- Set of OTT worm gears
- Gearset incl. thrust piece without bearing parts
- Gearset incl. all bearing parts

REQUEST      Date: \_\_\_\_\_  
 ORDER



## Type G1 Gear Catalogue

Zahnradfertigung Ott  
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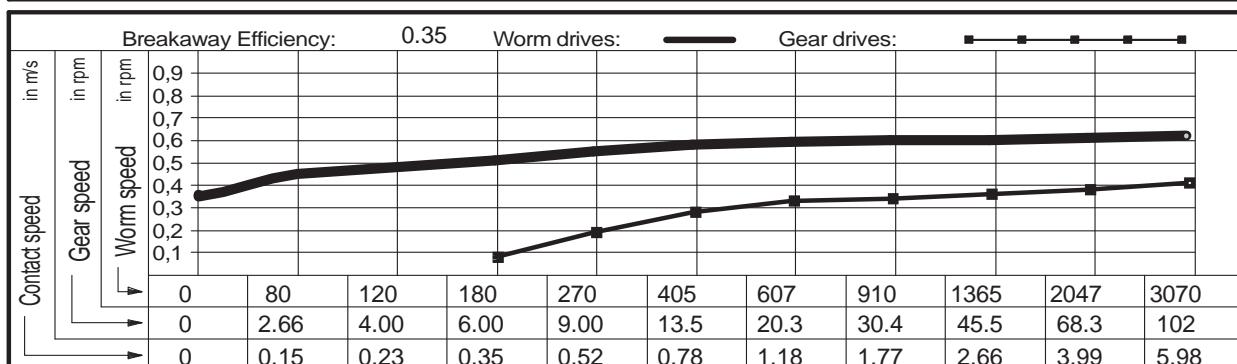
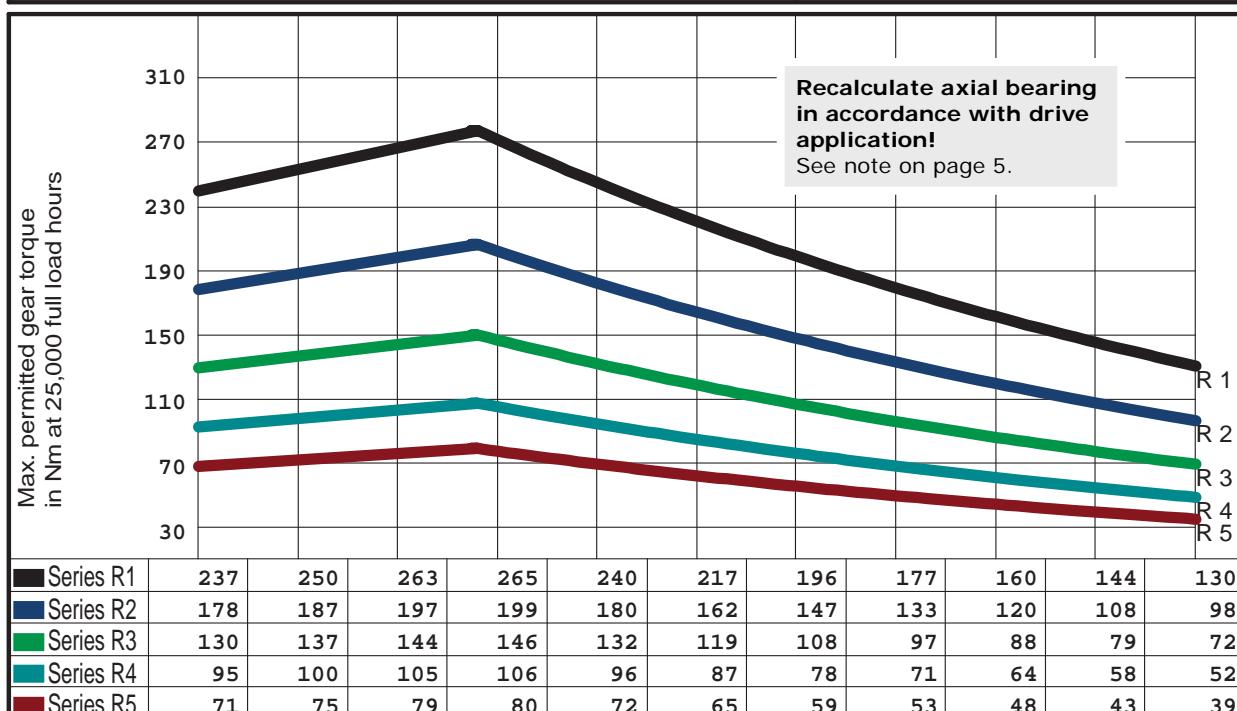
### Operational characteristics

Centre distance	75.00	mm	Material, gear	GZ-CuSn12Ni
Outer Ø worm	41.20	mm	Material, worm	31CrMoV9
Outer Ø gear	120.00	mm	Pressure angle in NS	10 °
No. starts, worm	2		Back angle in NS	20 °
Worm direction	right		Calculated circle Ø	37.06 mm
No. teeth, gear	60		Lead angle at Bks	5.6576 °

### Operating characteristics

#### Ott worm gear

**OTT no: 4863 SSR**



### Gear selection by load type and application

Series R1	a) random even load around gear b) absolutely smooth operation c) minimal acceleration and deceleration moments d) maximum 1 start per minute (60 per hour) e) up to 10% operating time per hour (6 minutes)	Series R4	a) segmental varying load on gear b) with uneven shock loads c) large acceleration and deceleration moments d) maximum 60 starts per minute (3600 per hour) e) up to 75% operating time per hour (45 minutes)	Lubricant: <b>Synthetic oil</b>
Application:	Measurement and test machinery drives, CNC axes	Application:	Rotary tables with unfavourable cutting conditions. Trunion axes, CNC axes, milling spindles	
Series R2	a) random even load around gear b) absolutely smooth operation c) minimal acceleration and deceleration moments d) maximum 6 starts per minute (360 per hour) e) up to 25% operating time per hour (15 minutes)	Series R5	a) loads limited only to eccentric gear segment b) heavy, uneven shock loads c) largest acceleration and deceleration moments d) maximum 180 starts per minute (10,800 per hour) e) up to 100% operating time per hour (60 minutes)	
Application:	Index tables, circular feed drives and CNC axes for mainly smooth, controlled applications	Application:	Heavy milling and trunion drives, CNC axes with unfavourable conditions	
Series R3	a) random changing load on gear b) small shock loads c) large acceleration and deceleration moments d) maximum 20 starts per minute (1200 per hour) e) up to 50% operating time per hour (30 minutes)	Zahnradfertigung OTT	Blöhsteinstraße 20 D-72411 Bodelshausen www.zahnrad-ott.de	
Application:	Index tables, rotary tables for circular milling with relatively favourable cutting conditions, CNC axes		Tel. 07471 - 705 0 Fax. 07471 - 705 39 Email. Info@zahnrad-ott.de	

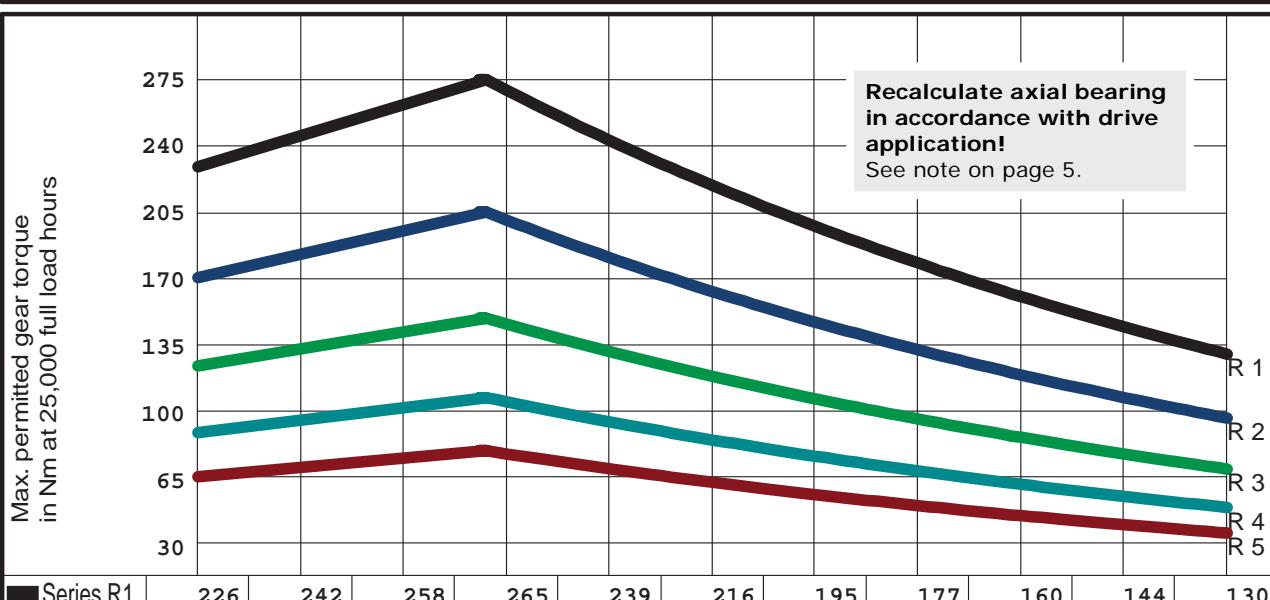
Centre distance	<b>75.00</b>	mm
Outer Ø worm	<b>39.60</b>	mm
Outer Ø gear	<b>120.00</b>	mm
No. starts, worm	<b>2</b>	
Worm direction	<b>right</b>	
No. teeth, gear	<b>72</b>	

Material, gear	<b>GZ-CuSn12Ni</b>
Material, worm	<b>31CrMoV9</b>
Pressure angle in NS	<b>10 °</b>
Back angle in NS	<b>20 °</b>
Calculated circle Ø	<b>35.95 mm</b>
Lead angle at Bks	<b>4.9252 °</b>

## Operating characteristics

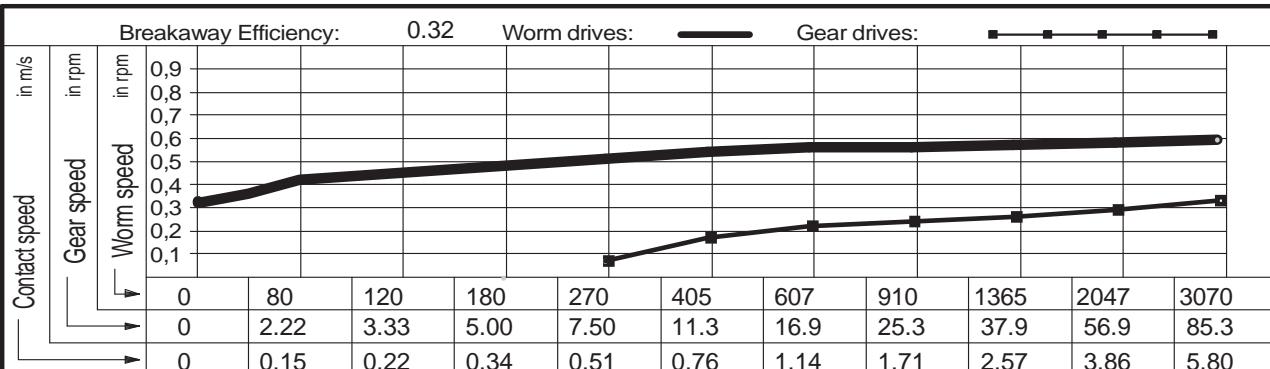
Ott worm gear

**OTT no: 5422 SSR**



Recalculate axial bearing  
in accordance with drive  
application!  
See note on page 5.

	226	242	258	265	239	216	195	177	160	144	130
Series R1	226	242	258	265	239	216	195	177	160	144	130
Series R2	170	181	193	199	179	162	147	132	120	108	98
Series R3	124	133	142	146	132	119	107	97	88	79	72
Series R4	90	97	103	106	96	86	78	71	64	58	52
Series R5	68	73	77	79	72	65	59	53	48	43	39



### Gear selection by load type and application

Series R1	a) random even load around gear b) absolutely smooth operation c) minimal acceleration and deceleration moments d) maximum 1 start per minute (60 per hour) e) up to 10% operating time per hour (6 minutes)	Series R4	a) segmental varying load on gear b) with uneven shock loads c) large acceleration and deceleration moments d) maximum 60 starts per minute (3600 per hour) e) up to 75% operating time per hour (45 minutes)	Lubricant: Synthetic oil
Application:	Measurement and test machinery drives, CNC axes	Application:	Rotary tables with unfavourable cutting conditions, Trunion axes, CNC axes, milling spindles	
Series R2	a) random even load around gear b) absolutely smooth operation c) minimal acceleration and deceleration moments d) maximum 6 starts per minute (360 per hour) e) up to 25% operating time per hour (15 minutes)	Series R5	a) loads limited only to eccentric gear segment b) heavy, uneven shock loads c) largest acceleration and deceleration moments d) maximum 180 starts per minute (10,800 per hour) e) up to 100% operating time per hour (60 minutes)	
Application:	Index tables, circular feed drives and CNC axes for mainly smooth, controlled applications	Application:	Heavy milling and trunion drives, CNC axes with unfavourable conditions	
Series R3	a) random changing load on gear b) small shock loads c) large acceleration and deceleration moments d) maximum 20 starts per minute (1200 per hour) e) up to 50% operating time per hour (30 minutes)	Zahnradfertigung OTT		
Application:	Index tables, rotary tables for circular milling with relatively favourable cutting conditions, CNC axes	Blöhsteinstraße 20 D-72411 Bodelshausen www.zahnrad-ott.de	Tel. 07471 - 705 0 Fax. 07471 - 705 39 Email. Info@zahnrad-ott.de	



## Type G1 Gear Catalogue

Zahnradfertigung Ott  
Blöhsteinstraße 20  
D-72411 Bodelshausen

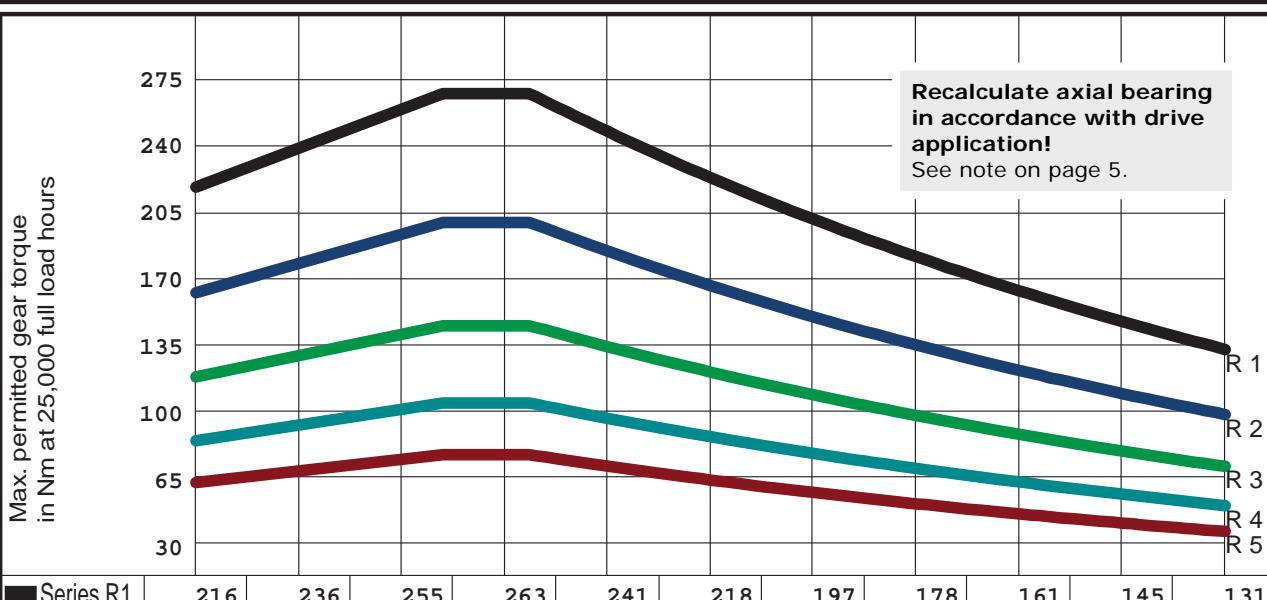
Centre distance	<b>75.00</b>	mm
Outer Ø worm	<b>38.00</b>	mm
Outer Ø gear	<b>120.00</b>	mm
No. starts, worm	<b>2</b>	
Worm direction	<b>right</b>	
No. teeth, gear	<b>90</b>	

Material, gear	<b>GZ-CuSn12Ni</b>
Material, worm	<b>31CrMoV9</b>
Pressure angle in NS	<b>10 °</b>
Back angle in NS	<b>15 °</b>
Calculated circle Ø	<b>34.87</b> mm
Lead angle at Bks	<b>4.1160</b> °

### Operating characteristics

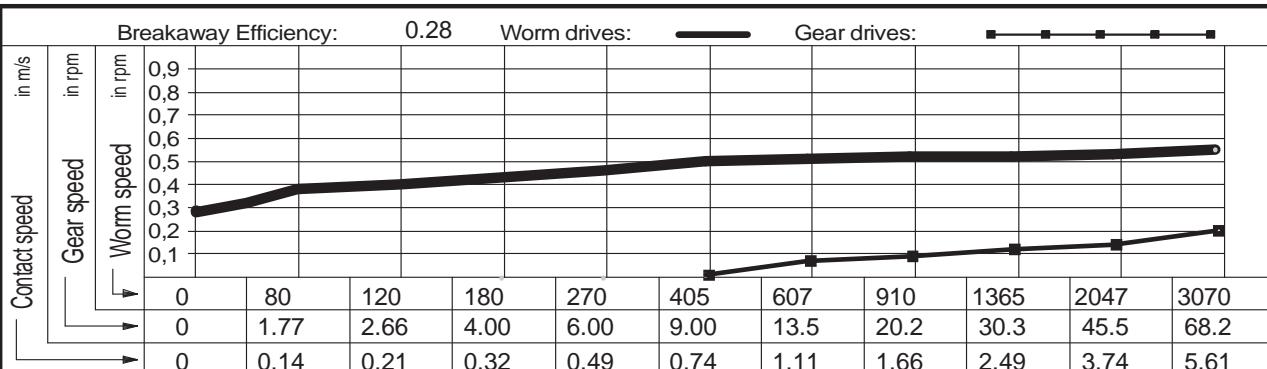
#### Ott worm gear

**OTT no: 4885 SSR**



Recalculate axial bearing  
in accordance with drive  
application!  
See note on page 5.

	Series R1	216	236	255	263	241	218	197	178	161	145	131
	Series R2	162	177	192	198	181	164	148	134	121	109	99
	Series R3	119	130	141	145	133	120	108	98	89	80	72
	Series R4	86	94	102	105	97	87	79	71	64	58	53
	Series R5	65	71	77	79	72	65	59	53	48	44	39



#### Gear selection by load type and application

Series R1	a) random even load around gear b) absolutely smooth operation c) minimal acceleration and deceleration moments d) maximum 1 start per minute (60 per hour) e) up to 10% operating time per hour (6 minutes)	Series R4	a) segmental varying load on gear b) with uneven shock loads c) large acceleration and deceleration moments d) maximum 60 starts per minute (3600 per hour) e) up to 75% operating time per hour (45 minutes)	Lubricant: <b>Synthetic oil</b>
Application:	Measurement and test machinery drives, CNC axes	Application:	Rotary tables with unfavourable cutting conditions, Trunion axes, CNC axes, milling spindles	
Series R2	a) random even load around gear b) absolutely smooth operation c) minimal acceleration and deceleration moments d) maximum 6 starts per minute (360 per hour) e) up to 25% operating time per hour (15 minutes)	Series R5	a) loads limited only to eccentric gear segment b) heavy, uneven shock loads c) largest acceleration and deceleration moments d) maximum 180 starts per minute (10,800 per hour) e) up to 100% operating time per hour (60 minutes)	
Application:	Index tables, circular feed drives and CNC axes for mainly smooth, controlled applications	Application:	Heavy milling and trunion drives, CNC axes with unfavourable conditions	
Series R3	a) random changing load on gear b) small shock loads c) large acceleration and deceleration moments d) maximum 20 starts per minute (1200 per hour) e) up to 50% operating time per hour (30 minutes)	Zahnradfertigung OTT	Blöhsteinstraße 20 D-72411 Bodelshausen www.zahnrad-ott.de	
Application:	Index tables, rotary tables for circular milling with relatively favourable cutting conditions, CNC axes	Tel. 07471 - 705 0 Fax. 07471 - 705 39 Email. Info@zahnrad-ott.de		

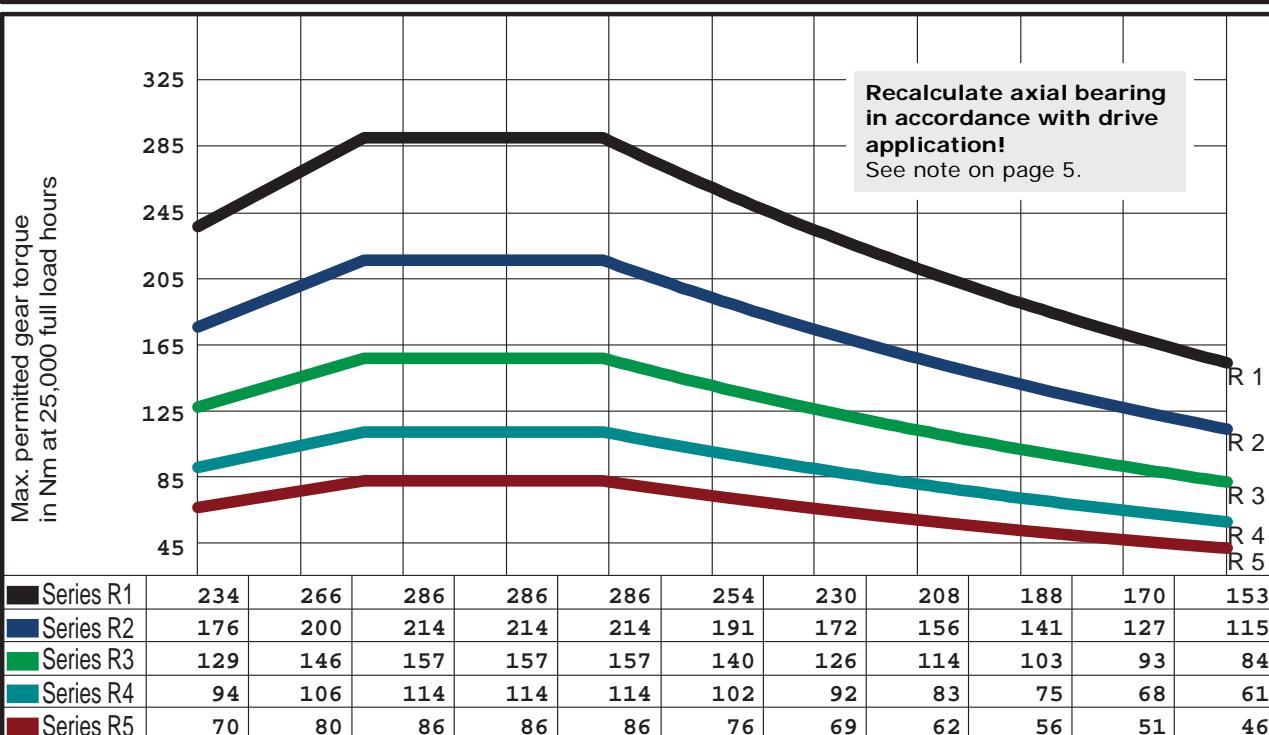
Centre distance	<b>75.00</b>	mm
Outer Ø worm	<b>41.20</b>	mm
Outer Ø gear	<b>120.00</b>	mm
No. starts, worm	<b>1</b>	
Worm direction	<b>right</b>	
No. teeth, gear	<b>60</b>	

Material, gear	<b>GZ-CuSn12Ni</b>
Material, worm	<b>31CrMoV9</b>
Pressure angle in NS	<b>10 °</b>
Back angle in NS	<b>20 °</b>
Calculated circle Ø	<b>37.06</b> mm
Lead angle at Bks	<b>2.8352</b> °

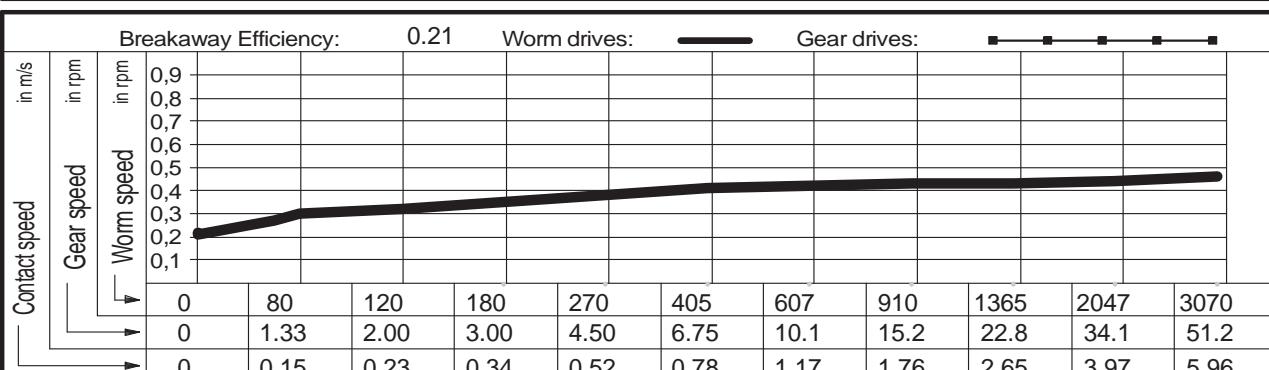
## Operating characteristics

Ott worm gear

**OTT no: 4871 SSR**

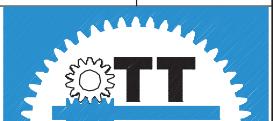


Recalculate axial bearing  
in accordance with drive  
application!  
See note on page 5.



Gear selection by load type and application													
Series R1	a) random even load around gear b) absolutely smooth operation c) minimal acceleration and deceleration moments d) maximum 1 start per minute (60 per hour) e) up to 10% operating time per hour (6 minutes)						Series R4	a) segmental varying load on gear b) with uneven shock loads c) large acceleration and deceleration moments d) maximum 60 starts per minute (3600 per hour) e) up to 75% operating time per hour (45 minutes)					
Application:	Measurement and test machinery drives, CNC axes						Application:	Rotary tables with unfavourable cutting conditions. Trunion axes, CNC axes, milling spindles					
Series R2	a) random even load around gear b) absolutely smooth operation c) minimal acceleration and deceleration moments d) maximum 6 starts per minute (360 per hour) e) up to 25% operating time per hour (15 minutes)						Series R5	a) loads limited only to eccentric gear segment b) heavy, uneven shock loads c) largest acceleration and deceleration moments d) maximum 180 starts per minute (10,800 per hour) e) up to 100% operating time per hour (60 minutes)					
Application:	Index tables, circular feed drives and CNC axes for mainly smooth, controlled applications						Application:	Heavy milling and trunion drives, CNC axes with unfavourable conditions					
Series R3	a) random changing load on gear b) small shock loads c) large acceleration and deceleration moments d) maximum 20 starts per minute (1200 per hour) e) up to 50% operating time per hour (30 minutes)						Zahnradfertigung OTT						
Application:	Index tables, rotary tables for circular milling with relatively favourable cutting conditions, CNC axes						Blöhsteinstraße 20	Tel.	07471 - 705 0				
							D-72411 Bodelshausen	Fax.	07471 - 705 39				
							www.zahnrad-ott.de	Email.	Info@zahnrad-ott.de				

Lubricant:  
Synthetic oil





## Type G1 Gear Catalogue

Zahnradfertigung Ott  
Blöhsteinstraße 20  
D-72411 Bodelshausen

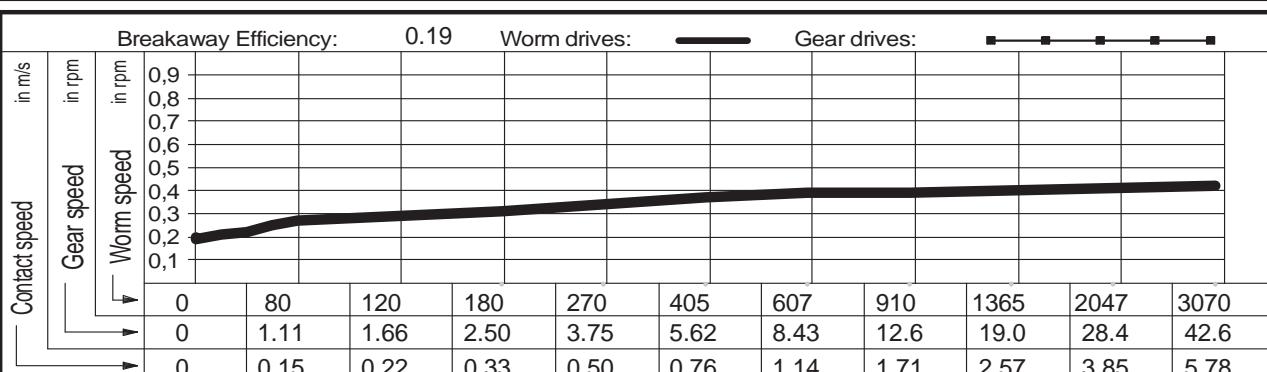
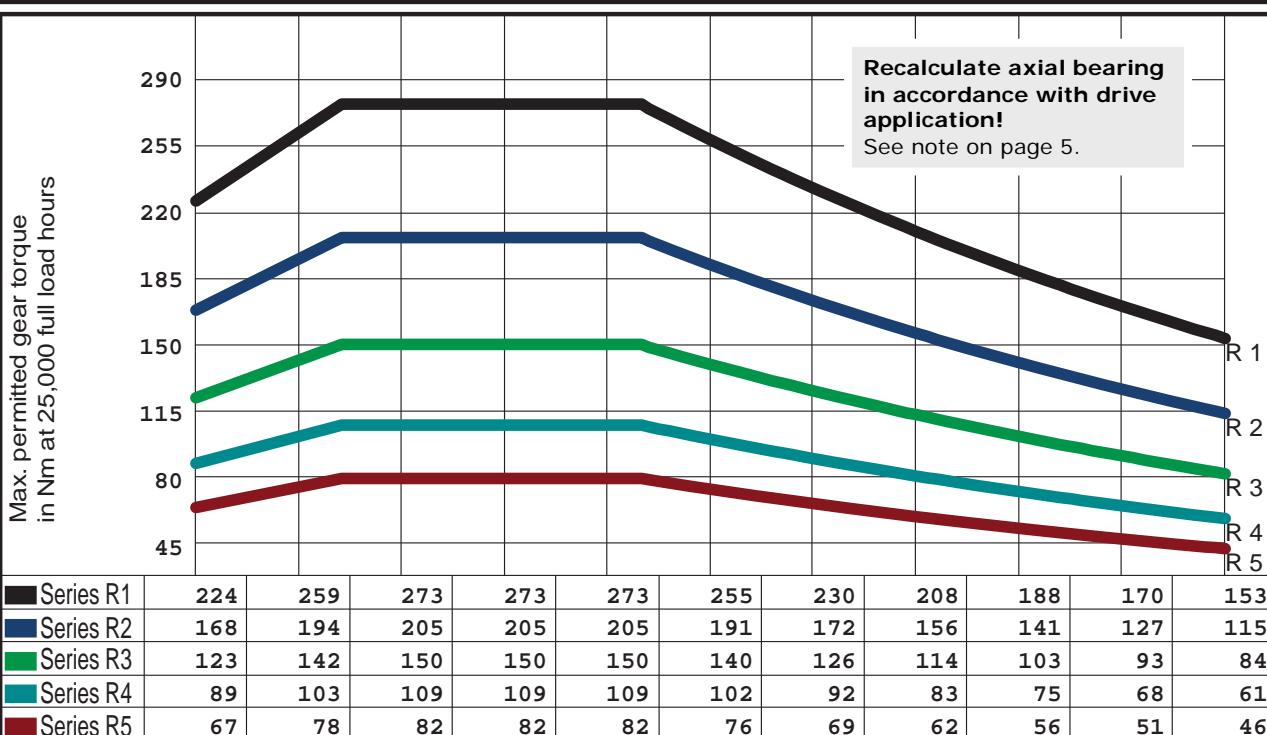
Centre distance	<b>75.00</b>	mm
Outer Ø worm	<b>39.60</b>	mm
Outer Ø gear	<b>120.00</b>	mm
No. starts, worm	<b>1</b>	
Worm direction	<b>right</b>	
No. teeth, gear	<b>72</b>	

Material, gear	<b>GZ-CuSn12Ni</b>
Material, worm	<b>31CrMoV9</b>
Pressure angle in NS	<b>10 °</b>
Back angle in NS	<b>20 °</b>
Calculated circle Ø	<b>35.96</b> mm
Lead angle at Bks	<b>2.4669</b> °

### Operating characteristics

#### Ott worm gear

**OTT no: 4872 SSR**



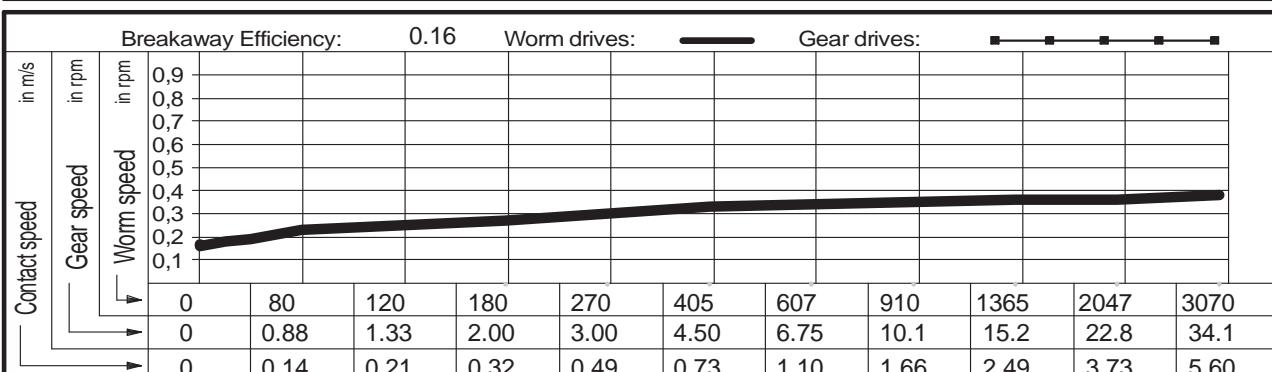
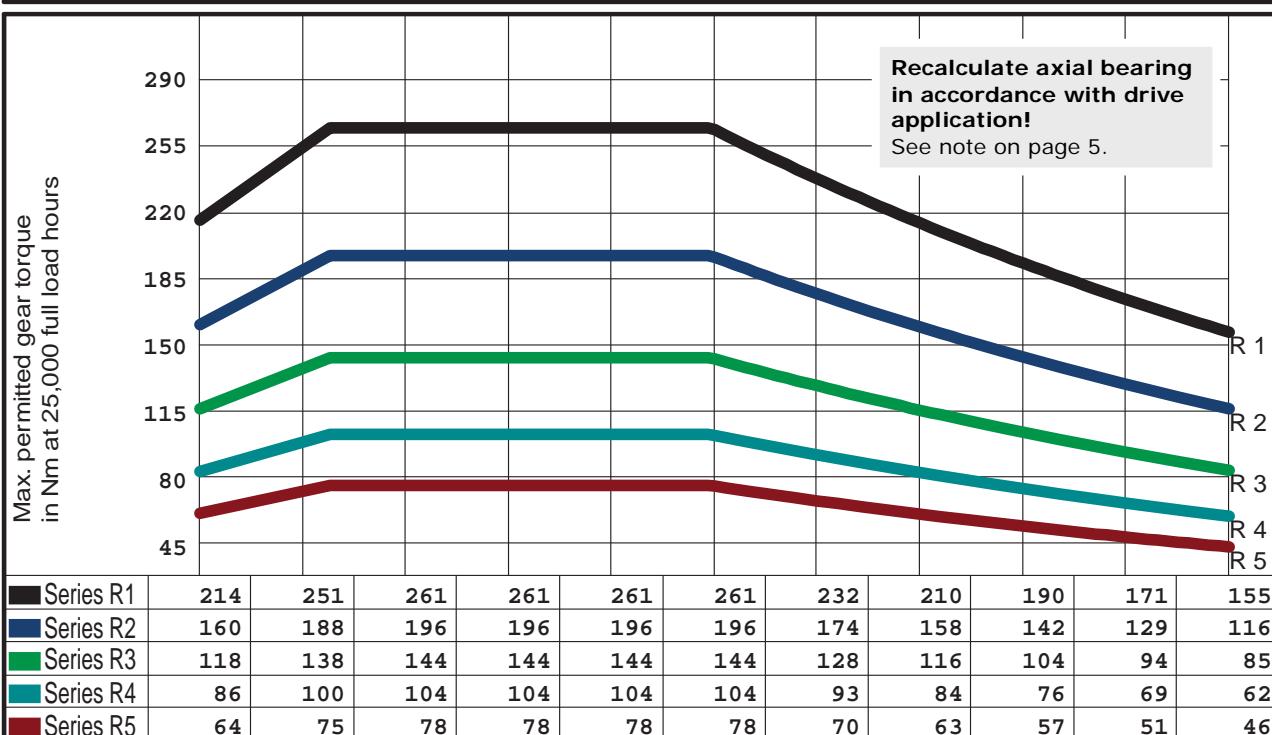
#### Gear selection by load type and application

Series R1	a) random even load around gear b) absolutely smooth operation c) minimal acceleration and deceleration moments d) maximum 1 start per minute (60 per hour) e) up to 10% operating time per hour (6 minutes)	Series R4	a) segmental varying load on gear b) with uneven shock loads c) large acceleration and deceleration moments d) maximum 60 starts per minute (3600 per hour) e) up to 75% operating time per hour (45 minutes)	Lubricant: <b>Synthetic oil</b>
Application:	Measurement and test machinery drives, CNC axes	Application:	Rotary tables with unfavourable cutting conditions. Trunion axes, CNC axes, milling spindles	
Series R2	a) random even load around gear b) absolutely smooth operation c) minimal acceleration and deceleration moments d) maximum 6 starts per minute (360 per hour) e) up to 25% operating time per hour (15 minutes)	Series R5	a) loads limited only to eccentric gear segment b) heavy, uneven shock loads c) largest acceleration and deceleration moments d) maximum 180 starts per minute (10,800 per hour) e) up to 100% operating time per hour (60 minutes)	
Application:	Index tables, circular feed drives and CNC axes for mainly smooth, controlled applications	Application:	Heavy milling and trunion drives, CNC axes with unfavourable conditions	
Series R3	a) random changing load on gear b) small shock loads c) large acceleration and deceleration moments d) maximum 20 starts per minute (1200 per hour) e) up to 50% operating time per hour (30 minutes)	Zahnradfertigung OTT	Blöhsteinstraße 20 D-72411 Bodelshausen www.zahnrad-ott.de	Blöhsteinstraße 20 D-72411 Bodelshausen www.zahnrad-ott.de
Application:	Index tables, rotary tables for circular milling with relatively favourable cutting conditions, CNC axes	Tel. 07471 - 705 0 Fax. 07471 - 705 39 Email. Info@zahnrad-ott.de	TT	

Centre distance	<b>75.00</b> mm	Material, gear	<b>GZ-CuSn12Ni</b>	Operating characteristics	
Outer Ø worm	<b>38.00</b> mm	Material, worm	<b>31CrMoV9</b>		
Outer Ø gear	<b>120.00</b> mm	Pressure angle in NS	<b>10 °</b>		
No. starts, worm	<b>1</b>	Back angle in NS	<b>15 °</b>		
Worm direction	<b>right</b>	Calculated circle Ø	<b>34.87</b> mm		
No. teeth, gear	<b>90</b>	Lead angle at Bks	<b>2.0605 °</b>		

## Ott worm gear

**OTT no: 4873 SSR**



Gear selection by load type and application					
Series R1	a) random even load around gear b) absolutely smooth operation c) minimal acceleration and deceleration moments d) maximum 1 start per minute (60 per hour) e) up to 10% operating time per hour (6 minutes)	Series R4	a) segmental varying load on gear b) with uneven shock loads c) large acceleration and deceleration moments d) maximum 60 starts per minute (3600 per hour) e) up to 75% operating time per hour (45 minutes)		
Application:	Measurement and test machinery drives, CNC axes	Application:	Rotary tables with unfavourable cutting conditions. Trunion axes, CNC axes, milling spindles		
Series R2	a) random even load around gear b) absolutely smooth operation c) minimal acceleration and deceleration moments d) maximum 6 starts per minute (360 per hour) e) up to 25% operating time per hour (15 minutes)	Series R5	a) loads limited only to eccentric gear segment b) heavy, uneven shock loads c) largest acceleration and deceleration moments d) maximum 180 starts per minute (10,800 per hour) e) up to 100% operating time per hour (60 minutes)		
Application:	Index tables, circular feed drives and CNC axes for mainly smooth, controlled applications	Application:	Heavy milling and trunion drives, CNC axes with unfavourable conditions		
Series R3	a) random changing load on gear b) small shock loads c) large acceleration and deceleration moments d) maximum 20 starts per minute (1200 per hour) e) up to 50% operating time per hour (30 minutes)	Zahnradfertigung OTT	Blöhsteinstraße 20 D-72411 Bodelshausen <a href="http://www.zahnrad-ott.de">www.zahnrad-ott.de</a>	Tel. 07471 - 705 0 Fax. 07471 - 705 39 Email. <a href="mailto:Info@zahnrad-ott.de">Info@zahnrad-ott.de</a>	Lubricant: Synthetic oil
Application:	Index tables, rotary tables for circular milling with relatively favourable cutting conditions, CNC axes				



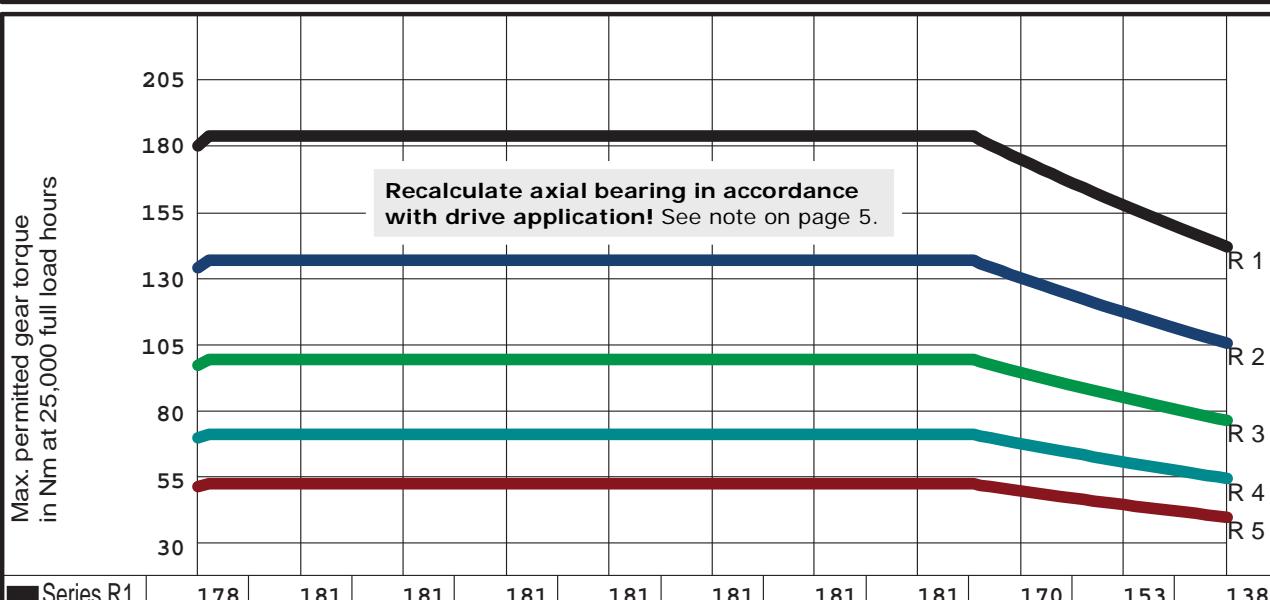
## Type G1 Gear Catalogue

Zahnradfertigung Ott  
Blöhsteinstraße 20  
D-72411 Bodelshausen

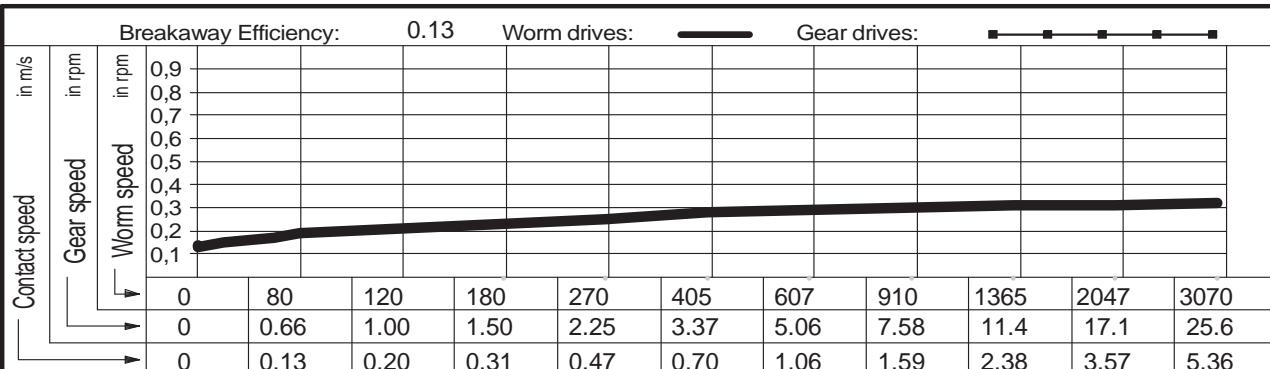
Centre distance	<b>75.00</b>	mm	Material, gear	<b>GZ-CuSn12Ni</b>	Operating characteristics	
Outer Ø worm	<b>35.80</b>	mm	Material, worm	<b>31CrMoV9</b>		
Outer Ø gear	<b>120.00</b>	mm	Pressure angle in NS	<b>10 °</b>		
No. starts, worm	<b>1</b>		Back angle in NS	<b>15 °</b>		
Worm direction	<b>right</b>		Calculated circle Ø	<b>33.36</b>	mm	
No. teeth, gear	<b>120</b>		Lead angle at Bks	<b>1.6439</b>	°	

### Ott worm gear

**OTT no: 4813 SSR**



■ Series R1	178	181	181	181	181	181	181	170	153	138
■ Series R2	133	136	136	136	136	136	136	127	115	104
■ Series R3	98	100	100	100	100	100	100	93	84	76
■ Series R4	71	73	73	73	73	73	73	68	61	55
■ Series R5	53	54	54	54	54	54	54	51	46	42



Gear selection by load type and application											
Series R1	a) random even load around gear b) absolutely smooth operation c) minimal acceleration and deceleration moments d) maximum 1 start per minute (60 per hour) e) up to 10% operating time per hour (6 minutes)					Series R4	a) segmental varying load on gear b) with uneven shock loads c) large acceleration and deceleration moments d) maximum 60 starts per minute (3600 per hour) e) up to 75% operating time per hour (45 minutes)				
Application:	Measurement and test machinery drives, CNC axes					Application:	Rotary tables with unfavourable cutting conditions. Trunion axes, CNC axes, milling spindles				
Series R2	a) random even load around gear b) absolutely smooth operation c) minimal acceleration and deceleration moments d) maximum 6 starts per minute (360 per hour) e) up to 25% operating time per hour (15 minutes)					Series R5	a) loads limited only to eccentric gear segment b) heavy, uneven shock loads c) largest acceleration and deceleration moments d) maximum 180 starts per minute (10,800 per hour) e) up to 100% operating time per hour (60 minutes)				
Application:	Index tables, circular feed drives and CNC axes for mainly smooth, controlled applications					Application:	Heavy milling and trunion drives, CNC axes with unfavourable conditions				
Series R3	a) random changing load on gear b) small shock loads c) large acceleration and deceleration moments d) maximum 20 starts per minute (1200 per hour) e) up to 50% operating time per hour (30 minutes)										Lubricant: Synthetic oil
Application:	Index tables, rotary tables for circular milling with relatively favourable cutting conditions, CNC axes										

**Zahnradfertigung OTT**

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## OTT worm gears - centre distance 82 mm

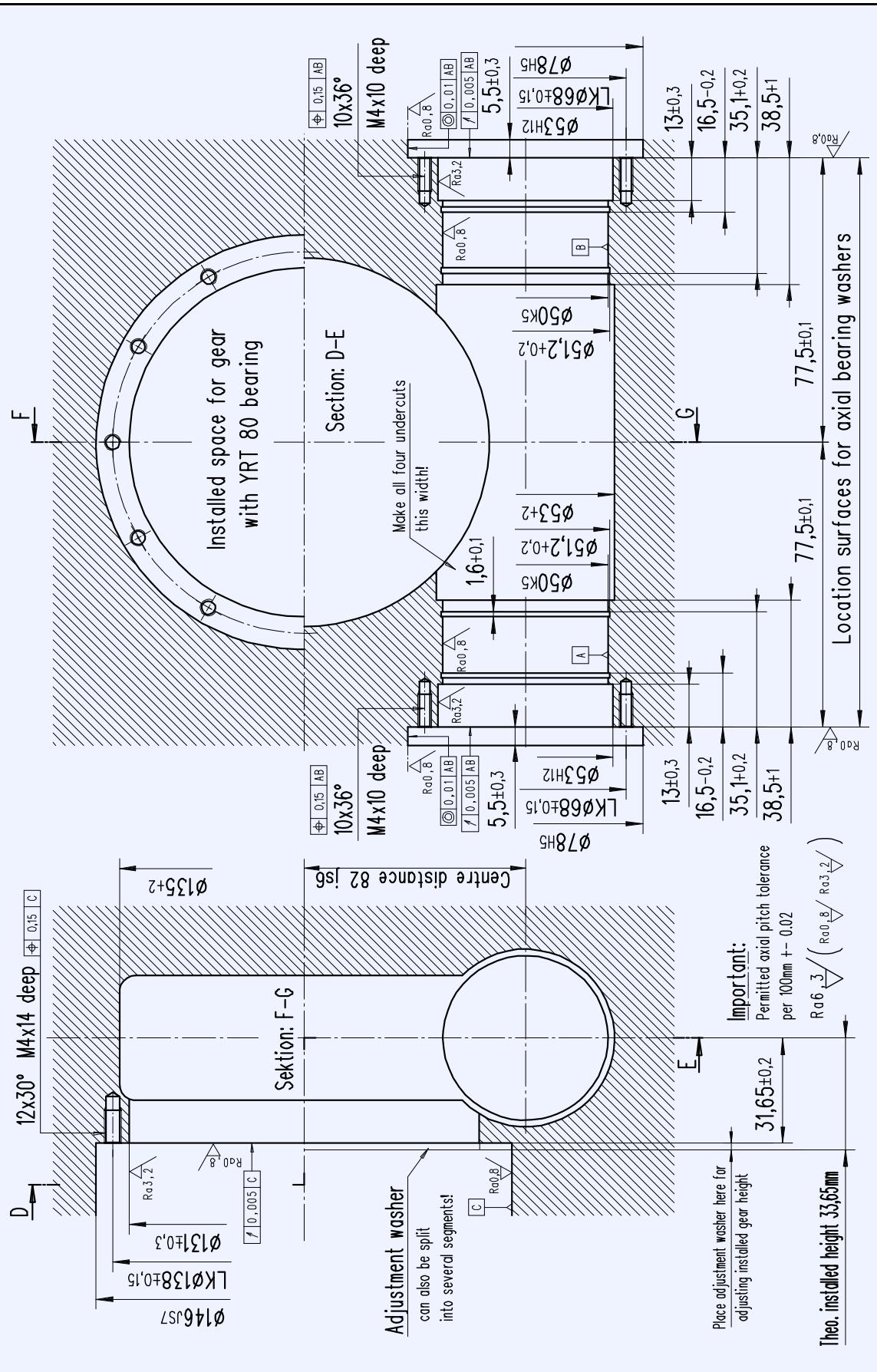
### Main dimensions

OTT gear no.	Ratio		Worm				YRT gear bearing	Gear			
	No. starts Z1	No. teeth Z2	Distance A	Undercut Ø B	Head Ø C	Collar Ø D		Internal Ø E	Head Ø F	Width G	Height H
4801 SSR	6	66	44	32,7	44,6	44,6	80	78	130	35	22
2833 SSR	3	72		32,8	44,4						
4835 SSR	3	90		33,0	42,6						
5266 SSR	2	72		32,8	44,4						
4884 SSR	2	90		33,0	42,6						
4824 SSR	1	72		32,8	44,4						
2735 SSR	1	90		33,0	42,8						
4833 SSR	1	120		33,2	40,8						

See comments page 5!

## Gear housing - required internal contour

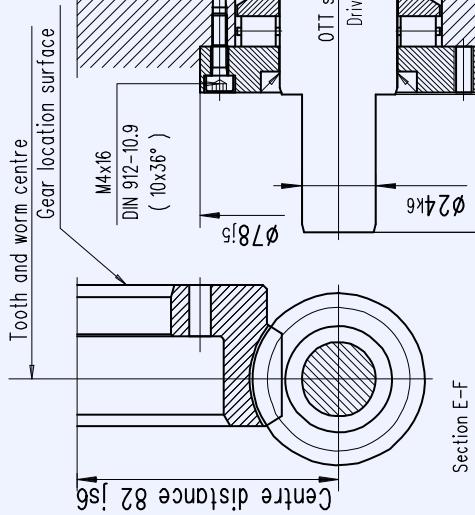
**Required internal contour of gear housing for centre distance 82 mm**



## Worm bearings

### Worm bearing for centre distance 82 mm

Important: This worm bearing must be matched to the particular drive!

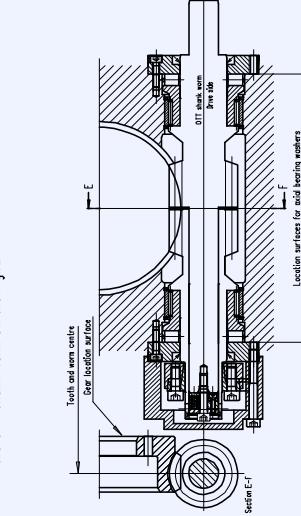
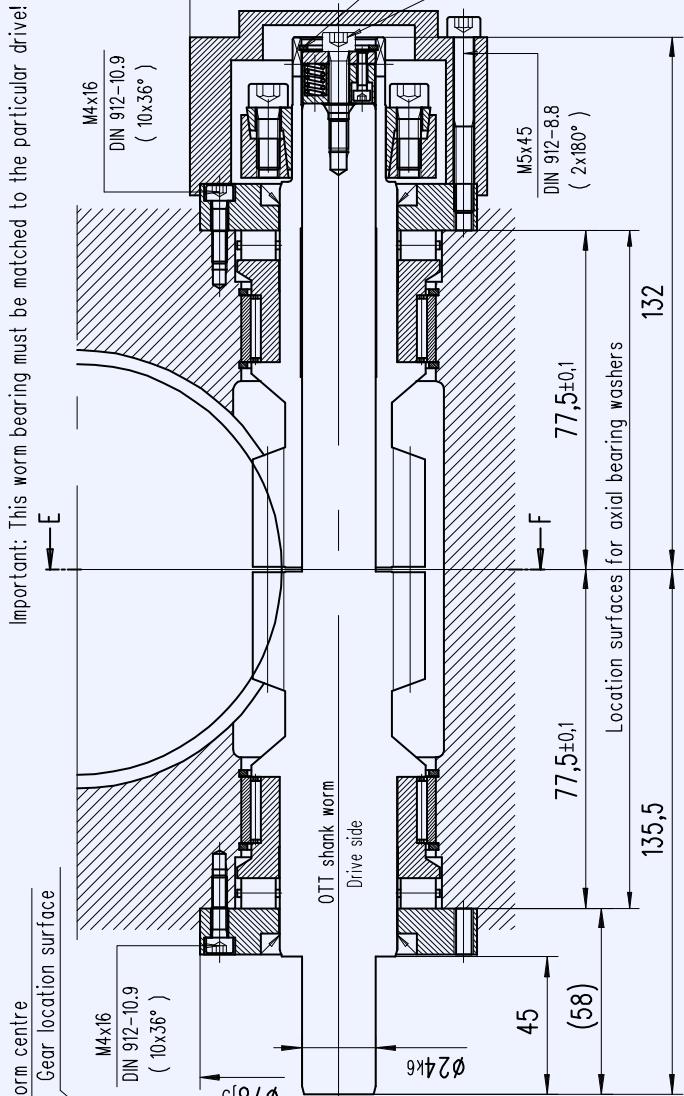


Installed position A (Standard)

The gear location surface is underneath, the OTT shank worm on the left.

Installed position B (to suit)

The gear location surface is underneath, the OTT shank worm on the right.



		Bearings parts per gear			
		Name	Q'ty	Name	Typ/Dwg no.
<input type="checkbox"/> 4801 SSR	OTT 420-G-RAO	T00263-G-SSC	1	Hollow worm	T00264-G-HSC
<input type="checkbox"/> 2833 SSR	OTT 421-G-RAO	T00265-G-SSC	2	Axial cylinder roller bearing	K812 06 TV
<input type="checkbox"/> 4835 SSR	OTT 422-G-RAO	T00267-G-SSC	2	Radial needle bearing	RNAO 40x50x17
<input type="checkbox"/> 5266 SSR	OTT 423-G-RAO	T00269-G-SSC	2	Shaft seal	30x40x5
<input type="checkbox"/> 4884 SSR	OTT 424-G-RAO	T00271-G-SSC	1	Shrink disc	HSD 30-22
<input type="checkbox"/> 4824 SSR	OTT 425-G-RAO	T00273-G-SSC	4	Circlip	SB 50
<input type="checkbox"/> 2735 SSR	OTT 426-G-RAO	T00275-G-SSC	20	Cylinder bolt DIN 912	M4x16 - 10.9
<input type="checkbox"/> 4833 SSR	OTT 427-G-RAO	T00277-G-SSC	2	Cylinder bolt DIN 912	M5x45 - 8.8
			1	Cylinder bolt DIN 912	M5x25 - 8.8
			1	Retainer ring DIN 472	24
			2	Bearing sleeve	T00220-G-LHÜ
			2	Axial bearing washer	T00232-G-LDX
			1	Cover	T00215-G-ADH
			1	Thrust piece	B00008-G-DST

Order using ..... Set of OTT worm gears

Gearset incl. thrust piece without bearing parts

Gearset incl. all bearing parts



## Type G1 Gear Catalogue

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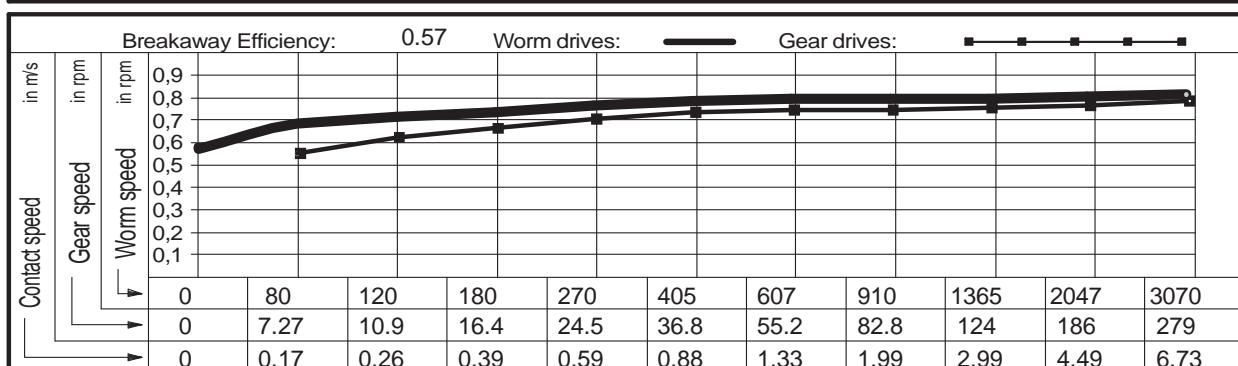
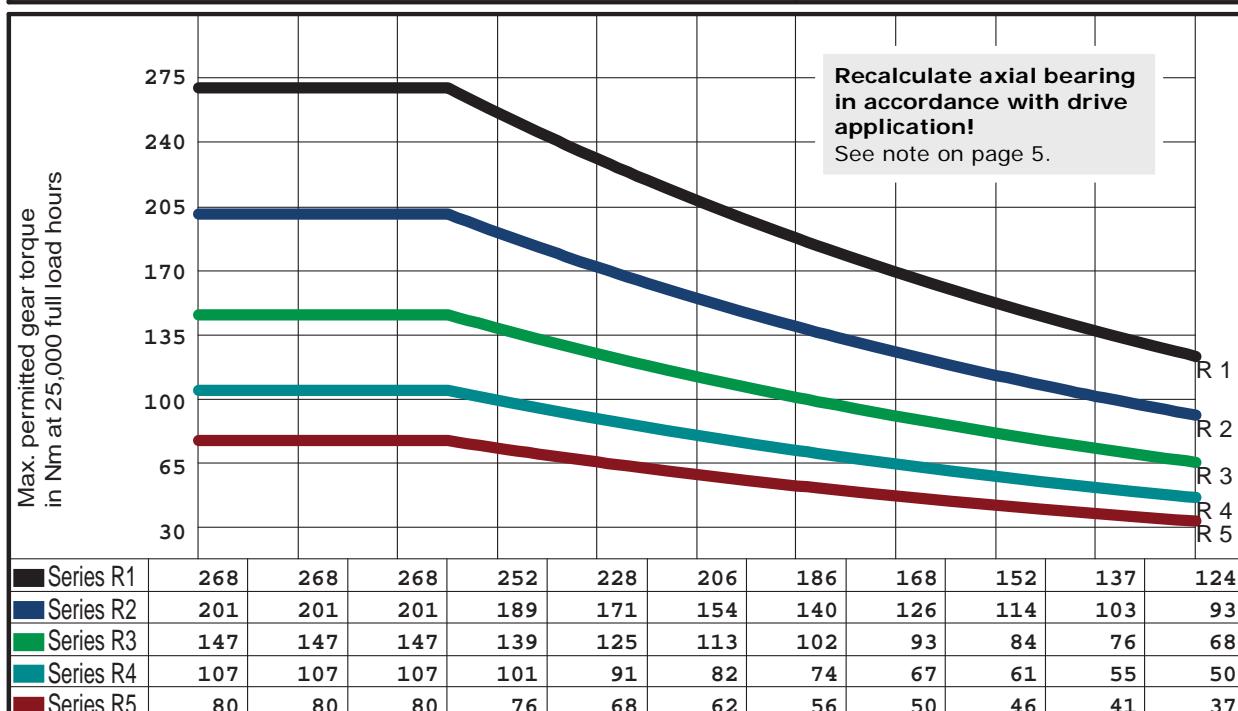
### Operational characteristics

Centre distance	82.00	mm	Material, gear	GZ-CuSn12Ni
Outer Ø worm	44.60	mm	Material, worm	31CrMoV9
Outer Ø gear	130.00	mm	Pressure angle in NS	10 °
No. starts, worm	6		Back angle in NS	20 °
Worm direction	right		Calculated circle Ø	40.46 mm
No. teeth, gear	66		Lead angle at Bks	15.1767 °

### Operating characteristics

#### Ott worm gear

**OTT no: 4801 SSR**



Gear selection by load type and application				
Series R1	a) random even load around gear b) absolutely smooth operation c) minimal acceleration and deceleration moments d) maximum 1 start per minute (60 per hour) e) up to 10% operating time per hour (6 minutes)	Series R4	a) segmental varying load on gear b) with uneven shock loads c) large acceleration and deceleration moments d) maximum 60 starts per minute (3600 per hour) e) up to 75% operating time per hour (45 minutes)	Lubricant: Synthetic oil
Application:	Measurement and test machinery drives, CNC axes	Application:	Rotary tables with unfavourable cutting conditions. Trunion axes, CNC axes, milling spindles	
Series R2	a) random even load around gear b) absolutely smooth operation c) minimal acceleration and deceleration moments d) maximum 6 starts per minute (360 per hour) e) up to 25% operating time per hour (15 minutes)	Series R5	a) loads limited only to eccentric gear segment b) heavy, uneven shock loads c) largest acceleration and deceleration moments d) maximum 180 starts per minute (10,800 per hour) e) up to 100% operating time per hour (60 minutes)	
Application:	Index tables, circular feed drives and CNC axes for mainly smooth, controlled applications	Application:	Heavy milling and trunion drives, CNC axes with unfavourable conditions	
Series R3	a) random changing load on gear b) small shock loads c) large acceleration and deceleration moments d) maximum 20 starts per minute (1200 per hour) e) up to 50% operating time per hour (30 minutes)	Zahnradfertigung OTT	Blöhsteinstraße 20 D-72411 Bodelshausen www.zahnrad-ott.de	
Application:	Index tables, rotary tables for circular milling with relatively favourable cutting conditions, CNC axes			

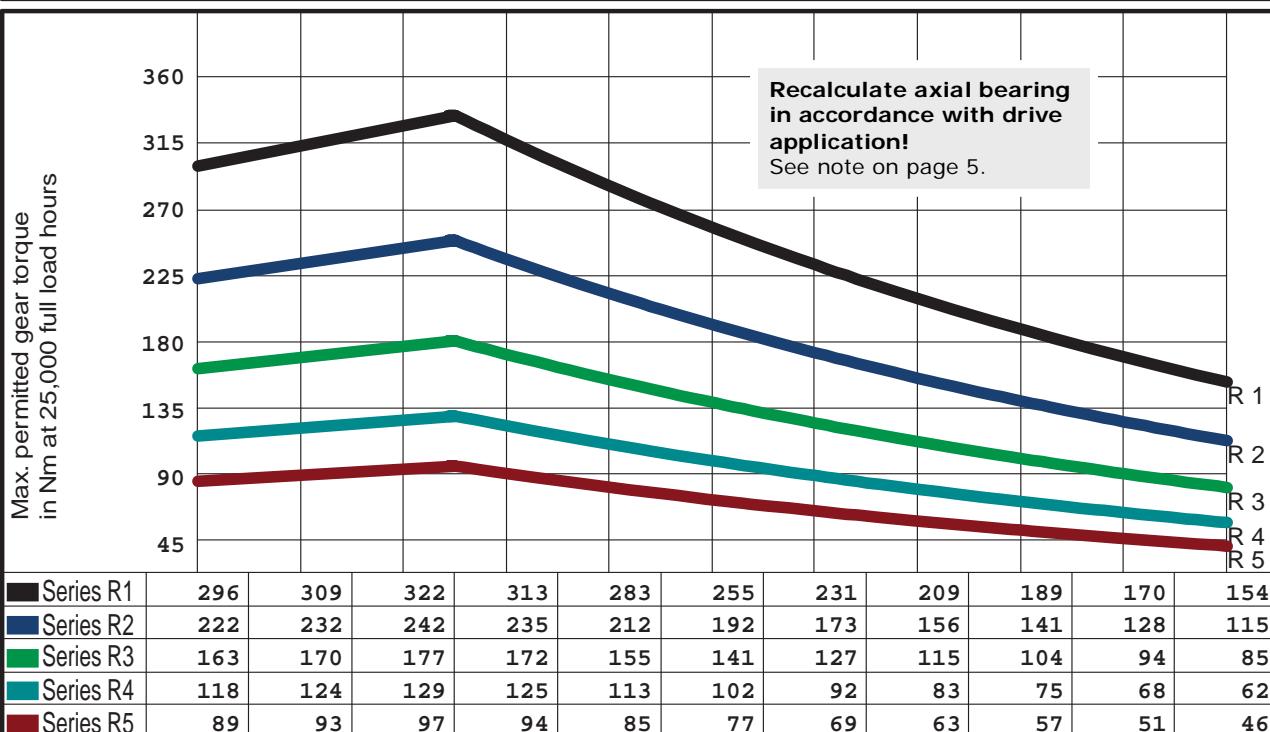
Centre distance	<b>82.00</b> mm	Material, gear	<b>GZ-CuSn12Ni</b>	Operating characteristics	
Outer Ø worm	<b>44.40</b> mm	Material, worm	<b>31CrMoV9</b>		
Outer Ø gear	<b>130.00</b> mm	Pressure angle in NS	<b>10 °</b>		
No. starts, worm	<b>3</b>	Back angle in NS	<b>20 °</b>		
Worm direction	<b>right</b>	Calculated circle Ø	<b>40.44</b> mm		
No. teeth, gear	<b>72</b>	Lead angle at Bks	<b>7.0963 °</b>		

**GZ-CuSn12Ni**  
**31CrMoV9**  
**10 °**  
**20 °**  
**40.44** mm  
**7.0963 °**

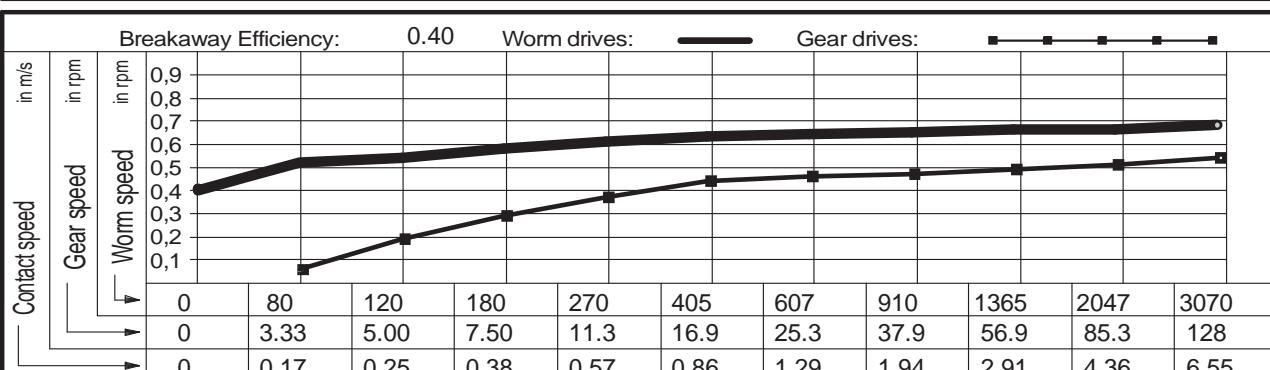
## Operating characteristics

### Ott worm gear

**OTT no: 2833 SSR**

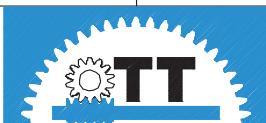


Recalculate axial bearing  
in accordance with drive  
application!  
See note on page 5.



### Gear selection by load type and application

Series R1	a) random even load around gear b) absolutely smooth operation c) minimal acceleration and deceleration moments d) maximum 1 start per minute (60 per hour) e) up to 10% operating time per hour (6 minutes)	Series R4	a) segmental varying load on gear b) with uneven shock loads c) large acceleration and deceleration moments d) maximum 60 starts per minute (3600 per hour) e) up to 75% operating time per hour (45 minutes)	Lubricant: <b>Synthetic oil</b>
Application:	Measurement and test machinery drives, CNC axes	Application:	Rotary tables with unfavourable cutting conditions. Trunion axes, CNC axes, milling spindles	
Series R2	a) random even load around gear b) absolutely smooth operation c) minimal acceleration and deceleration moments d) maximum 6 starts per minute (360 per hour) e) up to 25% operating time per hour (15 minutes)	Series R5	a) loads limited only to eccentric gear segment b) heavy, uneven shock loads c) largest acceleration and deceleration moments d) maximum 180 starts per minute (10,800 per hour) e) up to 100% operating time per hour (60 minutes)	
Application:	Index tables, circular feed drives and CNC axes for mainly smooth, controlled applications	Application:	Heavy milling and trunion drives, CNC axes with unfavourable conditions	
Series R3	a) random changing load on gear b) small shock loads c) large acceleration and deceleration moments d) maximum 20 starts per minute (1200 per hour) e) up to 50% operating time per hour (30 minutes)	Zahnradfertigung OTT	Blöhsteinstraße 20 D-72411 Bodelshausen www.zahnrad-ott.de	Tel. 07471 - 705 0 Fax. 07471 - 705 39 Email. Info@zahnrad-ott.de
Application:	Index tables, rotary tables for circular milling with relatively favourable cutting conditions, CNC axes			





## Type G1 Gear Catalogue

Zahnradfertigung Ott  
Blöhsteinstraße 20  
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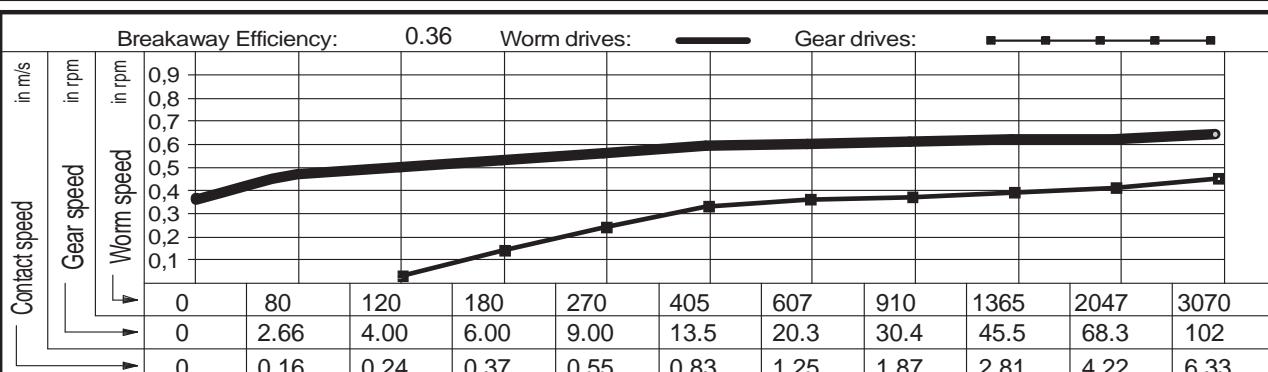
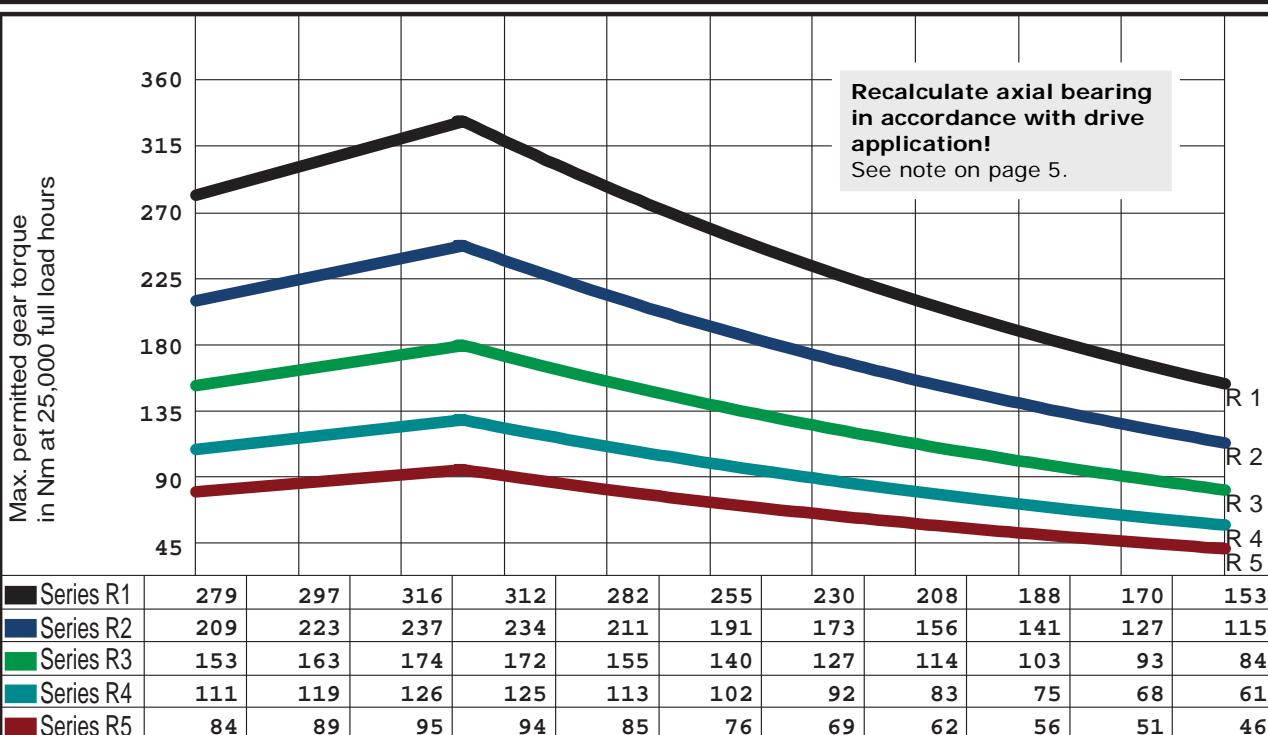
Centre distance	<b>82.00</b>	mm
Outer Ø worm	<b>42.60</b>	mm
Outer Ø gear	<b>130.00</b>	mm
No. starts, worm	<b>3</b>	
Worm direction	<b>right</b>	
No. teeth, gear	<b>90</b>	

Material, gear	<b>GZ-CuSn12Ni</b>
Material, worm	<b>31CrMoV9</b>
Pressure angle in NS	<b>10 °</b>
Back angle in NS	<b>15 °</b>
Calculated circle Ø	<b>39.22</b> mm
Lead angle at Bks	<b>5.9389</b> °

### Operating characteristics

#### Ott worm gear

**OTT no: 4835 SSR**



#### Gear selection by load type and application

Series R1	a) random even load around gear b) absolutely smooth operation c) minimal acceleration and deceleration moments d) maximum 1 start per minute (60 per hour) e) up to 10% operating time per hour (6 minutes)	Series R4	a) segmental varying load on gear b) with uneven shock loads c) large acceleration and deceleration moments d) maximum 60 starts per minute (3600 per hour) e) up to 75% operating time per hour (45 minutes)	Lubricant: <b>Synthetic oil</b>
Application:	Measurement and test machinery drives, CNC axes	Application:	Rotary tables with unfavourable cutting conditions. Trunion axes, CNC axes, milling spindles	
Series R2	a) random even load around gear b) absolutely smooth operation c) minimal acceleration and deceleration moments d) maximum 6 starts per minute (360 per hour) e) up to 25% operating time per hour (15 minutes)	Series R5	a) loads limited only to eccentric gear segment b) heavy, uneven shock loads c) largest acceleration and deceleration moments d) maximum 180 starts per minute (10,800 per hour) e) up to 100% operating time per hour (60 minutes)	
Application:	Index tables, circular feed drives and CNC axes for mainly smooth, controlled applications	Application:	Heavy milling and trunion drives, CNC axes with unfavourable conditions	
Series R3	a) random changing load on gear b) small shock loads c) large acceleration and deceleration moments d) maximum 20 starts per minute (1200 per hour) e) up to 50% operating time per hour (30 minutes)	Zahnradfertigung OTT	Blöhsteinstraße 20 D-72411 Bodelshausen www.zahnrad-ott.de	Tel. 07471 - 705 0 Fax. 07471 - 705 39 Email. Info@zahnrad-ott.de
Application:	Index tables, rotary tables for circular milling with relatively favourable cutting conditions, CNC axes			

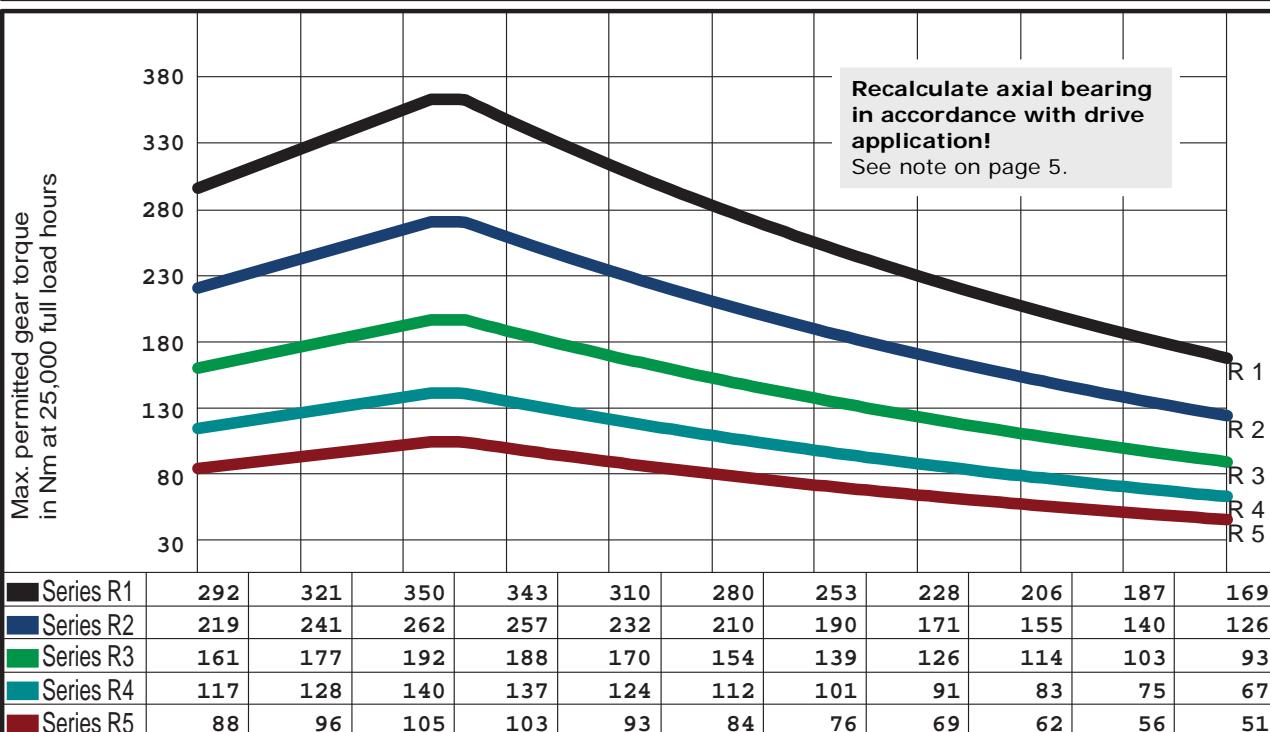
Centre distance	<b>82.00</b> mm
Outer Ø worm	<b>44.40</b> mm
Outer Ø gear	<b>130.00</b> mm
No. starts, worm	<b>2</b>
Worm direction	right
No. teeth, gear	<b>72</b>

Material, gear	<b>GZ-CuSn12Ni</b>
Material, worm	<b>31CrMoV9</b>
Pressure angle in NS	<b>10 °</b>
Back angle in NS	<b>20 °</b>
Calculated circle Ø	<b>40.45</b> mm
Lead angle at Bks	<b>4.7435</b> °

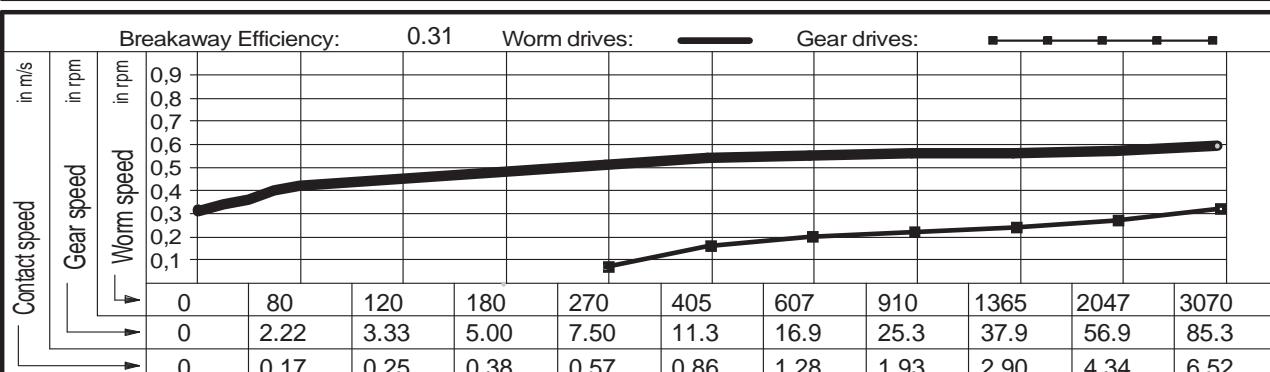
## Operating characteristics

Ott worm gear

**OTT no: 5266 SSR**

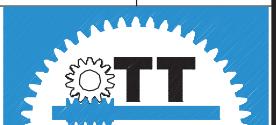


Recalculate axial bearing  
in accordance with drive  
application!  
See note on page 5.



### Gear selection by load type and application

Series R1	a) random even load around gear b) absolutely smooth operation c) minimal acceleration and deceleration moments d) maximum 1 start per minute (60 per hour) e) up to 10% operating time per hour (6 minutes)	Series R4	a) segmental varying load on gear b) with uneven shock loads c) large acceleration and deceleration moments d) maximum 60 starts per minute (3600 per hour) e) up to 75% operating time per hour (45 minutes)	Lubricant: <b>Synthetic oil</b>
Application:	Measurement and test machinery drives, CNC axes	Application:	Rotary tables with unfavourable cutting conditions. Trunion axes, CNC axes, milling spindles	
Series R2	a) random even load around gear b) absolutely smooth operation c) minimal acceleration and deceleration moments d) maximum 6 starts per minute (360 per hour) e) up to 25% operating time per hour (15 minutes)	Series R5	a) loads limited only to eccentric gear segment b) heavy, uneven shock loads c) largest acceleration and deceleration moments d) maximum 180 starts per minute (10,800 per hour) e) up to 100% operating time per hour (60 minutes)	
Application:	Index tables, circular feed drives and CNC axes for mainly smooth, controlled applications	Application:	Heavy milling and trunion drives, CNC axes with unfavourable conditions	
Series R3	a) random changing load on gear b) small shock loads c) large acceleration and deceleration moments d) maximum 20 starts per minute (1200 per hour) e) up to 50% operating time per hour (30 minutes)	Zahnradfertigung OTT	Blöhsteinstraße 20 D-72411 Bodelshausen www.zahnrad-ott.de	Tel. 07471 - 705 0 Fax. 07471 - 705 39 Email. Info@zahnrad-ott.de
Application:	Index tables, rotary tables for circular milling with relatively favourable cutting conditions, CNC axes			





## Type G1 Gear Catalogue

Zahnradfertigung Ott  
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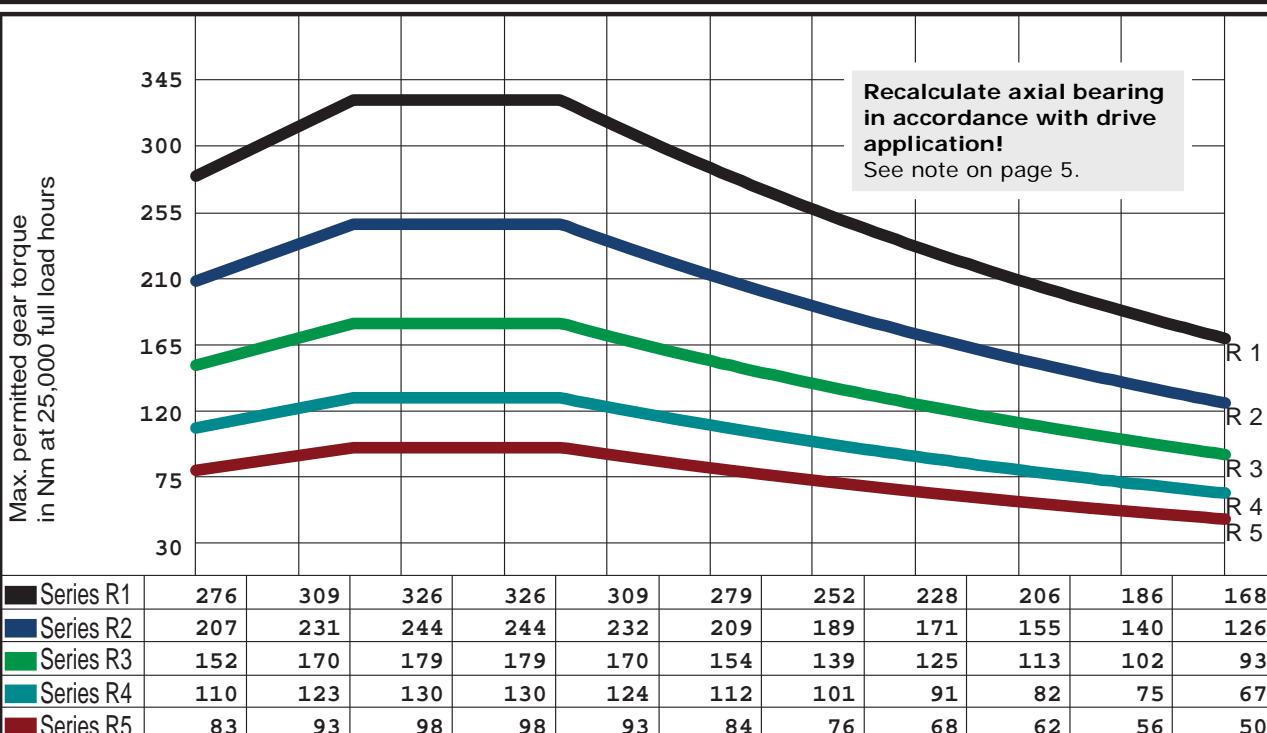
Centre distance	<b>82.00</b>	mm
Outer Ø worm	<b>42.60</b>	mm
Outer Ø gear	<b>130.00</b>	mm
No. starts, worm	<b>2</b>	
Worm direction	<b>right</b>	
No. teeth, gear	<b>90</b>	

Material, gear	<b>GZ-CuSn12Ni</b>
Material, worm	<b>31CrMoV9</b>
Pressure angle in NS	<b>10 °</b>
Back angle in NS	<b>20 °</b>
Calculated circle Ø	<b>39.22</b> mm
Lead angle at Bks	<b>3.9667</b> °

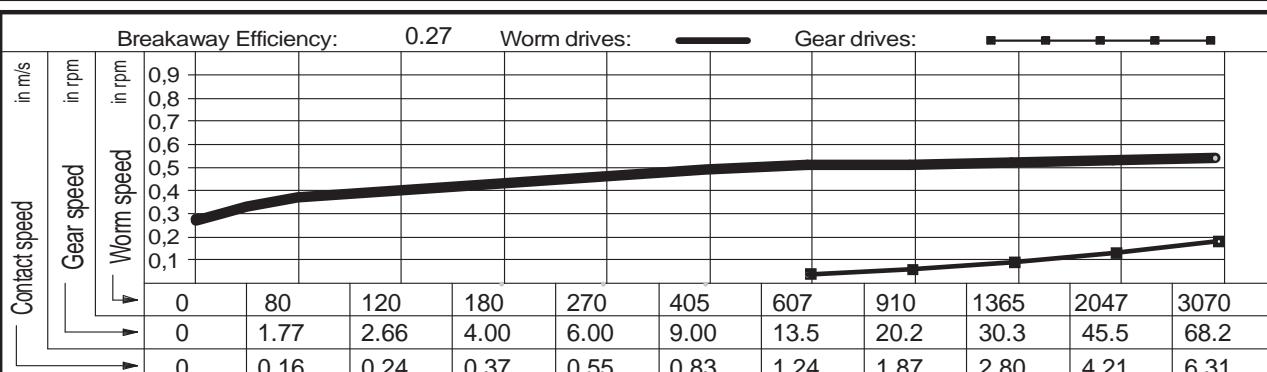
### Operating characteristics

#### Ott worm gear

**OTT no: 4884 SSR**



Recalculate axial bearing  
in accordance with drive  
application!  
See note on page 5.



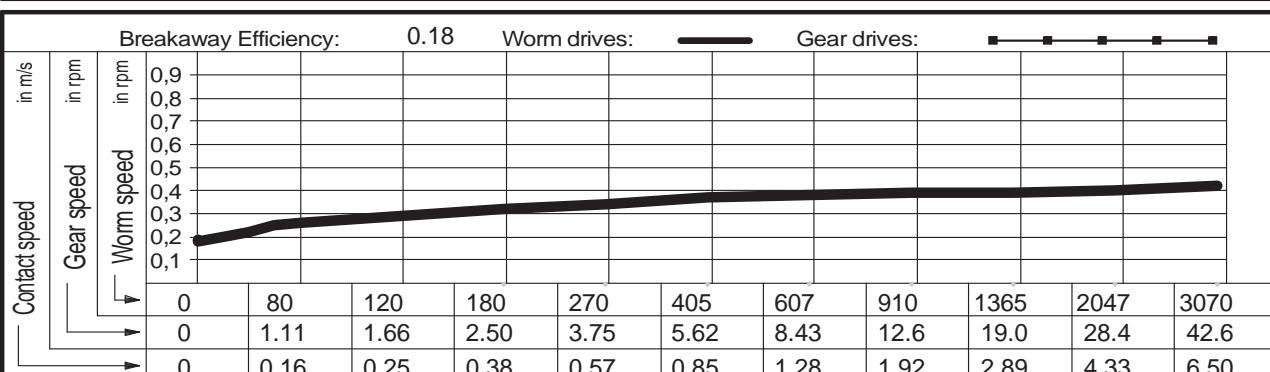
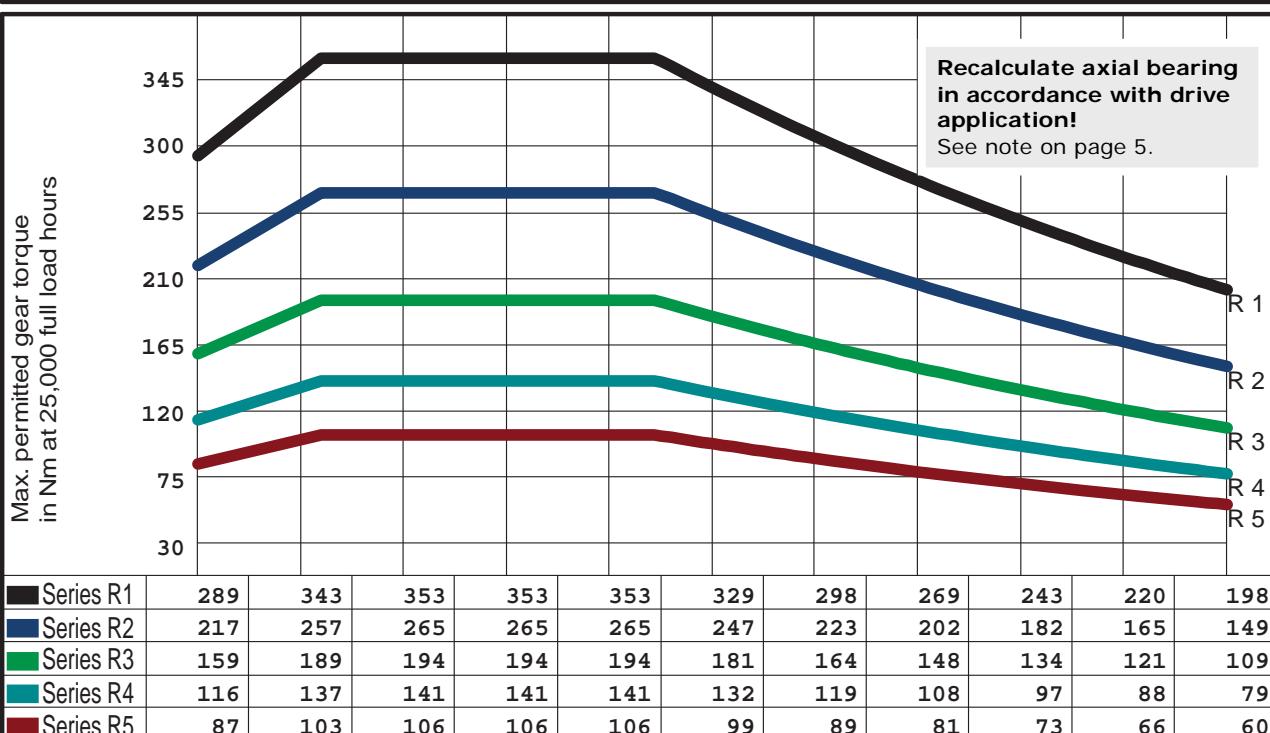
#### Gear selection by load type and application

Series R1	a) random even load around gear b) absolutely smooth operation c) minimal acceleration and deceleration moments d) maximum 1 start per minute (60 per hour) e) up to 10% operating time per hour (6 minutes)	Series R4	a) segmental varying load on gear b) with uneven shock loads c) large acceleration and deceleration moments d) maximum 60 starts per minute (3600 per hour) e) up to 75% operating time per hour (45 minutes)	Lubricant: Synthetic oil
Application:	Measurement and test machinery drives, CNC axes	Application:	Rotary tables with unfavourable cutting conditions. Trunion axes, CNC axes, milling spindles	
Series R2	a) random even load around gear b) absolutely smooth operation c) minimal acceleration and deceleration moments d) maximum 6 starts per minute (360 per hour) e) up to 25% operating time per hour (15 minutes)	Series R5	a) loads limited only to eccentric gear segment b) heavy, uneven shock loads c) largest acceleration and deceleration moments d) maximum 180 starts per minute (10,800 per hour) e) up to 100% operating time per hour (60 minutes)	
Application:	Index tables, circular feed drives and CNC axes for mainly smooth, controlled applications	Application:	Heavy milling and trunion drives, CNC axes with unfavourable conditions	
Series R3	a) random changing load on gear b) small shock loads c) large acceleration and deceleration moments d) maximum 20 starts per minute (1200 per hour) e) up to 50% operating time per hour (30 minutes)	Zahnradfertigung OTT	Blöhsteinstraße 20 D-72411 Bodelshausen www.zahnrad-ott.de	Tel. 07471 - 705 0 Fax. 07471 - 705 39 Email. Info@zahnrad-ott.de
Application:	Index tables, rotary tables for circular milling with relatively favourable cutting conditions, CNC axes			

Centre distance	<b>82.00</b> mm	Material, gear	<b>GZ-CuSn12Ni</b>	Operating characteristics	
Outer Ø worm	<b>44.40</b> mm	Material, worm	<b>31CrMoV9</b>		
Outer Ø gear	<b>130.00</b> mm	Pressure angle in NS	<b>10 °</b>		
No. starts, worm	<b>1</b>	Back angle in NS	<b>20 °</b>		
Worm direction	<b>right</b>	Calculated circle Ø	<b>40.45</b> mm		
No. teeth, gear	<b>72</b>	Lead angle at Bks	<b>2.3756 °</b>		

## Ott worm gear

**OTT no: 4824 SSR**



Gear selection by load type and application					
Series R1	a) random even load around gear b) absolutely smooth operation c) minimal acceleration and deceleration moments d) maximum 1 start per minute (60 per hour) e) up to 10% operating time per hour (6 minutes)	Series R4	a) segmental varying load on gear b) with uneven shock loads c) large acceleration and deceleration moments d) maximum 60 starts per minute (3600 per hour) e) up to 75% operating time per hour (45 minutes)		
Application:	Measurement and test machinery drives, CNC axes	Application:	Rotary tables with unfavourable cutting conditions. Trunion axes, CNC axes, milling spindles		
Series R2	a) random even load around gear b) absolutely smooth operation c) minimal acceleration and deceleration moments d) maximum 6 starts per minute (360 per hour) e) up to 25% operating time per hour (15 minutes)	Series R5	a) loads limited only to eccentric gear segment b) heavy, uneven shock loads c) largest acceleration and deceleration moments d) maximum 180 starts per minute (10,800 per hour) e) up to 100% operating time per hour (60 minutes)		
Application:	Index tables, circular feed drives and CNC axes for mainly smooth, controlled applications	Application:	Heavy milling and trunion drives, CNC axes with unfavourable conditions	Lubricant: <b>Synthetic oil</b>	
Series R3	a) random changing load on gear b) small shock loads c) large acceleration and deceleration moments d) maximum 20 starts per minute (1200 per hour) e) up to 50% operating time per hour (30 minutes)	Zahnradfertigung OTT	Blöhsteinstraße 20 D-72411 Bodelshausen www.zahnrad-ott.de	Tel. 07471 - 705 0 Fax. 07471 - 705 39 Email. Info@zahnrad-ott.de	
Application:	Index tables, rotary tables for circular milling with relatively favourable cutting conditions, CNC axes				



## Type G1 Gear Catalogue

Zahnradfertigung Ott  
Blöhsteinstraße 20  
D-72411 Bodelshausen

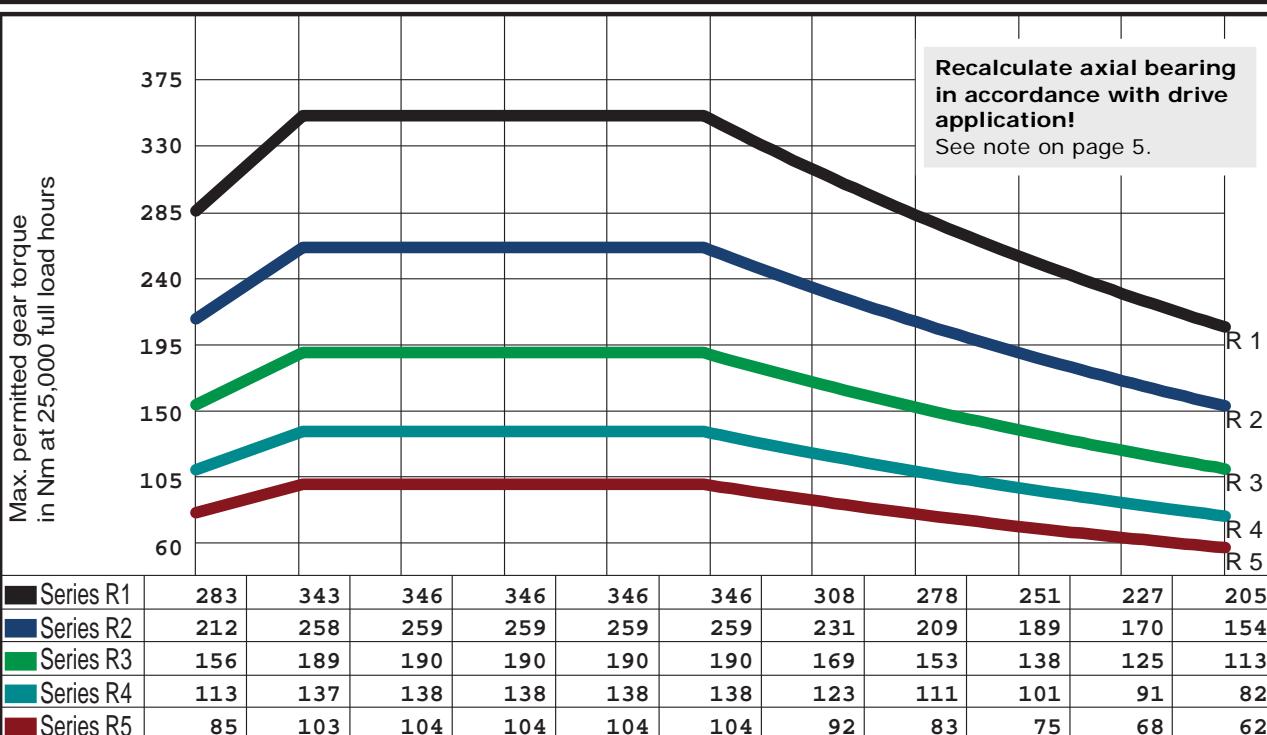
Centre distance	<b>82.00</b>	mm
Outer Ø worm	<b>42.80</b>	mm
Outer Ø gear	<b>130.00</b>	mm
No. starts, worm	<b>1</b>	
Worm direction	<b>right</b>	
No. teeth, gear	<b>90</b>	

Material, gear	<b>GZ-CuSn12Ni</b>
Material, worm	<b>31CrMoV9</b>
Pressure angle in NS	<b>10 °</b>
Back angle in NS	<b>20 °</b>
Calculated circle Ø	<b>39.38</b> mm
Lead angle at Bks	<b>1.9747</b> °

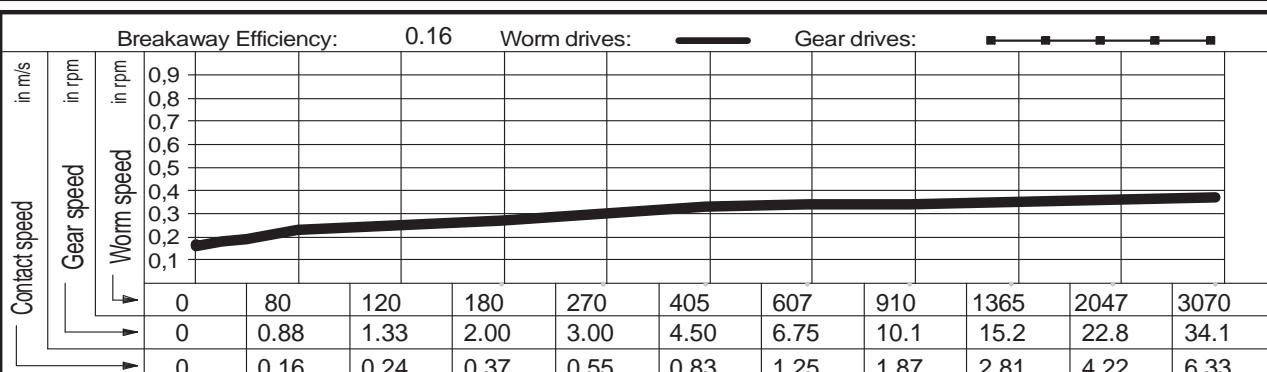
### Operating characteristics

#### Ott worm gear

**OTT no: 2735 SSR**



Recalculate axial bearing  
in accordance with drive  
application!  
See note on page 5.



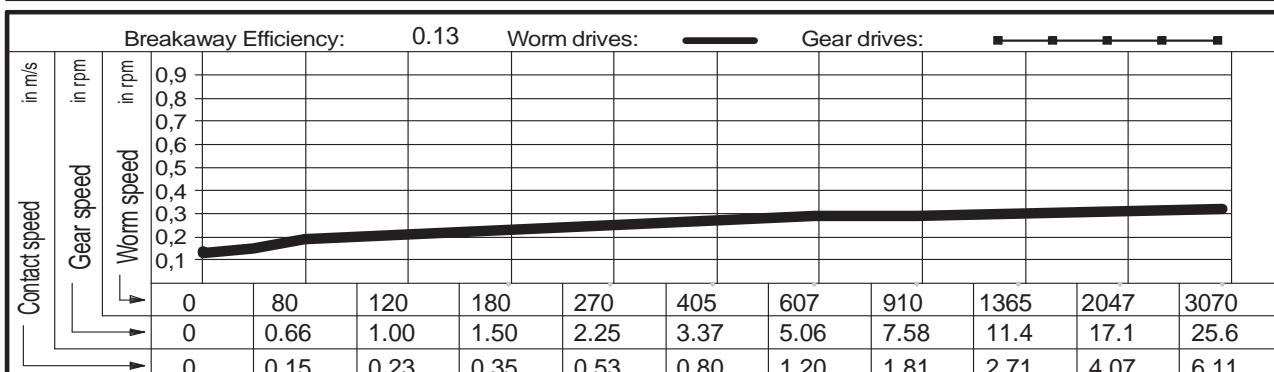
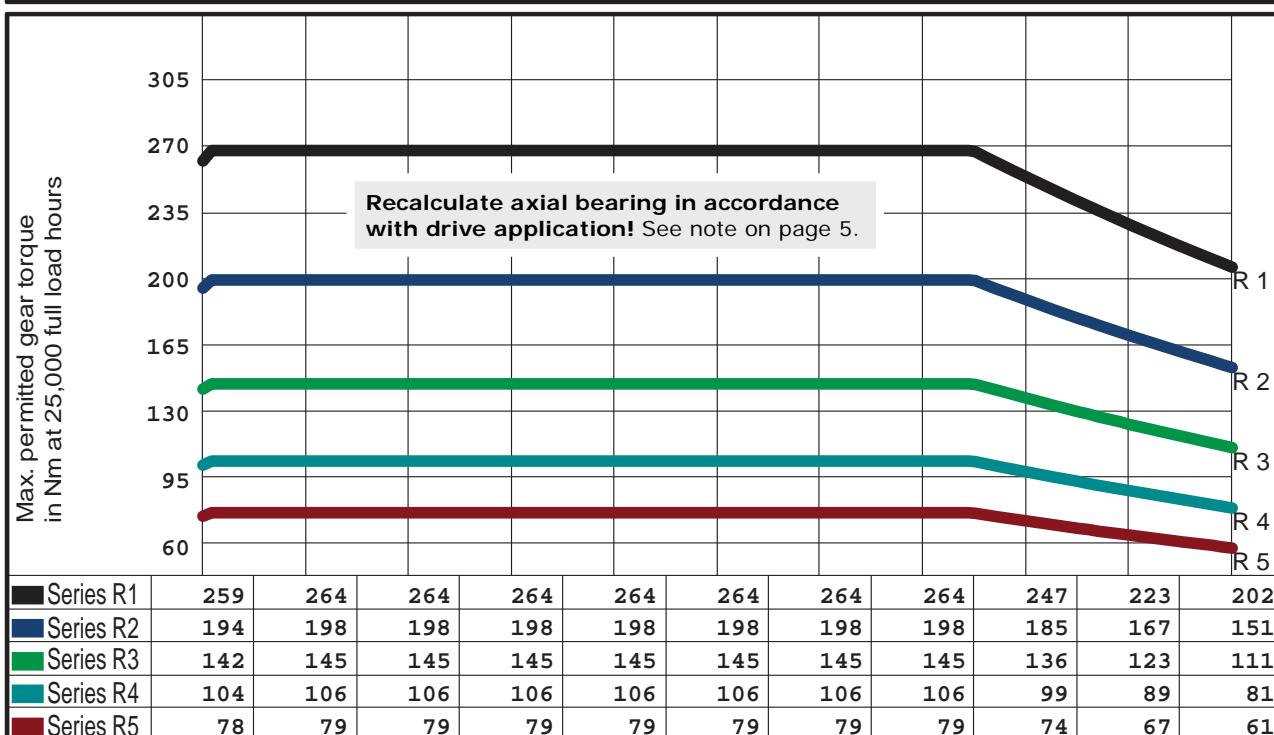
#### Gear selection by load type and application

Series R1	a) random even load around gear b) absolutely smooth operation c) minimal acceleration and deceleration moments d) maximum 1 start per minute (60 per hour) e) up to 10% operating time per hour (6 minutes)	Series R4	a) segmental varying load on gear b) with uneven shock loads c) large acceleration and deceleration moments d) maximum 60 starts per minute (3600 per hour) e) up to 75% operating time per hour (45 minutes)	Lubricant: <b>Synthetic oil</b>
Application:	Measurement and test machinery drives, CNC axes	Application:	Rotary tables with unfavourable cutting conditions, Trunion axes, CNC axes, milling spindles	
Series R2	a) random even load around gear b) absolutely smooth operation c) minimal acceleration and deceleration moments d) maximum 6 starts per minute (360 per hour) e) up to 25% operating time per hour (15 minutes)	Series R5	a) loads limited only to eccentric gear segment b) heavy, uneven shock loads c) largest acceleration and deceleration moments d) maximum 180 starts per minute (10,800 per hour) e) up to 100% operating time per hour (60 minutes)	
Application:	Index tables, circular feed drives and CNC axes for mainly smooth, controlled applications	Application:	Heavy milling and trunion drives, CNC axes with unfavourable conditions	
Series R3	a) random changing load on gear b) small shock loads c) large acceleration and deceleration moments d) maximum 20 starts per minute (1200 per hour) e) up to 50% operating time per hour (30 minutes)	Zahnradfertigung OTT	Blöhsteinstraße 20 D-72411 Bodelshausen www.zahnrad-ott.de	Tel. 07471 - 705 0 Fax. 07471 - 705 39 Email. Info@zahnrad-ott.de
Application:	Index tables, rotary tables for circular milling with relatively favourable cutting conditions, CNC axes			

Centre distance	<b>82.00</b> mm	Material, gear	<b>GZ-CuSn12Ni</b>	Operating characteristics	
Outer Ø worm	<b>40.80</b> mm	Material, worm	<b>31CrMoV9</b>		
Outer Ø gear	<b>130.00</b> mm	Pressure angle in NS	<b>10 °</b>		
No. starts, worm	<b>1</b>	Back angle in NS	<b>15 °</b>		
Worm direction	<b>right</b>	Calculated circle Ø	<b>38.04</b> mm		
No. teeth, gear	<b>120</b>	Lead angle at Bks	<b>1.5555</b> °		

## Ott worm gear

**OTT no: 4833 SSR**



Gear selection by load type and application					
Series R1	a) random even load around gear b) absolutely smooth operation c) minimal acceleration and deceleration moments d) maximum 1 start per minute (60 per hour) e) up to 10% operating time per hour (6 minutes)	Series R4	a) segmental varying load on gear b) with uneven shock loads c) large acceleration and deceleration moments d) maximum 60 starts per minute (3600 per hour) e) up to 75% operating time per hour (45 minutes)		
Application:	Measurement and test machinery drives, CNC axes	Application:	Rotary tables with unfavourable cutting conditions. Trunion axes, CNC axes, milling spindles		
Series R2	a) random even load around gear b) absolutely smooth operation c) minimal acceleration and deceleration moments d) maximum 6 starts per minute (360 per hour) e) up to 25% operating time per hour (15 minutes)	Series R5	a) loads limited only to eccentric gear segment b) heavy, uneven shock loads c) largest acceleration and deceleration moments d) maximum 180 starts per minute (10,800 per hour) e) up to 100% operating time per hour (60 minutes)		
Application:	Index tables, circular feed drives and CNC axes for mainly smooth, controlled applications	Application:	Heavy milling and trunion drives, CNC axes with unfavourable conditions	Lubricant:	Synthetic oil
Series R3	a) random changing load on gear b) small shock loads c) large acceleration and deceleration moments d) maximum 20 starts per minute (1200 per hour) e) up to 50% operating time per hour (30 minutes)	Zahnradfertigung OTT	Blöhsteinstraße 20 D-72411 Bodelshausen <a href="http://www.zahnrad-ott.de">www.zahnrad-ott.de</a>	Tel. 07471 - 705 0 Fax. 07471 - 705 39 Email. <a href="mailto:Info@zahnrad-ott.de">Info@zahnrad-ott.de</a>	
Application:	Index tables, rotary tables for circular milling with relatively favourable cutting conditions, CNC axes				



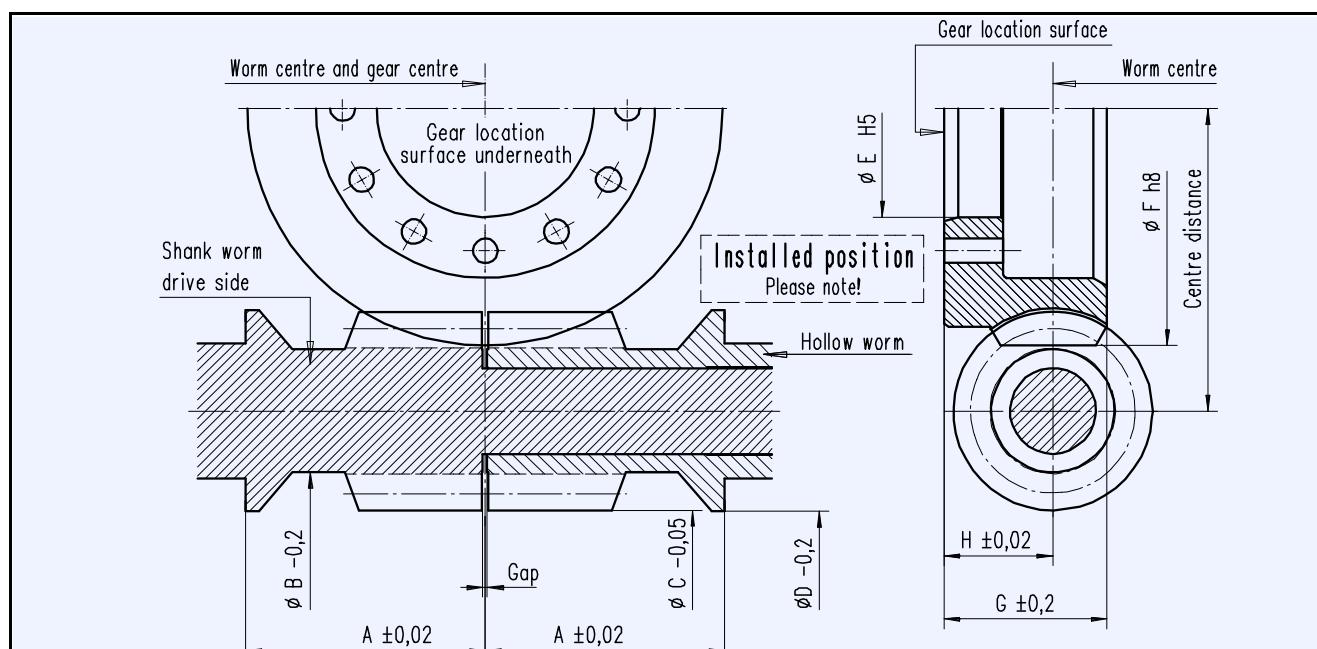
## Type G1 Gear Catalogue

Zahnradfertigung Ott  
Blöhsteinstraße 20  
D-72411 Bodelshausen

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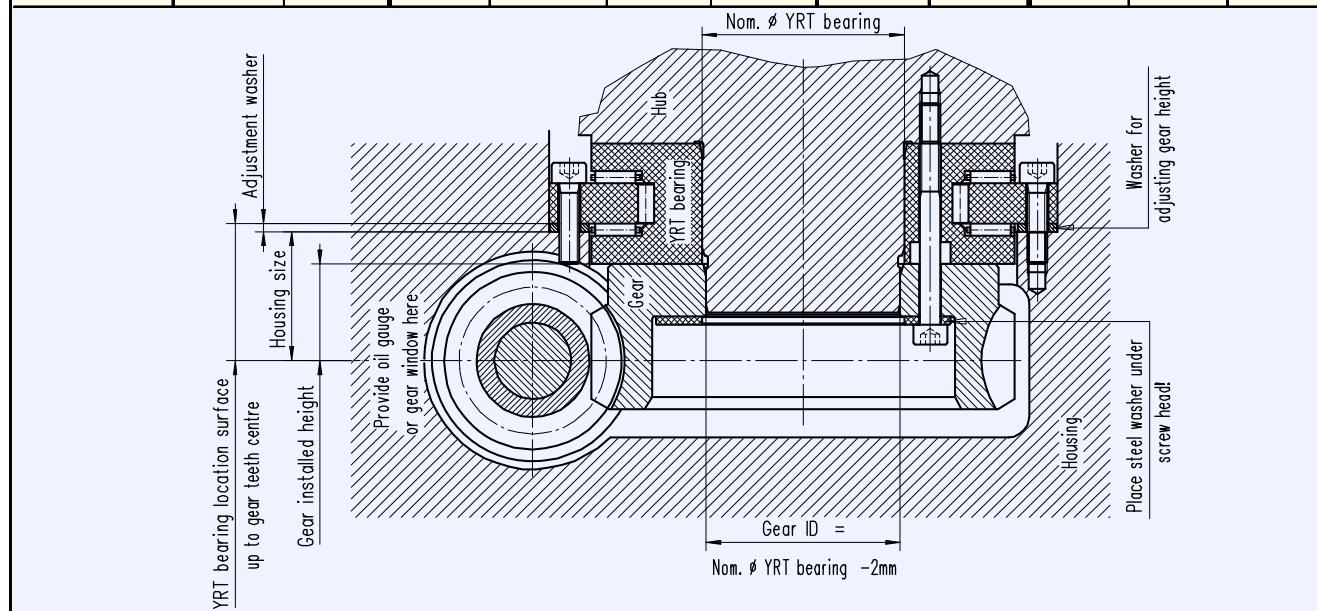
## OTT worm gears - centre distance 96 mm

### Main dimensions



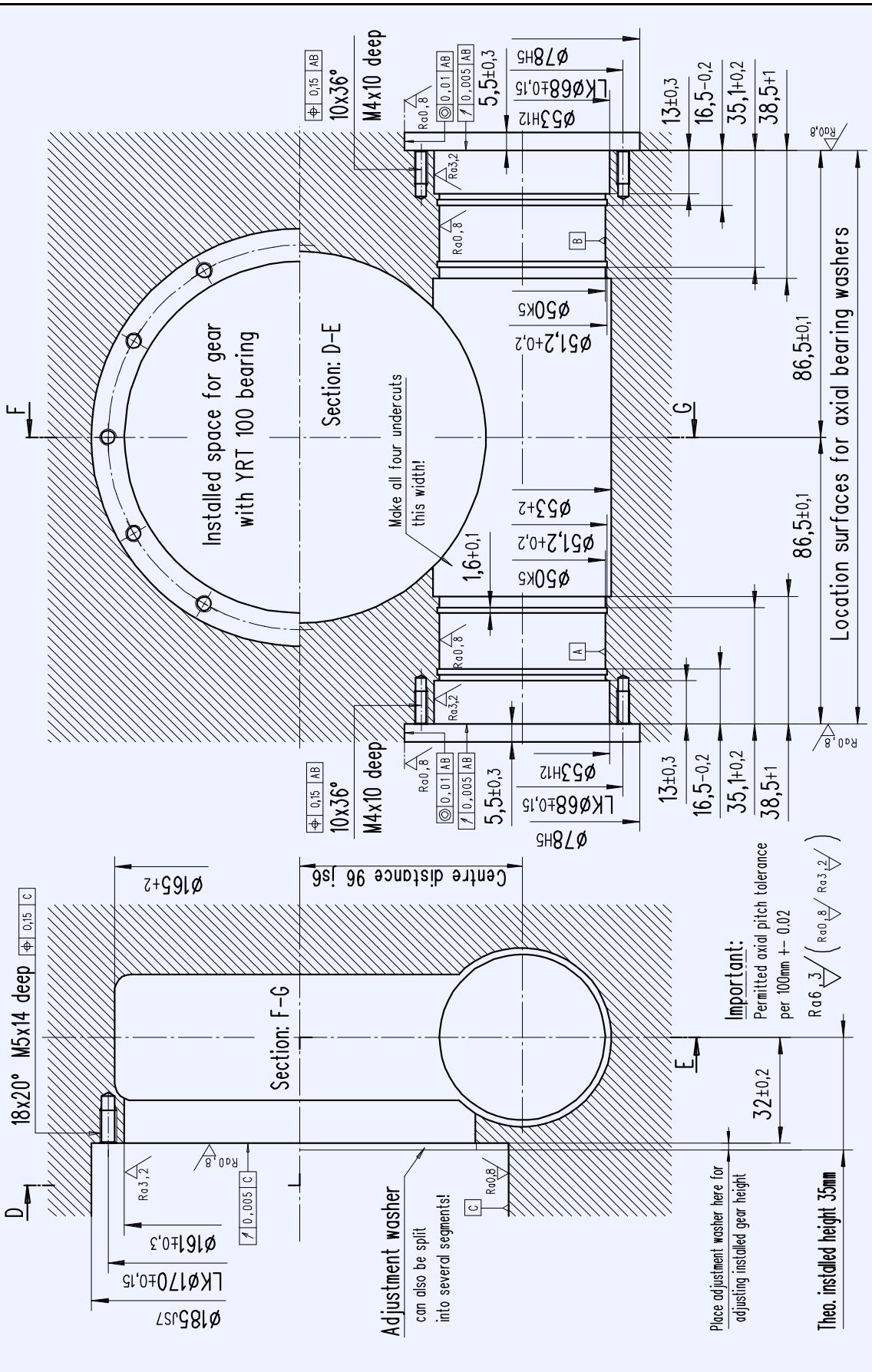
OTT gear no.	Ratio		Worm				YRT gear bearing	Gear			
	No. starts Z1	No. teeth Z2	Distance A	Undercut Ø B	Head Ø C	Collar Ø D		Internal Ø E	Head Ø F	Width G	Height H
4837 SSR	3	90	53	30,8	42,8	44,6	100	98	160	37	22
4856 SSR	2	72		30,5	44,6						
4803 SSR	2	90		30,8	42,6						
4848 SSR	1	72		30,5	44,6						
4802 SSR	1	90		30,8	42,6						
4823 SSR	1	120		31,1	40,6						

See comments page 5!



**Gear housing - required internal contour**

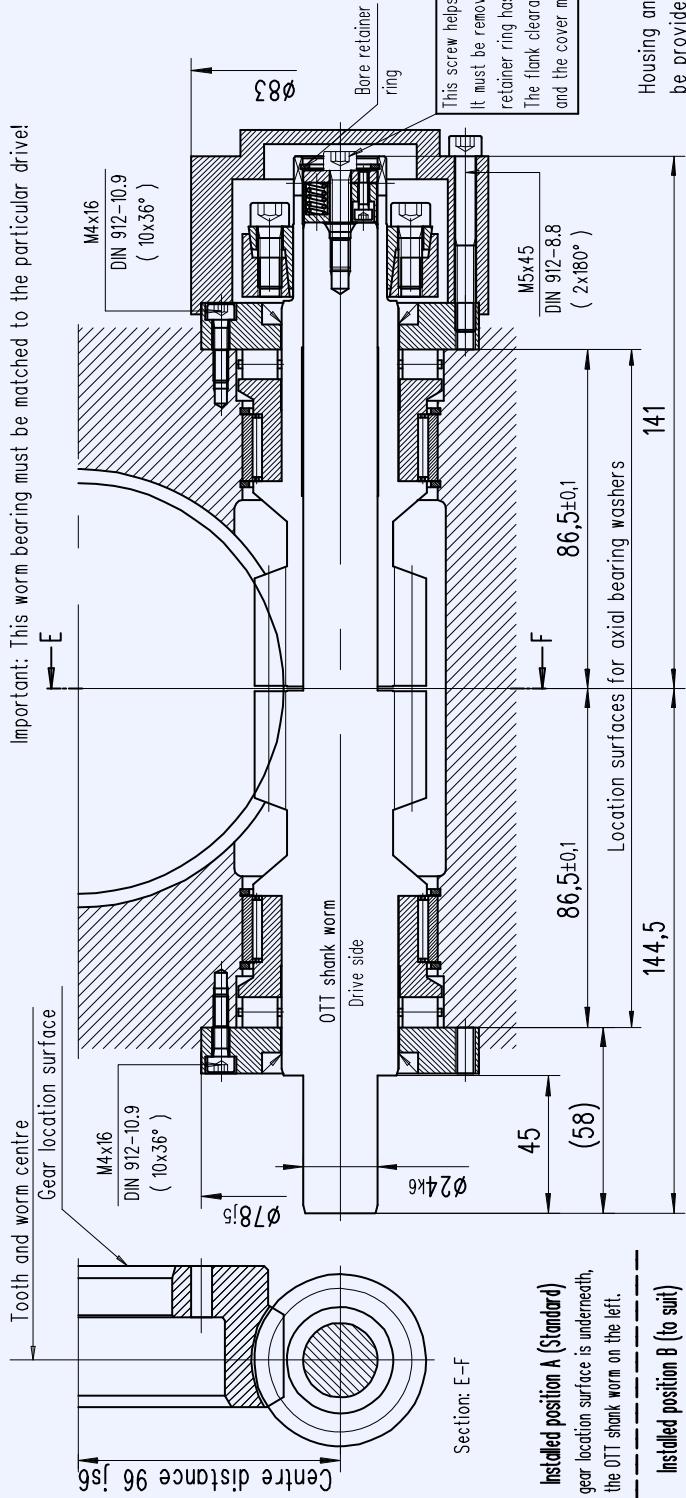
**Required internal contour of gear housing for centre distance 96 mm**



## Worm bearings

### Worm bearing for centre distance 96 mm

Important: This worm bearing must be matched to the particular drive!

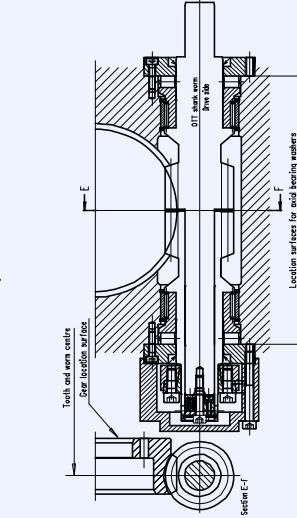


**Installed position A (Standard)**

The gear location surface is underneath, the OTT shank worm on the left.

**Installed position B (to suit)**

The gear location surface is underneath, the OTT shank worm on the right.



<b>Bearing parts per gear</b>			
OTT no.	Worm gear	Shank worm	Hollow worm
4837 SSR	T00428-G-RAO	T00279-G-SSC	T00280-G-HSC
4856 SSR	T00429-G-RAO	T00281-G-SSC	T00282-G-HSC
4803 SSR	T00430-G-RAO	T00283-G-SSC	T00284-G-HSC
4848 SSR	T00431-G-RAO	T00285-G-SSC	T00286-G-HSC
4802 SSR	T00432-G-RAO	T00287-G-SSC	T00288-G-HSC
4823 SSR	T00433-G-RAO	T00289-G-SSC	T00290-G-HSC

Q'ty Name Typ/Dwg no.

2 Axial cylinder roller bearing K812 06 TV

2 Radial needle bearing RNAO 40x50x17

2 Shaft seal 30x40x5

1 Shrink disc HSD 30-22

4 Circlip SB 50

20 Cylinder bolt DIN 912 M4x16 - 10,9

2 Cylinder bolt DIN 912 M5x45 - 8,8

1 Retainer ring DIN 472 M5x25 - 8,8

2 Bearing sleeve T00220-G-LHÜ

2 Axial bearing washer T00232-G-LDX

1 Cover T00215-G-ADH

1 Thrust piece B00008-G-DST

Order using ..... set of OTT worm gears

- Gearset incl. thrust piece without bearing parts
- Gearset incl. all bearing parts

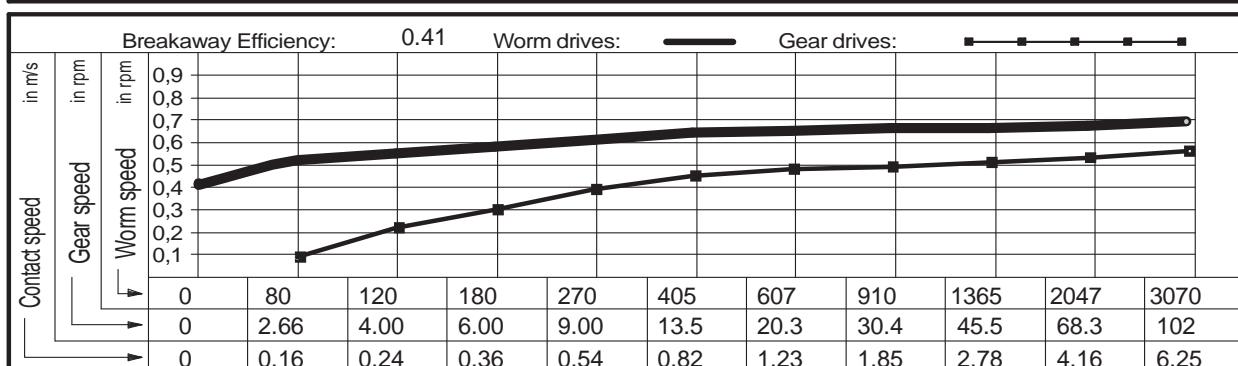
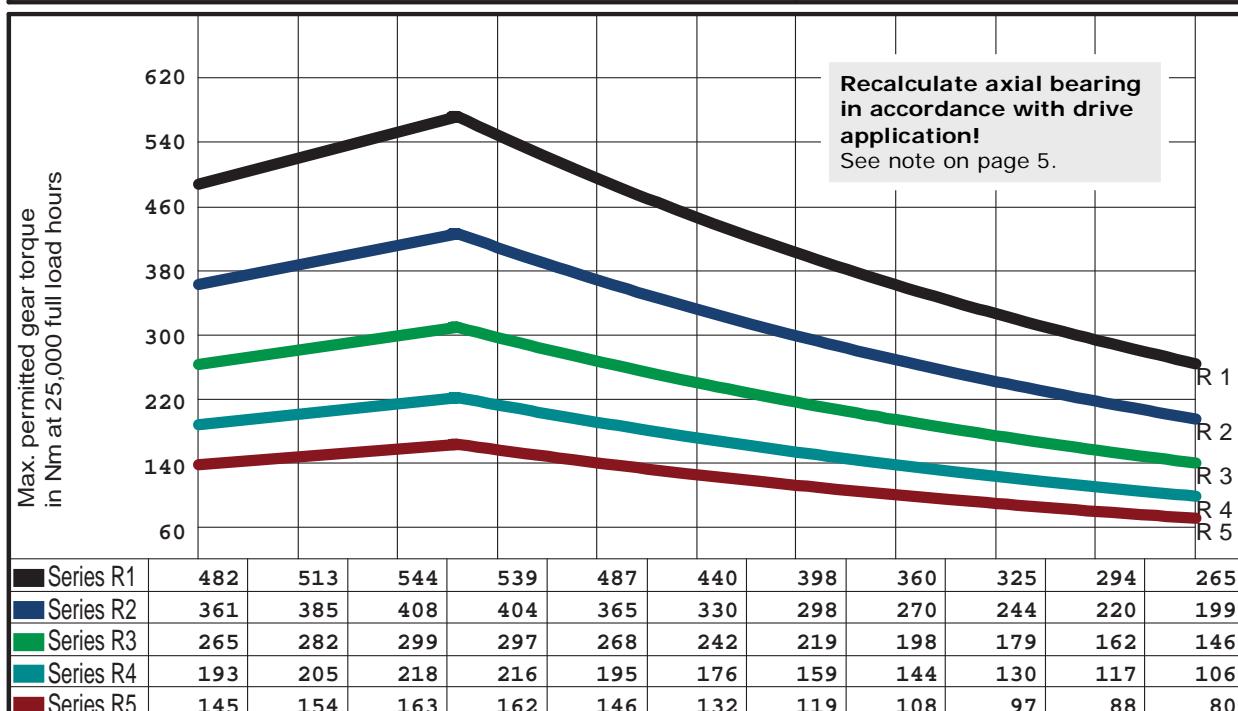


## Type G1 Gear Catalogue

Zahnradfertigung Ott  
Blöhsteinstraße 20  
D-72411 Bodelshausen

### Operational characteristics

Centre distance	96.00	mm	Material, gear	GZ-CuSn12Ni	Operating characteristics	
Outer Ø worm	42.80	mm	Material, worm	31CrMoV9	Ott worm gear	
Outer Ø gear	160.00	mm	Pressure angle in NS	10 °	OTT no: 4837 SSR	
No. starts, worm	3		Back angle in NS	15 °		
Worm direction	right		Calculated circle Ø	38.58 mm		
No. teeth, gear	90		Lead angle at Bks	7.4054 °		



Gear selection by load type and application					
Series R1	a) random even load around gear b) absolutely smooth operation c) minimal acceleration and deceleration moments d) maximum 1 start per minute (60 per hour) e) up to 10% operating time per hour (6 minutes)	Series R4	a) segmental varying load on gear b) with uneven shock loads c) large acceleration and deceleration moments d) maximum 60 starts per minute (3600 per hour) e) up to 75% operating time per hour (45 minutes)	Application: Measurement and test machinery drives, CNC axes	Lubricant: Synthetic oil
Series R2	a) random even load around gear b) absolutely smooth operation c) minimal acceleration and deceleration moments d) maximum 6 starts per minute (360 per hour) e) up to 25% operating time per hour (15 minutes)	Series R5	a) loads limited only to eccentric gear segment b) heavy, uneven shock loads c) largest acceleration and deceleration moments d) maximum 180 starts per minute (10,800 per hour) e) up to 100% operating time per hour (60 minutes)		
Application:	Index tables, circular feed drives and CNC axes for mainly smooth, controlled applications	Application:	Rotary tables with unfavourable cutting conditions. Trunion axes, CNC axes, milling spindles		
Series R3	a) random changing load on gear b) small shock loads c) large acceleration and deceleration moments d) maximum 20 starts per minute (1200 per hour) e) up to 50% operating time per hour (30 minutes)	Zahnradfertigung OTT	Blöhsteinstraße 20 D-72411 Bodelshausen www.zahnrad-ott.de	Tel. 07471 - 705 0 Fax. 07471 - 705 39 Email. Info@zahnrad-ott.de	
Application:	Index tables, rotary tables for circular milling with relatively favourable cutting conditions, CNC axes				

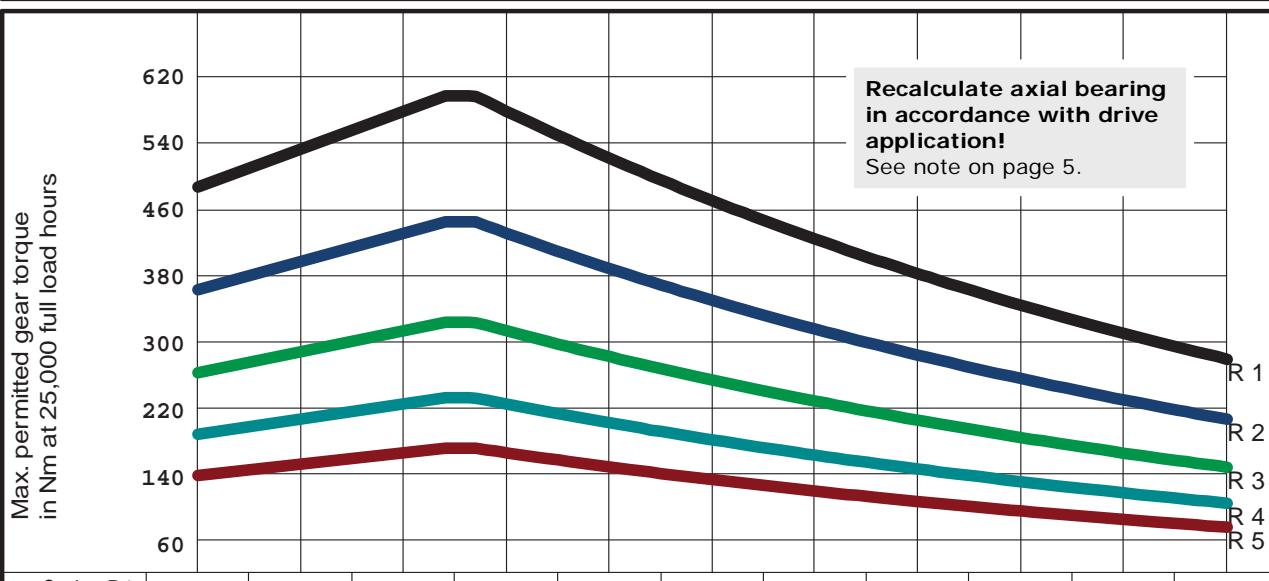
Centre distance	<b>96.00</b>	mm	Material, gear	<b>GZ-CuSn12Ni</b>
Outer Ø worm	<b>44.60</b>	mm	Material, worm	<b>31CrMoV9</b>
Outer Ø gear	<b>160.00</b>	mm	Pressure angle in NS	<b>10 °</b>
No. starts, worm	<b>2</b>		Back angle in NS	<b>20 °</b>
Worm direction		right	Calculated circle Ø	<b>39.77 mm</b>
No. teeth, gear	<b>72</b>		Lead angle at Bks	<b>5.9382 °</b>

**GZ-CuSn12Ni**  
**31CrMoV9**

## Operating characteristics

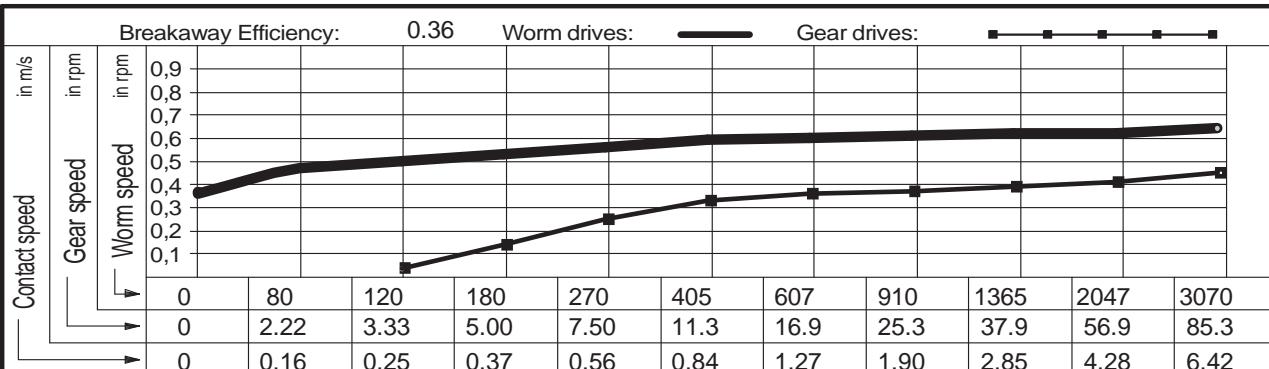
### Ott worm gear

**OTT no: 4856 SSR**



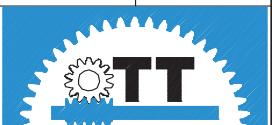
Recalculate axial bearing  
in accordance with drive  
application!  
See note on page 5.

	Series R1	525	569	564	509	460	416	376	340	307	277	
	Series R2	361	394	427	423	382	345	312	282	255	230	208
	Series R3	265	289	313	310	280	253	229	207	187	169	153
	Series R4	192	210	228	225	204	184	166	150	136	123	111
	Series R5	144	158	171	169	153	138	125	113	102	92	83



Gear selection by load type and application												
Series R1	a) random even load around gear b) absolutely smooth operation c) minimal acceleration and deceleration moments d) maximum 1 start per minute (60 per hour) e) up to 10% operating time per hour (6 minutes)					Series R4	a) segmental varying load on gear b) with uneven shock loads c) large acceleration and deceleration moments d) maximum 60 starts per minute (3600 per hour) e) up to 75% operating time per hour (45 minutes)					
Application:	Measurement and test machinery drives, CNC axes					Application:	Rotary tables with unfavourable cutting conditions. Trunion axes, CNC axes, milling spindles					
Series R2	a) random even load around gear b) absolutely smooth operation c) minimal acceleration and deceleration moments d) maximum 6 starts per minute (360 per hour) e) up to 25% operating time per hour (15 minutes)					Series R5	a) loads limited only to eccentric gear segment b) heavy, uneven shock loads c) largest acceleration and deceleration moments d) maximum 180 starts per minute (10,800 per hour) e) up to 100% operating time per hour (60 minutes)					
Application:	Index tables, circular feed drives and CNC axes for mainly smooth, controlled applications					Application:	Heavy milling and trunion drives, CNC axes with unfavourable conditions					
Series R3	a) random changing load on gear b) small shock loads c) large acceleration and deceleration moments d) maximum 20 starts per minute (1200 per hour) e) up to 50% operating time per hour (30 minutes)					Zahnradfertigung OTT						
Application:	Index tables, rotary tables for circular milling with relatively favourable cutting conditions, CNC axes					Blöhsteinstraße 20	Tel.	07471 - 705 0				
						D-72411 Bodelshausen	Fax.	07471 - 705 39				
						www.zahnrad-ott.de	Email.	Info@zahnrad-ott.de				

Lubricant:  
Synthetic oil





## Type G1 Gear Catalogue

Zahnradfertigung Ott  
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D-72411 Bodelshausen

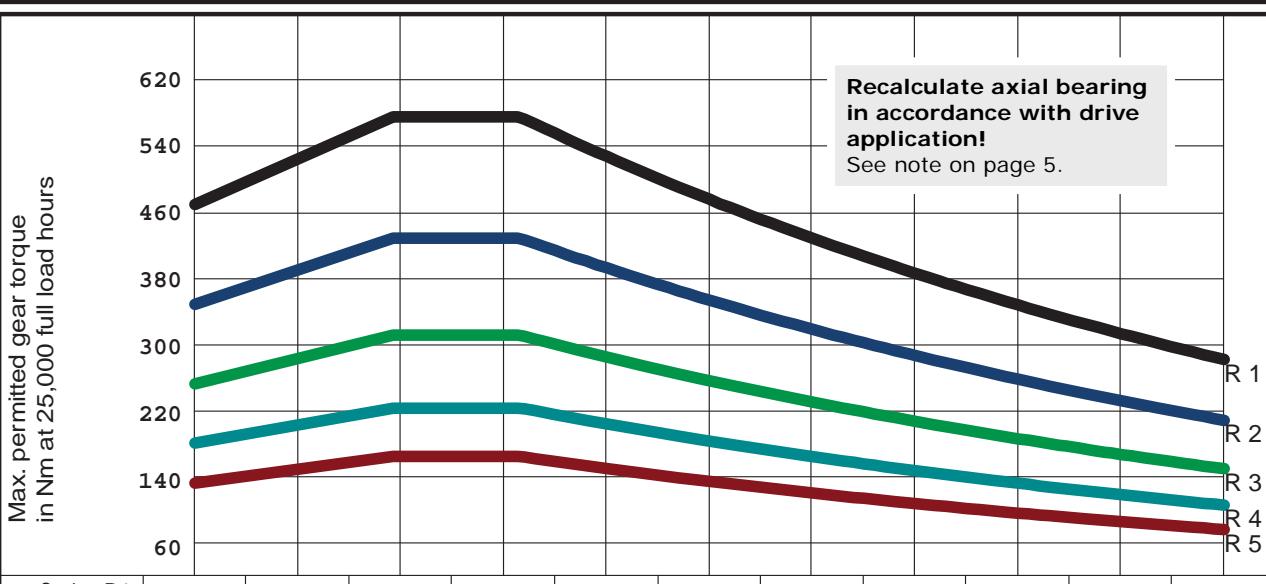
Centre distance	<b>96.00</b>	mm
Outer Ø worm	<b>42.60</b>	mm
Outer Ø gear	<b>160.00</b>	mm
No. starts, worm	<b>2</b>	
Worm direction	<b>right</b>	
No. teeth, gear	<b>90</b>	

Material, gear	<b>GZ-CuSn12Ni</b>
Material, worm	<b>31CrMoV9</b>
Pressure angle in NS	<b>10 °</b>
Back angle in NS	<b>15 °</b>
Calculated circle Ø	<b>38.43</b> mm
Lead angle at Bks	<b>4.9774</b> °

### Operating characteristics

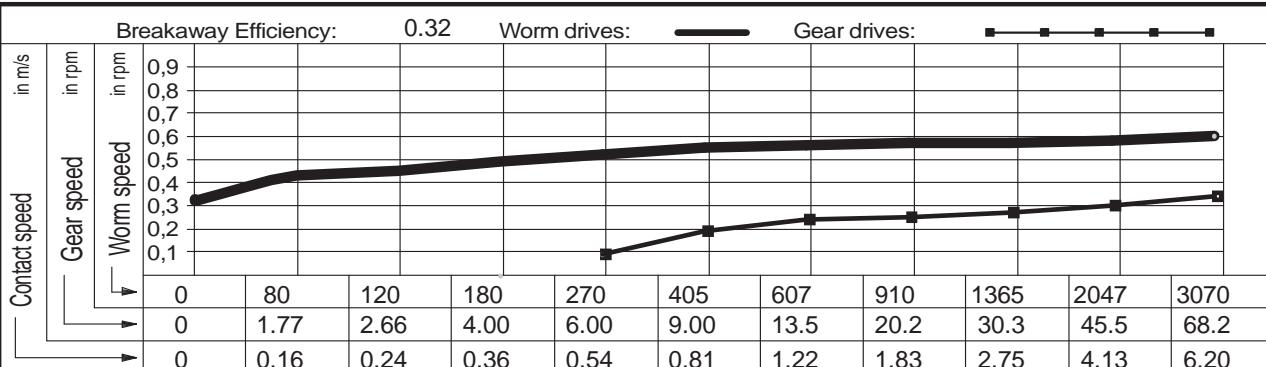
#### Ott worm gear

**OTT no: 4803 SSR**



Recalculate axial bearing  
in accordance with drive  
application!  
See note on page 5.

	Series R1	464	517	566	566	519	469	424	383	346	313	283
■ Series R2		348	388	425	425	389	352	318	287	260	235	212
■ Series R3		255	284	311	311	286	258	233	211	190	172	156
■ Series R4		186	207	227	227	208	188	170	153	139	125	113
■ Series R5		139	155	170	170	156	141	127	115	104	94	85



Gear selection by load type and application												
Series R1	a) random even load around gear b) absolutely smooth operation c) minimal acceleration and deceleration moments d) maximum 1 start per minute (60 per hour) e) up to 10% operating time per hour (6 minutes)					Series R4	a) segmental varying load on gear b) with uneven shock loads c) large acceleration and deceleration moments d) maximum 60 starts per minute (3600 per hour) e) up to 75% operating time per hour (45 minutes)					
Application:	Measurement and test machinery drives, CNC axes					Application:	Rotary tables with unfavourable cutting conditions. Trunion axes, CNC axes, milling spindles					
Series R2	a) random even load around gear b) absolutely smooth operation c) minimal acceleration and deceleration moments d) maximum 6 starts per minute (360 per hour) e) up to 25% operating time per hour (15 minutes)					Series R5	a) loads limited only to eccentric gear segment b) heavy, uneven shock loads c) largest acceleration and deceleration moments d) maximum 180 starts per minute (10,800 per hour) e) up to 100% operating time per hour (60 minutes)					
Application:	Index tables, circular feed drives and CNC axes for mainly smooth, controlled applications					Application:	Heavy milling and trunion drives, CNC axes with unfavourable conditions					
Series R3	a) random changing load on gear b) small shock loads c) large acceleration and deceleration moments d) maximum 20 starts per minute (1200 per hour) e) up to 50% operating time per hour (30 minutes)					Zahnradfertigung OTT	Blöhsteinstraße 20 D-72411 Bodelshausen www.zahnrad-ott.de					
Application:	Index tables, rotary tables for circular milling with relatively favourable cutting conditions, CNC axes						Tel. 07471 - 705 0 Fax. 07471 - 705 39 Email. Info@zahnrad-ott.de					

Lubricant:  
Synthetic oil

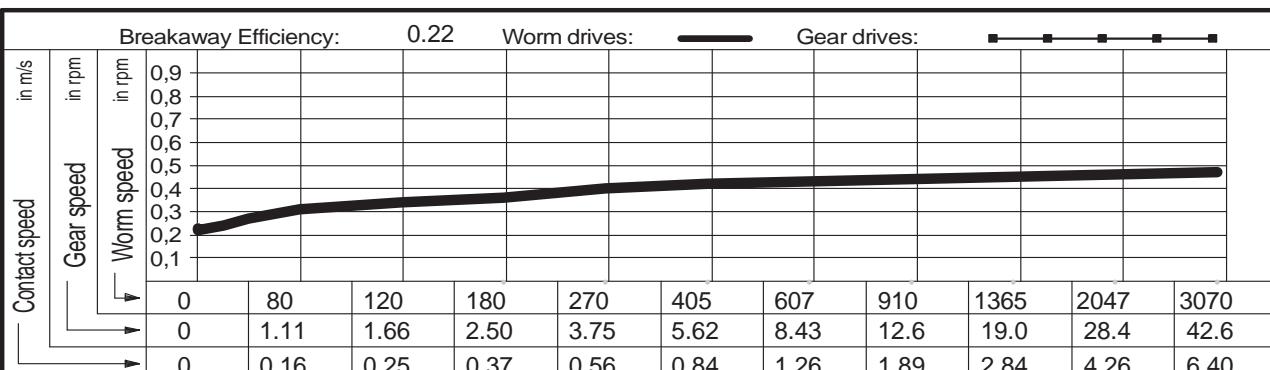
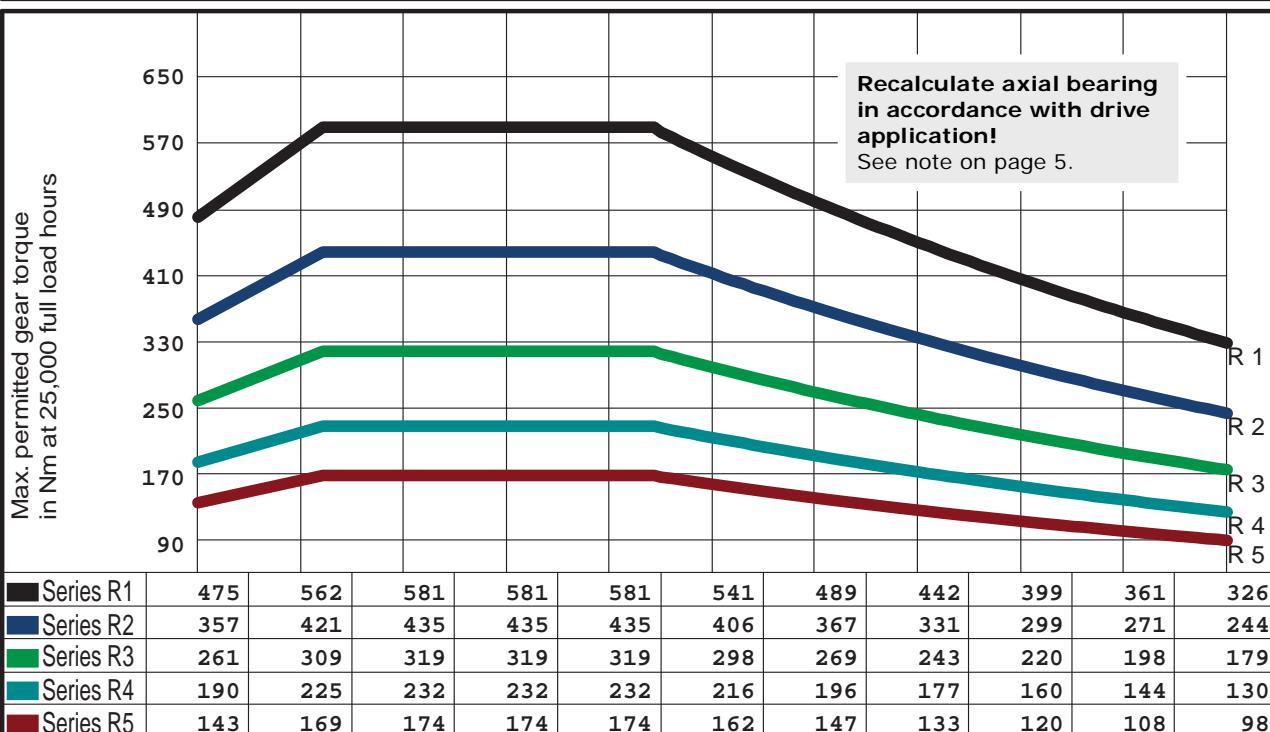
Centre distance	<b>96.00</b>	mm
Outer Ø worm	<b>44.60</b>	mm
Outer Ø gear	<b>160.00</b>	mm
No. starts, worm	<b>1</b>	
Worm direction	<b>right</b>	
No. teeth, gear	<b>72</b>	

Material, gear	<b>GZ-CuSn12Ni</b>
Material, worm	<b>31CrMoV9</b>
Pressure angle in NS	<b>10 °</b>
Back angle in NS	<b>20 °</b>
Calculated circle Ø	<b>39.78</b> mm
Lead angle at Bks	<b>2.9765</b> °

## Operating characteristics

Ott worm gear

**OTT no: 4848 SSR**



### Gear selection by load type and application

Series R1	a) random even load around gear b) absolutely smooth operation c) minimal acceleration and deceleration moments d) maximum 1 start per minute (60 per hour) e) up to 10% operating time per hour (6 minutes)	Series R4	a) segmental varying load on gear b) with uneven shock loads c) large acceleration and deceleration moments d) maximum 60 starts per minute (3600 per hour) e) up to 75% operating time per hour (45 minutes)	Lubricant: <b>Synthetic oil</b>
Application:	Measurement and test machinery drives, CNC axes	Application:	Rotary tables with unfavourable cutting conditions. Trunion axes, CNC axes, milling spindles	
Series R2	a) random even load around gear b) absolutely smooth operation c) minimal acceleration and deceleration moments d) maximum 6 starts per minute (360 per hour) e) up to 25% operating time per hour (15 minutes)	Series R5	a) loads limited only to eccentric gear segment b) heavy, uneven shock loads c) largest acceleration and deceleration moments d) maximum 180 starts per minute (10,800 per hour) e) up to 100% operating time per hour (60 minutes)	
Application:	Index tables, circular feed drives and CNC axes for mainly smooth, controlled applications	Application:	Heavy milling and trunion drives, CNC axes with unfavourable conditions	
Series R3	a) random changing load on gear b) small shock loads c) large acceleration and deceleration moments d) maximum 20 starts per minute (1200 per hour) e) up to 50% operating time per hour (30 minutes)	Zahnradfertigung OTT	Blöhsteinstraße 20 D-72411 Bodelshausen www.zahnrad-ott.de	Tel. 07471 - 705 0 Fax. 07471 - 705 39 Email. Info@zahnrad-ott.de
Application:	Index tables, rotary tables for circular milling with relatively favourable cutting conditions, CNC axes			



## Type G1 Gear Catalogue

Zahnradfertigung Ott  
Blöhsteinstraße 20  
D-72411 Bodelshausen

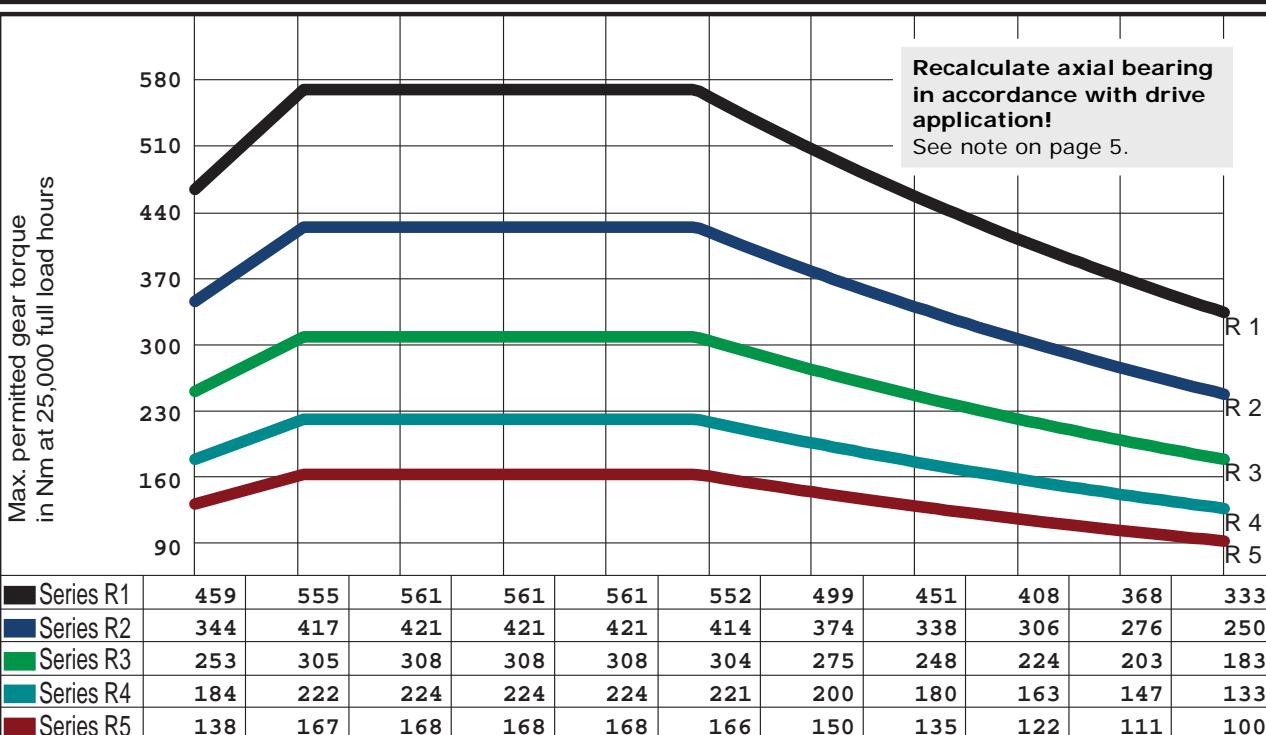
Centre distance	<b>96.00</b>	mm
Outer Ø worm	<b>42.60</b>	mm
Outer Ø gear	<b>160.00</b>	mm
No. starts, worm	<b>1</b>	
Worm direction	<b>right</b>	
No. teeth, gear	<b>90</b>	

Material, gear	<b>GZ-CuSn12Ni</b>
Material, worm	<b>31CrMoV9</b>
Pressure angle in NS	<b>10 °</b>
Back angle in NS	<b>20 °</b>
Calculated circle Ø	<b>38.44</b> mm
Lead angle at Bks	<b>2.4931</b> °

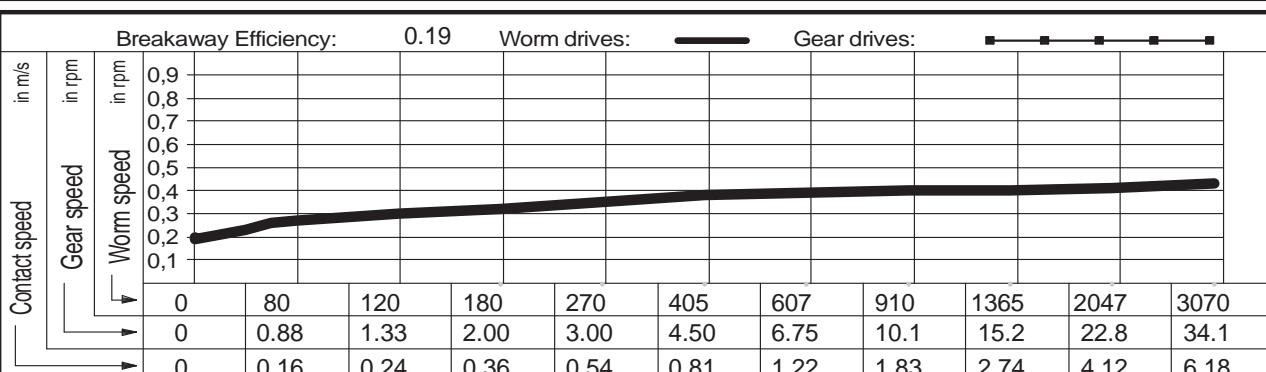
### Operating characteristics

#### Ott worm gear

**OTT no: 4802 SSR**



Recalculate axial bearing  
in accordance with drive  
application!  
See note on page 5.

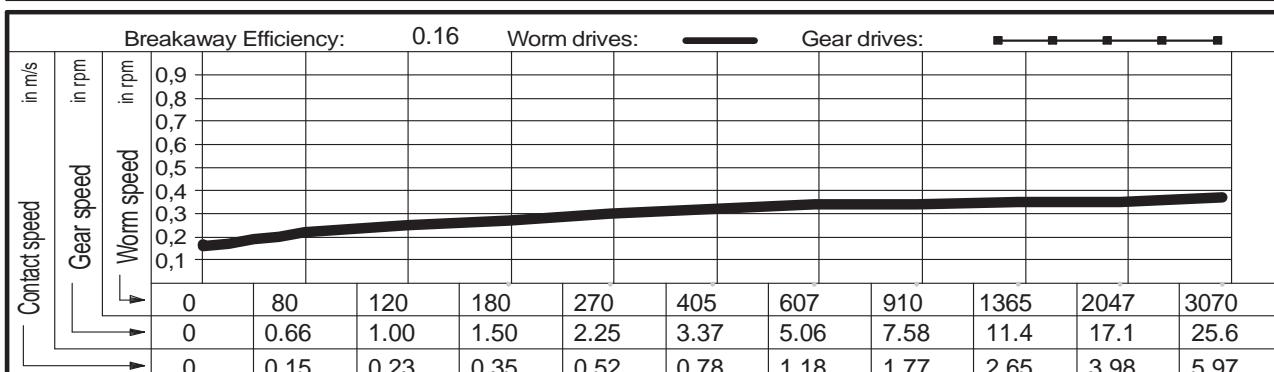
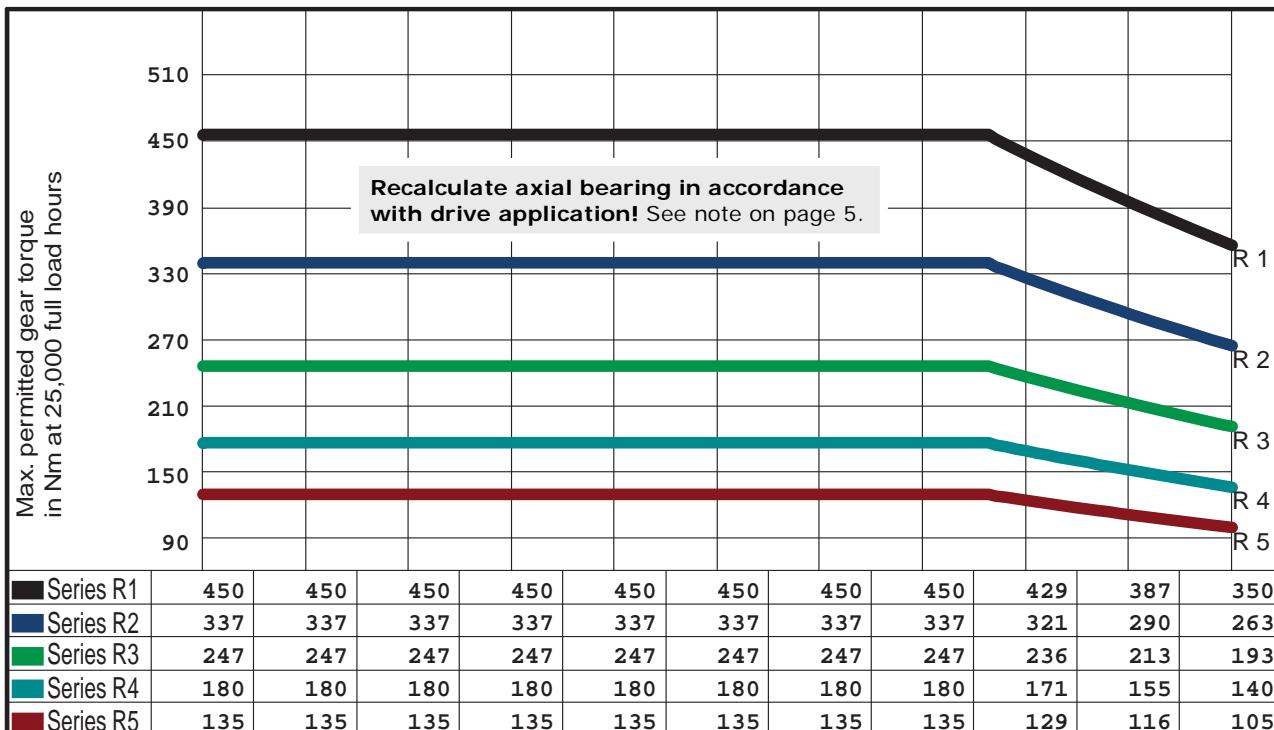


#### Gear selection by load type and application

Series R1	a) random even load around gear b) absolutely smooth operation c) minimal acceleration and deceleration moments d) maximum 1 start per minute (60 per hour) e) up to 10% operating time per hour (6 minutes)	Series R4	a) segmental varying load on gear b) with uneven shock loads c) large acceleration and deceleration moments d) maximum 60 starts per minute (3600 per hour) e) up to 75% operating time per hour (45 minutes)	Lubricant: Synthetic oil
Application:	Measurement and test machinery drives, CNC axes	Application:	Rotary tables with unfavourable cutting conditions, Trunion axes, CNC axes, milling spindles	
Series R2	a) random even load around gear b) absolutely smooth operation c) minimal acceleration and deceleration moments d) maximum 6 starts per minute (360 per hour) e) up to 25% operating time per hour (15 minutes)	Series R5	a) loads limited only to eccentric gear segment b) heavy, uneven shock loads c) largest acceleration and deceleration moments d) maximum 180 starts per minute (10,800 per hour) e) up to 100% operating time per hour (60 minutes)	
Application:	Index tables, circular feed drives and CNC axes for mainly smooth, controlled applications	Application:	Heavy milling and trunion drives, CNC axes with unfavourable conditions	
Series R3	a) random changing load on gear b) small shock loads c) large acceleration and deceleration moments d) maximum 20 starts per minute (1200 per hour) e) up to 50% operating time per hour (30 minutes)	Zahnradfertigung OTT	Blöhsteinstraße 20 D-72411 Bodelshausen www.zahnrad-ott.de	Tel. 07471 - 705 0 Fax. 07471 - 705 39 Email. Info@zahnrad-ott.de
Application:	Index tables, rotary tables for circular milling with relatively favourable cutting conditions, CNC axes			

Centre distance	<b>96.00</b>	mm	Material, gear	<b>GZ-CuSn12Ni</b>
Outer Ø worm	<b>40.60</b>	mm	Material, worm	<b>31CrMoV9</b>
Outer Ø gear	<b>160.00</b>	mm	Pressure angle in NS	<b>10 °</b>
No. starts, worm	<b>1</b>		Back angle in NS	<b>15 °</b>
Worm direction	<b>right</b>		Calculated circle Ø	<b>37.14 mm</b>
No. teeth, gear	<b>120</b>		Lead angle at Bks	<b>1.9577 °</b>

Material, gear	<b>GZ-CuSn12Ni</b>	Operating characteristics
Material, worm	<b>31CrMoV9</b>	Ott worm gear
Pressure angle in NS	<b>10 °</b>	<b>OTT no: 4823 SSR</b>
Back angle in NS	<b>15 °</b>	
Calculated circle Ø	<b>37.14 mm</b>	
Lead angle at Bks	<b>1.9577 °</b>	



Gear selection by load type and application				
Series R1	a) random even load around gear b) absolutely smooth operation c) minimal acceleration and deceleration moments d) maximum 1 start per minute (60 per hour) e) up to 10% operating time per hour (6 minutes)	Series R4	a) segmental varying load on gear b) with uneven shock loads c) large acceleration and deceleration moments d) maximum 60 starts per minute (3600 per hour) e) up to 75% operating time per hour (45 minutes)	Lubricant: <b>Synthetic oil</b>
Application:	Measurement and test machinery drives, CNC axes	Application:	Rotary tables with unfavourable cutting conditions. Trunion axes, CNC axes, milling spindles	
Series R2	a) random even load around gear b) absolutely smooth operation c) minimal acceleration and deceleration moments d) maximum 6 starts per minute (360 per hour) e) up to 25% operating time per hour (15 minutes)	Series R5	a) loads limited only to eccentric gear segment b) heavy, uneven shock loads c) largest acceleration and deceleration moments d) maximum 180 starts per minute (10,800 per hour) e) up to 100% operating time per hour (60 minutes)	
Application:	Index tables, circular feed drives and CNC axes for mainly smooth, controlled applications	Application:	Heavy milling and trunion drives, CNC axes with unfavourable conditions	
Series R3	a) random changing load on gear b) small shock loads c) large acceleration and deceleration moments d) maximum 20 starts per minute (1200 per hour) e) up to 50% operating time per hour (30 minutes)	Zahnradfertigung OTT	Blöhsteinstraße 20 D-72411 Bodelshausen www.zahnrad-ott.de	
Application:	Index tables, rotary tables for circular milling with relatively favourable cutting conditions, CNC axes			





## Type G1 Gear Catalogue

Zahnradfertigung Ott  
Blöhsteinstraße 20  
D-72411 Bodelshausen

## OTT worm gears - centre distance 110 mm

### Main dimensions

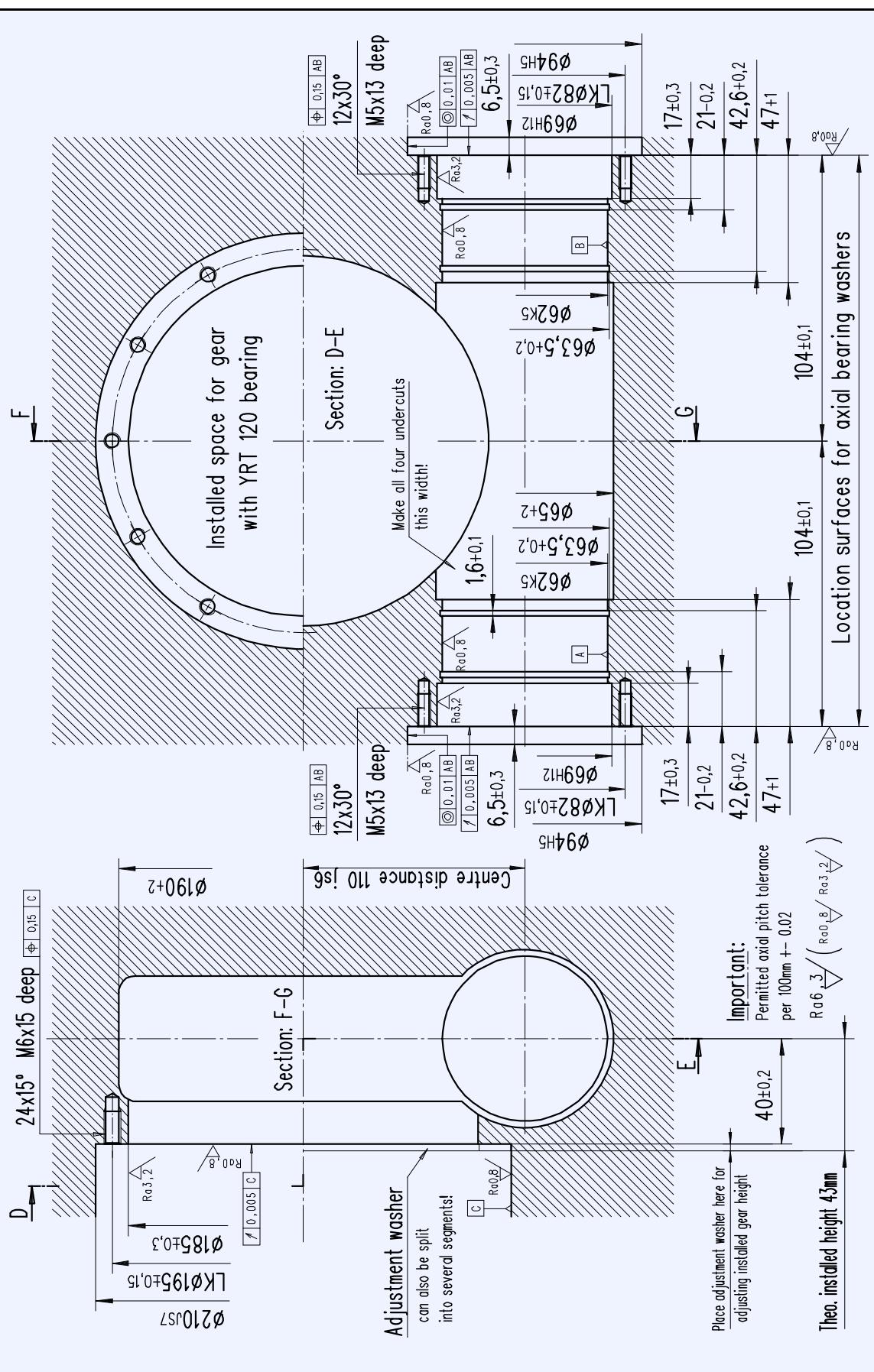
The technical drawing illustrates the assembly of a worm gear system. It shows a cross-section of the worm and gear assembly with various dimensions labeled: A ±0,02, φB -0,2, φC -0,05, φD -0,2, Gap, φE H5, φF h8, and Centre distance. A note indicates the 'Installed position Please note!' and 'Gear location surface underneath'. To the right, a separate diagram shows the worm center and gear center with dimensions H ±0,02 and G ±0,2.

OTT gear no.	Ratio		Worm				YRT gear bearing	Rad				
	No. starts Z1	No. teeth Z2	Distance A	Undercut Ø B	Head Ø C	Collar Ø D		Internal Ø E	Head Ø F	Width G	Height H	
5448 SSR	2	80	63	35,1	49,4	54,6	120	See comments page 5!	118	184	45	29
4867 SSR	2	120		34,9	45,6							
4847 SSR	1	72		34,3	50,8							
4817 SSR	1	90		34,6	48,3							
4800 SSR	1	120		34,9	45,6							
4814 SSR	1	144		35,1	44,6							
1664 SSR	1	180		35,3	42							

The cross-sectional diagram shows the gear assembly installed in a housing. Labels include: YRT bearing location surface, up to gear teeth centre, Housing size, Gear installed height, Provide oil gauge or gear window here, Hub, YRT bearing, Gear, Nom. Ø YRT bearing, Nom. Ø YRT bearing - 2mm, Place steel washer under screw head!, Washer for adjusting gear height, and Housing.

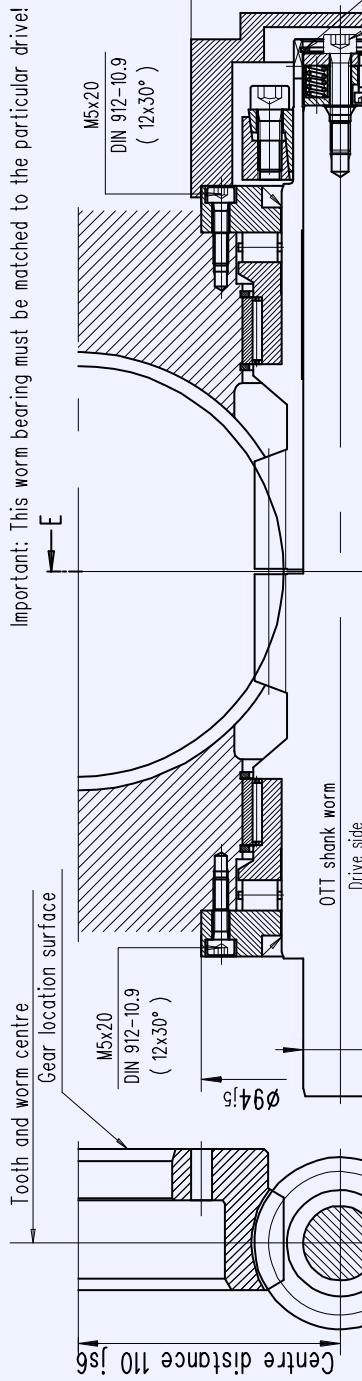
**Gear housing - required internal contour**

**Required internal contour of gear housing for centre distance 110 mm**



## Worm bearings

### Worm bearing for centre distance 110 mm



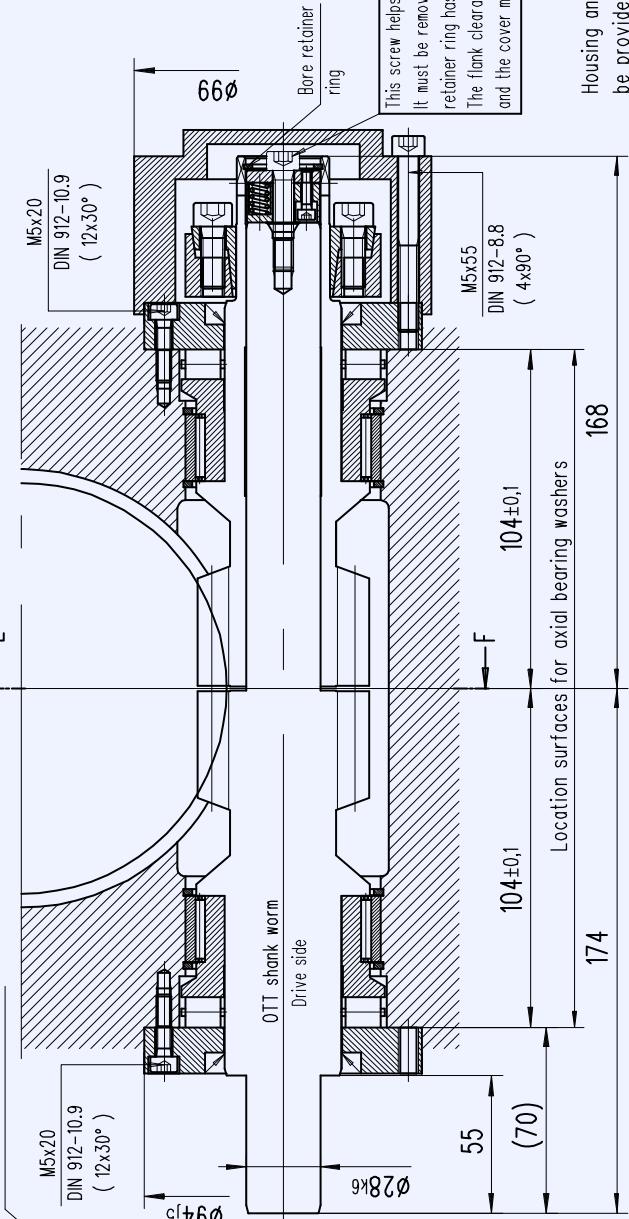
Important: This worm bearing must be matched to the particular drive!

Installed position A (Standard)

The gear location surface is underneath, the OTT shank worm on the left.

Installed position B (to suit)

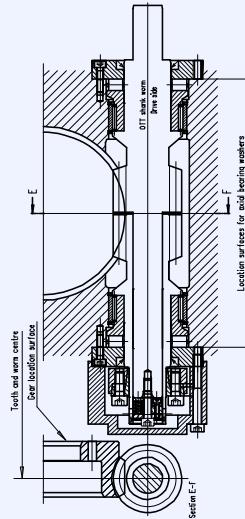
The gear location surface is underneath, the OTT shank worm on the right.



This screw helps with installation.  
It must be removed after the  
retainer ring has been installed.  
The flank clearance should then be set  
and the cover mounted.

Housing and YRT bearing to  
be provided by customer.

OTT worm gear		Bearing parts per gear		
OTT no.	Worm gear	Shank worm	Hollow worm	Q'ty
5448 SSR	T00434-G-RAO	T00291-G-SSC	T00292-G-HSC	2
4867 SSR	T00435-G-RAO	T00293-G-SSC	T00294-G-HSC	2
4847 SSR	T00436-G-RAO	T00295-G-SSC	T00296-G-HSC	2
4817 SSR	T00437-G-RAO	T00297-G-SSC	T00298-G-HSC	1
4800 SSR	T00438-G-RAO	T00299-G-SSC	T00300-G-HSC	4
4814 SSR	T00439-G-RAO	T00301-G-SSC	T00302-G-HSC	24
1664 SSR	T00440-G-RAO	T00303-G-SSC	T00304-G-HSC	4



Order using ..... set of OTT worm gears

- Gearset incl. thrust piece without bearing parts
- Gearset incl. all bearing parts

REQUEST      Date: Name:  
 ORDER

T00216-G-ADH  
 B00009-G-DST

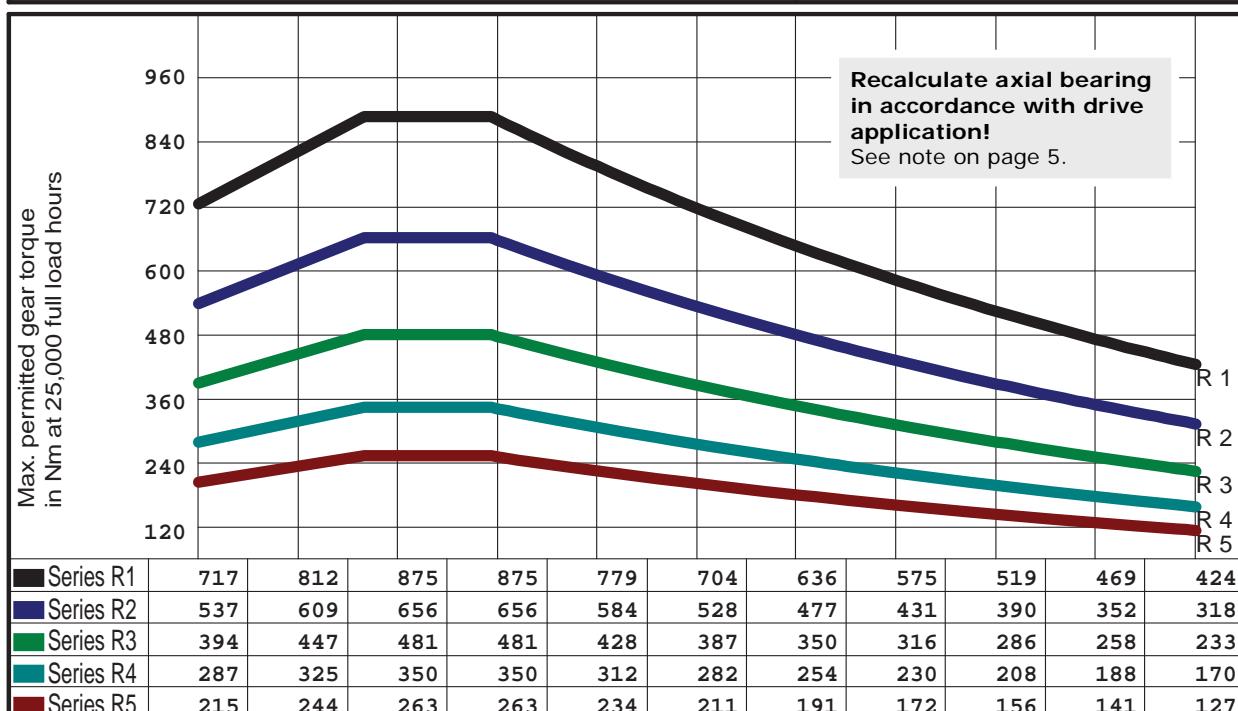


## Type G1 Gear Catalogue

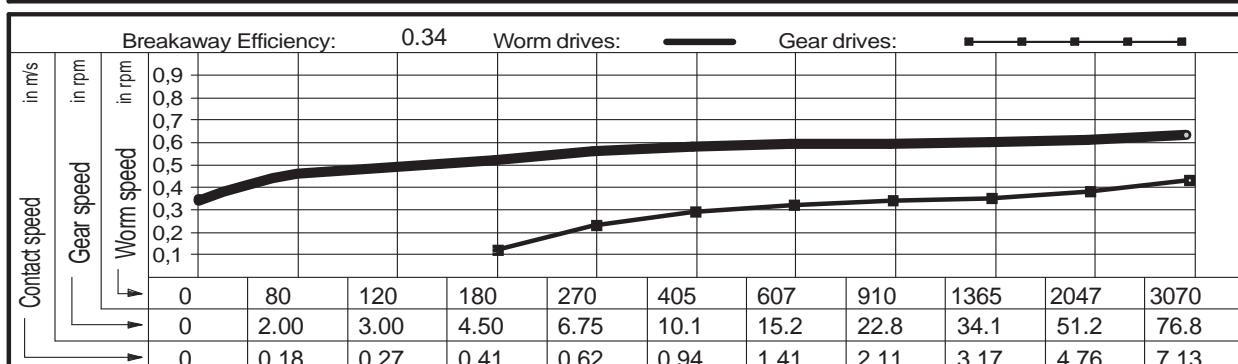
Zahnradfertigung Ott  
Blöhsteinstraße 20  
D-72411 Bodelshausen

### Operational characteristics

Centre distance	110.00	mm	Material, gear	GZ-CuSn12Ni	Operating characteristics	
Outer Ø worm	49.40	mm	Material, worm	31CrMoV9	Ott worm gear	
Outer Ø gear	184.00	mm	Pressure angle in NS	10 °	OTT no: 5448 SSR	
No. starts, worm	2		Back angle in NS	20 °		
Worm direction	right		Calculated circle Ø	44.21 mm		
No. teeth, gear	80		Lead angle at Bks	5.5615 °		



Recalculate axial bearing  
in accordance with drive  
application!  
See note on page 5.

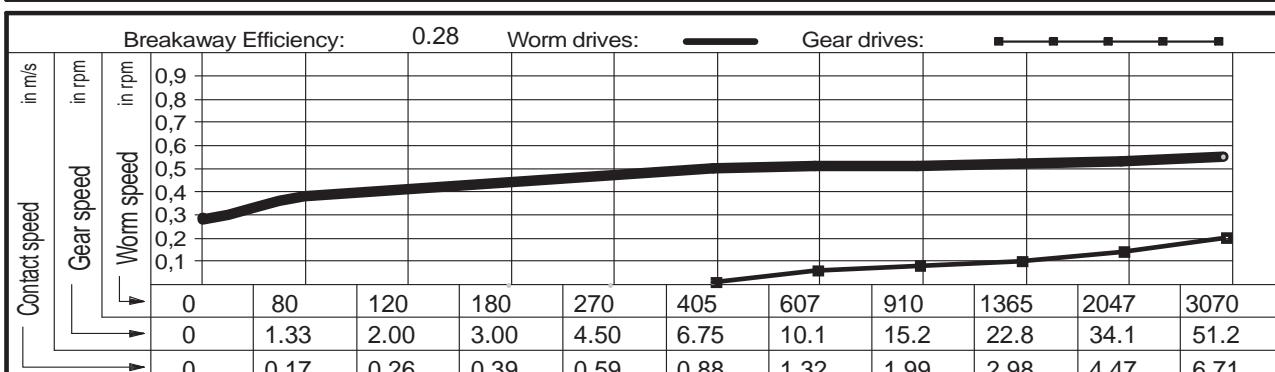
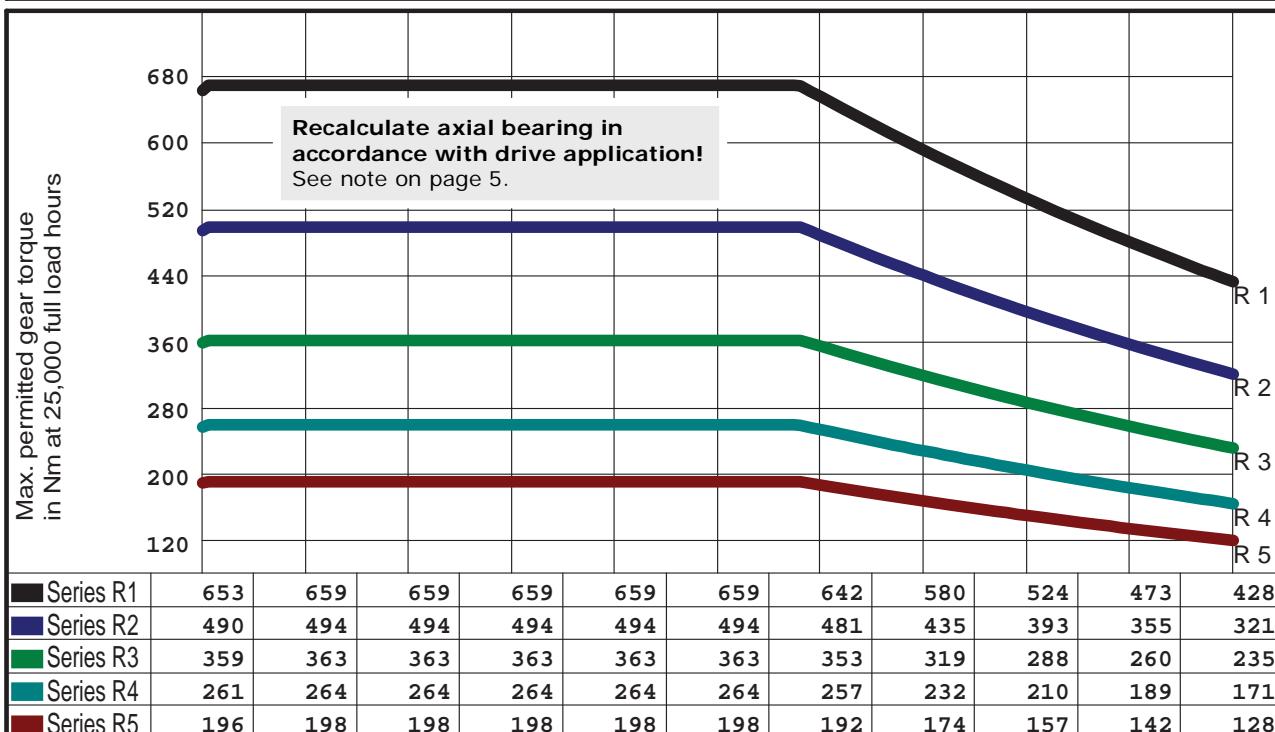


Gear selection by load type and application					
Series R1	a) random even load around gear b) absolutely smooth operation c) minimal acceleration and deceleration moments d) maximum 1 start per minute (60 per hour) e) up to 10% operating time per hour (6 minutes)	Series R4	a) segmental varying load on gear b) with uneven shock loads c) large acceleration and deceleration moments d) maximum 60 starts per minute (3600 per hour) e) up to 75% operating time per hour (45 minutes)	Lubricant:	Synthetic oil
Application: Measurement and test machinery drives, CNC axes		Application: Rotary tables with unfavourable cutting conditions, Trunion axes, CNC axes, milling spindles			
Series R2	a) random even load around gear b) absolutely smooth operation c) minimal acceleration and deceleration moments d) maximum 6 starts per minute (360 per hour) e) up to 25% operating time per hour (15 minutes)	Series R5	a) loads limited only to eccentric gear segment b) heavy, uneven shock loads c) largest acceleration and deceleration moments d) maximum 180 starts per minute (10,800 per hour) e) up to 100% operating time per hour (60 minutes)		
Application: Index tables, circular feed drives and CNC axes for mainly smooth, controlled applications		Application: Heavy milling and trunion drives, CNC axes with unfavourable conditions			
Series R3	a) random changing load on gear b) small shock loads c) large acceleration and deceleration moments d) maximum 20 starts per minute (1200 per hour) e) up to 50% operating time per hour (30 minutes)	Zahnradfertigung OTT	Blöhsteinstraße 20 D-72411 Bodelshausen www.zahnrad-ott.de	Tel. 07471 - 705 0 Fax. 07471 - 705 39 Email. Info@zahnrad-ott.de	
Application: Index tables, rotary tables for circular milling with relatively favourable cutting conditions, CNC axes					

Centre distance	<b>110.00</b> mm	Material, gear	<b>GZ-CuSn12Ni</b>	<b>Operating characteristics</b>	
Outer Ø worm	<b>45.60</b> mm	Material, worm	<b>31CrMoV9</b>		
Outer Ø gear	<b>184.00</b> mm	Pressure angle in NS	<b>10 °</b>		
No. starts, worm	<b>2</b>	Back angle in NS	<b>15 °</b>		
Worm direction	<b>right</b>	Calculated circle Ø	<b>41.69</b> mm		
No. teeth, gear	<b>120</b>	Lead angle at Bks	<b>4.0126 °</b>		

## Ott worm gear

**OTT no: 4867 SSR**



Gear selection by load type and application													
Series R1	a) random even load around gear b) absolutely smooth operation c) minimal acceleration and deceleration moments d) maximum 1 start per minute (60 per hour) e) up to 10% operating time per hour (6 minutes)						Series R4	a) segmental varying load on gear b) with uneven shock loads c) large acceleration and deceleration moments d) maximum 60 starts per minute (3600 per hour) e) up to 75% operating time per hour (45 minutes)					
Application:	Measurement and test machinery drives, CNC axes						Application:	Rotary tables with unfavourable cutting conditions, Trunion axes, CNC axes, milling spindles					
Series R2	a) random even load around gear b) absolutely smooth operation c) minimal acceleration and deceleration moments d) maximum 6 starts per minute (360 per hour) e) up to 25% operating time per hour (15 minutes)						Series R5	a) loads limited only to eccentric gear segment b) heavy, uneven shock loads c) largest acceleration and deceleration moments d) maximum 180 starts per minute (10,800 per hour) e) up to 100% operating time per hour (60 minutes)					
Application:	Index tables, circular feed drives and CNC axes for mainly smooth, controlled applications						Application:	Heavy milling and trunion drives, CNC axes with unfavourable conditions					
Series R3	a) random changing load on gear b) small shock loads c) large acceleration and deceleration moments d) maximum 20 starts per minute (1200 per hour) e) up to 50% operating time per hour (30 minutes)							<b>Zahnradfertigung OTT</b> Blöhsteinstraße 20 Tel. 07471 - 705 0 D-72411 Bodelshausen Fax. 07471 - 705 39 <a href="http://www.zahnrad-ott.de">www.zahnrad-ott.de</a> Email. <a href="mailto:Info@zahnrad-ott.de">Info@zahnrad-ott.de</a>					
Application:	Index tables, rotary tables for circular milling with relatively favourable cutting conditions, CNC axes												

Lubricant:  
**Synthetic oil**



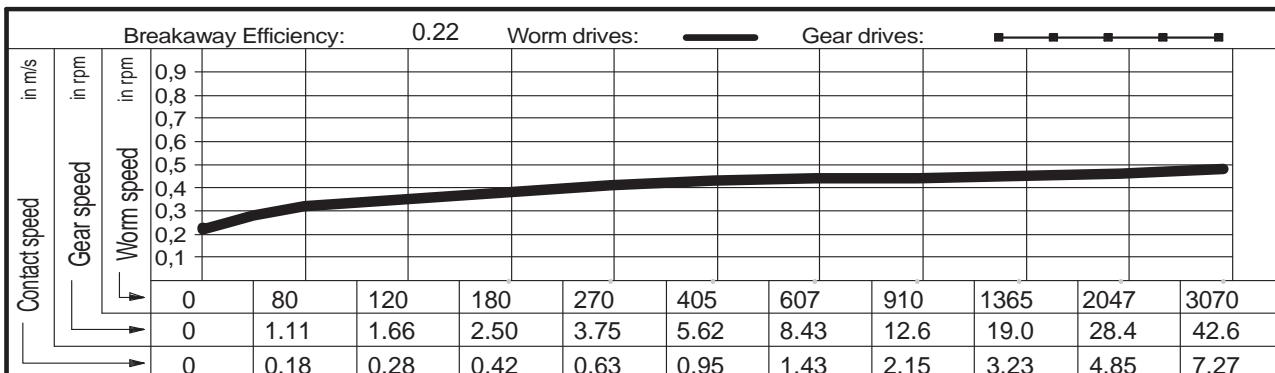
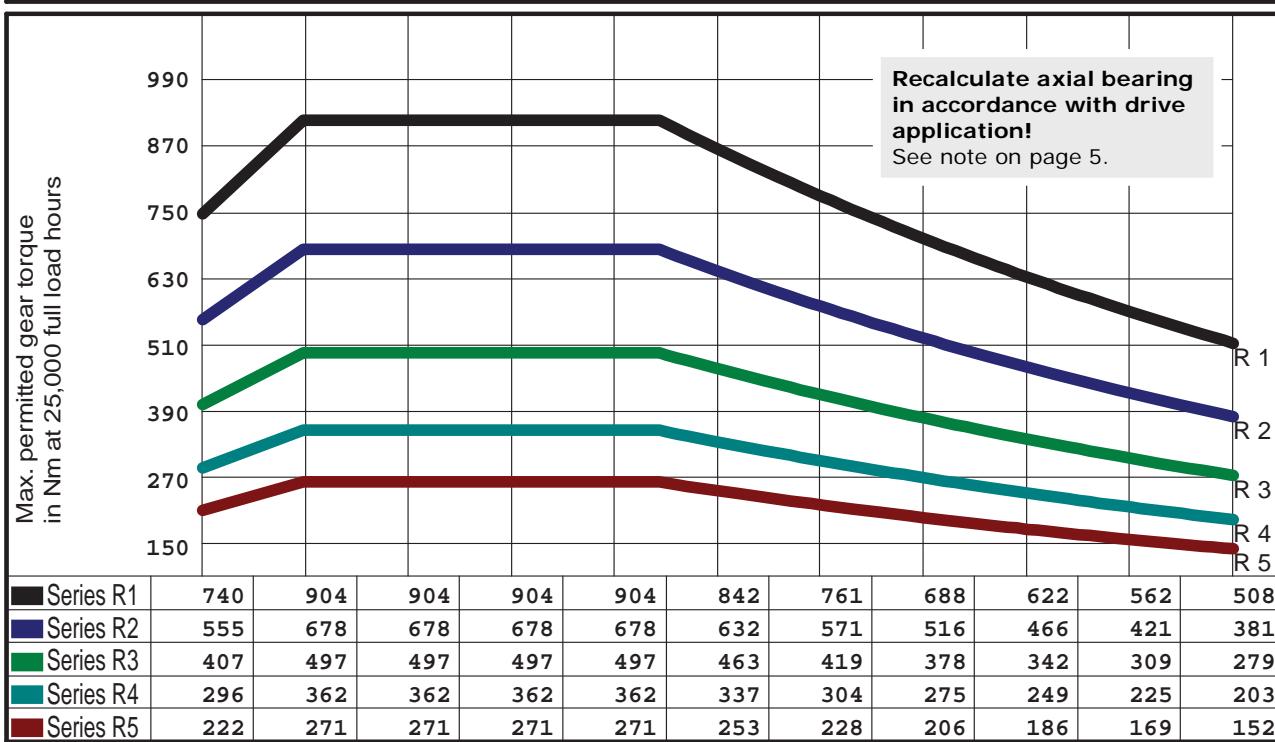
## Type G1 Gear Catalogue

Zahnradfertigung Ott  
Blöhsteinstraße 20  
D-72411 Bodelshausen

Centre distance	<b>110.00</b> mm	Material, gear	<b>GZ-CuSn12Ni</b>	Operating characteristics	
Outer Ø worm	<b>50.80</b> mm	Material, worm	<b>31CrMoV9</b>		
Outer Ø gear	<b>184.00</b> mm	Pressure angle in NS	<b>10 °</b>		
No. starts, worm	<b>1</b>	Back angle in NS	<b>20 °</b>		
Worm direction	<b>right</b>	Calculated circle Ø	<b>45.19</b> mm		
No. teeth, gear	<b>72</b>	Lead angle at Bks	<b>3.0074</b> °		

### Ott worm gear

**OTT no: 4847 SSR**

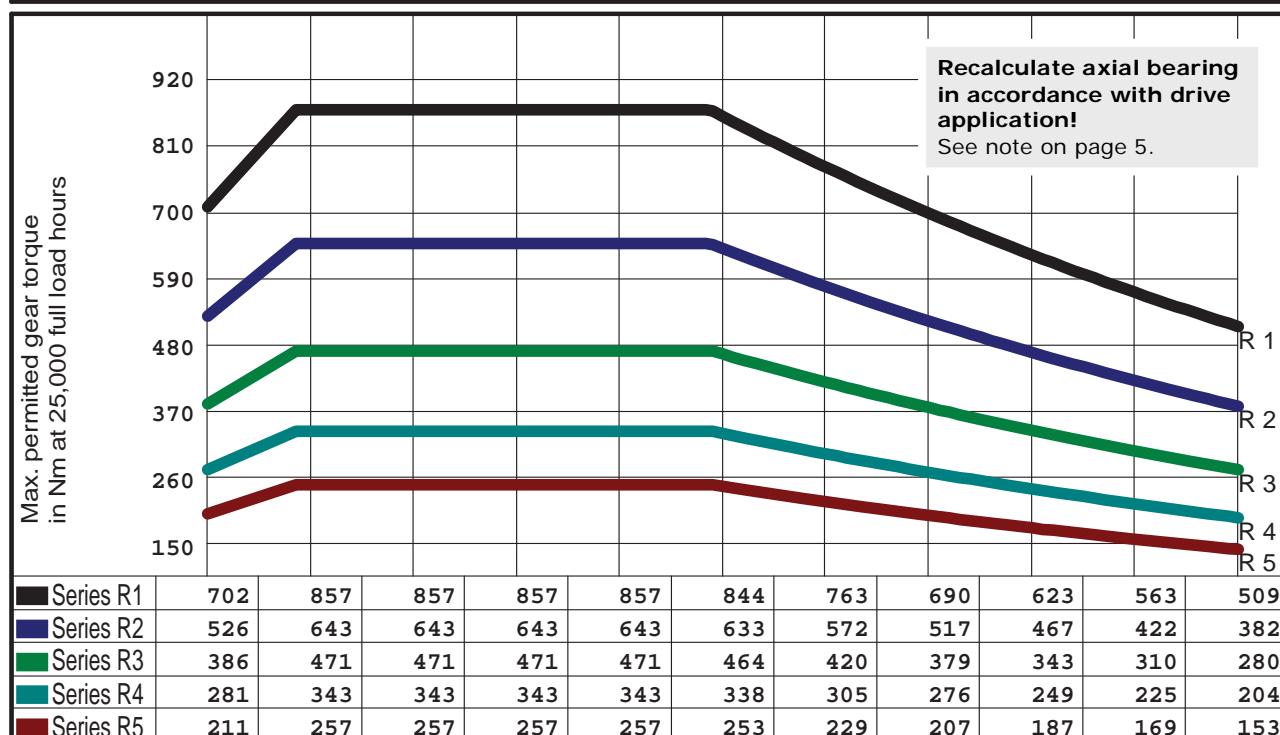


Gear selection by load type and application					
Series R1	a) random even load around gear b) absolutely smooth operation c) minimal acceleration and deceleration moments d) maximum 1 start per minute (60 per hour) e) up to 10% operating time per hour (6 minutes)	Series R4	a) segmental varying load on gear b) with uneven shock loads c) large acceleration and deceleration moments d) maximum 60 starts per minute (3600 per hour) e) up to 75% operating time per hour (45 minutes)	Lubricant:	Synthetic oil
Application:	Measurement and test machinery drives, CNC axes	Application:	Rotary tables with unfavourable cutting conditions, Trunion axes, CNC axes, milling spindles		
Series R2	a) random even load around gear b) absolutely smooth operation c) minimal acceleration and deceleration moments d) maximum 6 starts per minute (360 per hour) e) up to 25% operating time per hour (15 minutes)	Series R5	a) loads limited only to eccentric gear segment b) heavy, uneven shock loads c) largest acceleration and deceleration moments d) maximum 180 starts per minute (10,800 per hour) e) up to 100% operating time per hour (60 minutes)		
Application:	Index tables, circular feed drives and CNC axes for mainly smooth, controlled applications	Application:	Heavy milling and trunion drives, CNC axes with unfavourable conditions		
Series R3	a) random changing load on gear b) small shock loads c) large acceleration and deceleration moments d) maximum 20 starts per minute (1200 per hour) e) up to 50% operating time per hour (30 minutes)	Zahnradfertigung OTT	Blöhsteinstraße 20 D-72411 Bodelshausen www.zahnrad-ott.de	Tel. 07471 - 705 0 Fax. 07471 - 705 39 Email. Info@zahnrad-ott.de	
Application:	Index tables, rotary tables for circular milling with relatively favourable cutting conditions, CNC axes				

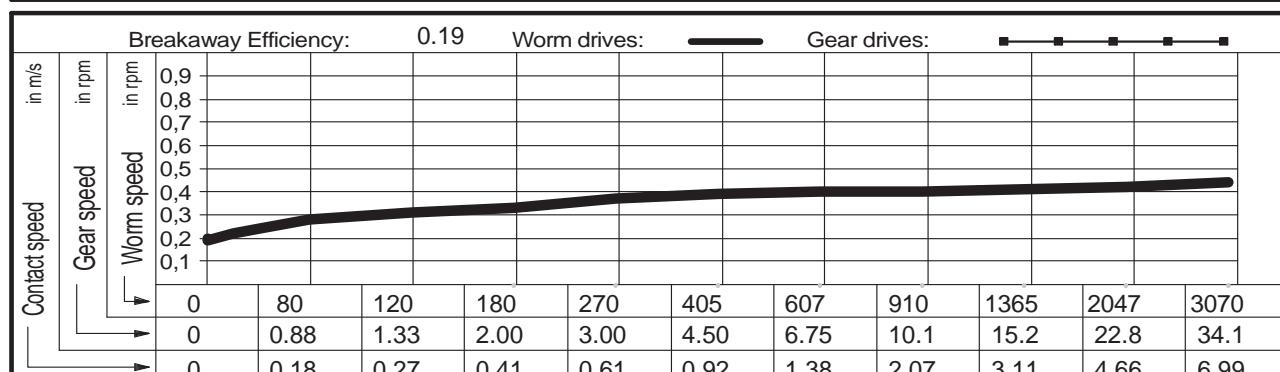
Centre distance	<b>110.00</b> mm	Material, gear	<b>GZ-CuSn12Ni</b>	<b>Operating characteristics</b>	
Outer Ø worm	<b>48.30</b> mm	Material, worm	<b>31CrMoV9</b>		
Outer Ø gear	<b>184.00</b> mm	Pressure angle in NS	<b>10 °</b>		
No. starts, worm	<b>1</b>	Back angle in NS	<b>20 °</b>		
Worm direction	<b>right</b>	Calculated circle Ø	<b>43.49</b> mm		
No. teeth, gear	<b>90</b>	Lead angle at Bks	<b>2.5323 °</b>		

Ott worm gear

**OTT no: 4817 SSR**

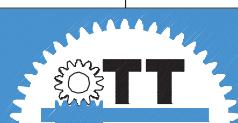


Recalculate axial bearing  
in accordance with drive  
application!  
See note on page 5.



#### Gear selection by load type and application

Series R1	a) random even load around gear b) absolutely smooth operation c) minimal acceleration and deceleration moments d) maximum 1 start per minute (60 per hour) e) up to 10% operating time per hour (6 minutes)	Series R4	a) segmental varying load on gear b) with uneven shock loads c) large acceleration and deceleration moments d) maximum 60 starts per minute (3600 per hour) e) up to 75% operating time per hour (45 minutes)	Lubricant: <b>Synthetic oil</b>
Application:	Measurement and test machinery drives, CNC axes	Application:	Rotary tables with unfavourable cutting conditions, Trunion axes, CNC axes, milling spindles	
Series R2	a) random even load around gear b) absolutely smooth operation c) minimal acceleration and deceleration moments d) maximum 6 starts per minute (360 per hour) e) up to 25% operating time per hour (15 minutes)	Series R5	a) loads limited only to eccentric gear segment b) heavy, uneven shock loads c) largest acceleration and deceleration moments d) maximum 180 starts per minute (10,800 per hour) e) up to 100% operating time per hour (60 minutes)	
Application:	Index tables, circular feed drives and CNC axes for mainly smooth, controlled applications	Application:	Heavy milling and trunion drives, CNC axes with unfavourable conditions	
Series R3	a) random changing load on gear b) small shock loads c) large acceleration and deceleration moments d) maximum 20 starts per minute (1200 per hour) e) up to 50% operating time per hour (30 minutes)	Zahnradfertigung OTT	Blöhsteinstraße 20 D-72411 Bodelshausen <a href="http://www.zahnrad-ott.de">www.zahnrad-ott.de</a>	Tel. 07471 - 705 0 Fax. 07471 - 705 39 Email. <a href="mailto:Info@zahnrad-ott.de">Info@zahnrad-ott.de</a>
Application:	Index tables, rotary tables for circular milling with relatively favourable cutting conditions, CNC axes			





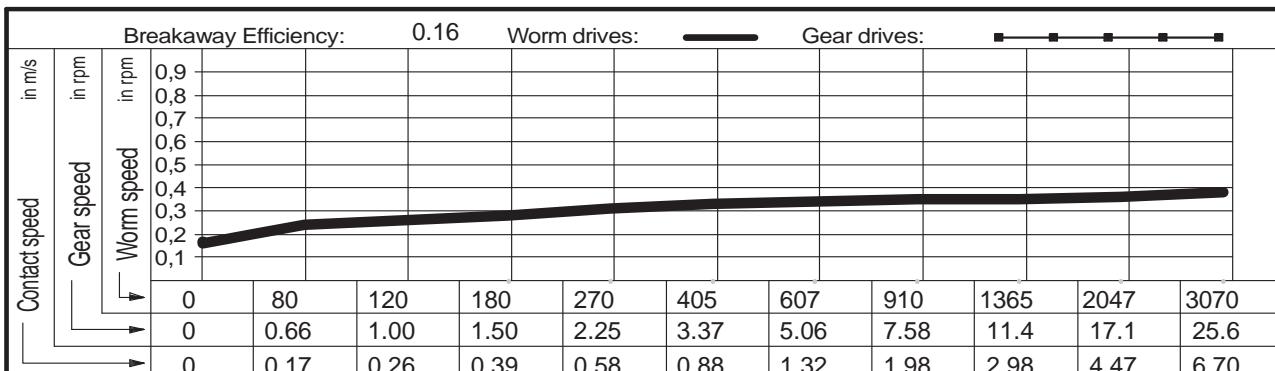
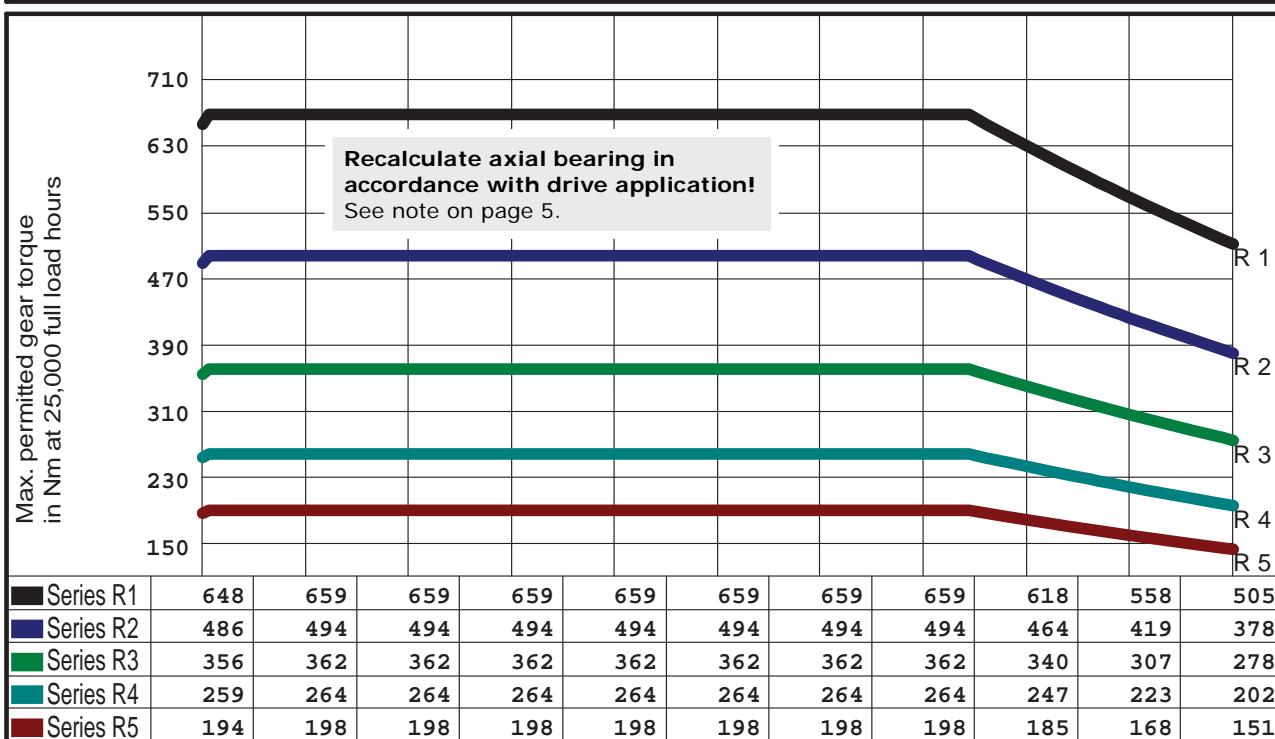
## Type G1 Gear Catalogue

Zahnradfertigung Ott  
Blöhsteinstraße 20  
D-72411 Bodelshausen

Centre distance	<b>110.00</b> mm	Material, gear	<b>GZ-CuSn12Ni</b>	Operating characteristics	
Outer Ø worm	<b>45.60</b> mm	Material, worm	<b>31CrMoV9</b>		
Outer Ø gear	<b>184.00</b> mm	Pressure angle in NS	<b>10 °</b>		
No. starts, worm	<b>1</b>	Back angle in NS	<b>15 °</b>		
Worm direction	<b>right</b>	Calculated circle Ø	<b>41.69</b> mm		
No. teeth, gear	<b>120</b>	Lead angle at Bks	<b>2.0086</b> °		

### Ott worm gear

**OTT no: 4800 SSR**

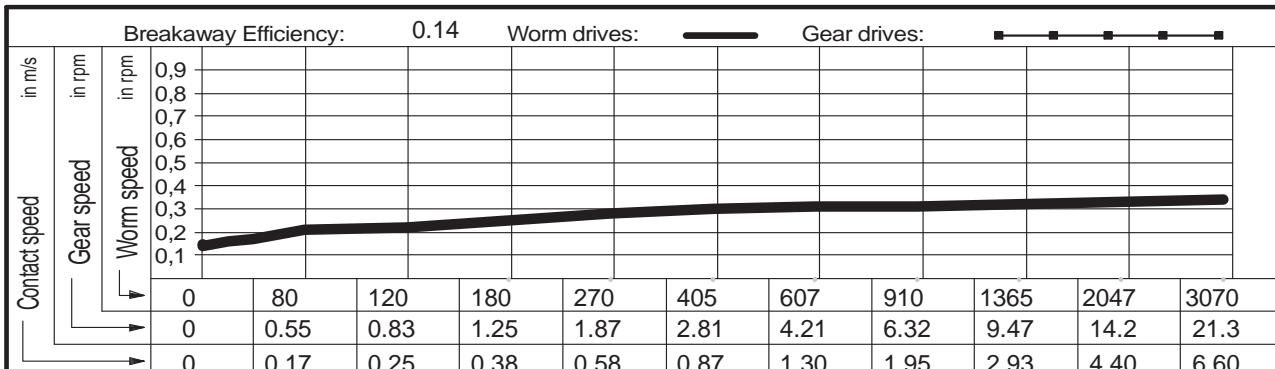
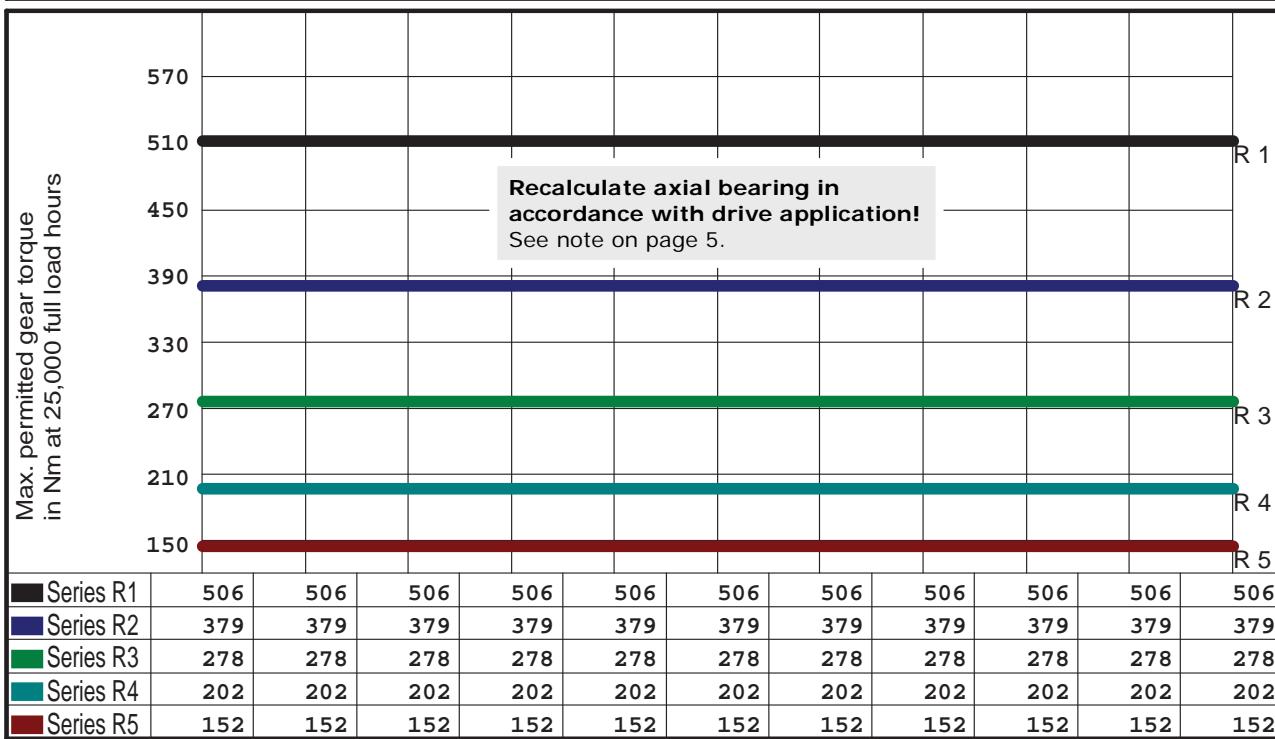


Gear selection by load type and application					
Series R1	a) random even load around gear b) absolutely smooth operation c) minimal acceleration and deceleration moments d) maximum 1 start per minute (60 per hour) e) up to 10% operating time per hour (6 minutes)	Series R4	a) segmental varying load on gear b) with uneven shock loads c) large acceleration and deceleration moments d) maximum 60 starts per minute (3600 per hour) e) up to 75% operating time per hour (45 minutes)	Lubricant:	Synthetic oil
Application:	Measurement and test machinery drives, CNC axes	Application:	Rotary tables with unfavourable cutting conditions, Trunion axes, CNC axes, milling spindles		
Series R2	a) random even load around gear b) absolutely smooth operation c) minimal acceleration and deceleration moments d) maximum 6 starts per minute (360 per hour) e) up to 25% operating time per hour (15 minutes)	Series R5	a) loads limited only to eccentric gear segment b) heavy, uneven shock loads c) largest acceleration and deceleration moments d) maximum 180 starts per minute (10,800 per hour) e) up to 100% operating time per hour (60 minutes)		
Application:	Index tables, circular feed drives and CNC axes for mainly smooth, controlled applications	Application:	Heavy milling and trunion drives, CNC axes with unfavourable conditions		
Series R3	a) random changing load on gear b) small shock loads c) large acceleration and deceleration moments d) maximum 20 starts per minute (1200 per hour) e) up to 50% operating time per hour (30 minutes)	Zahnradfertigung OTT	Blöhsteinstraße 20 D-72411 Bodelshausen www.zahnrad-ott.de	Tel.	07471 - 705 0
Application:	Index tables, rotary tables for circular milling with relatively favourable cutting conditions, CNC axes			Fax.	07471 - 705 39
				Email.	Info@zahnrad-ott.de

Centre distance	<b>110.00</b> mm	Material, gear	<b>GZ-CuSn12Ni</b>	<b>Operating characteristics</b>	
Outer Ø worm	<b>44.60</b> mm	Material, worm	<b>31CrMoV9</b>		
Outer Ø gear	<b>184.00</b> mm	Pressure angle in NS	<b>10 °</b>		
No. starts, worm	<b>1</b>	Back angle in NS	<b>15 °</b>		
Worm direction	<b>right</b>	Calculated circle Ø	<b>41.07</b> mm		
No. teeth, gear	<b>144</b>	Lead angle at Bks	<b>1.7075 °</b>		

## Ott worm gear

**OTT no: 4814 SSR**



Gear selection by load type and application					
Series R1	a) random even load around gear b) absolutely smooth operation c) minimal acceleration and deceleration moments d) maximum 1 start per minute (60 per hour) e) up to 10% operating time per hour (6 minutes)	Series R4	a) segmental varying load on gear b) with uneven shock loads c) large acceleration and deceleration moments d) maximum 60 starts per minute (3600 per hour) e) up to 75% operating time per hour (45 minutes)		
Application:	Measurement and test machinery drives, CNC axes	Application:	Rotary tables with unfavourable cutting conditions, Trunion axes, CNC axes, milling spindles		
Series R2	a) random even load around gear b) absolutely smooth operation c) minimal acceleration and deceleration moments d) maximum 6 starts per minute (360 per hour) e) up to 25% operating time per hour (15 minutes)	Series R5	a) loads limited only to eccentric gear segment b) heavy, uneven shock loads c) largest acceleration and deceleration moments d) maximum 180 starts per minute (10,800 per hour) e) up to 100% operating time per hour (60 minutes)		
Application:	Index tables, circular feed drives and CNC axes for mainly smooth, controlled applications	Application:	Heavy milling and trunion drives, CNC axes with unfavourable conditions		
Series R3	a) random changing load on gear b) small shock loads c) large acceleration and deceleration moments d) maximum 20 starts per minute (1200 per hour) e) up to 50% operating time per hour (30 minutes)	Zahnradfertigung OTT	Blöhsteinstraße 20 D-72411 Bodelshausen <a href="http://www.zahnrad-ott.de">www.zahnrad-ott.de</a>	Tel. 07471 - 705 0 Fax. 07471 - 705 39 Email. <a href="mailto:Info@zahnrad-ott.de">Info@zahnrad-ott.de</a>	Lubricant: Synthetic oil
Application:	Index tables, rotary tables for circular milling with relatively favourable cutting conditions, CNC axes				



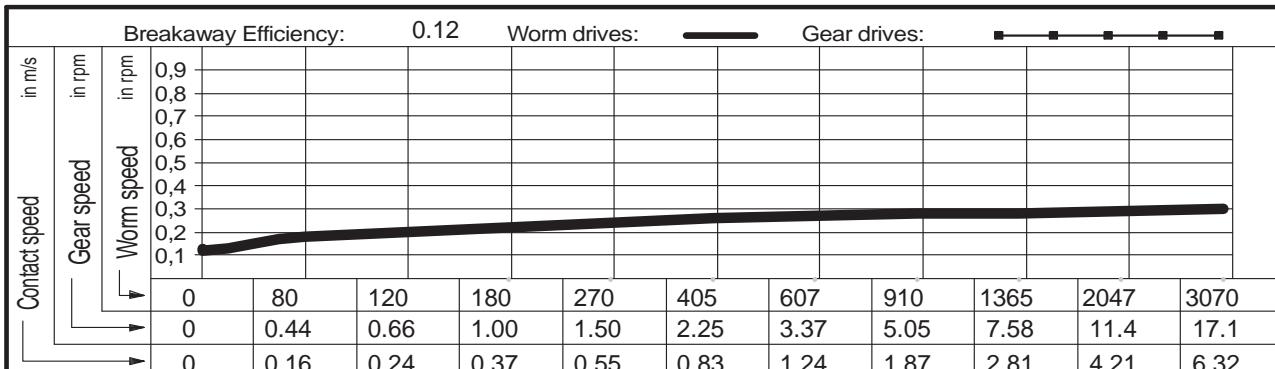
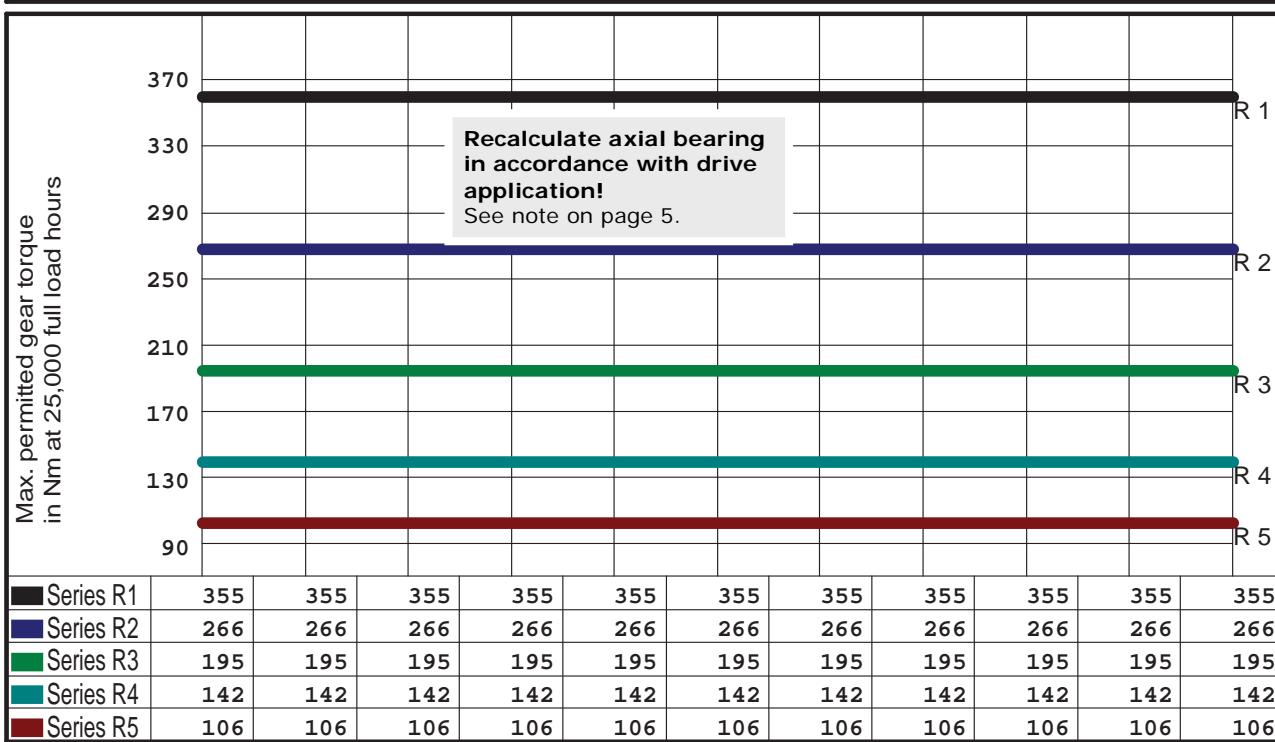
## Type G1 Gear Catalogue

Zahnradfertigung Ott  
Blöhsteinstraße 20  
D-72411 Bodelshausen

Centre distance	<b>110.00</b> mm	Material, gear	<b>GZ-CuSn12Ni</b>	Operating characteristics	
Outer Ø worm	<b>42.00</b> mm	Material, worm	<b>31CrMoV9</b>		
Outer Ø gear	<b>184.00</b> mm	Pressure angle in NS	<b>10 °</b>		
No. starts, worm	<b>1</b>	Back angle in NS	<b>15 °</b>		
Worm direction	<b>right</b>	Calculated circle Ø	<b>39.31</b> mm		
No. teeth, gear	<b>180</b>	Lead angle at Bks	<b>1.4467 °</b>		

### Ott worm gear

**OTT no: 1664 SSR**



Gear selection by load type and application					
Series R1	a) random even load around gear b) absolutely smooth operation c) minimal acceleration and deceleration moments d) maximum 1 start per minute (60 per hour) e) up to 10% operating time per hour (6 minutes)	Series R4	a) segmental varying load on gear b) with uneven shock loads c) large acceleration and deceleration moments d) maximum 60 starts per minute (3600 per hour) e) up to 75% operating time per hour (45 minutes)	Lubricant:	Synthetic oil
Application:	Measurement and test machinery drives, CNC axes	Application:	Rotary tables with unfavourable cutting conditions, Trunion axes, CNC axes, milling spindles		
Series R2	a) random even load around gear b) absolutely smooth operation c) minimal acceleration and deceleration moments d) maximum 6 starts per minute (360 per hour) e) up to 25% operating time per hour (15 minutes)	Series R5	a) loads limited only to eccentric gear segment b) heavy, uneven shock loads c) largest acceleration and deceleration moments d) maximum 180 starts per minute (10,800 per hour) e) up to 100% operating time per hour (60 minutes)		
Application:	Index tables, circular feed drives and CNC axes for mainly smooth, controlled applications	Application:	Heavy milling and trunion drives, CNC axes with unfavourable conditions		
Series R3	a) random changing load on gear b) small shock loads c) large acceleration and deceleration moments d) maximum 20 starts per minute (1200 per hour) e) up to 50% operating time per hour (30 minutes)	Zahnradfertigung OTT	Blöhsteinstraße 20 D-72411 Bodelshausen www.zahnrad-ott.de	Tel.	07471 - 705 0
Application:	Index tables, rotary tables for circular milling with relatively favourable cutting conditions, CNC axes			Fax.	07471 - 705 39
				Email.	Info@zahnrad-ott.de

## OTT worm gears - centre distance 125 mm

### Main dimensions

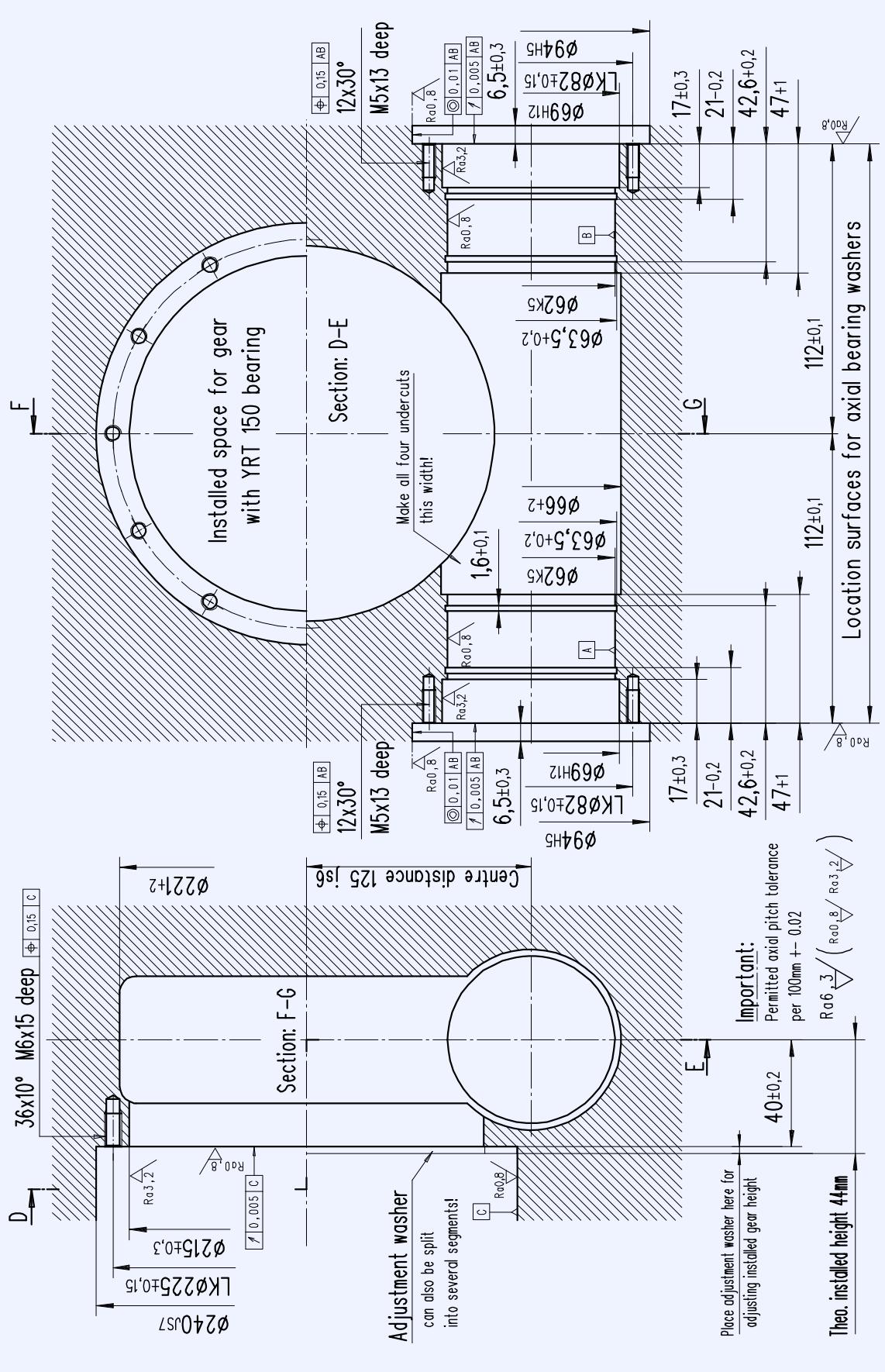
The technical drawing illustrates the assembly of a worm gear system. It shows two views: a front view of the worm and gear assembly with dimensions A ±0,02, B φ -0,2, C φ -0,05, D φD -0,2, E φ E H5, F φ F h8, and G ±0,2; and a side view showing the worm center and gear location surface underneath. A note indicates the 'Installed position Please note!'.

OTT gear no.	Ratio		Worm				YRT gear bearing	Gear				
	No. starts Z1	No. teeth Z2	Distance A	Undercut Ø B	Head Ø C	Collar Ø D		Internal Ø E	Head Ø F	Width G	Height H	
5549 SSR	2	80	71	34,2	51,7	54,6	150	See comments page 5!	148	214	48	30
4879 SSR	2	100		34,5	49,2							
4877 SSR	2	120		34,8	47,4							
4804 SSR	1	70		34,0	53,6							
5741 SSR	1	72		34,0	53,2							
4853 SSR	1	90		34,4	50,4							
4861 SSR	1	120		34,8	47,4							
4846 SSR	1	144		35	46							

The cross-sectional diagram shows the gear assembly installed in a housing. Labels include: YRT bearing location surface, up to gear teeth centre, Housing size, Gear installed height, Provide oil gauge or gear window here, Hub, YRT bearing, Gear, Nom. Ø YRT bearing, Nom. Ø YRT bearing - 2mm, Place steel washer under screw head!, Washer for adjusting gear height, and Housing.

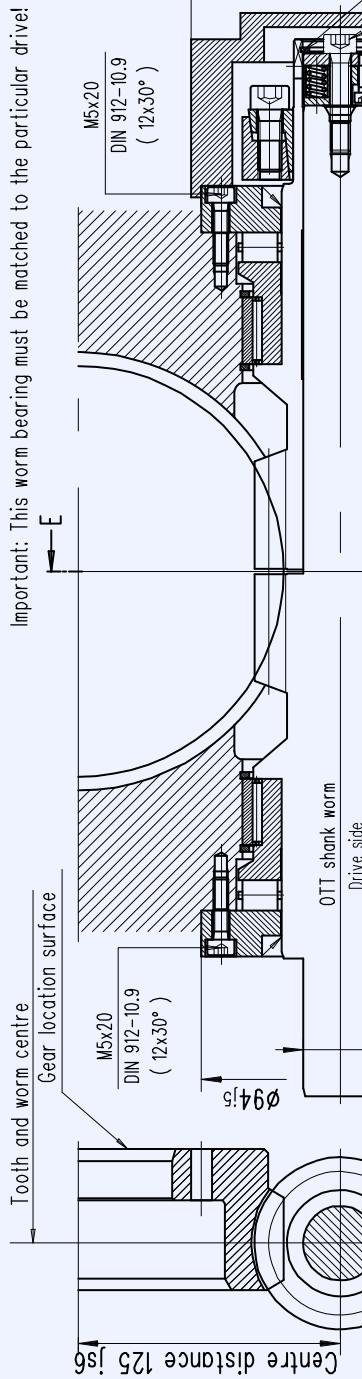
**Gear housing - required internal contour**

**Required internal contour of gear housing for centre distance 125 mm**



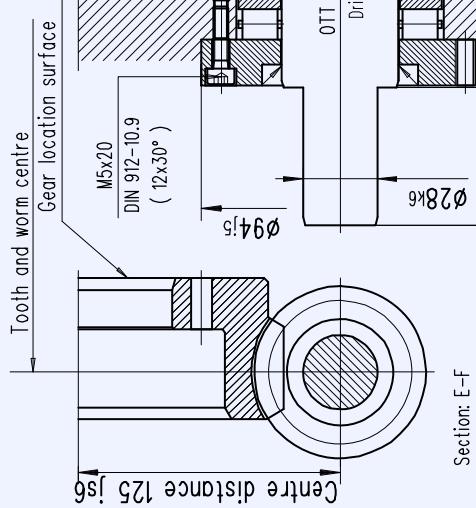
## Worm bearings

### Worm bearing for centre distance 125 mm



Important: This worm bearing must be matched to the particular drive!

Section: E-F

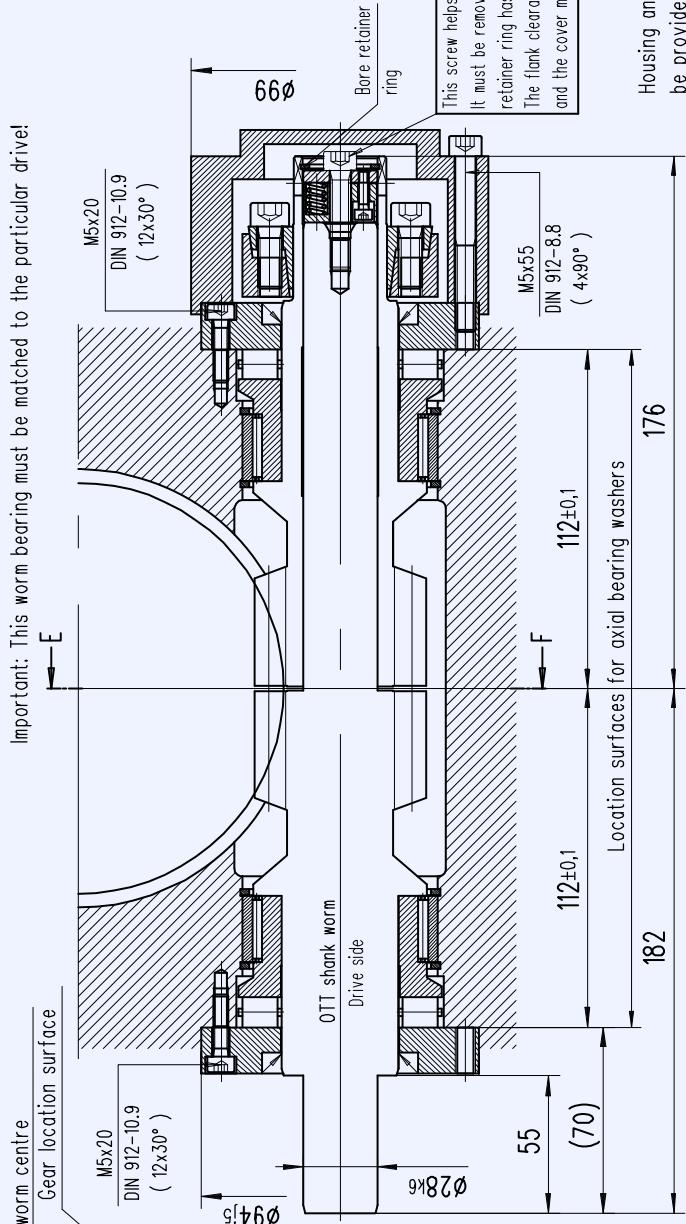


Installed position A (Standard)

The gear location surface is underneath, the OTT shank worm on the left.

Installed position B (to suit)

The gear location surface is underneath, the OTT shank worm on the right.



This screw helps with installation.  
It must be removed after the  
retainer ring has been installed.  
The flank clearance should then be set  
and the cover mounted.

Housing and YRT bearing to  
be provided by customer.

Bearing parts per gear			
OTT no.	OTT worm gear	Shank worm	Hollow worm
5549 SSR	T00441-G-RAO	T00305-G-SSC	T00306-G-HSC
4879 SSR	T00442-G-RAO	T00307-G-SSC	T00308-G-HSC
4877 SSR	T00443-G-RAO	T00309-G-SSC	T00310-G-HSC
4804 SSR	T00444-G-RAO	T00311-G-SSC	T00312-G-HSC
5741 SSR	T00445-G-RAO	T00313-G-SSC	T00314-G-HSC
4853 SSR	T00446-G-RAO	T00315-G-SSC	T00316-G-HSC
4861 SSR	T00447-G-RAO	T00317-G-SSC	T00318-G-HSC
4846 SSR	T00448-G-RAO	T00319-G-SSC	T00320-G-HSC

OTT no.	OTT worm gear	Shank worm	Hollow worm	Q'ty	Name	Typ/Dwg no.
5549 SSR	T00441-G-RAO	T00305-G-SSC	T00306-G-HSC	2	Axial cylinder roller bearing	K812 08 TV
4879 SSR	T00442-G-RAO	T00307-G-SSC	T00308-G-HSC	2	Radial needle bearing	RNAO 50x62x20
4877 SSR	T00443-G-RAO	T00309-G-SSC	T00310-G-HSC	2	Shaft seal	40x52x6
4804 SSR	T00444-G-RAO	T00311-G-SSC	T00312-G-HSC	1	Shrink disc	HSD 36-22
5741 SSR	T00445-G-RAO	T00313-G-SSC	T00314-G-HSC	4	Circlip	SB 62
4853 SSR	T00446-G-RAO	T00315-G-SSC	T00316-G-HSC	24	Cylinder bolt DIN 912	M5x20 - 10.9
4861 SSR	T00447-G-RAO	T00317-G-SSC	T00318-G-HSC	4	Cylinder bolt DIN 912	M5x55 - 8.8
4846 SSR	T00448-G-RAO	T00319-G-SSC	T00320-G-HSC	1	Cylinder bolt DIN 912	M6x30 - 8.8
				1	Retainer ring DIN 472	28
				2	Bearing sleeve	T00221-G-LHÜ
				2	Axial bearing washer	T00233-G-LDX
				1	Cover	T00216-G-ADH
				1	Thrust piece	BO0009-G-DST

- Order using ..... set of OTT worm gears  
 Gearset incl. thrust piece without bearing parts  
 Gearset incl. all bearing parts

- REQUEST      Date: \_\_\_\_\_  
 ORDER



## Type G1 Gear Catalogue

Zahnradfertigung Ott  
Blöhsteinstraße 20  
D-72411 Bodelshausen

### Operational characteristics

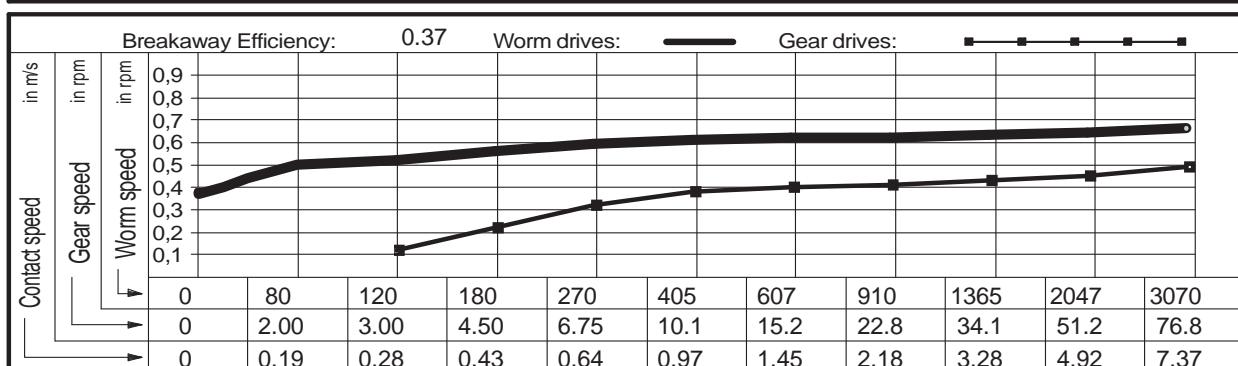
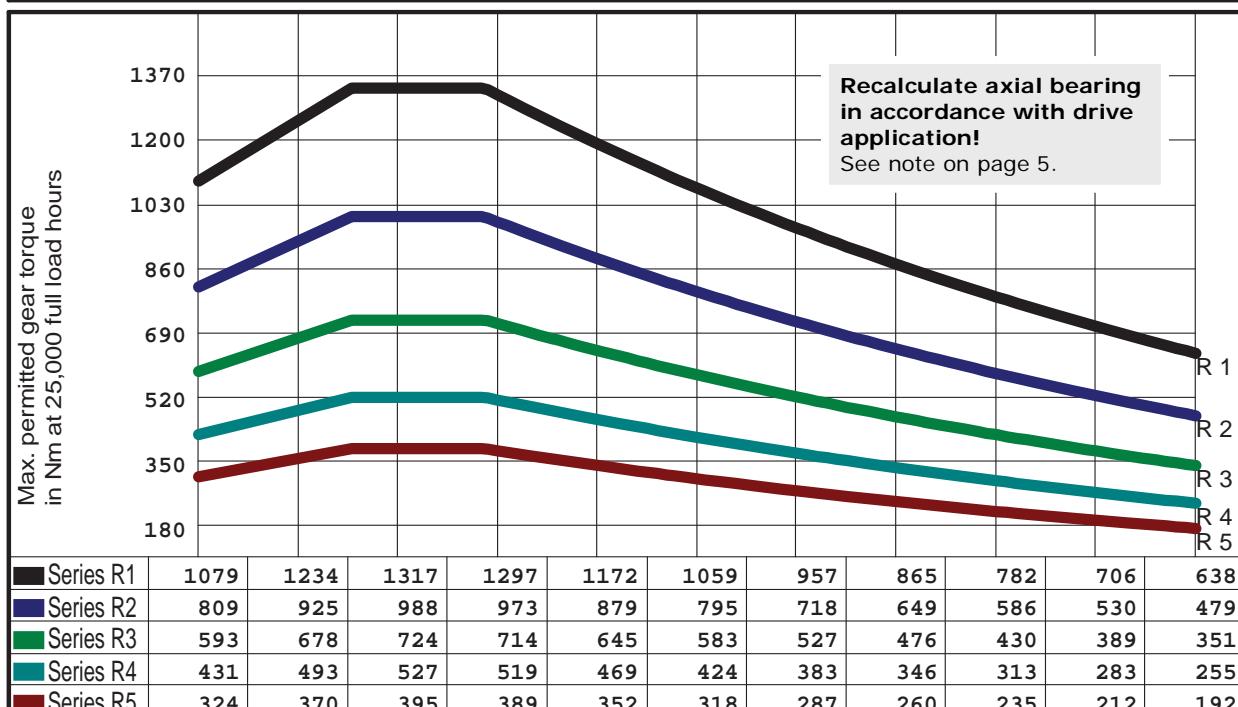
Centre distance	125.00	mm
Outer Ø worm	51.70	mm
Outer Ø gear	214.00	mm
No. starts, worm	2	
Worm direction	right	
No. teeth, gear	80	

Material, gear	GZ-CuSn12Ni
Material, worm	31CrMoV9
Pressure angle in NS	10 °
Back angle in NS	20 °
Calculated circle Ø	45.63 mm
Lead angle at Bks	6.2567 °

### Operating characteristics

#### Ott worm gear

**OTT no: 5549 SSR**

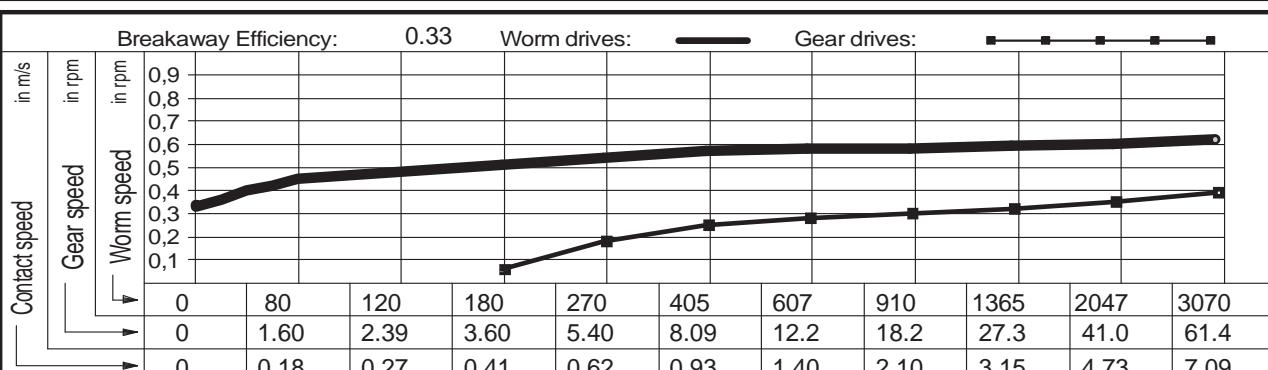
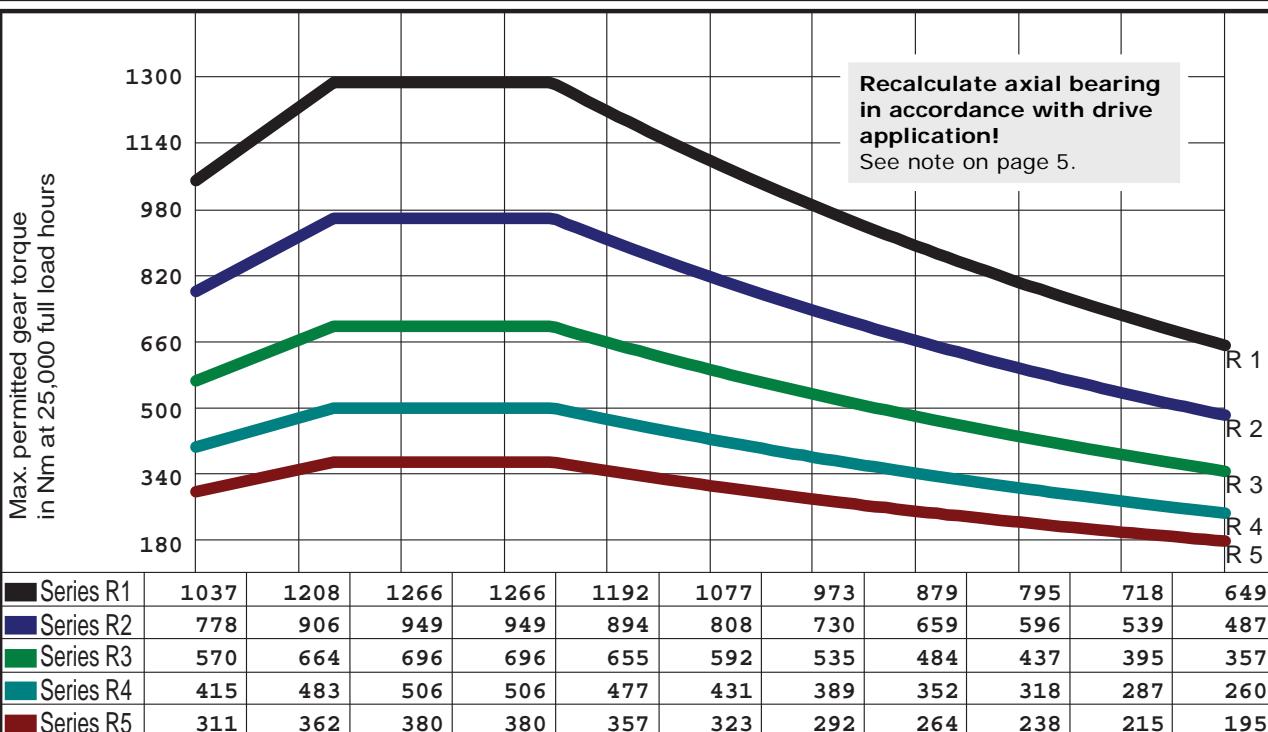


Gear selection by load type and application				
Series R1	a) random even load around gear b) absolutely smooth operation c) minimal acceleration and deceleration moments d) maximum 1 start per minute (60 per hour) e) up to 10% operating time per hour (6 minutes)	Series R4	a) segmental varying load on gear b) with uneven shock loads c) large acceleration and deceleration moments d) maximum 60 starts per minute (3600 per hour) e) up to 75% operating time per hour (45 minutes)	Lubricant: Synthetic oil
Application:	Measurement and test machinery drives, CNC axes	Application:	Rotary tables with unfavourable cutting conditions. Trunion axes, CNC axes, milling spindles	
Series R2	a) random even load around gear b) absolutely smooth operation c) minimal acceleration and deceleration moments d) maximum 6 starts per minute (360 per hour) e) up to 25% operating time per hour (15 minutes)	Series R5	a) loads limited only to eccentric gear segment b) heavy, uneven shock loads c) largest acceleration and deceleration moments d) maximum 180 starts per minute (10,800 per hour) e) up to 100% operating time per hour (60 minutes)	
Application:	Index tables, circular feed drives and CNC axes for mainly smooth, controlled applications	Application:	Heavy milling and trunion drives, CNC axes with unfavourable conditions	
Series R3	a) random changing load on gear b) small shock loads c) large acceleration and deceleration moments d) maximum 20 starts per minute (1200 per hour) e) up to 50% operating time per hour (30 minutes)	Zahnradfertigung OTT	Blöhsteinstraße 20 D-72411 Bodelshausen www.zahnrad-ott.de	Tel. 07471 - 705 0 Fax. 07471 - 705 39 Email. Info@zahnrad-ott.de
Application:	Index tables, rotary tables for circular milling with relatively favourable cutting conditions, CNC axes			

Centre distance	<b>125.00</b> mm	Material, gear	<b>GZ-CuSn12Ni</b>	<b>Operating characteristics</b>	
Outer Ø worm	<b>49.20</b> mm	Material, worm	<b>31CrMoV9</b>		
Outer Ø gear	<b>214.00</b> mm	Pressure angle in NS	<b>10 °</b>		
No. starts, worm	<b>2</b>	Back angle in NS	<b>15 °</b>		
Worm direction	<b>right</b>	Calculated circle Ø	<b>43.97</b> mm		
No. teeth, gear	<b>100</b>	Lead angle at Bks	<b>5.2566 °</b>		

## Ott worm gear

**OTT no: 4879 SSR**



Gear selection by load type and application					
Series R1	a) random even load around gear b) absolutely smooth operation c) minimal acceleration and deceleration moments d) maximum 1 start per minute (60 per hour) e) up to 10% operating time per hour (6 minutes)	Series R4	a) segmental varying load on gear b) with uneven shock loads c) large acceleration and deceleration moments d) maximum 60 starts per minute (3600 per hour) e) up to 75% operating time per hour (45 minutes)		
Application:	Measurement and test machinery drives, CNC axes	Application:	Rotary tables with unfavourable cutting conditions. Trunion axes, CNC axes, milling spindles		
Series R2	a) random even load around gear b) absolutely smooth operation c) minimal acceleration and deceleration moments d) maximum 6 starts per minute (360 per hour) e) up to 25% operating time per hour (15 minutes)	Series R5	a) loads limited only to eccentric gear segment b) heavy, uneven shock loads c) largest acceleration and deceleration moments d) maximum 180 starts per minute (10,800 per hour) e) up to 100% operating time per hour (60 minutes)		
Application:	Index tables, circular feed drives and CNC axes for mainly smooth, controlled applications	Application:	Heavy milling and trunion drives, CNC axes with unfavourable conditions		
Series R3	a) random changing load on gear b) small shock loads c) large acceleration and deceleration moments d) maximum 20 starts per minute (1200 per hour) e) up to 50% operating time per hour (30 minutes)	Zahnradfertigung OTT	Blöhsteinstraße 20 D-72411 Bodelshausen <a href="http://www.zahnrad-ott.de">www.zahnrad-ott.de</a>	Tel. 07471 - 705 0 Fax. 07471 - 705 39 Email. <a href="mailto:Info@zahnrad-ott.de">Info@zahnrad-ott.de</a>	Lubricant: Synthetic oil
Application:	Index tables, rotary tables for circular milling with relatively favourable cutting conditions, CNC axes				



## Type G1 Gear Catalogue

Zahnradfertigung Ott  
Blöhsteinstraße 20  
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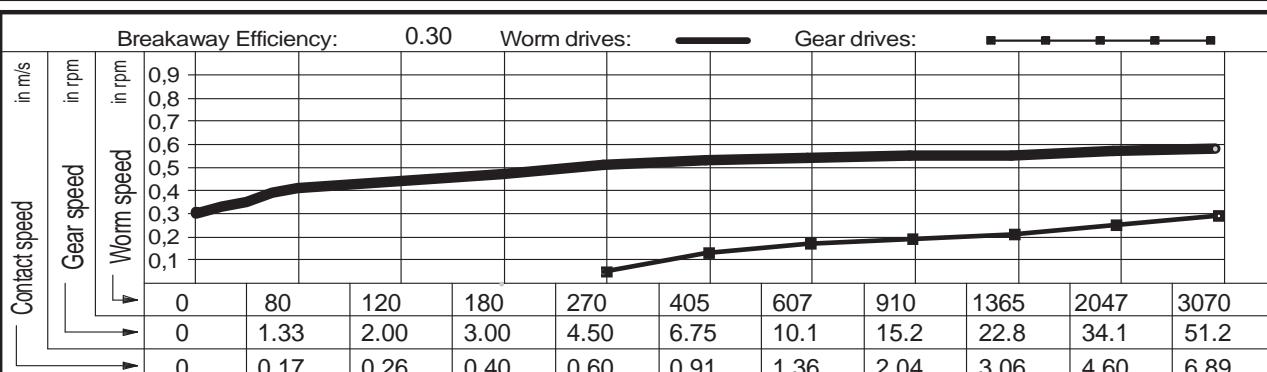
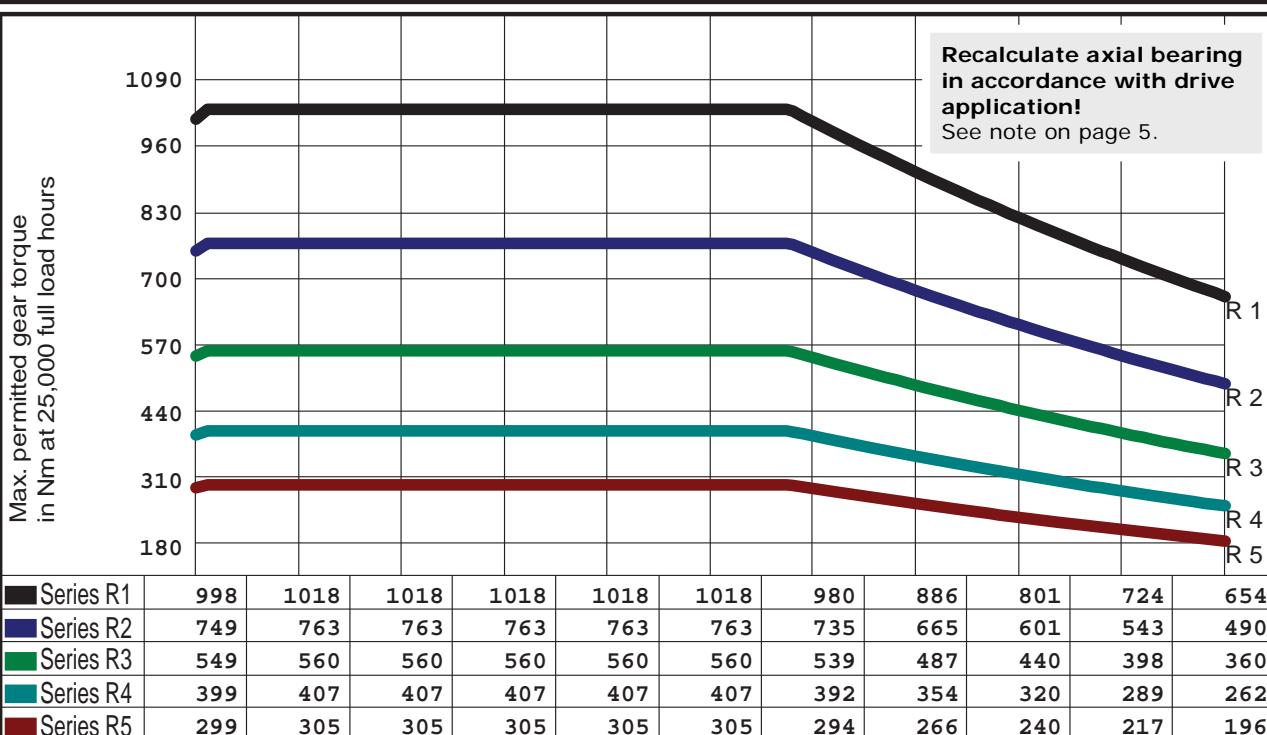
Centre distance	<b>125.00</b>	mm
Outer Ø worm	<b>47.40</b>	mm
Outer Ø gear	<b>214.00</b>	mm
No. starts, worm	<b>2</b>	
Worm direction	<b>right</b>	
No. teeth, gear	<b>120</b>	

Material, gear	<b>GZ-CuSn12Ni</b>
Material, worm	<b>31CrMoV9</b>
Pressure angle in NS	<b>10 °</b>
Back angle in NS	<b>15 °</b>
Calculated circle Ø	<b>42.79</b> mm
Lead angle at Bks	<b>4.5399</b> °

### Operating characteristics

#### Ott worm gear

**OTT no: 4877 SSR**



#### Gear selection by load type and application

Series R1	a) random even load around gear b) absolutely smooth operation c) minimal acceleration and deceleration moments d) maximum 1 start per minute (60 per hour) e) up to 10% operating time per hour (6 minutes)	Series R4	a) segmental varying load on gear b) with uneven shock loads c) large acceleration and deceleration moments d) maximum 60 starts per minute (3600 per hour) e) up to 75% operating time per hour (45 minutes)	Lubricant: <b>Synthetic oil</b>
Application:	Measurement and test machinery drives, CNC axes	Application:	Rotary tables with unfavourable cutting conditions. Trunion axes, CNC axes, milling spindles	
Series R2	a) random even load around gear b) absolutely smooth operation c) minimal acceleration and deceleration moments d) maximum 6 starts per minute (360 per hour) e) up to 25% operating time per hour (15 minutes)	Series R5	a) loads limited only to eccentric gear segment b) heavy, uneven shock loads c) largest acceleration and deceleration moments d) maximum 180 starts per minute (10,800 per hour) e) up to 100% operating time per hour (60 minutes)	
Application:	Index tables, circular feed drives and CNC axes for mainly smooth, controlled applications	Application:	Heavy milling and trunion drives, CNC axes with unfavourable conditions	
Series R3	a) random changing load on gear b) small shock loads c) large acceleration and deceleration moments d) maximum 20 starts per minute (1200 per hour) e) up to 50% operating time per hour (30 minutes)	Zahnradfertigung OTT	Blöhsteinstraße 20 D-72411 Bodelshausen www.zahnrad-ott.de	Tel. 07471 - 705 0 Fax. 07471 - 705 39 Email. Info@zahnrad-ott.de
Application:	Index tables, rotary tables for circular milling with relatively favourable cutting conditions, CNC axes			

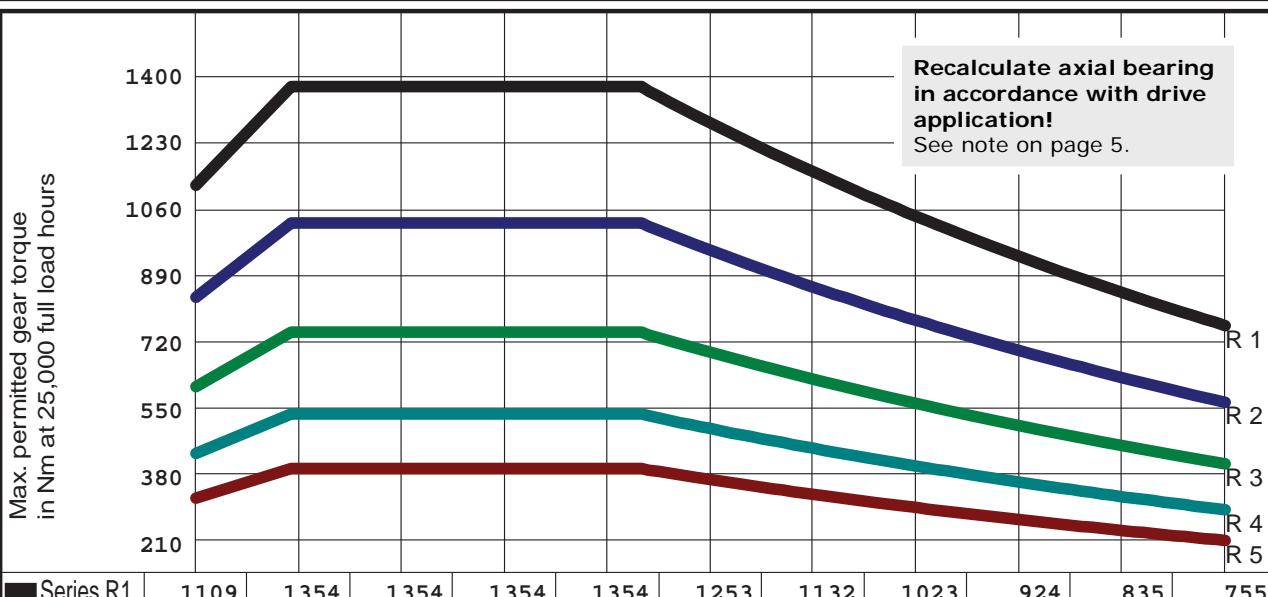
Centre distance	<b>125.00</b> mm
Outer Ø worm	<b>53.60</b> mm
Outer Ø gear	<b>214.00</b> mm
No. starts, worm	<b>1</b>
Worm direction	<b>right</b>
No. teeth, gear	<b>70</b>

Material, gear	<b>GZ-CuSn12Ni</b>
Material, worm	<b>31CrMoV9</b>
Pressure angle in NS	<b>10 °</b>
Back angle in NS	<b>20 °</b>
Calculated circle Ø	<b>46.95</b> mm
Lead angle at Bks	<b>3.4559</b> °

## Operating characteristics

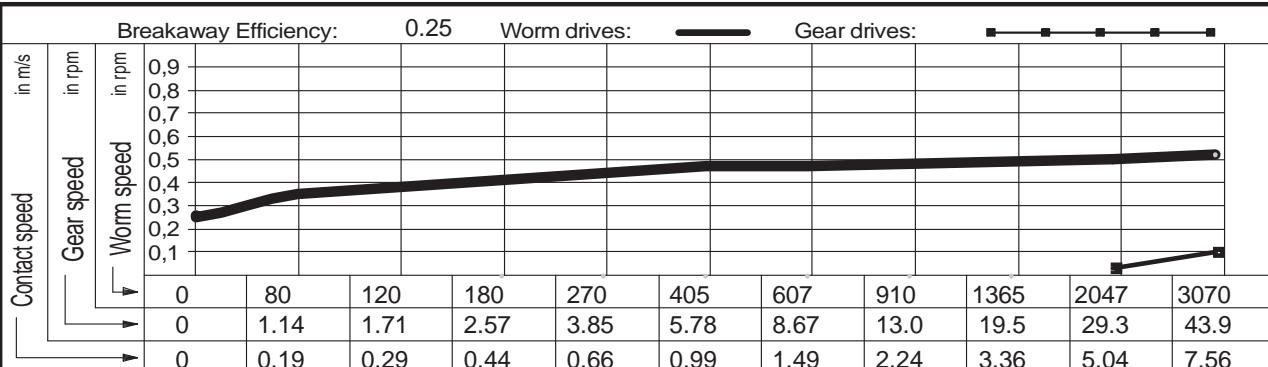
Ott worm gear

**OTT no: 4804 SSR**



Recalculate axial bearing  
in accordance with drive  
application!  
See note on page 5.

■ Series R1	1109	1354	1354	1354	1354	1253	1132	1023	924	835	755
■ Series R2	832	1015	1015	1015	1015	940	849	767	693	626	566
■ Series R3	610	745	745	745	745	689	623	563	508	459	415
■ Series R4	443	541	541	541	541	501	453	409	370	334	302
■ Series R5	333	406	406	406	406	376	340	307	277	251	226



Gear selection by load type and application														
Series R1	a) random even load around gear b) absolutely smooth operation c) minimal acceleration and deceleration moments d) maximum 1 start per minute (60 per hour) e) up to 10% operating time per hour (6 minutes)						Series R4	a) segmental varying load on gear b) with uneven shock loads c) large acceleration and deceleration moments d) maximum 60 starts per minute (3600 per hour) e) up to 75% operating time per hour (45 minutes)						
Application:	Measurement and test machinery drives, CNC axes						Application:	Rotary tables with unfavourable cutting conditions. Trunion axes, CNC axes, milling spindles						
Series R2	a) random even load around gear b) absolutely smooth operation c) minimal acceleration and deceleration moments d) maximum 6 starts per minute (360 per hour) e) up to 25% operating time per hour (15 minutes)						Series R5	a) loads limited only to eccentric gear segment b) heavy, uneven shock loads c) largest acceleration and deceleration moments d) maximum 180 starts per minute (10,800 per hour) e) up to 100% operating time per hour (60 minutes)						
Application:	Index tables, circular feed drives and CNC axes for mainly smooth, controlled applications						Application:	Heavy milling and trunion drives, CNC axes with unfavourable conditions						
Series R3	a) random changing load on gear b) small shock loads c) large acceleration and deceleration moments d) maximum 20 starts per minute (1200 per hour) e) up to 50% operating time per hour (30 minutes)						Zahnradfertigung OTT						Lubricant: Synthetic oil	
Application:	Index tables, rotary tables for circular milling with relatively favourable cutting conditions, CNC axes						Blöhsteinstraße 20 D-72411 Bodelshausen <a href="http://www.zahnrad-ott.de">www.zahnrad-ott.de</a>	Tel. 07471 - 705 0 Fax. 07471 - 705 39 Email. <a href="mailto:Info@zahnrad-ott.de">Info@zahnrad-ott.de</a>						



## Type G1 Gear Catalogue

Zahnradfertigung Ott  
Blöhsteinstraße 20  
D-72411 Bodelshausen

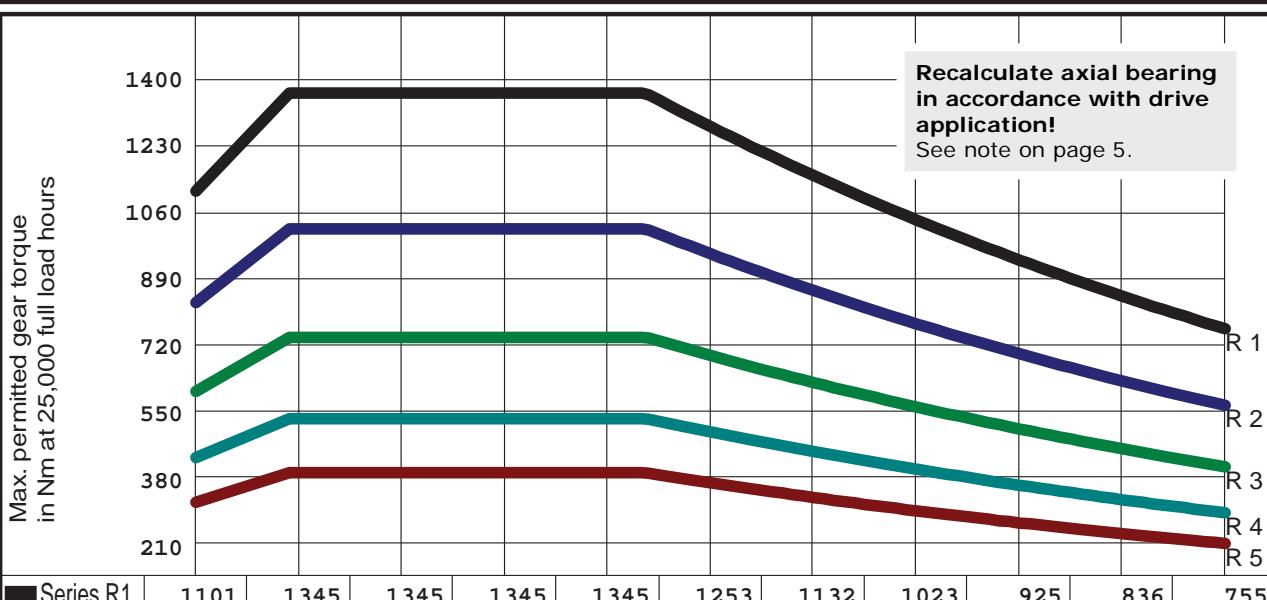
Centre distance	<b>125.00</b>	mm
Outer Ø worm	<b>53.20</b>	mm
Outer Ø gear	<b>214.00</b>	mm
No. starts, worm	<b>1</b>	
Worm direction	<b>right</b>	
No. teeth, gear	<b>72</b>	

Material, gear	<b>GZ-CuSn12Ni</b>
Material, worm	<b>31CrMoV9</b>
Pressure angle in NS	<b>10 °</b>
Back angle in NS	<b>20 °</b>
Calculated circle Ø	<b>46.67</b> mm
Lead angle at Bks	<b>3.3859</b> °

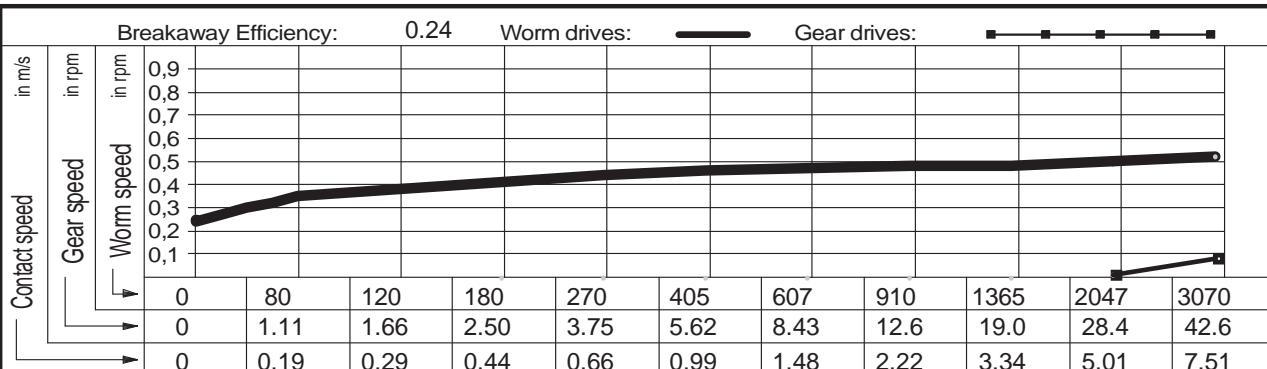
### Operating characteristics

#### Ott worm gear

**OTT no: 5741 SSR**

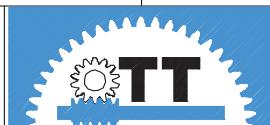


■ Series R1	1101	1345	1345	1345	1345	1253	1132	1023	925	836	755
■ Series R2	826	1008	1008	1008	1008	940	849	767	694	627	566
■ Series R3	606	740	740	740	740	689	623	563	509	460	415
■ Series R4	441	538	538	538	538	501	453	409	370	334	302
■ Series R5	330	403	403	403	403	376	340	307	277	251	227



Gear selection by load type and application													
Series R1	a) random even load around gear b) absolutely smooth operation c) minimal acceleration and deceleration moments d) maximum 1 start per minute (60 per hour) e) up to 10% operating time per hour (6 minutes)						Series R4	a) segmental varying load on gear b) with uneven shock loads c) large acceleration and deceleration moments d) maximum 60 starts per minute (3600 per hour) e) up to 75% operating time per hour (45 minutes)					
Application:	Measurement and test machinery drives, CNC axes						Application:	Rotary tables with unfavourable cutting conditions. Trunion axes, CNC axes, milling spindles					
Series R2	a) random even load around gear b) absolutely smooth operation c) minimal acceleration and deceleration moments d) maximum 6 starts per minute (360 per hour) e) up to 25% operating time per hour (15 minutes)						Series R5	a) loads limited only to eccentric gear segment b) heavy, uneven shock loads c) largest acceleration and deceleration moments d) maximum 180 starts per minute (10,800 per hour) e) up to 100% operating time per hour (60 minutes)					
Application:	Index tables, circular feed drives and CNC axes for mainly smooth, controlled applications						Application:	Heavy milling and trunion drives, CNC axes with unfavourable conditions					
Series R3	a) random changing load on gear b) small shock loads c) large acceleration and deceleration moments d) maximum 20 starts per minute (1200 per hour) e) up to 50% operating time per hour (30 minutes)						Zahnradfertigung OTT						
Application:	Index tables, rotary tables for circular milling with relatively favourable cutting conditions, CNC axes						Blöhsteinstraße 20	Tel.	07471 - 705 0				
							D-72411 Bodelshausen	Fax.	07471 - 705 39				
							www.zahnrad-ott.de	Email.	Info@zahnrad-ott.de				

Lubricant:  
**Synthetic oil**



Centre distance	<b>125.00</b> mm
Outer Ø worm	<b>50.40</b> mm
Outer Ø gear	<b>214.00</b> mm
No. starts, worm	<b>1</b>
Worm direction	<b>right</b>
No. teeth, gear	<b>90</b>

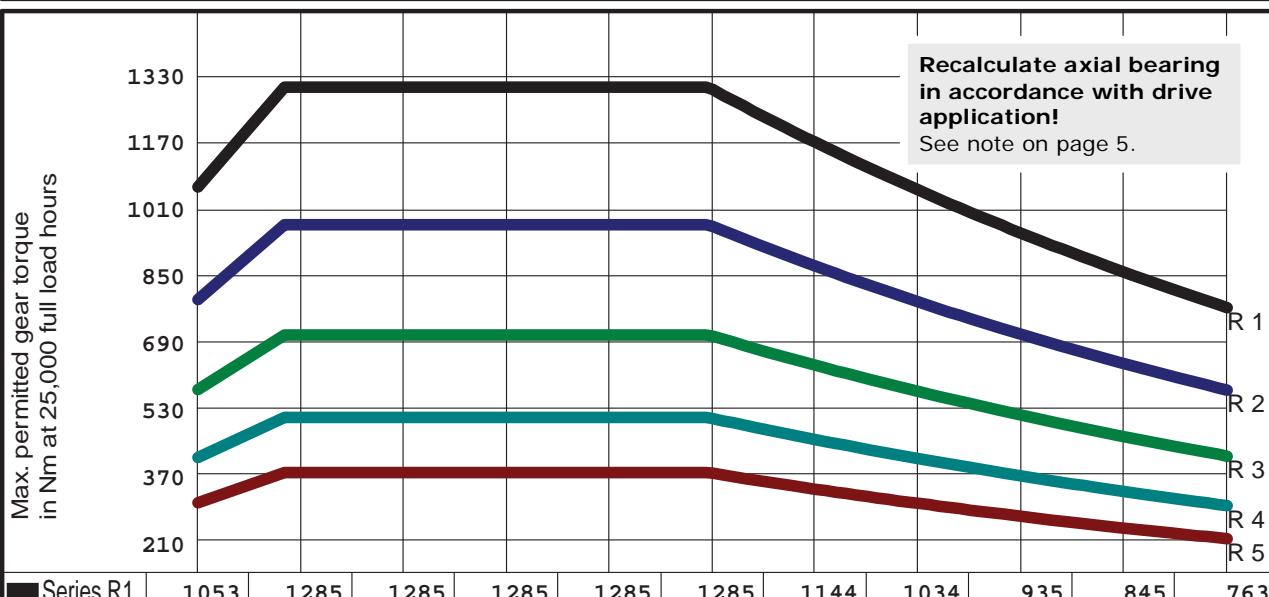
Material, gear  
 Material, worm  
 Pressure angle in NS  
 Back angle in NS  
 Calculated circle Ø  
 Lead angle at Bks

**GZ-CuSn12Ni**  
**31CrMoV9**  
 10 °  
 20 °  
 44.78 mm  
 2.8585 °

## Operating characteristics

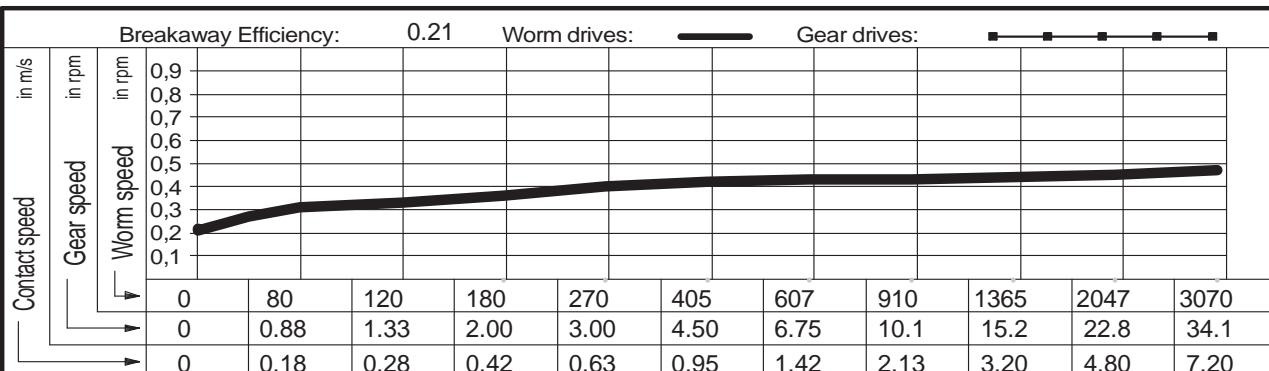
### Ott worm gear

**OTT no: 4853 SSR**



Recalculate axial bearing  
in accordance with drive  
application!  
See note on page 5.

Series	1053	1285	1285	1285	1285	1285	1144	1034	935	845	763
R1	1053	1285	1285	1285	1285	1285	1144	1034	935	845	763
R2	790	964	964	964	964	964	858	776	701	633	572
R3	579	707	707	707	707	707	629	569	514	464	420
R4	421	514	514	514	514	514	458	414	374	338	305
R5	316	386	386	386	386	386	343	310	280	253	229



### Gear selection by load type and application

Series R1	a) random even load around gear b) absolutely smooth operation c) minimal acceleration and deceleration moments d) maximum 1 start per minute (60 per hour) e) up to 10% operating time per hour (6 minutes)	Series R4	a) segmental varying load on gear b) with uneven shock loads c) large acceleration and deceleration moments d) maximum 60 starts per minute (3600 per hour) e) up to 75% operating time per hour (45 minutes)	Lubricant: <b>Synthetic oil</b>
Application:	Measurement and test machinery drives, CNC axes	Application:	Rotary tables with unfavourable cutting conditions, Trunion axes, CNC axes, milling spindles	
Series R2	a) random even load around gear b) absolutely smooth operation c) minimal acceleration and deceleration moments d) maximum 6 starts per minute (360 per hour) e) up to 25% operating time per hour (15 minutes)	Series R5	a) loads limited only to eccentric gear segment b) heavy, uneven shock loads c) largest acceleration and deceleration moments d) maximum 180 starts per minute (10,800 per hour) e) up to 100% operating time per hour (60 minutes)	
Application:	Index tables, circular feed drives and CNC axes for mainly smooth, controlled applications	Application:	Heavy milling and trunion drives, CNC axes with unfavourable conditions	
Series R3	a) random changing load on gear b) small shock loads c) large acceleration and deceleration moments d) maximum 20 starts per minute (1200 per hour) e) up to 50% operating time per hour (30 minutes)	Zahnradfertigung OTT	Blöhsteinstraße 20 D-72411 Bodelshausen www.zahnrad-ott.de	
Application:	Index tables, rotary tables for circular milling with relatively favourable cutting conditions, CNC axes		Tel. 07471 - 705 0 Fax. 07471 - 705 39 Email. Info@zahnrad-ott.de	



## Type G1 Gear Catalogue

Zahnradfertigung Ott  
Blöhsteinstraße 20  
D-72411 Bodelshausen

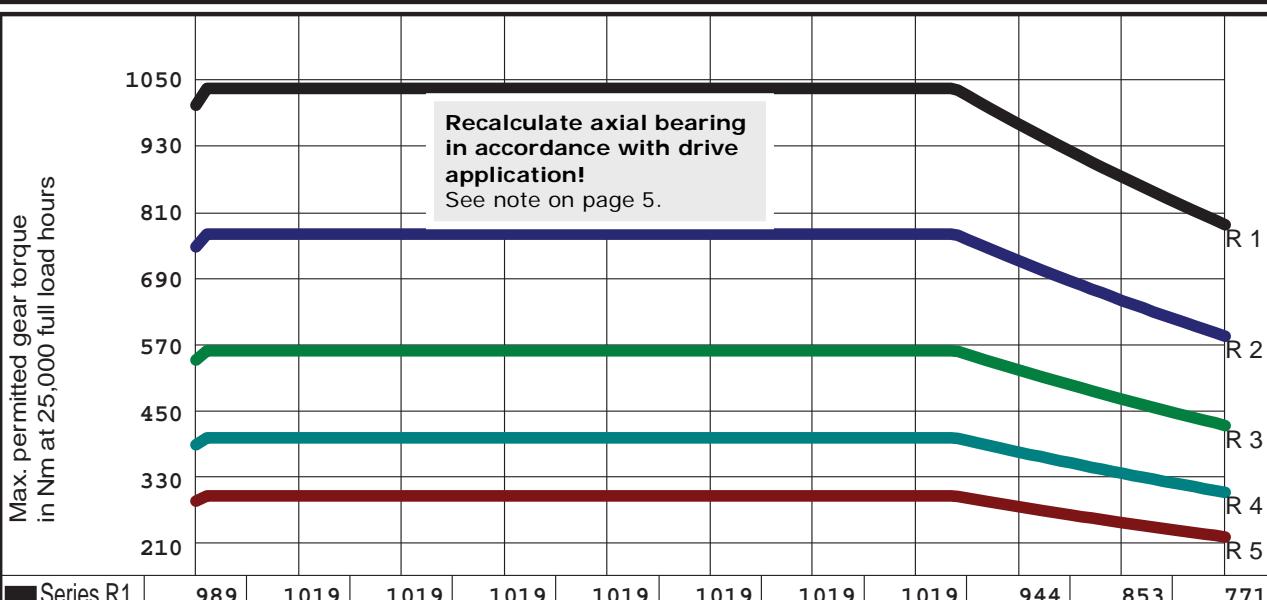
Centre distance	<b>125.00</b>	mm
Outer Ø worm	<b>47.40</b>	mm
Outer Ø gear	<b>214.00</b>	mm
No. starts, worm	<b>1</b>	
Worm direction	<b>right</b>	
No. teeth, gear	<b>120</b>	

Material, gear	<b>GZ-CuSn12Ni</b>
Material, worm	<b>31CrMoV9</b>
Pressure angle in NS	<b>10 °</b>
Back angle in NS	<b>15 °</b>
Calculated circle Ø	<b>42.79</b> mm
Lead angle at Bks	<b>2.2733</b> °

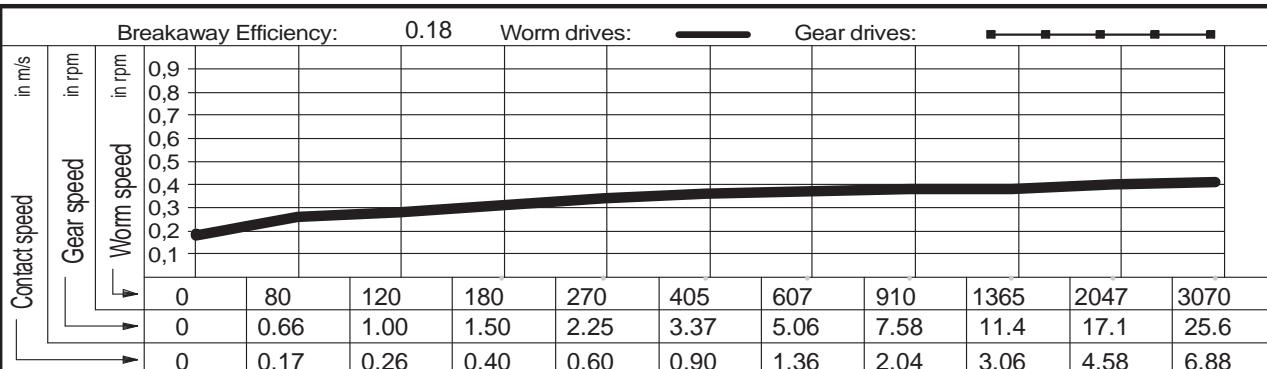
### Operating characteristics

#### Ott worm gear

**OTT no: 4861 SSR**



■ Series R1	989	1019	1019	1019	1019	1019	1019	944	853	771
■ Series R2	742	764	764	764	764	764	764	708	640	578
■ Series R3	544	560	560	560	560	560	560	519	469	424
■ Series R4	396	408	408	408	408	408	408	378	341	308
■ Series R5	297	306	306	306	306	306	306	283	256	231

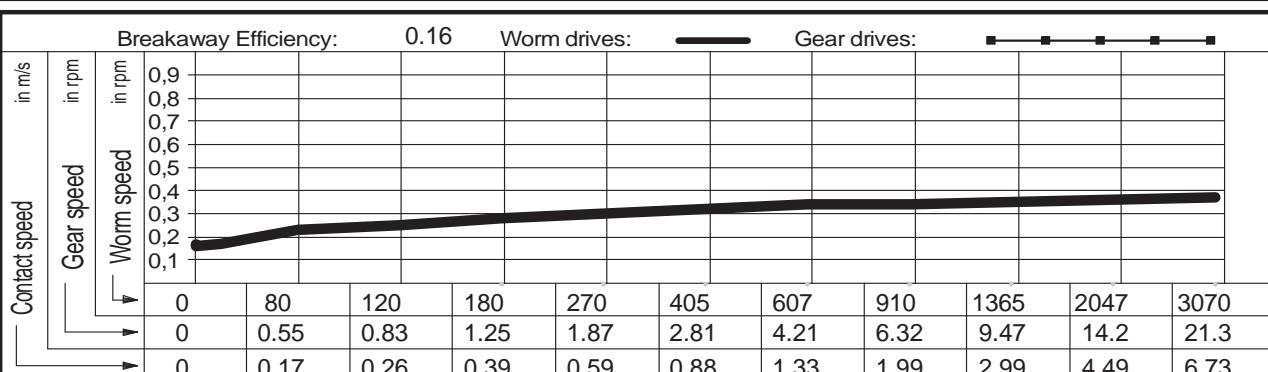
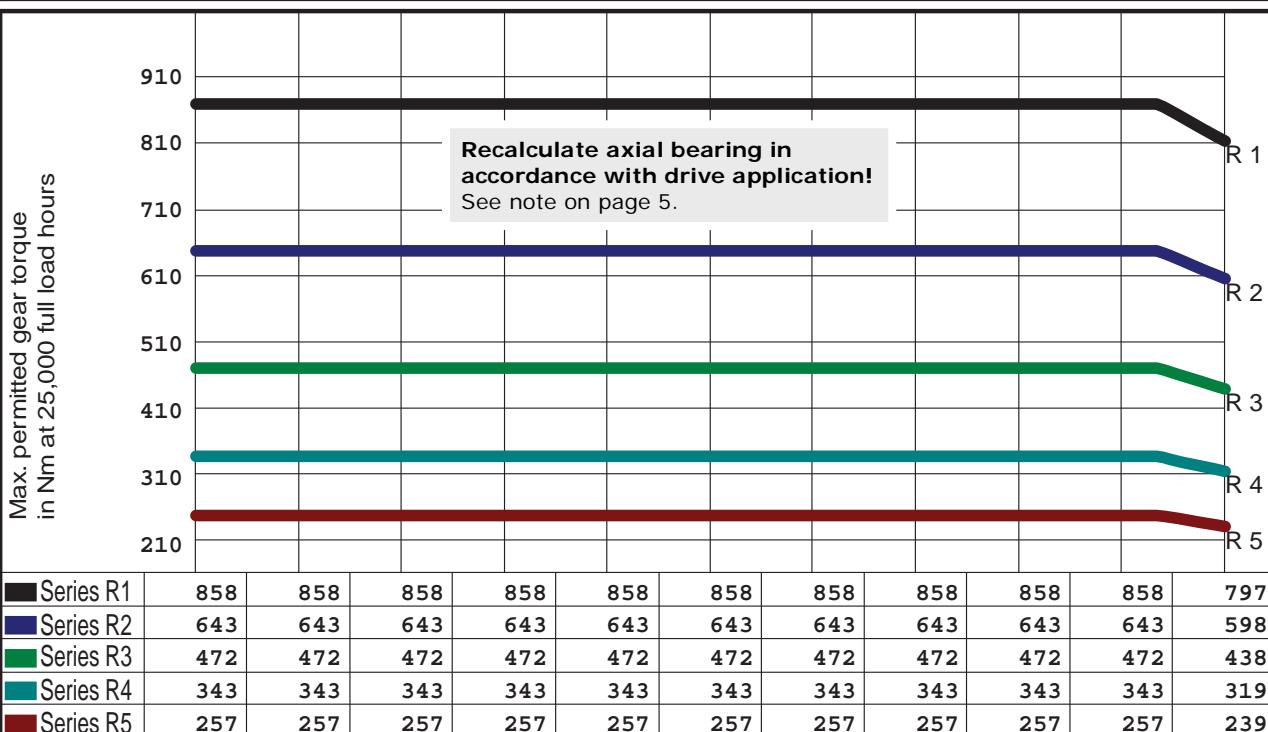


#### Gear selection by load type and application

Series R1	a) random even load around gear b) absolutely smooth operation c) minimal acceleration and deceleration moments d) maximum 1 start per minute (60 per hour) e) up to 10% operating time per hour (6 minutes)	Series R4	a) segmental varying load on gear b) with uneven shock loads c) large acceleration and deceleration moments d) maximum 60 starts per minute (3600 per hour) e) up to 75% operating time per hour (45 minutes)	Lubricant: <b>Synthetic oil</b>
Application:	Measurement and test machinery drives, CNC axes	Application:	Rotary tables with unfavourable cutting conditions, Trunion axes, CNC axes, milling spindles	
Series R2	a) random even load around gear b) absolutely smooth operation c) minimal acceleration and deceleration moments d) maximum 6 starts per minute (360 per hour) e) up to 25% operating time per hour (15 minutes)	Series R5	a) loads limited only to eccentric gear segment b) heavy, uneven shock loads c) largest acceleration and deceleration moments d) maximum 180 starts per minute (10,800 per hour) e) up to 100% operating time per hour (60 minutes)	
Application:	Index tables, circular feed drives and CNC axes for mainly smooth, controlled applications	Application:	Heavy milling and trunion drives, CNC axes with unfavourable conditions	
Series R3	a) random changing load on gear b) small shock loads c) large acceleration and deceleration moments d) maximum 20 starts per minute (1200 per hour) e) up to 50% operating time per hour (30 minutes)	Zahnradfertigung OTT	Blöhsteinstraße 20 D-72411 Bodelshausen www.zahnrad-ott.de	
Application:	Index tables, rotary tables for circular milling with relatively favourable cutting conditions, CNC axes	Tel. 07471 - 705 0 Fax. 07471 - 705 39 Email. Info@zahnrad-ott.de		



Centre distance	125.00	mm	Material, gear	GZ-CuSn12Ni	Operating characteristics
Outer Ø worm	46.00	mm	Material, worm	31CrMoV9	
Outer Ø gear	214.00	mm	Pressure angle in NS	10 °	Ott worm gear
No. starts, worm	1		Back angle in NS	16 °	
Worm direction	right		Calculated circle Ø	41.90 mm	
No. teeth, gear	144		Lead angle at Bks	1.9465 °	OTT no: 4846 SSR



Gear selection by load type and application														
Series R1	a) random even load around gear b) absolutely smooth operation c) minimal acceleration and deceleration moments d) maximum 1 start per minute (60 per hour) e) up to 10% operating time per hour (6 minutes)						Series R4	a) segmental varying load on gear b) with uneven shock loads c) large acceleration and deceleration moments d) maximum 60 starts per minute (3600 per hour) e) up to 75% operating time per hour (45 minutes)						
Application:	Measurement and test machinery drives, CNC axes						Application:	Rotary tables with unfavourable cutting conditions. Trunion axes, CNC axes, milling spindles						
Series R2	a) random even load around gear b) absolutely smooth operation c) minimal acceleration and deceleration moments d) maximum 6 starts per minute (360 per hour) e) up to 25% operating time per hour (15 minutes)						Series R5	a) loads limited only to eccentric gear segment b) heavy, uneven shock loads c) largest acceleration and deceleration moments d) maximum 180 starts per minute (10,800 per hour) e) up to 100% operating time per hour (60 minutes)						
Application:	Index tables, circular feed drives and CNC axes for mainly smooth, controlled applications						Application:	Heavy milling and trunion drives, CNC axes with unfavourable conditions						
Series R3	a) random changing load on gear b) small shock loads c) large acceleration and deceleration moments d) maximum 20 starts per minute (1200 per hour) e) up to 50% operating time per hour (30 minutes)						Zahnradfertigung OTT							
Application:	Index tables, rotary tables for circular milling with relatively favourable cutting conditions, CNC axes						Blöhsteinstraße 20 D-72411 Bodelshausen <a href="http://www.zahnrad-ott.de">www.zahnrad-ott.de</a>	Tel. 07471 - 705 0 Fax. 07471 - 705 39 Email. <a href="mailto:Info@zahnrad-ott.de">Info@zahnrad-ott.de</a>						

Lubricant:  
Synthetic oil



## Type G1 Gear Catalogue

Zahnradfertigung Ott  
Blöhsteinstraße 20  
D-72411 Bodelshausen

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## OTT worm gears - centre distance 145 mm

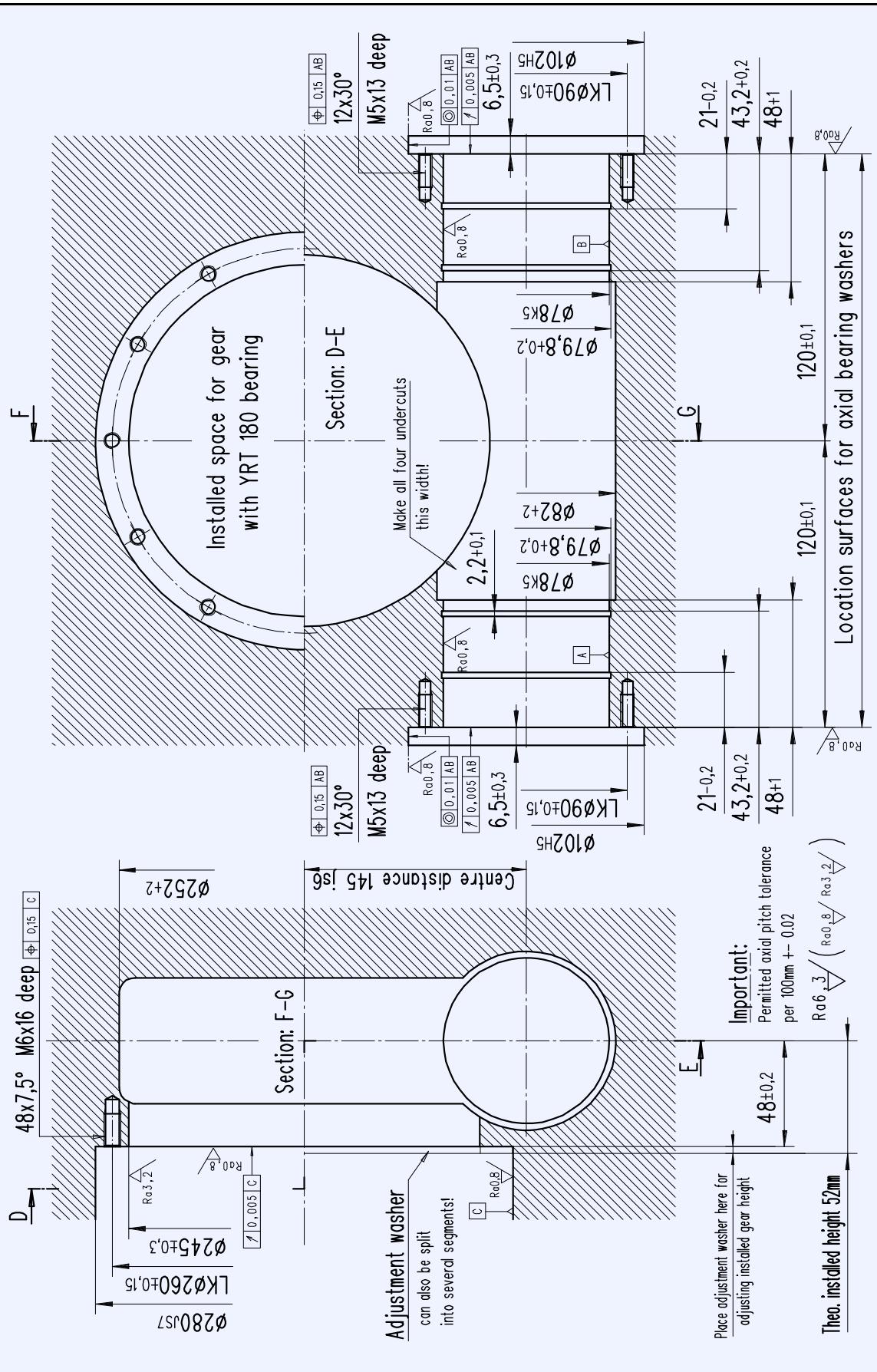
### Main dimensions

The technical drawing consists of two main parts. The left part shows a cross-section of the worm gear assembly with various dimensions labeled: A ±0,02, φB -0,02, φC -0,05, φD -0,2, Gap, and H ±0,02. It also includes a note 'Installed position Please note!' and labels for 'Worm centre and gear centre', 'Gear location surface underneath', 'Shank worm drive side', and 'Hollow worm'. The right part is a separate cross-sectional view of a gear assembly with labels for 'Gear location surface', 'Worm centre', 'φE H5', 'φF h8', and 'Centre distance'. The bottom section is a detailed drawing of a gear assembly installed in a housing, showing the gear, hub, bearings, and adjustment washers.

OTT gear no.	Ratio		Worm				YRT gear bearing	Gear			
	No. starts Z1	No. teeth Z2	Distance A	Undercut Ø B	Head Ø C	Collar Ø D		Internal Ø E	Head Ø F	Width G	Height H
5834 SSR	2	89	79	44,1	62,0	67,6	180	178	244	58	38
5722 SSR	2	91		44,2	62,0						
4875 SSR	2	120		44,6	59,0						
2788 SSR	1	72		43,7	65,6						
5721 SSR	1	90		44,2	62,0						
4815 SSR	1	120		44,6	59,0						
4821 SSR	1	144		44,8	57,6						
4842 SSR	1	180		45	55,8						

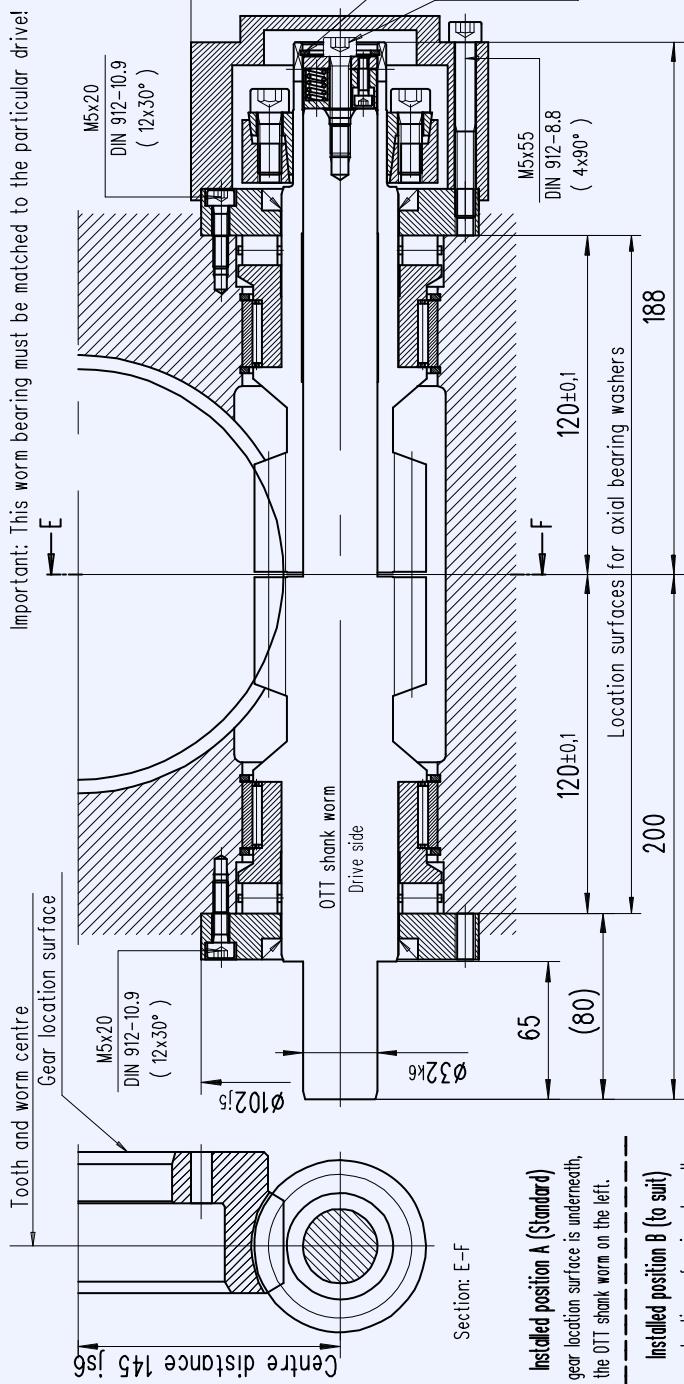
**Gear housing - required internal contour**

**Required internal contour of gear housing for centre distance 145 mm**



## Worm bearings

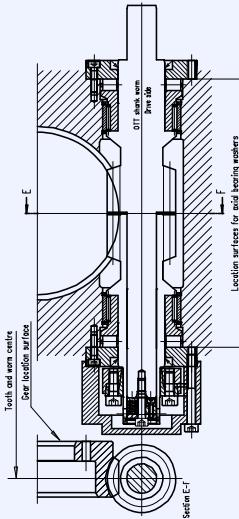
### Worm bearing for centre distance 145 mm



Bearing parts per gear			
OTT no.	Worm gear	Shank worm	Hollow worm
5834 SSR	T00449-G-RAO	T00321-G-SSC	T00322-G-HSC
5722 SSR	T00450-G-RAO	T00323-G-SSC	T00324-G-HSC
4875 SSR	T00451-G-RAO	T00325-G-SSC	T00326-G-HSC
2788 SSR	T00452-G-RAO	T00327-G-SSC	T00328-G-HSC
5721 SSR	T00453-G-RAO	T00329-G-SSC	T00330-G-HSC
4815 SSR	T00454-G-RAO	T00331-G-SSC	T00332-G-HSC
4821 SSR	T00455-G-RAO	T00333-G-SSC	T00334-G-HSC
4842 SSR	T00456-G-RAO	T00335-G-SSC	T00336-G-HSC

**Bearing parts per gear**

Name	Typ/Dwg no.
Axial cylinder roller bearing	K812 09 TV
Radial needle bearing	RNAO 60x78x20
Shaft seal	45x60x7
Shrink disc	HSD 44-22
Circlip	SB 78
Cylinder bolt DIN 912	M5x20 - 10,9
Cylinder bolt DIN 912	M5x55 - 8,8
Cylinder bolt DIN 912	M6x30 - 8,8
Retainer ring DIN 472	34
Bearing sleeve	T00222-G-LHÜ
Axial bearing washer	T00234-G-LDX
Cover	T00217-G-ADH
Thrust piece	B00010-G-DST



Order using ..... set of OTT worm gears

- Gearset incl. thrust piece without bearing parts
- Gearset incl. all bearing parts

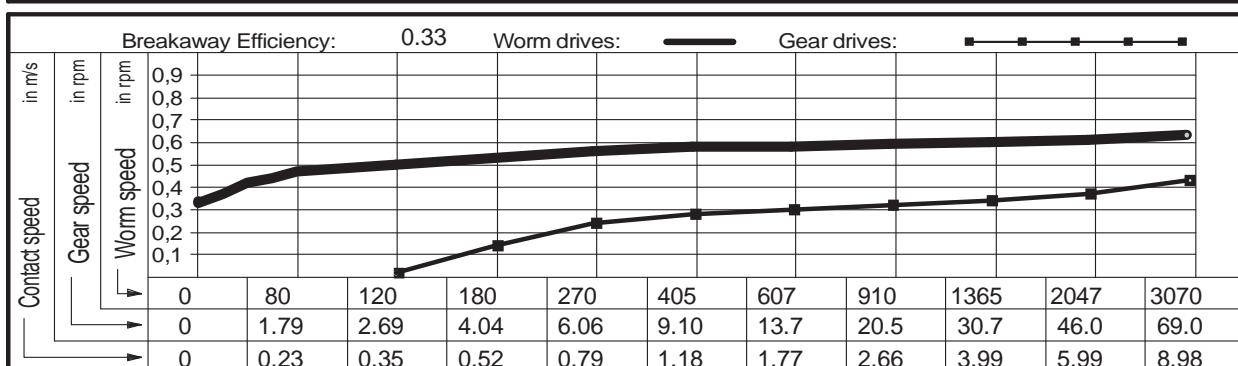
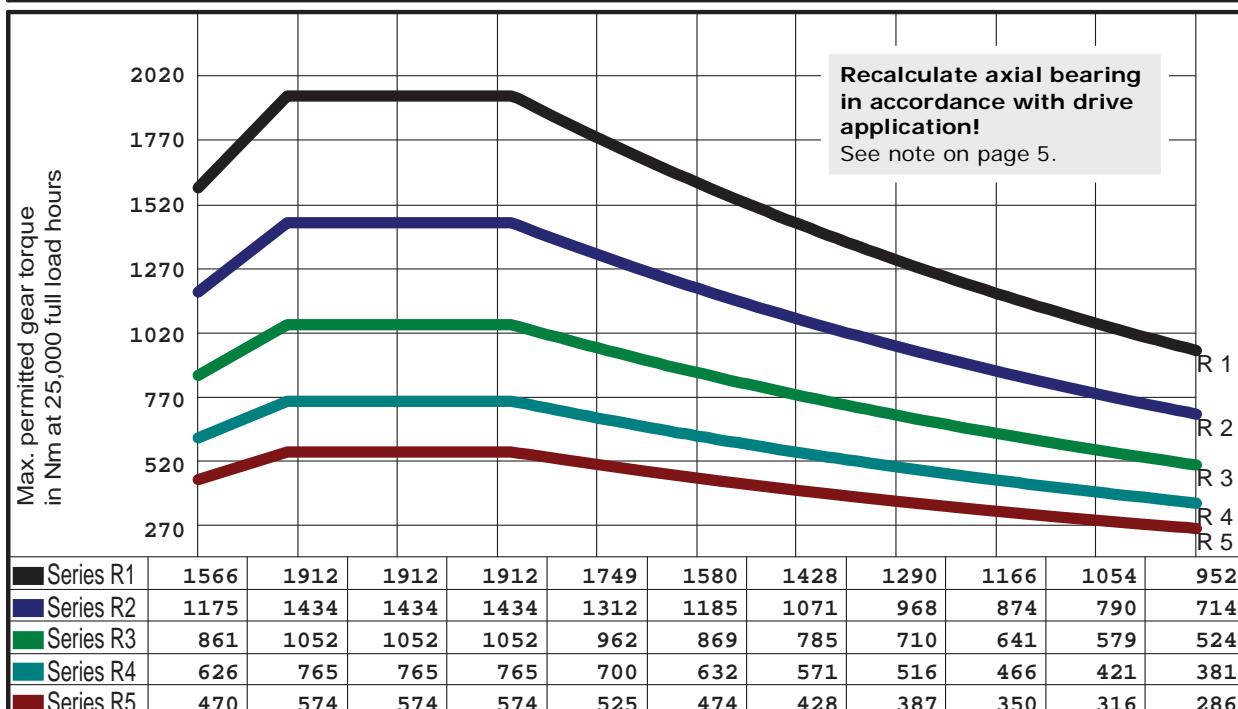


## Type G1 Gear Catalogue

Zahnradfertigung Ott  
Blöhsteinstraße 20  
D-72411 Bodelshausen

### Operational characteristics

Centre distance	145.00	mm	Material, gear	GZ-CuSn12Ni	Operating characteristics	
Outer Ø worm	62.00	mm	Material, worm	31CrMoV9		
Outer Ø gear	244.00	mm	Pressure angle in NS	10 °	Ott worm gear	
No. starts, worm	2		Back angle in NS	20 °		
Worm direction	right		Calculated circle Ø	55.67 mm	OTT no: 5834 SSR	
No. teeth, gear	89		Lead angle at Bks	5.3020 °		



Gear selection by load type and application													
Series R1	a) random even load around gear b) absolutely smooth operation c) minimal acceleration and deceleration moments d) maximum 1 start per minute (60 per hour) e) up to 10% operating time per hour (6 minutes)						Series R4	a) segmental varying load on gear b) with uneven shock loads c) large acceleration and deceleration moments d) maximum 60 starts per minute (3600 per hour) e) up to 75% operating time per hour (45 minutes)					
Application:	Measurement and test machinery drives, CNC axes						Application:	Rotary tables with unfavourable cutting conditions. Trunion axes, CNC axes, milling spindles					
Series R2	a) random even load around gear b) absolutely smooth operation c) minimal acceleration and deceleration moments d) maximum 6 starts per minute (360 per hour) e) up to 25% operating time per hour (15 minutes)						Series R5	a) loads limited only to eccentric gear segment b) heavy, uneven shock loads c) largest acceleration and deceleration moments d) maximum 180 starts per minute (10,800 per hour) e) up to 100% operating time per hour (60 minutes)					
Application:	Index tables, circular feed drives and CNC axes for mainly smooth, controlled applications						Application:	Heavy milling and trunion drives, CNC axes with unfavourable conditions					
Series R3	a) random changing load on gear b) small shock loads c) large acceleration and deceleration moments d) maximum 20 starts per minute (1200 per hour) e) up to 50% operating time per hour (30 minutes)						Zahnradfertigung OTT Blöhsteinstraße 20 D-72411 Bodelshausen www.zahnrad-ott.de					Lubricant: Synthetic oil	
Application:	Index tables, rotary tables for circular milling with relatively favourable cutting conditions, CNC axes						Tel. 07471 - 705 0 Fax. 07471 - 705 39 Email. Info@zahnrad-ott.de						

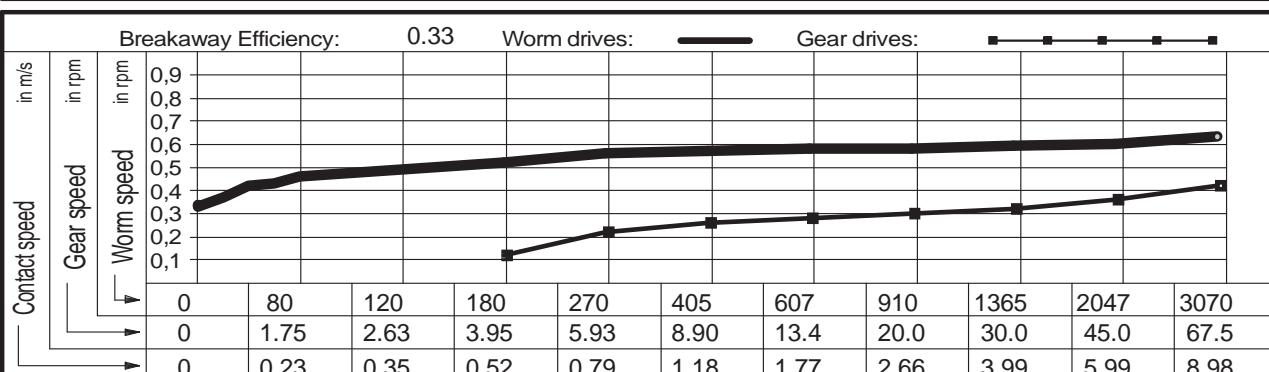
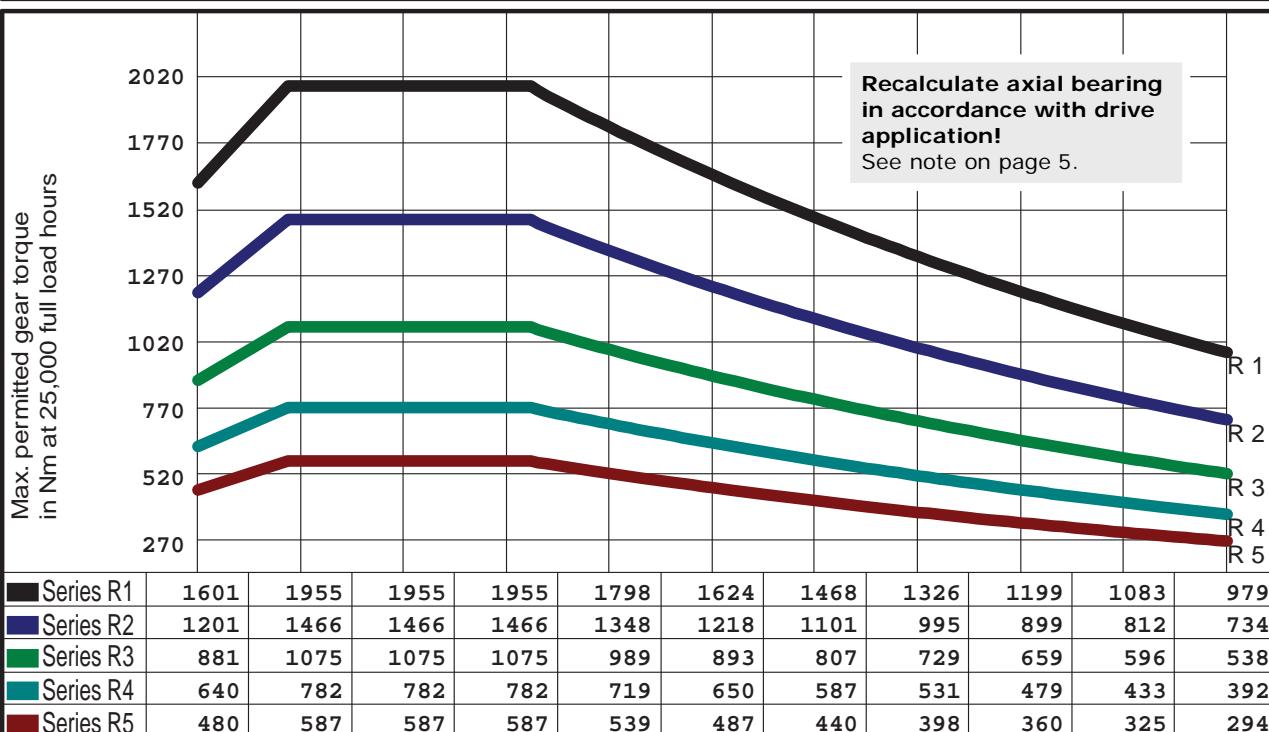
Centre distance	<b>145.00</b> mm
Outer Ø worm	<b>62.00</b> mm
Outer Ø gear	<b>244.00</b> mm
No. starts, worm	<b>2</b>
Worm direction	<b>right</b>
No. teeth, gear	<b>91</b>

Material, gear	<b>GZ-CuSn12Ni</b>
Material, worm	<b>31CrMoV9</b>
Pressure angle in NS	<b>10 °</b>
Back angle in NS	<b>20 °</b>
Calculated circle Ø	<b>55.70</b> mm
Lead angle at Bks	<b>5.1824</b> °

## Operating characteristics

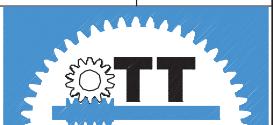
Ott worm gear

**OTT no: 5722 SSR**



Gear selection by load type and application													
Series R1	a) random even load around gear b) absolutely smooth operation c) minimal acceleration and deceleration moments d) maximum 1 start per minute (60 per hour) e) up to 10% operating time per hour (6 minutes)						Series R4	a) segmental varying load on gear b) with uneven shock loads c) large acceleration and deceleration moments d) maximum 60 starts per minute (3600 per hour) e) up to 75% operating time per hour (45 minutes)					
Application:	Measurement and test machinery drives, CNC axes						Application:	Rotary tables with unfavourable cutting conditions. Trunion axes, CNC axes, milling spindles					
Series R2	a) random even load around gear b) absolutely smooth operation c) minimal acceleration and deceleration moments d) maximum 6 starts per minute (360 per hour) e) up to 25% operating time per hour (15 minutes)						Series R5	a) loads limited only to eccentric gear segment b) heavy, uneven shock loads c) largest acceleration and deceleration moments d) maximum 180 starts per minute (10,800 per hour) e) up to 100% operating time per hour (60 minutes)					
Application:	Index tables, circular feed drives and CNC axes for mainly smooth, controlled applications						Application:	Heavy milling and trunion drives, CNC axes with unfavourable conditions					
Series R3	a) random changing load on gear b) small shock loads c) large acceleration and deceleration moments d) maximum 20 starts per minute (1200 per hour) e) up to 50% operating time per hour (30 minutes)						Zahnradfertigung OTT	Blöhsteinstraße 20 D-72411 Bodelshausen <a href="http://www.zahnrad-ott.de">www.zahnrad-ott.de</a>					
Application:	Index tables, rotary tables for circular milling with relatively favourable cutting conditions, CNC axes							Tel. 07471 - 705 0 Fax. 07471 - 705 39 Email. <a href="mailto:Info@zahnrad-ott.de">Info@zahnrad-ott.de</a>					

Lubricant:  
Synthetic oil





## Type G1 Gear Catalogue

Zahnradfertigung Ott  
Blöhsteinstraße 20  
D-72411 Bodelshausen

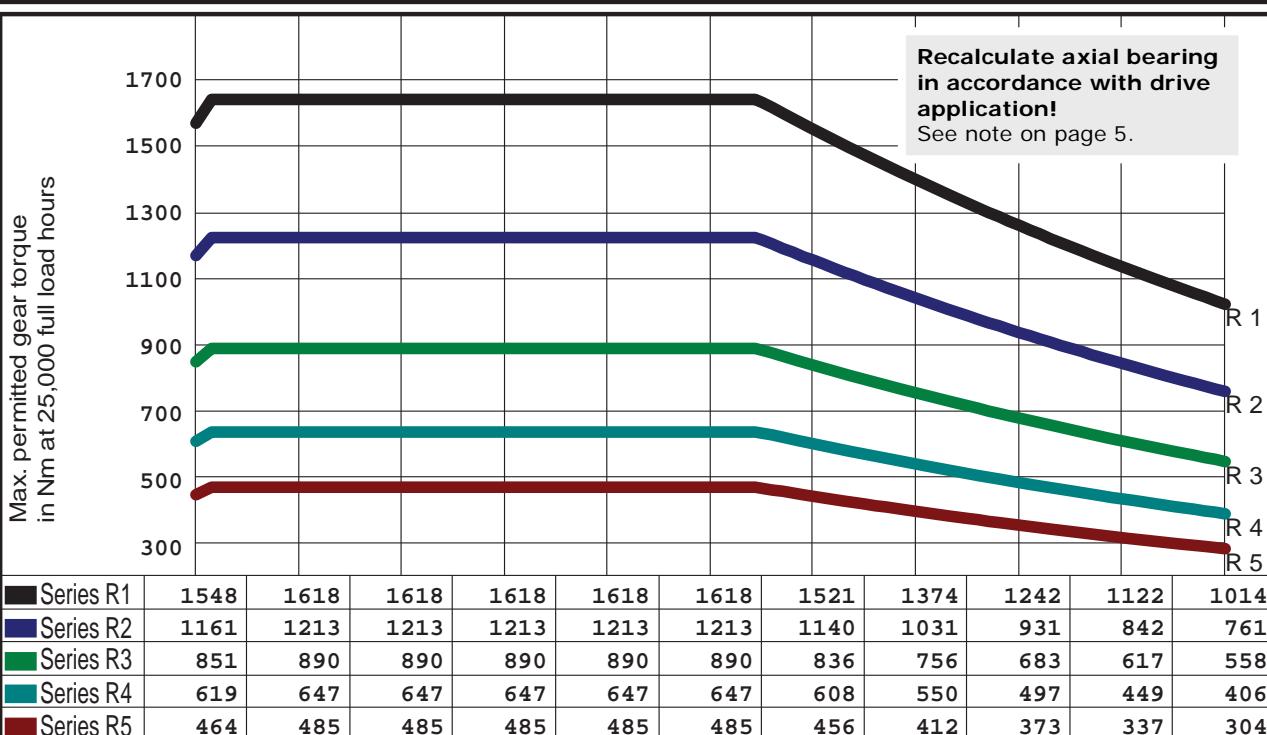
Centre distance	<b>145.00</b> mm
Outer Ø worm	<b>59.00</b> mm
Outer Ø gear	<b>244.00</b> mm
No. starts, worm	<b>2</b>
Worm direction	<b>right</b>
No. teeth, gear	<b>120</b>

Material, gear	<b>GZ-CuSn12Ni</b>
Material, worm	<b>31CrMoV9</b>
Pressure angle in NS	<b>10 °</b>
Back angle in NS	<b>15 °</b>
Calculated circle Ø	<b>53.74</b> mm
Lead angle at Bks	<b>4.1226</b> °

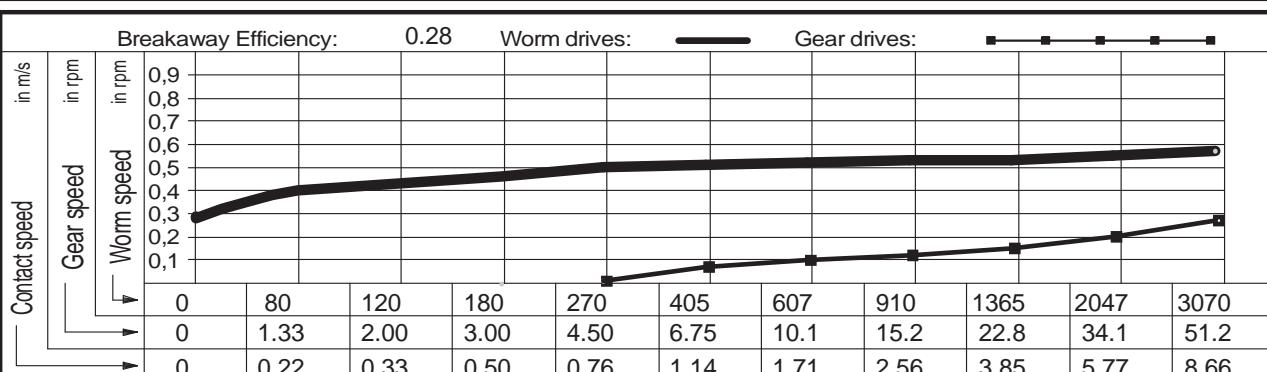
### Operating characteristics

#### Ott worm gear

**OTT no: 4875 SSR**



Recalculate axial bearing  
in accordance with drive  
application!  
See note on page 5.



#### Gear selection by load type and application

Series R1	a) random even load around gear b) absolutely smooth operation c) minimal acceleration and deceleration moments d) maximum 1 start per minute (60 per hour) e) up to 10% operating time per hour (6 minutes)	Series R4	a) segmental varying load on gear b) with uneven shock loads c) large acceleration and deceleration moments d) maximum 60 starts per minute (3600 per hour) e) up to 75% operating time per hour (45 minutes)	Lubricant: Synthetic oil
Application:	Measurement and test machinery drives, CNC axes	Application:	Rotary tables with unfavourable cutting conditions. Trunion axes, CNC axes, milling spindles	
Series R2	a) random even load around gear b) absolutely smooth operation c) minimal acceleration and deceleration moments d) maximum 6 starts per minute (360 per hour) e) up to 25% operating time per hour (15 minutes)	Series R5	a) loads limited only to eccentric gear segment b) heavy, uneven shock loads c) largest acceleration and deceleration moments d) maximum 180 starts per minute (10,800 per hour) e) up to 100% operating time per hour (60 minutes)	
Application:	Index tables, circular feed drives and CNC axes for mainly smooth, controlled applications	Application:	Heavy milling and trunion drives, CNC axes with unfavourable conditions	
Series R3	a) random changing load on gear b) small shock loads c) large acceleration and deceleration moments d) maximum 20 starts per minute (1200 per hour) e) up to 50% operating time per hour (30 minutes)	Zahnradfertigung OTT	Blöhsteinstraße 20 D-72411 Bodelshausen www.zahnrad-ott.de	Tel. 07471 - 705 0 Fax. 07471 - 705 39 Email. Info@zahnrad-ott.de
Application:	Index tables, rotary tables for circular milling with relatively favourable cutting conditions, CNC axes			

Centre distance	<b>145.00</b> mm
Outer Ø worm	<b>65.60</b> mm
Outer Ø gear	<b>244.00</b> mm
No. starts, worm	<b>1</b>
Worm direction	<b>right</b>
No. teeth, gear	<b>72</b>

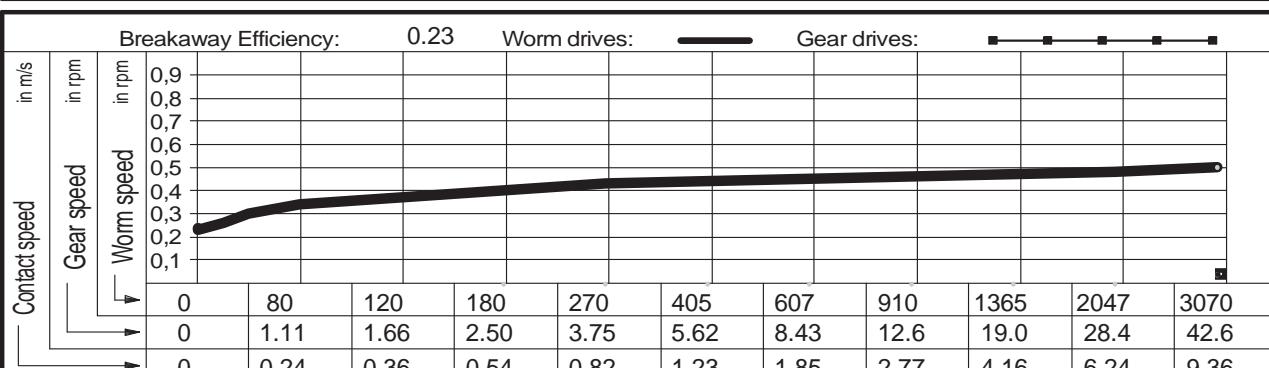
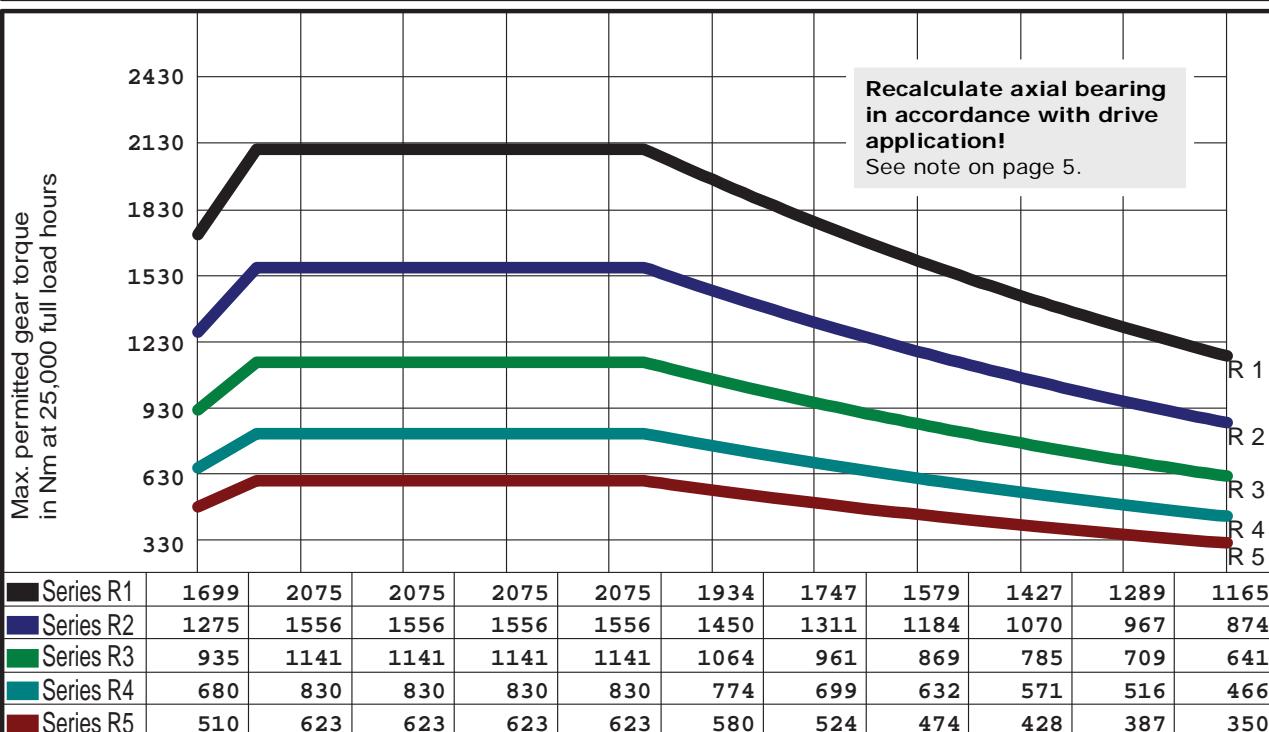
Material, gear  
 Material, worm  
 Pressure angle in NS  
 Back angle in NS  
 Calculated circle Ø  
 Lead angle at Bks

**GZ-CuSn12Ni**  
**31CrMoV9**  
 10 °  
 20 °  
 58.17 mm  
 3.0985 °

## Operating characteristics

### Ott worm gear

**OTT no: 2788 SSR**



Gear selection by load type and application													
Series R1	a) random even load around gear b) absolutely smooth operation c) minimal acceleration and deceleration moments d) maximum 1 start per minute (60 per hour) e) up to 10% operating time per hour (6 minutes)						Series R4	a) segmental varying load on gear b) with uneven shock loads c) large acceleration and deceleration moments d) maximum 60 starts per minute (3600 per hour) e) up to 75% operating time per hour (45 minutes)					
Application:	Measurement and test machinery drives, CNC axes						Application:	Rotary tables with unfavourable cutting conditions. Trunion axes, CNC axes, milling spindles					
Series R2	a) random even load around gear b) absolutely smooth operation c) minimal acceleration and deceleration moments d) maximum 6 starts per minute (360 per hour) e) up to 25% operating time per hour (15 minutes)						Series R5	a) loads limited only to eccentric gear segment b) heavy, uneven shock loads c) largest acceleration and deceleration moments d) maximum 180 starts per minute (10,800 per hour) e) up to 100% operating time per hour (60 minutes)					
Application:	Index tables, circular feed drives and CNC axes for mainly smooth, controlled applications						Application:	Heavy milling and trunion drives, CNC axes with unfavourable conditions					
Series R3	a) random changing load on gear b) small shock loads c) large acceleration and deceleration moments d) maximum 20 starts per minute (1200 per hour) e) up to 50% operating time per hour (30 minutes)						Zahnradfertigung OTT						
Application:	Index tables, rotary tables for circular milling with relatively favourable cutting conditions, CNC axes						Blöhsteinstraße 20	Tel.	07471 - 705 0				
							D-72411 Bodelshausen	Fax.	07471 - 705 39				
							www.zahnrad-ott.de	Email.	Info@zahnrad-ott.de				

Lubricant:  
 Synthetic oil



## Type G1 Gear Catalogue

Zahnradfertigung Ott  
Blöhsteinstraße 20  
D-72411 Bodelshausen

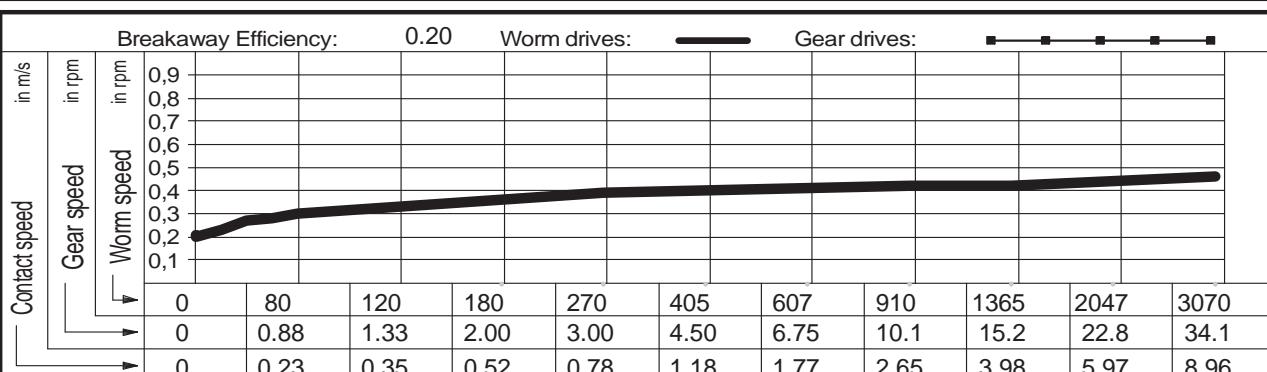
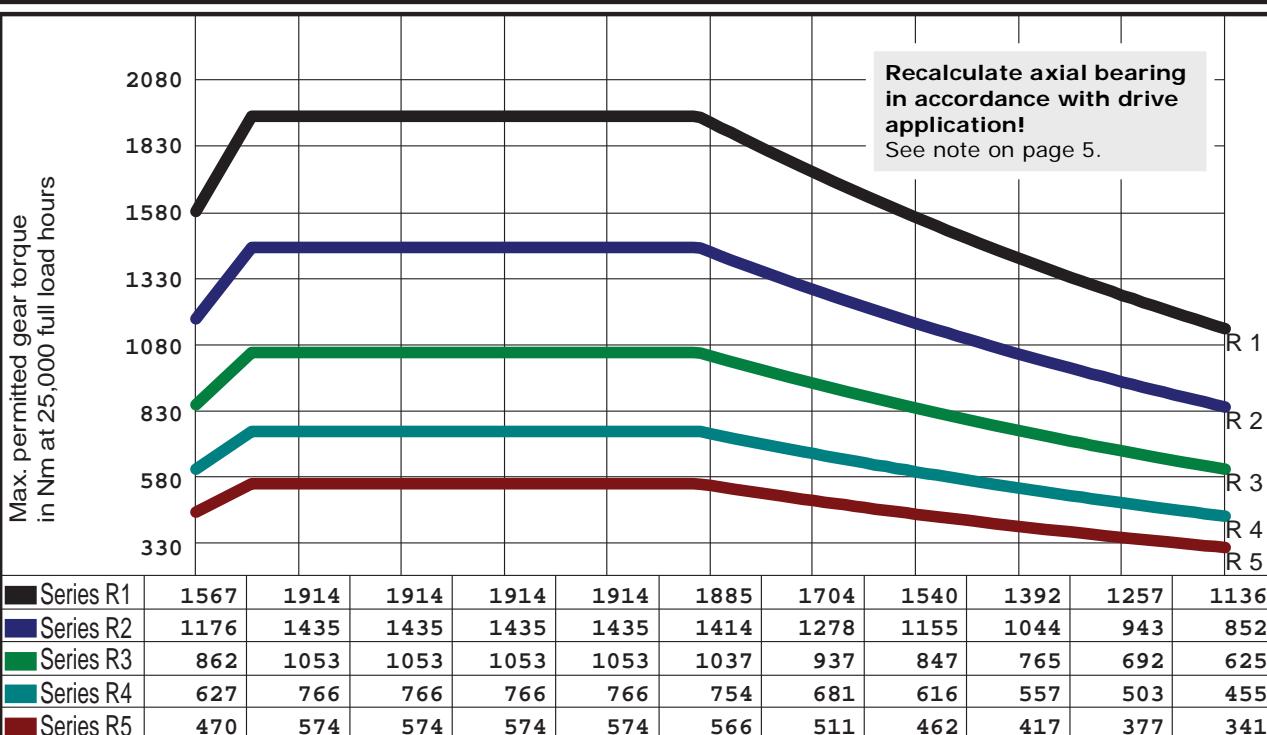
Centre distance	<b>145.00</b>	mm
Outer Ø worm	<b>62.00</b>	mm
Outer Ø gear	<b>244.00</b>	mm
No. starts, worm	<b>1</b>	
Worm direction	<b>right</b>	
No. teeth, gear	<b>90</b>	

Material, gear	<b>GZ-CuSn12Ni</b>
Material, worm	<b>31CrMoV9</b>
Pressure angle in NS	<b>10 °</b>
Back angle in NS	<b>20 °</b>
Calculated circle Ø	<b>55.69 mm</b>
Lead angle at Bks	<b>2.6260 °</b>

### Operating characteristics

#### Ott worm gear

**OTT no: 5721 SSR**



#### Gear selection by load type and application

Series R1	a) random even load around gear b) absolutely smooth operation c) minimal acceleration and deceleration moments d) maximum 1 start per minute (60 per hour) e) up to 10% operating time per hour (6 minutes)	Series R4	a) segmental varying load on gear b) with uneven shock loads c) large acceleration and deceleration moments d) maximum 60 starts per minute (3600 per hour) e) up to 75% operating time per hour (45 minutes)	Lubricant: <b>Synthetic oil</b>
Application:	Measurement and test machinery drives, CNC axes	Application:	Rotary tables with unfavourable cutting conditions. Trunion axes, CNC axes, milling spindles	
Series R2	a) random even load around gear b) absolutely smooth operation c) minimal acceleration and deceleration moments d) maximum 6 starts per minute (360 per hour) e) up to 25% operating time per hour (15 minutes)	Series R5	a) loads limited only to eccentric gear segment b) heavy, uneven shock loads c) largest acceleration and deceleration moments d) maximum 180 starts per minute (10,800 per hour) e) up to 100% operating time per hour (60 minutes)	
Application:	Index tables, circular feed drives and CNC axes for mainly smooth, controlled applications	Application:	Heavy milling and trunion drives, CNC axes with unfavourable conditions	
Series R3	a) random changing load on gear b) small shock loads c) large acceleration and deceleration moments d) maximum 20 starts per minute (1200 per hour) e) up to 50% operating time per hour (30 minutes)	Zahnradfertigung OTT	Blöhsteinstraße 20 D-72411 Bodelshausen www.zahnrad-ott.de	Tel. 07471 - 705 0 Fax. 07471 - 705 39 Email. Info@zahnrad-ott.de
Application:	Index tables, rotary tables for circular milling with relatively favourable cutting conditions, CNC axes			

Centre distance	<b>145.00</b> mm
Outer Ø worm	<b>59.00</b> mm
Outer Ø gear	<b>244.00</b> mm
No. starts, worm	<b>1</b>
Worm direction	<b>right</b>
No. teeth, gear	<b>120</b>

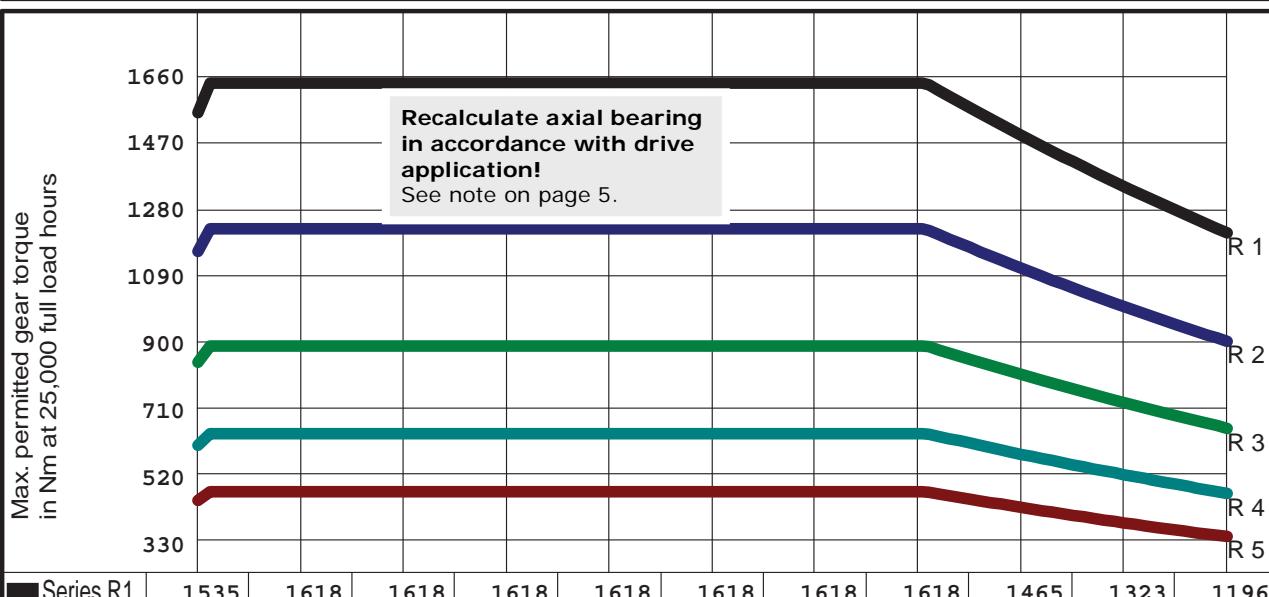
Material, gear  
 Material, worm  
 Pressure angle in NS  
 Back angle in NS  
 Calculated circle Ø  
 Lead angle at Bks

**GZ-CuSn12Ni**  
**31CrMoV9**  
**10 °**  
**15 °**  
**53.75 mm**  
**2.0638 °**

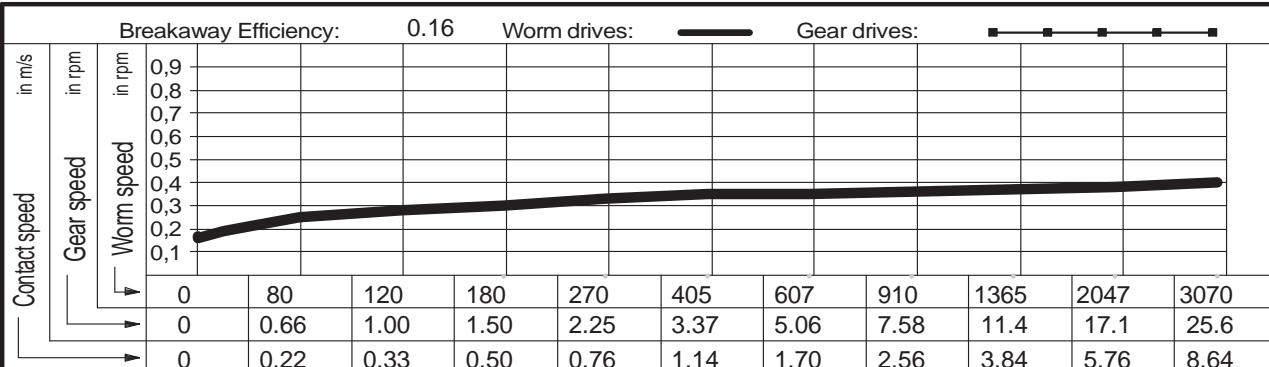
## Operating characteristics

Ott worm gear

**OTT no: 4815 SSR**



	Series R1	1535	1618	1618	1618	1618	1618	1618	1465	1323	1196
Series R2		1151	1213	1213	1213	1213	1213	1213	1099	993	897
Series R3		844	890	890	890	890	890	890	806	728	658
Series R4		614	647	647	647	647	647	647	586	529	478
Series R5		461	485	485	485	485	485	485	439	397	359



Gear selection by load type and application													
Series R1	a) random even load around gear b) absolutely smooth operation c) minimal acceleration and deceleration moments d) maximum 1 start per minute (60 per hour) e) up to 10% operating time per hour (6 minutes)						Series R4	a) segmental varying load on gear b) with uneven shock loads c) large acceleration and deceleration moments d) maximum 60 starts per minute (3600 per hour) e) up to 75% operating time per hour (45 minutes)					
Application:	Measurement and test machinery drives, CNC axes						Application:	Rotary tables with unfavourable cutting conditions. Trunion axes, CNC axes, milling spindles					
Series R2	a) random even load around gear b) absolutely smooth operation c) minimal acceleration and deceleration moments d) maximum 6 starts per minute (360 per hour) e) up to 25% operating time per hour (15 minutes)						Series R5	a) loads limited only to eccentric gear segment b) heavy, uneven shock loads c) largest acceleration and deceleration moments d) maximum 180 starts per minute (10,800 per hour) e) up to 100% operating time per hour (60 minutes)					
Application:	Index tables, circular feed drives and CNC axes for mainly smooth, controlled applications						Application:	Heavy milling and trunion drives, CNC axes with unfavourable conditions					
Series R3	a) random changing load on gear b) small shock loads c) large acceleration and deceleration moments d) maximum 20 starts per minute (1200 per hour) e) up to 50% operating time per hour (30 minutes)						Zahnradfertigung OTT	Blöhsteinstraße 20 Tel. 07471 - 705 0 D-72411 Bodelshausen Fax. 07471 - 705 39 <a href="http://www.zahnrad-ott.de">www.zahnrad-ott.de</a> Email. <a href="mailto:Info@zahnrad-ott.de">Info@zahnrad-ott.de</a>					
Application:	Index tables, rotary tables for circular milling with relatively favourable cutting conditions, CNC axes							Synthetic oil					



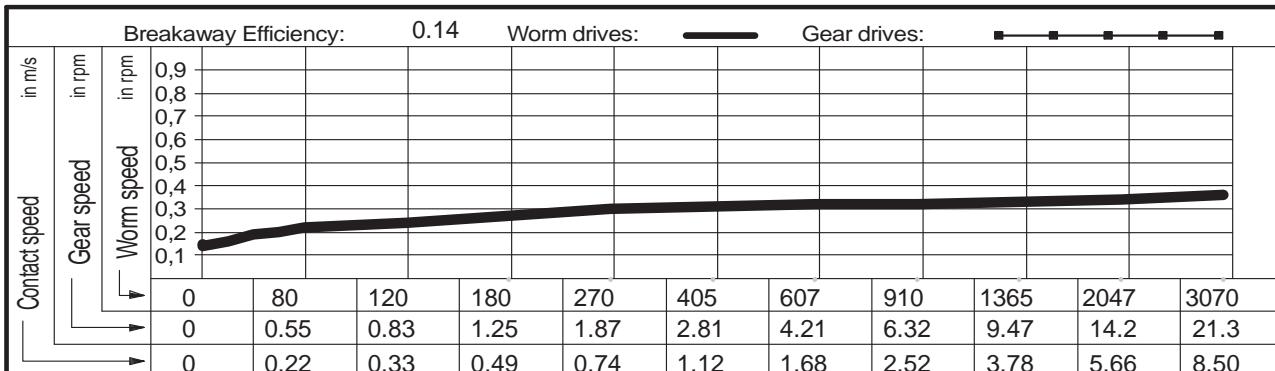
## Type G1 Gear Catalogue

Zahnradfertigung Ott  
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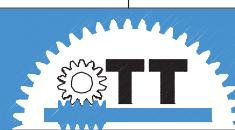
Centre distance	<b>145.00</b> mm	Material, gear	<b>GZ-CuSn12Ni</b>	Operating characteristics	
Outer Ø worm	<b>57.60</b> mm	Material, worm	<b>31CrMoV9</b>		
Outer Ø gear	<b>244.00</b> mm	Pressure angle in NS	<b>10 °</b>		
No. starts, worm	<b>1</b>	Back angle in NS	<b>15 °</b>		
Worm direction	<b>right</b>	Calculated circle Ø	<b>52.87</b> mm		
No. teeth, gear	<b>144</b>	Lead angle at Bks	<b>1.7572 °</b>		

### Ott worm gear

**OTT no: 4821 SSR**



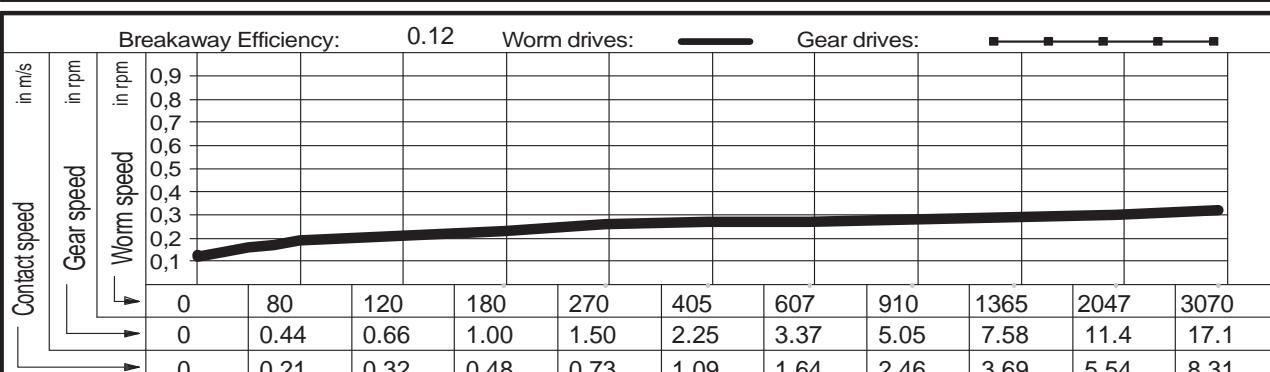
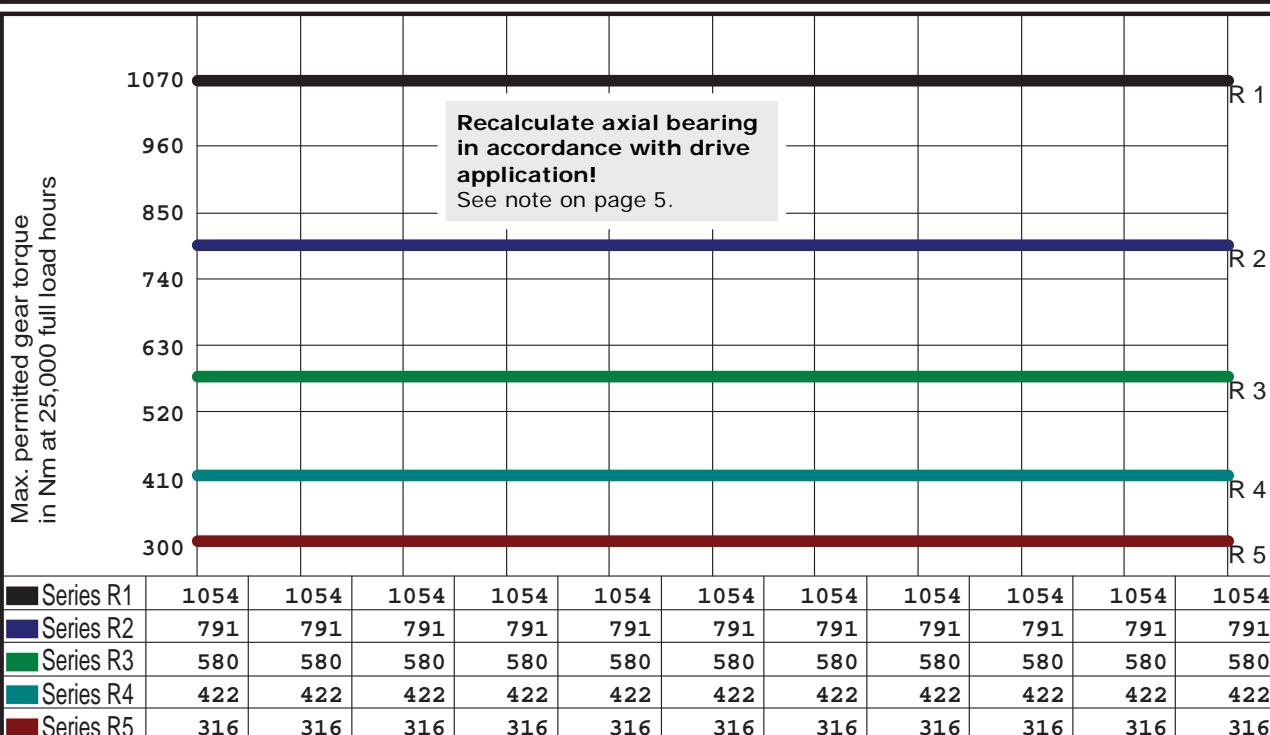
Gear selection by load type and application											
Series R1	a) random even load around gear b) absolutely smooth operation c) minimal acceleration and deceleration moments d) maximum 1 start per minute (60 per hour) e) up to 10% operating time per hour (6 minutes)					Series R4	a) segmental varying load on gear b) with uneven shock loads c) large acceleration and deceleration moments d) maximum 60 starts per minute (3600 per hour) e) up to 75% operating time per hour (45 minutes)				
Application:	Measurement and test machinery drives, CNC axes					Application:	Rotary tables with unfavourable cutting conditions, Trunion axes, CNC axes, milling spindles				
Series R2	a) random even load around gear b) absolutely smooth operation c) minimal acceleration and deceleration moments d) maximum 6 starts per minute (360 per hour) e) up to 25% operating time per hour (15 minutes)					Series R5	a) loads limited only to eccentric gear segment b) heavy, uneven shock loads c) largest acceleration and deceleration moments d) maximum 180 starts per minute (10,800 per hour) e) up to 100% operating time per hour (60 minutes)				
Application:	Index tables, circular feed drives and CNC axes for mainly smooth, controlled applications					Application:	Heavy milling and trunion drives, CNC axes with unfavourable conditions				
Series R3	a) random changing load on gear b) small shock loads c) large acceleration and deceleration moments d) maximum 20 starts per minute (1200 per hour) e) up to 50% operating time per hour (30 minutes)						Lubricant: <b>Synthetic oil</b>				
Application:	Index tables, rotary tables for circular milling with relatively favourable cutting conditions, CNC axes										



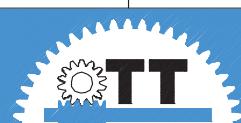
Centre distance	<b>145.00</b> mm	Material, gear	<b>GZ-CuSn12Ni</b>	<b>Operating characteristics</b>	
Outer Ø worm	<b>55.80</b> mm	Material, worm	<b>31CrMoV9</b>		
Outer Ø gear	<b>244.00</b> mm	Pressure angle in NS	<b>10 °</b>		
No. starts, worm	<b>1</b>	Back angle in NS	<b>15 °</b>		
Worm direction	<b>right</b>	Calculated circle Ø	<b>51.72</b> mm		
No. teeth, gear	<b>180</b>	Lead angle at Bks	<b>1.4469 °</b>		

**Ott worm gear**

**OTT no: 4842 SSR**



Gear selection by load type and application					
Series R1	a) random even load around gear b) absolutely smooth operation c) minimal acceleration and deceleration moments d) maximum 1 start per minute (60 per hour) e) up to 10% operating time per hour (6 minutes)	Series R4	a) segmental varying load on gear b) with uneven shock loads c) large acceleration and deceleration moments d) maximum 60 starts per minute (3600 per hour) e) up to 75% operating time per hour (45 minutes)	Lubricant:	Synthetic oil
Application:	Measurement and test machinery drives, CNC axes	Application:	Rotary tables with unfavourable cutting conditions, Trunion axes, CNC axes, milling spindles		
Series R2	a) random even load around gear b) absolutely smooth operation c) minimal acceleration and deceleration moments d) maximum 6 starts per minute (360 per hour) e) up to 25% operating time per hour (15 minutes)	Series R5	a) loads limited only to eccentric gear segment b) heavy, uneven shock loads c) largest acceleration and deceleration moments d) maximum 180 starts per minute (10,800 per hour) e) up to 100% operating time per hour (60 minutes)		
Application:	Index tables, circular feed drives and CNC axes for mainly smooth, controlled applications	Application:	Heavy milling and trunion drives, CNC axes with unfavourable conditions		
Series R3	a) random changing load on gear b) small shock loads c) large acceleration and deceleration moments d) maximum 20 starts per minute (1200 per hour) e) up to 50% operating time per hour (30 minutes)	Zahnradfertigung OTT	Blöhsteinstraße 20 D-72411 Bodelshausen <a href="http://www.zahnrad-ott.de">www.zahnrad-ott.de</a>	Tel.	07471 - 705 0
Application:	Index tables, rotary tables for circular milling with relatively favourable cutting conditions, CNC axes			Fax.	07471 - 705 39
				Email.	<a href="mailto:Info@zahnrad-ott.de">Info@zahnrad-ott.de</a>





## Type G1 Gear Catalogue

Zahnradfertigung Ott  
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## OTT worm gears - centre distance 165 mm

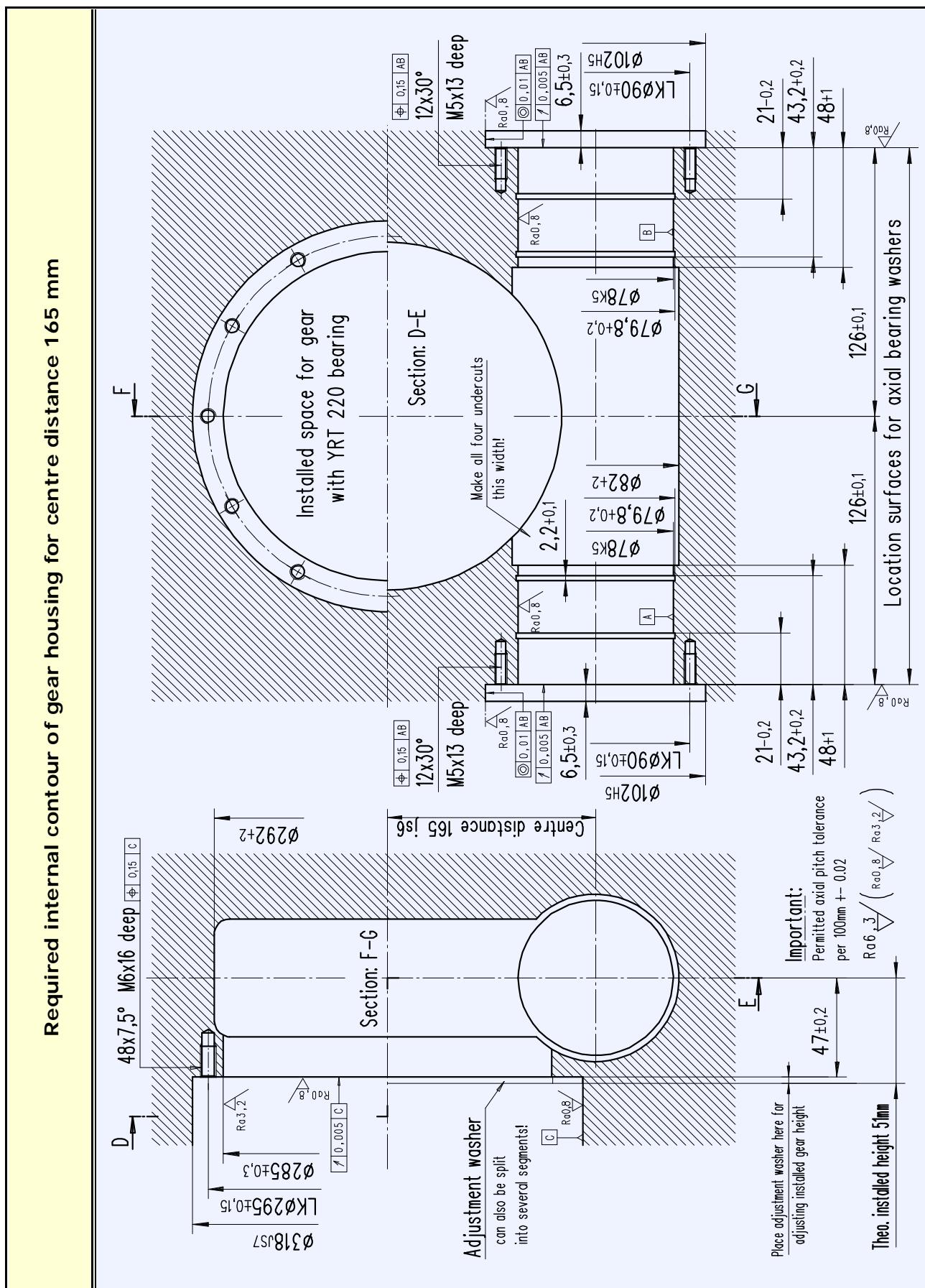
### Main dimensions

The technical drawing illustrates the assembly of a worm gear system. It shows a cross-section of the worm and gear assembly, highlighting the worm center and gear center, the gear location surface underneath, the shank worm drive side, and the hollow worm. Key dimensions include the worm center ( $\phi E \text{ H5}$ ), gear location surface ( $\phi F \text{ h8}$ ), and center distance. A note indicates the 'Installed position Please note!'.

OTT gear no.	Ratio		Worm				YRT gear bearing	Gear			
	No. starts Z1	No. teeth Z2	Distance A	Undercut Ø B	Head Ø C	Collar Ø D		Internal Ø E	Head Ø F	Width G	Height H
4860 SSR	2	120	85	44,4	62,0	67,6	220	218	284	57	36
4876 SSR	1	90		43,9	65,0						
4854 SSR	1	120		44,4	62,0						
4827 SSR	1	144		44,6	59,2						
4819 SSR	1	180		44,9	57,2						
							See comments page 5!				

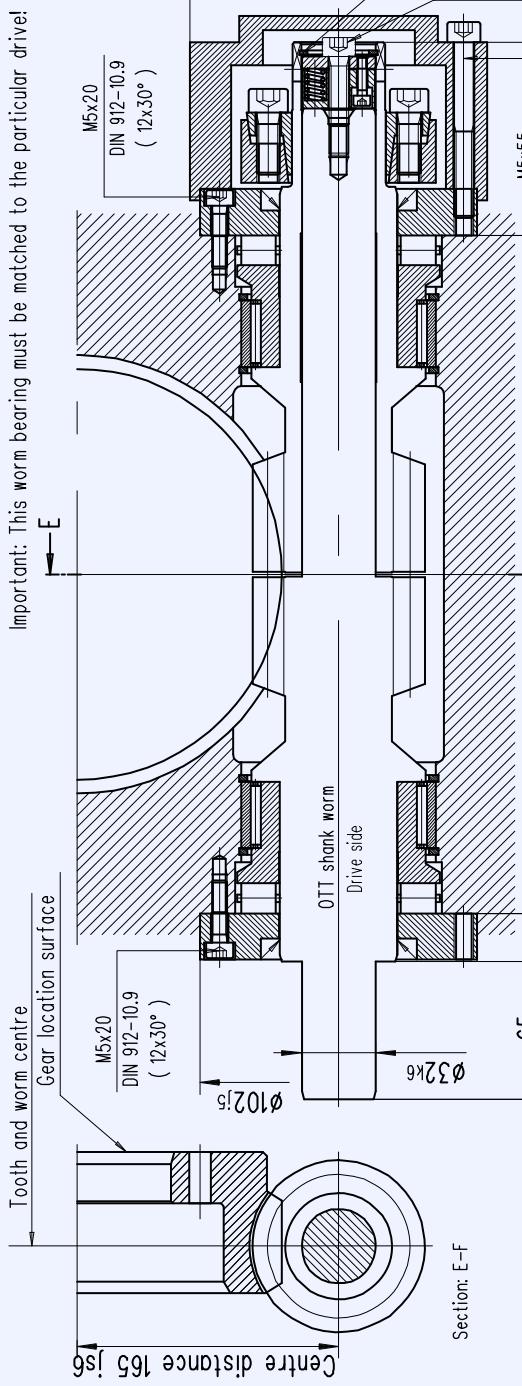
The bottom diagram provides a detailed view of the gear assembly within a housing. It shows the gear, hub, YRT bearings, and adjustment washers. Labels indicate the YRT bearing location surface, up to gear teeth centre, housing size, gear installed height, provide oil gauge or gear window here, Nom. Ø YRT bearing, and screw head. A note specifies 'Place steel washer under'.

## Gear housing - required internal contour



## Worm bearings

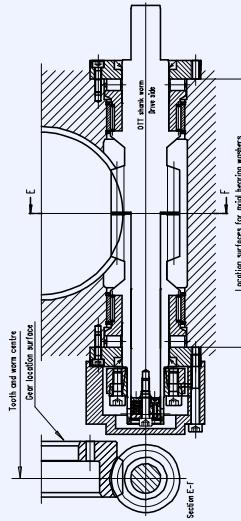
### Worm bearing for centre distance 165 mm



This screw helps with installation.  
It must be removed after the  
retainer ring has been installed.  
The flank clearance should then be set  
and the cover mounted.

Housing and YRT bearing to  
be provided by customer.

		Bearing parts per gear				
OTT no.	OTT worm gear	Shank worm	Hollow worm	Q'ty	Name	Typ/Dwg no.
4860 SSR	T00457-G-RAO	T00337-G-SSC	T00338-G-HSC	2	Axial cylinder roller bearing	K812 09 TV
4876 SSR	T00458-G-RAO	T00339-G-SSC	T00340-G-HSC	2	Radial needle bearing	RNAO 60x78x20
4854 SSR	T00459-G-RAO	T00341-G-SSC	T00342-G-HSC	2	Shaft seal	45x60x7
4827 SSR	T00460-G-RAO	T00343-G-SSC	T00344-G-HSC	1	Shrink disc	HSD 44-22
4819 SSR	T00461-G-RAO	T00345-G-SSC	T00346-G-HSC	4	Circlip	SB 78
				24	Cylinder bolt DIN 912	M5x20 - 10,9
				4	Cylinder bolt DIN 912	M5x55 - 8,8
				1	Cylinder bolt DIN 912	M6x30 - 8,8
				1	Retainer ring DIN 472	34
				2	Bearing sleeve	T00222-G-LHÜ
				2	Axial bearing washer	T00234-G-LDX
				1	Cover	T00217-G-ADH
				1	Thrust piece	B00010-G-DST



Order using ..... set of OTT worm gears

- Gearset incl. thrust piece without bearing parts
- Gearset incl. all bearing parts

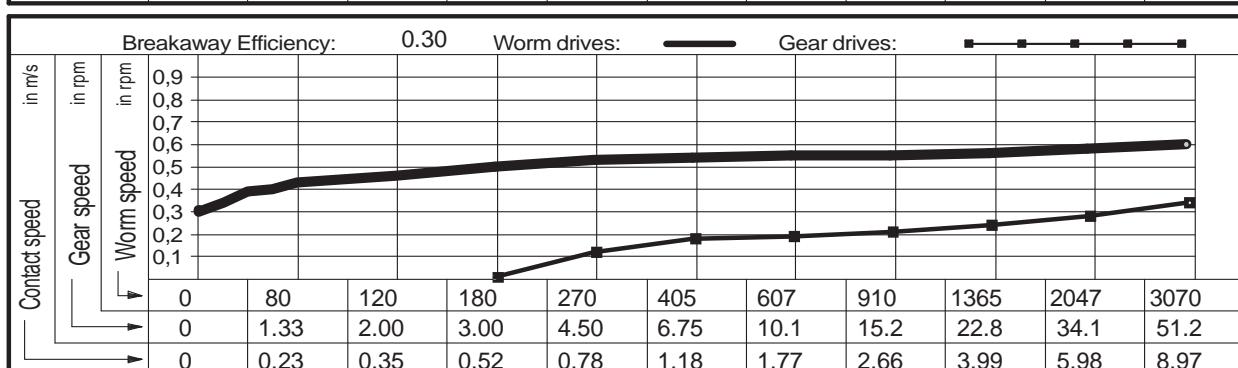
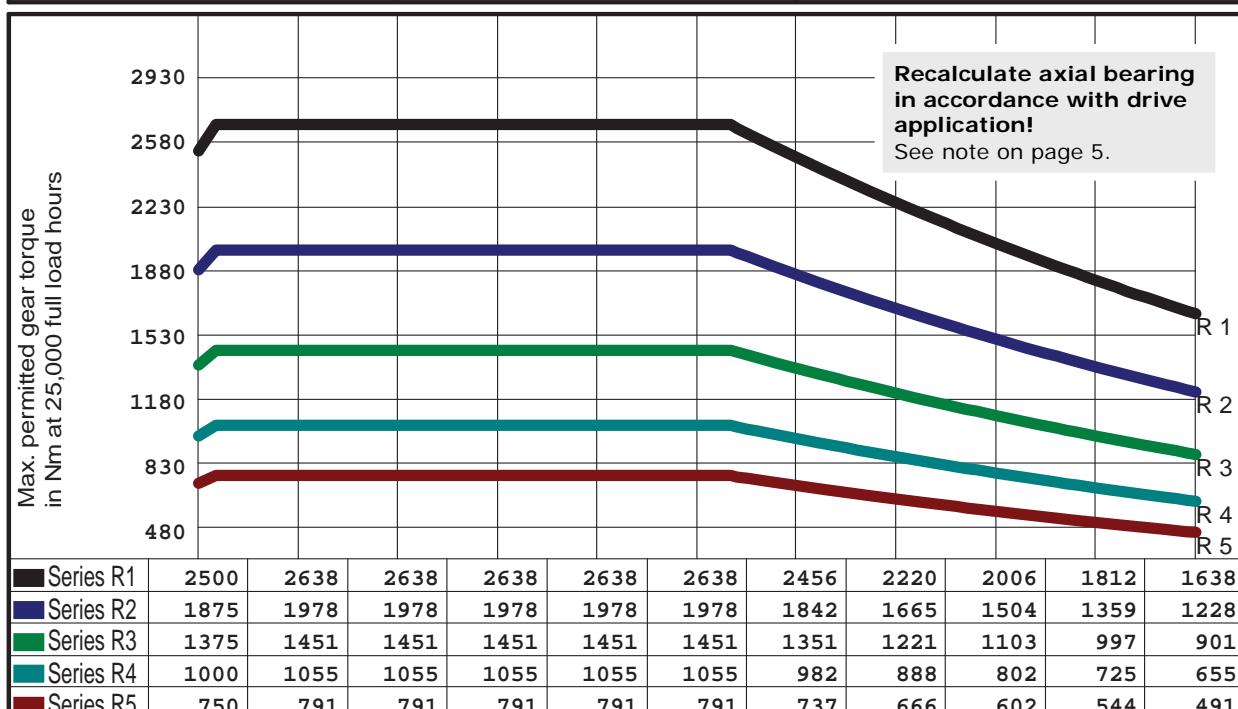


## Type G1 Gear Catalogue

Zahnradfertigung Ott  
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### Operational characteristics

Centre distance	165.00	mm	Material, gear	GZ-CuSn12Ni	Operating characteristics	
Outer Ø worm	62.00	mm	Material, worm	31CrMoV9	Ott worm gear	
Outer Ø gear	284.00	mm	Pressure angle in NS	10 °	OTT no: 4860 SSR	
No. starts, worm	2		Back angle in NS	15 °		
Worm direction	right		Calculated circle Ø	55.66 mm		
No. teeth, gear	120		Lead angle at Bks	4.6160 °		



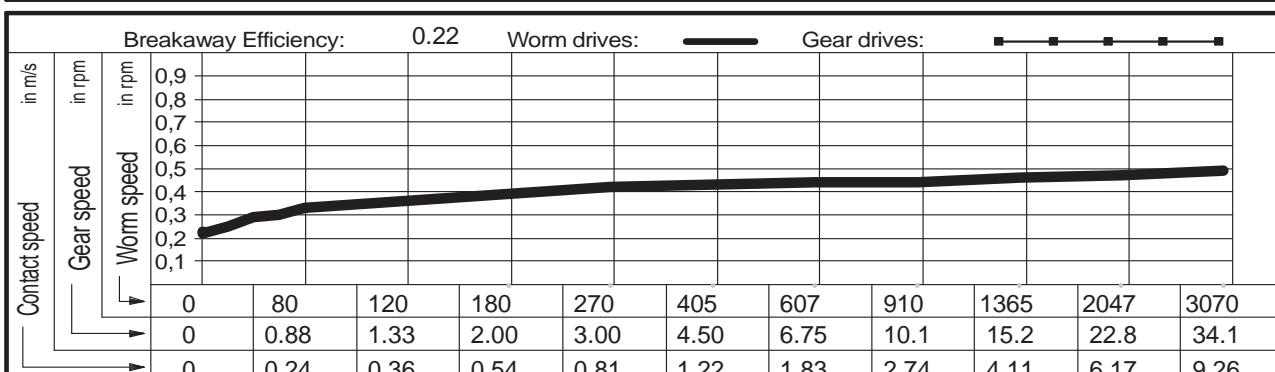
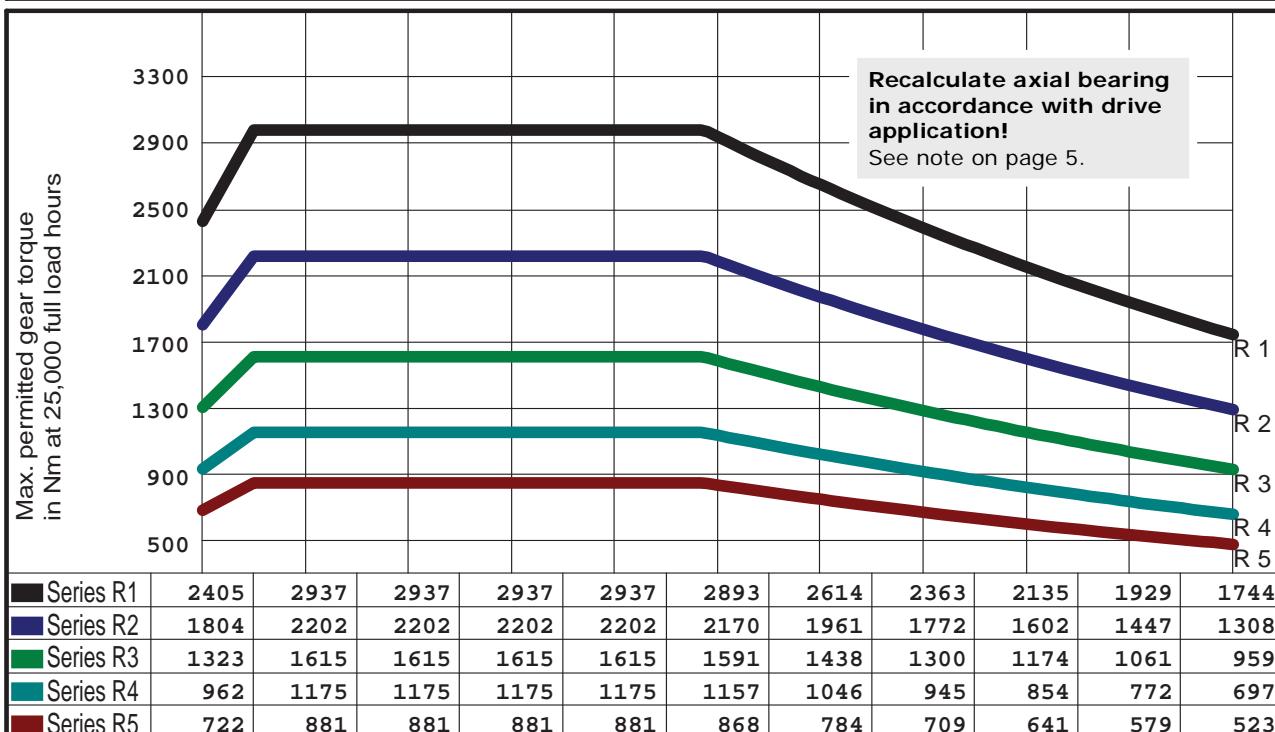
Gear selection by load type and application					
Series R1	a) random even load around gear b) absolutely smooth operation c) minimal acceleration and deceleration moments d) maximum 1 start per minute (60 per hour) e) up to 10% operating time per hour (6 minutes)	Series R4	a) segmental varying load on gear b) with uneven shock loads c) large acceleration and deceleration moments d) maximum 60 starts per minute (3600 per hour) e) up to 75% operating time per hour (45 minutes)	Lubricant: Synthetic oil	
Application: Measurement and test machinery drives, CNC axes		Application: Rotary tables with unfavourable cutting conditions. Trunion axes, CNC axes, milling spindles			
Series R2	a) random even load around gear b) absolutely smooth operation c) minimal acceleration and deceleration moments d) maximum 6 starts per minute (360 per hour) e) up to 25% operating time per hour (15 minutes)	Series R5	a) loads limited only to eccentric gear segment b) heavy, uneven shock loads c) largest acceleration and deceleration moments d) maximum 180 starts per minute (10,800 per hour) e) up to 100% operating time per hour (60 minutes)		
Application: Index tables, circular feed drives and CNC axes for mainly smooth, controlled applications		Application: Heavy milling and trunion drives, CNC axes with unfavourable conditions			
Series R3	a) random changing load on gear b) small shock loads c) large acceleration and deceleration moments d) maximum 20 starts per minute (1200 per hour) e) up to 50% operating time per hour (30 minutes)	<b>Zahnradfertigung OTT</b> Blöhsteinstraße 20 D-72411 Bodelshausen <a href="http://www.zahnrad-ott.de">www.zahnrad-ott.de</a>			
Application: Index tables, rotary tables for circular milling with relatively favourable cutting conditions, CNC axes		Tel. 07471 - 705 0 Fax. 07471 - 705 39 Email. <a href="mailto:Info@zahnrad-ott.de">Info@zahnrad-ott.de</a>			



Centre distance	<b>165.00</b> mm	Material, gear	<b>GZ-CuSn12Ni</b>	<b>Operating characteristics</b>	
Outer Ø worm	<b>65.00</b> mm	Material, worm	<b>31CrMoV9</b>		
Outer Ø gear	<b>284.00</b> mm	Pressure angle in NS	<b>10 °</b>		
No. starts, worm	<b>1</b>	Back angle in NS	<b>20 °</b>		
Worm direction	<b>right</b>	Calculated circle Ø	<b>57.57</b> mm		
No. teeth, gear	<b>90</b>	Lead angle at Bks	<b>2.9519</b> °		

## Ott worm gear

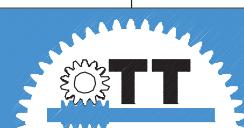
**OTT no: 4876 SSR**



Gear selection by load type and application													
Series R1	a) random even load around gear b) absolutely smooth operation c) minimal acceleration and deceleration moments d) maximum 1 start per minute (60 per hour) e) up to 10% operating time per hour (6 minutes)						Series R4	a) segmental varying load on gear b) with uneven shock loads c) large acceleration and deceleration moments d) maximum 60 starts per minute (3600 per hour) e) up to 75% operating time per hour (45 minutes)					
Application:	Measurement and test machinery drives, CNC axes						Application:	Rotary tables with unfavourable cutting conditions, Trunion axes, CNC axes, milling spindles					
Series R2	a) random even load around gear b) absolutely smooth operation c) minimal acceleration and deceleration moments d) maximum 6 starts per minute (360 per hour) e) up to 25% operating time per hour (15 minutes)						Series R5	a) loads limited only to eccentric gear segment b) heavy, uneven shock loads c) largest acceleration and deceleration moments d) maximum 180 starts per minute (10,800 per hour) e) up to 100% operating time per hour (60 minutes)					
Application:	Index tables, circular feed drives and CNC axes for mainly smooth, controlled applications						Application:	Heavy milling and trunion drives, CNC axes with unfavourable conditions					
Series R3	a) random changing load on gear b) small shock loads c) large acceleration and deceleration moments d) maximum 20 starts per minute (1200 per hour) e) up to 50% operating time per hour (30 minutes)							Lubricant: <b>Synthetic oil</b>					
Application:	Index tables, rotary tables for circular milling with relatively favourable cutting conditions, CNC axes												

**Zahnradfertigung OTT**

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 D-72411 Bodelshausen Fax. 07471 - 705 39  
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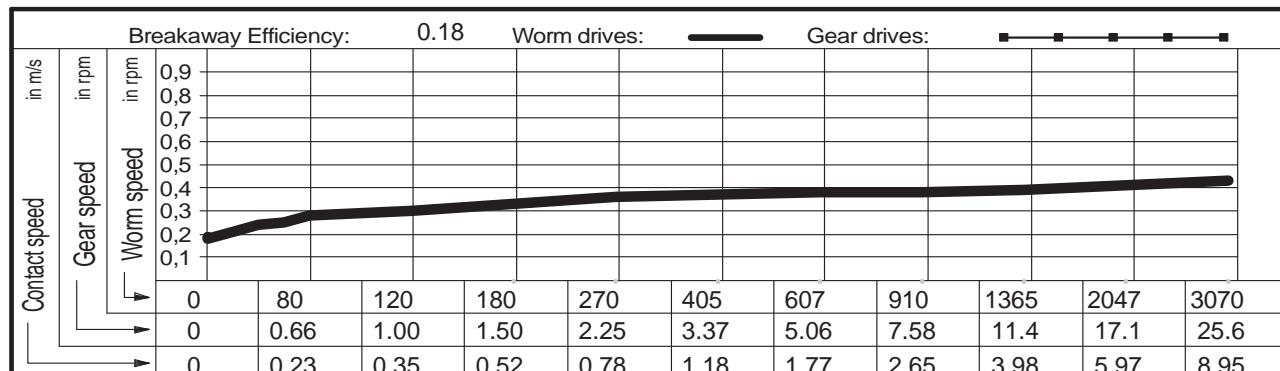
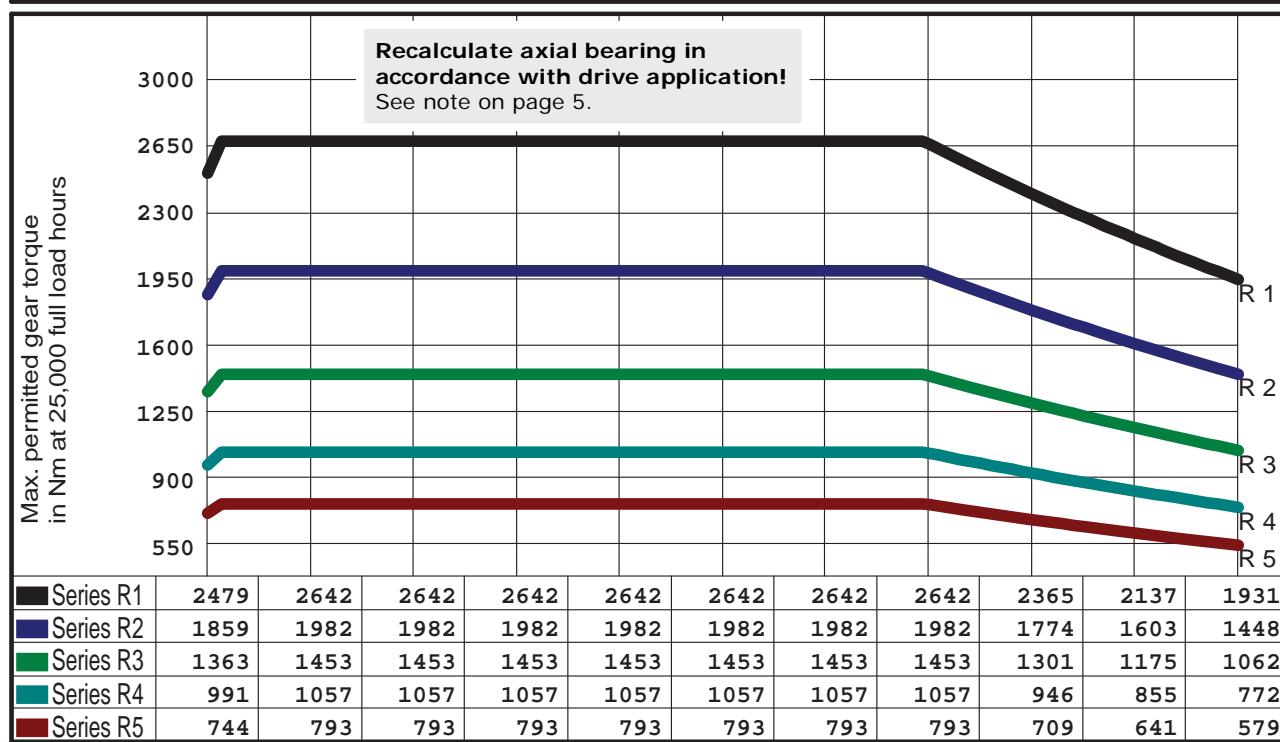
## Type G1 Gear Catalogue

Zahnradfertigung Ott  
Blöhsteinstraße 20  
D-72411 Bodelshausen

Centre distance	<b>165.00</b> mm	Material, gear	<b>GZ-CuSn12Ni</b>	Operating characteristics	
Outer Ø worm	<b>62.00</b> mm	Material, worm	<b>31CrMoV9</b>		
Outer Ø gear	<b>284.00</b> mm	Pressure angle in NS	<b>10 °</b>		
No. starts, worm	<b>1</b>	Back angle in NS	<b>15 °</b>		
Worm direction	<b>right</b>	Calculated circle Ø	<b>55.67</b> mm		
No. teeth, gear	<b>120</b>	Lead angle at Bks	<b>2.3115 °</b>		

### Ott worm gear

**OTT no: 4854 SSR**



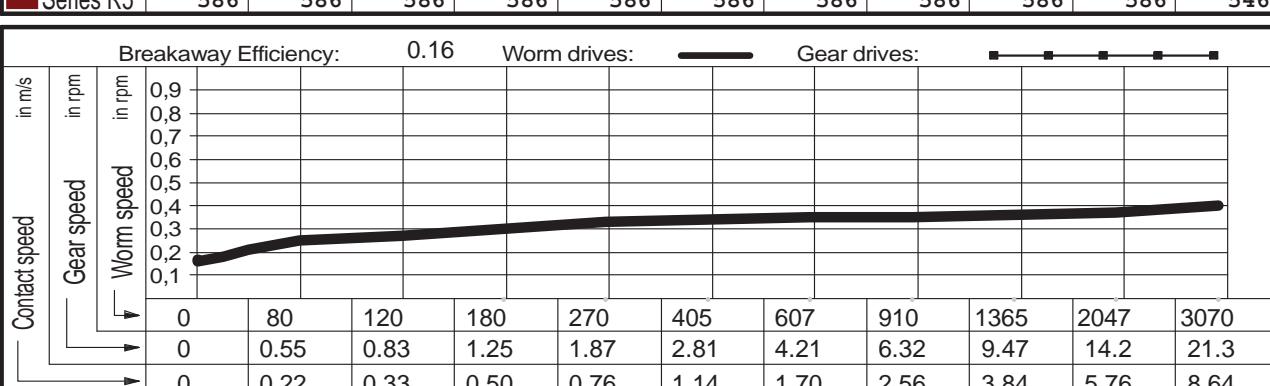
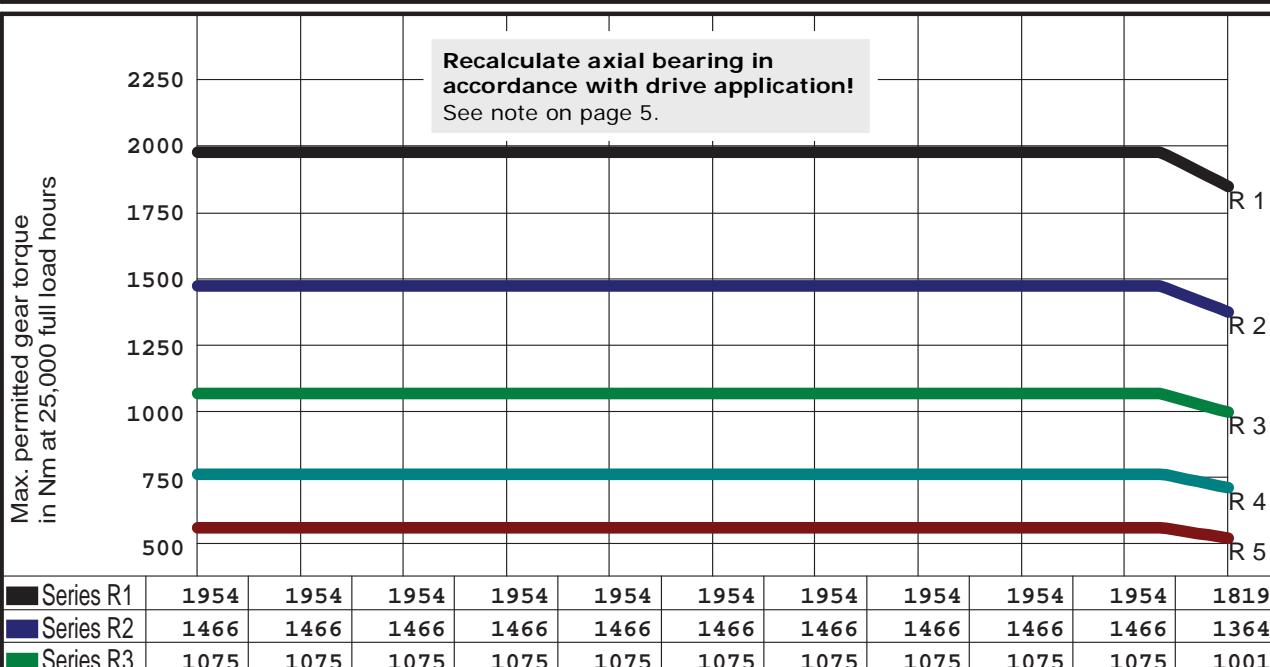
Gear selection by load type and application					
Series R1	a) random even load around gear b) absolutely smooth operation c) minimal acceleration and deceleration moments d) maximum 1 start per minute (60 per hour) e) up to 10% operating time per hour (6 minutes)	Series R4	a) segmental varying load on gear b) with uneven shock loads c) large acceleration and deceleration moments d) maximum 60 starts per minute (3600 per hour) e) up to 75% operating time per hour (45 minutes)	Lubricant:	Synthetic oil
Application:	Measurement and test machinery drives, CNC axes	Application:	Rotary tables with unfavourable cutting conditions, Trunion axes, CNC axes, milling spindles		
Series R2	a) random even load around gear b) absolutely smooth operation c) minimal acceleration and deceleration moments d) maximum 6 starts per minute (360 per hour) e) up to 25% operating time per hour (15 minutes)	Series R5	a) loads limited only to eccentric gear segment b) heavy, uneven shock loads c) largest acceleration and deceleration moments d) maximum 180 starts per minute (10,800 per hour) e) up to 100% operating time per hour (60 minutes)		
Application:	Index tables, circular feed drives and CNC axes for mainly smooth, controlled applications	Application:	Heavy milling and trunion drives, CNC axes with unfavourable conditions		
Series R3	a) random changing load on gear b) small shock loads c) large acceleration and deceleration moments d) maximum 20 starts per minute (1200 per hour) e) up to 50% operating time per hour (30 minutes)	Zahnradfertigung OTT	Blöhsteinstraße 20 D-72411 Bodelshausen www.zahnrad-ott.de	Tel. 07471 - 705 0 Fax. 07471 - 705 39 Email. Info@zahnrad-ott.de	
Application:	Index tables, rotary tables for circular milling with relatively favourable cutting conditions, CNC axes				



Centre distance	<b>165.00</b> mm	Material, gear	<b>GZ-CuSn12Ni</b>	<b>Operating characteristics</b>	
Outer Ø worm	<b>59.20</b> mm	Material, worm	<b>31CrMoV9</b>		
Outer Ø gear	<b>284.00</b> mm	Pressure angle in NS	<b>10 °</b>		
No. starts, worm	<b>1</b>	Back angle in NS	<b>15 °</b>		
Worm direction	<b>right</b>	Calculated circle Ø	<b>53.77</b> mm		
No. teeth, gear	<b>144</b>	Lead angle at Bks	<b>2.0134 °</b>		

Ott worm gear

**OTT no: 4827 SSR**



Gear selection by load type and application					
Series R1	a) random even load around gear b) absolutely smooth operation c) minimal acceleration and deceleration moments d) maximum 1 start per minute (60 per hour) e) up to 10% operating time per hour (6 minutes)	Series R4	a) segmental varying load on gear b) with uneven shock loads c) large acceleration and deceleration moments d) maximum 60 starts per minute (3600 per hour) e) up to 75% operating time per hour (45 minutes)		
Application:	Measurement and test machinery drives, CNC axes	Application:	Rotary tables with unfavourable cutting conditions, Trunion axes, CNC axes, milling spindles		
Series R2	a) random even load around gear b) absolutely smooth operation c) minimal acceleration and deceleration moments d) maximum 6 starts per minute (360 per hour) e) up to 25% operating time per hour (15 minutes)	Series R5	a) loads limited only to eccentric gear segment b) heavy, uneven shock loads c) largest acceleration and deceleration moments d) maximum 180 starts per minute (10,800 per hour) e) up to 100% operating time per hour (60 minutes)		
Application:	Index tables, circular feed drives and CNC axes for mainly smooth, controlled applications	Application:	Heavy milling and trunion drives, CNC axes with unfavourable conditions		
Series R3	a) random changing load on gear b) small shock loads c) large acceleration and deceleration moments d) maximum 20 starts per minute (1200 per hour) e) up to 50% operating time per hour (30 minutes)	Zahnradfertigung OTT	Blöhsteinstraße 20 D-72411 Bodelshausen <a href="http://www.zahnrad-ott.de">www.zahnrad-ott.de</a>	Tel. 07471 - 705 0 Fax. 07471 - 705 39 Email. <a href="mailto:Info@zahnrad-ott.de">Info@zahnrad-ott.de</a>	Lubricant: Synthetic oil
Application:	Index tables, rotary tables for circular milling with relatively favourable cutting conditions, CNC axes				



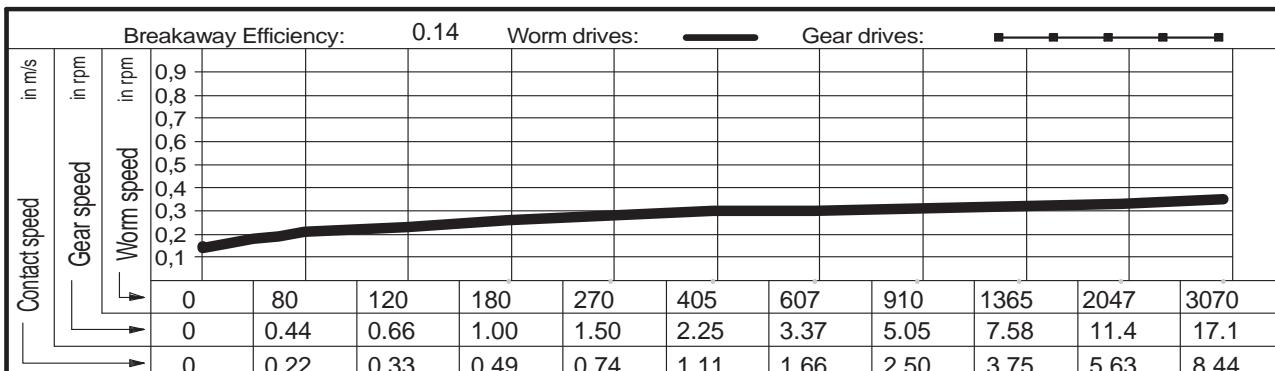
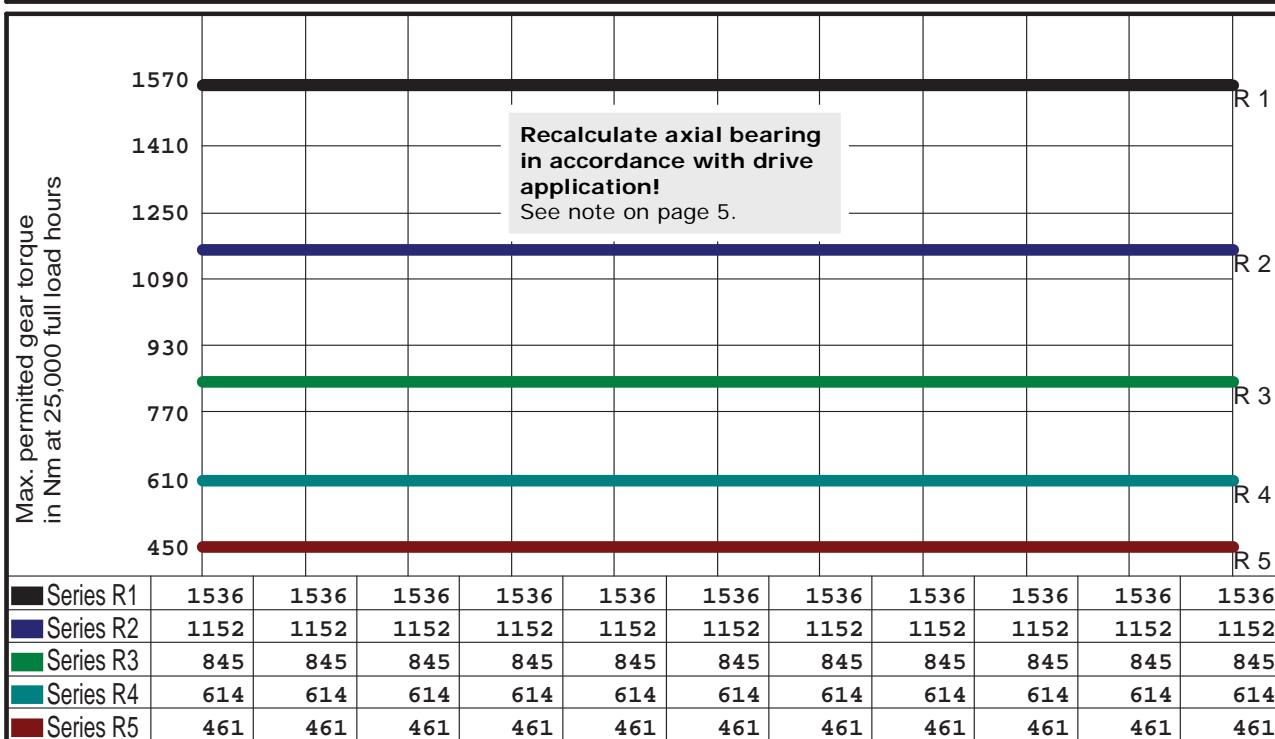
## Type G1 Gear Catalogue

Zahnradfertigung Ott  
Blöhsteinstraße 20  
D-72411 Bodelshausen

Centre distance	<b>165.00</b>	mm	Material, gear	<b>GZ-CuSn12Ni</b>	Operating characteristics	
Outer Ø worm	<b>57.20</b>	mm	Material, worm	<b>31CrMoV9</b>		
Outer Ø gear	<b>284.00</b>	mm	Pressure angle in NS	<b>10 °</b>		
No. starts, worm	<b>1</b>		Back angle in NS	<b>15 °</b>		
Worm direction	<b>right</b>		Calculated circle Ø	<b>52.51</b>	mm	
No. teeth, gear	<b>180</b>		Lead angle at Bks	<b>1.6600</b>	°	

### Ott worm gear

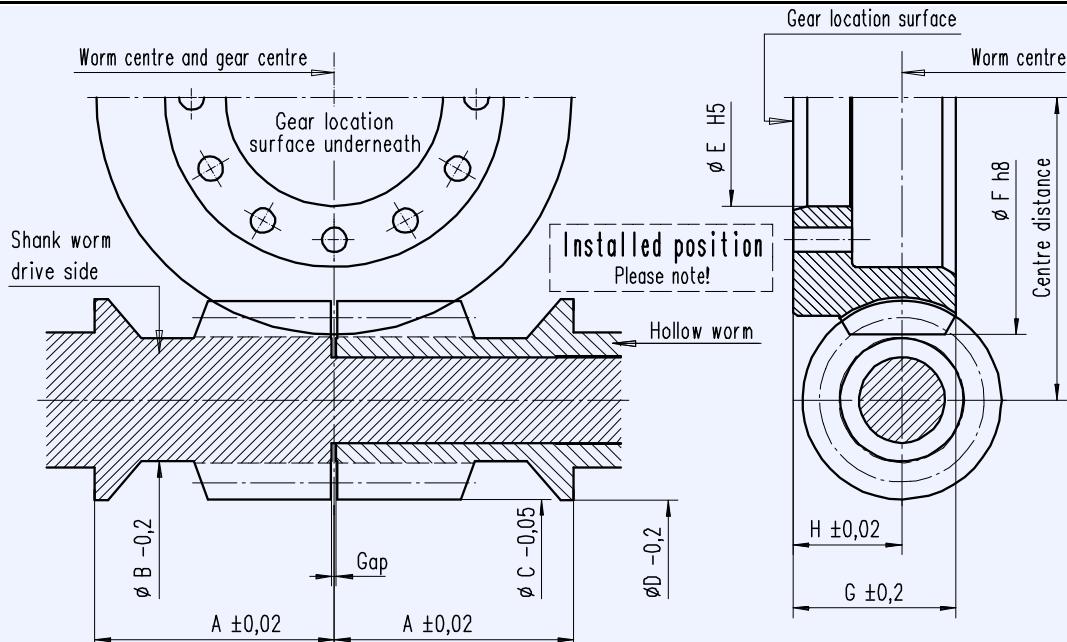
**OTT no: 4819 SSR**



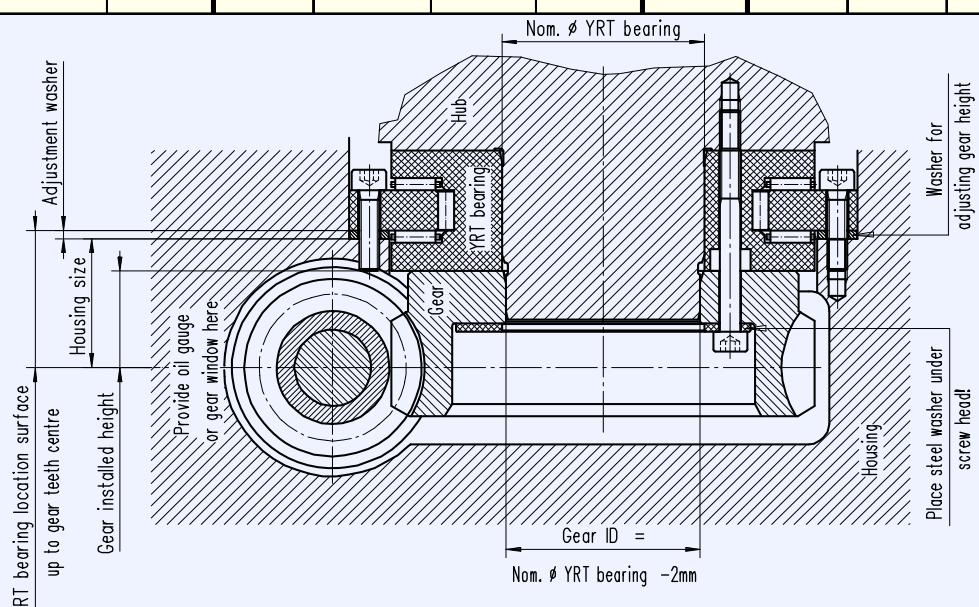
Gear selection by load type and application					
Series R1	a) random even load around gear b) absolutely smooth operation c) minimal acceleration and deceleration moments d) maximum 1 start per minute (60 per hour) e) up to 10% operating time per hour (6 minutes)	Series R4	a) segmental varying load on gear b) with uneven shock loads c) large acceleration and deceleration moments d) maximum 60 starts per minute (3600 per hour) e) up to 75% operating time per hour (45 minutes)	Lubricant:	Synthetic oil
Application:	Measurement and test machinery drives, CNC axes	Application:	Rotary tables with unfavourable cutting conditions, Trunion axes, CNC axes, milling spindles		
Series R2	a) random even load around gear b) absolutely smooth operation c) minimal acceleration and deceleration moments d) maximum 6 starts per minute (360 per hour) e) up to 25% operating time per hour (15 minutes)	Series R5	a) loads limited only to eccentric gear segment b) heavy, uneven shock loads c) largest acceleration and deceleration moments d) maximum 180 starts per minute (10,800 per hour) e) up to 100% operating time per hour (60 minutes)		
Application:	Index tables, circular feed drives and CNC axes for mainly smooth, controlled applications	Application:	Heavy milling and trunion drives, CNC axes with unfavourable conditions		
Series R3	a) random changing load on gear b) small shock loads c) large acceleration and deceleration moments d) maximum 20 starts per minute (1200 per hour) e) up to 50% operating time per hour (30 minutes)	Zahnradfertigung OTT	Blöhsteinstraße 20 D-72411 Bodelshausen www.zahnrad-ott.de	Tel. 07471 - 705 0 Fax. 07471 - 705 39 Email. Info@zahnrad-ott.de	
Application:	Index tables, rotary tables for circular milling with relatively favourable cutting conditions, CNC axes				

## OTT worm gears - centre distance 195 mm

### Main dimensions

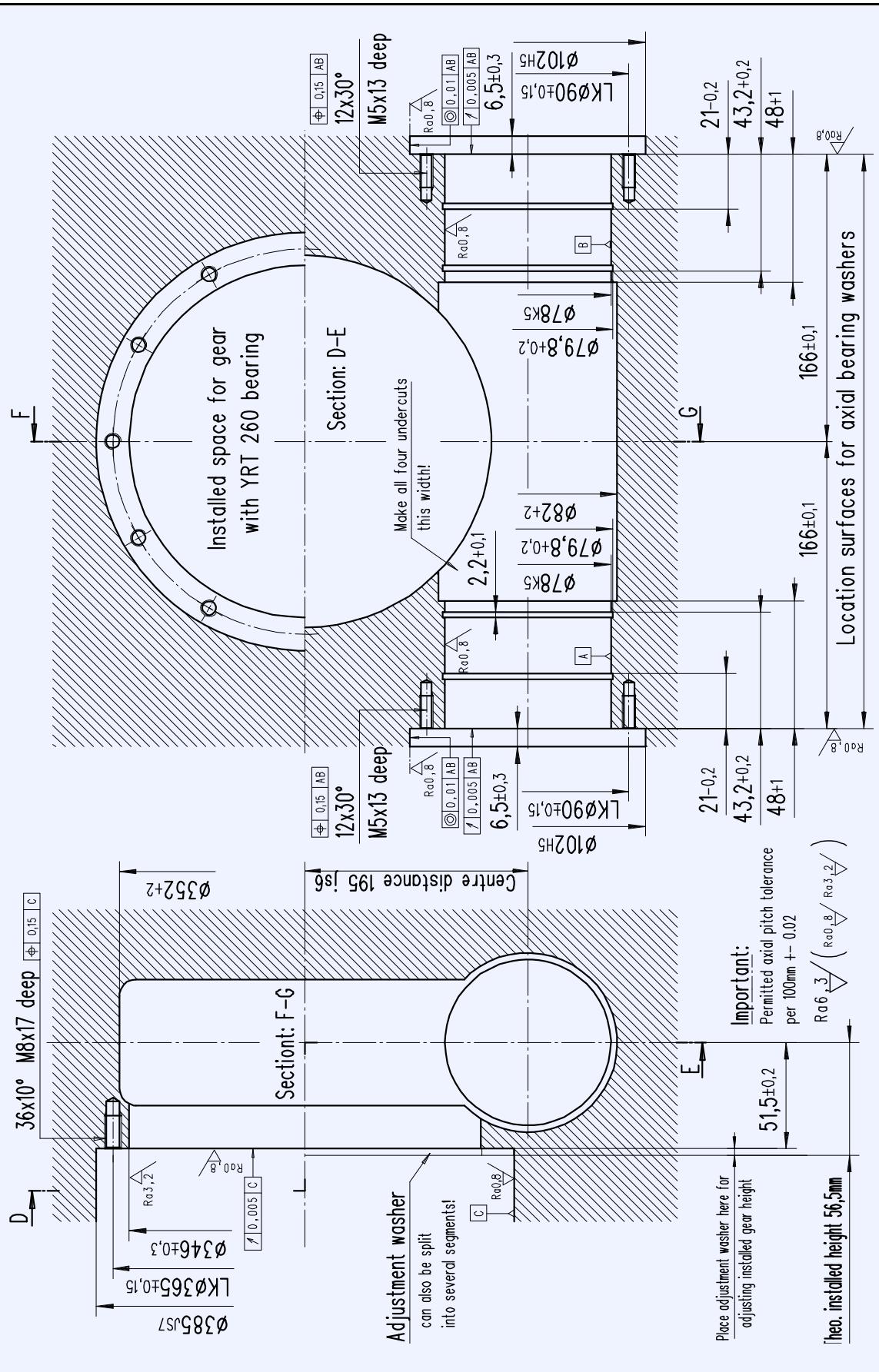


OTT gear no.	Ratio		Distance A	Worm			YRT gear bearing	Gear			
	No. starts Z1	No. teeth Z2		Undercut Ø B	Head Ø C	Collar Ø D		Internal Ø E	Head Ø F	Width G	Height H
4864 SSR	2	120	93	43,0	63,4	67,6	260	258	345	61	38
5362 SSR	2	165		43,5	59,5						
4845 SSR	1	120		43,0	63,4						
4805 SSR	1	144		43,3	61,0						
4822 SSR	1	180		43,7	58,6						
4865 SSR	1	200		43,8	57,6						
							See comments page 5!				



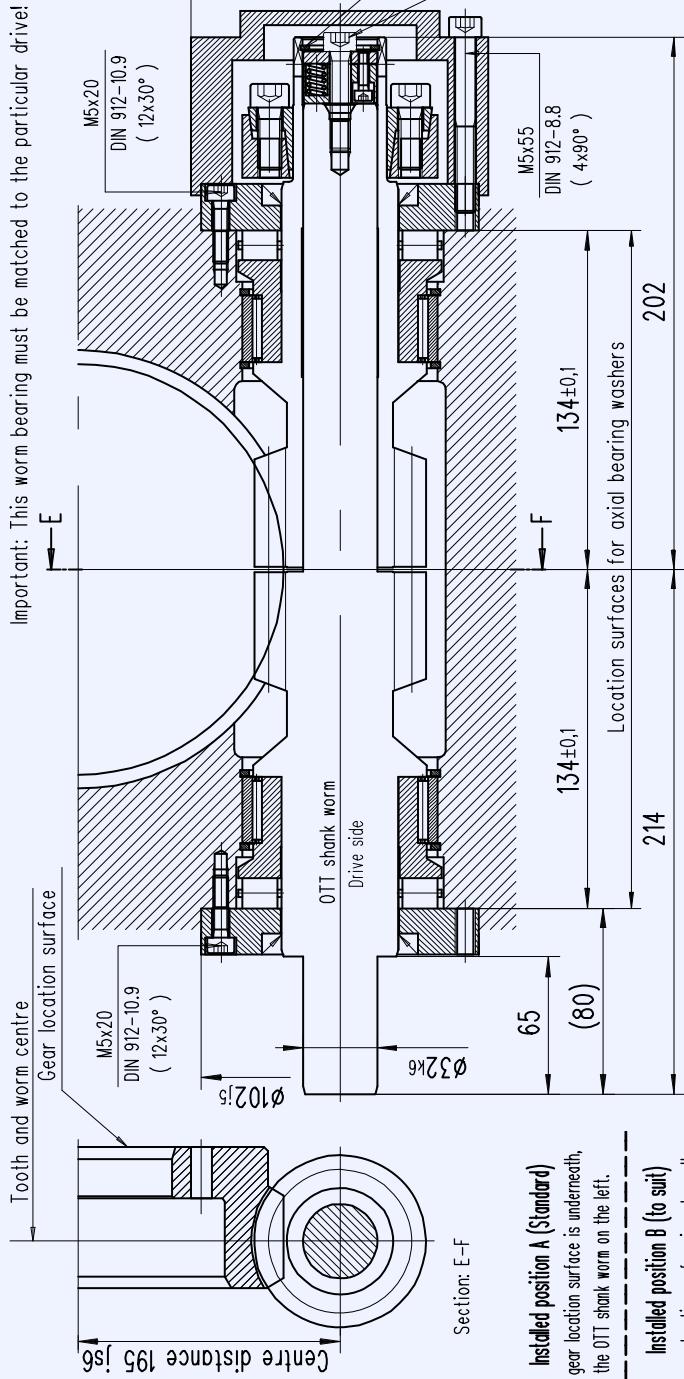
**Gear housing - required internal contour**

**Required internal contour of gear housing for centre distance 195 mm**

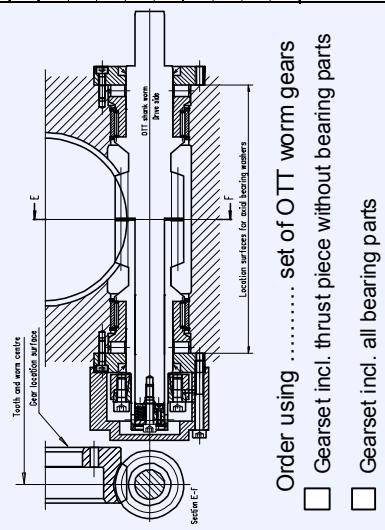


## Worm bearings

### Worm bearing for centre distance 195 mm



Bearing parts per gear			
OTT no.	Worm gear	Shank worm	Hollow worm
4864 SSR	T00462-G-RAO	T00347-G-SSC	T00348-G-HSC
5362 SSR	T00463-G-RAO	T00349-G-SSC	T00350-G-HSC
4845 SSR	T00464-G-RAO	T00351-G-SSC	T00352-G-HSC
4805 SSR	T00465-G-RAO	T00353-G-SSC	T00354-G-HSC
4822 SSR	T00466-G-RAO	T00355-G-SSC	T00356-G-HSC
4865 SSR	T00467-G-RAO	T00357-G-SSC	T00358-G-HSC



- REQUEST
- ORDER
- Gearset incl. thrust piece without bearing parts
- Gearset incl. all bearing parts



## Type G1 Gear Catalogue

Zahnradfertigung Ott  
Blöhsteinstraße 20  
D-72411 Bodelshausen

### Operational characteristics

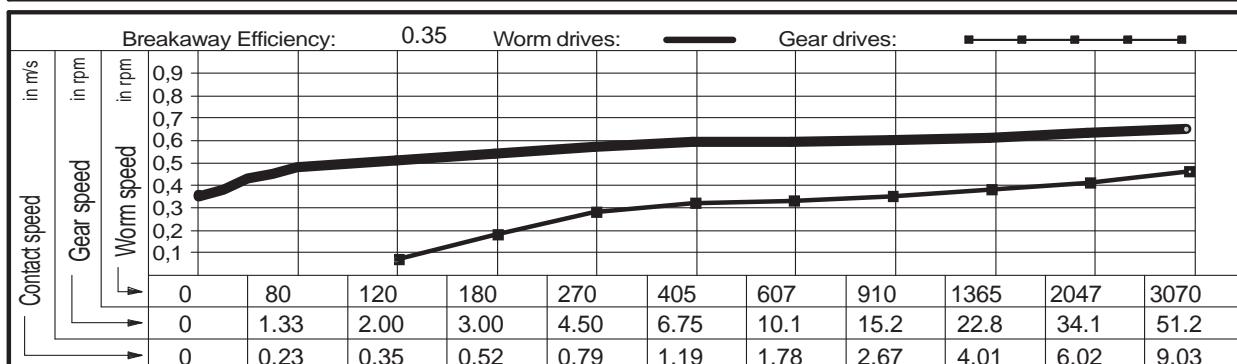
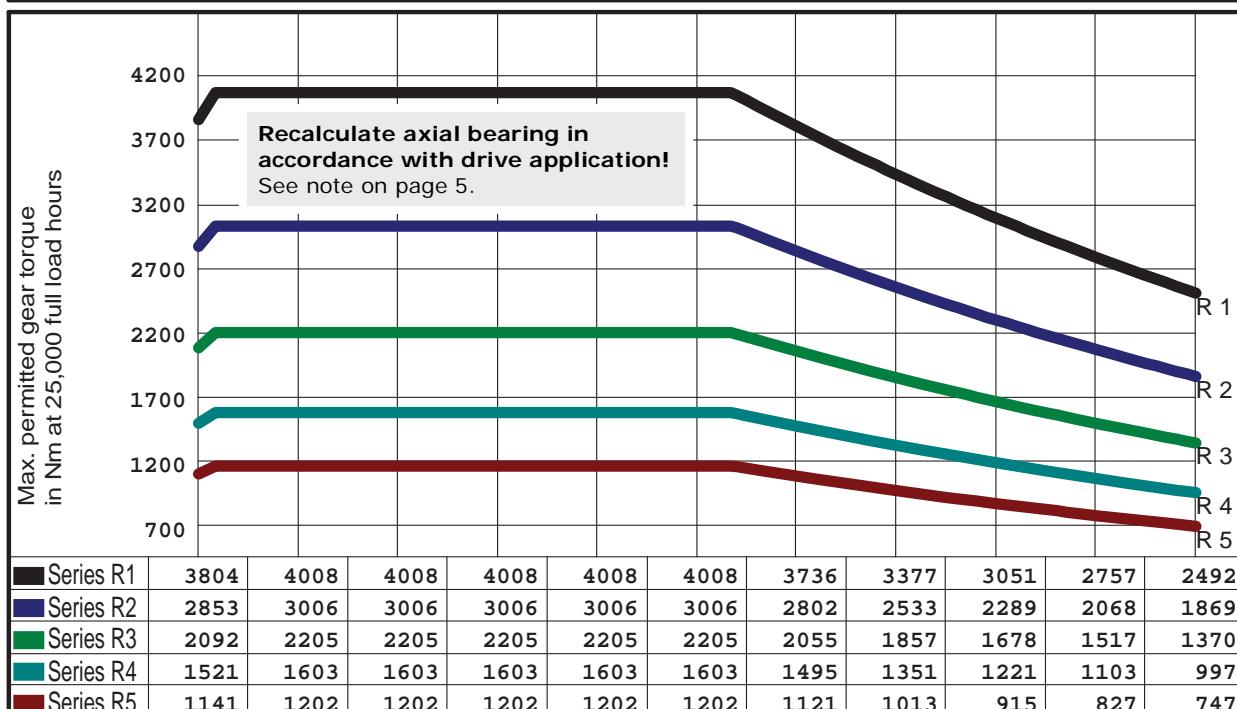
Centre distance	195.00	mm
Outer Ø worm	63.40	mm
Outer Ø gear	345.00	mm
No. starts, worm	2	
Worm direction	right	
No. teeth, gear	120	

Material, gear	GZ-CuSn12Ni
Material, worm	31CrMoV9
Pressure angle in NS	10 °
Back angle in NS	15 °
Calculated circle Ø	55.95 mm
Lead angle at Bks	5.5907 °

### Operating characteristics

#### Ott worm gear

**OTT no: 4864 SSR**

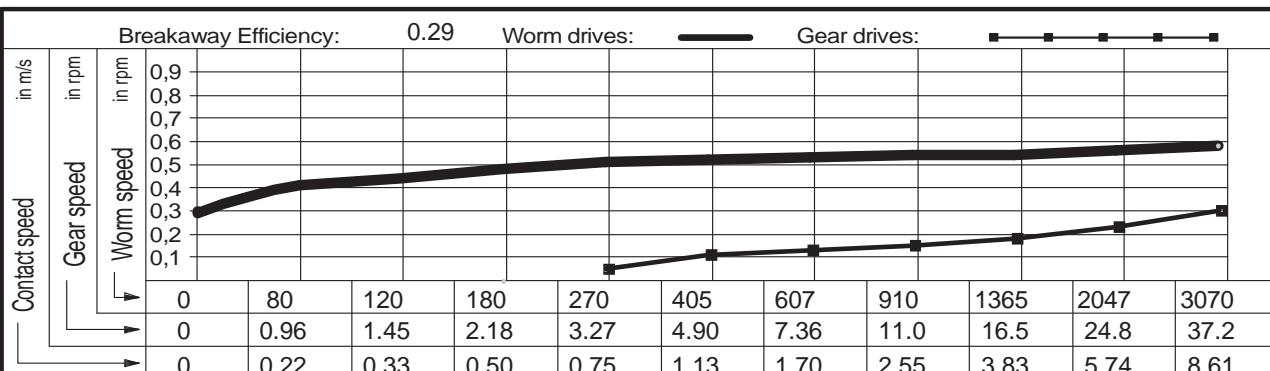
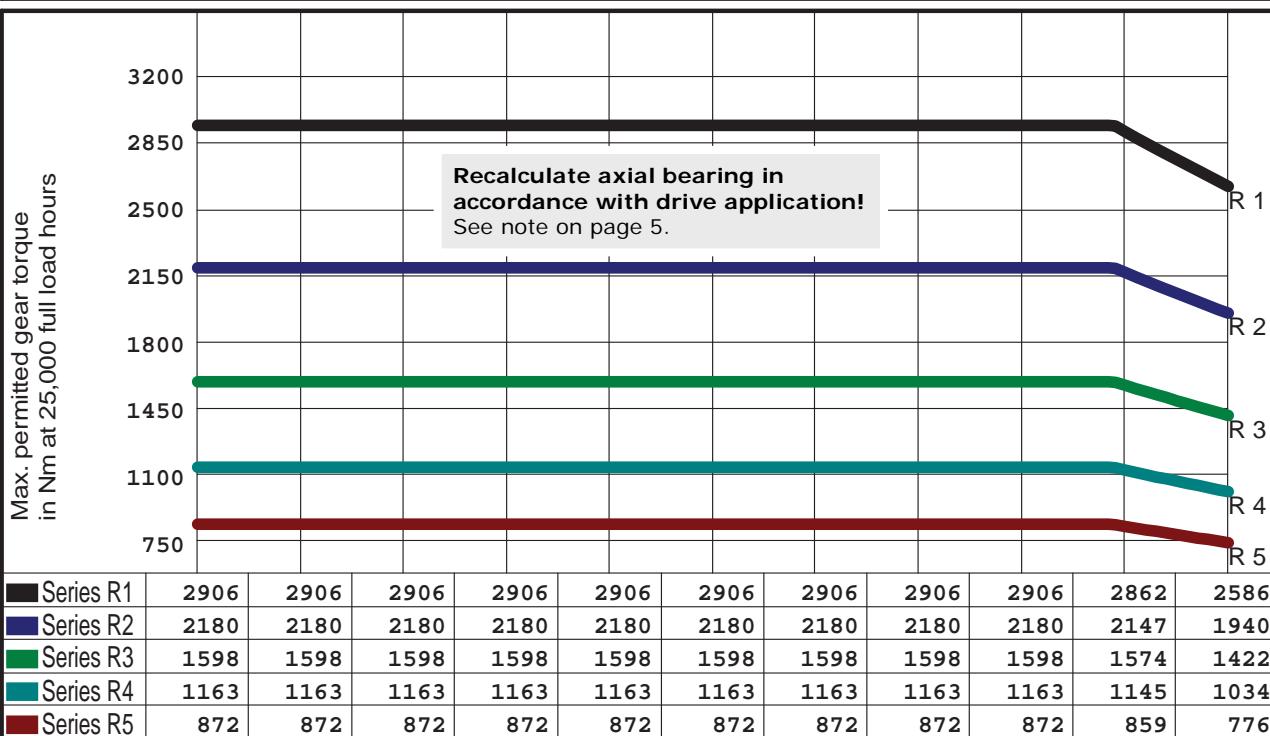


Gear selection by load type and application													
Series R1	a) random even load around gear b) absolutely smooth operation c) minimal acceleration and deceleration moments d) maximum 1 start per minute (60 per hour) e) up to 10% operating time per hour (6 minutes)						Series R4	a) segmental varying load on gear b) with uneven shock loads c) large acceleration and deceleration moments d) maximum 60 starts per minute (3600 per hour) e) up to 75% operating time per hour (45 minutes)					
Application:	Measurement and test machinery drives, CNC axes						Application:	Rotary tables with unfavourable cutting conditions. Trunion axes, CNC axes, milling spindles					
Series R2	a) random even load around gear b) absolutely smooth operation c) minimal acceleration and deceleration moments d) maximum 6 starts per minute (360 per hour) e) up to 25% operating time per hour (15 minutes)						Series R5	a) loads limited only to eccentric gear segment b) heavy, uneven shock loads c) largest acceleration and deceleration moments d) maximum 180 starts per minute (10,800 per hour) e) up to 100% operating time per hour (60 minutes)					
Application:	Index tables, circular feed drives and CNC axes for mainly smooth, controlled applications						Application:	Heavy milling and trunion drives, CNC axes with unfavourable conditions					
Series R3	a) random changing load on gear b) small shock loads c) large acceleration and deceleration moments d) maximum 20 starts per minute (1200 per hour) e) up to 50% operating time per hour (30 minutes)						Zahnradfertigung OTT						
Application:	Index tables, rotary tables for circular milling with relatively favourable cutting conditions, CNC axes						Blöhsteinstraße 20 D-72411 Bodelshausen www.zahnrad-ott.de	Tel. 07471 - 705 0 Fax. 07471 - 705 39 Email. Info@zahnrad-ott.de					Lubricant: Synthetic oil

Centre distance	<b>195.00</b> mm	Material, gear	<b>GZ-CuSn12Ni</b>	<b>Operating characteristics</b>	
Outer Ø worm	<b>59.50</b> mm	Material, worm	<b>31CrMoV9</b>		
Outer Ø gear	<b>345.00</b> mm	Pressure angle in NS	<b>10 °</b>		
No. starts, worm	<b>2</b>	Back angle in NS	<b>15 °</b>		
Worm direction	<b>right</b>	Calculated circle Ø	<b>53.45</b> mm		
No. teeth, gear	<b>165</b>	Lead angle at Bks	<b>4.3051</b> °		

## Ott worm gear

**OTT no: 5362 SSR**



Gear selection by load type and application					
Series R1	a) random even load around gear b) absolutely smooth operation c) minimal acceleration and deceleration moments d) maximum 1 start per minute (60 per hour) e) up to 10% operating time per hour (6 minutes)	Series R4	a) segmental varying load on gear b) with uneven shock loads c) large acceleration and deceleration moments d) maximum 60 starts per minute (3600 per hour) e) up to 75% operating time per hour (45 minutes)		
Application:	Measurement and test machinery drives, CNC axes	Application:	Rotary tables with unfavourable cutting conditions, Trunion axes, CNC axes, milling spindles		
Series R2	a) random even load around gear b) absolutely smooth operation c) minimal acceleration and deceleration moments d) maximum 6 starts per minute (360 per hour) e) up to 25% operating time per hour (15 minutes)	Series R5	a) loads limited only to eccentric gear segment b) heavy, uneven shock loads c) largest acceleration and deceleration moments d) maximum 180 starts per minute (10,800 per hour) e) up to 100% operating time per hour (60 minutes)		
Application:	Index tables, circular feed drives and CNC axes for mainly smooth, controlled applications	Application:	Heavy milling and trunion drives, CNC axes with unfavourable conditions		
Series R3	a) random changing load on gear b) small shock loads c) large acceleration and deceleration moments d) maximum 20 starts per minute (1200 per hour) e) up to 50% operating time per hour (30 minutes)	Zahnradfertigung OTT	Blöhsteinstraße 20 D-72411 Bodelshausen <a href="http://www.zahnrad-ott.de">www.zahnrad-ott.de</a>	Tel. 07471 - 705 0 Fax. 07471 - 705 39 Email. <a href="mailto:Info@zahnrad-ott.de">Info@zahnrad-ott.de</a>	Lubricant: Synthetic oil
Application:	Index tables, rotary tables for circular milling with relatively favourable cutting conditions, CNC axes				



## Type G1 Gear Catalogue

Zahnradfertigung Ott  
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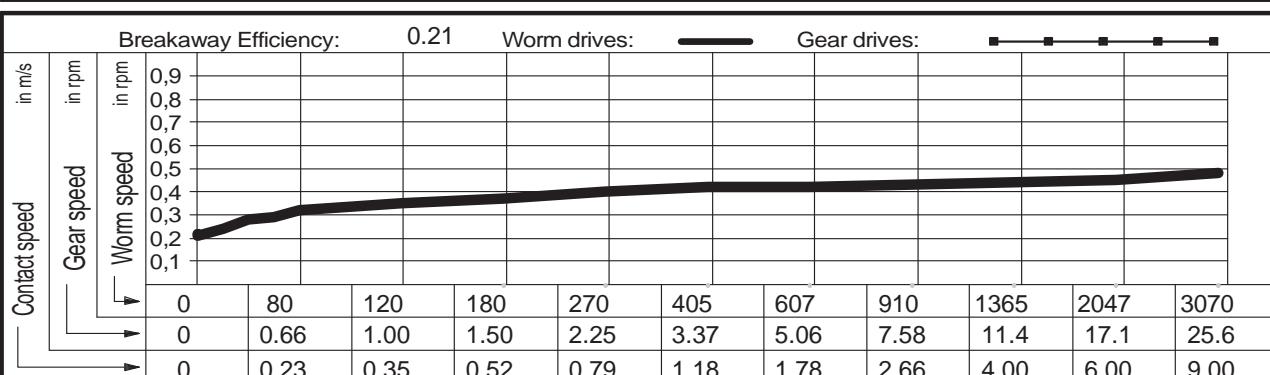
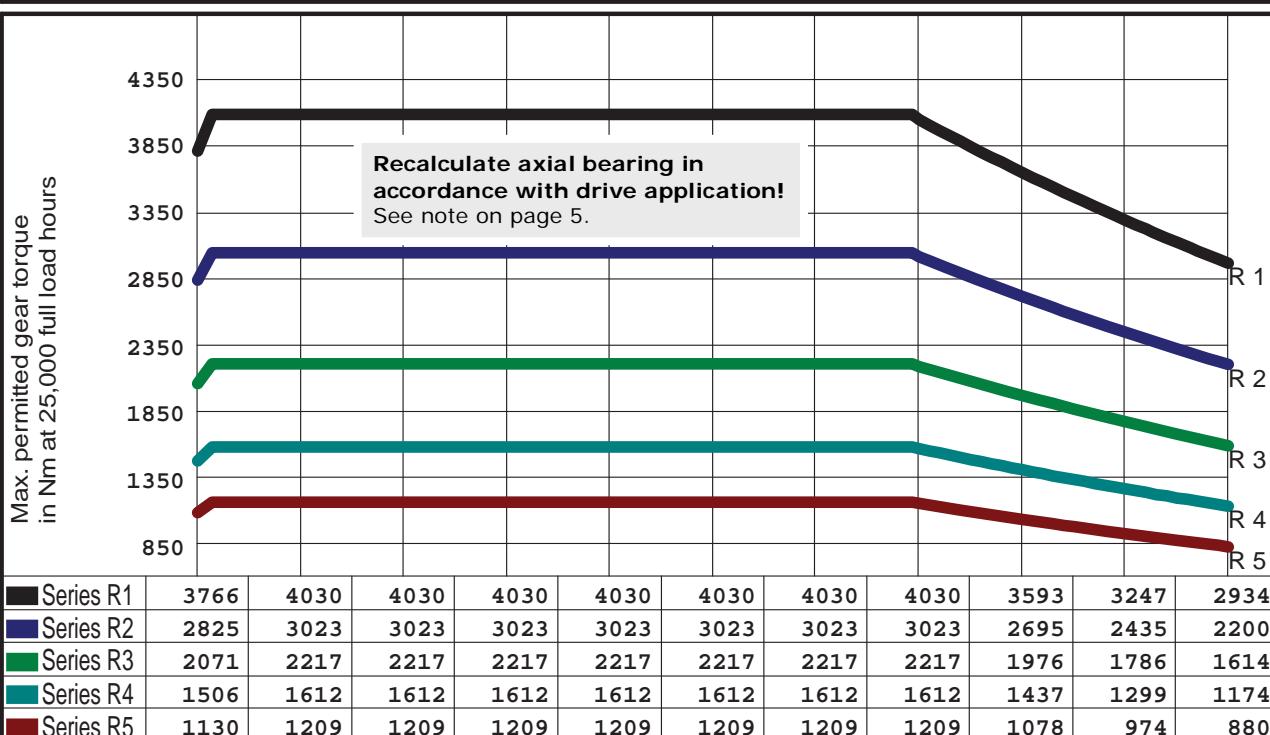
Centre distance	<b>195.00</b>	mm
Outer Ø worm	<b>63.40</b>	mm
Outer Ø gear	<b>345.00</b>	mm
No. starts, worm	<b>1</b>	
Worm direction	<b>right</b>	
No. teeth, gear	<b>120</b>	

Material, gear	<b>GZ-CuSn12Ni</b>
Material, worm	<b>31CrMoV9</b>
Pressure angle in NS	<b>10 °</b>
Back angle in NS	<b>15 °</b>
Calculated circle Ø	<b>55.96</b> mm
Lead angle at Bks	<b>2.8015</b> °

### Operating characteristics

#### Ott worm gear

**OTT no: 4845 SSR**



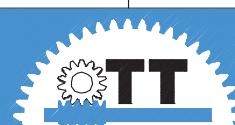
#### Gear selection by load type and application

Series R1	a) random even load around gear b) absolutely smooth operation c) minimal acceleration and deceleration moments d) maximum 1 start per minute (60 per hour) e) up to 10% operating time per hour (6 minutes)	Series R4	a) segmental varying load on gear b) with uneven shock loads c) large acceleration and deceleration moments d) maximum 60 starts per minute (3600 per hour) e) up to 75% operating time per hour (45 minutes)	Lubricant: <b>Synthetic oil</b>
Application:	Measurement and test machinery drives, CNC axes	Application:	Rotary tables with unfavourable cutting conditions, Trunion axes, CNC axes, milling spindles	
Series R2	a) random even load around gear b) absolutely smooth operation c) minimal acceleration and deceleration moments d) maximum 6 starts per minute (360 per hour) e) up to 25% operating time per hour (15 minutes)	Series R5	a) loads limited only to eccentric gear segment b) heavy, uneven shock loads c) largest acceleration and deceleration moments d) maximum 180 starts per minute (10,800 per hour) e) up to 100% operating time per hour (60 minutes)	
Application:	Index tables, circular feed drives and CNC axes for mainly smooth, controlled applications	Application:	Heavy milling and trunion drives, CNC axes with unfavourable conditions	
Series R3	a) random changing load on gear b) small shock loads c) large acceleration and deceleration moments d) maximum 20 starts per minute (1200 per hour) e) up to 50% operating time per hour (30 minutes)			
Application:	Index tables, rotary tables for circular milling with relatively favourable cutting conditions, CNC axes			

**Zahnradfertigung OTT**

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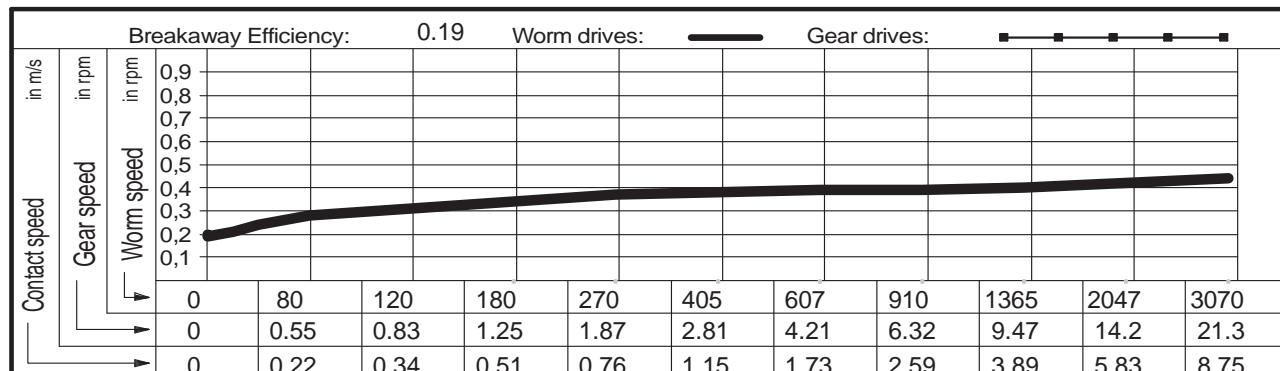
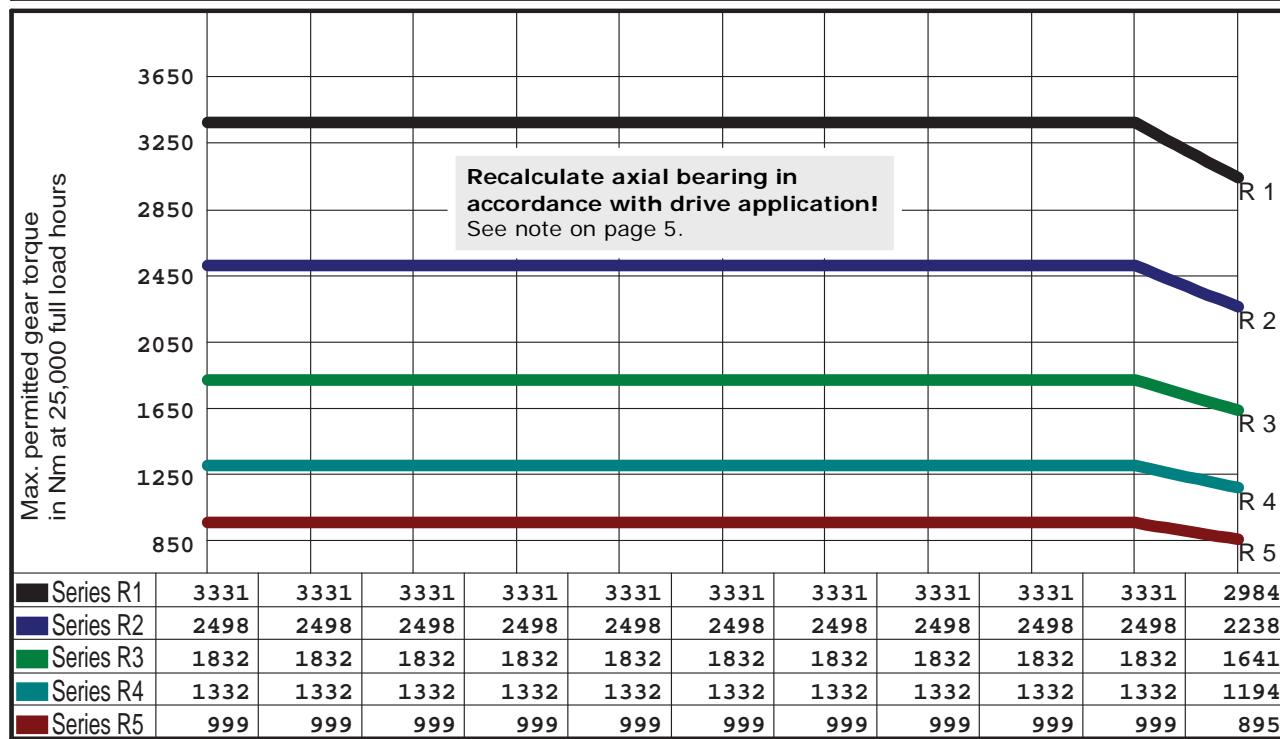
Tel. 07471 - 705 0  
Fax. 07471 - 705 39  
Email. Info@zahnrad-ott.de



Centre distance	<b>195.00</b> mm	Material, gear	<b>GZ-CuSn12Ni</b>	Operating characteristics	
Outer Ø worm	<b>61.00</b> mm	Material, worm	<b>31CrMoV9</b>		
Outer Ø gear	<b>345.00</b> mm	Pressure angle in NS	<b>10 °</b>		
No. starts, worm	<b>1</b>	Back angle in NS	<b>15 °</b>		
Worm direction	<b>right</b>	Calculated circle Ø	<b>54.41</b> mm		
No. teeth, gear	<b>144</b>	Lead angle at Bks	<b>2.4166</b> °		

## Ott worm gear

**OTT no: 4805 SSR**



Gear selection by load type and application											
Series R1	a) random even load around gear b) absolutely smooth operation c) minimal acceleration and deceleration moments d) maximum 1 start per minute (60 per hour) e) up to 10% operating time per hour (6 minutes)					Series R4	a) segmental varying load on gear b) with uneven shock loads c) large acceleration and deceleration moments d) maximum 60 starts per minute (3600 per hour) e) up to 75% operating time per hour (45 minutes)				
Application:	Measurement and test machinery drives, CNC axes					Application:	Rotary tables with unfavourable cutting conditions, Trunion axes, CNC axes, milling spindles				
Series R2	a) random even load around gear b) absolutely smooth operation c) minimal acceleration and deceleration moments d) maximum 6 starts per minute (360 per hour) e) up to 25% operating time per hour (15 minutes)					Series R5	a) loads limited only to eccentric gear segment b) heavy, uneven shock loads c) largest acceleration and deceleration moments d) maximum 180 starts per minute (10,800 per hour) e) up to 100% operating time per hour (60 minutes)				
Application:	Index tables, circular feed drives and CNC axes for mainly smooth, controlled applications					Application:	Heavy milling and trunion drives, CNC axes with unfavourable conditions				
Series R3	a) random changing load on gear b) small shock loads c) large acceleration and deceleration moments d) maximum 20 starts per minute (1200 per hour) e) up to 50% operating time per hour (30 minutes)					Lubricant: <b>Synthetic oil</b>					
Application:	Index tables, rotary tables for circular milling with relatively favourable cutting conditions, CNC axes					<b>Zahnradfertigung OTT</b> Blöhsteinstraße 20 Tel. 07471 - 705 0 D-72411 Bodelshausen Fax. 07471 - 705 39 <a href="http://www.zahnrad-ott.de">www.zahnrad-ott.de</a> Email. <a href="mailto:Info@zahnrad-ott.de">Info@zahnrad-ott.de</a>					



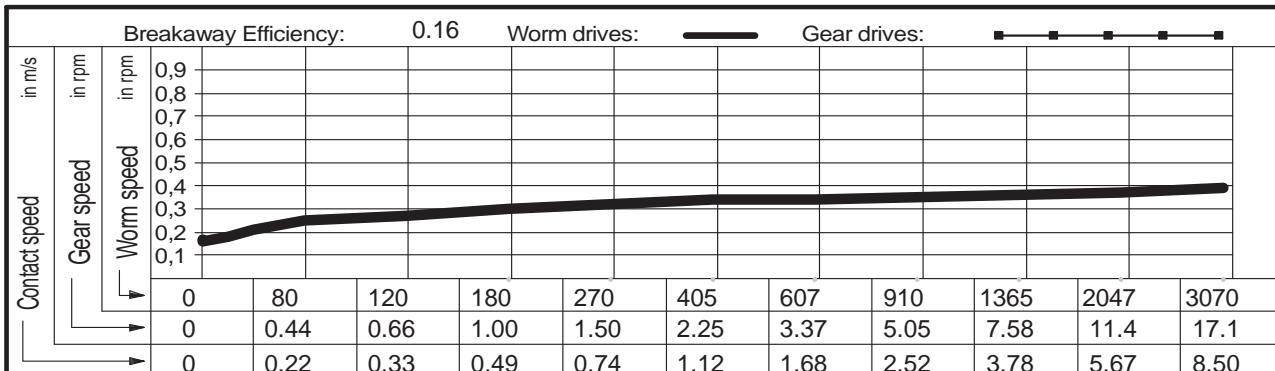
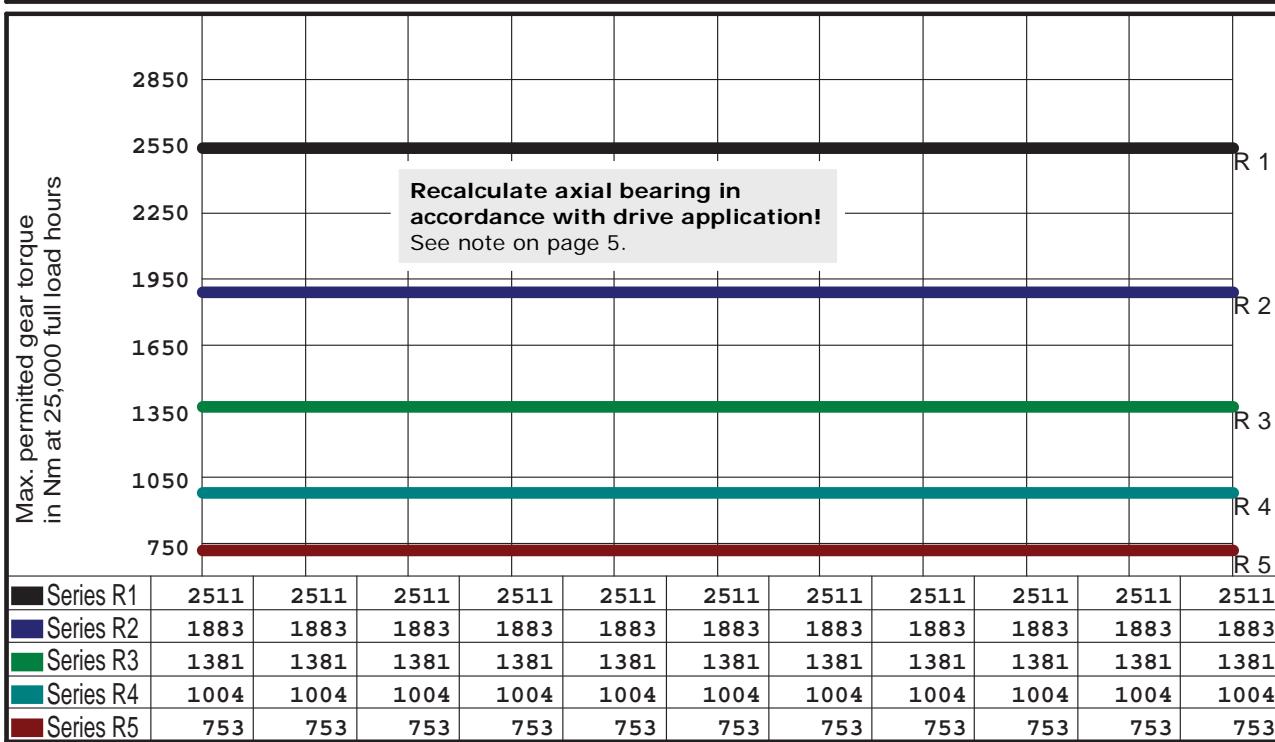
## Type G1 Gear Catalogue

Zahnradfertigung Ott  
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Centre distance	<b>195.00</b> mm	Material, gear	<b>GZ-CuSn12Ni</b>	Operating characteristics	
Outer Ø worm	<b>58.60</b> mm	Material, worm	<b>31CrMoV9</b>		
Outer Ø gear	<b>345.00</b> mm	Pressure angle in NS	<b>10 °</b>		
No. starts, worm	<b>1</b>	Back angle in NS	<b>15 °</b>		
Worm direction	<b>right</b>	Calculated circle Ø	<b>52.90</b> mm		
No. teeth, gear	<b>180</b>	Lead angle at Bks	<b>2.0014 °</b>		

### Ott worm gear

**OTT no: 4822 SSR**

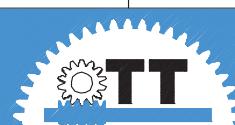


Gear selection by load type and application							
Series R1	a) random even load around gear b) absolutely smooth operation c) minimal acceleration and deceleration moments d) maximum 1 start per minute (60 per hour) e) up to 10% operating time per hour (6 minutes)	Series R4	a) segmental varying load on gear b) with uneven shock loads c) large acceleration and deceleration moments d) maximum 60 starts per minute (3600 per hour) e) up to 75% operating time per hour (45 minutes)				
Application:	Measurement and test machinery drives, CNC axes	Application:	Rotary tables with unfavourable cutting conditions, Trunion axes, CNC axes, milling spindles				
Series R2	a) random even load around gear b) absolutely smooth operation c) minimal acceleration and deceleration moments d) maximum 6 starts per minute (360 per hour) e) up to 25% operating time per hour (15 minutes)	Series R5	a) loads limited only to eccentric gear segment b) heavy, uneven shock loads c) largest acceleration and deceleration moments d) maximum 180 starts per minute (10,800 per hour) e) up to 100% operating time per hour (60 minutes)				
Application:	Index tables, circular feed drives and CNC axes for mainly smooth, controlled applications	Application:	Heavy milling and trunion drives, CNC axes with unfavourable conditions				
Series R3	a) random changing load on gear b) small shock loads c) large acceleration and deceleration moments d) maximum 20 starts per minute (1200 per hour) e) up to 50% operating time per hour (30 minutes)						
Application:	Index tables, rotary tables for circular milling with relatively favourable cutting conditions, CNC axes						
Lubricant: <b>Synthetic oil</b>							

**Zahnradfertigung OTT**

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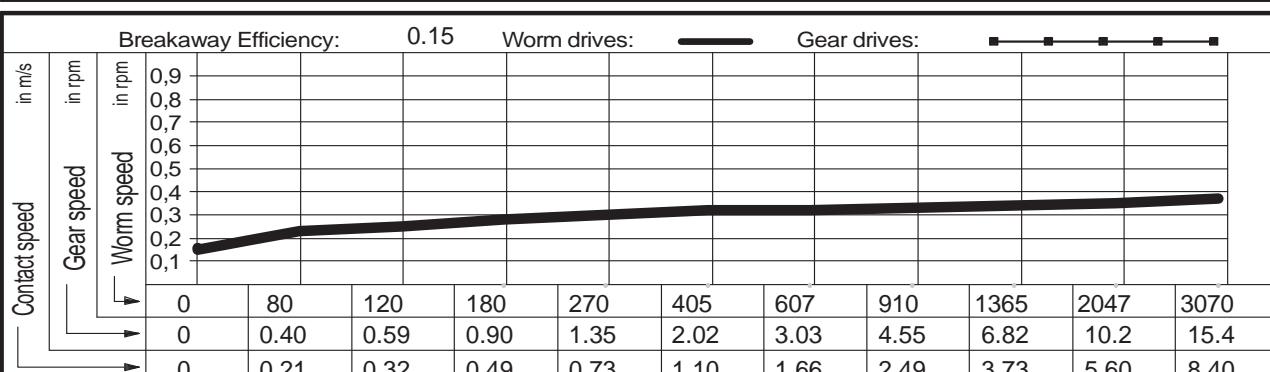
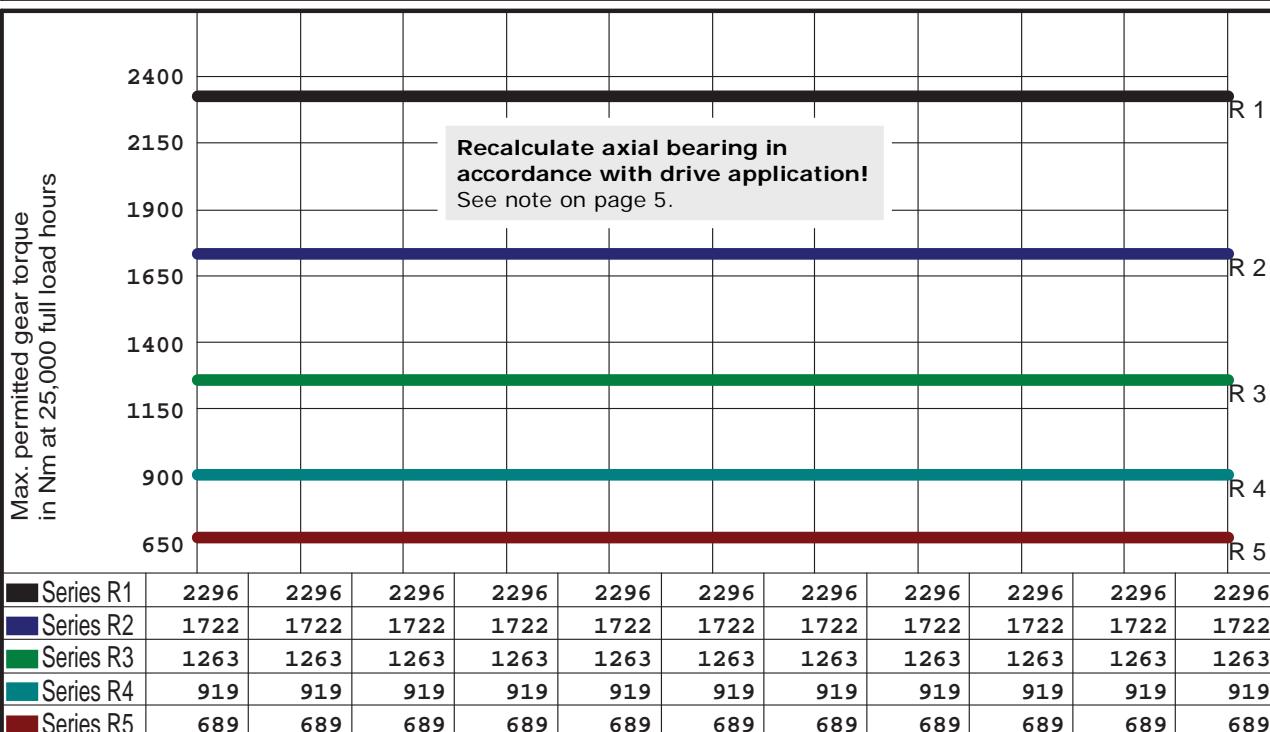
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Fax. 07471 - 705 39  
Email. Info@zahnrad-ott.de



Centre distance	<b>195.00</b> mm	Material, gear	<b>GZ-CuSn12Ni</b>	Operating characteristics	
Outer Ø worm	<b>57.60</b> mm	Material, worm	<b>31CrMoV9</b>		
Outer Ø gear	<b>345.00</b> mm	Pressure angle in NS	<b>10 °</b>		
No. starts, worm	<b>1</b>	Back angle in NS	<b>15 °</b>		
Worm direction	<b>right</b>	Calculated circle Ø	<b>52.27</b> mm		
No. teeth, gear	<b>200</b>	Lead angle at Bks	<b>1.8279 °</b>		

## Ott worm gear

**OTT no: 4865 SSR**



Gear selection by load type and application					
Series R1	a) random even load around gear b) absolutely smooth operation c) minimal acceleration and deceleration moments d) maximum 1 start per minute (60 per hour) e) up to 10% operating time per hour (6 minutes)	Series R4	a) segmental varying load on gear b) with uneven shock loads c) large acceleration and deceleration moments d) maximum 60 starts per minute (3600 per hour) e) up to 75% operating time per hour (45 minutes)	Lubricant:	Synthetic oil
Application:	Measurement and test machinery drives, CNC axes	Application:	Rotary tables with unfavourable cutting conditions, Trunion axes, CNC axes, milling spindles		
Series R2	a) random even load around gear b) absolutely smooth operation c) minimal acceleration and deceleration moments d) maximum 6 starts per minute (360 per hour) e) up to 25% operating time per hour (15 minutes)	Series R5	a) loads limited only to eccentric gear segment b) heavy, uneven shock loads c) largest acceleration and deceleration moments d) maximum 180 starts per minute (10,800 per hour) e) up to 100% operating time per hour (60 minutes)		
Application:	Index tables, circular feed drives and CNC axes for mainly smooth, controlled applications	Application:	Heavy milling and trunion drives, CNC axes with unfavourable conditions		
Series R3	a) random changing load on gear b) small shock loads c) large acceleration and deceleration moments d) maximum 20 starts per minute (1200 per hour) e) up to 50% operating time per hour (30 minutes)	Zahnradfertigung OTT	Blöhsteinstraße 20 D-72411 Bodelshausen <a href="http://www.zahnrad-ott.de">www.zahnrad-ott.de</a>	Tel. 07471 - 705 0 Fax. 07471 - 705 39 Email. <a href="mailto:Info@zahnrad-ott.de">Info@zahnrad-ott.de</a>	
Application:	Index tables, rotary tables for circular milling with relatively favourable cutting conditions, CNC axes				



## Type G1 Gear Catalogue

Zahnradfertigung Ott  
Blöhsteinstraße 20  
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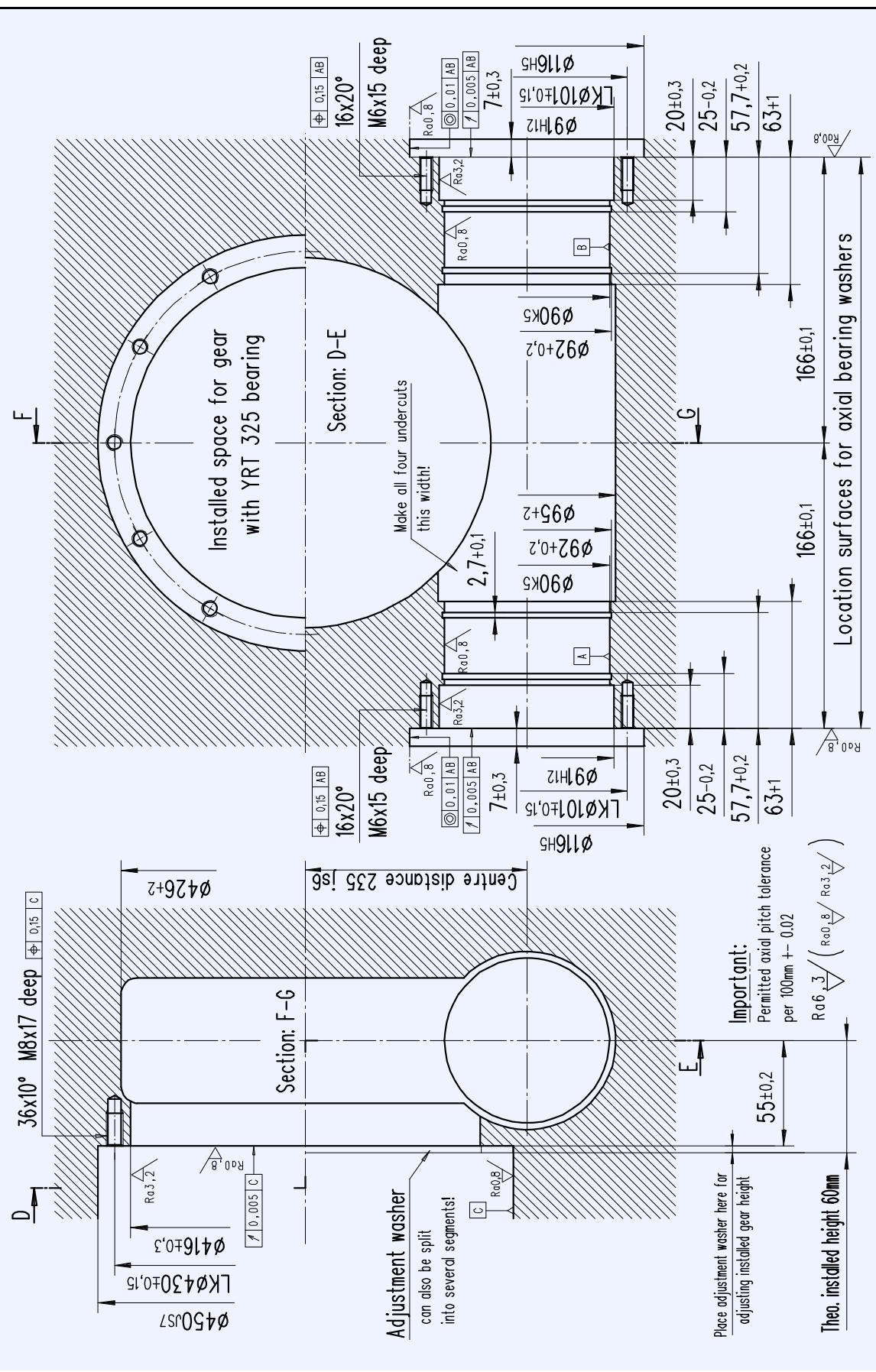
## OTT worm gears - centre distance 235 mm

### Main dimensions

The technical drawing illustrates the assembly of a worm gear system. It shows a cross-section of the worm and gear assembly with various dimensions labeled: A ±0,02, φB -0,2, φC -0,05, φD -0,2, Gap, φE H5, φF h8, and Centre distance. An 'Installed position Please note!' callout points to the right side of the drawing. The left side shows the 'Shank worm drive side' and 'Gear location surface underneath'. The right side shows the 'Gear location surface' and 'Worm centre'.

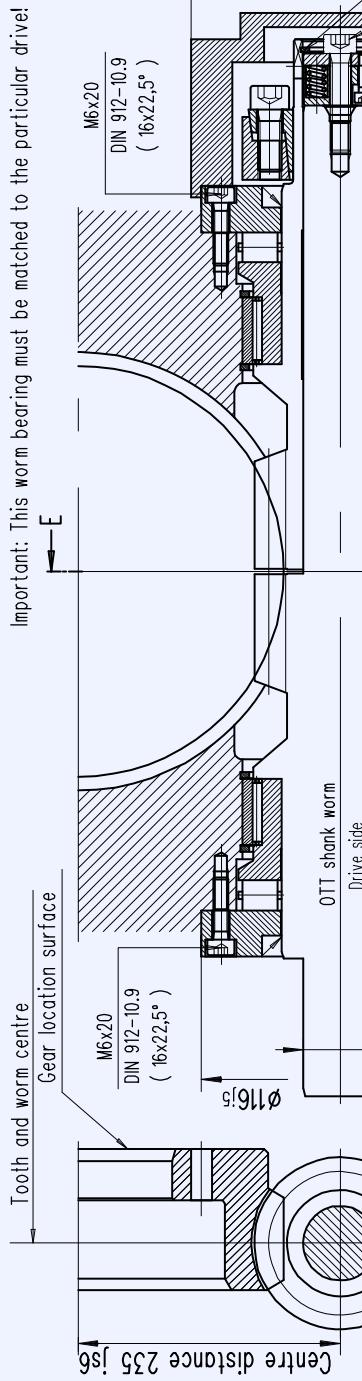
OTT gear no.	Ratio		Worm				YRT gear bearing	Gear			
	No. starts Z1	No. teeth Z2	Distance A	Undercut Ø B	Head Ø C	Collar Ø D		Internal Ø E	Head Ø F	Width G	Height H
4870 SSR	2	120	111	52,6	77,2	77,6	325	323	415	66	40
4806 SSR	1	90		51,9	77,6						
4808 SSR	1	120		52,6	77,2						
4843 SSR	1	144		53,0	74,4						
5655 SSR	1	150		53,1	73,8						
4807 SSR	1	180		53,4	71,4						
							See comments page 5!				

The cross-sectional diagram shows the gear assembly installed in a housing. Labels include: YRT bearing location surface, up to gear teeth centre, Housing size, Gear installed height, Provide oil gauge or gear window here, Hub, YRT bearing, Gear, Nom. Ø YRT bearing, Nom. Ø YRT bearing - 2mm, Place steel washer under screw head!, Washer for adjusting gear height, and Housing.

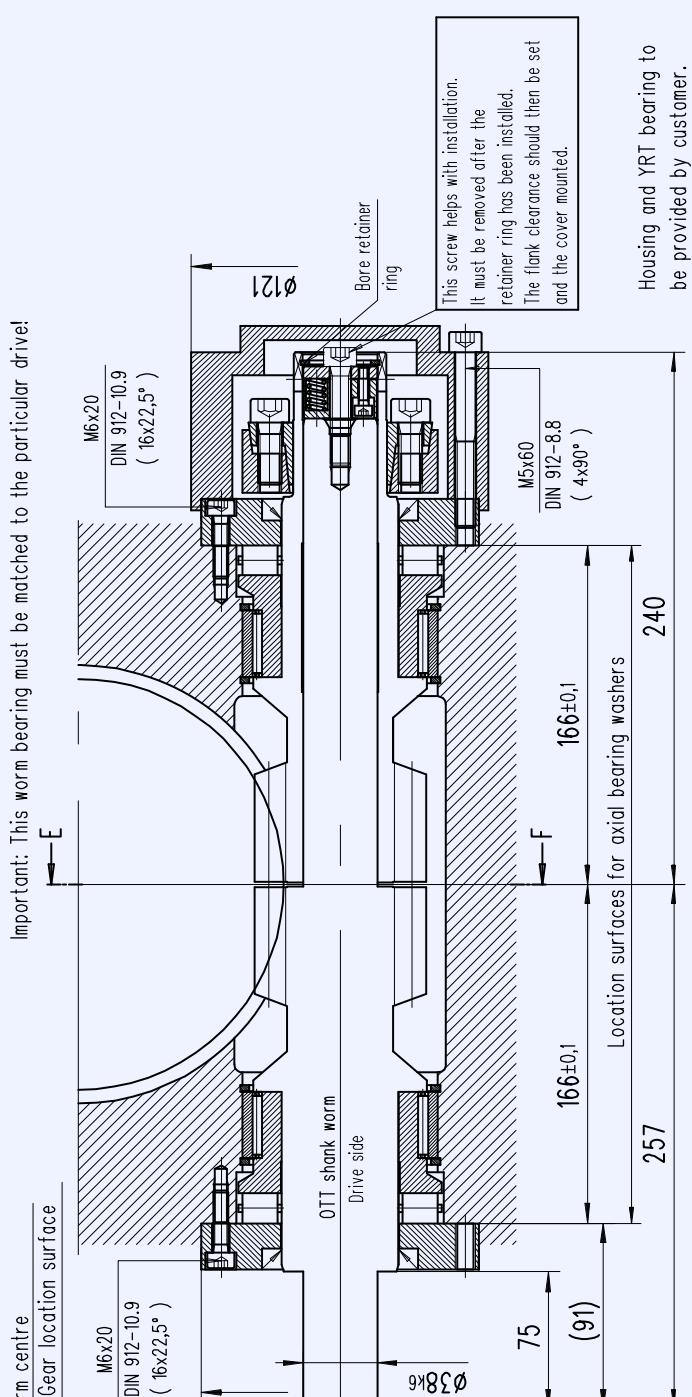
**Gear housing - required internal contour**
**Required internal contour of gear housing for centre distance 235 mm**


## Worm bearings

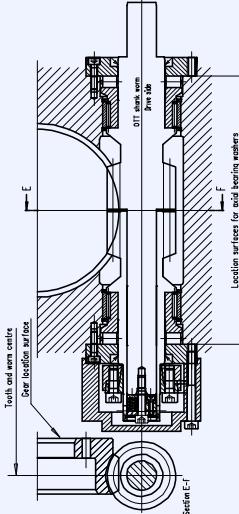
### Worm bearing for centre distance 235 mm



- Installed position A (Standard)**  
The gear location surface is underneath, the OTT shank worm on the left.
- Installed position B (to suit)**  
The gear location surface is underneath, the OTT shank worm on the right.



OTT worm gear		Bearing parts per gear	
OTT no.	Name	Name	Typ/Dwg no.
<b>4870 SSR</b>	Worm gear	Shank worm	Hollow worm
T00468-G-RAO	T00359-G-SSC	T00360-G-HSC	M6x20
<b>4806 SSR</b>	T00469-G-RAO	T00361-G-SSC	2 Axial cylinder roller bearing
T00470-G-RAO	T00363-G-SSC	T00362-G-HSC	K81211 TV
<b>4808 SSR</b>	T00471-G-RAO	T00364-G-SSC	2 Radial needle bearing
T00472-G-RAO	T00365-G-SSC	T00366-G-HSC	RNAO 70x90x30
<b>4843 SSR</b>	T00473-G-RAO	T00367-G-SSC	2 Shaft seal
T00474-G-RAO	T00368-G-HSC	1 Shrink disc	55x70x8
<b>5655 SSR</b>		4 Circlip	HSD 50-22
		32 Cylinder bolt DIN 912	SB 90
<b>4807 SSR</b>	T00473-G-RAO	T00369-G-SSC	4 Cylinder bolt DIN 912
		1 Cylinder bolt DIN 912	M6x20 - 10.9
		1 Retainer ring DIN 472	M5x60 - 8.8
		2 Bearing sleeve	M6x30 - 8.8
		2 Axial bearing washer	38
		1 Cover	T00223-G-LHÜ
		1 Thrust piece	T00235-G-LDX
			T00218-G-ADH
			B00011-G-DST



- Set of OTT worm gears
- Gearset incl. thrust piece without bearing parts
- Gearset incl. all bearing parts

REQUEST      Date: \_\_\_\_\_ Name: \_\_\_\_\_

ORDER



## Type G1 Gear Catalogue

Zahnradfertigung Ott  
Blöhsteinstraße 20  
D-72411 Bodelshausen

### Operational characteristics

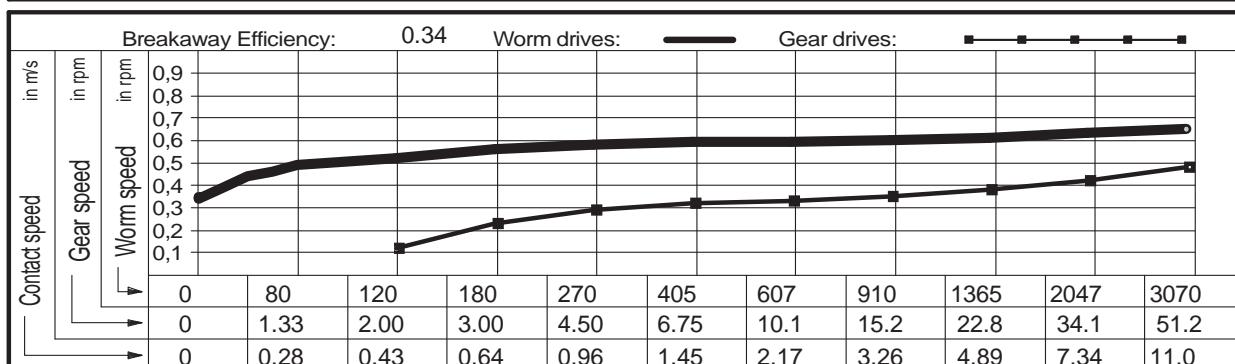
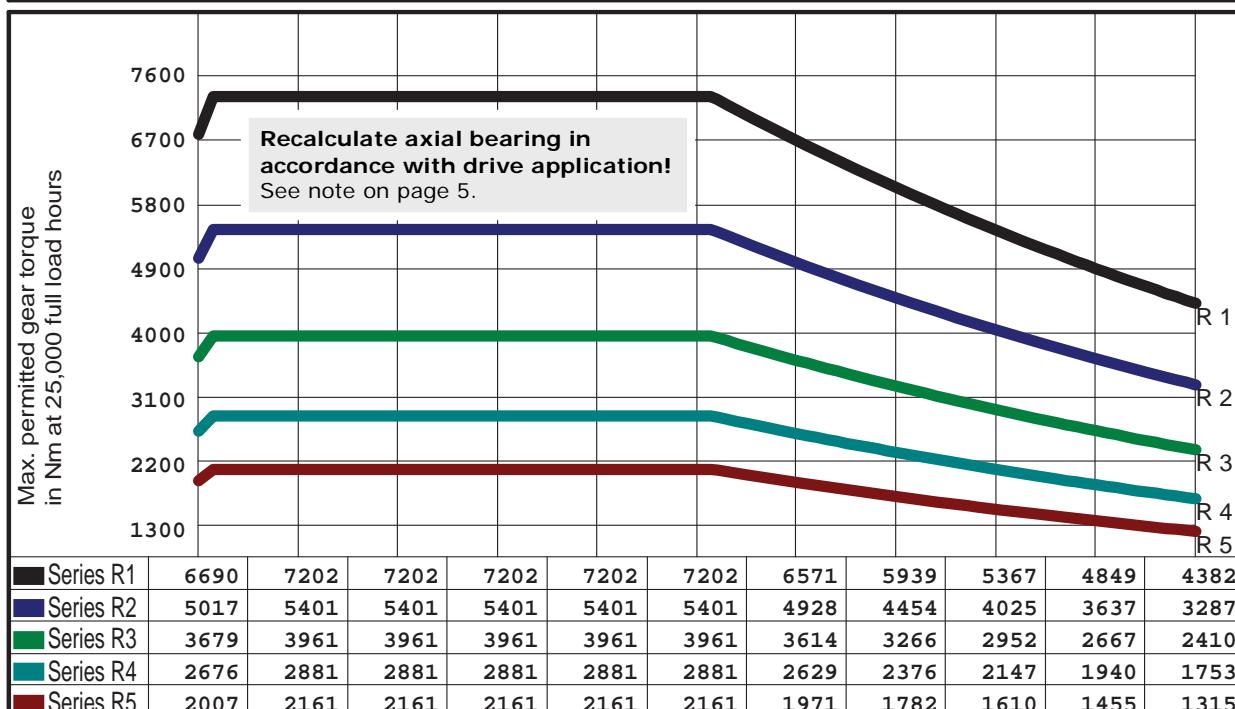
Centre distance	235.00	mm
Outer Ø worm	77.20	mm
Outer Ø gear	415.00	mm
No. starts, worm	2	
Worm direction	right	
No. teeth, gear	120	

Material, gear	GZ-CuSn12Ni
Material, worm	31CrMoV9
Pressure angle in NS	10 °
Back angle in NS	15 °
Calculated circle Ø	68.22 mm
Lead angle at Bks	5.5151 °

### Operating characteristics

#### Ott worm gear

**OTT no: 4870 SSR**

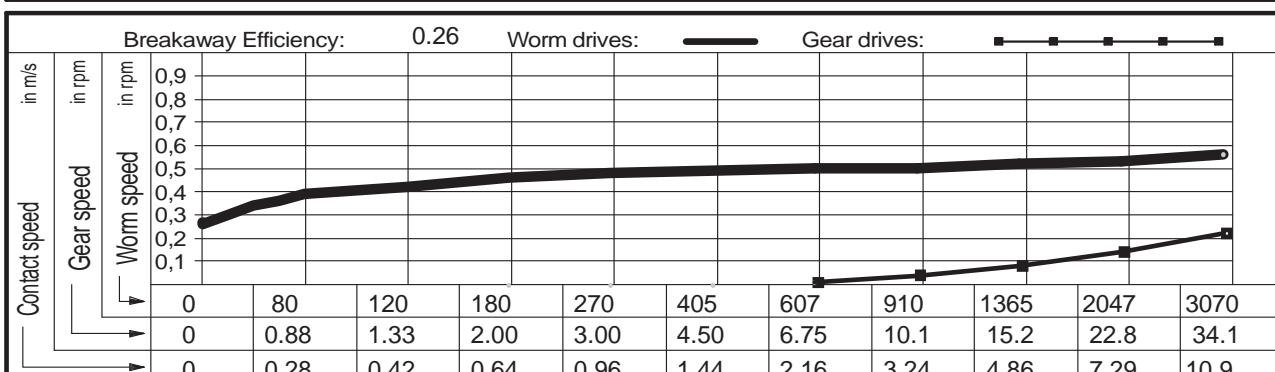
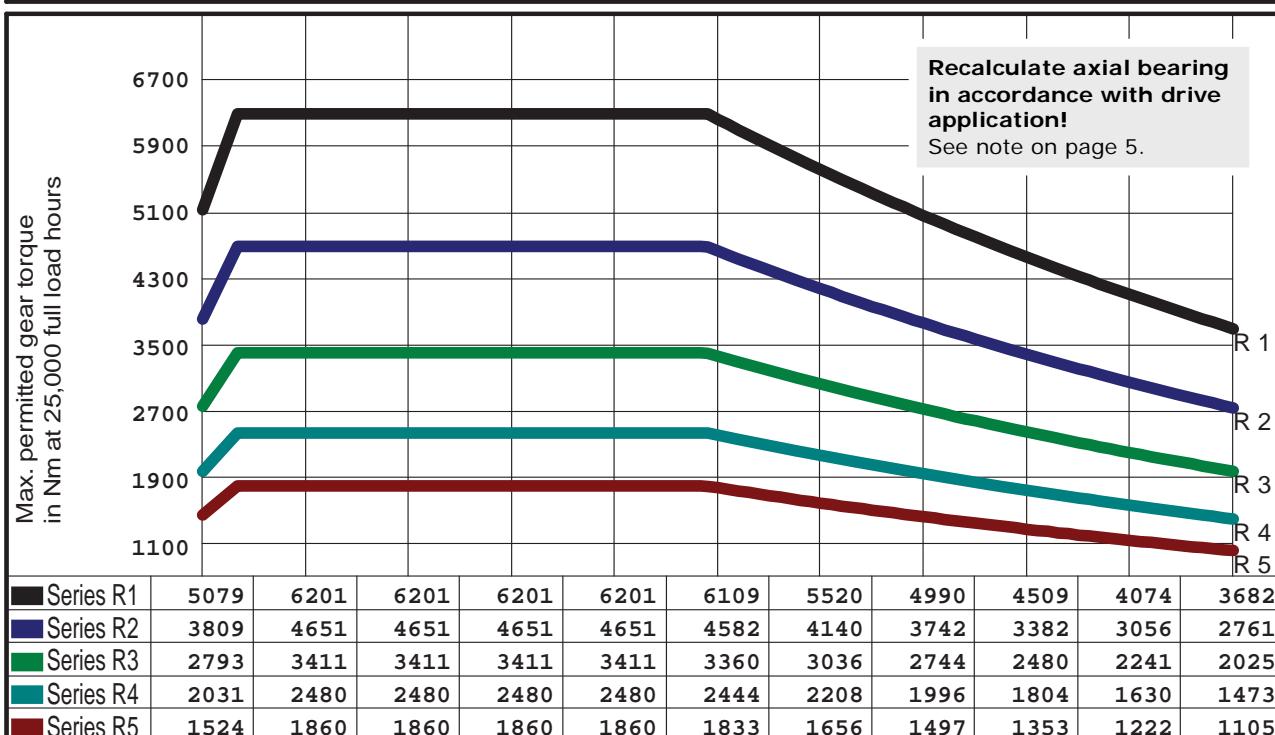


Gear selection by load type and application				
Series R1	a) random even load around gear b) absolutely smooth operation c) minimal acceleration and deceleration moments d) maximum 1 start per minute (60 per hour) e) up to 10% operating time per hour (6 minutes)	Series R4	a) segmental varying load on gear b) with uneven shock loads c) large acceleration and deceleration moments d) maximum 60 starts per minute (3600 per hour) e) up to 75% operating time per hour (45 minutes)	Lubricant: Synthetic oil
Application:	Measurement and test machinery drives, CNC axes	Application:	Rotary tables with unfavourable cutting conditions. Trunion axes, CNC axes, milling spindles	
Series R2	a) random even load around gear b) absolutely smooth operation c) minimal acceleration and deceleration moments d) maximum 6 starts per minute (360 per hour) e) up to 25% operating time per hour (15 minutes)	Series R5	a) loads limited only to eccentric gear segment b) heavy, uneven shock loads c) largest acceleration and deceleration moments d) maximum 180 starts per minute (10,800 per hour) e) up to 100% operating time per hour (60 minutes)	
Application:	Index tables, circular feed drives and CNC axes for mainly smooth, controlled applications	Application:	Heavy milling and trunion drives, CNC axes with unfavourable conditions	
Series R3	a) random changing load on gear b) small shock loads c) large acceleration and deceleration moments d) maximum 20 starts per minute (1200 per hour) e) up to 50% operating time per hour (30 minutes)	Zahnradfertigung OTT	Blöhsteinstraße 20 D-72411 Bodelshausen www.zahnrad-ott.de	Tel. 07471 - 705 0 Fax. 07471 - 705 39 Email. Info@zahnrad-ott.de
Application:	Index tables, rotary tables for circular milling with relatively favourable cutting conditions, CNC axes			

Centre distance	<b>235.00</b> mm	Material, gear	<b>GZ-CuSn12Ni</b>	<b>Operating characteristics</b>	
Outer Ø worm	<b>77.60</b> mm	Material, worm	<b>31CrMoV9</b>		
Outer Ø gear	<b>415.00</b> mm	Pressure angle in NS	<b>10 °</b>		
No. starts, worm	<b>1</b>	Back angle in NS	<b>15 °</b>		
Worm direction	<b>right</b>	Calculated circle Ø	<b>67.93</b> mm		
No. teeth, gear	<b>90</b>	Lead angle at Bks	<b>3.7027</b> °		

## Ott worm gear

**OTT no: 4806 SSR**



Gear selection by load type and application					
Series R1	a) random even load around gear b) absolutely smooth operation c) minimal acceleration and deceleration moments d) maximum 1 start per minute (60 per hour) e) up to 10% operating time per hour (6 minutes)	Series R4	a) segmental varying load on gear b) with uneven shock loads c) large acceleration and deceleration moments d) maximum 60 starts per minute (3600 per hour) e) up to 75% operating time per hour (45 minutes)		
Application:	Measurement and test machinery drives, CNC axes	Application:	Rotary tables with unfavourable cutting conditions, Trunion axes, CNC axes, milling spindles		
Series R2	a) random even load around gear b) absolutely smooth operation c) minimal acceleration and deceleration moments d) maximum 6 starts per minute (360 per hour) e) up to 25% operating time per hour (15 minutes)	Series R5	a) loads limited only to eccentric gear segment b) heavy, uneven shock loads c) largest acceleration and deceleration moments d) maximum 180 starts per minute (10,800 per hour) e) up to 100% operating time per hour (60 minutes)		
Application:	Index tables, circular feed drives and CNC axes for mainly smooth, controlled applications	Application:	Heavy milling and trunion drives, CNC axes with unfavourable conditions		
Series R3	a) random changing load on gear b) small shock loads c) large acceleration and deceleration moments d) maximum 20 starts per minute (1200 per hour) e) up to 50% operating time per hour (30 minutes)	Zahnradfertigung OTT	Blöhsteinstraße 20 D-72411 Bodelshausen <a href="http://www.zahnrad-ott.de">www.zahnrad-ott.de</a>	Tel. 07471 - 705 0 Fax. 07471 - 705 39 Email. <a href="mailto:Info@zahnrad-ott.de">Info@zahnrad-ott.de</a>	Lubricant: Synthetic oil
Application:	Index tables, rotary tables for circular milling with relatively favourable cutting conditions, CNC axes				



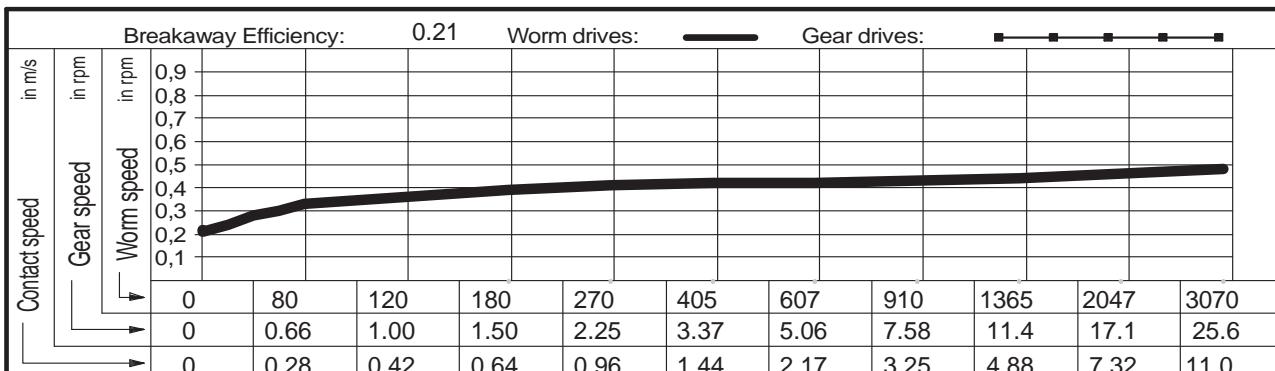
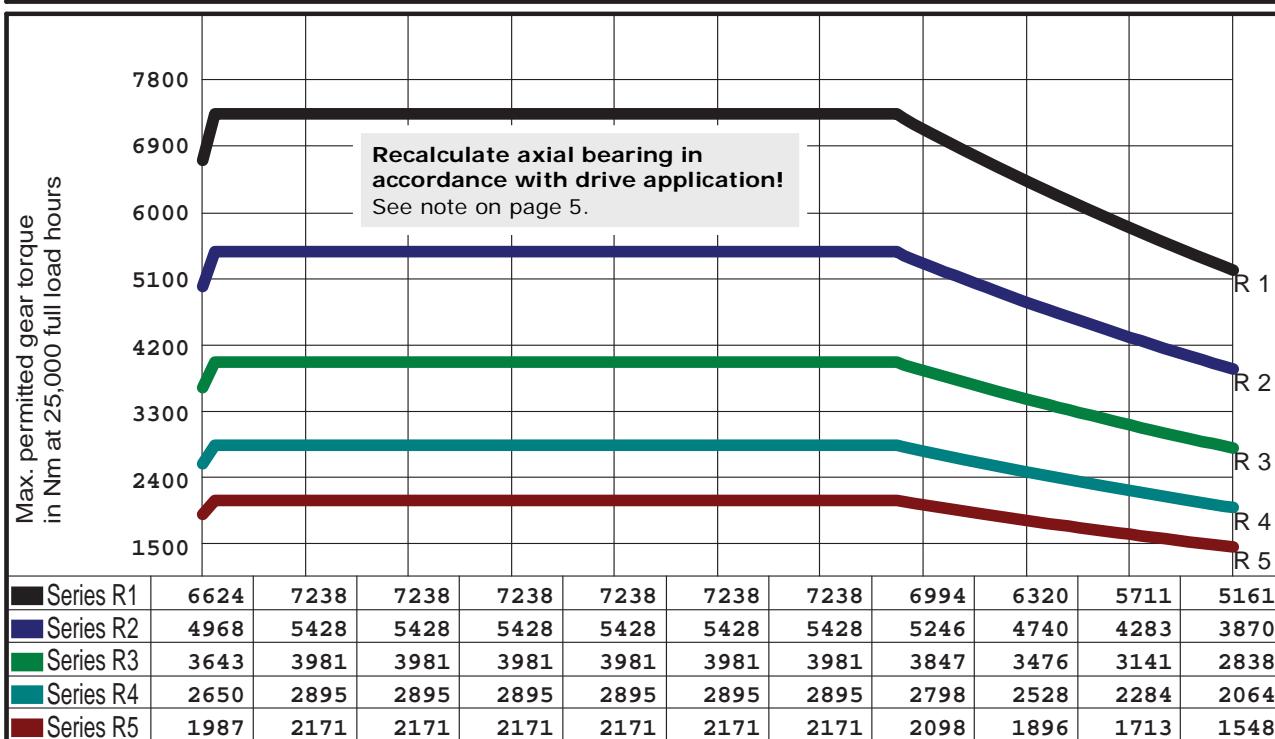
## Type G1 Gear Catalogue

Zahnradfertigung Ott  
Blöhsteinstraße 20  
D-72411 Bodelshausen

Centre distance	<b>235.00</b> mm	Material, gear	<b>GZ-CuSn12Ni</b>	Operating characteristics	
Outer Ø worm	<b>77.20</b> mm	Material, worm	<b>31CrMoV9</b>		
Outer Ø gear	<b>415.00</b> mm	Pressure angle in NS	<b>10 °</b>		
No. starts, worm	<b>1</b>	Back angle in NS	<b>15 °</b>		
Worm direction	<b>right</b>	Calculated circle Ø	<b>68.23</b> mm		
No. teeth, gear	<b>120</b>	Lead angle at Bks	<b>2.7635 °</b>		

### Ott worm gear

**OTT no: 4808 SSR**

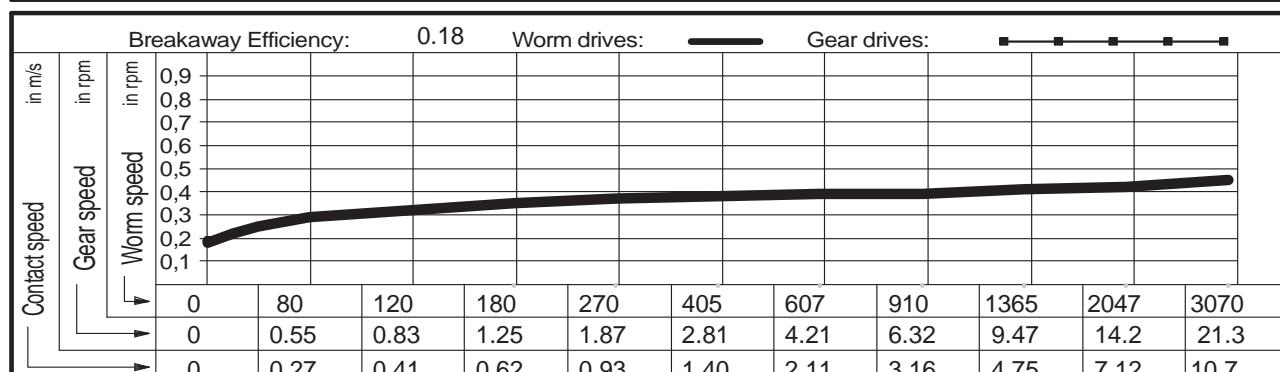
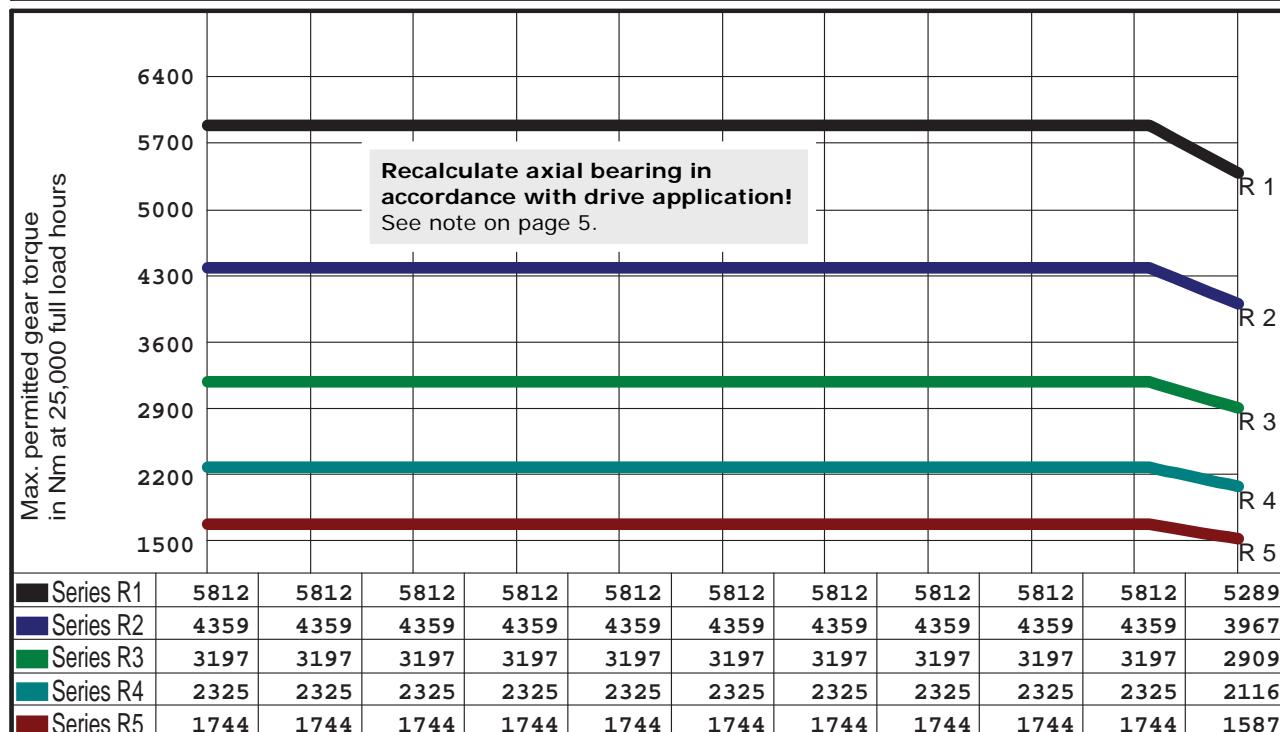


Gear selection by load type and application					
Series R1	a) random even load around gear b) absolutely smooth operation c) minimal acceleration and deceleration moments d) maximum 1 start per minute (60 per hour) e) up to 10% operating time per hour (6 minutes)	Series R4	a) segmental varying load on gear b) with uneven shock loads c) large acceleration and deceleration moments d) maximum 60 starts per minute (3600 per hour) e) up to 75% operating time per hour (45 minutes)	Lubricant:	Synthetic oil
Application:	Measurement and test machinery drives, CNC axes	Application:	Rotary tables with unfavourable cutting conditions, Trunion axes, CNC axes, milling spindles		
Series R2	a) random even load around gear b) absolutely smooth operation c) minimal acceleration and deceleration moments d) maximum 6 starts per minute (360 per hour) e) up to 25% operating time per hour (15 minutes)	Series R5	a) loads limited only to eccentric gear segment b) heavy, uneven shock loads c) largest acceleration and deceleration moments d) maximum 180 starts per minute (10,800 per hour) e) up to 100% operating time per hour (60 minutes)		
Application:	Index tables, circular feed drives and CNC axes for mainly smooth, controlled applications	Application:	Heavy milling and trunion drives, CNC axes with unfavourable conditions		
Series R3	a) random changing load on gear b) small shock loads c) large acceleration and deceleration moments d) maximum 20 starts per minute (1200 per hour) e) up to 50% operating time per hour (30 minutes)	Zahnradfertigung OTT	Blöhsteinstraße 20 D-72411 Bodelshausen www.zahnrad-ott.de	Tel. 07471 - 705 0 Fax. 07471 - 705 39 Email. Info@zahnrad-ott.de	
Application:	Index tables, rotary tables for circular milling with relatively favourable cutting conditions, CNC axes				

Centre distance	<b>235.00</b> mm	Material, gear	<b>GZ-CuSn12Ni</b>	<b>Operating characteristics</b>	
Outer Ø worm	<b>74.40</b> mm	Material, worm	<b>31CrMoV9</b>		
Outer Ø gear	<b>415.00</b> mm	Pressure angle in NS	<b>10 °</b>		
No. starts, worm	<b>1</b>	Back angle in NS	<b>15 °</b>		
Worm direction	<b>right</b>	Calculated circle Ø	<b>66.43</b> mm		
No. teeth, gear	<b>144</b>	Lead angle at Bks	<b>2.3801</b> °		

## Ott worm gear

**OTT no: 4843 SSR**



Gear selection by load type and application											
Series R1	a) random even load around gear b) absolutely smooth operation c) minimal acceleration and deceleration moments d) maximum 1 start per minute (60 per hour) e) up to 10% operating time per hour (6 minutes)					Series R4	a) segmental varying load on gear b) with uneven shock loads c) large acceleration and deceleration moments d) maximum 60 starts per minute (3600 per hour) e) up to 75% operating time per hour (45 minutes)				
Application:	Measurement and test machinery drives, CNC axes					Application:	Rotary tables with unfavourable cutting conditions, Trunion axes, CNC axes, milling spindles				
Series R2	a) random even load around gear b) absolutely smooth operation c) minimal acceleration and deceleration moments d) maximum 6 starts per minute (360 per hour) e) up to 25% operating time per hour (15 minutes)					Series R5	a) loads limited only to eccentric gear segment b) heavy, uneven shock loads c) largest acceleration and deceleration moments d) maximum 180 starts per minute (10,800 per hour) e) up to 100% operating time per hour (60 minutes)				
Application:	Index tables, circular feed drives and CNC axes for mainly smooth, controlled applications					Application:	Heavy milling and trunion drives, CNC axes with unfavourable conditions				
Series R3	a) random changing load on gear b) small shock loads c) large acceleration and deceleration moments d) maximum 20 starts per minute (1200 per hour) e) up to 50% operating time per hour (30 minutes)					Lubricant: <b>Synthetic oil</b>					
Application:	Index tables, rotary tables for circular milling with relatively favourable cutting conditions, CNC axes					<b>Zahnradfertigung OTT</b> Blöhsteinstraße 20 D-72411 Bodelshausen <a href="http://www.zahnrad-ott.de">www.zahnrad-ott.de</a> Tel. 07471 - 705 0 Fax. 07471 - 705 39 Email. <a href="mailto:Info@zahnrad-ott.de">Info@zahnrad-ott.de</a>					



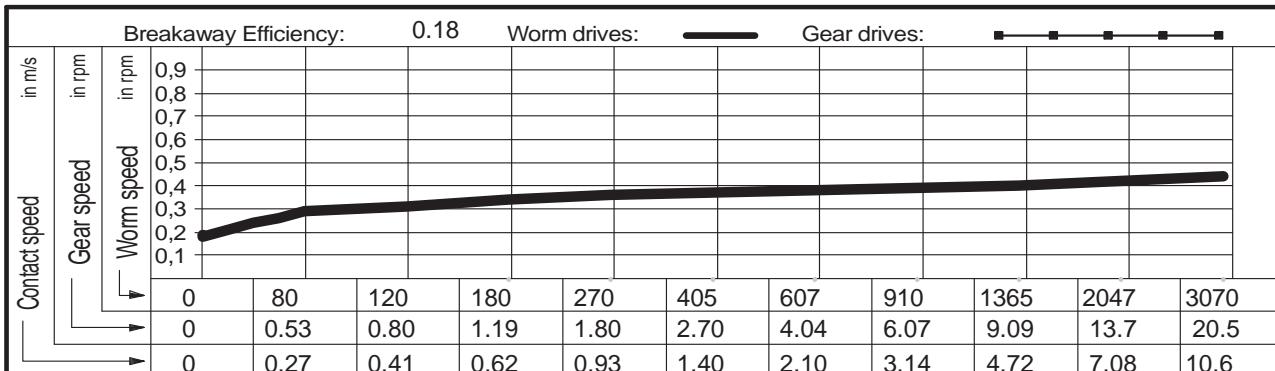
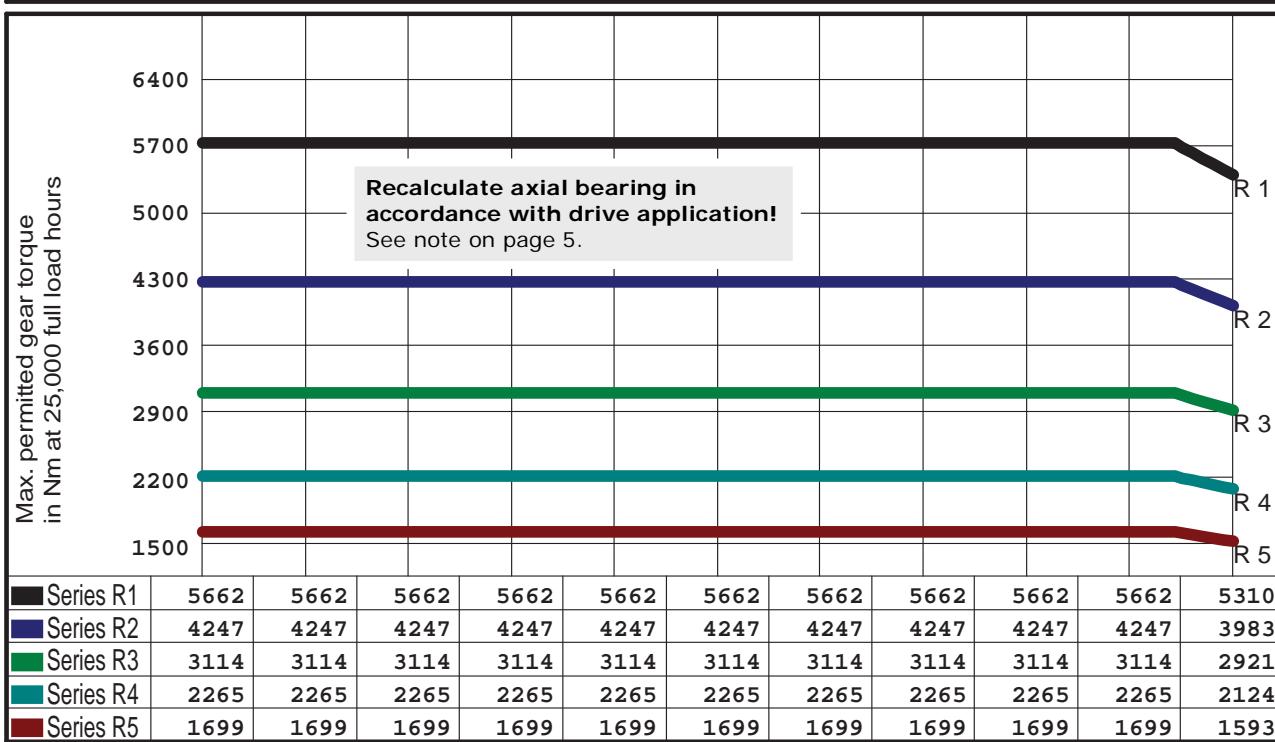
## Type G1 Gear Catalogue

Zahnradfertigung Ott  
Blöhsteinstraße 20  
D-72411 Bodelshausen

Centre distance	<b>235.00</b> mm	Material, gear	<b>GZ-CuSn12Ni</b>	Operating characteristics	
Outer Ø worm	<b>73.80</b> mm	Material, worm	<b>31CrMoV9</b>		
Outer Ø gear	<b>415.00</b> mm	Pressure angle in NS	<b>10 °</b>		
No. starts, worm	<b>1</b>	Back angle in NS	<b>15 °</b>		
Worm direction	<b>right</b>	Calculated circle Ø	<b>66.05</b> mm		
No. teeth, gear	<b>150</b>	Lead angle at Bks	<b>2.3012 °</b>		

### Ott worm gear

**OTT no: 5655 SSR**



### Gear selection by load type and application

Series R1	a) random even load around gear b) absolutely smooth operation c) minimal acceleration and deceleration moments d) maximum 1 start per minute (60 per hour) e) up to 10% operating time per hour (6 minutes)	Series R4	a) segmental varying load on gear b) with uneven shock loads c) large acceleration and deceleration moments d) maximum 60 starts per minute (3600 per hour) e) up to 75% operating time per hour (45 minutes)	Lubricant:
Application:	Measurement and test machinery drives, CNC axes	Application:	Rotary tables with unfavourable cutting conditions, Trunion axes, CNC axes, milling spindles	Synthetic oil
Series R2	a) random even load around gear b) absolutely smooth operation c) minimal acceleration and deceleration moments d) maximum 6 starts per minute (360 per hour) e) up to 25% operating time per hour (15 minutes)	Series R5	a) loads limited only to eccentric gear segment b) heavy, uneven shock loads c) largest acceleration and deceleration moments d) maximum 180 starts per minute (10,800 per hour) e) up to 100% operating time per hour (60 minutes)	
Application:	Index tables, circular feed drives and CNC axes for mainly smooth, controlled applications	Application:	Heavy milling and trunion drives, CNC axes with unfavourable conditions	
Series R3	a) random changing load on gear b) small shock loads c) large acceleration and deceleration moments d) maximum 20 starts per minute (1200 per hour) e) up to 50% operating time per hour (30 minutes)			
Application:	Index tables, rotary tables for circular milling with relatively favourable cutting conditions, CNC axes			

**Zahnradfertigung OTT**

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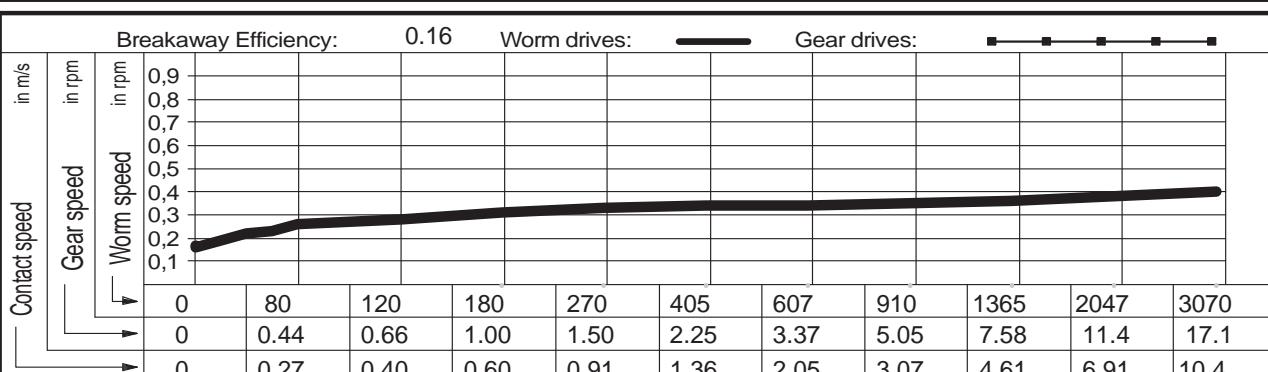
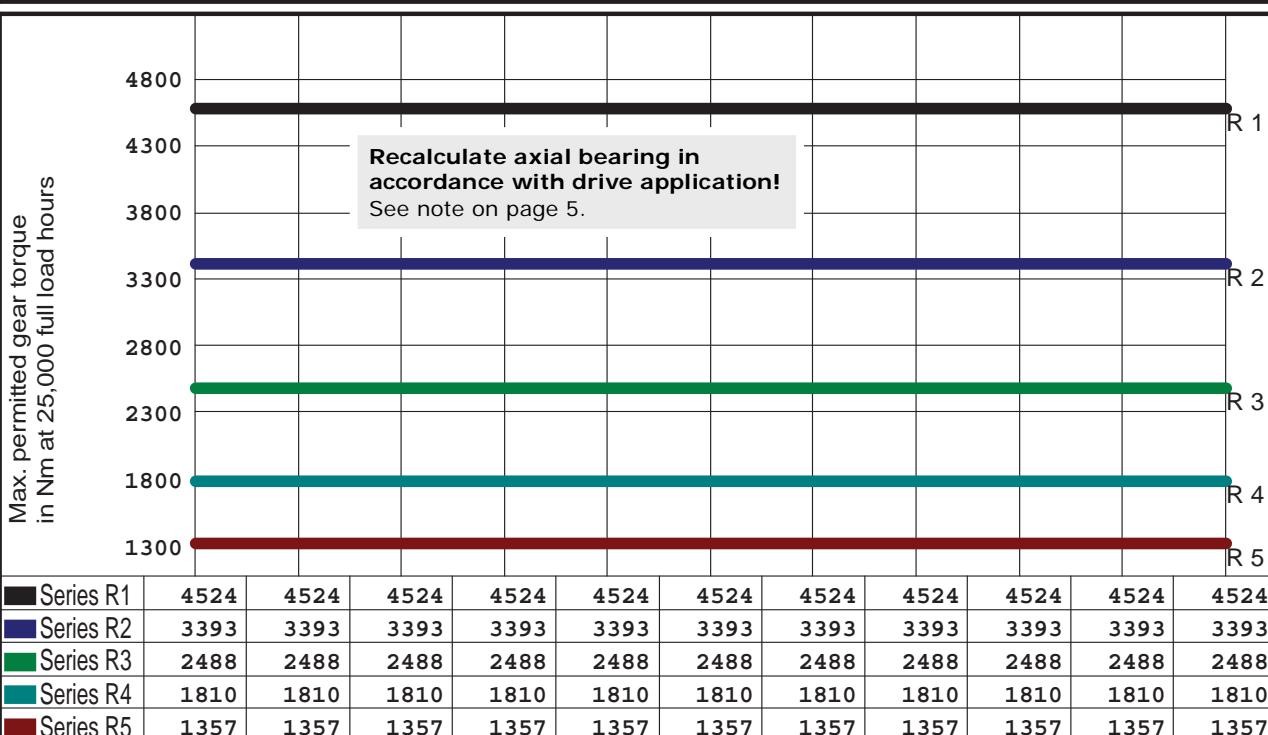
Tel. 07471 - 705 0  
Fax. 07471 - 705 39  
Email. [Info@zahnrad-ott.de](mailto:Info@zahnrad-ott.de)



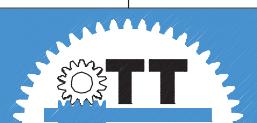
Centre distance	<b>235.00</b> mm	Material, gear	<b>GZ-CuSn12Ni</b>	<b>Operating characteristics</b>	
Outer Ø worm	<b>71.40</b> mm	Material, worm	<b>31CrMoV9</b>		
Outer Ø gear	<b>415.00</b> mm	Pressure angle in NS	<b>10 °</b>		
No. starts, worm	<b>1</b>	Back angle in NS	<b>15 °</b>		
Worm direction	<b>right</b>	Calculated circle Ø	<b>64.53</b> mm		
No. teeth, gear	<b>180</b>	Lead angle at Bks	<b>1.9736 °</b>		

### Ott worm gear

**OTT no: 4807 SSR**



Gear selection by load type and application							
Series R1	a) random even load around gear b) absolutely smooth operation c) minimal acceleration and deceleration moments d) maximum 1 start per minute (60 per hour) e) up to 10% operating time per hour (6 minutes)	Series R4	a) segmental varying load on gear b) with uneven shock loads c) large acceleration and deceleration moments d) maximum 60 starts per minute (3600 per hour) e) up to 75% operating time per hour (45 minutes)				
Application:	Measurement and test machinery drives, CNC axes	Application:	Rotary tables with unfavourable cutting conditions, Trunion axes, CNC axes, milling spindles				
Series R2	a) random even load around gear b) absolutely smooth operation c) minimal acceleration and deceleration moments d) maximum 6 starts per minute (360 per hour) e) up to 25% operating time per hour (15 minutes)	Series R5	a) loads limited only to eccentric gear segment b) heavy, uneven shock loads c) largest acceleration and deceleration moments d) maximum 180 starts per minute (10,800 per hour) e) up to 100% operating time per hour (60 minutes)				
Application:	Index tables, circular feed drives and CNC axes for mainly smooth, controlled applications	Application:	Heavy milling and trunion drives, CNC axes with unfavourable conditions				
Series R3	a) random changing load on gear b) small shock loads c) large acceleration and deceleration moments d) maximum 20 starts per minute (1200 per hour) e) up to 50% operating time per hour (30 minutes)	Lubricant: <b>Synthetic oil</b>					
Application:	Index tables, rotary tables for circular milling with relatively favourable cutting conditions, CNC axes	Blöhsteinstraße 20 D-72411 Bodelshausen <a href="http://www.zahnrad-ott.de">www.zahnrad-ott.de</a>					
<b>Zahnradfertigung OTT</b> Tel. 07471 - 705 0 Fax. 07471 - 705 39 Email. <a href="mailto:Info@zahnrad-ott.de">Info@zahnrad-ott.de</a>							





## Type G1 Gear Catalogue

Zahnradfertigung Ott  
Blöhsteinstraße 20  
D-72411 Bodelshausen

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## OTT worm gears - centre distance 270 mm

### Main dimensions

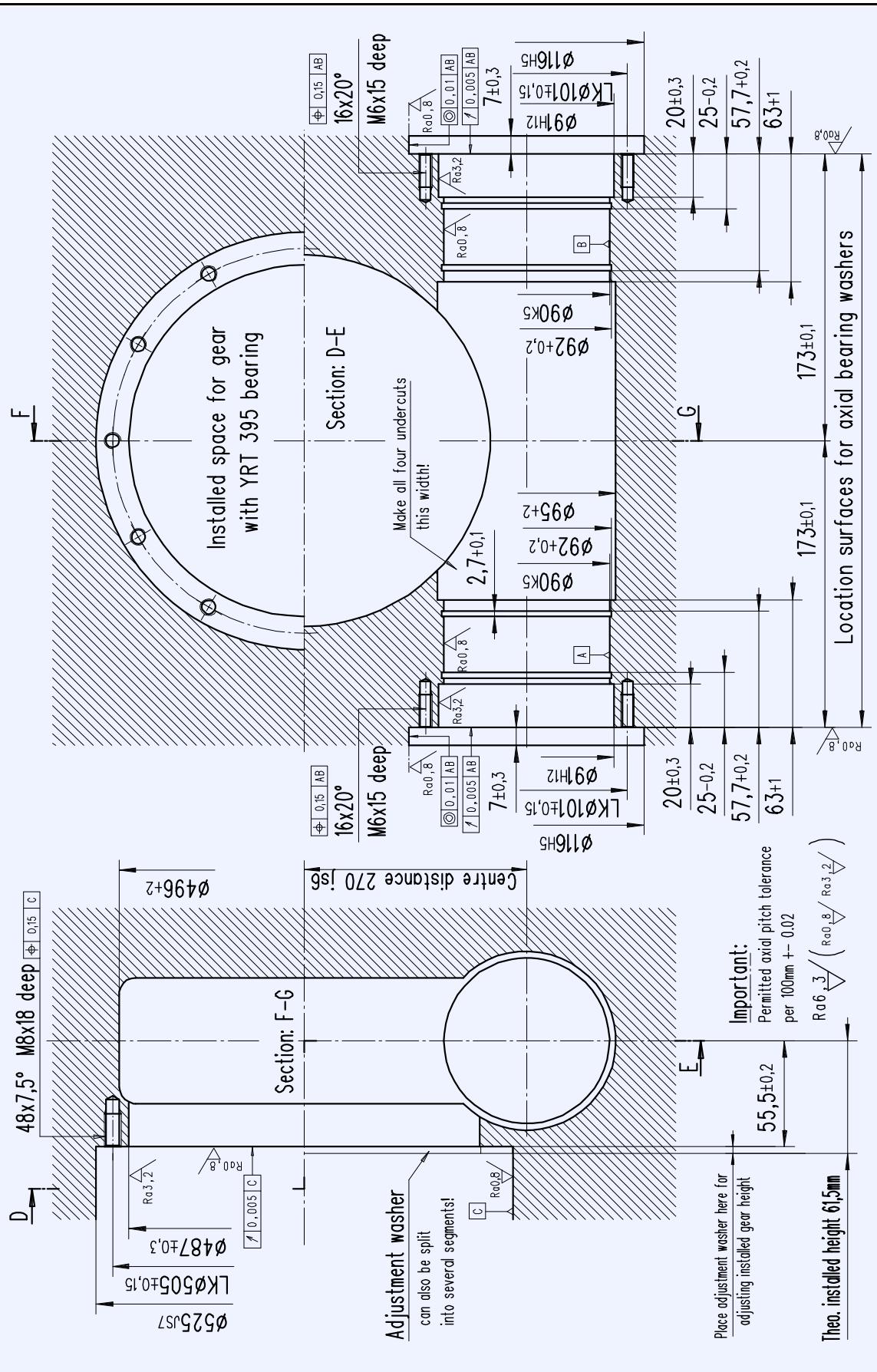
The technical drawing illustrates the assembly of a worm gear system. It shows a cross-section of the worm and gear assembly with various dimensions labeled: A ±0,02, φB -0,2, φC -0,05, φD -0,2, Gap, φE H5, φF h8, and Centre distance. An inset shows the gear location surface underneath the worm center. A note indicates the 'Installed position Please note!'.

Ott gear no.	Ratio		Worm				YRT gear bearing	Gear			
	No. starts Z1	No. teeth Z2	Distance A	Undercut Ø B	Head Ø C	Collar Ø D		Internal Ø E	Head Ø F	Width G	Height H
4883 SSR	2	120	118	51,2	77,6	77,6	395	393	486	65	39
4882 SSR	1	120		51,2	77,6						
4880 SSR	1	144		51,7	76,6						
4809 SSR	1	180		52,1	73,2						

The cross-sectional diagram shows the gear assembly within a housing. Labels include: YRT bearing location surface, up to gear teeth centre, Housing size, Gear installed height, Hub, YRT bearing, Gear, Nom. Ø YRT bearing, Washer for adjusting gear height, Place steel washer under screw head!, and Gear ID = Nom. Ø YRT bearing - 2mm. A note says 'Provide oil gauge or gear window here'.

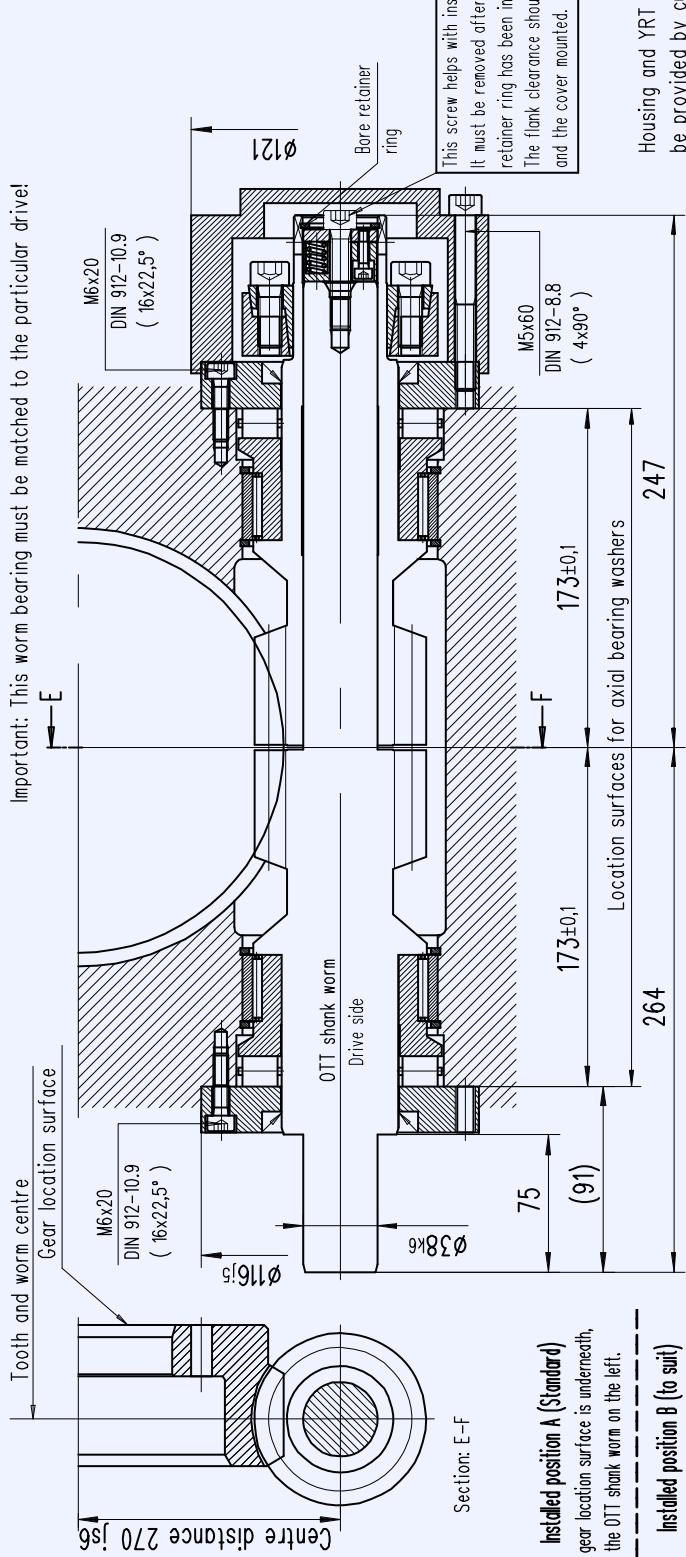
**Gear housing - required internal contour**

**Required internal contour of gear housing for centre distance 270 mm**



## Worm bearings

### Worm bearing for centre distance 270 mm



		Bearing parts per gear		
OTT no.	Worm gear	Shank worm	Hollow worm	Qty
4883 SSR	T00474-G-RAO	T00371-G-SSC	T00372-G-HSC	2
4882 SSR	T00475-G-RAO	T00373-G-SSC	T00374-G-HSC	2
4880 SSR	T00476-G-RAO	T00375-G-SSC	T00376-G-HSC	2
4809 SSR	T00477-G-RAO	T00377-G-SSC	T00378-G-HSC	1

<input type="checkbox"/> REQUEST	Date:	Name:	
<input type="checkbox"/> ORDER			
Order using ..... set of OTT worm gears			
<input type="checkbox"/> Gearset incl. thrust piece without bearing parts			
<input type="checkbox"/> Gearset incl. all bearing parts			



## Type G1 Gear Catalogue

Zahnradfertigung Ott  
Blöhsteinstraße 20  
D-72411 Bodelshausen

### Operational characteristics

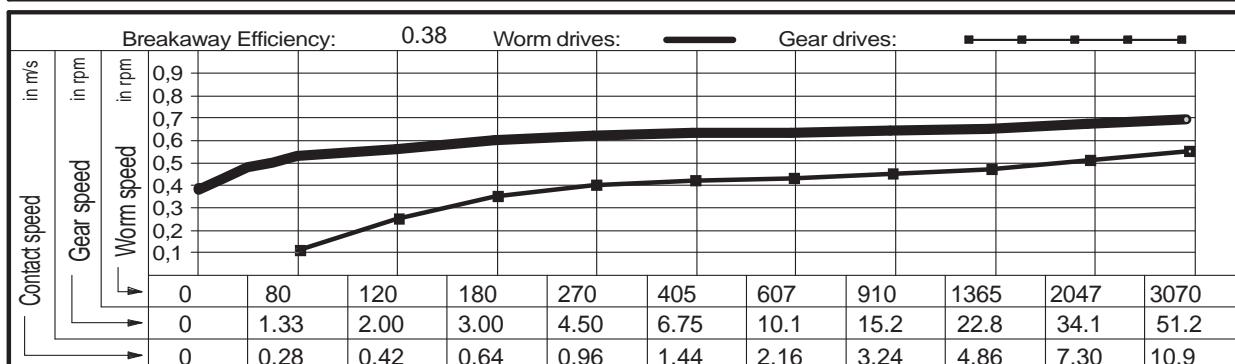
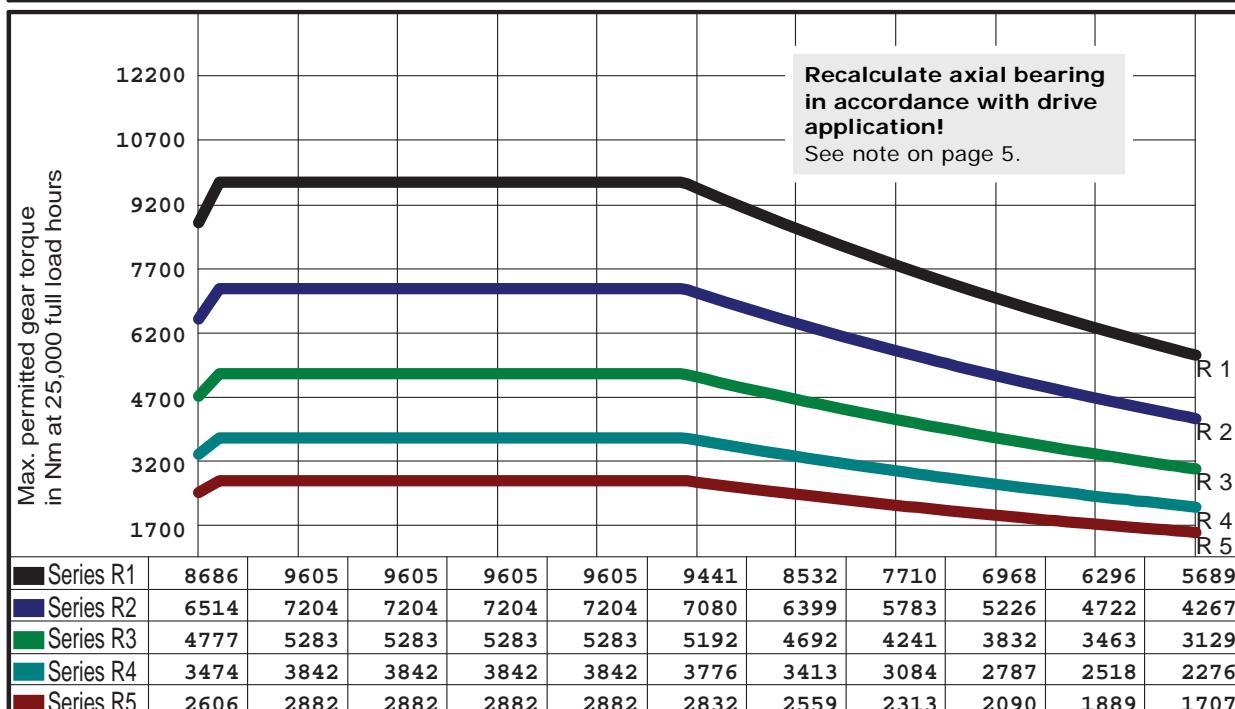
Centre distance	<b>270.00</b>	mm
Outer Ø worm	<b>77.60</b>	mm
Outer Ø gear	<b>486.00</b>	mm
No. starts, worm	<b>2</b>	
Worm direction	<b>right</b>	
No. teeth, gear	<b>120</b>	

Material, gear	<b>GZ-CuSn12Ni</b>
Material, worm	<b>31CrMoV9</b>
Pressure angle in NS	<b>10 °</b>
Back angle in NS	<b>15 °</b>
Calculated circle Ø	<b>67.68</b> mm
Lead angle at Bks	<b>6.5361</b> °

### Operating characteristics

#### Ott worm gear

**OTT no: 4883 SSR**



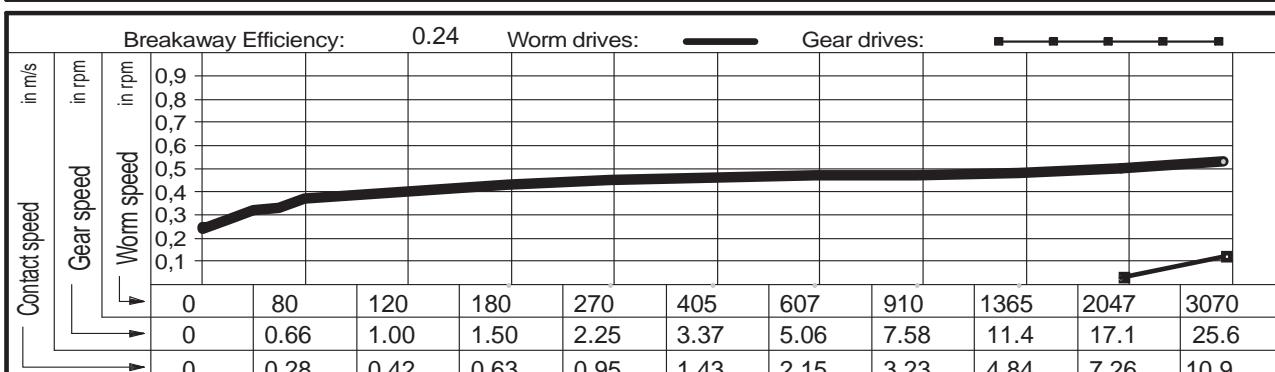
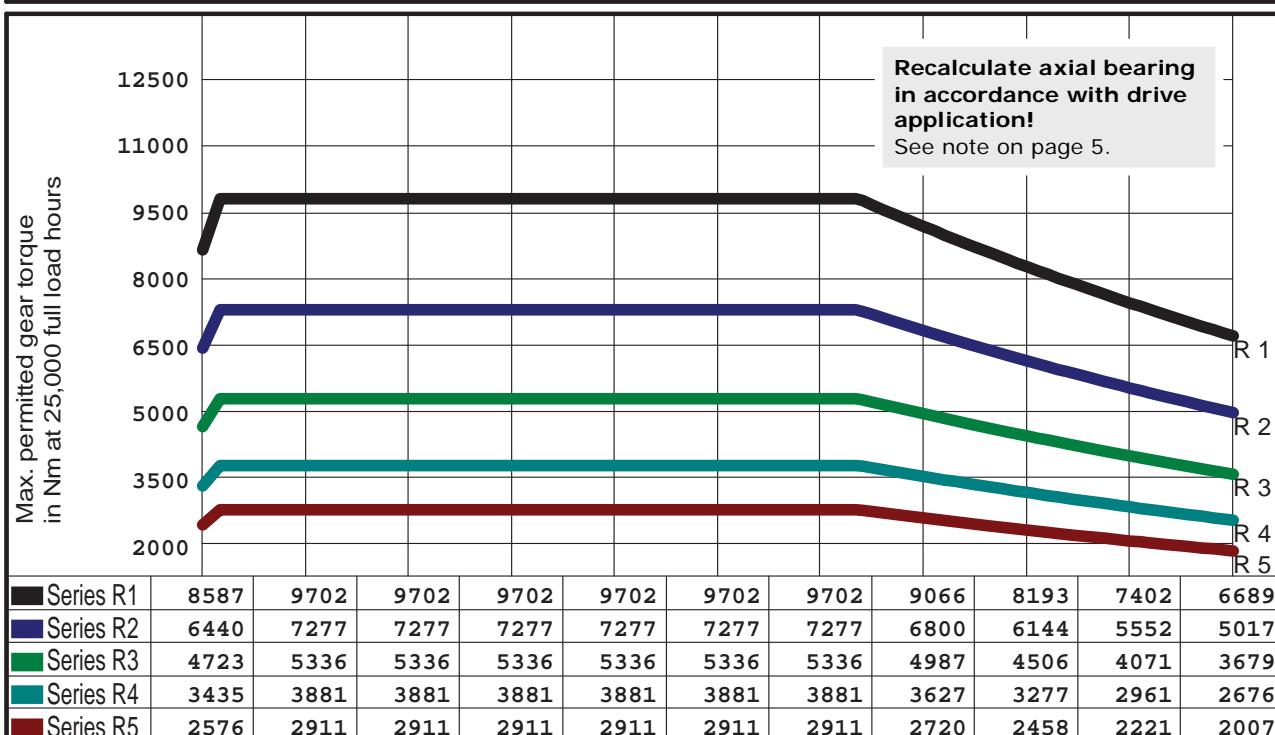
### Gear selection by load type and application

Series R1	a) random even load around gear b) absolutely smooth operation c) minimal acceleration and deceleration moments d) maximum 1 start per minute (60 per hour) e) up to 10% operating time per hour (6 minutes)	Series R4	a) segmental varying load on gear b) with uneven shock loads c) large acceleration and deceleration moments d) maximum 60 starts per minute (3600 per hour) e) up to 75% operating time per hour (45 minutes)	Lubricant: <b>Synthetic oil</b>
Application:	Measurement and test machinery drives, CNC axes	Application:	Rotary tables with unfavourable cutting conditions. Trunion axes, CNC axes, milling spindles	
Series R2	a) random even load around gear b) absolutely smooth operation c) minimal acceleration and deceleration moments d) maximum 6 starts per minute (360 per hour) e) up to 25% operating time per hour (15 minutes)	Series R5	a) loads limited only to eccentric gear segment b) heavy, uneven shock loads c) largest acceleration and deceleration moments d) maximum 180 starts per minute (10,800 per hour) e) up to 100% operating time per hour (60 minutes)	
Application:	Index tables, circular feed drives and CNC axes for mainly smooth, controlled applications	Application:	Heavy milling and trunion drives, CNC axes with unfavourable conditions	
Series R3	a) random changing load on gear b) small shock loads c) large acceleration and deceleration moments d) maximum 20 starts per minute (1200 per hour) e) up to 50% operating time per hour (30 minutes)	Zahnradfertigung OTT	Blöhsteinstraße 20 D-72411 Bodelshausen www.zahnrad-ott.de	
Application:	Index tables, rotary tables for circular milling with relatively favourable cutting conditions, CNC axes		Tel. 07471 - 705 0 Fax. 07471 - 705 39 Email. Info@zahnrad-ott.de	

Centre distance	<b>270.00</b> mm	Material, gear	<b>GZ-CuSn12Ni</b>	<b>Operating characteristics</b>	
Outer Ø worm	<b>77.60</b> mm	Material, worm	<b>31CrMoV9</b>		
Outer Ø gear	<b>486.00</b> mm	Pressure angle in NS	<b>10 °</b>		
No. starts, worm	<b>1</b>	Back angle in NS	<b>15 °</b>		
Worm direction	<b>right</b>	Calculated circle Ø	<b>67.69</b> mm		
No. teeth, gear	<b>120</b>	Lead angle at Bks	<b>3.2779</b> °		

## Ott worm gear

**OTT no: 4882 SSR**



Gear selection by load type and application													
Series R1	a) random even load around gear b) absolutely smooth operation c) minimal acceleration and deceleration moments d) maximum 1 start per minute (60 per hour) e) up to 10% operating time per hour (6 minutes)						Series R4	a) segmental varying load on gear b) with uneven shock loads c) large acceleration and deceleration moments d) maximum 60 starts per minute (3600 per hour) e) up to 75% operating time per hour (45 minutes)					
Application:	Measurement and test machinery drives, CNC axes						Application:	Rotary tables with unfavourable cutting conditions, Trunion axes, CNC axes, milling spindles					
Series R2	a) random even load around gear b) absolutely smooth operation c) minimal acceleration and deceleration moments d) maximum 6 starts per minute (360 per hour) e) up to 25% operating time per hour (15 minutes)						Series R5	a) loads limited only to eccentric gear segment b) heavy, uneven shock loads c) largest acceleration and deceleration moments d) maximum 180 starts per minute (10,800 per hour) e) up to 100% operating time per hour (60 minutes)					
Application:	Index tables, circular feed drives and CNC axes for mainly smooth, controlled applications						Application:	Heavy milling and trunion drives, CNC axes with unfavourable conditions					
Series R3	a) random changing load on gear b) small shock loads c) large acceleration and deceleration moments d) maximum 20 starts per minute (1200 per hour) e) up to 50% operating time per hour (30 minutes)							<b>Zahnradfertigung OTT</b> Blöhsteinstraße 20 Tel. 07471 - 705 0 D-72411 Bodelshausen Fax. 07471 - 705 39 <a href="http://www.zahnrad-ott.de">www.zahnrad-ott.de</a> Email. <a href="mailto:Info@zahnrad-ott.de">Info@zahnrad-ott.de</a>					
Application:	Index tables, rotary tables for circular milling with relatively favourable cutting conditions, CNC axes												

Lubricant:  
Synthetic oil



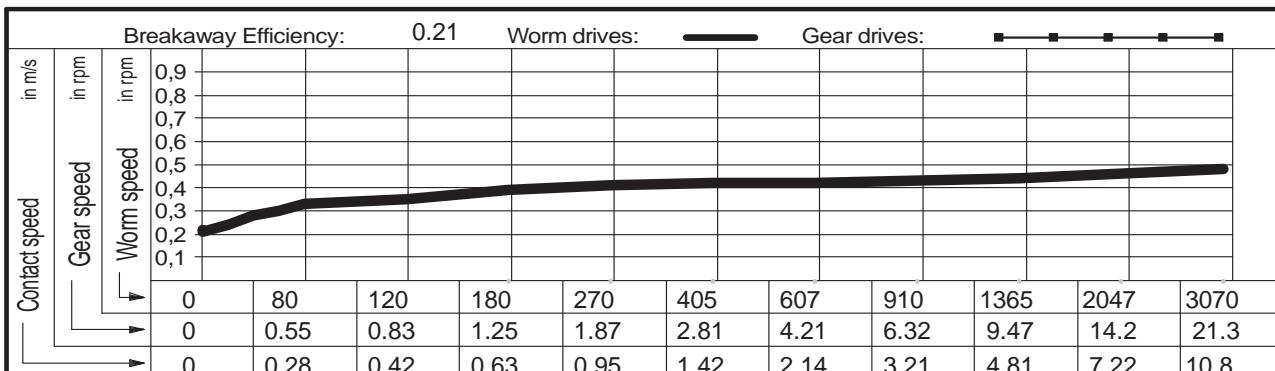
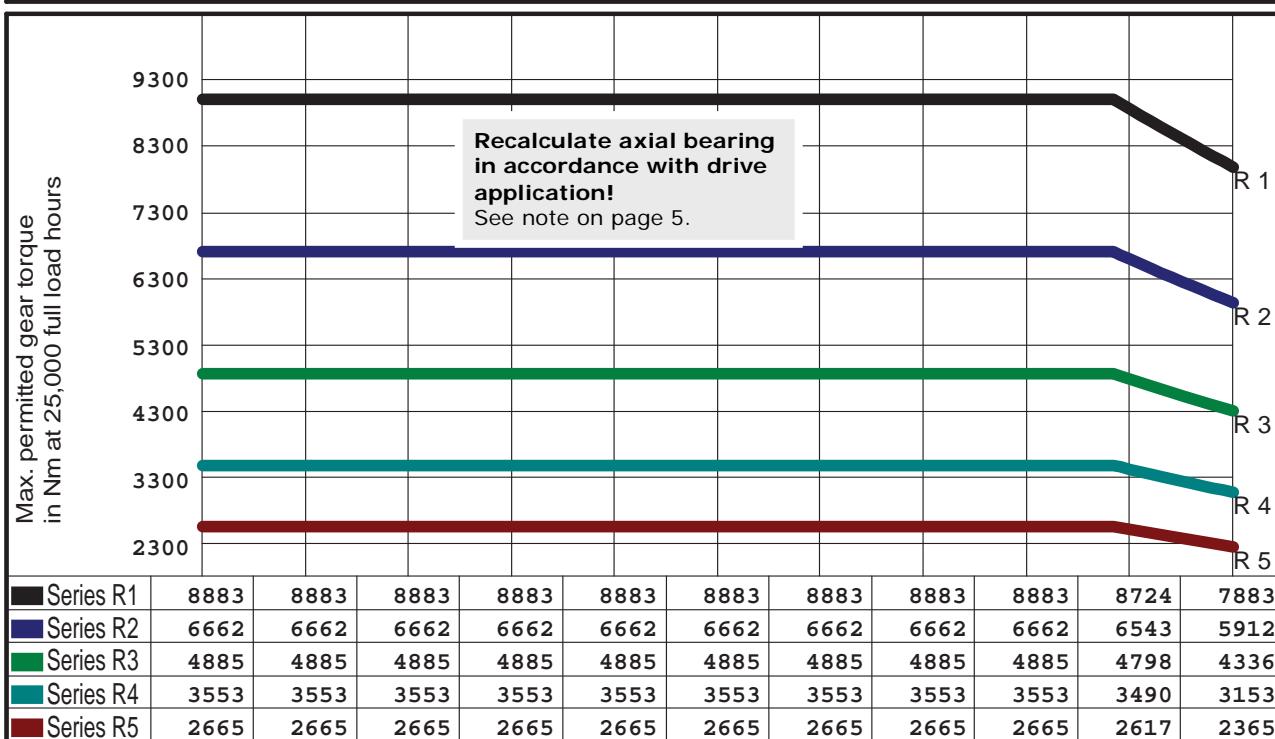
## Type G1 Gear Catalogue

Zahnradfertigung Ott  
Blöhsteinstraße 20  
D-72411 Bodelshausen

Centre distance	<b>270.00</b> mm	Material, gear	<b>GZ-CuSn12Ni</b>	Operating characteristics	
Outer Ø worm	<b>76.60</b> mm	Material, worm	<b>31CrMoV9</b>		
Outer Ø gear	<b>486.00</b> mm	Pressure angle in NS	<b>10 °</b>		
No. starts, worm	<b>1</b>	Back angle in NS	<b>15 °</b>		
Worm direction	<b>right</b>	Calculated circle Ø	<b>67.30</b> mm		
No. teeth, gear	<b>144</b>	Lead angle at Bks	<b>2.7514 °</b>		

### Ott worm gear

**OTT no: 4880 SSR**



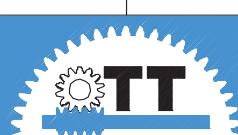
Gear selection by load type and application					
Series R1	a) random even load around gear b) absolutely smooth operation c) minimal acceleration and deceleration moments d) maximum 1 start per minute (60 per hour) e) up to 10% operating time per hour (6 minutes)	Series R4	a) segmental varying load on gear b) with uneven shock loads c) large acceleration and deceleration moments d) maximum 60 starts per minute (3600 per hour) e) up to 75% operating time per hour (45 minutes)		
Application:	Measurement and test machinery drives, CNC axes	Application:	Rotary tables with unfavourable cutting conditions, Trunion axes, CNC axes, milling spindles		
Series R2	a) random even load around gear b) absolutely smooth operation c) minimal acceleration and deceleration moments d) maximum 6 starts per minute (360 per hour) e) up to 25% operating time per hour (15 minutes)	Series R5	a) loads limited only to eccentric gear segment b) heavy, uneven shock loads c) largest acceleration and deceleration moments d) maximum 180 starts per minute (10,800 per hour) e) up to 100% operating time per hour (60 minutes)		
Application:	Index tables, circular feed drives and CNC axes for mainly smooth, controlled applications	Application:	Heavy milling and trunion drives, CNC axes with unfavourable conditions		
Series R3	a) random changing load on gear b) small shock loads c) large acceleration and deceleration moments d) maximum 20 starts per minute (1200 per hour) e) up to 50% operating time per hour (30 minutes)			Lubricant: Synthetic oil	
Application:	Index tables, rotary tables for circular milling with relatively favourable cutting conditions, CNC axes				

**Zahnradfertigung OTT**

Blöhsteinstraße 20  
D-72411 Bodelshausen  
[www.zahnrad-ott.de](http://www.zahnrad-ott.de)

Tel. 07471 - 705 0  
Fax. 07471 - 705 39

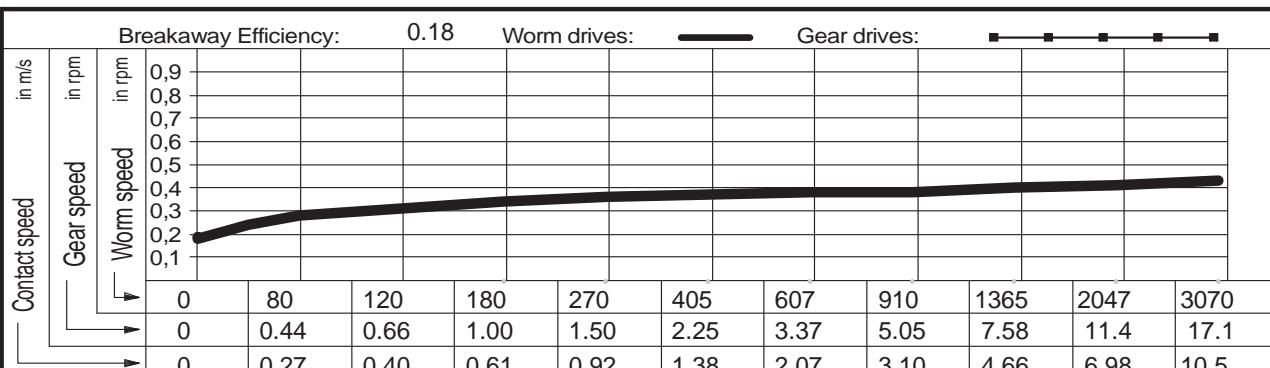
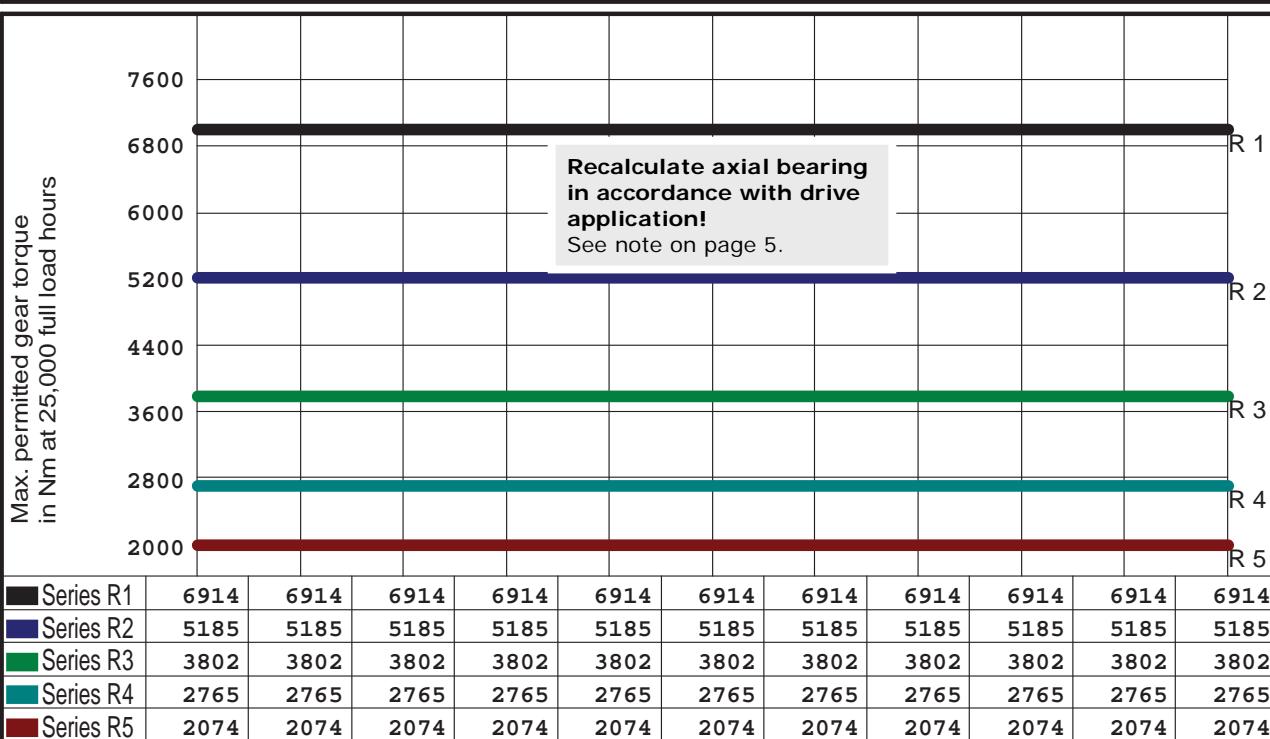
Email. [Info@zahnrad-ott.de](mailto:Info@zahnrad-ott.de)



Centre distance	<b>270.00</b> mm	Material, gear	<b>GZ-CuSn12Ni</b>	<b>Operating characteristics</b>	
Outer Ø worm	<b>73.20</b> mm	Material, worm	<b>31CrMoV9</b>		
Outer Ø gear	<b>486.00</b> mm	Pressure angle in NS	<b>10 °</b>		
No. starts, worm	<b>1</b>	Back angle in NS	<b>15 °</b>		
Worm direction	<b>right</b>	Calculated circle Ø	<b>65.16</b> mm		
No. teeth, gear	<b>180</b>	Lead angle at Bks	<b>2.2886</b> °		

## Ott worm gear

**OTT no: 4809 SSR**



Gear selection by load type and application					
Series R1	a) random even load around gear b) absolutely smooth operation c) minimal acceleration and deceleration moments d) maximum 1 start per minute (60 per hour) e) up to 10% operating time per hour (6 minutes)	Series R4	a) segmental varying load on gear b) with uneven shock loads c) large acceleration and deceleration moments d) maximum 60 starts per minute (3600 per hour) e) up to 75% operating time per hour (45 minutes)	Lubricant:	Synthetic oil
Application:	Measurement and test machinery drives, CNC axes	Application:	Rotary tables with unfavourable cutting conditions, Trunion axes, CNC axes, milling spindles		
Series R2	a) random even load around gear b) absolutely smooth operation c) minimal acceleration and deceleration moments d) maximum 6 starts per minute (360 per hour) e) up to 25% operating time per hour (15 minutes)	Series R5	a) loads limited only to eccentric gear segment b) heavy, uneven shock loads c) largest acceleration and deceleration moments d) maximum 180 starts per minute (10,800 per hour) e) up to 100% operating time per hour (60 minutes)		
Application:	Index tables, circular feed drives and CNC axes for mainly smooth, controlled applications	Application:	Heavy milling and trunion drives, CNC axes with unfavourable conditions		
Series R3	a) random changing load on gear b) small shock loads c) large acceleration and deceleration moments d) maximum 20 starts per minute (1200 per hour) e) up to 50% operating time per hour (30 minutes)	Zahnradfertigung OTT	Blöhsteinstraße 20 D-72411 Bodelshausen <a href="http://www.zahnrad-ott.de">www.zahnrad-ott.de</a>	Tel.	07471 - 705 0
Application:	Index tables, rotary tables for circular milling with relatively favourable cutting conditions, CNC axes			Fax.	07471 - 705 39
				Email.	<a href="mailto:Info@zahnrad-ott.de">Info@zahnrad-ott.de</a>



## Type G1 Gear Catalogue

Zahnradfertigung Ott  
Blöhsteinstraße 20  
D-72411 Bodelshausen

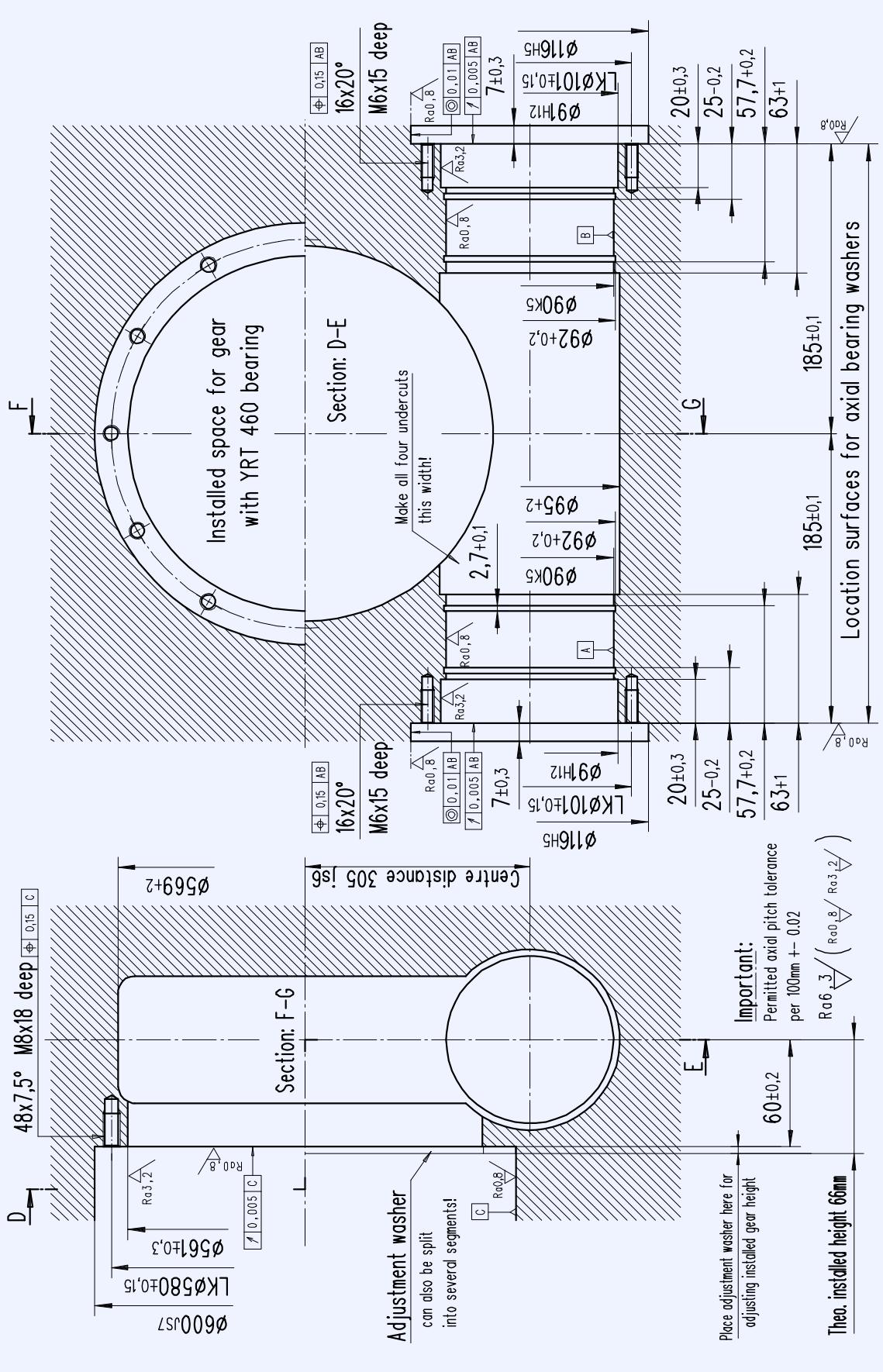
## OTT worm gears - centre distance 305 mm

### Main dimensions

OTT gear no.	Ratio		Worm				YRT gear bearing	Gear			
	No. starts Z1	No. teeth Z2	Distance A	Undercut Ø B	Head Ø C	Collar Ø D		Internal Ø E	Head Ø F	Width G	Height H
4829 SSR	1	120	130	46,8	77,5	77,6	460	458	560	69	42
4851 SSR	1	144		47,3	76,0						
4816 SSR	1	180		47,9	72,2						
4828 SSR	1	240		48,4	67,8						
							See comments page 5!				

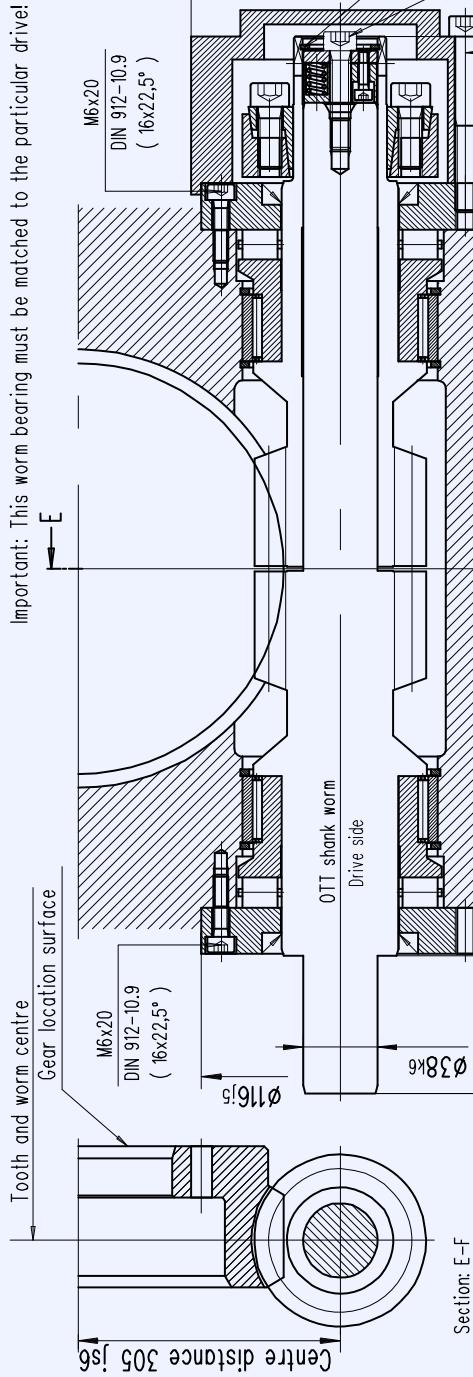
**Gear housing - required internal contour**

**Required internal contour of gear housing for centre distance 305 mm**



## Worm bearings

### Worm bearing for centre distance 305 mm



Installed position A (Standard)  
 The gear location surface is underneath,  
 the OTT shank worm on the left.

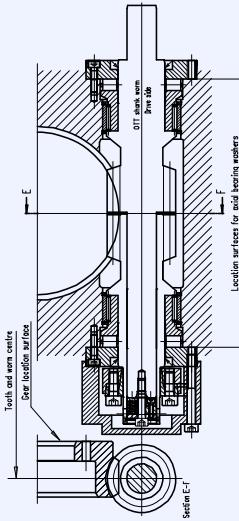
Installed position B (to suit)  
 The gear location surface is underneath,  
 the OTT shank worm on the right.

This screw helps with installation.  
 It must be removed after the  
 retainer ring has been installed.  
 The flank clearance should then be set  
 and the cover mounted.

Housing and YRT bearing to  
 be provided by customer.

### OTT worm gear

OTT no.	Worm gear	Shank worm	Hollow worm	Q'ty	Bearing parts per gear
4829 SSR	T00478-G-RAO	T00379-G-SSC	T00380-G-HSC	2	Axial cylinder roller bearing K81211 TV
4851 SSR	T00479-G-RAO	T00381-G-SSC	T00382-G-HSC	2	Radial needle bearing RNAO 70x90x30
4816 SSR	T00480-G-RAO	T00383-G-SSC	T00384-G-HSC	2	Shaft seal 55x70x8
4828 SSR	T00481-G-RAO	T00385-G-SSC	T00386-G-HSC	1	Shrink disc HSD 50-22
				4	Circlip SB 90
				32	Cylinder bolt DIN 912 M6x20 - 10.9
				4	Cylinder bolt DIN 912 M5x60 - 8.8
				1	Cylinder bolt DIN 912 M6x30 - 8.8
				1	Retainer ring DIN 472 38
				2	Bearing sleeve T00223-G-LHÜ
				2	Axial bearing washer T00235-G-LDX
				1	Cover T00218-G-ADH
				1	Thrust piece B00011-G-DST



Order using ..... Set of OTT worm gears

- Gearset incl. thrust piece without bearing parts
- Gearset incl. all bearing parts

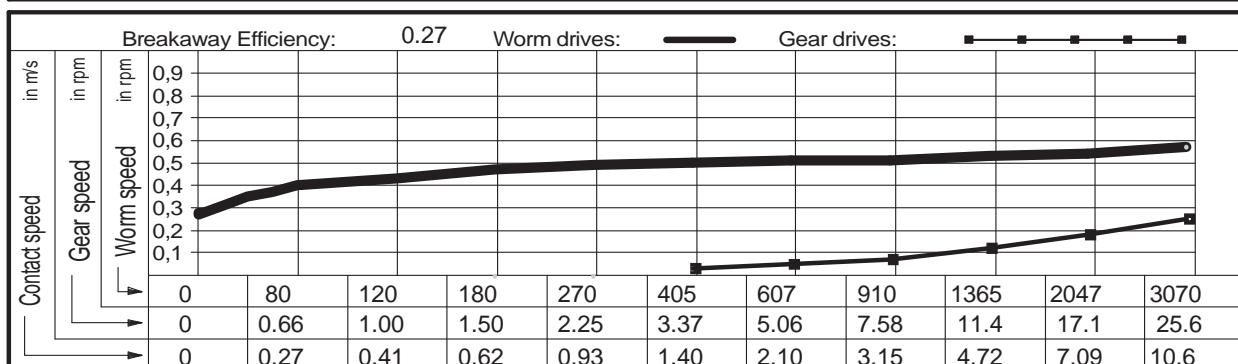
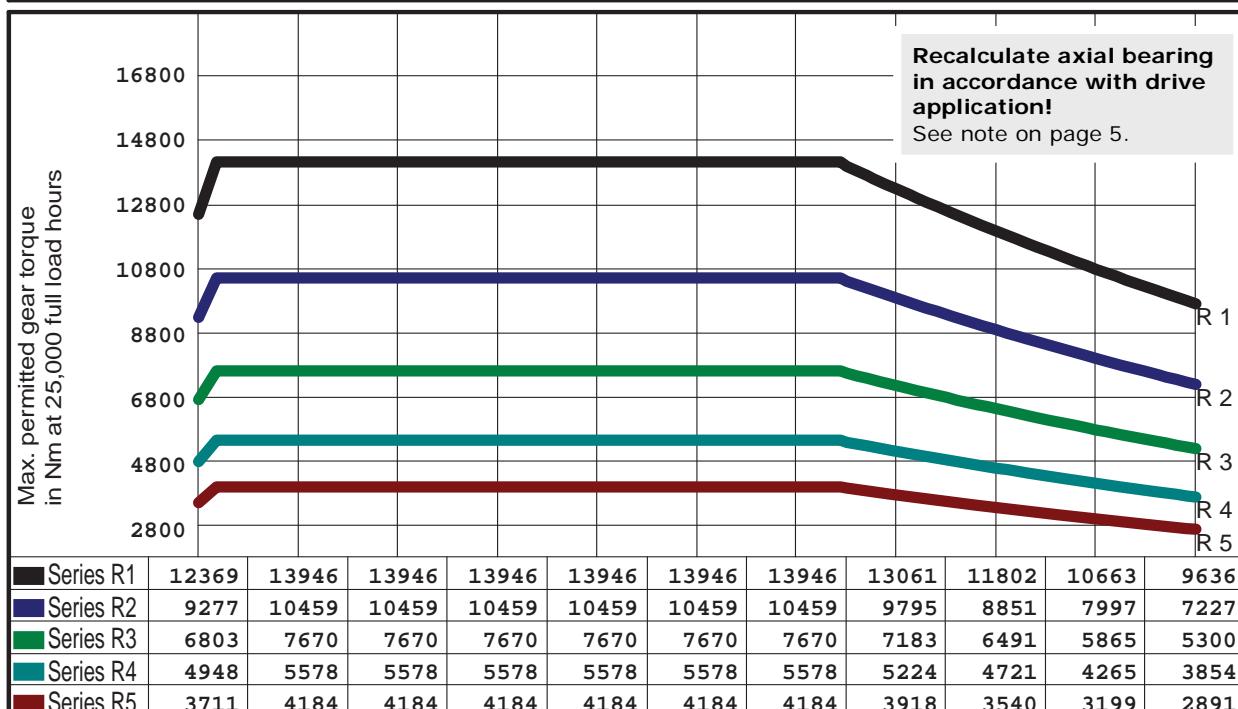


## Type G1 Gear Catalogue

Zahnradfertigung Ott  
Blöhsteinstraße 20  
D-72411 Bodelshausen

### Operational characteristics

Centre distance	305.00	mm	Material, gear	GZ-CuSn12Ni	Operating characteristics	
Outer Ø worm	77.50	mm	Material, worm	31CrMoV9	Ott worm gear	
Outer Ø gear	560.00	mm	Pressure angle in NS	10 °	OTT no: 4829 SSR	
No. starts, worm	1		Back angle in NS	15 °		
Worm direction	right		Calculated circle Ø	66.00 mm		
No. teeth, gear	120		Lead angle at Bks	3.8699 °		

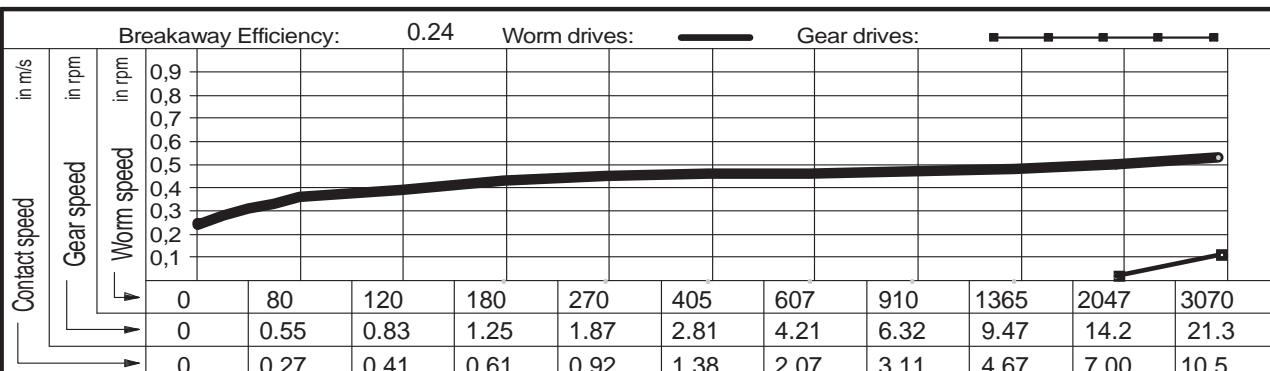
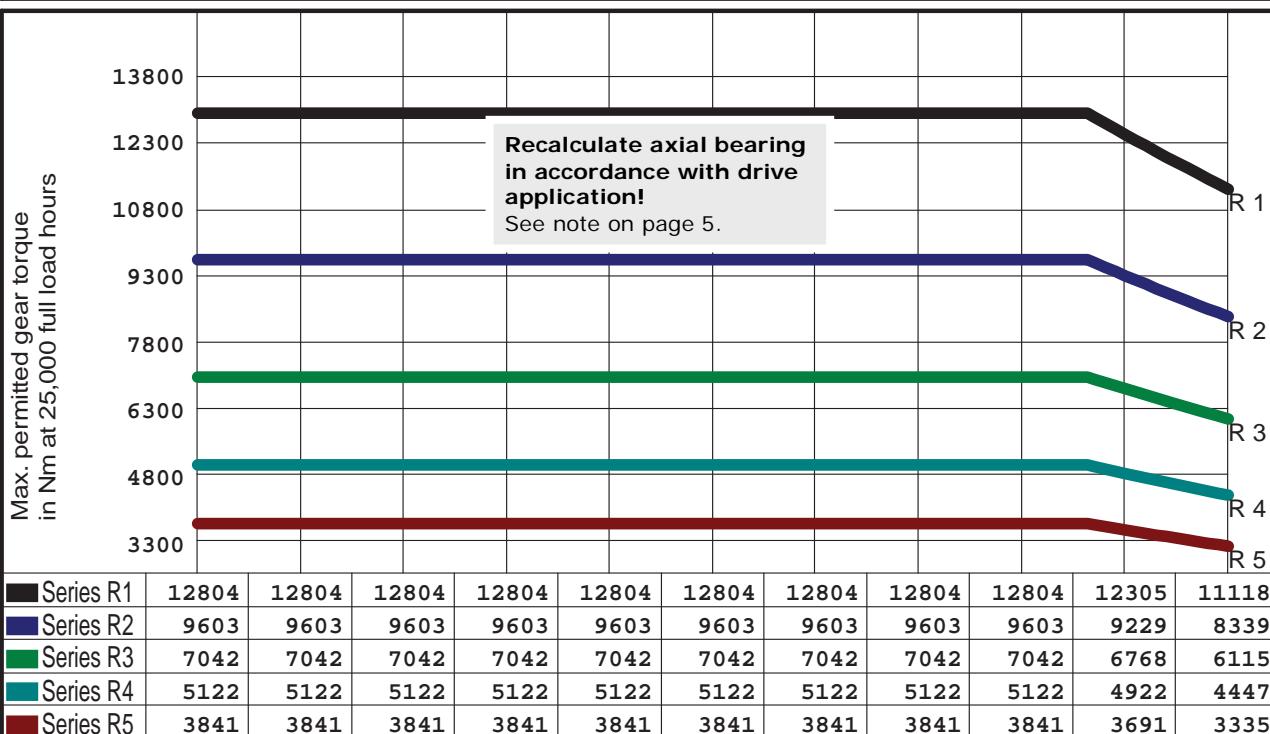


Gear selection by load type and application					
Series R1	a) random even load around gear b) absolutely smooth operation c) minimal acceleration and deceleration moments d) maximum 1 start per minute (60 per hour) e) up to 10% operating time per hour (6 minutes)	Series R4	a) segmental varying load on gear b) with uneven shock loads c) large acceleration and deceleration moments d) maximum 60 starts per minute (3600 per hour) e) up to 75% operating time per hour (45 minutes)	Lubricant:	Synthetic oil
Application:	Measurement and test machinery drives, CNC axes	Application:	Rotary tables with unfavourable cutting conditions. Trunion axes, CNC axes, milling spindles		
Series R2	a) random even load around gear b) absolutely smooth operation c) minimal acceleration and deceleration moments d) maximum 6 starts per minute (360 per hour) e) up to 25% operating time per hour (15 minutes)	Series R5	a) loads limited only to eccentric gear segment b) heavy, uneven shock loads c) largest acceleration and deceleration moments d) maximum 180 starts per minute (10,800 per hour) e) up to 100% operating time per hour (60 minutes)		
Application:	Index tables, circular feed drives and CNC axes for mainly smooth, controlled applications	Application:	Heavy milling and trunion drives, CNC axes with unfavourable conditions		
Series R3	a) random changing load on gear b) small shock loads c) large acceleration and deceleration moments d) maximum 20 starts per minute (1200 per hour) e) up to 50% operating time per hour (30 minutes)	Zahnradfertigung OTT	Blöhsteinstraße 20 D-72411 Bodelshausen www.zahnrad-ott.de	Tel. 07471 - 705 0 Fax. 07471 - 705 39 Email. Info@zahnrad-ott.de	
Application:	Index tables, rotary tables for circular milling with relatively favourable cutting conditions, CNC axes				

Centre distance	<b>305.00</b> mm	Material, gear	<b>GZ-CuSn12Ni</b>	<b>Operating characteristics</b>	
Outer Ø worm	<b>76.00</b> mm	Material, worm	<b>31CrMoV9</b>		
Outer Ø gear	<b>560.00</b> mm	Pressure angle in NS	<b>10 °</b>		
No. starts, worm	<b>1</b>	Back angle in NS	<b>15 °</b>		
Worm direction	<b>right</b>	Calculated circle Ø	<b>65.30</b> mm		
No. teeth, gear	<b>144</b>	Lead angle at Bks	<b>3.2671</b> °		

### Ott worm gear

**OTT no: 4851 SSR**



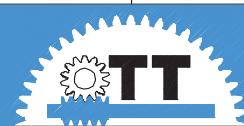
Gear selection by load type and application					
Series R1	a) random even load around gear b) absolutely smooth operation c) minimal acceleration and deceleration moments d) maximum 1 start per minute (60 per hour) e) up to 10% operating time per hour (6 minutes)	Series R4	a) segmental varying load on gear b) with uneven shock loads c) large acceleration and deceleration moments d) maximum 60 starts per minute (3600 per hour) e) up to 75% operating time per hour (45 minutes)		
Application:	Measurement and test machinery drives, CNC axes	Application:	Rotary tables with unfavourable cutting conditions, Trunion axes, CNC axes, milling spindles		
Series R2	a) random even load around gear b) absolutely smooth operation c) minimal acceleration and deceleration moments d) maximum 6 starts per minute (360 per hour) e) up to 25% operating time per hour (15 minutes)	Series R5	a) loads limited only to eccentric gear segment b) heavy, uneven shock loads c) largest acceleration and deceleration moments d) maximum 180 starts per minute (10,800 per hour) e) up to 100% operating time per hour (60 minutes)		
Application:	Index tables, circular feed drives and CNC axes for mainly smooth, controlled applications	Application:	Heavy milling and trunion drives, CNC axes with unfavourable conditions		
Series R3	a) random changing load on gear b) small shock loads c) large acceleration and deceleration moments d) maximum 20 starts per minute (1200 per hour) e) up to 50% operating time per hour (30 minutes)			Lubricant: Synthetic oil	
Application:	Index tables, rotary tables for circular milling with relatively favourable cutting conditions, CNC axes				

**Zahnradfertigung OTT**

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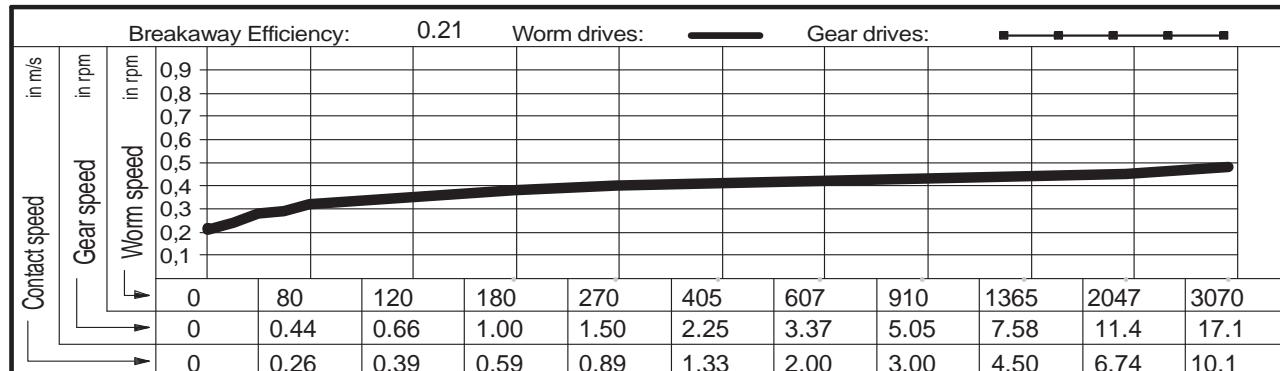
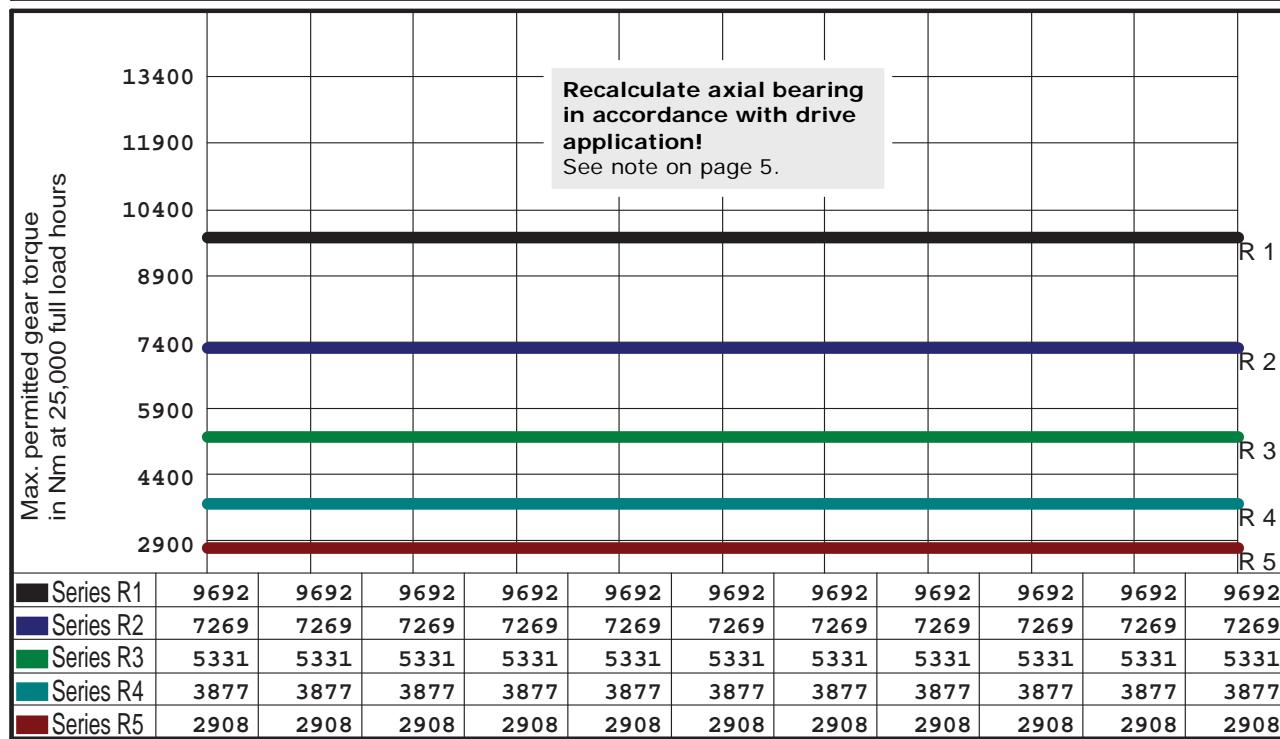
## Type G1 Gear Catalogue

Zahnradfertigung Ott  
Blöhsteinstraße 20  
D-72411 Bodelshausen

Centre distance	<b>305.00</b> mm	Material, gear	<b>GZ-CuSn12Ni</b>	Operating characteristics	
Outer Ø worm	<b>72.20</b> mm	Material, worm	<b>31CrMoV9</b>		
Outer Ø gear	<b>560.00</b> mm	Pressure angle in NS	<b>10 °</b>		
No. starts, worm	<b>1</b>	Back angle in NS	<b>15 °</b>		
Worm direction	<b>right</b>	Calculated circle Ø	<b>62.90</b> mm		
No. teeth, gear	<b>180</b>	Lead angle at Bks	<b>2.7306 °</b>		

### Ott worm gear

**OTT no: 4816 SSR**

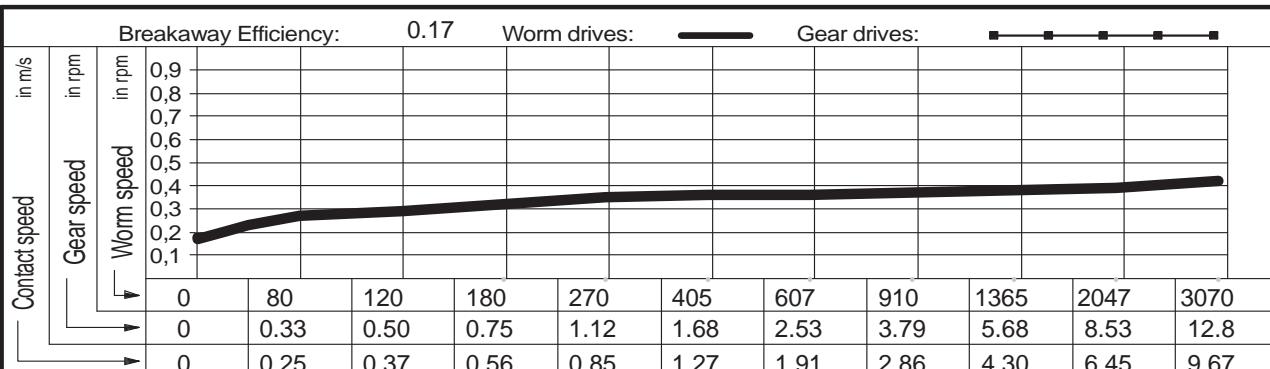
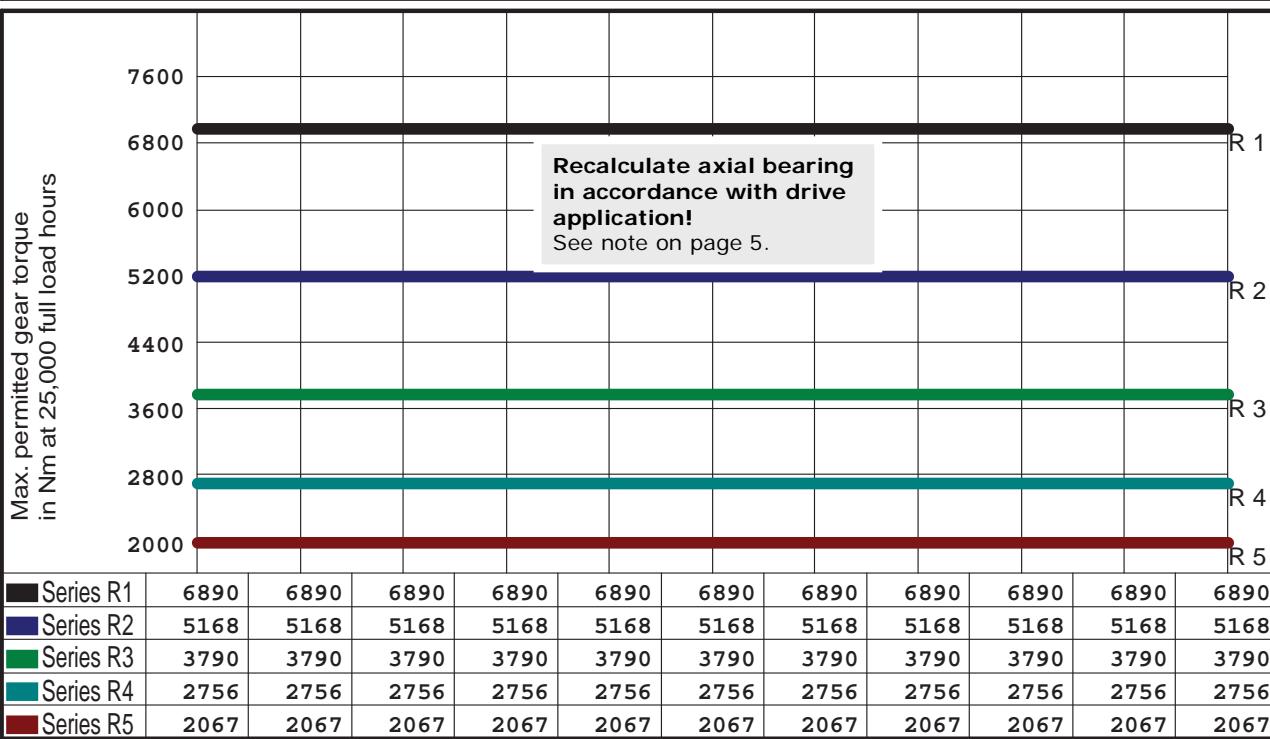


Gear selection by load type and application					
Series R1	a) random even load around gear b) absolutely smooth operation c) minimal acceleration and deceleration moments d) maximum 1 start per minute (60 per hour) e) up to 10% operating time per hour (6 minutes)	Series R4	a) segmental varying load on gear b) with uneven shock loads c) large acceleration and deceleration moments d) maximum 60 starts per minute (3600 per hour) e) up to 75% operating time per hour (45 minutes)	Application:	Lubricant: <b>Synthetic oil</b>
Application:	Measurement and test machinery drives, CNC axes	Application:	Rotary tables with unfavourable cutting conditions, Trunion axes, CNC axes, milling spindles		
Series R2	a) random even load around gear b) absolutely smooth operation c) minimal acceleration and deceleration moments d) maximum 6 starts per minute (360 per hour) e) up to 25% operating time per hour (15 minutes)	Series R5	a) loads limited only to eccentric gear segment b) heavy, uneven shock loads c) largest acceleration and deceleration moments d) maximum 180 starts per minute (10,800 per hour) e) up to 100% operating time per hour (60 minutes)	Application:	
Application:	Index tables, circular feed drives and CNC axes for mainly smooth, controlled applications	Application:	Heavy milling and trunion drives, CNC axes with unfavourable conditions		
Series R3	a) random changing load on gear b) small shock loads c) large acceleration and deceleration moments d) maximum 20 starts per minute (1200 per hour) e) up to 50% operating time per hour (30 minutes)	Zahnradfertigung OTT	Blöhsteinstraße 20 D-72411 Bodelshausen www.zahnrad-ott.de	Tel. 07471 - 705 0 Fax. 07471 - 705 39 Email. Info@zahnrad-ott.de	
Application:	Index tables, rotary tables for circular milling with relatively favourable cutting conditions, CNC axes				

Centre distance	<b>305.00</b> mm	Material, gear	<b>GZ-CuSn12Ni</b>	<b>Operating characteristics</b>	
Outer Ø worm	<b>67.80</b> mm	Material, worm	<b>31CrMoV9</b>		
Outer Ø gear	<b>560.00</b> mm	Pressure angle in NS	<b>10 °</b>		
No. starts, worm	<b>1</b>	Back angle in NS	<b>15 °</b>		
Worm direction	<b>right</b>	Calculated circle Ø	<b>60.14</b> mm		
No. teeth, gear	<b>240</b>	Lead angle at Bks	<b>2.1580</b> °		

## Ott worm gear

**OTT no: 4828 SSR**



Gear selection by load type and application					
Series R1	a) random even load around gear b) absolutely smooth operation c) minimal acceleration and deceleration moments d) maximum 1 start per minute (60 per hour) e) up to 10% operating time per hour (6 minutes)	Series R4	a) segmental varying load on gear b) with uneven shock loads c) large acceleration and deceleration moments d) maximum 60 starts per minute (3600 per hour) e) up to 75% operating time per hour (45 minutes)	Lubricant:	Synthetic oil
Application:	Measurement and test machinery drives, CNC axes	Application:	Rotary tables with unfavourable cutting conditions, Trunion axes, CNC axes, milling spindles		
Series R2	a) random even load around gear b) absolutely smooth operation c) minimal acceleration and deceleration moments d) maximum 6 starts per minute (360 per hour) e) up to 25% operating time per hour (15 minutes)	Series R5	a) loads limited only to eccentric gear segment b) heavy, uneven shock loads c) largest acceleration and deceleration moments d) maximum 180 starts per minute (10,800 per hour) e) up to 100% operating time per hour (60 minutes)		
Application:	Index tables, circular feed drives and CNC axes for mainly smooth, controlled applications	Application:	Heavy milling and trunion drives, CNC axes with unfavourable conditions		
Series R3	a) random changing load on gear b) small shock loads c) large acceleration and deceleration moments d) maximum 20 starts per minute (1200 per hour) e) up to 50% operating time per hour (30 minutes)	Zahnradfertigung OTT	Blöhsteinstraße 20 D-72411 Bodelshausen <a href="http://www.zahnrad-ott.de">www.zahnrad-ott.de</a>	Tel.	07471 - 705 0
Application:	Index tables, rotary tables for circular milling with relatively favourable cutting conditions, CNC axes			Fax.	07471 - 705 39
				Email.	<a href="mailto:Info@zahnrad-ott.de">Info@zahnrad-ott.de</a>



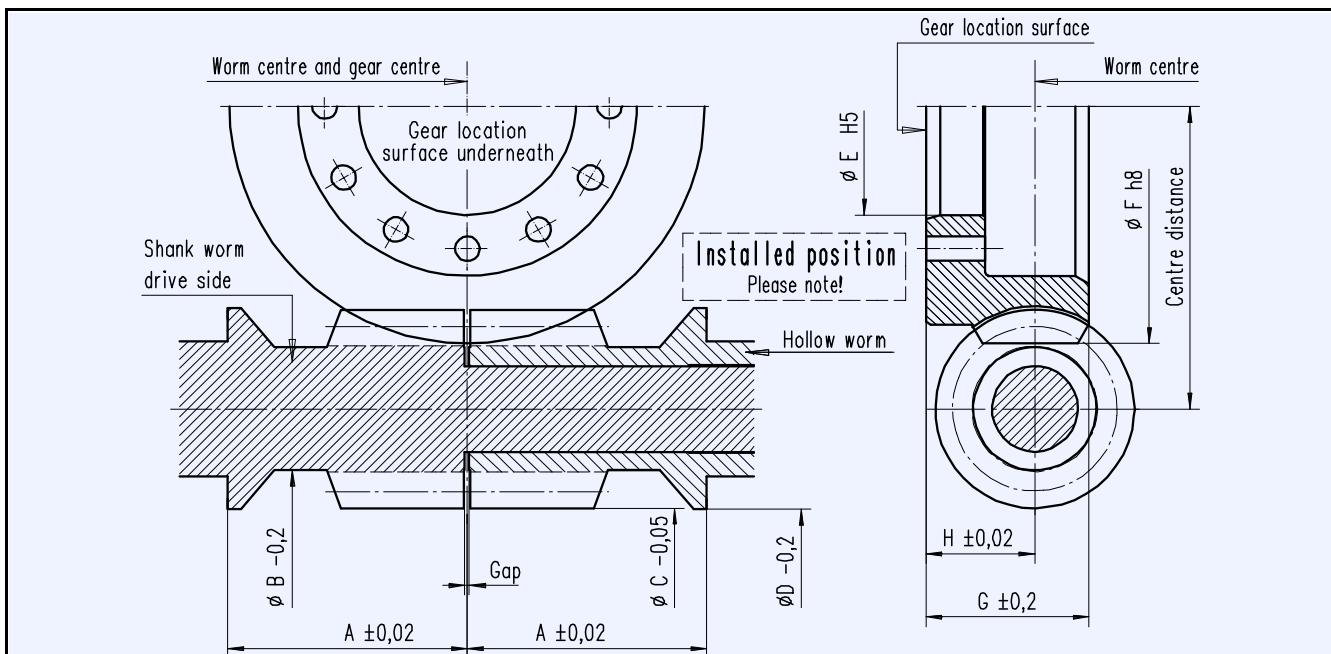
## Type G1 Gear Catalogue

Zahnradfertigung Ott  
Blöhsteinstraße 20  
D-72411 Bodelshausen

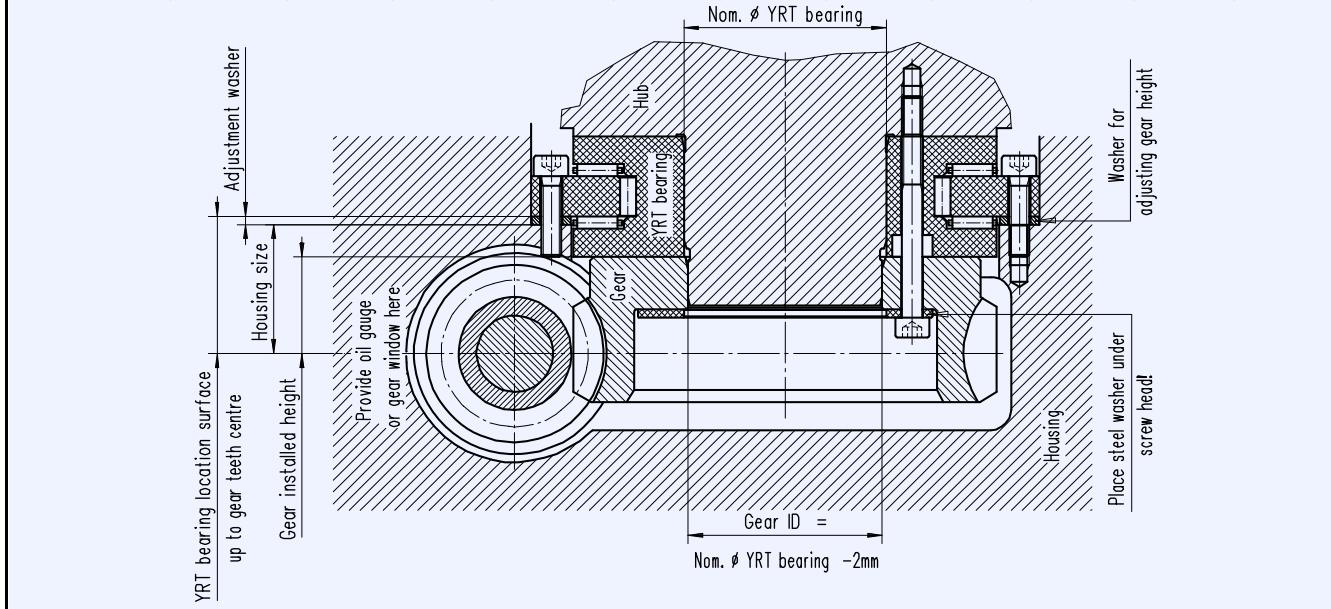
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## OTT worm gears - centre distance 340 mm

### Main dimensions

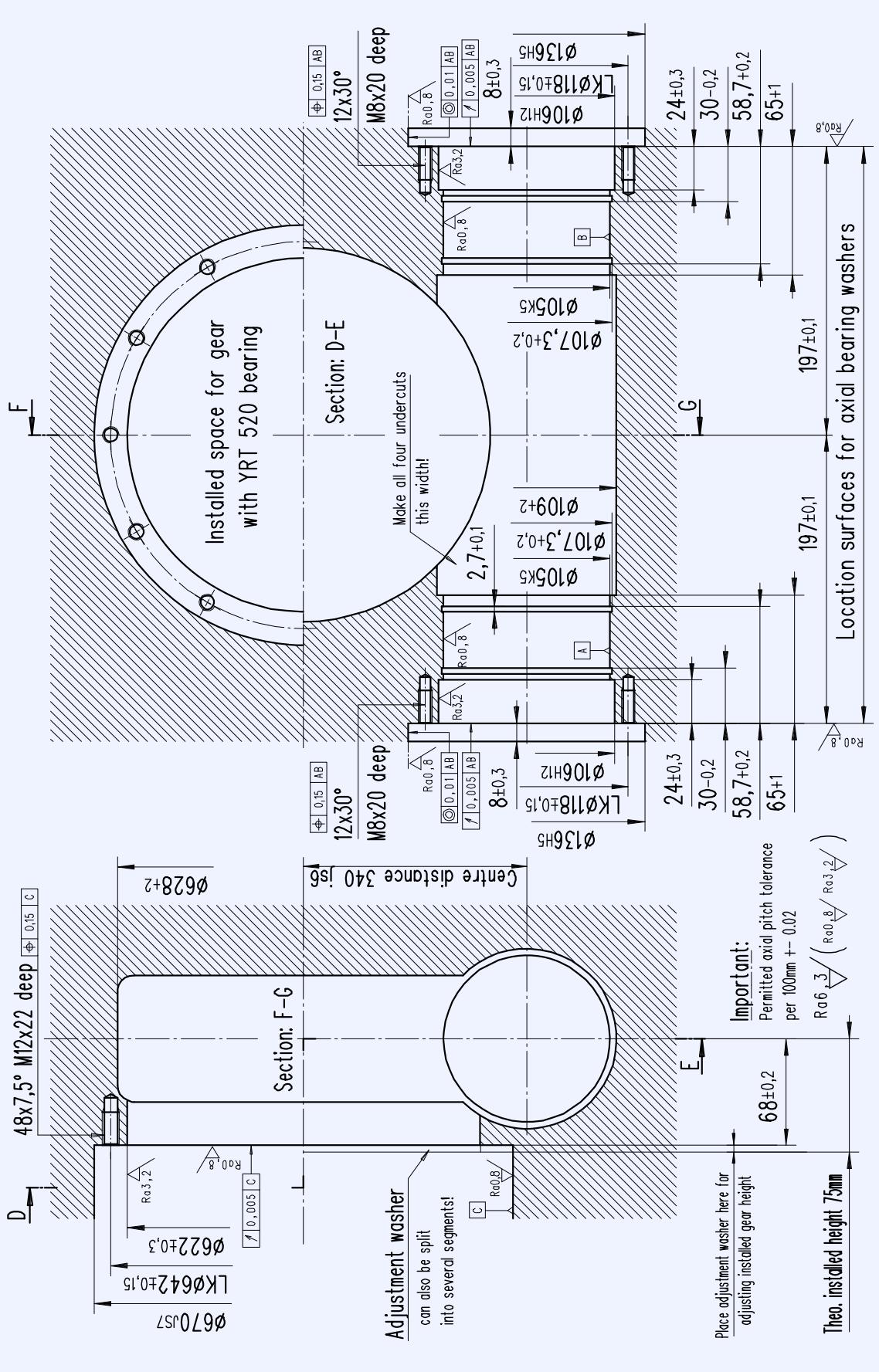


OTT gear no.	Ratio		Distance A	Worm			YRT gear bearing	Gear			
	No. starts Z1	No. teeth Z2		Undercut Ø B	Head Ø C	Collar Ø D		Internal Ø E	Head Ø F	Width G	Height H
4818 SSR	1	180	141	57,6	86,0	97,0	520	518	620	78	48
4810 SSR	1	240		58,2	80,4						
5489 SSR	1	360		58,8	72,0						
							See comments page 5!				



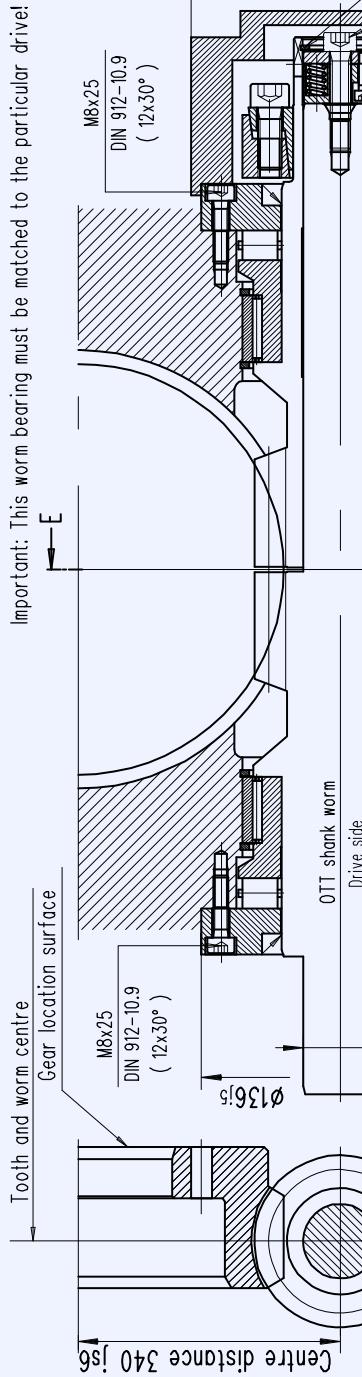
Gear housing - required internal contour

**Required internal contour of gear housing for centre distance 340 mm**



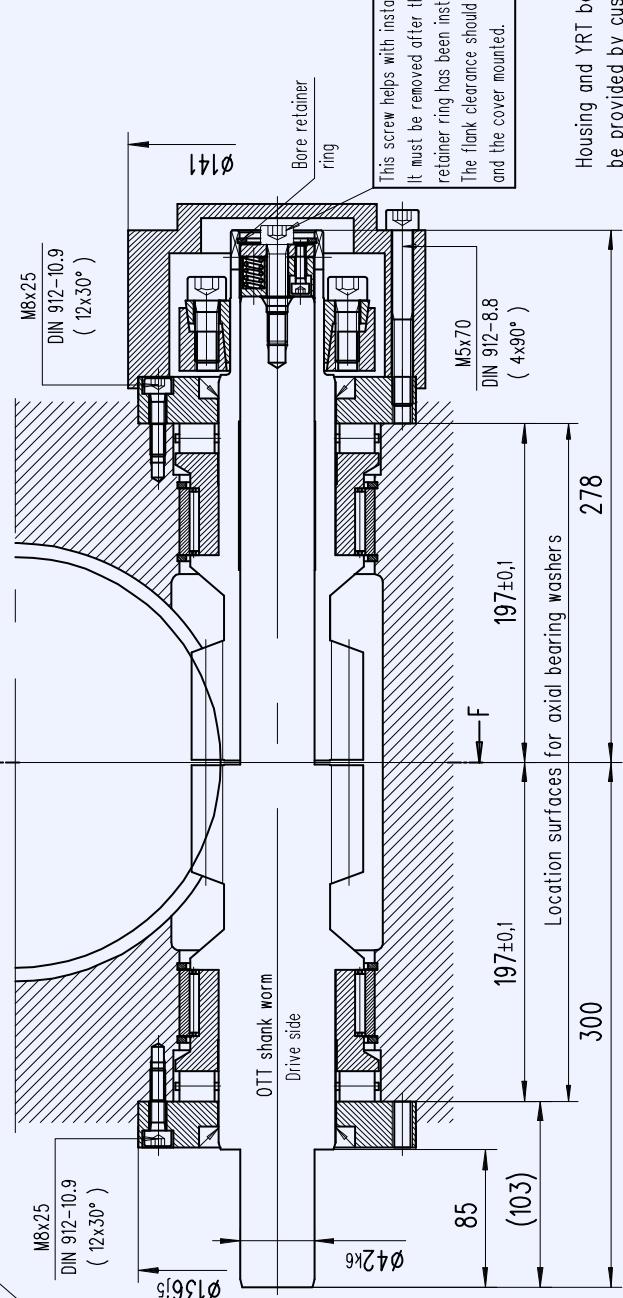
## Worm bearings

### Worm bearing for centre distance 340 mm



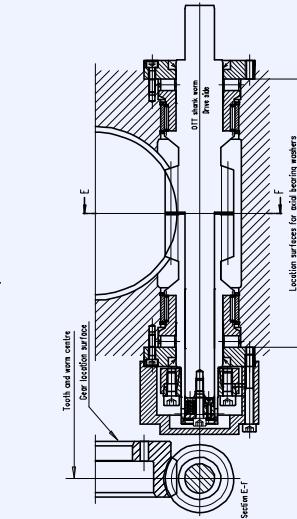
Important: This worm bearing must be matched to the particular drive!

Section: E-F



Installed position A (Standard)  
 The gear location surface is underneath, the OTT shank worm on the left.

Installed position B (to suit)  
 The gear location surface is underneath, the OTT shank worm on the right.



Order using ..... Set of OTT worm gears  
 Gearset incl. thrust piece without bearing parts  
 Gearset incl. all bearing parts

OTT no.	OTT worm gear	Shank worm	Hollow worm	Q'ty	Bearing parts per gear
<b>4818 SSR</b>	T00482-G-RAO	T00387-G-SSC	T00388-G-HSC	2	Axial cylinder roller bearing K81214 TV
<b>4810 SSR</b>	T00483-G-RAO	T00389-G-SSC	T00390-G-HSC	2	Radial needle bearing RNAO 90x105x26
<b>5489 SSR</b>	T00484-G-RAO	T00391-G-SSC	T00392-G-HSC	2	Shaft seal 70x85x8
				1	Shrink disc HSD 55-22
				4	Circlip SB 105
				24	Cylinder bolt DIN 912 M8x25 - 10.9
				4	Cylinder bolt DIN 912 M5x70 - 8.8
				1	Cylinder bolt DIN 912 M6x30 - 8.8
				1	Retainer ring DIN 472 42
				2	Bearing sleeve T00224-G-LHÜ
				2	Axial bearing washer T00236-G-LDX
				1	Cover T00219-G-ADH
				1	Thrust piece B00012-G-DST

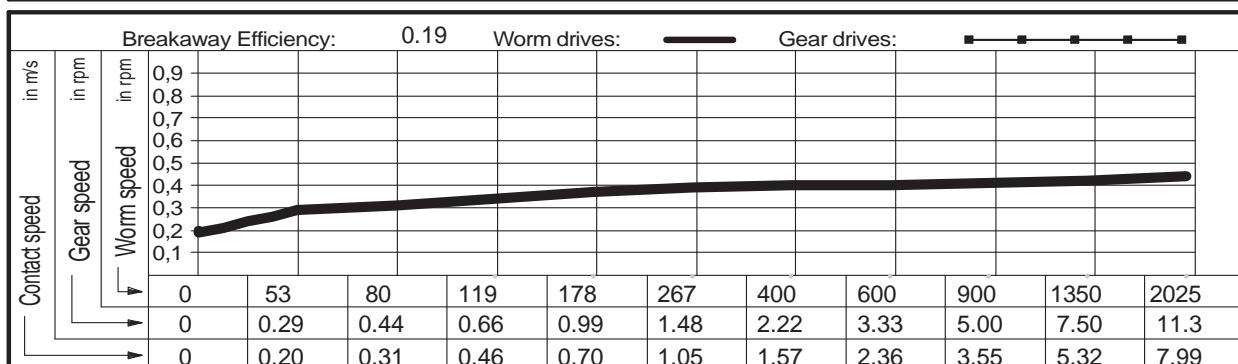
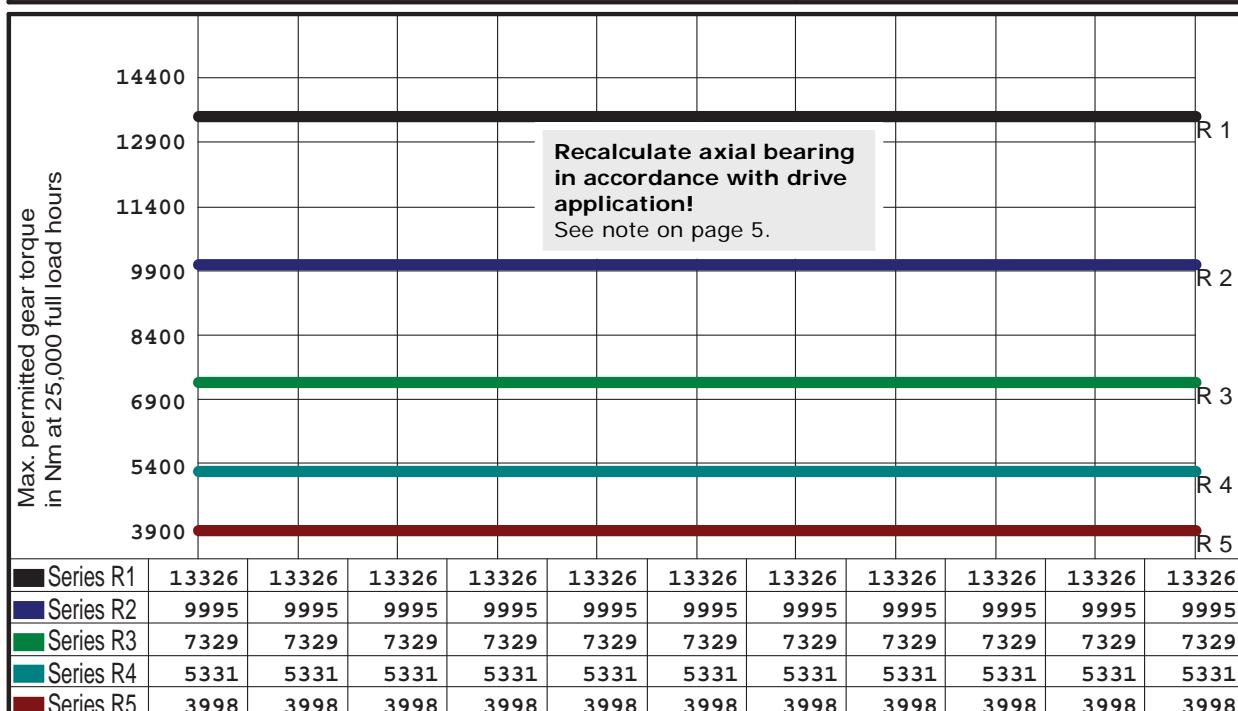


## Type G1 Gear Catalogue

Zahnradfertigung Ott  
Blöhsteinstraße 20  
D-72411 Bodelshausen

### Operational characteristics

Centre distance	340.00	mm	Material, gear	GZ-CuSn12Ni	Operating characteristics	
Outer Ø worm	86.00	mm	Material, worm	31CrMoV9	Ott worm gear	
Outer Ø gear	620.00	mm	Pressure angle in NS	10 °	OTT no: 4818 SSR	
No. starts, worm	1		Back angle in NS	15 °		
Worm direction	right		Calculated circle Ø	75.32 mm		
No. teeth, gear	180		Lead angle at Bks	2.5188 °		

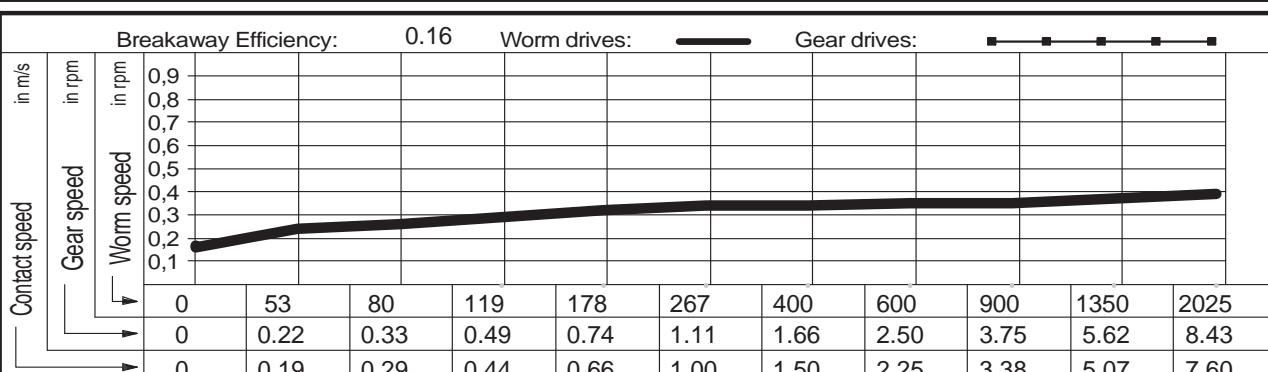
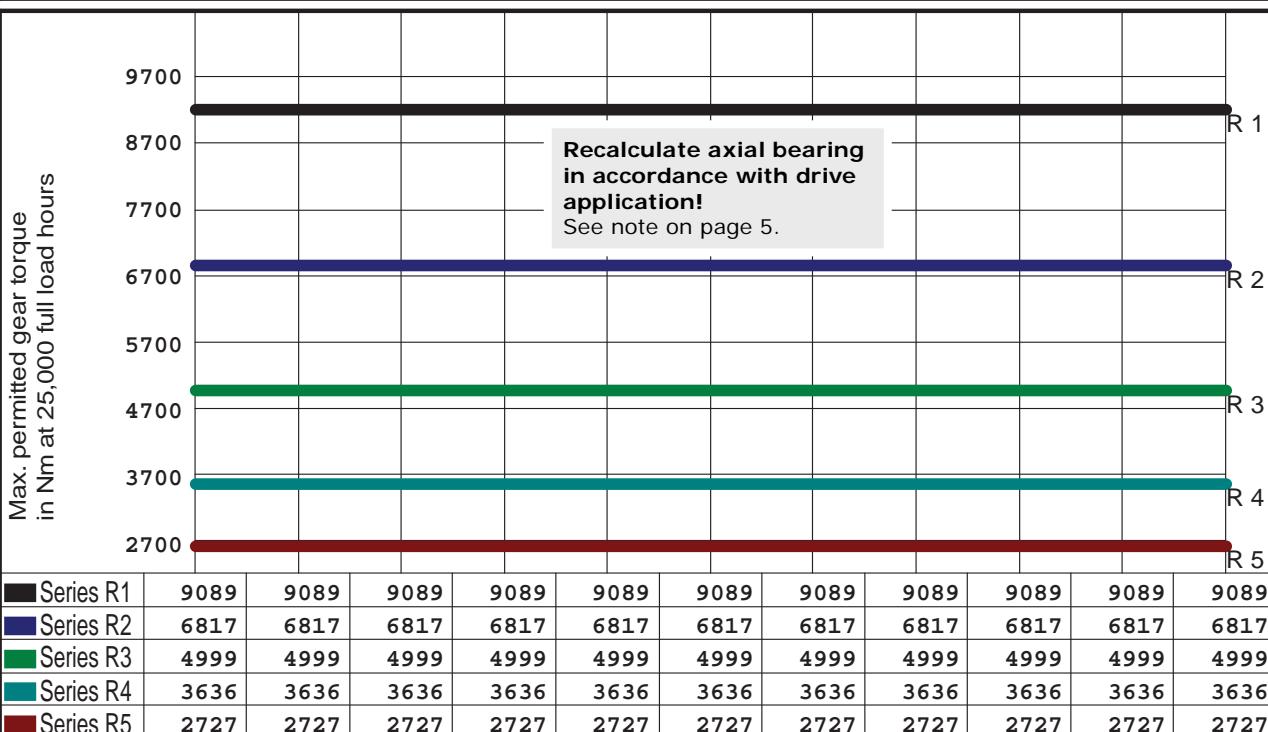


Gear selection by load type and application					
Series R1	a) random even load around gear b) absolutely smooth operation c) minimal acceleration and deceleration moments d) maximum 1 start per minute (60 per hour) e) up to 10% operating time per hour (6 minutes)	Series R4	a) segmental varying load on gear b) with uneven shock loads c) large acceleration and deceleration moments d) maximum 60 starts per minute (3600 per hour) e) up to 75% operating time per hour (45 minutes)	Lubricant:	Synthetic oil
Application:	Measurement and test machinery drives, CNC axes	Application:	Rotary tables with unfavourable cutting conditions. Trunion axes, CNC axes, milling spindles		
Series R2	a) random even load around gear b) absolutely smooth operation c) minimal acceleration and deceleration moments d) maximum 6 starts per minute (360 per hour) e) up to 25% operating time per hour (15 minutes)	Series R5	a) loads limited only to eccentric gear segment b) heavy, uneven shock loads c) largest acceleration and deceleration moments d) maximum 180 starts per minute (10,800 per hour) e) up to 100% operating time per hour (60 minutes)		
Application:	Index tables, circular feed drives and CNC axes for mainly smooth, controlled applications	Application:	Heavy milling and trunion drives, CNC axes with unfavourable conditions		
Series R3	a) random changing load on gear b) small shock loads c) large acceleration and deceleration moments d) maximum 20 starts per minute (1200 per hour) e) up to 50% operating time per hour (30 minutes)	Zahnradfertigung OTT	Blöhsteinstraße 20 D-72411 Bodelshausen www.zahnrad-ott.de	Tel. 07471 - 705 0 Fax. 07471 - 705 39 Email. Info@zahnrad-ott.de	
Application:	Index tables, rotary tables for circular milling with relatively favourable cutting conditions, CNC axes				

Centre distance	<b>340.00</b> mm	Material, gear	<b>GZ-CuSn12Ni</b>	<b>Operating characteristics</b>	
Outer Ø worm	<b>80.40</b> mm	Material, worm	<b>31CrMoV9</b>		
Outer Ø gear	<b>620.00</b> mm	Pressure angle in NS	<b>10 °</b>		
No. starts, worm	<b>1</b>	Back angle in NS	<b>15 °</b>		
Worm direction	<b>right</b>	Calculated circle Ø	<b>71.72</b> mm		
No. teeth, gear	<b>240</b>	Lead angle at Bks	<b>2.0013 °</b>		

### Ott worm gear

**OTT no: 4810 SSR**



Gear selection by load type and application					
Series R1	a) random even load around gear b) absolutely smooth operation c) minimal acceleration and deceleration moments d) maximum 1 start per minute (60 per hour) e) up to 10% operating time per hour (6 minutes)	Series R4	a) segmental varying load on gear b) with uneven shock loads c) large acceleration and deceleration moments d) maximum 60 starts per minute (3600 per hour) e) up to 75% operating time per hour (45 minutes)	Lubricant:	Synthetic oil
Application:	Measurement and test machinery drives, CNC axes	Application:	Rotary tables with unfavourable cutting conditions, Trunion axes, CNC axes, milling spindles		
Series R2	a) random even load around gear b) absolutely smooth operation c) minimal acceleration and deceleration moments d) maximum 6 starts per minute (360 per hour) e) up to 25% operating time per hour (15 minutes)	Series R5	a) loads limited only to eccentric gear segment b) heavy, uneven shock loads c) largest acceleration and deceleration moments d) maximum 180 starts per minute (10,800 per hour) e) up to 100% operating time per hour (60 minutes)		
Application:	Index tables, circular feed drives and CNC axes for mainly smooth, controlled applications	Application:	Heavy milling and trunion drives, CNC axes with unfavourable conditions		
Series R3	a) random changing load on gear b) small shock loads c) large acceleration and deceleration moments d) maximum 20 starts per minute (1200 per hour) e) up to 50% operating time per hour (30 minutes)	Zahnradfertigung OTT	Blöhsteinstraße 20 D-72411 Bodelshausen <a href="http://www.zahnrad-ott.de">www.zahnrad-ott.de</a>	Tel.	07471 - 705 0
Application:	Index tables, rotary tables for circular milling with relatively favourable cutting conditions, CNC axes			Fax.	07471 - 705 39
				Email.	<a href="mailto:Info@zahnrad-ott.de">Info@zahnrad-ott.de</a>



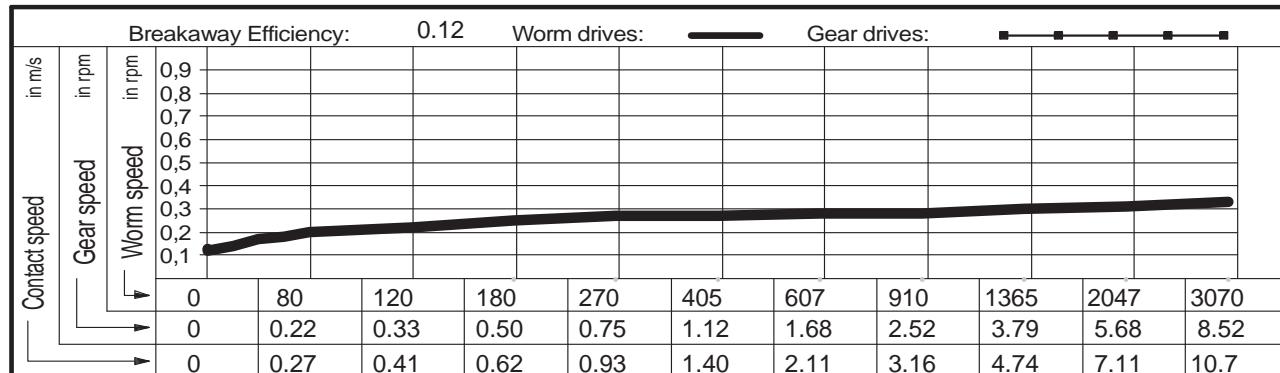
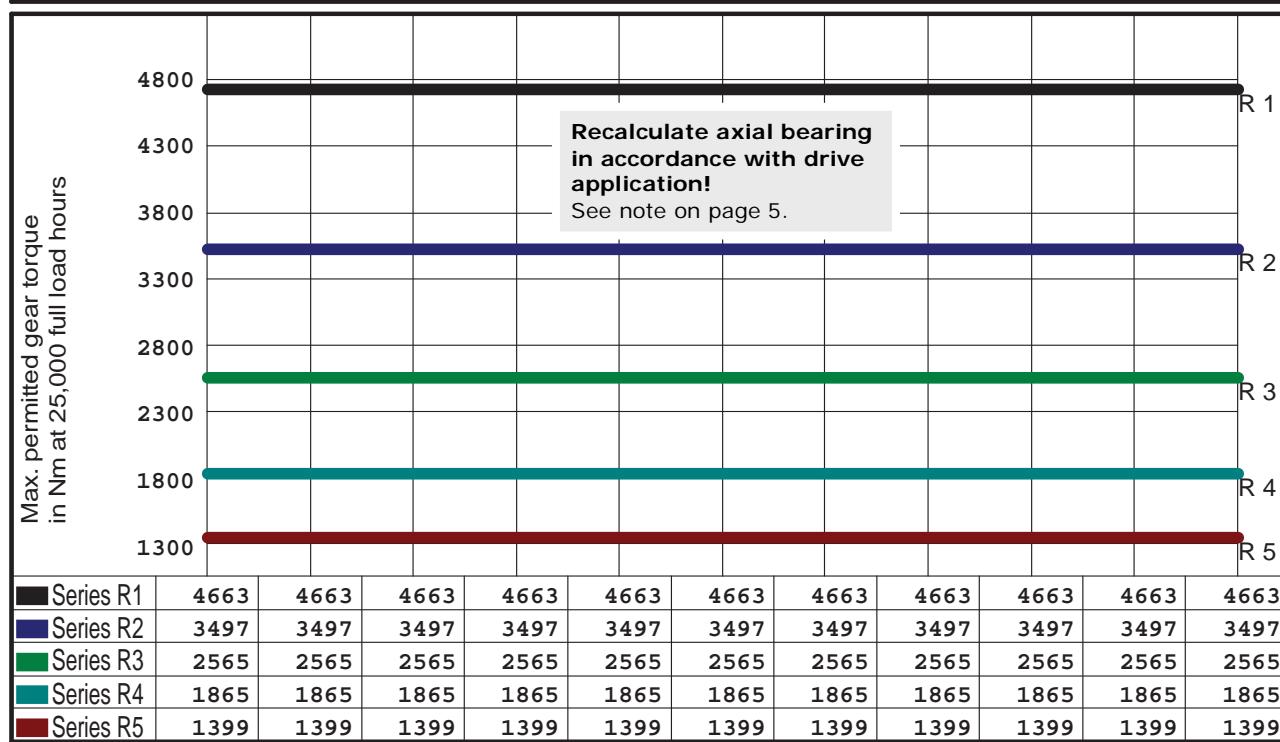
## Type G1 Gear Catalogue

Zahnradfertigung Ott  
Blöhsteinstraße 20  
D-72411 Bodelshausen

Centre distance	<b>340.00</b> mm	Material, gear	<b>GZ-CuSn12Ni</b>	Operating characteristics	
Outer Ø worm	<b>72.00</b> mm	Material, worm	<b>31CrMoV9</b>		
Outer Ø gear	<b>620.00</b> mm	Pressure angle in NS	<b>10 °</b>		
No. starts, worm	<b>1</b>	Back angle in NS	<b>15 °</b>		
Worm direction	<b>right</b>	Calculated circle Ø	<b>66.39</b> mm		
No. teeth, gear	<b>360</b>	Lead angle at Bks	<b>1.4603 °</b>		

### Ott worm gear

**OTT no: 5489 SSR**



Gear selection by load type and application					
Series R1	a) random even load around gear b) absolutely smooth operation c) minimal acceleration and deceleration moments d) maximum 1 start per minute (60 per hour) e) up to 10% operating time per hour (6 minutes)	Series R4	a) segmental varying load on gear b) with uneven shock loads c) large acceleration and deceleration moments d) maximum 60 starts per minute (3600 per hour) e) up to 75% operating time per hour (45 minutes)	Lubricant:	Synthetic oil
Application:	Measurement and test machinery drives, CNC axes	Application:	Rotary tables with unfavourable cutting conditions, Trunion axes, CNC axes, milling spindles		
Series R2	a) random even load around gear b) absolutely smooth operation c) minimal acceleration and deceleration moments d) maximum 6 starts per minute (360 per hour) e) up to 25% operating time per hour (15 minutes)	Series R5	a) loads limited only to eccentric gear segment b) heavy, uneven shock loads c) largest acceleration and deceleration moments d) maximum 180 starts per minute (10,800 per hour) e) up to 100% operating time per hour (60 minutes)		
Application:	Index tables, circular feed drives and CNC axes for mainly smooth, controlled applications	Application:	Heavy milling and trunion drives, CNC axes with unfavourable conditions		
Series R3	a) random changing load on gear b) small shock loads c) large acceleration and deceleration moments d) maximum 20 starts per minute (1200 per hour) e) up to 50% operating time per hour (30 minutes)	Zahnradfertigung OTT	Blöhsteinstraße 20 D-72411 Bodelshausen www.zahnrad-ott.de	Tel.	07471 - 705 0
Application:	Index tables, rotary tables for circular milling with relatively favourable cutting conditions, CNC axes			Fax.	07471 - 705 39
				Email.	Info@zahnrad-ott.de

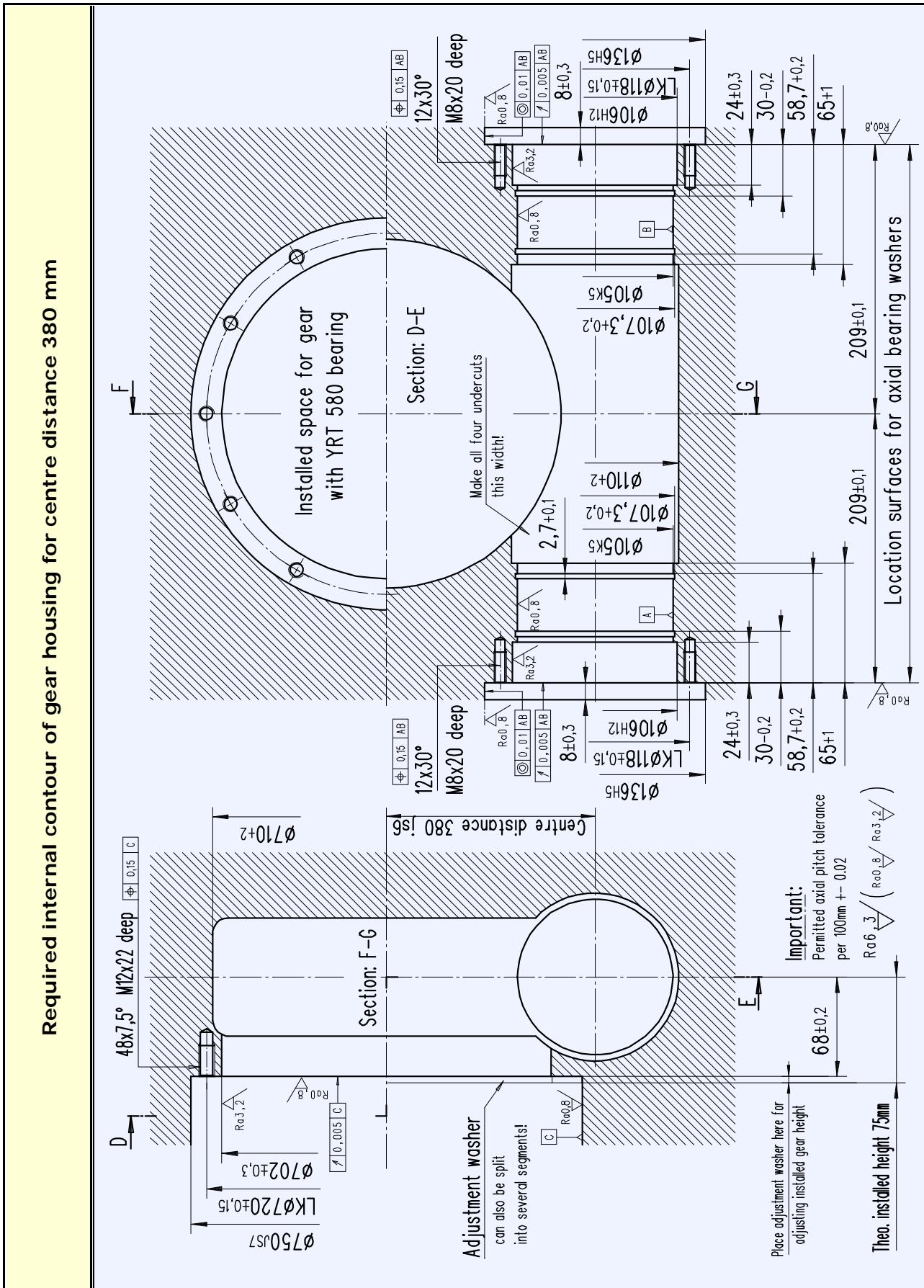
## OTT worm gears - centre distance 380 mm

### Main dimensions

The technical drawing illustrates the assembly of a worm gear system. On the left, a cross-sectional view shows the worm and gear assembly with various dimensions labeled: A ±0,02, φB -0,2, φC -0,05, φD -0,2, Gap, and H ±0,02. An 'Installed position Please note!' callout points to a side view of the assembly, which includes the worm center, gear location surface, and center distance. A dimension of φE h5 is also shown. On the right, a table lists gear ratios and dimensions for different models:

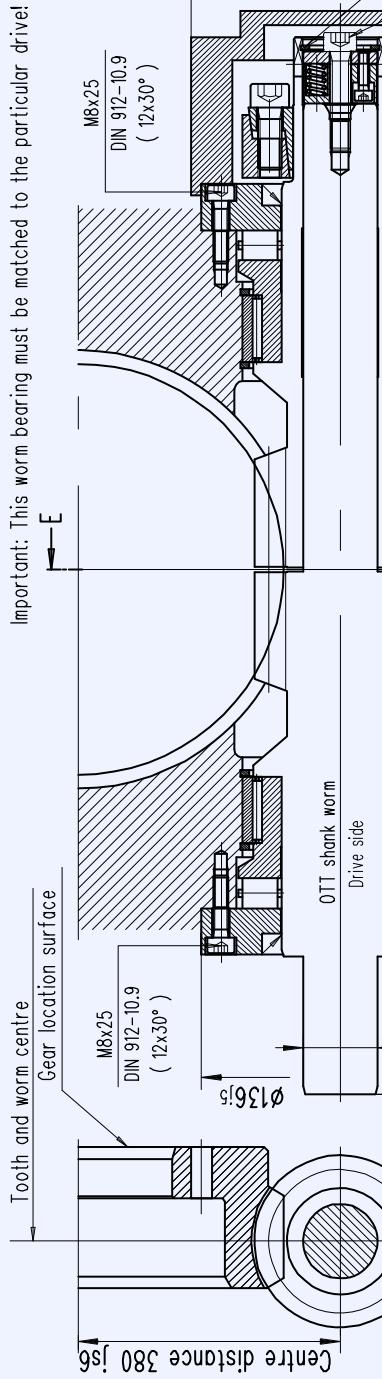
OTT gear no.	Ratio		Worm				YRT gear bearing	Gear			
	No. starts Z1	No. teeth Z2	Distance A	Undercut Ø B	Head Ø C	Collar Ø D		Internal Ø E	Head Ø F	Width G	Height H
4811 SSR	1	180	153	57,3	87,6	97,0	580	578	700	73	45
4855 SSR	1	240		58,0	82,8						
4825 SSR	1	288		58,3	79,0						
4869 SSR	1	360		58,6	74,4						
									See comments page 5!		

The bottom part of the drawing shows a detailed cross-section of the gear assembly within a housing, including labels for YRT bearing, hub, gear, and housing dimensions.

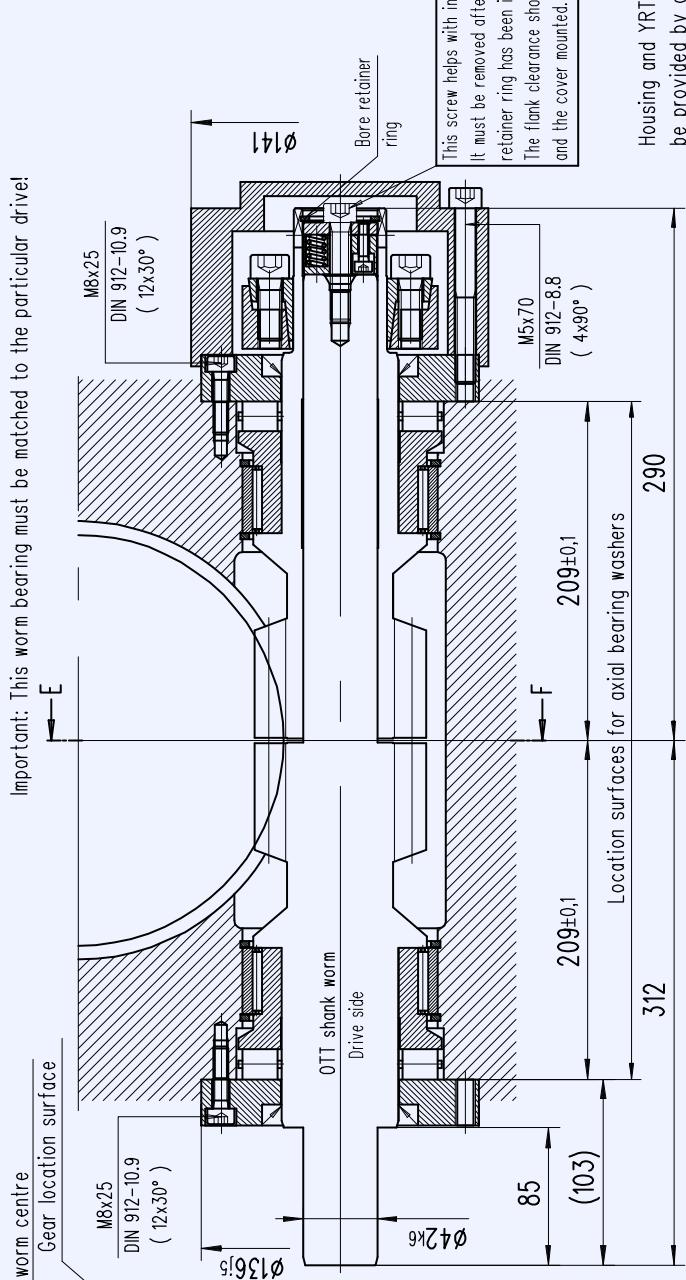
**Gear housing - required internal contour**


## Worm bearings

### Worm bearing for centre distance 380 mm

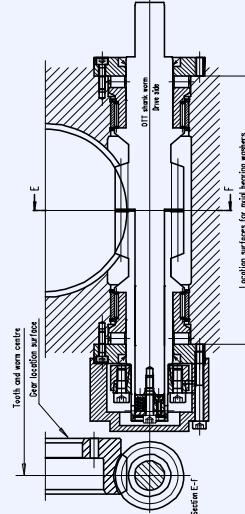


- Installed position A (Standard)**  
The gear location surface is underneath, the OTT shank worm on the left.
- Installed position B (to suit)**  
The gear location surface is underneath, the OTT shank worm on the right.



Housing and YRT bearing to be provided by customer.

		Bearing parts per gear				
OTT no.	Worm gear	Shank worm	Hollow worm	Q'ty	Name	Typ/Dwg no.
4811 SSR	T00485-G-RAO	T00393-G-SSC	T00394-G-HSC	2	Axial cylinder roller bearing	K812 14 TV
4855 SSR	T00486-G-RAO	T00395-G-SSC	T00396-G-HSC	2	Radial needle bearing	RNAO 90x105x26
4825 SSR	T00487-G-RAO	T00397-G-SSC	T00398-G-HSC	2	Shaft seal	70x85x8
4869 SSR	T00488-G-RAO	T00399-G-SSC	T00400-G-HSC	1	Shrink disc	HSD 55-22
				4	Circlip	SB 105
					24	Cylinder bolt DIN 912
					4	Cylinder bolt DIN 912
					1	Cylinder bolt DIN 912
					1	Retainer ring DIN 472
					2	Bearing sleeve
					2	Axial bearing washer
					1	Cover
					1	Thrust piece



- Order using ..... set of OTT worm gears  
 Gearset incl. thrust piece without bearing parts  
 Gearset incl. all bearing parts

REQUEST      Date: \_\_\_\_\_ Name: \_\_\_\_\_

ORDER

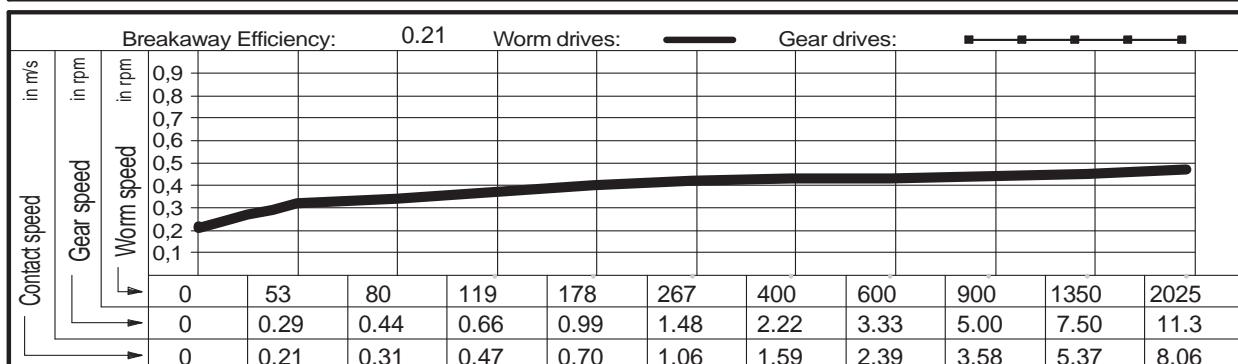
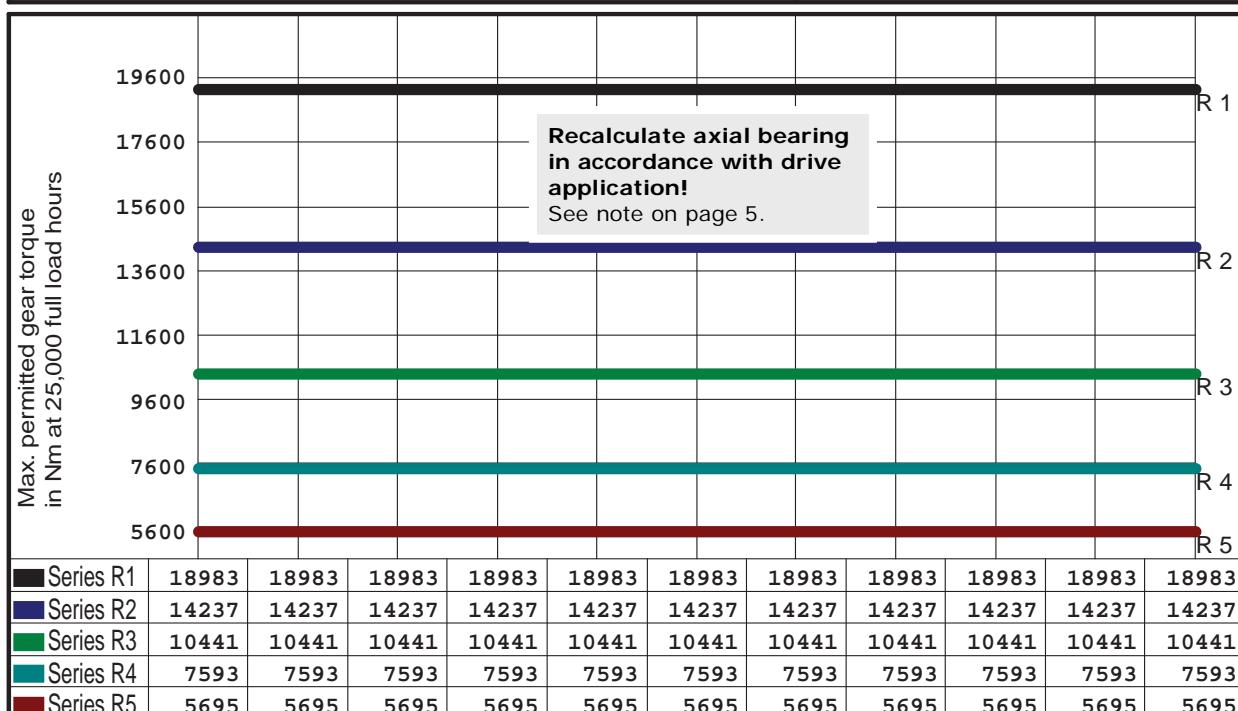


## Type G1 Gear Catalogue

Zahnradfertigung Ott  
Blöhsteinstraße 20  
D-72411 Bodelshausen

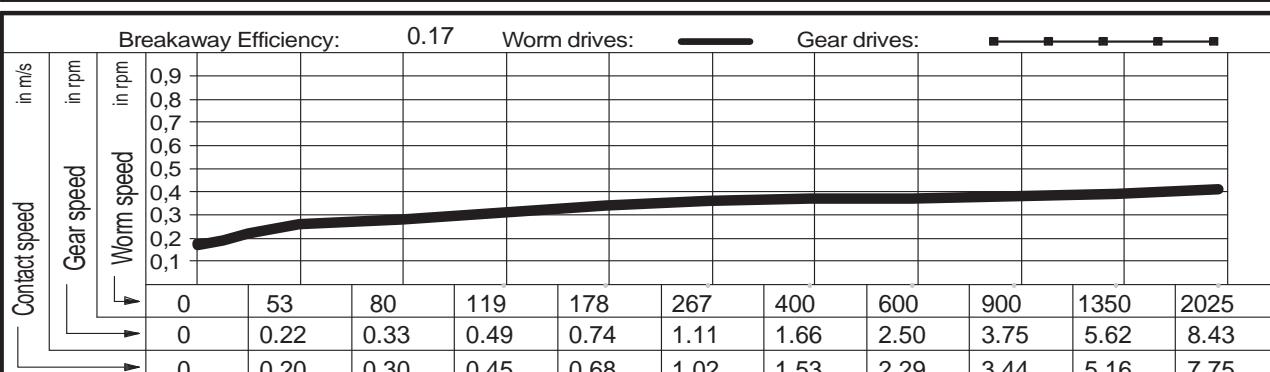
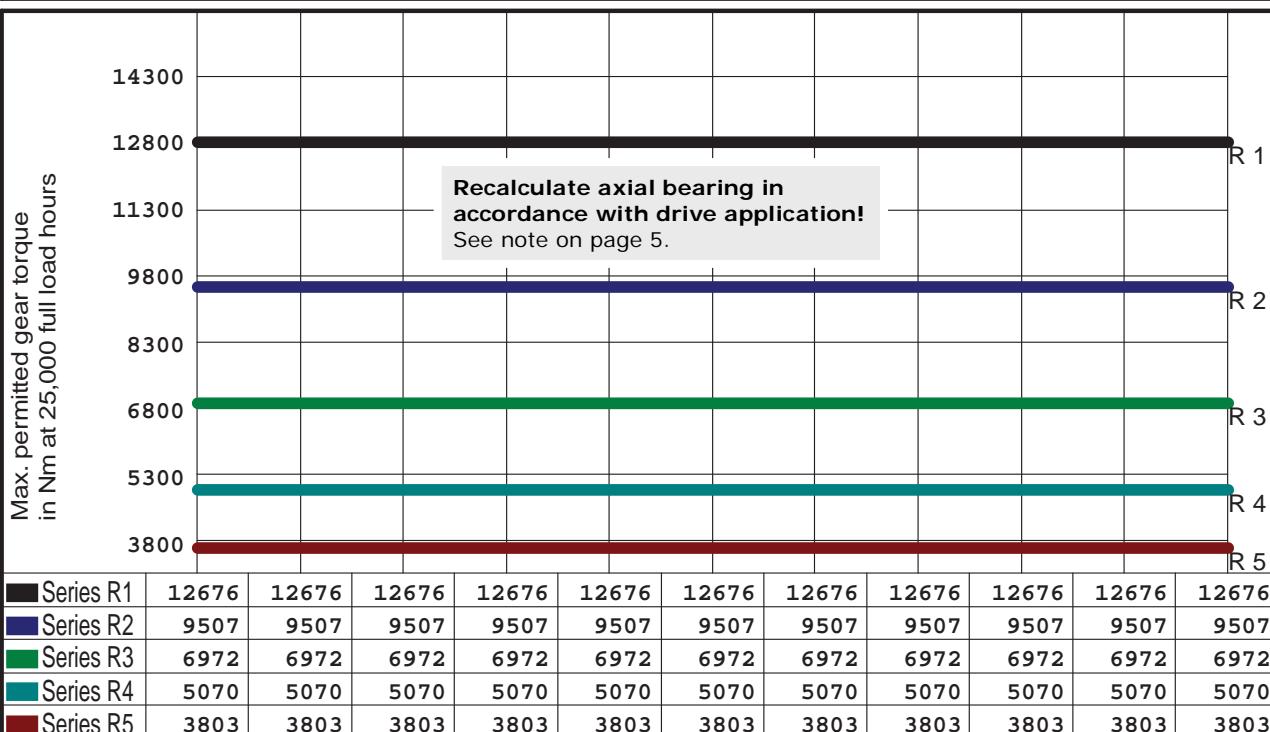
### Operational characteristics

Centre distance	380.00	mm	Material, gear	GZ-CuSn12Ni	Operating characteristics	
Outer Ø worm	87.60	mm	Material, worm	31CrMoV9	Ott worm gear	
Outer Ø gear	700.00	mm	Pressure angle in NS	10 °	OTT no: 4811 SSR	
No. starts, worm	1		Back angle in NS	15 °		
Worm direction	right		Calculated circle Ø	76.01 mm		
No. teeth, gear	180		Lead angle at Bks	2.8251 °		



Gear selection by load type and application					
Series R1	a) random even load around gear b) absolutely smooth operation c) minimal acceleration and deceleration moments d) maximum 1 start per minute (60 per hour) e) up to 10% operating time per hour (6 minutes)	Series R4	a) segmental varying load on gear b) with uneven shock loads c) large acceleration and deceleration moments d) maximum 60 starts per minute (3600 per hour) e) up to 75% operating time per hour (45 minutes)	Lubricant:	Synthetic oil
Application:	Measurement and test machinery drives, CNC axes	Application:	Rotary tables with unfavourable cutting conditions. Trunion axes, CNC axes, milling spindles		
Series R2	a) random even load around gear b) absolutely smooth operation c) minimal acceleration and deceleration moments d) maximum 6 starts per minute (360 per hour) e) up to 25% operating time per hour (15 minutes)	Series R5	a) loads limited only to eccentric gear segment b) heavy, uneven shock loads c) largest acceleration and deceleration moments d) maximum 180 starts per minute (10,800 per hour) e) up to 100% operating time per hour (60 minutes)		
Application:	Index tables, circular feed drives and CNC axes for mainly smooth, controlled applications	Application:	Heavy milling and trunion drives, CNC axes with unfavourable conditions		
Series R3	a) random changing load on gear b) small shock loads c) large acceleration and deceleration moments d) maximum 20 starts per minute (1200 per hour) e) up to 50% operating time per hour (30 minutes)	Zahnradfertigung OTT	Blöhsteinstraße 20 D-72411 Bodelshausen www.zahnrad-ott.de	Tel. 07471 - 705 0 Fax. 07471 - 705 39 Email. Info@zahnrad-ott.de	
Application:	Index tables, rotary tables for circular milling with relatively favourable cutting conditions, CNC axes				

Centre distance	380.00	mm	Material, gear	GZ-CuSn12Ni	Operating characteristics	
Outer Ø worm	82.80	mm	Material, worm	31CrMoV9		
Outer Ø gear	700.00	mm	Pressure angle in NS	10 °	Ott worm gear	
No. starts, worm	1		Back angle in NS	15 °		
Worm direction	right		Calculated circle Ø	73.07 mm	OTT no: 4855 SSR	
No. teeth, gear	240		Lead angle at Bks	2.2183 °		



Gear selection by load type and application					
Series R1	a) random even load around gear b) absolutely smooth operation c) minimal acceleration and deceleration moments d) maximum 1 start per minute (60 per hour) e) up to 10% operating time per hour (6 minutes)	Series R4	a) segmental varying load on gear b) with uneven shock loads c) large acceleration and deceleration moments d) maximum 60 starts per minute (3600 per hour) e) up to 75% operating time per hour (45 minutes)	Lubricant:	Synthetic oil
Application:	Measurement and test machinery drives, CNC axes	Application:	Rotary tables with unfavourable cutting conditions, Trunion axes, CNC axes, milling spindles		
Series R2	a) random even load around gear b) absolutely smooth operation c) minimal acceleration and deceleration moments d) maximum 6 starts per minute (360 per hour) e) up to 25% operating time per hour (15 minutes)	Series R5	a) loads limited only to eccentric gear segment b) heavy, uneven shock loads c) largest acceleration and deceleration moments d) maximum 180 starts per minute (10,800 per hour) e) up to 100% operating time per hour (60 minutes)		
Application:	Index tables, circular feed drives and CNC axes for mainly smooth, controlled applications	Application:	Heavy milling and trunion drives, CNC axes with unfavourable conditions		
Series R3	a) random changing load on gear b) small shock loads c) large acceleration and deceleration moments d) maximum 20 starts per minute (1200 per hour) e) up to 50% operating time per hour (30 minutes)	Zahnradfertigung OTT	Blöhsteinstraße 20 D-72411 Bodelshausen <a href="http://www.zahnrad-ott.de">www.zahnrad-ott.de</a>	Tel.	07471 - 705 0
Application:	Index tables, rotary tables for circular milling with relatively favourable cutting conditions, CNC axes			Fax.	07471 - 705 39
				Email.	<a href="mailto:Info@zahnrad-ott.de">Info@zahnrad-ott.de</a>



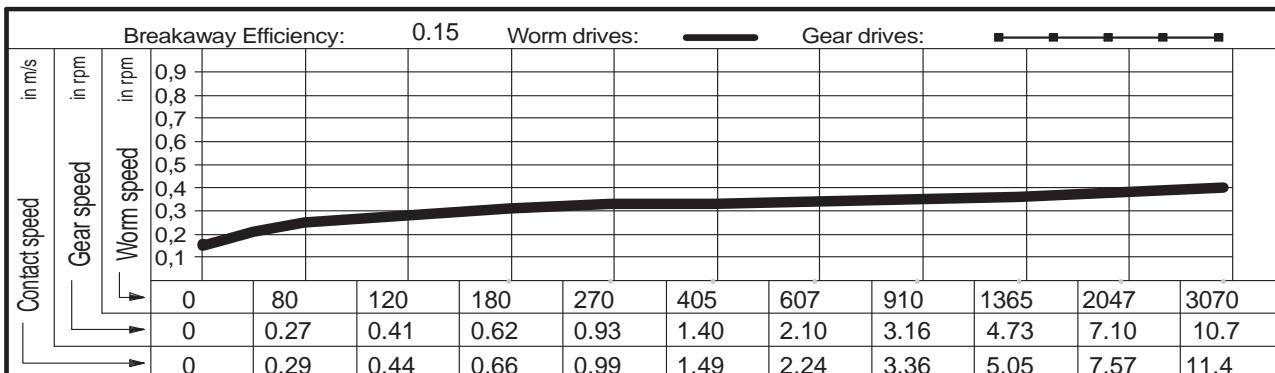
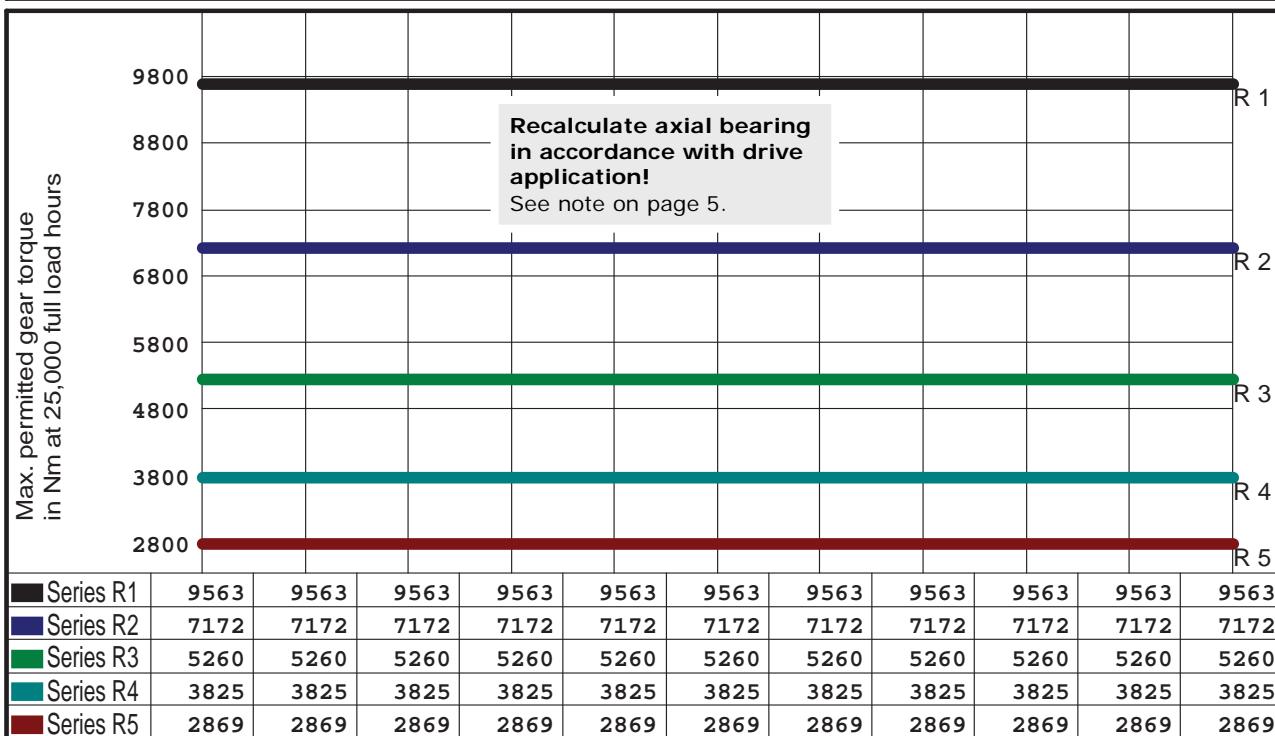
## Type G1 Gear Catalogue

Zahnradfertigung Ott  
Blöhsteinstraße 20  
D-72411 Bodelshausen

Centre distance	<b>380.00</b>	mm	Material, gear	<b>GZ-CuSn12Ni</b>	Operating characteristics	
Outer Ø worm	<b>79.00</b>	mm	Material, worm	<b>31CrMoV9</b>		
Outer Ø gear	<b>700.00</b>	mm	Pressure angle in NS	<b>10 °</b>		
No. starts, worm	<b>1</b>		Back angle in NS	<b>15 °</b>		
Worm direction	<b>right</b>		Calculated circle Ø	<b>70.65</b>	mm	
No. teeth, gear	<b>288</b>		Lead angle at Bks	<b>1.9218</b>	°	

### Ott worm gear

**OTT no: 4825 SSR**



Gear selection by load type and application											
Series R1	a) random even load around gear b) absolutely smooth operation c) minimal acceleration and deceleration moments d) maximum 1 start per minute (60 per hour) e) up to 10% operating time per hour (6 minutes)					Series R4	a) segmental varying load on gear b) with uneven shock loads c) large acceleration and deceleration moments d) maximum 60 starts per minute (3600 per hour) e) up to 75% operating time per hour (45 minutes)				
Application:	Measurement and test machinery drives, CNC axes					Application:	Rotary tables with unfavourable cutting conditions, Trunion axes, CNC axes, milling spindles				
Series R2	a) random even load around gear b) absolutely smooth operation c) minimal acceleration and deceleration moments d) maximum 6 starts per minute (360 per hour) e) up to 25% operating time per hour (15 minutes)					Series R5	a) loads limited only to eccentric gear segment b) heavy, uneven shock loads c) largest acceleration and deceleration moments d) maximum 180 starts per minute (10,800 per hour) e) up to 100% operating time per hour (60 minutes)				
Application:	Index tables, circular feed drives and CNC axes for mainly smooth, controlled applications					Application:	Heavy milling and trunion drives, CNC axes with unfavourable conditions				
Series R3	a) random changing load on gear b) small shock loads c) large acceleration and deceleration moments d) maximum 20 starts per minute (1200 per hour) e) up to 50% operating time per hour (30 minutes)					Lubricant: <b>Synthetic oil</b>					
Application:	Index tables, rotary tables for circular milling with relatively favourable cutting conditions, CNC axes										

**Zahnradfertigung OTT**

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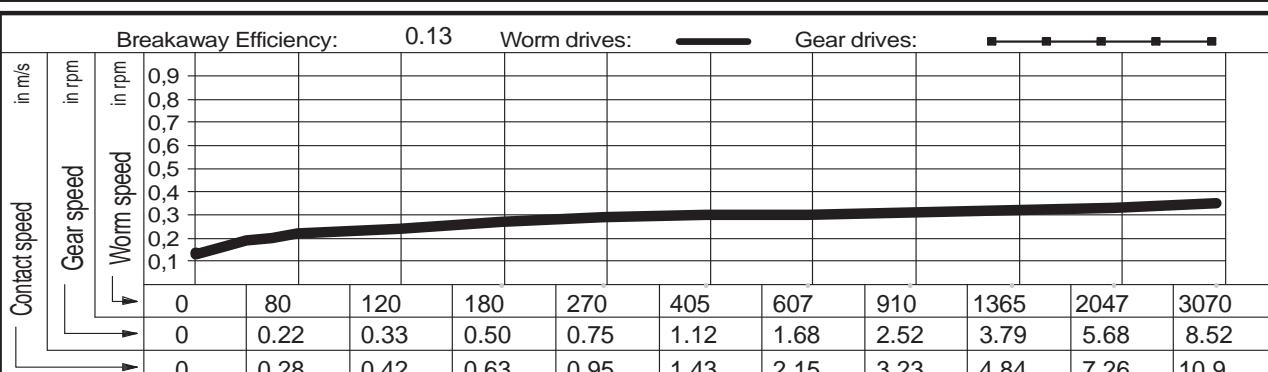
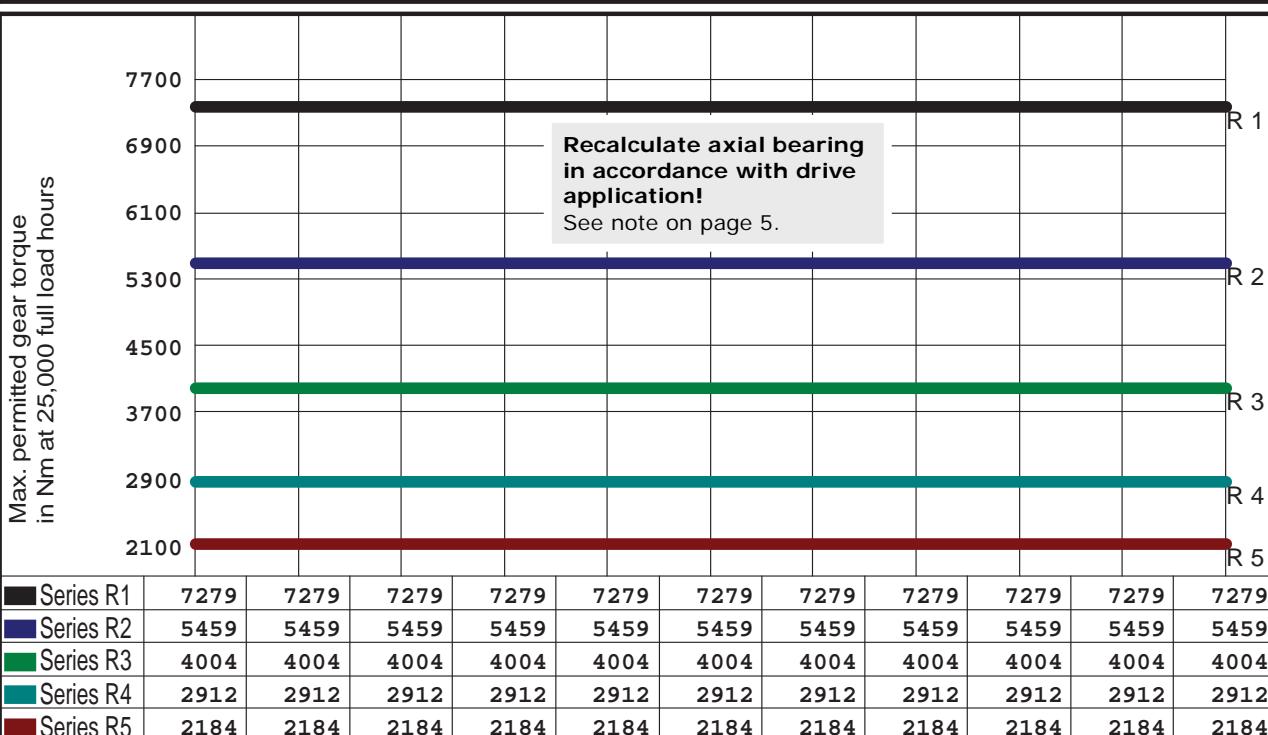
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Centre distance	<b>380.00</b> mm	Material, gear	<b>GZ-CuSn12Ni</b>	<b>Operating characteristics</b>	
Outer Ø worm	<b>74.40</b> mm	Material, worm	<b>31CrMoV9</b>		
Outer Ø gear	<b>700.00</b> mm	Pressure angle in NS	<b>10 °</b>		
No. starts, worm	<b>1</b>	Back angle in NS	<b>15 °</b>		
Worm direction	<b>right</b>	Calculated circle Ø	<b>67.77</b> mm		
No. teeth, gear	<b>360</b>	Lead angle at Bks	<b>1.6129 °</b>		

Ott worm gear

**OTT no: 4869 SSR**



Gear selection by load type and application											
Series R1	a) random even load around gear b) absolutely smooth operation c) minimal acceleration and deceleration moments d) maximum 1 start per minute (60 per hour) e) up to 10% operating time per hour (6 minutes)					Series R4	a) segmental varying load on gear b) with uneven shock loads c) large acceleration and deceleration moments d) maximum 60 starts per minute (3600 per hour) e) up to 75% operating time per hour (45 minutes)				
Application:	Measurement and test machinery drives, CNC axes					Application:	Rotary tables with unfavourable cutting conditions, Trunion axes, CNC axes, milling spindles				
Series R2	a) random even load around gear b) absolutely smooth operation c) minimal acceleration and deceleration moments d) maximum 6 starts per minute (360 per hour) e) up to 25% operating time per hour (15 minutes)					Series R5	a) loads limited only to eccentric gear segment b) heavy, uneven shock loads c) largest acceleration and deceleration moments d) maximum 180 starts per minute (10,800 per hour) e) up to 100% operating time per hour (60 minutes)				
Application:	Index tables, circular feed drives and CNC axes for mainly smooth, controlled applications					Application:	Heavy milling and trunion drives, CNC axes with unfavourable conditions				
Series R3	a) random changing load on gear b) small shock loads c) large acceleration and deceleration moments d) maximum 20 starts per minute (1200 per hour) e) up to 50% operating time per hour (30 minutes)					Zahnradfertigung OTT					
Application:	Index tables, rotary tables for circular milling with relatively favourable cutting conditions, CNC axes					Blöhsteinstraße 20 D-72411 Bodelshausen <a href="http://www.zahnrad-ott.de">www.zahnrad-ott.de</a>	Tel. 07471 - 705 0 Fax. 07471 - 705 39 Email. <a href="mailto:Info@zahnrad-ott.de">Info@zahnrad-ott.de</a>				Lubricant: Synthetic oil

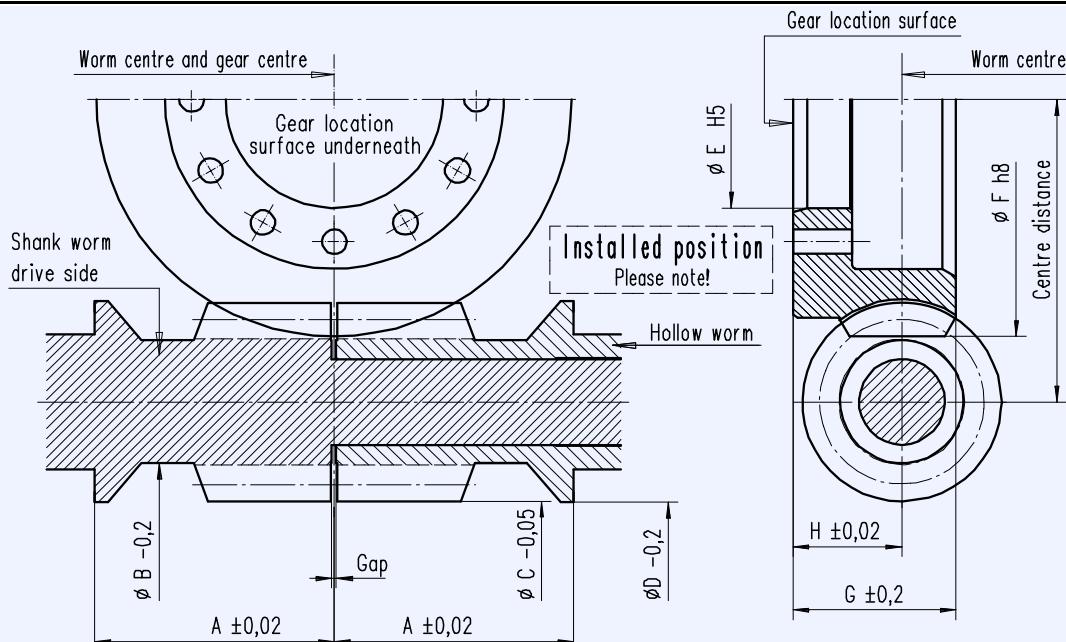


## Type G1 Gear Catalogue

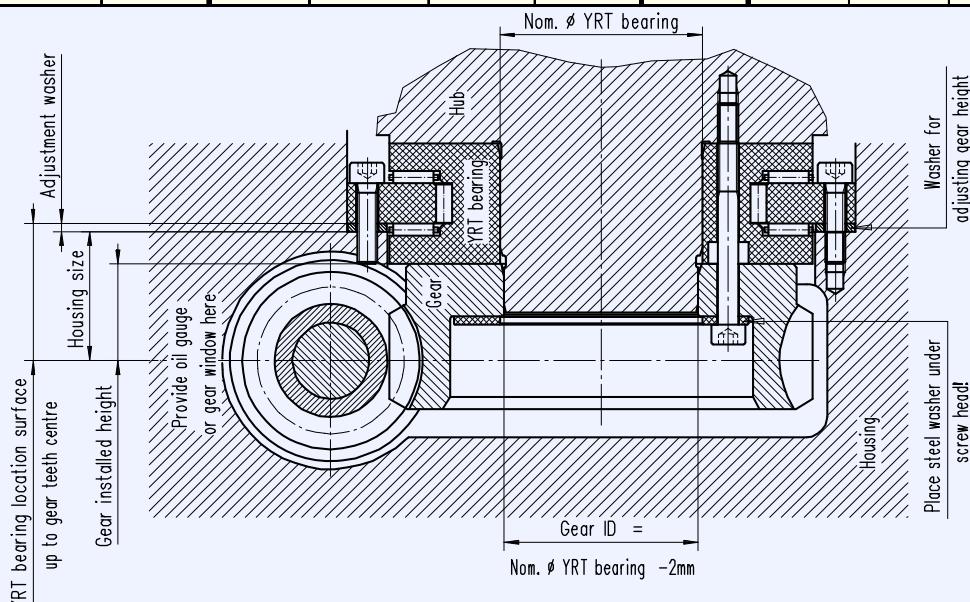
Zahnradfertigung Ott  
Blöhsteinstraße 20  
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## OTT worm gears - centre distance 430 mm

### Main dimensions

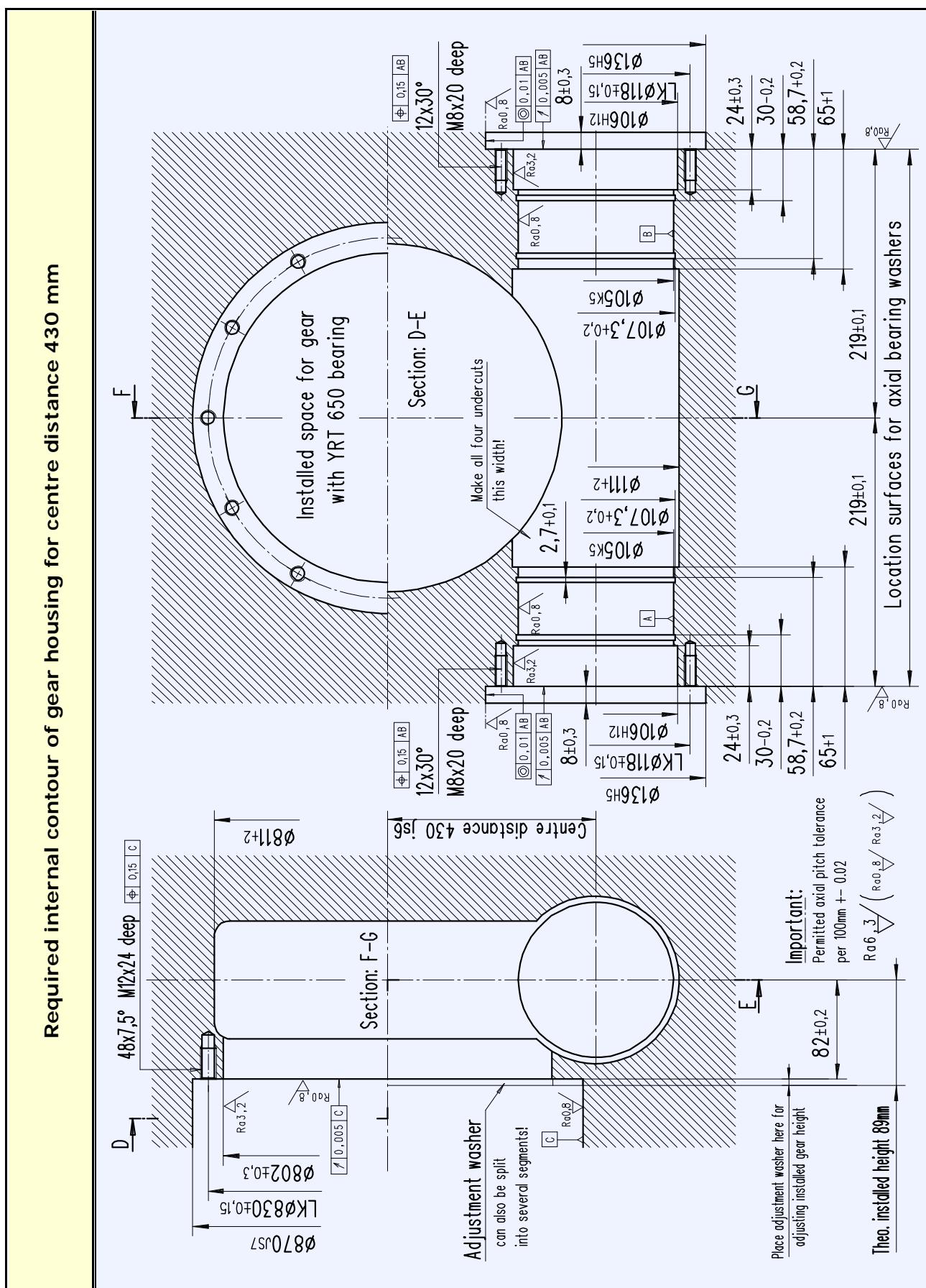


OTT gear no.	Ratio		Worm				YRT gear bearing	Gear			
	No. starts Z1	No. teeth Z2	Distance A	Undercut Ø B	Head Ø C	Collar Ø D		Internal Ø E	Head Ø F	Width G	Height H
4850 SSR	1	180	163	56,9	91,6	97,0	650	648	800	75	45
4820 SSR	1	240		57,7	85,8						
4862 SSR	1	288		58,1	81,8		See comments page 5!				



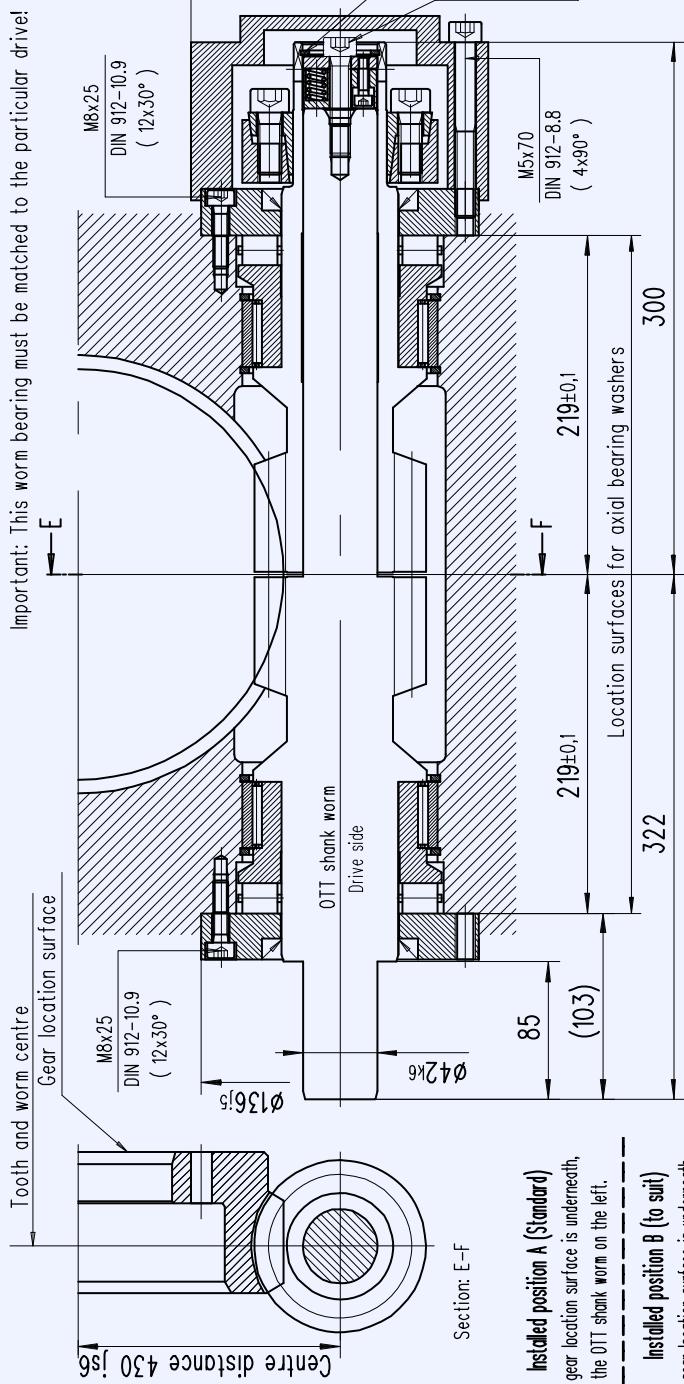
**Gear housing - required internal contour**

Required internal contour of gear housing for centre distance 430 mm



## Worm bearings

### Worm bearing for centre distance 430 mm



		Bearing parts per gear			
OTT no.	Name	Q'ty	Name	Q'ty	Typ/Dwg no.
<b>4850 SSR</b>	Worm gear	1	Hollow worm	1	
<b>4850 G-RAO</b>	Shank worm	1			K812 14 TV
<b>4820 SSR</b>	T00489-G-RAO	2	Axial cylinder roller bearing	2	RNAO 90x105x26
<b>4820 G-RAO</b>	T00490-G-RAO	2	Radial needle bearing	2	
<b>4862 SSR</b>	T00491-G-RAO	2	Shaft seal	1	70x85x8
<b>4862 G-HSC</b>	T00405-G-SSC	2	Shrink disc	1	HSD 55-22
		4	Circlip	4	SB 105
		24	Cylinder bolt DIN 912	24	M8x25 - 10.9
		4	Cylinder bolt DIN 912	4	M5x70 - 8.8
		1	Cylinder bolt DIN 912	1	M6x30 - 8.8
		1	Retainer ring DIN 472	1	42
		2	Bearing sleeve	2	T00224-G-LHÜ
		2	Axial bearing washer	2	T00236-G-LDX
		1	Cover	1	T00219-G-ADH
		1	Thrust piece	1	B00012-G-DST

**Order using ..... Set of OTT worm gears**  
 REQUEST      Date: Name:  
 ORDER

**Gearset incl. thrust piece without bearing parts**

**Gearset incl. all bearing parts**

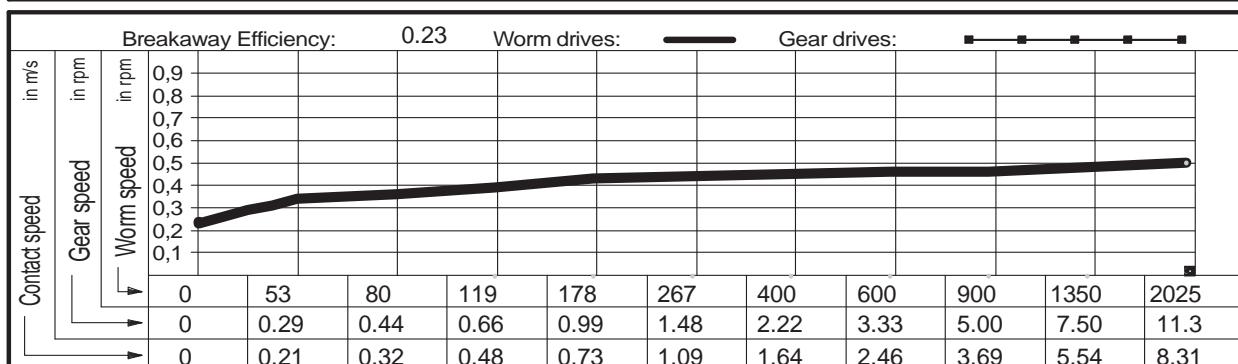
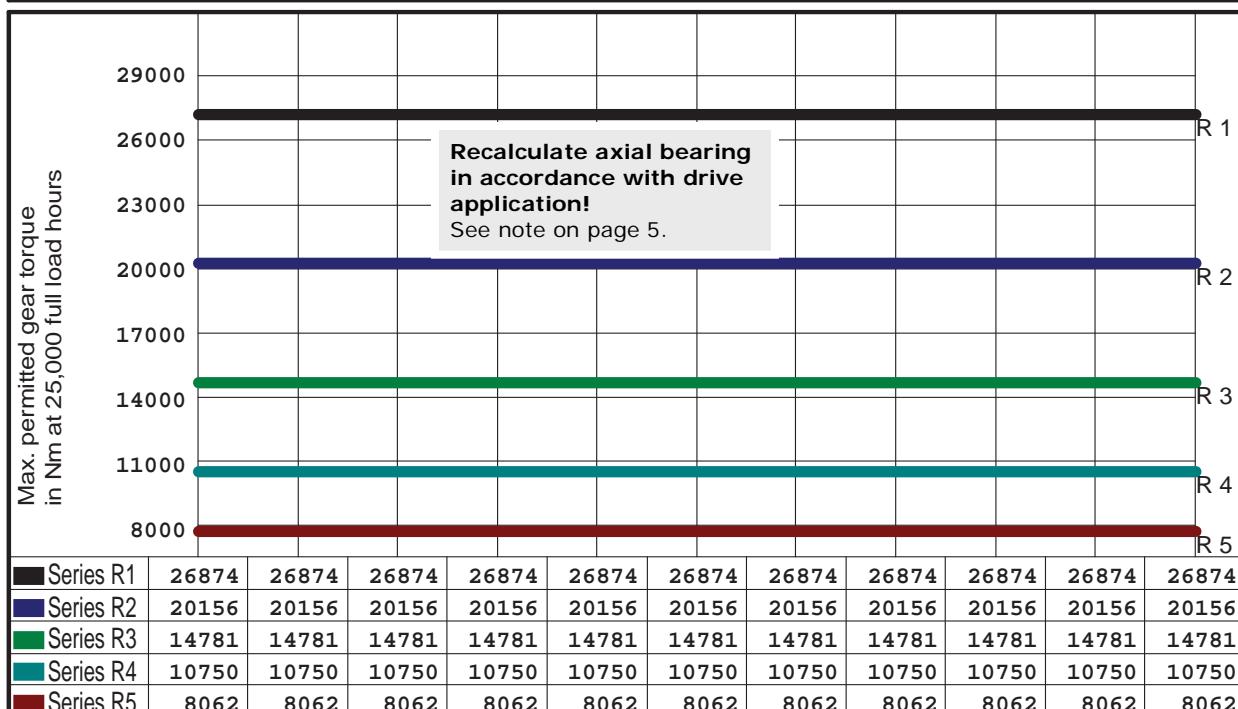


## Type G1 Gear Catalogue

Zahnradfertigung Ott  
Blöhsteinstraße 20  
D-72411 Bodelshausen

### Operational characteristics

Centre distance	430.00	mm	Material, gear	GZ-CuSn12Ni	Operating characteristics	
Outer Ø worm	91.60	mm	Material, worm	31CrMoV9	Ott worm gear	
Outer Ø gear	800.00	mm	Pressure angle in NS	10 °	OTT no: 4850 SSR	
No. starts, worm	1		Back angle in NS	15 °		
Worm direction	right		Calculated circle Ø	78.34 mm		
No. teeth, gear	180		Lead angle at Bks	3.1318 °		

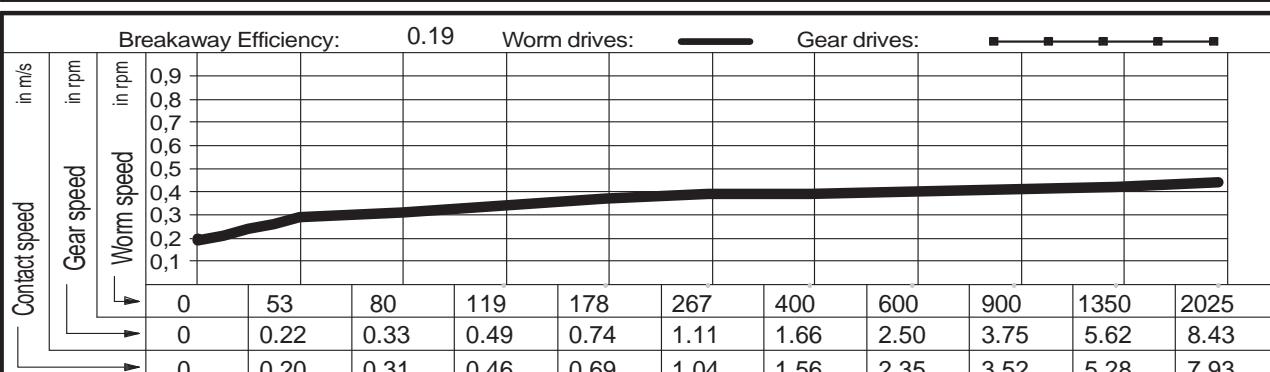
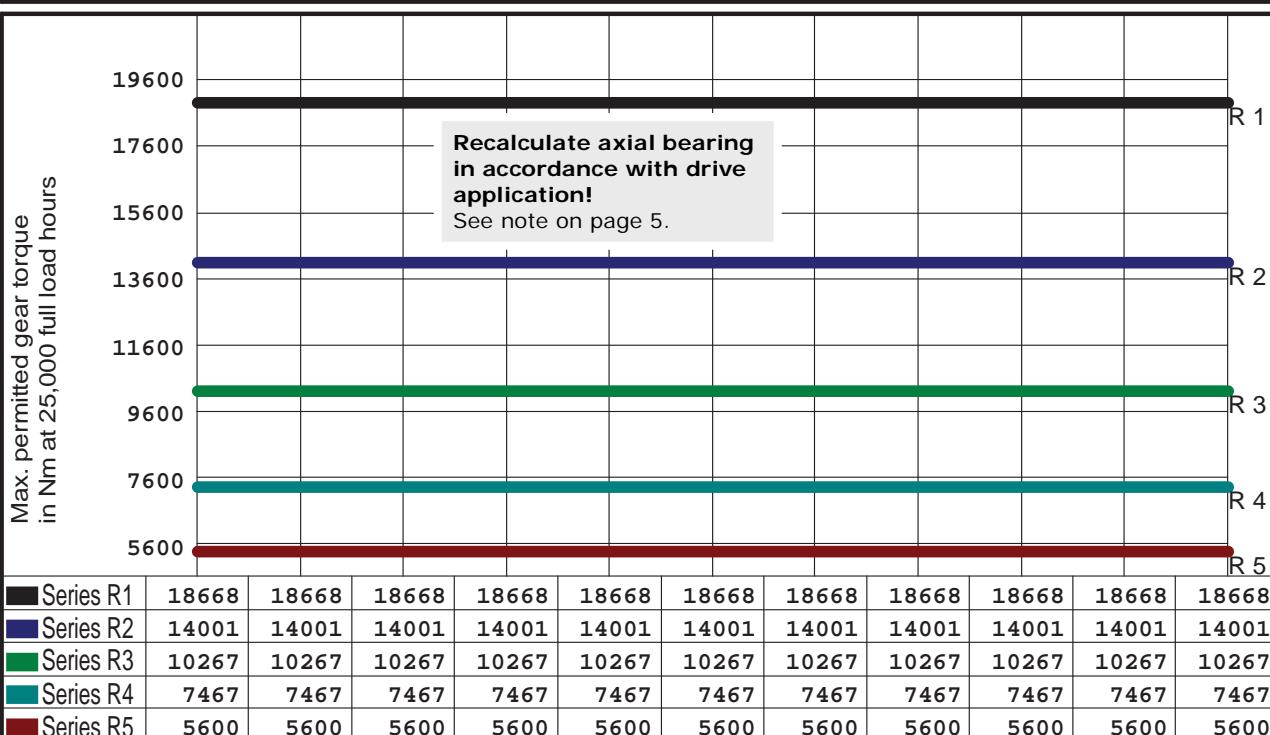


Gear selection by load type and application							
Series R1	a) random even load around gear b) absolutely smooth operation c) minimal acceleration and deceleration moments d) maximum 1 start per minute (60 per hour) e) up to 10% operating time per hour (6 minutes)	Series R4	a) segmental varying load on gear b) with uneven shock loads c) large acceleration and deceleration moments d) maximum 60 starts per minute (3600 per hour) e) up to 75% operating time per hour (45 minutes)	Lubricant: Synthetic oil			
Application:	Measurement and test machinery drives, CNC axes	Application:	Rotary tables with unfavourable cutting conditions. Trunion axes, CNC axes, milling spindles				
Series R2	a) random even load around gear b) absolutely smooth operation c) minimal acceleration and deceleration moments d) maximum 6 starts per minute (360 per hour) e) up to 25% operating time per hour (15 minutes)	Series R5	a) loads limited only to eccentric gear segment b) heavy, uneven shock loads c) largest acceleration and deceleration moments d) maximum 180 starts per minute (10,800 per hour) e) up to 100% operating time per hour (60 minutes)				
Application:	Index tables, circular feed drives and CNC axes for mainly smooth, controlled applications	Application:	Heavy milling and trunion drives, CNC axes with unfavourable conditions				
Series R3	a) random changing load on gear b) small shock loads c) large acceleration and deceleration moments d) maximum 20 starts per minute (1200 per hour) e) up to 50% operating time per hour (30 minutes)	<b>Zahnradfertigung OTT</b> Blöhsteinstraße 20 D-72411 Bodelshausen www.zahnrad-ott.de					
Application:	Index tables, rotary tables for circular milling with relatively favourable cutting conditions, CNC axes						

Centre distance	<b>430.00</b> mm	Material, gear	<b>GZ-CuSn12Ni</b>	<b>Operating characteristics</b>	
Outer Ø worm	<b>85.80</b> mm	Material, worm	<b>31CrMoV9</b>		
Outer Ø gear	<b>800.00</b> mm	Pressure angle in NS	<b>10 °</b>		
No. starts, worm	<b>1</b>	Back angle in NS	<b>15 °</b>		
Worm direction	<b>right</b>	Calculated circle Ø	<b>74.75</b> mm		
No. teeth, gear	<b>240</b>	Lead angle at Bks	<b>2.4786</b> °		

## Ott worm gear

**OTT no: 4820 SSR**



Gear selection by load type and application					
Series R1	a) random even load around gear b) absolutely smooth operation c) minimal acceleration and deceleration moments d) maximum 1 start per minute (60 per hour) e) up to 10% operating time per hour (6 minutes)	Series R4	a) segmental varying load on gear b) with uneven shock loads c) large acceleration and deceleration moments d) maximum 60 starts per minute (3600 per hour) e) up to 75% operating time per hour (45 minutes)		
Application:	Measurement and test machinery drives, CNC axes	Application:	Rotary tables with unfavourable cutting conditions, Trunion axes, CNC axes, milling spindles		
Series R2	a) random even load around gear b) absolutely smooth operation c) minimal acceleration and deceleration moments d) maximum 6 starts per minute (360 per hour) e) up to 25% operating time per hour (15 minutes)	Series R5	a) loads limited only to eccentric gear segment b) heavy, uneven shock loads c) largest acceleration and deceleration moments d) maximum 180 starts per minute (10,800 per hour) e) up to 100% operating time per hour (60 minutes)		
Application:	Index tables, circular feed drives and CNC axes for mainly smooth, controlled applications	Application:	Heavy milling and trunion drives, CNC axes with unfavourable conditions		
Series R3	a) random changing load on gear b) small shock loads c) large acceleration and deceleration moments d) maximum 20 starts per minute (1200 per hour) e) up to 50% operating time per hour (30 minutes)	Zahnradfertigung OTT	Blöhsteinstraße 20 D-72411 Bodelshausen <a href="http://www.zahnrad-ott.de">www.zahnrad-ott.de</a>	Tel. 07471 - 705 0 Fax. 07471 - 705 39 Email. <a href="mailto:Info@zahnrad-ott.de">Info@zahnrad-ott.de</a>	Lubricant: Synthetic oil
Application:	Index tables, rotary tables for circular milling with relatively favourable cutting conditions, CNC axes				



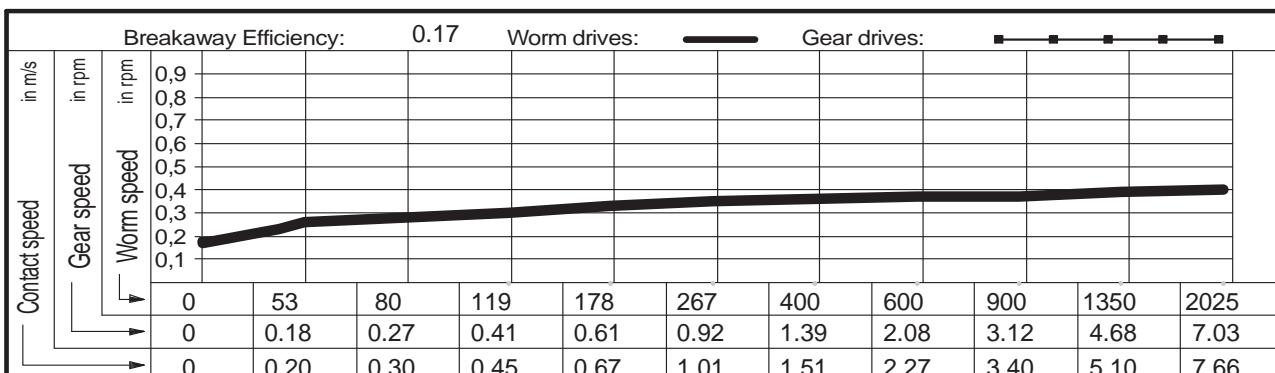
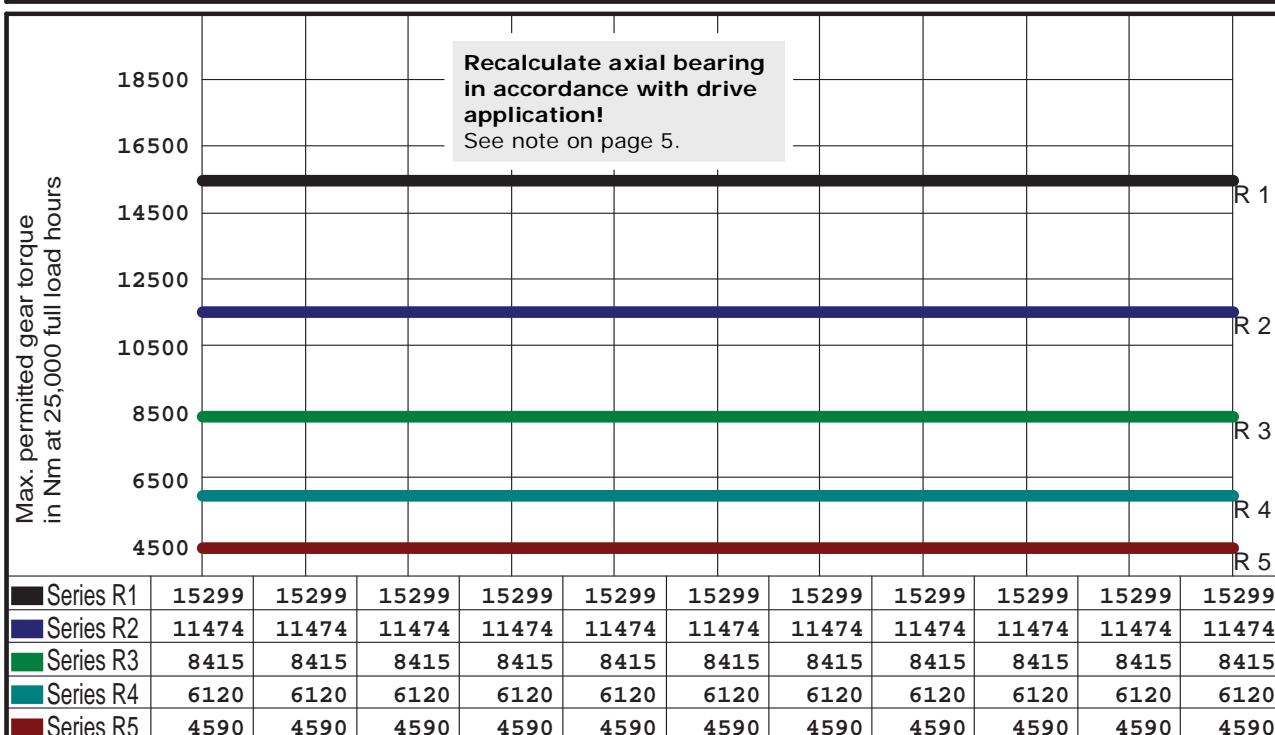
## Type G1 Gear Catalogue

Zahnradfertigung Ott  
Blöhsteinstraße 20  
D-72411 Bodelshausen

Centre distance	<b>430.00</b>	mm	Material, gear	<b>GZ-CuSn12Ni</b>	Operating characteristics	
Outer Ø worm	<b>81.80</b>	mm	Material, worm	<b>31CrMoV9</b>		
Outer Ø gear	<b>800.00</b>	mm	Pressure angle in NS	<b>10 °</b>		
No. starts, worm	<b>1</b>		Back angle in NS	<b>15 °</b>		
Worm direction	<b>right</b>		Calculated circle Ø	<b>72.22</b>	mm	
No. teeth, gear	<b>288</b>		Lead angle at Bks	<b>2.1481</b>	°	

### Ott worm gear

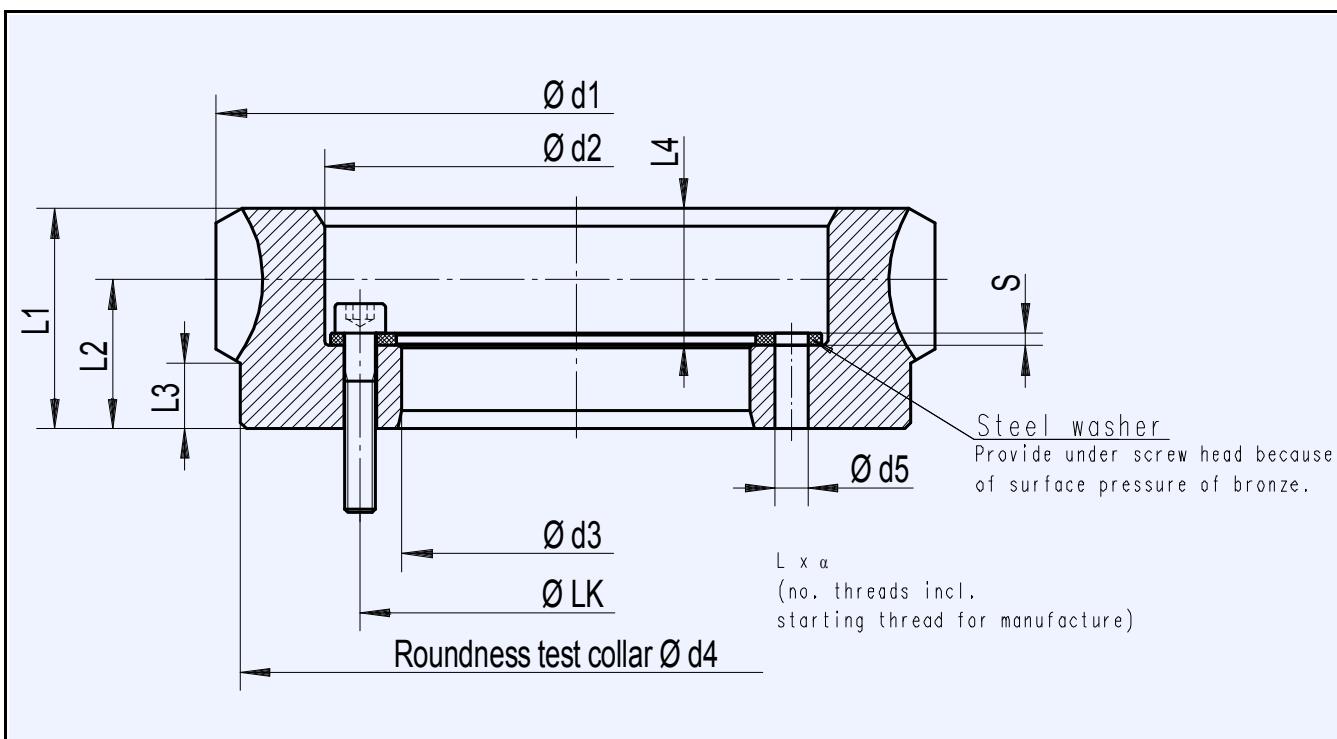
**OTT no: 4862 SSR**



Gear selection by load type and application					
Series R1	a) random even load around gear b) absolutely smooth operation c) minimal acceleration and deceleration moments d) maximum 1 start per minute (60 per hour) e) up to 10% operating time per hour (6 minutes)	Series R4	a) segmental varying load on gear b) with uneven shock loads c) large acceleration and deceleration moments d) maximum 60 starts per minute (3600 per hour) e) up to 75% operating time per hour (45 minutes)	Lubricant: <b>Synthetic oil</b>	
Application:	Measurement and test machinery drives, CNC axes	Application:	Rotary tables with unfavourable cutting conditions, Trunion axes, CNC axes, milling spindles		
Series R2	a) random even load around gear b) absolutely smooth operation c) minimal acceleration and deceleration moments d) maximum 6 starts per minute (360 per hour) e) up to 25% operating time per hour (15 minutes)	Series R5	a) loads limited only to eccentric gear segment b) heavy, uneven shock loads c) largest acceleration and deceleration moments d) maximum 180 starts per minute (10,800 per hour) e) up to 100% operating time per hour (60 minutes)		
Application:	Index tables, circular feed drives and CNC axes for mainly smooth, controlled applications	Application:	Heavy milling and trunion drives, CNC axes with unfavourable conditions		
Series R3	a) random changing load on gear b) small shock loads c) large acceleration and deceleration moments d) maximum 20 starts per minute (1200 per hour) e) up to 50% operating time per hour (30 minutes)	<b>Zahnradfertigung OTT</b> Blöhsteinstraße 20 D-72411 Bodelshausen www.zahnrad-ott.de			
Application:	Index tables, rotary tables for circular milling with relatively favourable cutting conditions, CNC axes	Tel.	07471 - 705 0	Fax.	07471 - 705 39
		Email.	Info@zahnrad-ott.de		

## Info on OTT worm gears

### OTT worm gear



Centre distance	L1	L2	L3	L4	d1	d2	d3	d4	d5	Lxα	LK	S
67	36	24	10	23	105	75	48	97	5,5	12x30°	63	2
75	37	25	11	23	120	84	58	112	5,5	12x30°	72	2
82	35	22	9	24	130	104	78	125	5,5	12x30°	92	2
96	37	22	6	27	160	124	98	156	5,5	18x20°	112	2
110	45	29	12	30	184	148	118	174	6,6	24x15°	135	2
125	48	30	11	32	214	178	148	206	6,6	36x10°	165	2
145	58	38	16	36	244	207	178	234	6,6	48x7,5°	194	3
165	57	36	13	37	284	245	218	274	6,6	48x7,5°	232	3
195	61	38	14	31	345	297	258	335	9	36x10°	280	3
235	66	40	13	35	415	359	323	405	9	36x10°	342	3
270	65	39	12	35	486	432	393	476	9	48x7,5°	415	3
305	69	42	14	36	560	499	458	550	9	48x7,5°	482	3
340	78	48	15	40	620	564	518	602	11	48x7,5°	544	3
380	73	45	14	37	700	630	578	680	11	48x7,5°	610	3
430	75	45	13	40	800	704	648	782	13,5	48x7,5°	680	3

**Single flank tangential composite error testing of OTT worm gears as per DIN 3974**

Our OTT worm gears are subjected to extensive testing. In the single flank test, the worm drives the worm gear below the recommended centre distance. A small tooth flank clearance is set. Here, either the right or left flanks are in constant contact, brought about by slight braking of the worm gear.

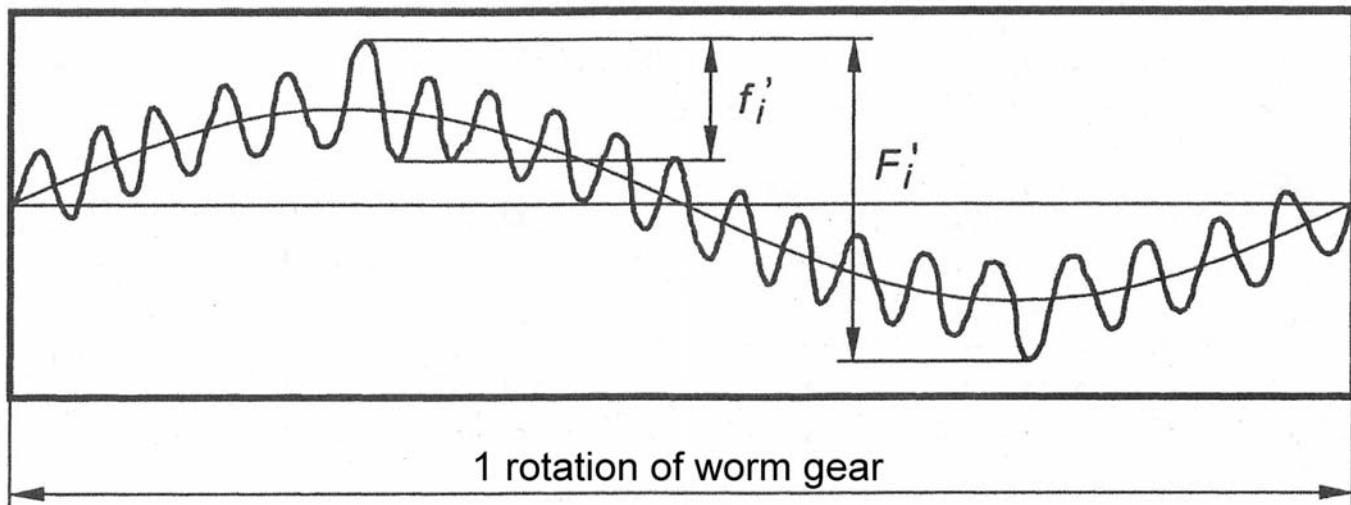
Measurements are taken of the deviations from constant motion transfer caused by the teeth ratios of the driving worm and the driven worm gear. The rotational error, so to speak, between worm and worm gear is measured.

The diagram of the flank test shows by how many angular seconds or  $\mu\text{m}$  the worm gear advances or decreases in relation to the nominal rotation.

To convert  $\mu\text{m}$  to angular seconds or vice versa:

In the case of a worm gear working circle of 412 mm 1  $\mu\text{m}$  equals 1 angular second. The conversion of angular seconds into  $\mu\text{m}$  or vice versa can easily be done using the rule of three. In the case of a worm gear working circle of, for example, 206 mm 1  $\mu\text{m}$  equals 2 angular seconds.

The permissible error for the gears given in this catalogue can be found on the following page, in both angular seconds and  $\mu\text{m}$ .



$F_i'$  = Tangential composite error (largest rotation error within one worm gear revolution)

$f_i'$  = Tangential tooth-to-tooth composite error (largest rotation error within the duration on one tooth meshing)

The **OTT worm gear** is made in its standard form in **Quality 3** as per **DIN 3974**  
 Tangential composite error test carried out. Better qualities are possible upon request.

OTT-Nr.	Fi' [wsec]	fi'm [wsec]	Fi' [µm]	fi'm [µm]	OTT-Nr.	Fi' [wsec]	fi'm [wsec]	Fi' [µm]	fi'm [µm]
<a href="#">4849 SSR</a>	59,0	28,0	14,0	6,5	<a href="#">5834 SSR</a>	30,0	11,0	17,0	6,5
<a href="#">4866 SSR</a>	58,0	27,0	14,0	6,5	<a href="#">5722 SSR</a>	30,0	11,0	17,0	6,5
<a href="#">4859 SSR</a>	50,0	23,0	12,0	5,5	<a href="#">4875 SSR</a>	24,0	9,5	14,0	5,5
<a href="#">4830 SSR</a>	49,0	22,0	12,0	5,5	<a href="#">2788 SSR</a>	30,0	11,0	17,0	6,5
<a href="#">4812 SSR</a>	49,0	22,0	12,0	5,5	<a href="#">5721 SSR</a>	30,0	11,0	17,0	6,5
<a href="#">4831 SSR</a>	48,0	22,0	12,0	5,5	<a href="#">4815 SSR</a>	24,0	9,5	14,0	5,5
<a href="#">4863 SSR</a>	43,0	20,0	12,0	5,5	<a href="#">4821 SSR</a>	24,0	9,5	14,0	5,5
<a href="#">5422 SSR</a>	43,0	20,0	12,0	5,5	<a href="#">4842 SSR</a>	24,0	9,5	14,0	5,5
<a href="#">4885 SSR</a>	43,0	20,0	12,0	5,5	<a href="#">4860 SSR</a>	25,0	9,5	17,0	6,5
<a href="#">4871 SSR</a>	43,0	20,0	12,0	5,5	<a href="#">4876 SSR</a>	26,0	10,0	17,0	6,5
<a href="#">4872 SSR</a>	43,0	20,0	12,0	5,5	<a href="#">4854 SSR</a>	25,0	9,5	17,0	6,5
<a href="#">4873 SSR</a>	43,0	20,0	12,0	5,5	<a href="#">4827 SSR</a>	21,0	8,0	14,0	5,5
<a href="#">4813 SSR</a>	42,0	19,0	12,0	5,5	<a href="#">4819 SSR</a>	21,0	8,0	14,0	5,5
<a href="#">4801 SSR</a>	40,0	18,0	12,0	5,5	<a href="#">4864 SSR</a>	22,0	8,0	18,0	6,5
<a href="#">2833 SSR</a>	40,0	18,0	12,0	5,5	<a href="#">5362 SSR</a>	22,0	8,0	18,0	6,5
<a href="#">4835 SSR</a>	43,0	18,0	13,0	5,5	<a href="#">4845 SSR</a>	22,0	8,0	18,0	6,5
<a href="#">5266 SSR</a>	40,0	18,0	12,0	5,5	<a href="#">4805 SSR</a>	22,0	8,0	18,0	6,5
<a href="#">4884 SSR</a>	43,0	18,0	13,0	5,5	<a href="#">4822 SSR</a>	18,0	6,5	15,0	5,5
<a href="#">4824 SSR</a>	40,0	18,0	12,0	5,5	<a href="#">4865 SSR</a>	18,0	6,5	15,0	5,5
<a href="#">2735 SSR</a>	43,0	18,0	13,0	5,5	<a href="#">4870 SSR</a>	18,0	6,5	18,0	6,5
<a href="#">4833 SSR</a>	42,0	18,0	13,0	5,5	<a href="#">4806 SSR</a>	22,0	8,0	21,0	8,0
<a href="#">4837 SSR</a>	35,0	15,0	13,0	5,5	<a href="#">4808 SSR</a>	18,0	6,5	18,0	6,5
<a href="#">4856 SSR</a>	43,0	17,0	16,0	6,5	<a href="#">4843 SSR</a>	18,0	6,5	18,0	6,5
<a href="#">4803 SSR</a>	35,0	15,0	13,0	5,5	<a href="#">5655 SSR</a>	18,0	6,5	18,0	6,5
<a href="#">4848 SSR</a>	43,0	17,0	16,0	6,5	<a href="#">4807 SSR</a>	18,0	6,5	18,0	6,5
<a href="#">4802 SSR</a>	35,0	15,0	13,0	5,5	<a href="#">4883 SSR</a>	18,0	7,0	21,0	8,0
<a href="#">4823 SSR</a>	34,0	15,0	13,0	5,5	<a href="#">4882 SSR</a>	18,0	7,0	21,0	8,0
<a href="#">5448 SSR</a>	37,0	15,0	16,0	6,5	<a href="#">4880 SSR</a>	16,0	5,5	18,0	6,5
<a href="#">4867 SSR</a>	30,0	13,0	13,0	5,5	<a href="#">4809 SSR</a>	16,0	5,5	18,0	6,5
<a href="#">4847 SSR</a>	37,0	15,0	16,0	6,5	<a href="#">4829 SSR</a>	16,0	6,0	21,0	8,0
<a href="#">4817 SSR</a>	30,0	13,0	13,0	5,5	<a href="#">4851 SSR</a>	16,0	6,0	21,0	8,0
<a href="#">4800 SSR</a>	30,0	13,0	13,0	5,5	<a href="#">4816 SSR</a>	14,0	5,0	18,0	6,5
<a href="#">4814 SSR</a>	30,0	13,0	13,0	5,5	<a href="#">4828 SSR</a>	14,0	5,0	18,0	6,5
<a href="#">1664 SSR</a>	30,0	12,0	13,0	5,5	<a href="#">4818 SSR</a>	13,0	4,5	19,0	6,5
<a href="#">5549 SSR</a>	32,0	13,0	16,0	6,5	<a href="#">4810 SSR</a>	13,0	4,5	19,0	6,5
<a href="#">4879 SSR</a>	32,0	13,0	16,0	6,5	<a href="#">5489 SSR</a>	11,0	4,0	16,0	6,0
<a href="#">4877 SSR</a>	26,0	11,0	13,0	5,5	<a href="#">4811 SSR</a>	13,0	5,0	22,0	8,0
<a href="#">4804 SSR</a>	32,0	13,0	16,0	6,5	<a href="#">4855 SSR</a>	11,0	4,0	19,0	6,5
<a href="#">5741 SSR</a>	32,0	13,0	16,0	6,5	<a href="#">4825 SSR</a>	11,0	4,0	19,0	6,5
<a href="#">4853 SSR</a>	32,0	13,0	16,0	6,5	<a href="#">4869 SSR</a>	9,5	3,5	16,0	6,0
<a href="#">4861 SSR</a>	26,0	11,0	13,0	5,5	<a href="#">4850 SSR</a>	12,0	4,0	22,0	8,0
<a href="#">4846 SSR</a>	26,0	11,0	13,0	5,5	<a href="#">4820 SSR</a>	10,0	3,5	19,0	6,5
					<a href="#">4862 SSR</a>	10,0	3,5	19,0	6,5



## Selecting a lubricant

The more pressure-resistant the oil in each application,  
the less metal contact and wear.

**- The goal is hydrodynamic lubrication -**

However, the choice of a suitable lubricant viscosity depends on many factors and differs from application to application.

<b>Greater operational loading</b>	- <b>Greater lubricant viscosity</b>
<b>Lower operational loading</b>	- <b>Lower lubricant viscosity</b>
<b>Greater contact velocity</b>	- <b>Lower lubricant viscosity</b>
<b>Lower contact velocity</b>	- <b>Greater lubricant viscosity</b>

Acceleration, bearing type and design, switch-on duration, oil quantity, installation location, operating temperature, housing design, application, etc. also play a major role in the selection of a lubricant and its viscosity.

**This applies not only to OTT worm gears,  
but also to worm gears in general.**

We assume that the system supplier will know the application and usage and take this into account when choosing the lubricant and/or its viscosity.

### **Advantages of grease over oil lubrication**

- less structural outlay
- simple gasket design and less risk of leaks
- effective support for seals through grease escape or "grease rim formation"
- life-long lubrication possible, so less frequent servicing is needed
- with high-speed greases, dispensed quantities of grease and running-in, lower bearing temperatures can be achieved at higher revolutions

### **Disadvantages of grease over oil lubrication**

- no removal of impurities possible, especially with minimal grease lubrication
- lower threshold speeds and/or permissible speed values
- no heat dispersal possible

## Recommended lubrication

Oil viscosity and lubrication type for Ott worm gears, as a factor of the contact velocity and the expected operating temperature							
Contact velocity [m/s]	possible lubrication type			Lubricating oil as per ISO VG DIN 51519			
> 18 -				68	80	100	150
> 9 - 18				80	100	150	220
> 3 - 9				100	150	220	320
0 - 3				150	220	320	460
Oil spray lubrication				23°	30°	40°	50°
Oil immersion lubrication							60°
Liquid grease				expected operating temperature in °C			
DIN 51561	Kinemat. viscosity in mm²/s in			e.g. Synthetic lubricants		GH 6 oils are high-temperature gear oils offering high scuffing load capacity and wear resistance. They are especially resistant to ageing and oxidation. They were developed for lubricating worm gears in steel/bronze. <i>Not for aluminium/bronze!</i> GH 6 oils do <u>not</u> mix with mineral oil! Their compatibility with colour coatings and seals should be checked.	
	20°C	40°C	100°C	Klüber gear lubricants			
CLP PG 80	205	80	16	Gear oils		Klübersynth GE 46-1200	
CLP PG 100	270	100	20	Klübersynth GH 6-100			
CLP PG 150	400	150	28	Klübersynth GH 6-150		Structovis P LIQUID	
CLP PG 220	630	220	41	Klübersynth GH 6-220			
CLP PG 320	880	320	58	Klübersynth GH 6-320		Structovis P LIQUID	
CLP PG 460	1240	460	79	Klübersynth GH 6-460			
DIN 51561	Kinemat. viscosity in mm²/s in			e.g. Synthetic lubricants		EG - 4 oils are high-performance gear oils which are <u>also</u> suitable for worm gear lubrication with <u>aluminium/bronze</u> worm gears. EG - 4 oils are miscible with mineral oil and react neutrally with seal materials and colour coatings. They have excellent wear anti-wear and corrosion properties.	
	20°C	40°C	100°C	Klüber gear lubricants			
CLP HC 150		150	18	Gear oils		KLÜBERPLEX GE 11 - 680 (this grease is a mineral lubricant)	
CLP HC 220		220	24	Klübersynth EG 4-220			
CLP HC 320		320	30	Klübersynth EG 4-320		KLÜBERPLEX GE 11 - 680 (this grease is a mineral lubricant)	
CLP HC 460		460	38	Klübersynth EG 4-460			
CLP HC 680		680	50	Klübersynth EG 4-680		KLÜBERPLEX GE 11 - 680 (this grease is a mineral lubricant)	
CLP HC 1000		1000	65	Klübersynth EG 4-1000			
DIN 51561	Kinemat. viscosity in mm²/s in			e.g. Mineral lubricants		GEM 1 oils are mineral high-performance gear and multipurpose oils.	
	20°C	40°C	100°C	Klüber gear lubricants			
CLP 68	200	68	8	Gear oils		KLÜBERPLEX GE 11 - 680	
CLP 100	330	100	11	Klüberoil GEM 1-100 N			
CLP 150	570	150	15	Klüberoil GEM 1-150 N		KLÜBERPLEX GE 11 - 680	
CLP 220	820	220	18	Klüberoil GEM 1-220 N			
CLP 320	1350	320	24	Klüberoil GEM 1-320 N		KLÜBERPLEX GE 11 - 680	
CLP 460	1970	460	29	Klüberoil GEM 1-460 N			



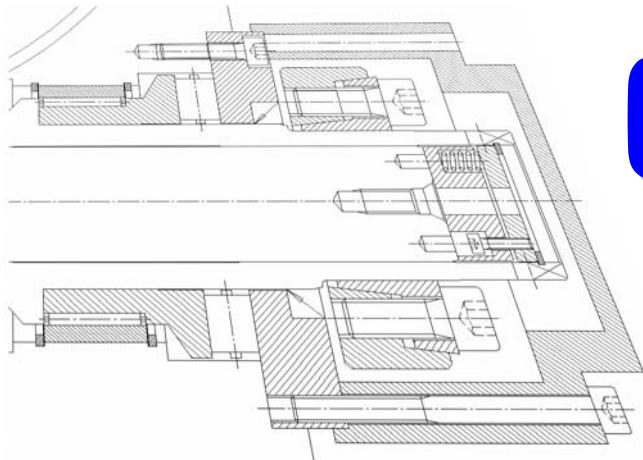
## Type G1 Gear Catalogue

Zahnradfertigung Ott  
Blöhsteinstraße 20  
D-72411 Bodelshausen

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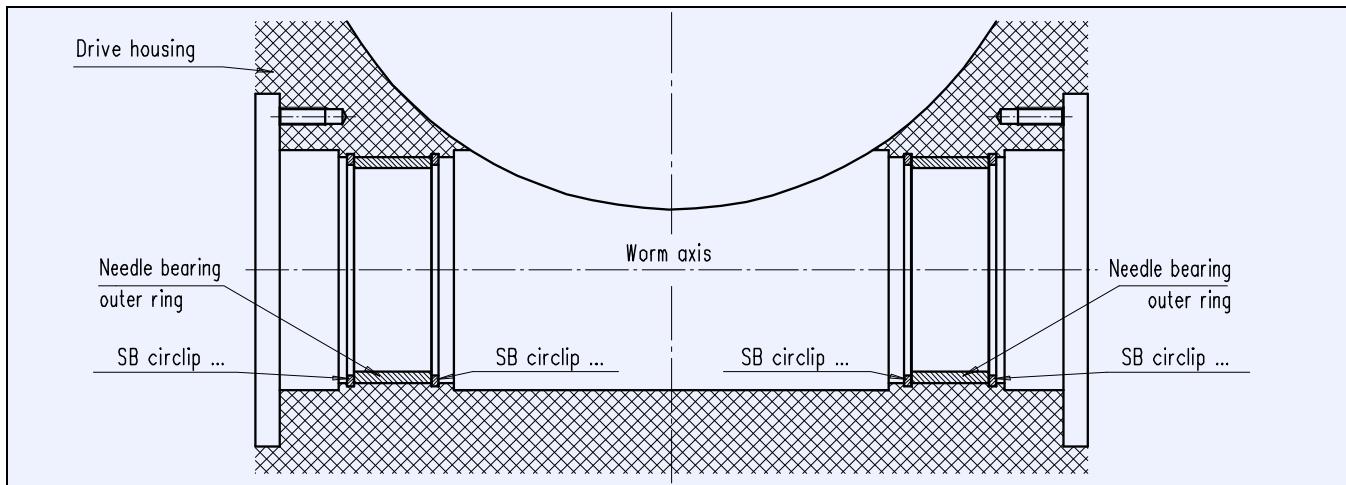
Installation Instructions

# Installation Instructions

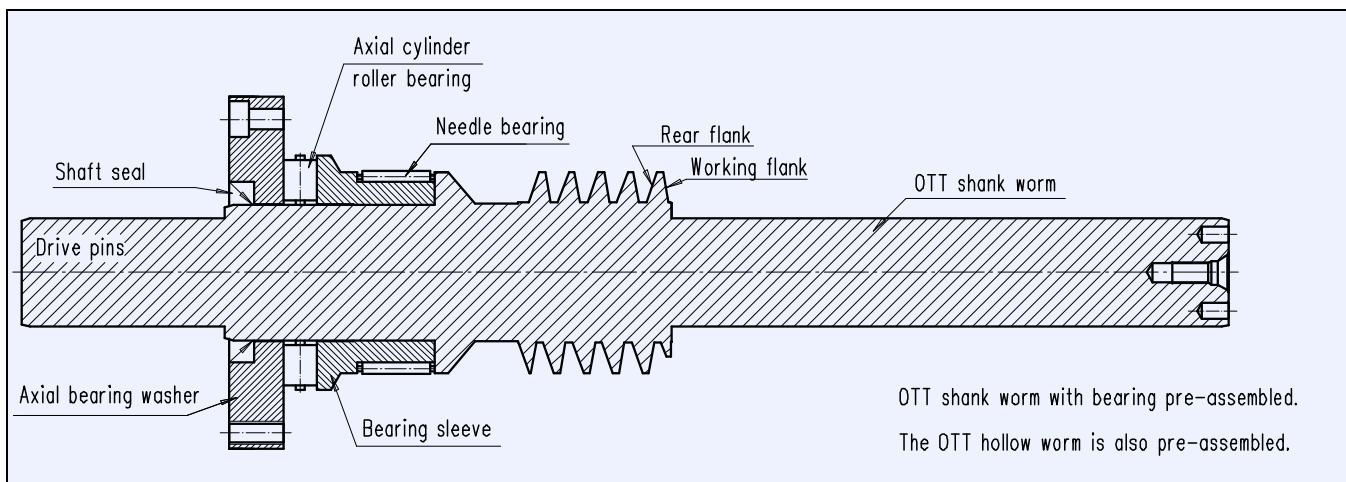


**OTT Worm Gears**  
**Type G1**

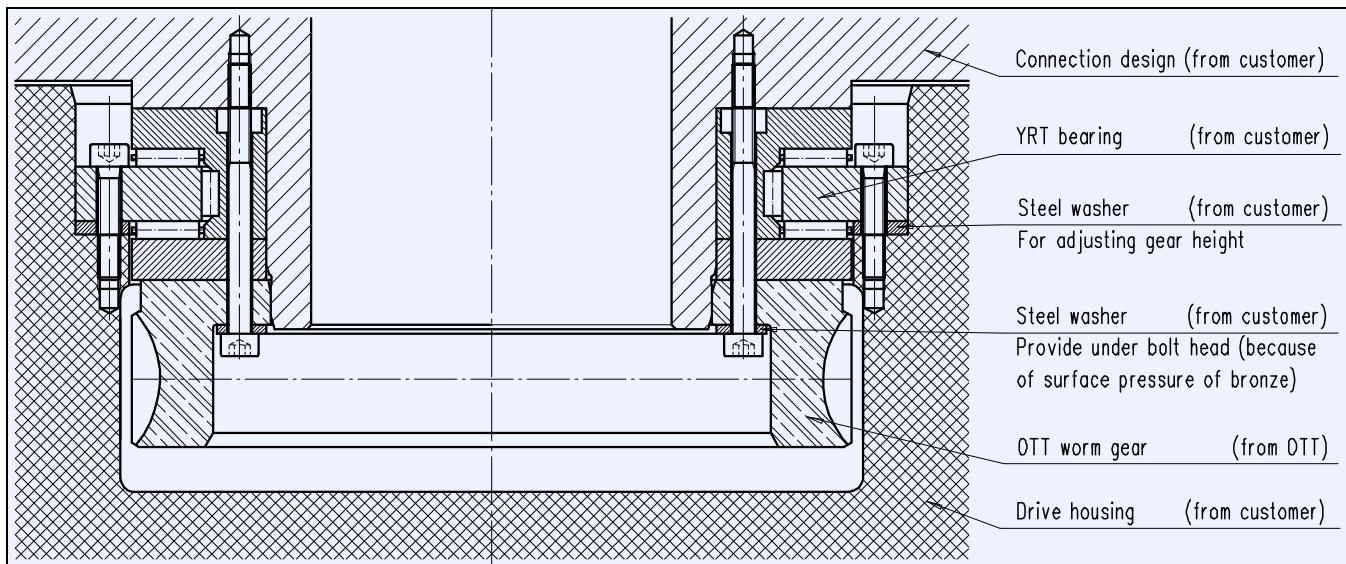




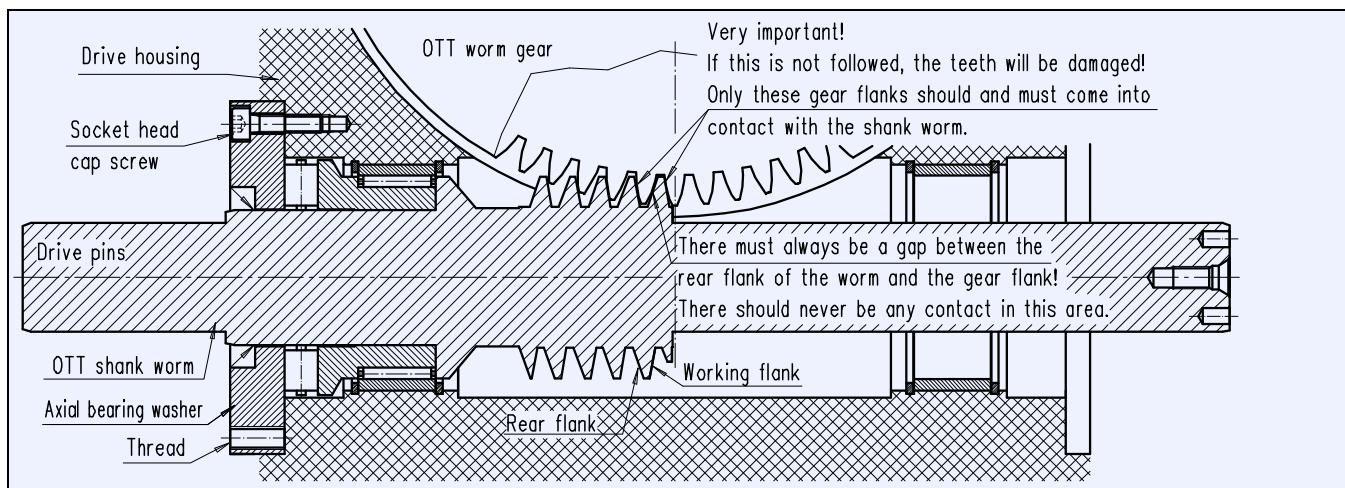
- 1.) Install rear SB circlip in gear housing.
- 2.) Insert needle bearing outer ring and secure with front SB circlip.



- 3.) Pre-assemble shank worm and hollow worm with bearing sleeve and radial needle bearing.



- 4.) Install worm gear - at suitable installed height of gear - in the gear housing.



5.) Lubricate working flank of shank worm.

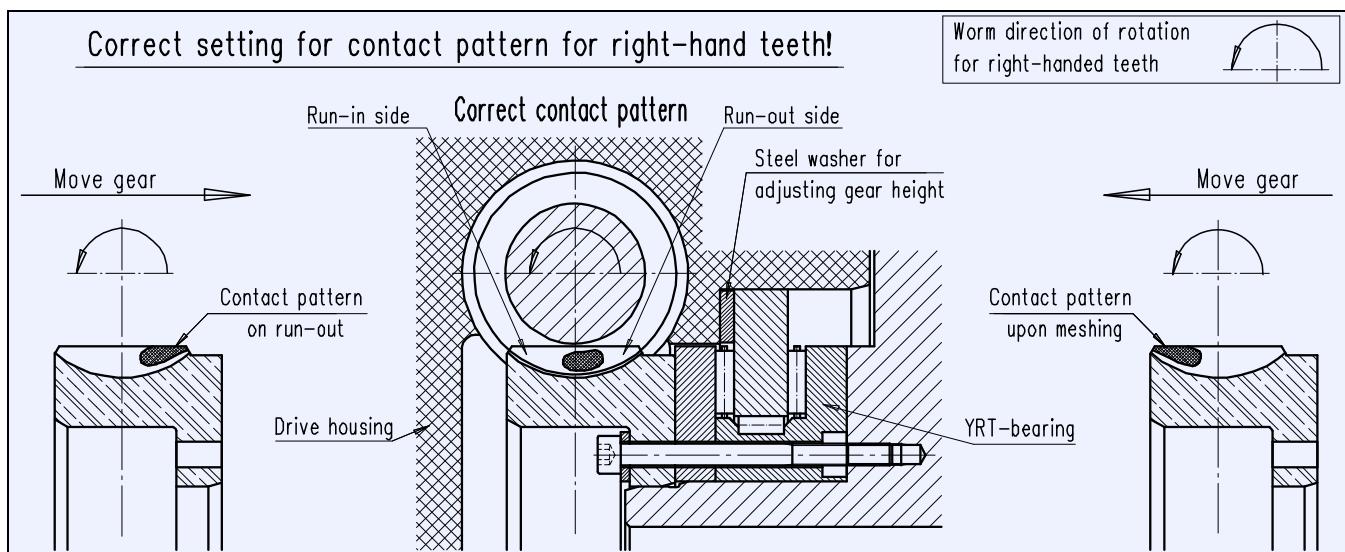
**Important:** Right-turning worms are attached to gear by turning clockwise!

Left-turning worms are attached to gear by turning anticlockwise!

6.) Press shank worm against gear face. **Do not draw in!**

7.) **Important:** Screw in shank worm up to the centre of the gear, not beyond it.

8.) Mount axial bearing on shank worm and screw to axial bearing end cover, using a torque wrench to tighten the screws.

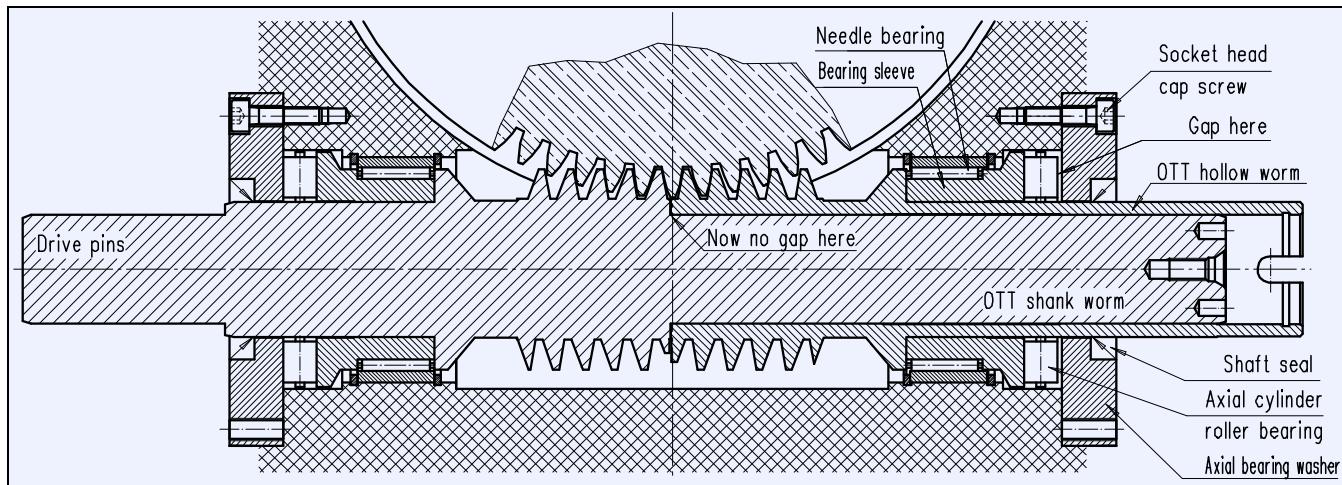


9.) Press worm gear against the shank worm and thus against its axial bearing.

10.) When the shank worm is drawn slowly back and there is a simultaneous torsional load by the gear on the shank worm, the gear flank contacts the working flank of the shank worm and is spot-lubricated by it.

11.) Check contact pattern on the gear flank (see Fig.).

12.) **If necessary, correct the contact pattern by adjusting the height of the gear,** then check again. The amount of steel washer depth adjustment to change the height depends on the pitch of the individual gear!

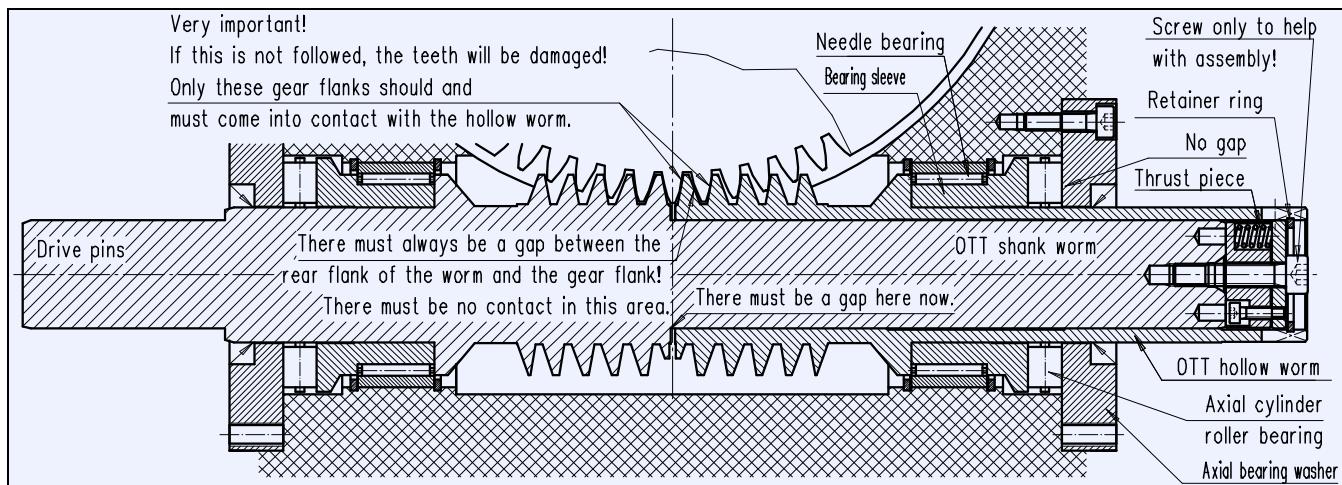


13.) Place hollow worm on shank worm, and press shank worm on to gear flank. **Do not draw in!**

14.) The shank worm should not rotate, and the gear must be pressed against the working flank.

Important: The rear flank of the worm should not touch the gear flank.

15.) Mount axial bearing on hollow worm and screw on to axial bearing end cover, using a torque wrench to tighten the screws.



16.) Hold the shank worm firmly and turn the hollow worm in the opposite direction to slide the worm halves against the working flank. There will be an even clearance of the flanks and axial bearing. There will now be a gap between the shank worm and the hollow worm.

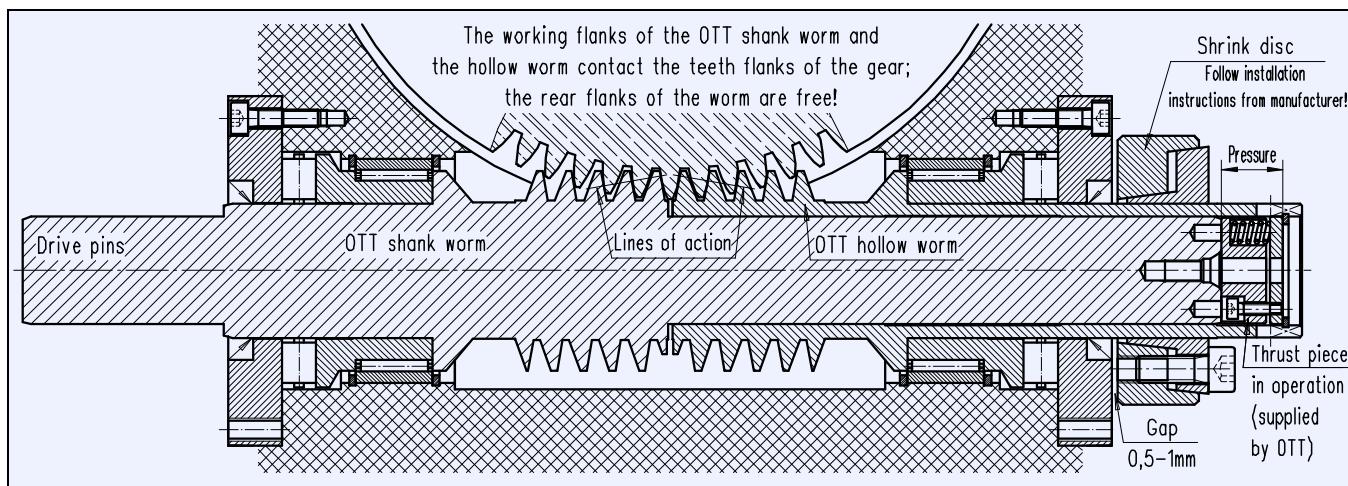
Important: The flank clearance is reduced by turning right-turning worms to the left.

It is reduced in the case of left-turning worms by turning them to the right.

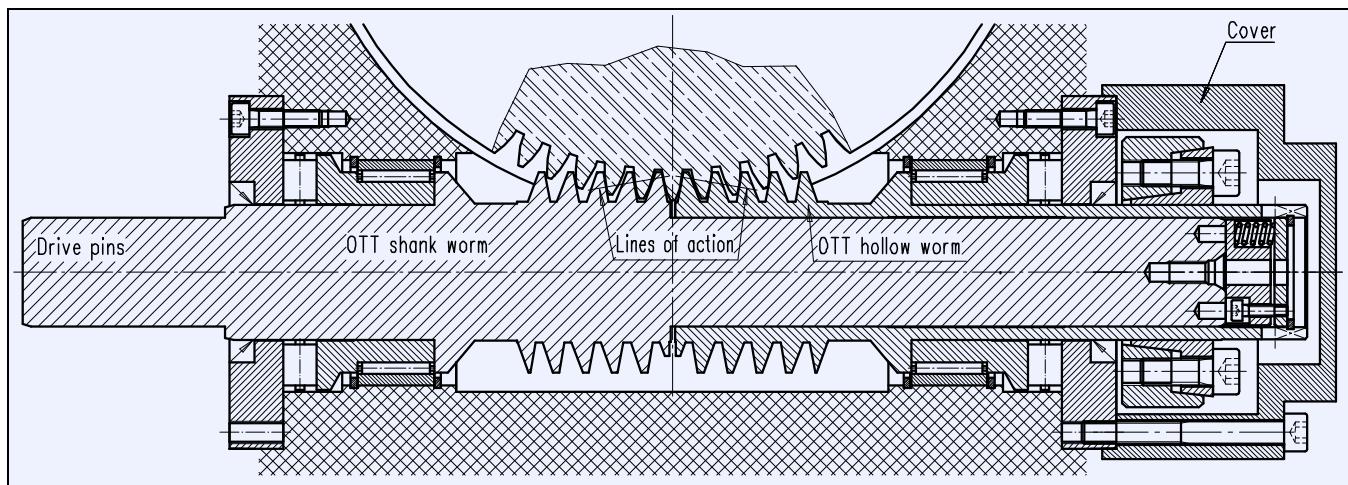
17.) Screw the thrust piece to the shank worm.

18.) Insert SB spring ring in the hollow worm bore.

19.) The mounting screw must now be removed from the thrust piece.



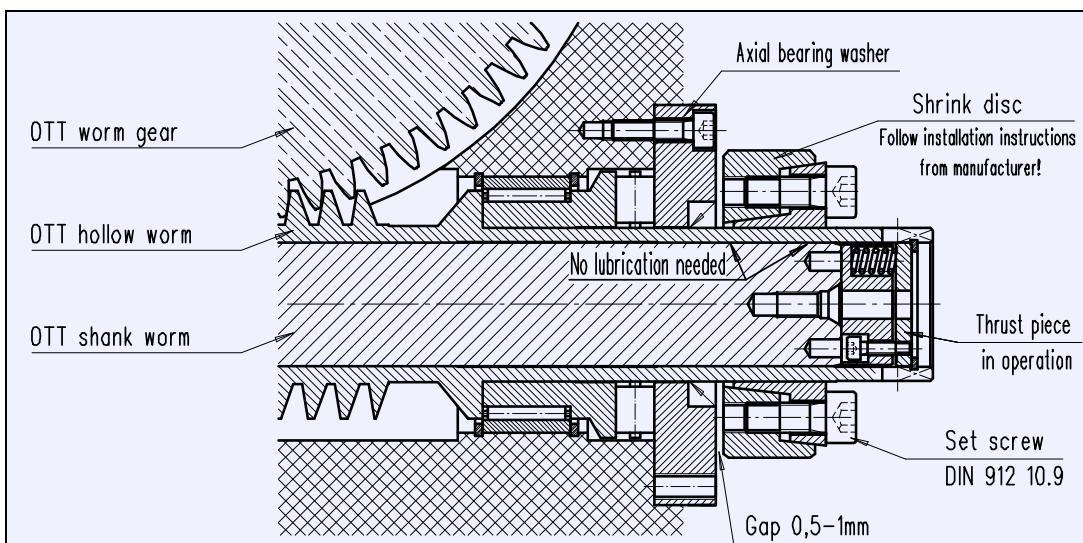
- 20.) Place shrink disc on the hollow worm. There must be a gap between the shrink disc and the axial bearing end cover.
- 21.) A larger flank clearance must be set because the clearance is reduced by heating.
- 22.) Install shrink disc according to manufacturer's instructions.
- 23.) Check axial bearing **and set flank clearances** after tightening the shrink disc.
- 24.) Fill with suitable gear oil.
- 25.) Test-run gear, monitoring temperature and flank clearance changes.
- 26.) Once the maximum operating temperature has been reached, the residual flank clearance can be set to 0.00 while the gear is warm.



- 27.) The cover can be put in place after the final flank clearance adjustment.

**Your OTT worm gear is now ready for use!**

## Mounting and demounting the shrink disc



### Mounting

The shrink discs are supplied ready-to-install. They should not be removed before the initial tightening.

#### 1 Degrease the hub bore and the shaft!

2 Slip the shrink disc onto the hub. The outer surface of the hub can be greased near the shrink disc seat.

#### **WARNING!**

Never torque the bolts before the shaft has been inserted.

3 Insertion of shaft and sliding hub onto shaft

#### 4 Torque all bolts slowly until the front-side faces of the outer and inner rings align.

5 The correct tightness can then be checked visually.

### Demounting

The loosening process is similar to the tightening process.

1 The bolts should be undone evenly and in sequence in order to release the stored energy in the outer ring slowly during demounting.

Start with just a quarter turn.

#### **WARNING!**

Under no circumstances should the bolts be withdrawn one after the other.

If the outer ring does not come away by itself after approx. one turn of all bolts, it can be detensioned using a kickback thread by screwing some of the adjacent bolts into the thread.

The outer ring will be supported by the remaining bolts while it is being released.

This procedure must be repeated until the outer ring comes off.

2 Removal of shaft and hub from shaft

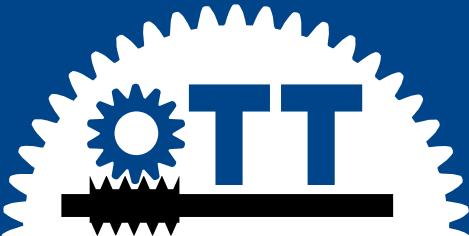
Any rust which may have formed on the shaft in front of the hub must be removed first.

3 Remove the shrink disc from the hub.

### Tightening bolts

DIN 912 inner-hex head bolts are normally used, quality 10.9!

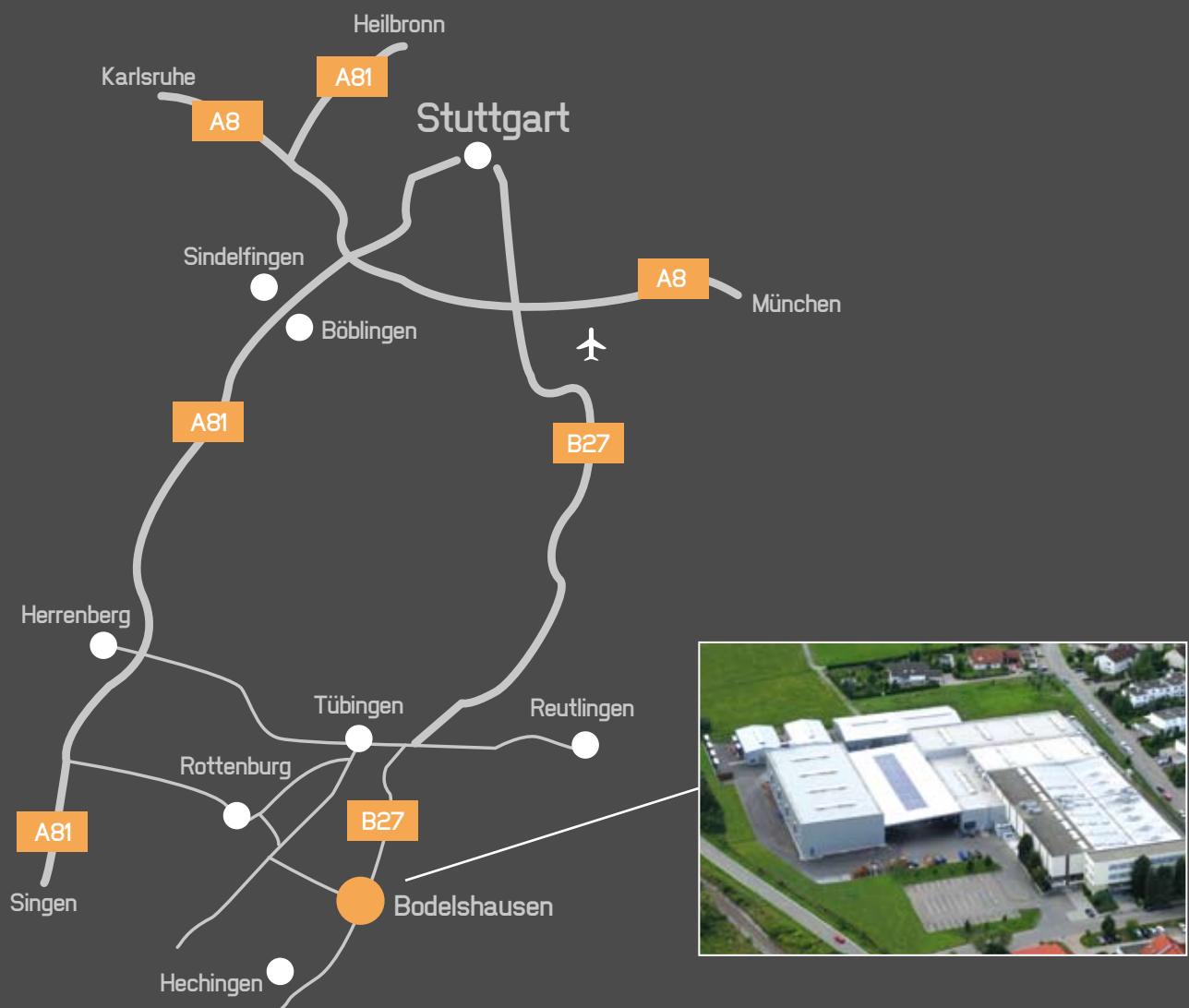
## Notes



...toothed  
innovations!

# Zahnradfertigung OTT

## How to find us!



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