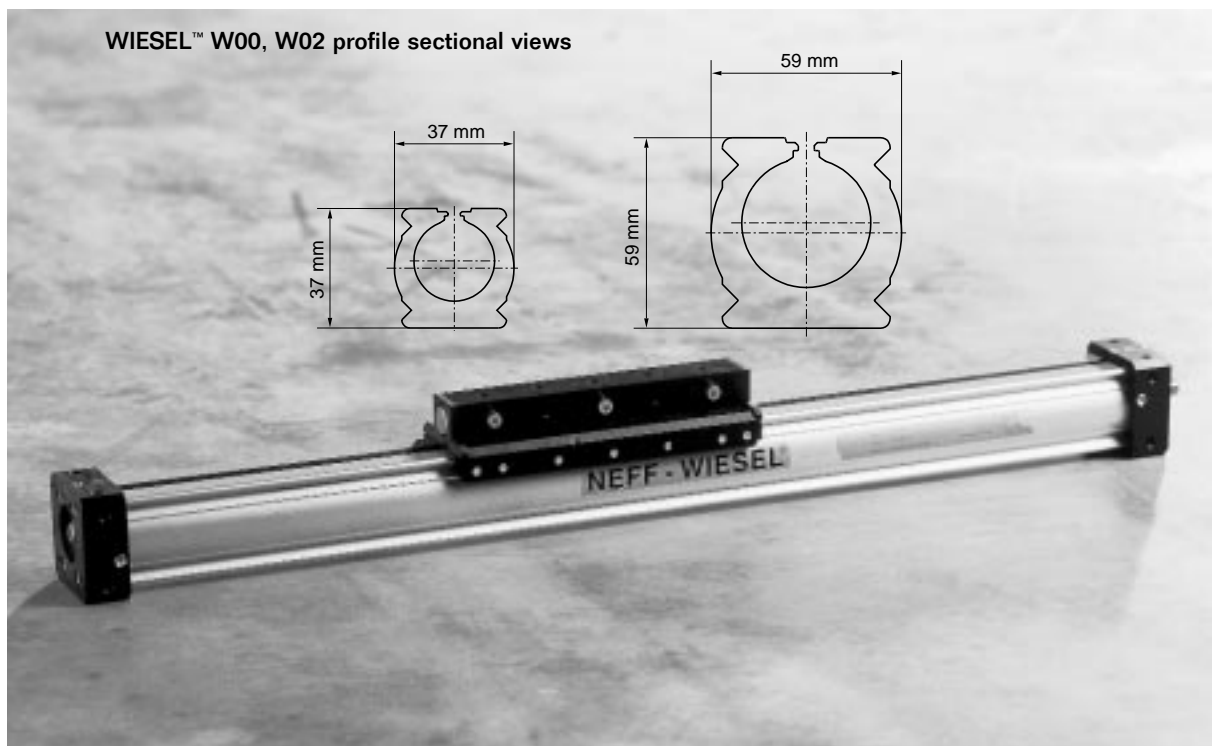


# Mechanical linear drive units

## WIESEL™ WO

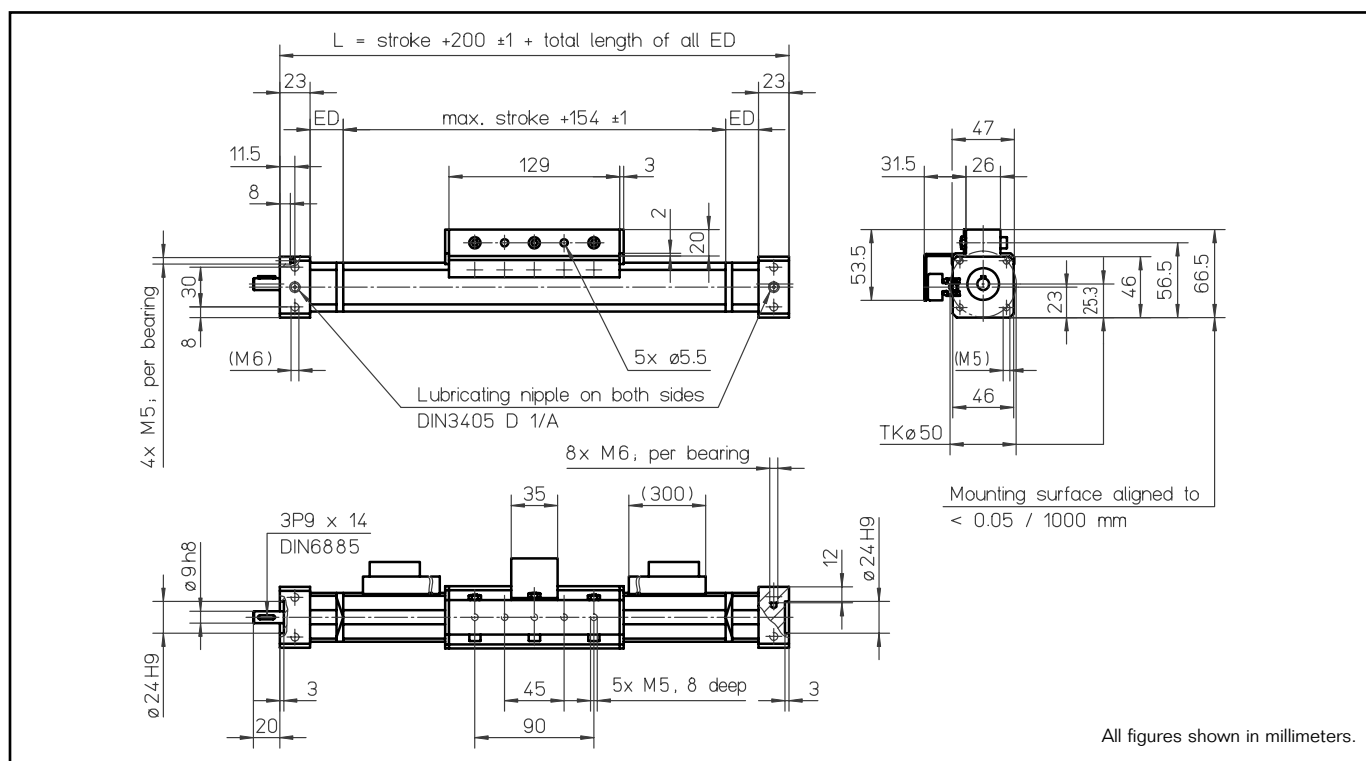
### WIESEL™ W00, W02

- Rigid aluminum profile with guide slot
- Power bridge with external sliding guide
- Completely protected precision screw drive
- High speeds thanks to patented spindle supports
- Available with ball screw drive or trapezoidal screw drive



# WIESEL™ W00

with ball screw drive and sliding guide



## Technical data

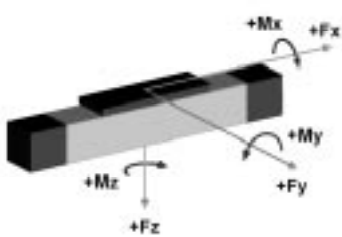
Linear speed: .....max. 0.25 m/s  
 Repeatability: .....± 0.05 mm  
 Acceleration: .....max. 5 m/s<sup>2</sup>  
 Rotational speed: .....max. 3000 rpm  
 Drive element: .....ball screw drive  
 Diameter: .....12 mm  
 Lead: .....4 or 5 mm  
 Stroke length: .....30 up to 1000 mm  
 Geometrical moment of inertia: .....ly 9.76 x 10<sup>4</sup> mm<sup>4</sup>  
 lz 9.26 x 10<sup>4</sup> mm<sup>4</sup>

## Weights

Base without stroke: .....2.00 kg  
 100 mm stroke: .....0.20 kg  
 Carriage: .....0.20 kg

Trapezoidal screw drive on request (4, 8 and 12 mm lead)

## Loads and load moments



Load	dynam. [N]
Fx drive	200
Fy	200
± Fz	250

Load moment	dynam. [Nm]
Mx	6
My	15
Mz	10

Order Code see page 101

## Unit conversions

**Length:**  
 1 m=1000 mm=39.37 inches  
 1 inch=25.4 mm

**Force:**  
 1 N=0.225 lbf  
 1 lbf=4.45 N

**Moment of Force:**  
 1 Nm=0.738 lb · ft=8.85 lb · inches  
 1 lb · ft=1.36 Nm

**Geometrical moment of inertia:**  
 1 m<sup>4</sup>=10<sup>12</sup> mm<sup>4</sup>=2.4025 x 10<sup>6</sup> in<sup>4</sup>

**Mass moment of inertia:**  
 1 kg · m<sup>2</sup>=10<sup>4</sup> kg · cm<sup>2</sup>=0.738 lb · ft · s<sup>2</sup>

**Mass:**  
 1 kg=2.2 lb

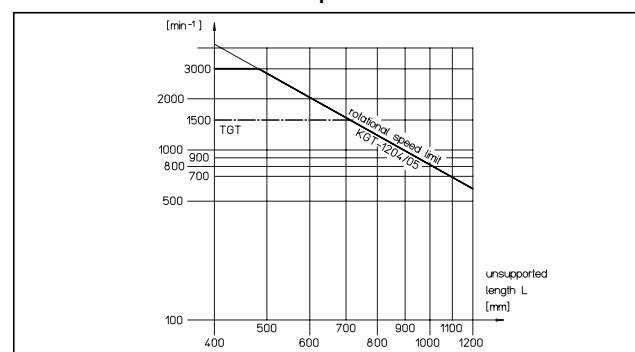
## Idle torques [Nm]

Rotational speed [rpm]	Lead P [mm]	
	4	5
150	0.20	0.20
1500	0.35	0.35
3000	0.5	0.5

## Extra length with end dampers

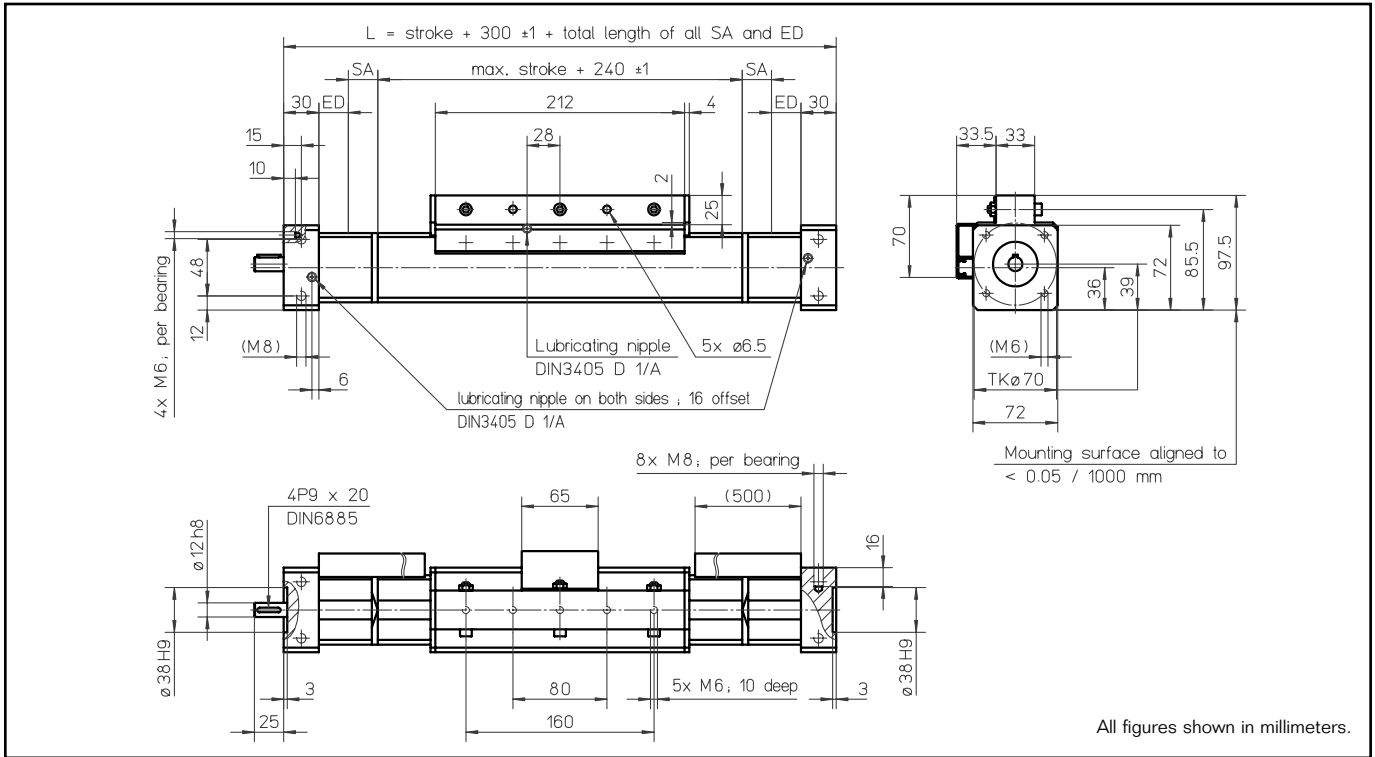
Length [mm]	L <sub>ED</sub> [mm]
30	2 ED

## Theoretical critical rotational speed



# WIESEL™ W02

with ball screw drive and sliding guide



### Technical data

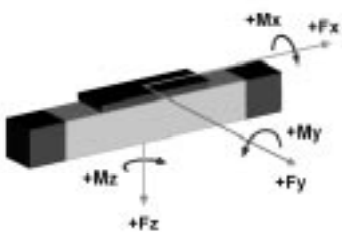
Linear speed: .....max. 0.1 m/s  
 Repeatability: .....± 0.05 mm  
 Acceleration:  
 Single lead nut: .....max. 5 m/s<sup>2</sup>  
 Double lead nut: .....max. 10 m/s<sup>2</sup>  
 Rotational speed: .....max. 3000 rpm  
 Drive element: .....ball screw drive  
 Diameter: .....20 mm  
 Lead: .....5 or 20 mm  
 Stroke length: .....40 up to 5200 mm  
 Geometrical moment of inertia: .....ly 6.52 x 10<sup>5</sup> mm<sup>4</sup>  
 lz 5.99 x 10<sup>5</sup> mm<sup>4</sup>

### Weights

Base without stroke: .....3.60 kg  
 100 mm stroke: .....0.70 kg  
 Carriage: .....0.60 kg

Trapezoidal screw drive on request (4, 8 and 16 mm lead)

### Loads and load moments



Load	dynam. [N]
Fx drive 2005	2500
Fy drive 2020	1500
Fy	500
± Fz	650
Load moment	dynam. [Nm]
Mx	30
My	70
Mz	50

Order Code see page 101

### Unit conversions

**Length:**  
 1 m=1000 mm=39.37 inches  
 1 inch=25.4 mm

**Force:**  
 1 N=0.225 lbf  
 1 lbf=4.45 N

**Moment of Force:**  
 1 Nm=0.738 lb • ft=8.85 lb • inches  
 1 lb • ft=1.36 Nm

**Geometrical moment of inertia:**  
 1 m<sup>4</sup>=10<sup>12</sup> mm<sup>4</sup>=2.4025 x 10<sup>6</sup> in<sup>4</sup>

**Mass moment of inertia:**  
 1 kg • m<sup>2</sup>=10<sup>4</sup> kg • cm<sup>2</sup>=0.738 lb • ft • s<sup>2</sup>

**Mass:**  
 1 kg=2.2 lb

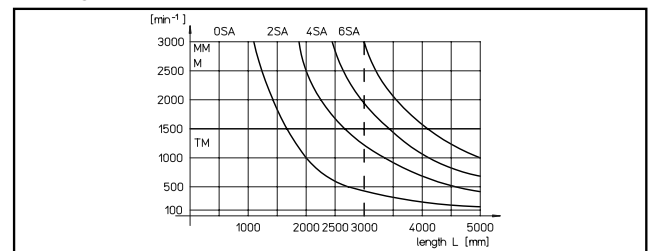
### Idle torques [Nm]

Rotational speed [rpm]	Lead P [mm]			
	MM 5	MM 20	M 5	M 20
150	0.75	1.00	0.50	0.70
1500	1.30	1.50	1.00	1.35
3000	1.75	2.00	1.50	1.80

### Extra length with end dampers

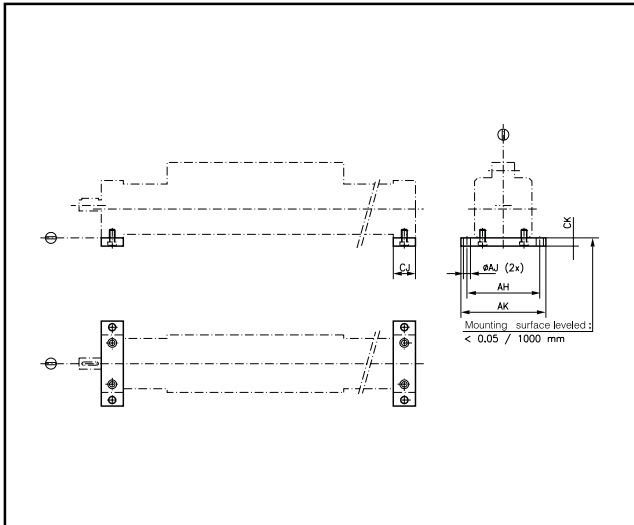
Length [mm]	L <sub>SA</sub> [mm]	L <sub>ED</sub> [mm]
30	4 SA	-
60	6 SA	-
70	-	2 ED

### SA diagram



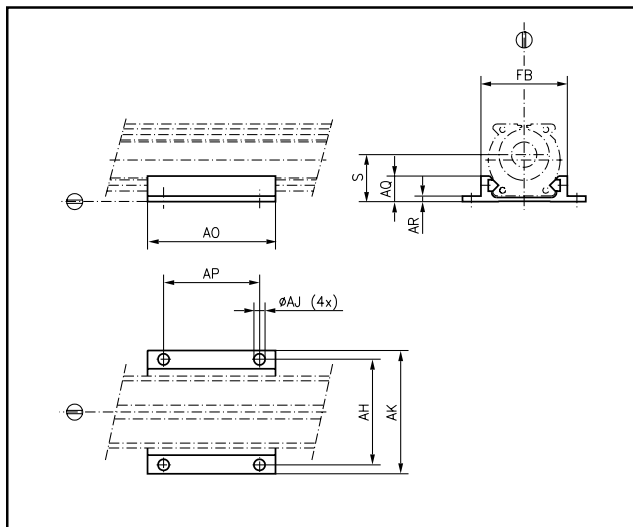
# Accessories for WIESEL™ W0

## Mounting feet/central support



### WBL Mounting feet

The WBL mounting bars are designed for situations where a screw connection from below is not possible. They are to be used to mount WIESEL™ units on pedestals and as a base for the MU central supports (2 WBL for 1 MU).



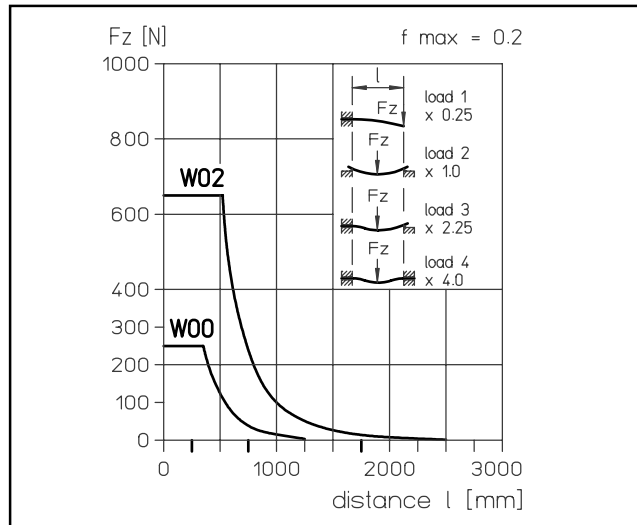
### WBL Mounting feet

The MU central support is an additional support for the WIESEL™ cylinder, in order to prevent deflection. In addition, the MU central support can also be used solely for mounting purposes, in which case it must be attached near the fixed or moving bearing.

The number of central supports depends on the WIESEL™ length (see MU diagram). Increasing transverse forces ( $F_z$ ) reduces the distance between supports.

### Unit conversions

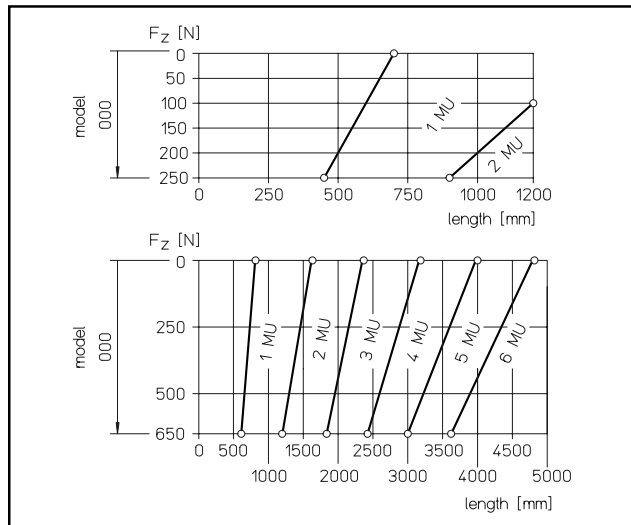
<b>Length:</b>	1 m=1000 mm=39.37 inches 1 inch=25.4 mm
<b>Force:</b>	1 N=0.225 lbf 1 lbf=4.45 N
<b>Moment of Force:</b>	1 Nm=0.738 lb · ft=8.85 lb · inches 1 lb · ft=1.36 Nm



### Deflection W00, W02

#### Technical data

Size	AH	AJ	AK	CJ	CK
W00	60	7	72	20	10
W02	92	9	108	30	12



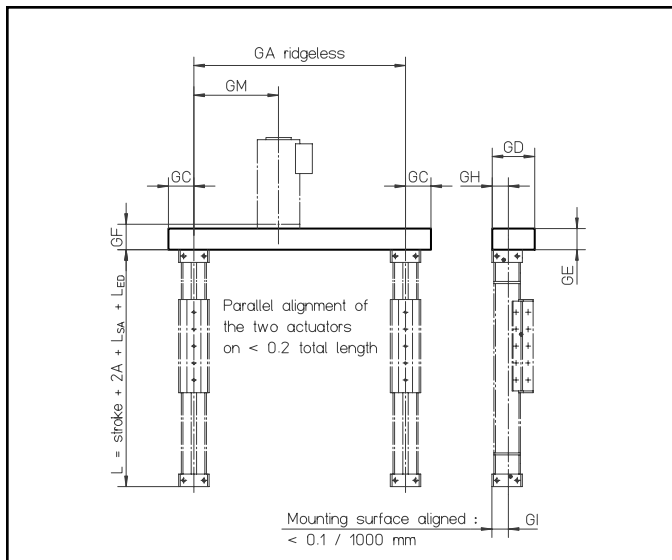
Size	Dimensions [mm]								
	AH	AJ	AK	AO	AP	AQ	AR	FB	S
W00	60	6.6	72	80	60	15.5	4.5	49	25.3
W02	92	9	108	120	90	24	6.5	74	39.0

Order Code see page 101

<b>Geometrical moment of inertia:</b>	1 m <sup>4</sup> =10 <sup>12</sup> mm <sup>4</sup> =2.4025 x 10 <sup>6</sup> in <sup>4</sup>
<b>Mass moment of inertia:</b>	1 kg · m <sup>2</sup> =10 <sup>4</sup> kg · cm <sup>2</sup> =0.738 lb · ft · s <sup>2</sup>
<b>Mass:</b>	1 kg=2.2 lb

# Accessories for WIESEL™ W0

## Parallel drive belt system/Universal joint shaft



### PRT 611 Parallel drive belt system for W00/W02

Two WIESEL™ units are connected by a parallel drive (PRT) to one motor.

Application:

- Parallel, wide guides with drive
- Basis for multi-coordinate systems
- Stops slidable in parallel

Type	Dimensions [mm]									M <sub>max</sub> [Nm]
	GA <sub>min</sub>	GA <sub>max</sub>	GC	GD	GE	GF	GH	GI	GM	
W00	300	1000	35	50	30	61	25	25	0	12
W02	400	2000	60	100	50	60	38	39	200	12

### GX Universal joint shaft for W02

The GX universal joint shaft is used for the parallel driving of 2 WIESEL™ KGT with bevel gearboxes or 2 WIESEL™ ZRT. In the case of long connecting shafts, suitable pillow blocks can also be supplied.

GZ model:

Only on request – for high demands on quiet operation and rotational speed (middle part with centering device).

### Technical data

Type	M1 <sup>1)</sup>	M2 <sup>2)</sup>	m1 <sup>3)</sup>	m2 <sup>4)</sup>	J1 <sup>5)</sup>	J2 <sup>6)</sup>	[M <sub>A</sub> ] <sup>7)</sup>
GX2	20	20	1.06	1.42	13.8	5.29	9.7

1) Transmittable torque

2) Max. input torque on the tensioning element [Nm]

3) Weight in kg without middle part

4) Weight of middle part

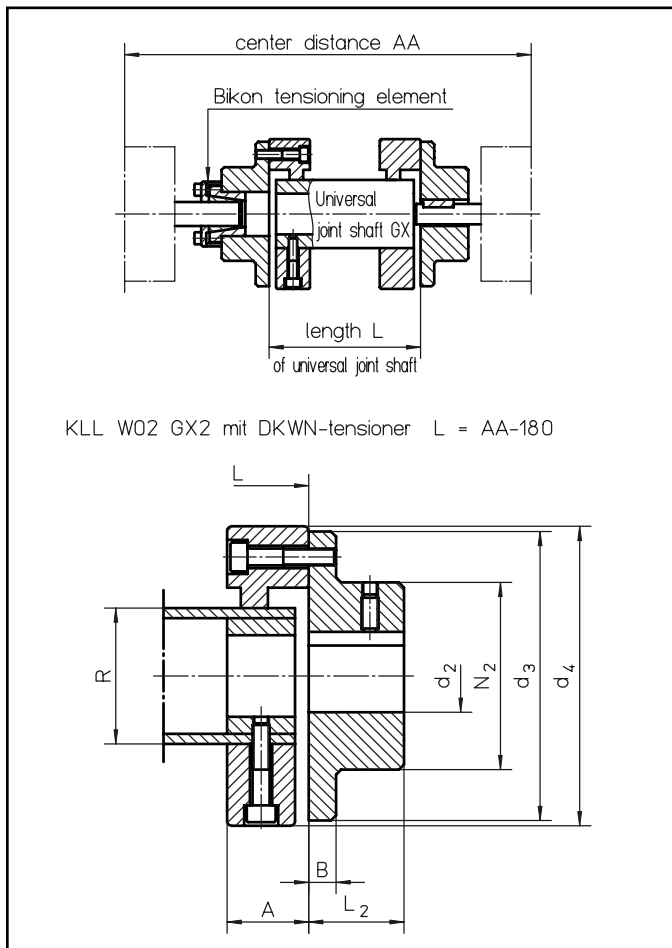
5) Mass inertia of the two connectors

6) Mass inertia of the shaft

7) Starting torque of the tensioning screws of the DKWN tensioning element [Nm]

### Execution with groove (on request)

Type	Dimensions [mm]								
	A	B	d <sub>2min.</sub>	d <sub>2max.</sub>	d <sub>3</sub>	d <sub>4</sub>	L <sub>2</sub>	N <sub>2</sub>	R
GX2	24	8	14	38	85	88	28	55	40



KLL W02 GX2 mit DKWN-tensioner L = AA-180

### Unit conversions

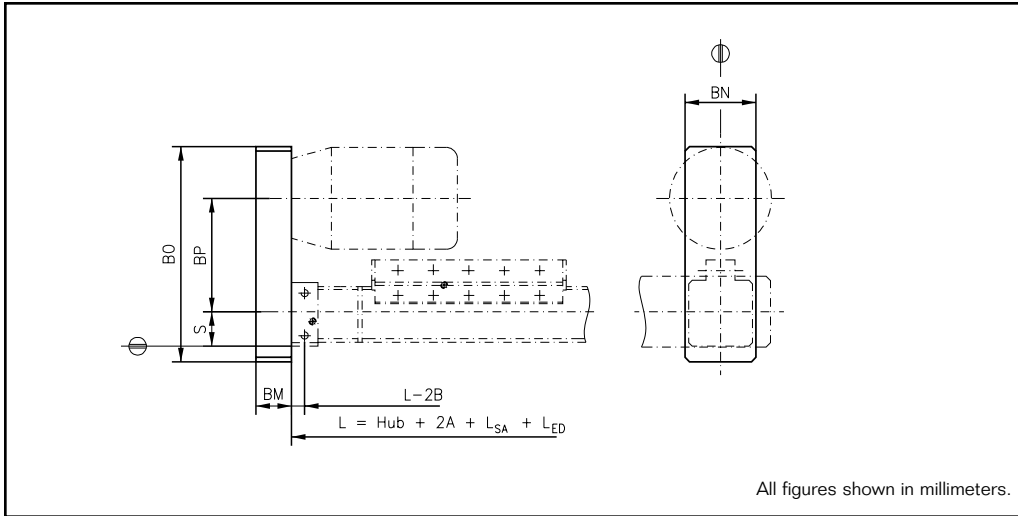
<b>Length:</b>	1 m=1000 mm=39.37 inches 1 inch=25.4 mm
<b>Force:</b>	1 N=0.225 lbf 1 lbf=4.45 N
<b>Moment of Force:</b>	1 Nm=0.738 lb · ft=8.85 lb · inches 1 lb · ft=1.36 Nm

<b>Geometrical moment of inertia:</b>	1 m <sup>4</sup> =10 <sup>12</sup> mm <sup>4</sup> =2.4025 x 10 <sup>6</sup> in <sup>4</sup>
<b>Mass moment of inertia:</b>	1 kg · m <sup>2</sup> =10 <sup>4</sup> kg · cm <sup>2</sup> =0.738 lb · ft · s <sup>2</sup>
<b>Mass:</b>	1 kg=2.2 lb

Order Code see page 101

# Accessories for WIESEL™ W0

## Timing belt drive



### RT 880 Belt drive for W00/W02

The RT 880 belt drive is a transmission designed to minimize the overall length. The RT housing (which is both belt guard and motor support) can be mounted in positions offset by 90°. The drive is provided via standard toothed belts. Transmission ratios of "i".

Ratios: W00 i = 1 : 1

W02 i = 1 : 1

2 : 1

1 : 2

Permissible radial forces  
(without counter bearing)

W00 50 N

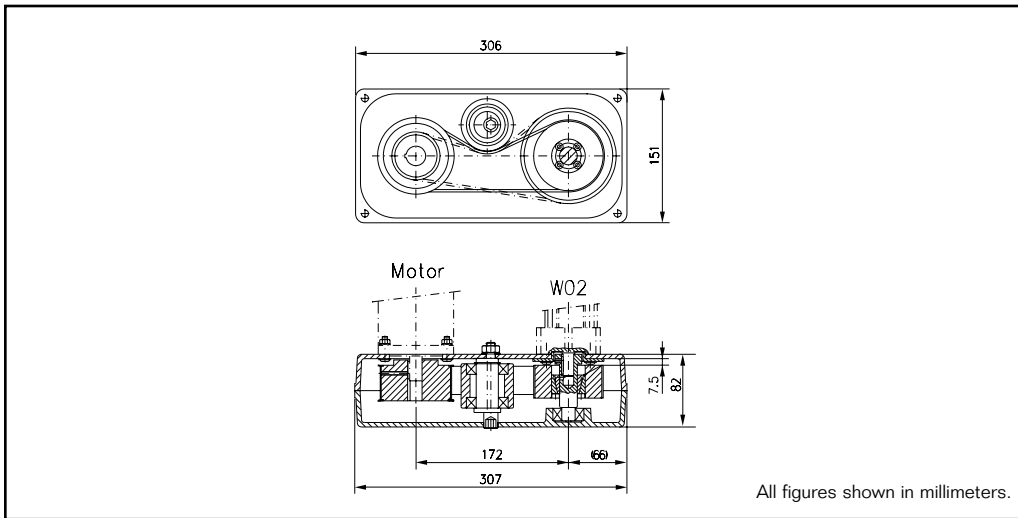
W02 150 N

Size	Dimensions [mm]				Technical data
	BM <sup>1)</sup>	BN	BO	BP	Transmission ratio i
W00	30	68	176	110	1 : 1
W02	40	80	243	128	1 : 1; 2 : 1 <sup>3)</sup> ; 1 : 2

1) Housing protrudes beyond fixed bearing

2) W00: combined housing for motor size C80/90. If no motor specified centering dia. 53 mm – no mounting bores

3) Max. shaft dia. at motor: 12 mm



### RT 890 Belt drive for W02

Ratios: i = 1 : 1

2 : 1

3 : 1

Transmittable drive torque:  
max. 12 Nm

Size	M <sub>max.</sub>	n <sub>max.</sub> <sup>Input</sup>	M <sub>idle</sub>	Gear factor η	Mass inertia			Weight [kg]		
	[Nm]	[rpm]	[Nm]		i = 1:1	i = 2:1	i = 3:1	i = 1:1	i = 2:1	i = 3:1
W02	12	3000	0.7	0.85	8.56	4.08	2.60	3.5	3.7	3.9

### Unit conversions

**Length:**  
1 m=1000 mm=39.37 inches  
1 inch=25.4 mm

**Force:**  
1 N=0.225 lbf  
1 lbf=4.45 N

**Moment of Force:**  
1 Nm=0.738 lb · ft=8.85 lb · inches  
1 lb · ft=1.36 Nm

**Geometrical moment of inertia:** 1 m<sup>4</sup>=10<sup>12</sup> mm<sup>4</sup>=2.4025 x 10<sup>6</sup> in<sup>4</sup>

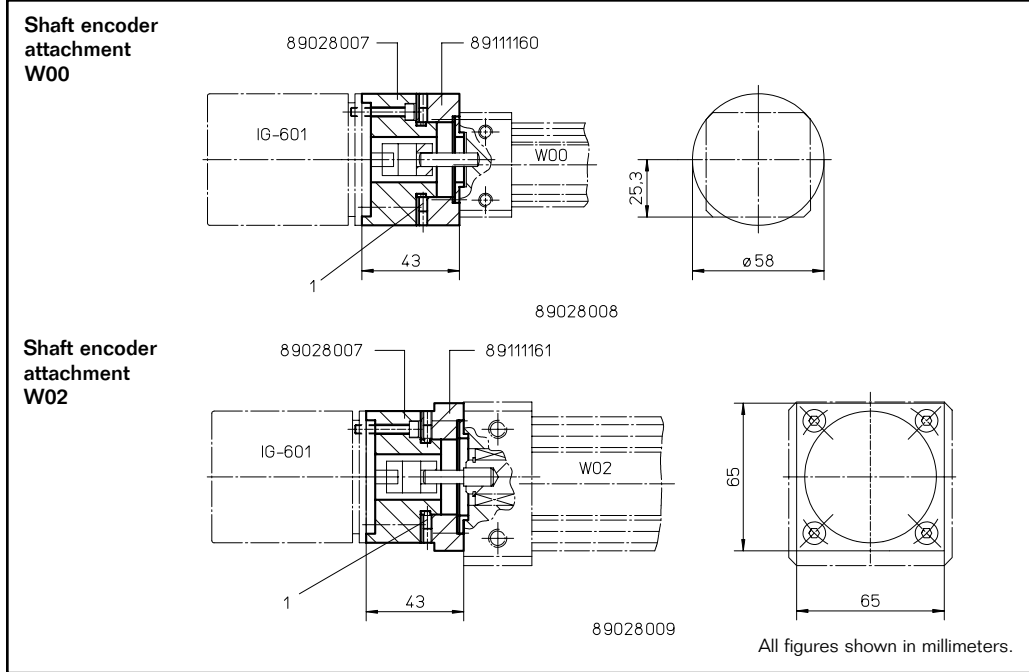
**Mass moment of inertia:** 1 kg · m<sup>2</sup>=10<sup>4</sup> kg · cm<sup>2</sup>=0.738 lb · ft · s<sup>2</sup>

**Mass:** 1 kg=2.2 lb

Order Code see page 101

# Accessories for WIESEL™ W0

## Cage attachment for IG 600 shaft encoder on mechanical linear drive unit, motor cage



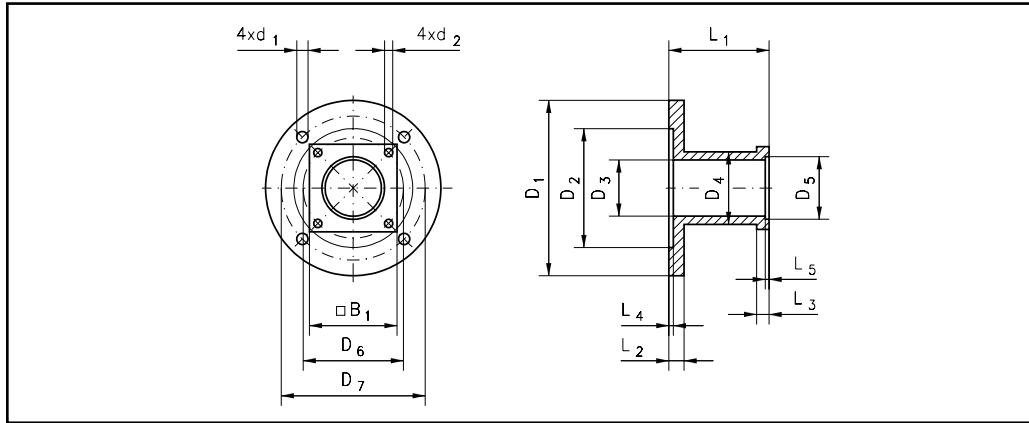
### Cage attachment for IG 600 shaft encoder for W00/W02

Incremental shaft encoders can be used in combination with screws to measure displacement. This is achieved by mounting the shaft encoder on the movable bearing end of the WIESEL™ shaft.

The IG601 incremental shaft encoders with pulse counts between 100 and 2500 are used by Precision Technology USA, Inc. as standard elements. Two output circuits are basically possible:

- GE = Push-pull output, 10–30 V
- LD = Line driver, as per RS 422 (phys.)

Detailed information can be found in our special Drive Systems brochure.



The shaft encoder is connected to the WIESEL™ units via a two-piece adapter flange and a coupling. It can be adjusted to the required reference point by loosening the threaded studs.

### MG motor cage for W00/W02

The motor cages are used to mount motors on linear drive units, gearboxes, bearing units, pumps etc. They also serve as housings for couplings for connecting the motors and drive shafts of the units to be driven.

Product/Type/Size	Dimensions [mm]															
	B1	D <sub>1</sub>	D <sub>2</sub>	D <sub>3</sub>	D <sub>4</sub>	D <sub>5</sub>	D <sub>6</sub>	D <sub>7</sub>	d <sub>1</sub>	d <sub>2</sub>	L <sub>1</sub>	L <sub>2</sub>	L <sub>3</sub>	L <sub>4</sub>	L <sub>5</sub>	
MG W00-C 80	45	80	50	33	40	38	50	65	5.5	5.5	45	10	9	3	3	
MG W00-C 90	45	90	60	33	40	38	50	75	5.5	5.5	45	10	9	3	3	
MG W02-C 80	66	80	50	46	56	50	65	70	5.5	6.6	70	10	10	3	3	
MG W02-C 90	66	90	60	46	56	50	70	75	5.5	6.6	70	10	10	3	3	
MG W02-C 105	66	100	70	46	56	50	70	85	6.6	6.6	70	10	10	3	3	
MG W02-NMT 30	66	100	60	46	56	50	70	75	9.0	6.6	80	10	10	3.5	3	
MG W02-C 120	66	120	80	46	56	50	70	100	6.6	6.6	80	10	10	3.5	3	
MG W02-C 140	66	140	95	46	56	50	70	115	9.0	6.6	80	10	10	3.5	3	
MG W00 blank	45	92	–	33	40	38	50	–	–	5.5	46	11	9	–	3	
MG W02 blank	66	120	–	46	56	50	70	–	–	6.6	71	11	10	–	3	
MG W02 blank	66	140	–	46	56	50	70	–	–	6.6	81	11	10	–	3	

### Unit conversions

<b>Length:</b>	1 m=1000 mm=39.37 inches 1 inch=25.4 mm
<b>Force:</b>	1 N=0.225 lbf 1 lbf=4.45 N
<b>Moment of Force:</b>	1 Nm=0.738 lb · ft=8.85 lb · inches 1 lb · ft=1.36 Nm

<b>Geometrical moment of inertia:</b>	1 m <sup>4</sup> =10 <sup>12</sup> mm <sup>4</sup> =2.4025 × 10 <sup>6</sup> in <sup>4</sup>
<b>Mass moment of inertia:</b>	1 kg · m <sup>2</sup> =10 <sup>4</sup> kg · cm <sup>2</sup> =0.738 lb · ft · s <sup>2</sup>
<b>Mass:</b>	1 kg=2.2 lb

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