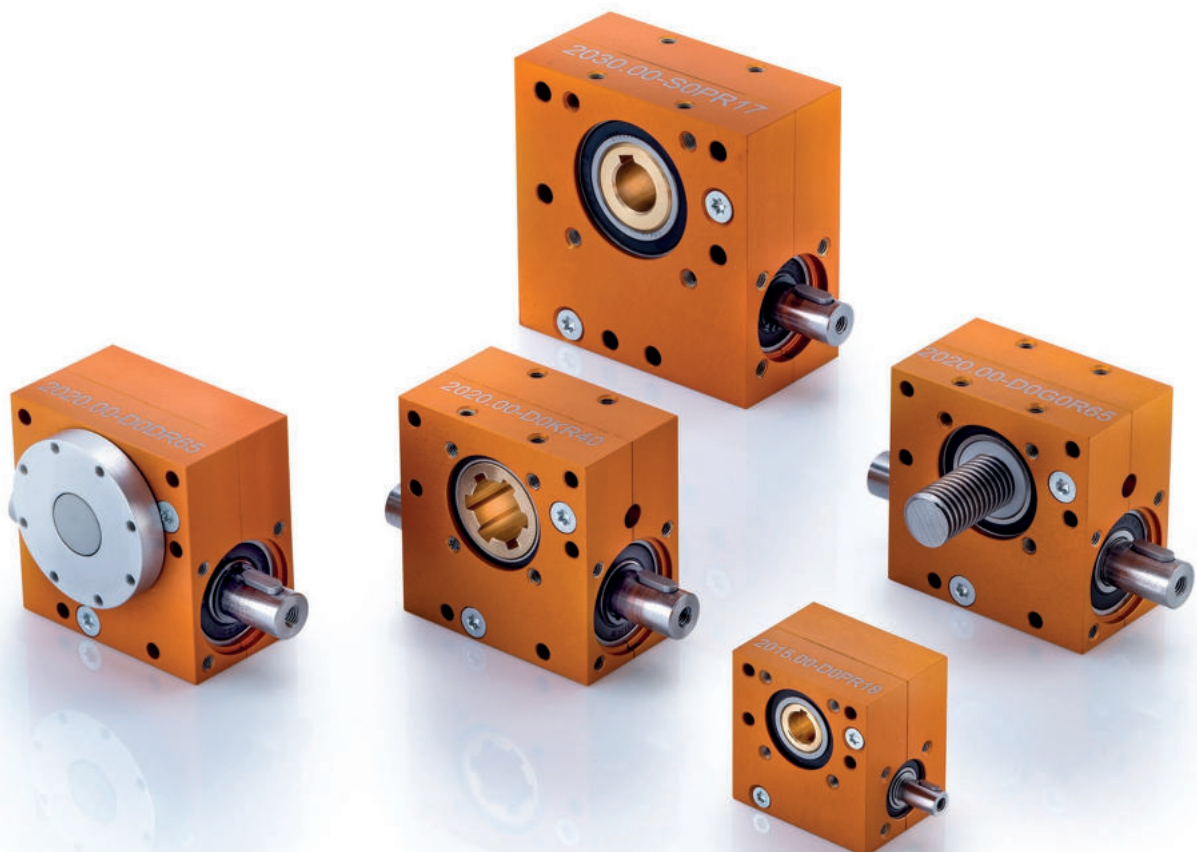


Worm gearbox family Ket-Motion



WE GET IDEAS MOVING

The spirit of innovation and a sense of ideas beyond the familiar has made us into a pioneering company over more than 185 years.

For a quarter of a century, we have been offering customized drive solutions for office and workplace workstations, as well as for shading systems and building technology.

Through our tradition of innovation, we have succeeded in establishing ourselves as a specialist and problem-solver in numerous areas.



Over 185 years' experience



More than 60 standard solutions for four different market segments



100% Made in Black Forest

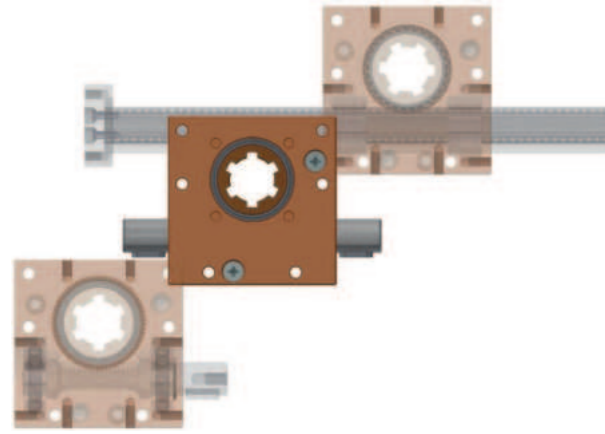
THE RIGHT PRODUCT FOR EACH APPLICATION

Worm Gears

- Page 04 2XXX Worm gearbox family Ket Motion
- Page 06 2015 P Worm gear reducer Ket-Motion
- Page 08 2020 P Worm gear reducer Ket-Motion
- Page 12 2030 P Worm gear reducer Ket-Motion
- Page 14 2020 D Worm gear reducer Ket-Motion
- Page 18 2020 DS Low-backlash gear Ket-Motion
- Page 20 2020 K Worm gear reducer Ket-Motion
- Page 26 2020 ZxP Rack and pinion gear Ket-Motion
- Page 30 2020 ZxK Rack and pinion gear Ket-Motion



Ket-Motion 2XXX worm gearbox family



Ket Motion modular gearboxes
Modular, robust, versatile
Your individual requirements - our special solution!

Variance drive side			
Single: Drive with feather key groove	Double: Drive as through axis with feather key groove	With motor (3 motor variants)	With position show

Variance output side				
Feather key groove	Splined shaft profile	With turntable	For push rod	With linear guidance

Linear gearbox with rack
Ket-Motion 2XXX Z

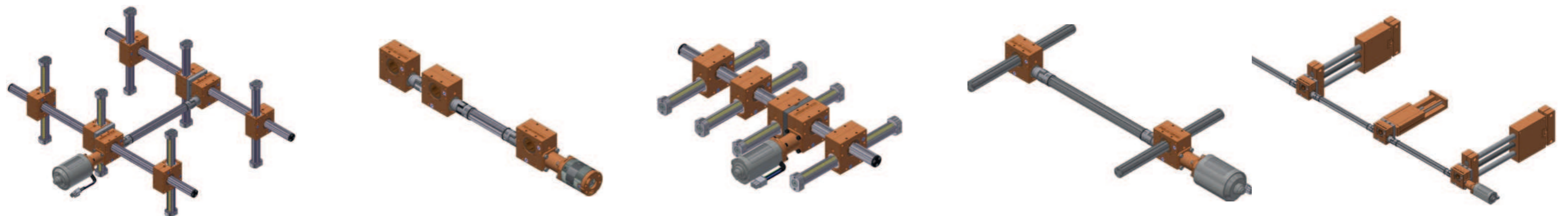
Ket-Motion 2XXX	<p>Ket-Motion 2015</p> <p>7 Reduction ratio variants 0.3 - 3 Nm</p> <p>15 mm</p>
	<p>Ket-Motion 2020</p> <p>9 Reduction ratio variants 0.65 - 15 Nm</p> <p>20 mm</p>
	<p>Ket-Motion 2030</p> <p>9 Reduction ratio variants 1 - 20 Nm</p> <p>30 mm</p>

		—	—
			 <i>in progress</i>
		 <i>in planning</i>	 <i>in planning</i>

	—	—	 <i>in planning</i>	 <i>possible on request</i>
	 <i>in planning</i>	 <i>in planning</i>	 <i>in planning</i>	 <i>in planning</i>

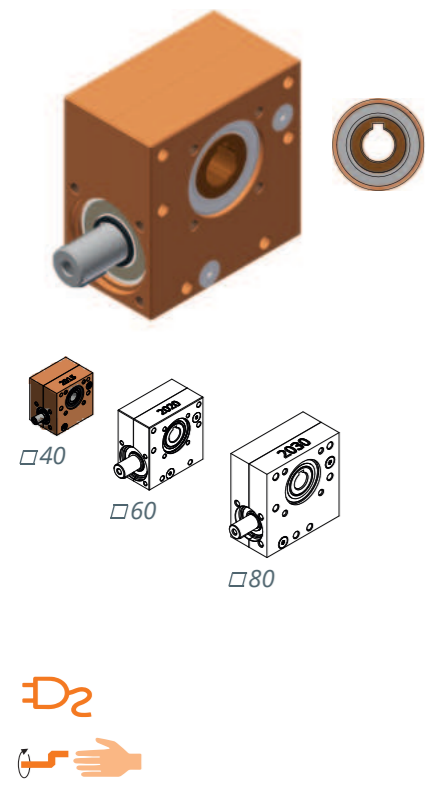
—
 <i>in planning</i>

Note: Backlash-free or oil-lubricated variants also available on request



Worm gear reducer Ket-Motion 2015 P

with feather key groove



Universally usable and maintenance-free worm gear unit with an **axis distance of 15 mm** and with nine different reduction ratios. The housing is encapsulated to prevent the escape of grease and the ingress of dust. The worm gear pair is left-handed. The direction of rotation on the shaft is arbitrary.

Special features

- **Axis distance 15 mm**
- Maintenance-free grease lubrication
- Housing anodized aluminum, orange as standard, other colors possible to suit customer requirement
- 7 reduction ratios from 1:1 to 47:1
- Backlash on the output shaft $1^\circ \pm 0.5^\circ$, (for $i=1:1$ $2^\circ \pm 0.5^\circ$)
- Duty cycle 20 % for 5 min (1 min ON, 4 min OFF)
- Service life of 1,000 hours with:
 - full load and
 - input speed of 500 rpm and
 - duty cycle 20 % for 5 min and
 - ambient temperature 20 °C



Variant key

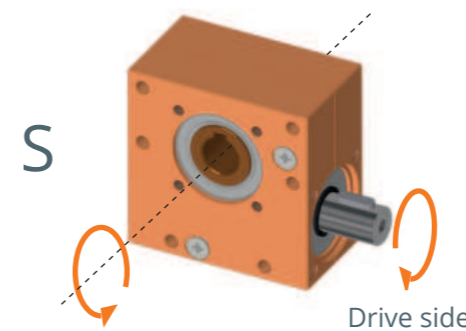
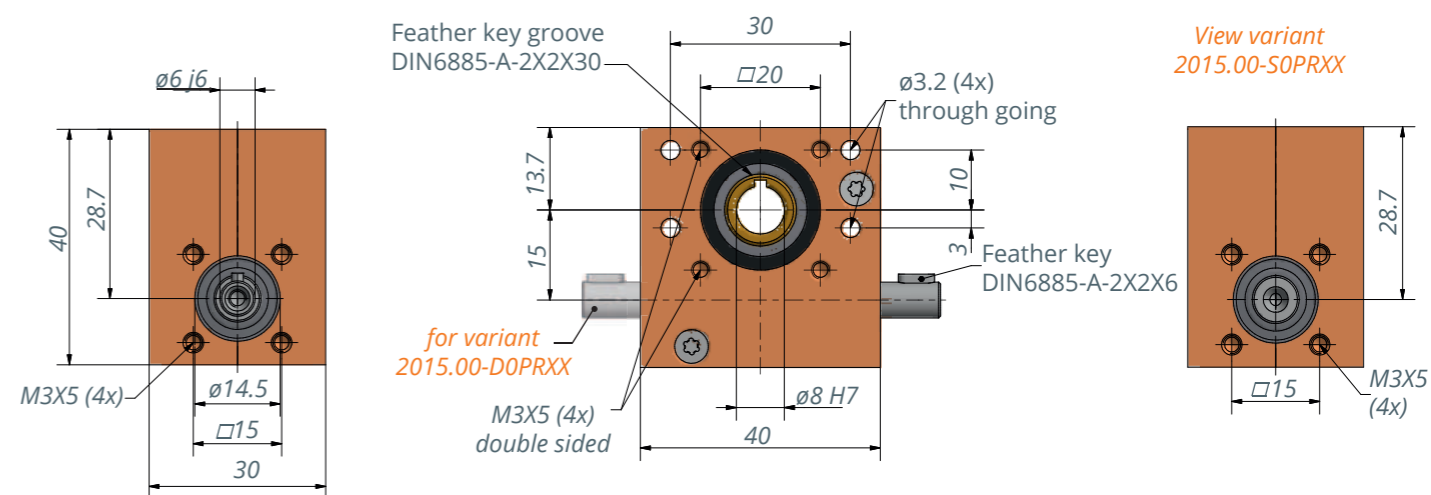
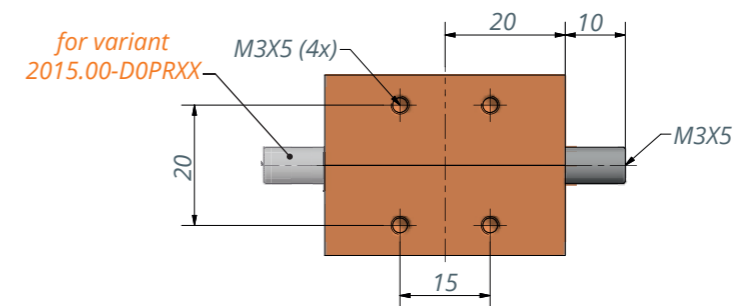
- Variant 2015.00-**S**0PRXX with one drive pin
- Variant 2015.00-**D**0PRXX with through going axis

Technical data

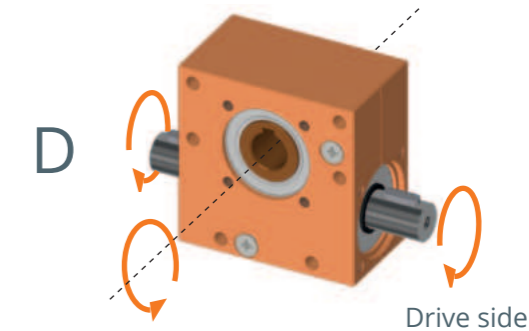
Item number	Ratio i	Self-locking static	Output-speed n in min^{-1}	Max. output-torque M in Nm	Max. drive-torque M in Nm	Drive side		Degree of efficiency %
						Radial-force ¹⁾ F_R in N	Axial-force ²⁾ F_A in N	
2015.00-S0PR47	47 : 1	Yes	100/500/1000	1.6/1.4/1.2	0.10/0.09/0.08	200	200	34
2015.00-D0PR47								
2015.00-S0PR40	40 : 1	Yes	100/500/1000	1.7/1.6/1.5	0.15/0.14/0.13	150	150	29
2015.00-D0PR40								
2015.00-S0PR30	30 : 1	No	100/500/1000	2.6/2.3/2.0	0.20/0.18/0.16	100	100	43
2015.00-D0PR30								
2015.00-S0PR18	18 : 1	No	100/500/1000	2.8/2.5/2.3	0.37/0.33/0.30	50	50	42
2015.00-D0PR18								
2015.00-S0PR12	12 : 1	No	100/500/1000	3.0/2.8/2.5	0.56/0.52/0.46	50	50	45
2015.00-D0PR12								
2015.00-S0PR05	5 : 1	No	100/500/1000	2.7/2.6/2.4	0.89/0.85/0.79	50	50	61
2015.00-D0PR05								
2015.00-S0PR01*	1 : 1	No	100/500/1000	1.0/0.6/0.3	1.28/0.77/0.38	50	50	78
2015.00-D0PR01*								

1) The values of F_R apply only when $F_A = 0$ N
2) The values of F_A apply only when $F_R = 0$ N

* Backlash on the output shaft: $2^\circ \pm 0.5^\circ$



Variant 2015.00-**S**0PRXX with one drive pin



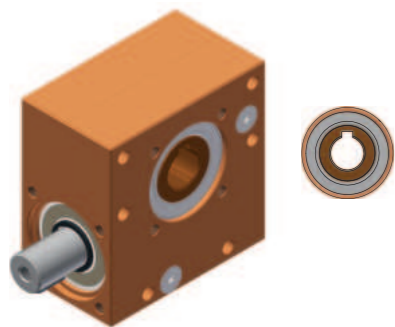
Variant 2015.00-**D**0PRXX with through going axis

Technical notes

- Permissible force on drive side: $F_A = 200$ N when $F_R = 0$ N and $F_R = 200$ N when $F_A = 0$ N
- The positions of the feather keys as standard in variant D are not in line. Possible on enquiry if needed

Worm gear reducer Ket-Motion 2020 P

With feather key groove

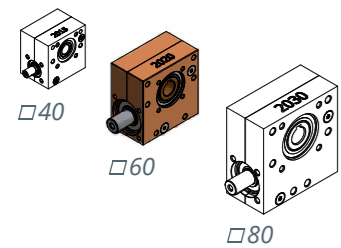


Description

Universally usable and maintenance-free worm gear with unit an **axis distance of 20 mm** and with nine different reduction ratios. The aluminium or zinc housing is encapsulated to prevent the escape of grease and the ingress of dust. The worm gear pair is left-handed. The direction of rotation on the shaft is arbitrary.

Special features

- **Axis distance 20 mm**
- Maintenance-free grease lubrication
- Aluminium housing, anodized (Color on customer request) or Zinc housing in a material-saving design
- 9 reduction ratios from 1:1 to 65:1
- Backlash on the drive shaft $1^\circ \pm 0.5^\circ$, (for $i=1:1$ $2^\circ \pm 0.5^\circ$)
- Duty cycle of 20 % at 5 min (1 min ON, 4 min OFF)
- Service life of 1,000 hours with:
 - full load and
 - input speed of 500 rpm and
 - duty cycle 20% with 5 min and
 - ambient temperature 20 °C

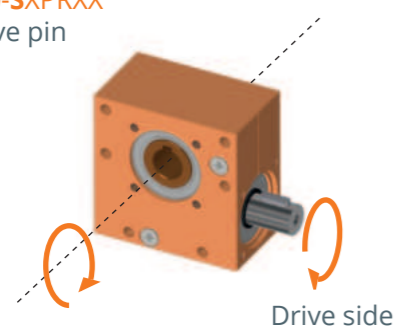


Variant key

Ket-Motion	Configuration of drive side	
2020.00	S	With one drive pin
	D	With through going axis
Housing: Material & Optics		
	0	Alu, orange anodized (standard)
	1	Alu, silver anodized
	X _i	Alu, Color according to customer requirements
	Z	Zinc die-cast housing
Configuration of output side		
	P	Feather key groove
Reduction ratio R		
	RXX	9 Reduction variants of R01 (i= 1:1) to R65 (i=65:1)
2020.00-	S	0 P R65 Example

Variant 2020.00-SXPRXX with one drive pin

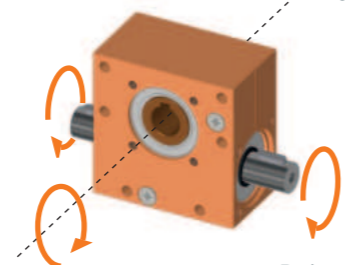
S



Drive side

Variant 2020.00-DXPRXX with through going axis

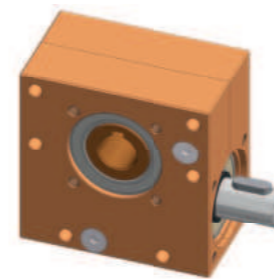
D



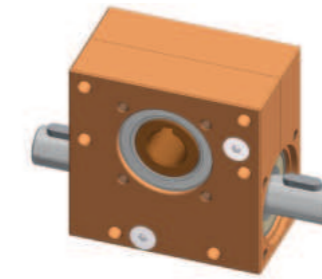
Drive side

2020 P Gearbox with aluminium housing, anodized

With one drive pin
2020.00-S0PRXX



With through-screw
2020.00-D0PRXX



- ▶ Lower point load due to full-surface contact during bolting
- ▶ Free choice of color through anodizing
- ▶ Noble design in the visible area

2020 P Gearbox with material-saving zinc housing

With one drive pin
2020.00-SZPRXX



With through-screw
2020.00-DZPRXX



- ▶ Lower CO2 imprint than ALU
- ▶ Cost-optimized
- ▶ Industrial Design

Technical data

Item number	Reduction ratio i	Self-locking static	Output-speed n in min^{-1}	Max. output torque M in Nm	Max. drive torque M in Nm	Drive side		Degree of efficiency %
						Radial-force ¹⁾ F_R in N	Axial-force ²⁾ F_A in N	
2020.00-XXPR65	65 : 1	Yes	100/500/1000	4.5/3.8/3	0.2/0.2/0.2	500	500	29
2020.00-XXPR40	40 : 1	Yes	100/500/1000	5.5/4.8/4	0.4/0.3/0.3	400	400	39
2020.00-XXPR30	30 : 1	No	100/500/1000	8.5/7/5.5	0.6/0.5/0.4	350	350	45
2020.00-XXPR23	23 : 1	No	100/500/1000	10/8/6	0.9/0.7/0.5	250	250	50
2020.00-XXPR18	18 : 1	No	100/500/1000	11/9/7	1.1/0.9/0.7	250	250	55
2020.00-XXPR15	15 : 1	No	100/500/1000	12/10/8	1.5/1.3/1	250	200	52
2020.00-XXPR13	13 : 1	No	100/500/1000	15/13/11	2.1/1.8/1.5	200	200	56
2020.00-XXPR05	5 : 1	No	100/500/1000	10/8/6	2.9/2.3/1.7	200	200	70
2020.00-XXPR01*	1 : 1	No	100/500/1000	1.5/1/0.65	2.1/1.4/0.9	250	250	73

1) The values of F_R apply only when $F_A = 0$ N

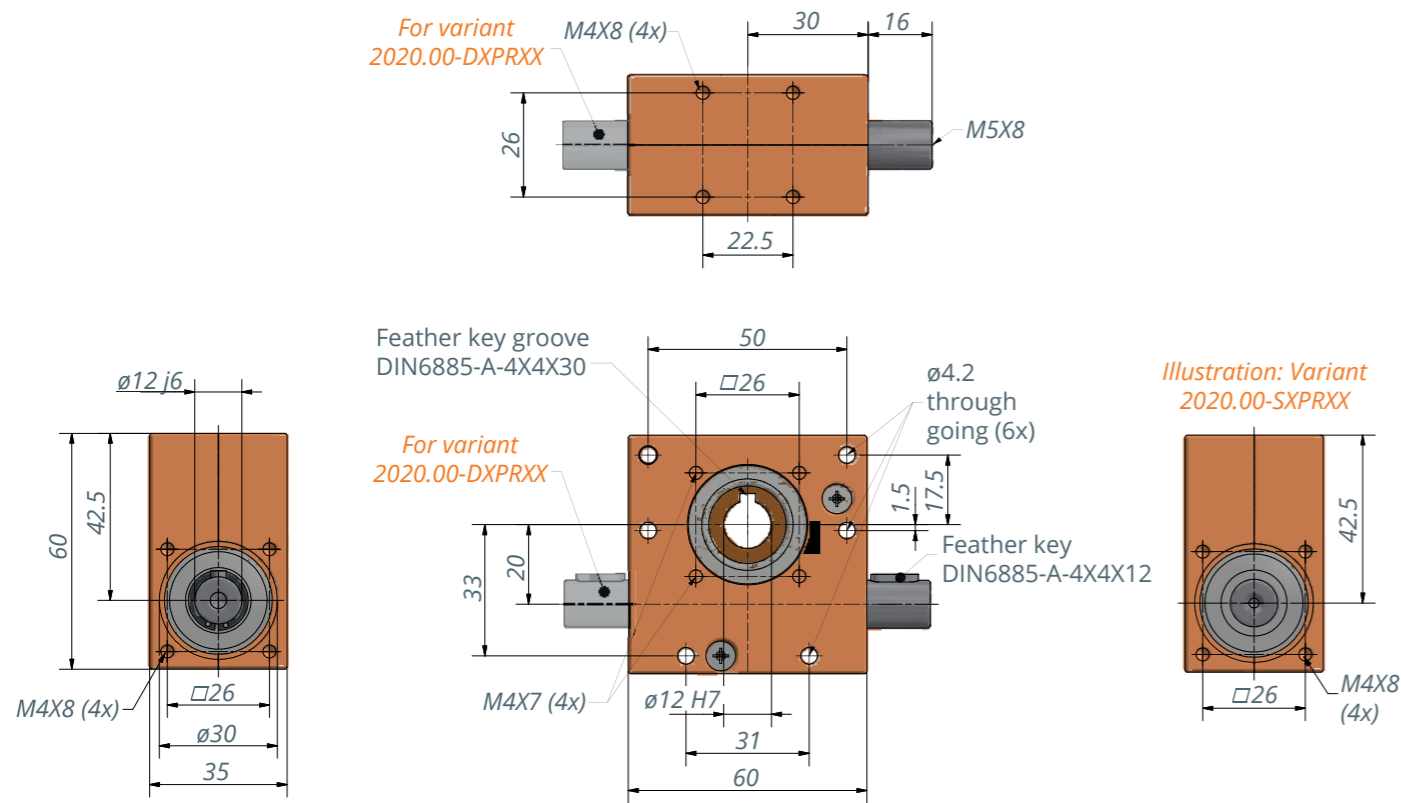
2) The values of F_A apply only when $F_R = 0$ N

* Backlash on the output shaft $2^\circ \pm 0.5^\circ$

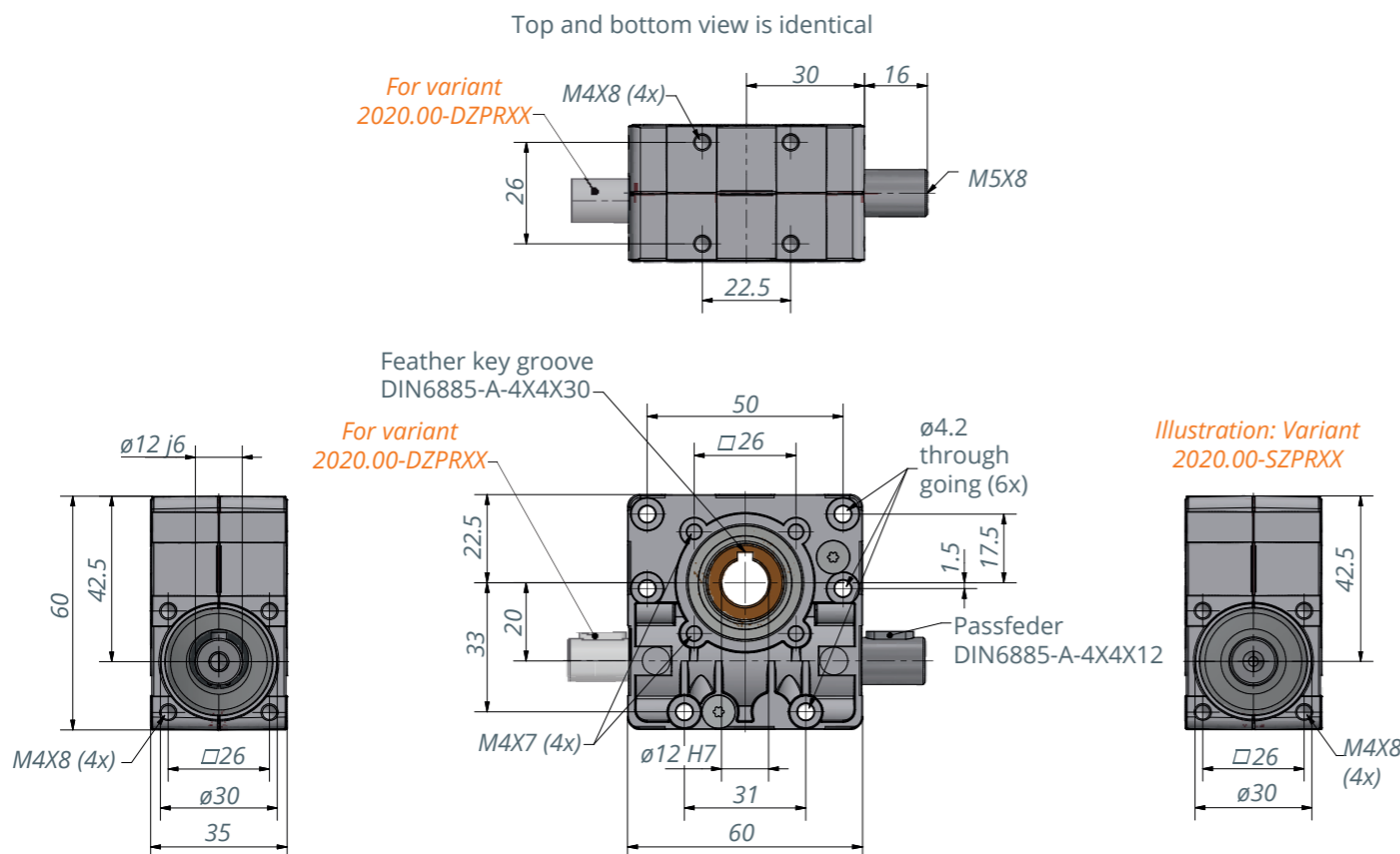
Technical notes

- Variant with feather key groove: Permissible force on drive side $F_A = 500$ N at $F_R = 0$ N and $F_R = 500$ N at $F_A = 0$ N
- The positions of the feather keys as standard in variant D are not in line. Possible on enquiry if needed

Variant with **Aluminium housing**: With one drive pin or through going axis



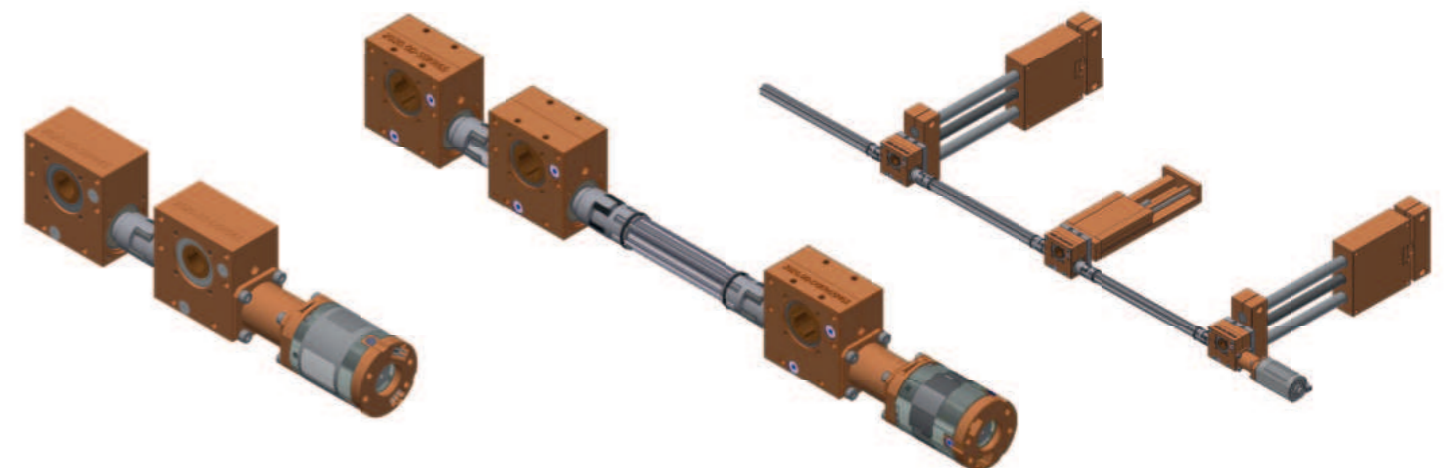
Variant with **Zinc housing**: With one drive pin or through going axis



Mechanical accessories

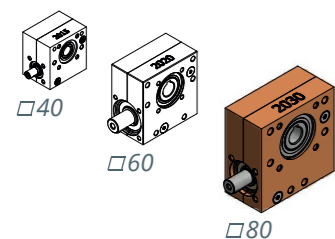
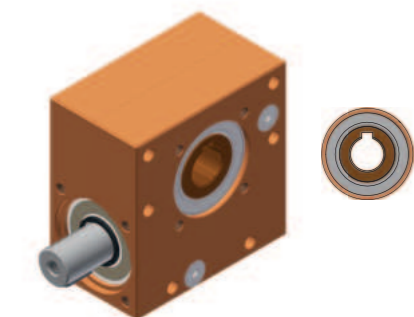
	Item number	Illustration
Alu shaft (Gear connector) with feather key DIN6885-A-4x4x12	5708.39-0000	
Steel shaft (Gear connector) with feather key DIN6885-A-4x4x12	5708.39-0001	
Claw coupling D1= 12/ D2= 8 for shaft connection	5790.12-0003	
Claw coupling D1= 12/ D2= 12 for shaft connection	5790.12-0001	
Claw coupling D1= 12 for slinde shaft profil (DIN5463-6x12x20)	5790.12-0007	
Mounting flange 45° latching	2010.15-0001	

Application example



Worm gear reducer Ket-Motion 2030 P

with feather key groove



Universally usable and maintenance-free worm gear with an **axis distance of 30 mm** and with nine different reduction ratios. The housing is encapsulated to prevent the escape of grease and the ingress of dust. The worm gear pair is left-handed. The direction of rotation on the shaft is arbitrary.

Special features

- **Axis distance 30 mm**
- Maintenance-free grease lubrication
- Housing anodized aluminum, orange as standard, other colors possible to suit customer requirement
- 9 reduction ratios from 1:1 to 64:1
- Backlash on the output shaft $1^\circ \pm 0.5^\circ$, (for $i=1:1$ $2^\circ \pm 0.5^\circ$)
- Duty cycle 20 % for 5 min (1 min ON, 4 min OFF)
- Service life of 1,000 hours with:
 - full load and
 - input speed of 500 rpm and
 - duty cycle 20 % for 5 min and
 - ambient temperature 20 °C



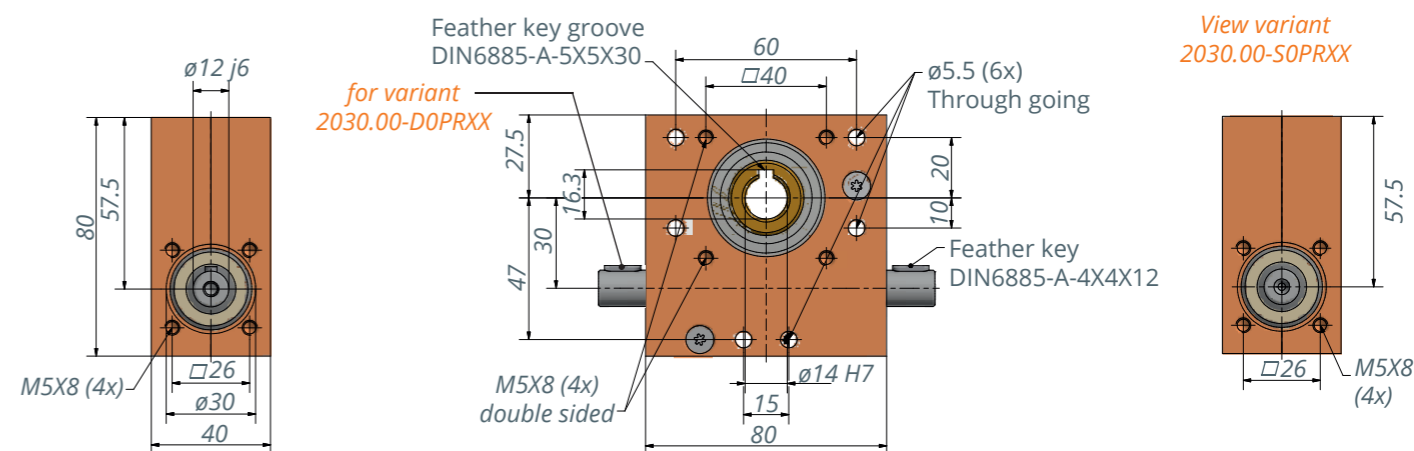
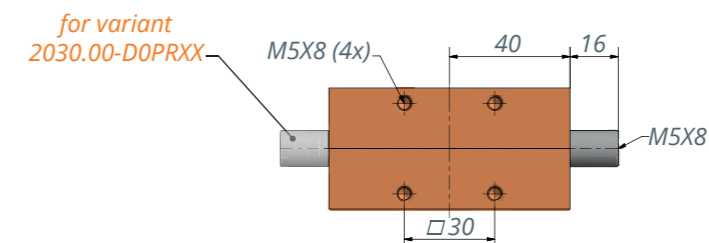
Variant key

- Variant 2030.00-**S**0PRXX with one drive pin
- Variant 2030.00-**D**0PRXX with through going axis

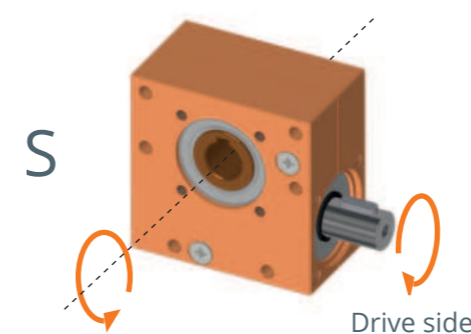
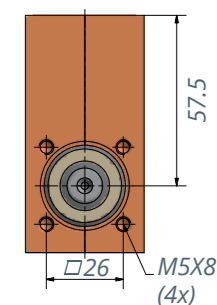
Item number	Ratio i	Self-locking static	Output-speed n in min^{-1}	Max. output-torque M in Nm	Max. drive-torque M in Nm	Drive side		Degree of efficiency %
						Radial-force ¹⁾ F_R in N	Axial-force ²⁾ F_A in N	
2030.00- S 0PR64	64 : 1	Yes	100/500/1000	8.5/7.5/6.0	0.5/0.4/0.3	700	600	27
2030.00- D 0PR64								
2030.00- S 0PR45	45 : 1	up to 5 Nm	100/500/1000	10.5/9.5/9.0	0.9/0.8/0.8	700	600	25
2030.00- D 0PR45								
2030.00- S 0PR34	34 : 1	up to 5 Nm	100/500/1000	12.0/11.0/10.0	1.2/1.1/1.0	600	500	29
2030.00- D 0PR34								
2030.00- S 0PR25	25 : 1	No	100/500/1000	13.5/12.0/11.0	1.3/1.2/1.1	500	500	41
2030.00- D 0PR25								
2030.00- S 0PR20	20 : 1	No	100/500/1000	15.0/13.5/12.0	1.7/1.6/1.4	500	400	43
2030.00- D 0PR20								
2030.00- S 0PR17	17 : 1	No	100/500/1000	17.0/15.0/14.0	2.2/1.9/1.8	400	400	46
2030.00- D 0PR17								
2030.00- S 0PR10	10 : 1	No	100/500/1000	20.0/18.0/16.0	3.4/3.1/2.8	400	300	58
2030.00- D 0PR10								
2030.00- S 0PR05	5 : 1	No	100/500/1000	19.0/17.0/15.0	5.4/4.9/4.3	400	300	70
2030.00- D 0PR05								
2030.00- S 0PR01*	1 : 1	No	100/500/1000	2.0/1.5/1.0	2.7/2.1/1.4	400	300	73
2030.00- D 0PR01*								

1) The values of F_R apply only when $F_A = 0$ N
2) The values of F_A apply only when $F_R = 0$ N

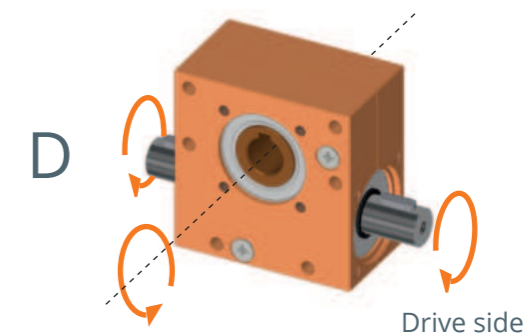
* Backlash on the output shaft $2^\circ \pm 0.5^\circ$



View variant 2030.00-S0PRXX



Variant 2030.00-**S**0PRXX with one drive pin



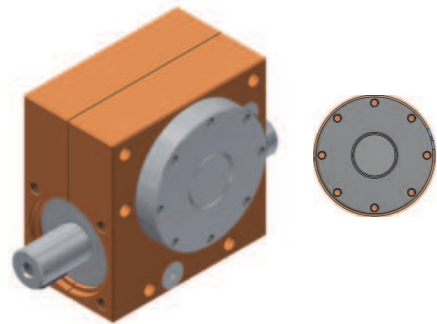
Variant 2030.00-**D**0PRXX with through going axis

Technical notes

- Permissible force on drive side: $F_A = 800$ N when $F_R = 0$ N and $F_R = 800$ N when $F_A = 0$ N
- The positions of the feather keys as standard in variant D are not in line. Possible on enquiry if needed

Worm gear reducer Ket-Motion 2020 D

With turntable

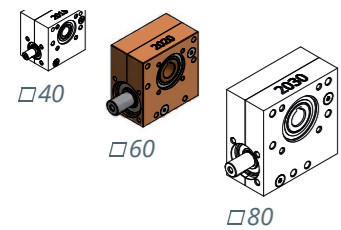


Description

Universally usable and maintenance-free worm gear unit with an **axis distance of 20 mm** and with nine different reduction ratios. The aluminium or zinc housing is encapsulated to prevent the escape of grease and the ingress of dust. The worm gear pair is left-handed. The direction of rotation on the shaft is arbitrary.

Special features

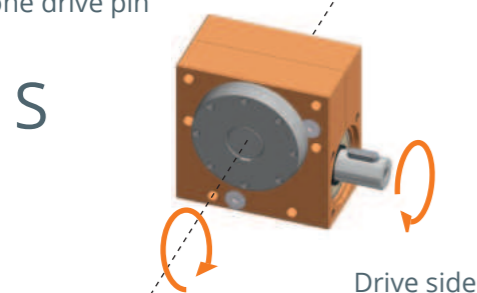
- **Axis distance 20 mm**
- Maintenance-free grease lubrication
- Aluminium housing, anodized (Color on customer request) or Zinc housing in a material-saving design
- 9 reduction ratios from 1:1 to 65:1
- Backlash on the drive shaft $1^\circ \pm 0.5^\circ$, (for $i=1:1$ $2^\circ \pm 0.5^\circ$)
- Duty cycle of 20 % at 5 min (1 min ON, 4 min OFF)
- Service life of 1,000 hours with:
 - full load and
 - input speed of 500 rpm and
 - duty cycle 20% with 5 min and
 - ambient temperature 20 °C



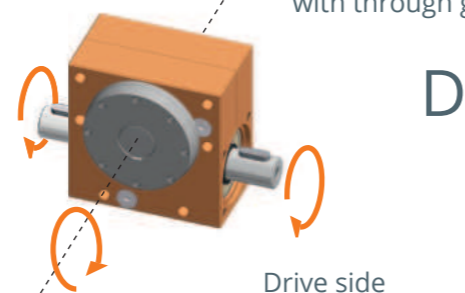
Variant key

Ket-Motion	Configuration of drive side		
2020.00	S	With one drive pin	
	D	With through going axis	
	Housing: Material & Optics		
	0	Alu, orange anodized (standard)	
	1	Alu, silver anodized	
	X _i	Alu, Color according to customer requirements	
	Z	Zinc die-cast housing	
	Configuration of output side		
	D	Turntable	
	Reduction ratio R		
	RXX	9 Reduction variants of R01 (i= 1:1) to R65 (i=65:1)	
2020.00-	S	0 D R65	Example

Variant 2020.00-SXDRXX with one drive pin

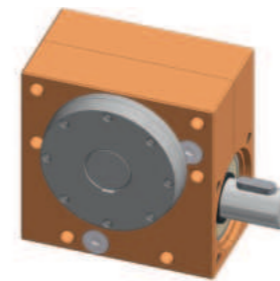


Variant 2020.00-DXDRXX with through going axis

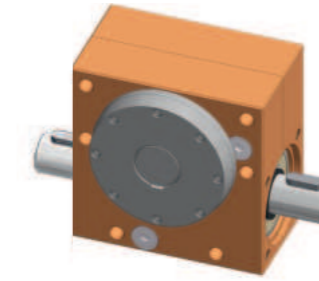


2020 D Gearbox with aluminium housing

With one drive pin
2020.00-S0DRXX



With through-screw
2020.00-D0DRXX



- ▶ Lower point load due to full-surface contact during bolting
- ▶ Free choice of color through anodizing
- ▶ Noble design in the visible area

2020 D Gearbox with zinc die casting housing

With one drive pin
2020.00-SZDRXX



With through-screw
2020.00-DZDRXX



- ▶ Lower CO2 imprint than ALU
- ▶ Cost-optimized
- ▶ Industrial Design

Technical data

Item number	Reduction ratio i	Self-locking static	Output-speed n in min^{-1}	Max. output-torque M in Nm	Max. drive-torque M in Nm	Drive side		Degree of efficiency %
						Radial-force ¹⁾ F_R in N	Axial-force ²⁾ F_A in N	
2020.00-XXDR65	65 : 1	Yes	100/500/1000	4.5/3.8/3	0.2/0.2/0.2	500	500	29
2020.00-XXDR40	40 : 1	Yes	100/500/1000	5.5/4.8/4	0.4/0.3/0.3	400	400	39
2020.00-XXDR30	30 : 1	No	100/500/1000	8.5/7/5.5	0.6/0.5/0.4	350	350	45
2020.00-XXDR23	23 : 1	No	100/500/1000	10/8/6	0.9/0.7/0.5	250	250	50
2020.00-XXDR18	18 : 1	No	100/500/1000	11/9/7	1.1/0.9/0.7	250	250	55
2020.00-XXDR15	15 : 1	No	100/500/1000	12/10/8	1.5/1.3/1	250	200	52
2020.00-XXDR13	13 : 1	No	100/500/1000	15/13/11	2.1/1.8/1.5	200	200	56
2020.00-XXDR05	5 : 1	No	100/500/1000	10/8/6	2.9/2.3/1.7	200	200	70
2020.00-XXDR01*	1 : 1	No	100/500/1000	1.5/1/0.65	2.1/1.4/0.9	250	250	73

1) The values of F_R apply only when $F_A = 0$ N

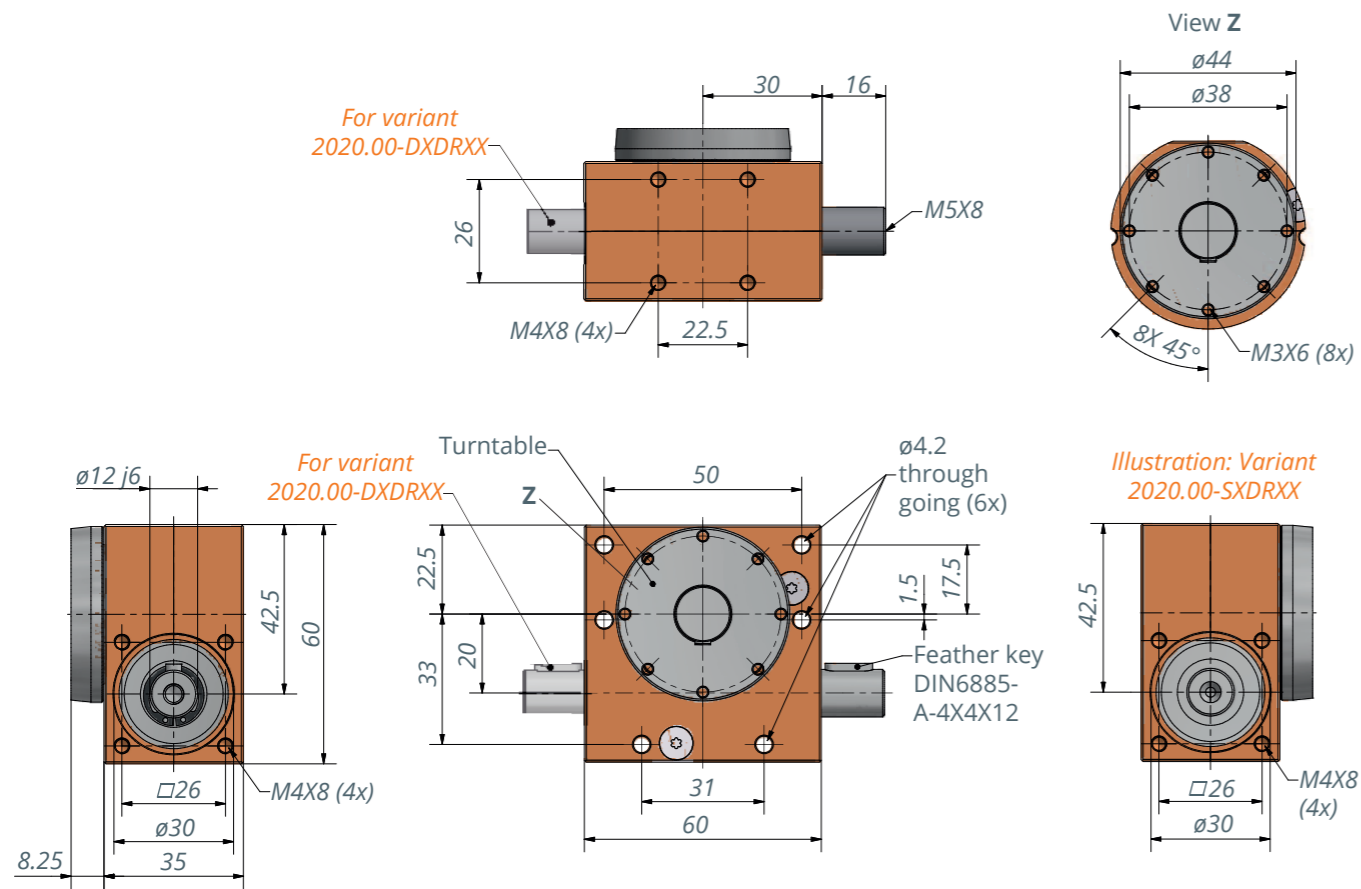
2) The values of F_A apply only when $F_R = 0$ N

* Backlash on the output shaft $2^\circ \pm 0.5^\circ$

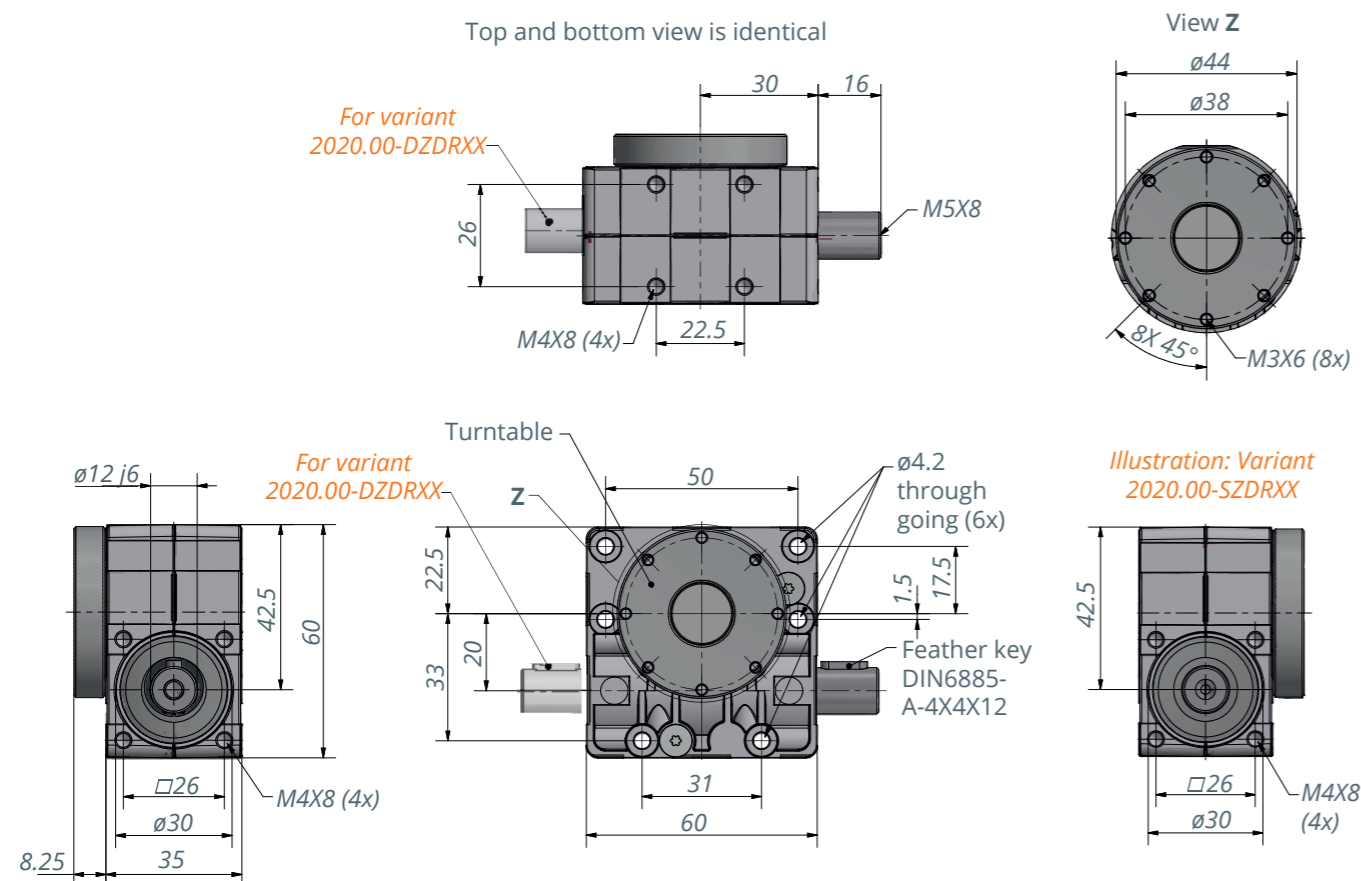
Technical notes

- Variant with **turntable**: Permissible forces on drive side $F_A = 1,500$ N
- The positions of the feather keys as standard in variant D are not in line. Possible on enquiry if needed

Variant with **Aluminium housing**: With one drive pin or through going axis



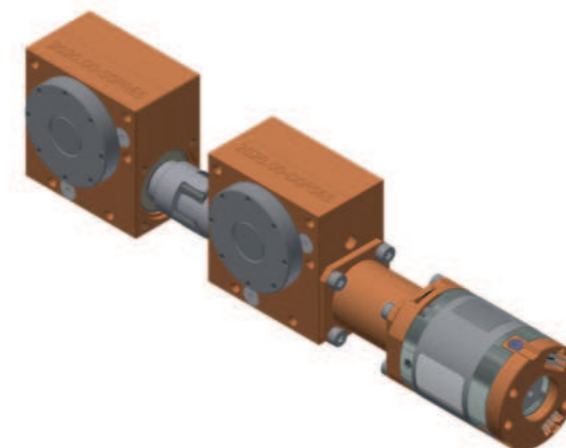
Variant with **Zinc housing**: With one drive pin or through going axis



Mechanical accessories

	Item number	Illustration
Shaft (Gear connector) with feather key DIN6885-A-4x4x12	5708.39-0000	
Claw coupling D1= 12/ D2= 8 for shaft connection	5790.12-0003	
Claw coupling D1= 12/ D2= 12 for shaft connection	5790.12-0001	
Claw coupling D1= 12 for slide shaft profil (DIN5463-6x12x20)	5790.12-0007	
Mounting flange 45° latching	2010.15-0001	

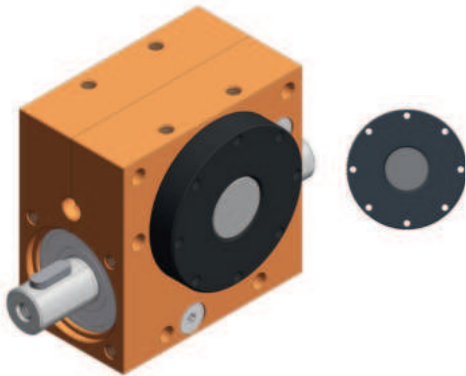
Application example



Low-backlash gear Ket-Motion 2020 DS

with turntable

A low-backlash, maintenance-free worm gear unit for demanding applications in positioning or for high-precision measuring tasks. The housing is encapsulated to prevent the escape of grease and the ingress of dust. The direction of rotation on the shaft is arbitrary.



Special features

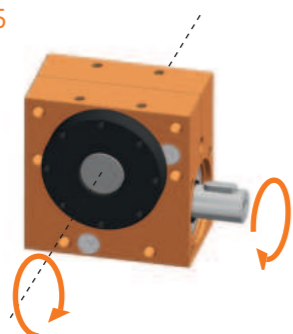
- Maintenance-free grease lubrication
- Housing: Aluminium anodized (Zinc housing on customer request)
- Reduction ratios of 65:1 in standard (Other reduction ratios also possible on request)
- Backlash: $\leq 0.05^\circ$ (3') to $M_{Drive} = 0.1 \text{ Nm}$
 $\leq 0.5^\circ$ (30') to $M_{Drive} = 1 \text{ Nm}$
- Duty cycle of 10 % at 5 min (0.5 min ON, 4.5 min OFF)
- Service life of 1,000 hours with:
 - full load and
 - input speed of 100 rpm and
 - duty cycle 10% with 5 min and
 - ambient temperature 20 °C



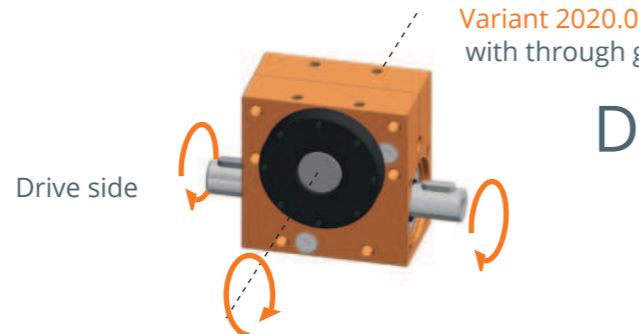
Variant key

Ket-Motion	Configuration of drive side				
2020.00	S	With one drive pin			
	D	With through going axis			
Housing: Material & Optics					
	0	Alu, orange anodized (standard)			
	1	Alu, silver anodized			
	X _i	Alu, Color according to customer requirements			
	Z	Zinc die-cast housing (on request)			
Configuration of output side					
	D	Turntable			
Reduction ratio					
	S65	i = 65:1 other reduction variants on request			
2020.00-	S	0	D	S65	Example

Variant 2020.00-S0DS65 with one drive pin



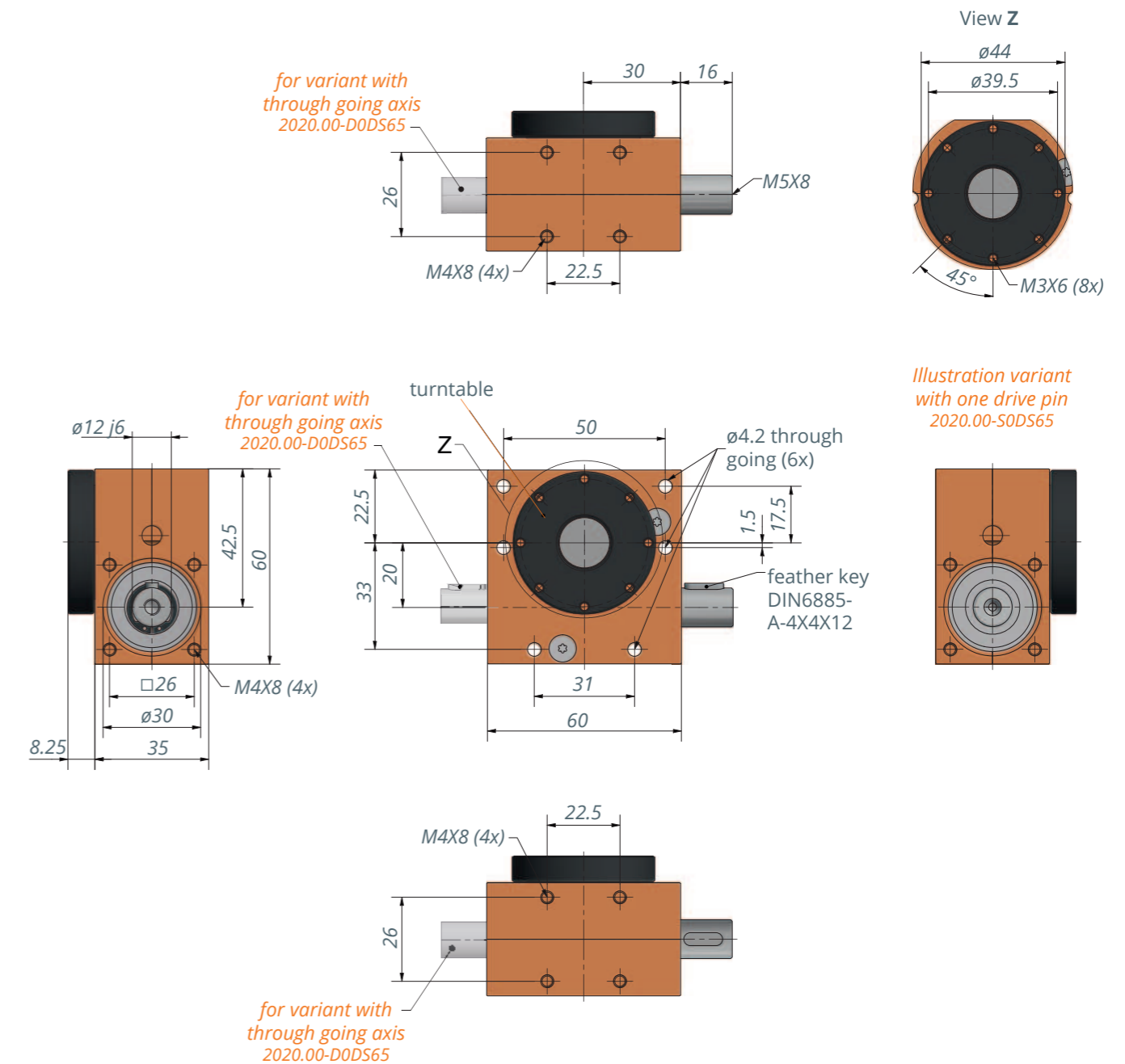
Variant 2020.00-D0DS65 with through going axis



Technical data

Item number	Reduction ratio i	Self-locking static	Max. output-speed n in min ⁻¹	Max. output-torque M in Nm	Max. drive-torque M in Ncm	Max. axial load on drive side in N	Max. axial load on output side in N	Degree of efficiency in %
2020.00-S0DS65	65 : 1	Yes	100	1	5	600	1500	35
2020.00-D0DS65								

Other translations on request

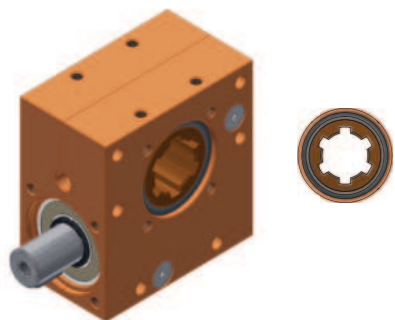


Technical notes

- Variant with **turntable**: Permissible axial forces on drive side $FA = 1,500 \text{ N}$
- The positions of the feather keys as standard in variant D are not in line. Possible on enquiry if needed

Worm gear reducer Ket-Motion 2020 K

With splined shaft connection

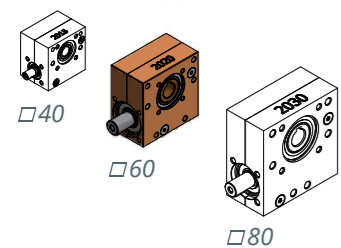


Description

Universally usable and maintenance-free worm gear unit with an **axis distance of 20 mm** and with nine different reduction ratios. The aluminium or zinc housing is encapsulated to prevent the escape of grease and the ingress of dust. The worm gear pair is left-handed. The direction of rotation on the shaft is arbitrary.

Special features

- **Axis distance 20 mm**
- Maintenance-free grease lubrication
- Aluminium housing, anodized (Color on customer request) or Zinc housing in a material-saving design
- 9 reduction ratios from 1:1 to 65:1
- Backlash on the drive shaft $1^\circ \pm 0.5^\circ$, (for $i=1:1$ $2^\circ \pm 0.5^\circ$)
- Duty cycle of 20 % at 5 min (1 min ON, 4 min OFF)
- Service life of 1,000 hours with:
 - full load and
 - input speed of 500 rpm and
 - duty cycle 20% with 5 min and
 - ambient temperature 20 °C

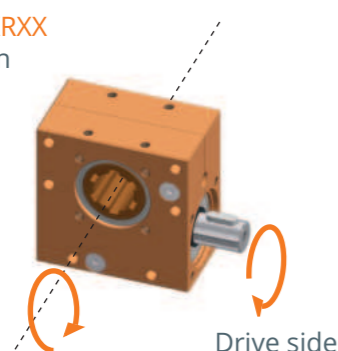


Variant key

Ket-Motion	Configuration of drive side				
2020.00	S	With one drive pin			
	D	With through going axis			
Housing: Material & Optics					
	0	Alu, orange anodized (standard)			
	1	Alu, silver anodized			
	X _i	Alu, Color according to customer requirements			
	Z	Zinc die-cast housing			
Configuration of output side					
	K	Splined shaft connection			
Reduction ratio R					
	RXX	9 Reduction variants of R01 (i= 1:1) to R65 (i=65:1)			
2020.00-	S	0	K	R65	Example

Variant 2020.00-S0KRXX with one drive pin

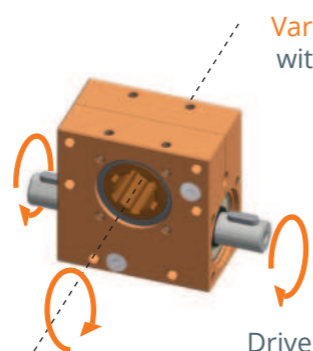
S



Drive side

Variant 2020.00-D0KRXX with through going axis

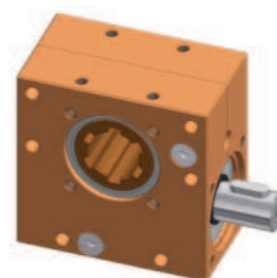
D



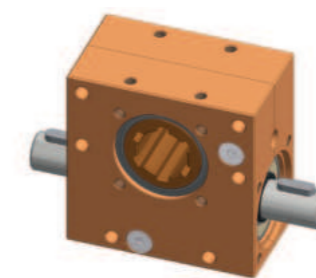
Drive side

2020 K Gearbox with aluminium housing, anodized

With one drive pin
2020.00-S0KRXX



With through-screw
2020.00-D0KRXX



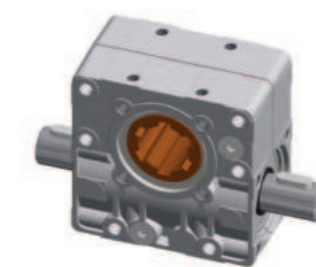
- ▶ Lower point load due to full-surface contact during bolting
- ▶ Free choice of color through anodizing
- ▶ Noble design in the visible area

2020 K Gearbox with material-saving zinc housing

With one drive pin
2020.00-SZKRXX



With through-screw
2020.00-DZKRXX



- ▶ Lower CO2 imprint than ALU
- ▶ Cost-optimized
- ▶ Industrial Design

Technical data

Item number	Reduction ratio i	Self-locking static	Output-speed n in min^{-1}	Max. output-torque M in Nm	Max. drive-torque M in Nm	Drive side		Degree of efficiency %
						Radial-force ¹⁾ F_R in N	Axial-force ²⁾ F_A in N	
2020.00-XXKR65	65 : 1	Yes	100/500/1000	4.5/3.8/3	0.2/0.2/0.2	500	500	29
2020.00-XXKR40	40 : 1	Yes	100/500/1000	5.5/4.8/4	0.4/0.3/0.3	400	400	39
2020.00-XXKR30	30 : 1	No	100/500/1000	8.5/7/5.5	0.6/0.5/0.4	350	350	45
2020.00-XXKR23	23 : 1	No	100/500/1000	10/8/6	0.9/0.7/0.5	250	250	50
2020.00-XXKR18	18 : 1	No	100/500/1000	11/9/7	1.1/0.9/0.7	250	250	55
2020.00-XXKR15	15 : 1	No	100/500/1000	12/10/8	1.5/1.3/1	250	200	52
2020.00-XXKR13	13 : 1	No	100/500/1000	15/13/11	2.1/1.8/1.5	200	200	56
2020.00-XXKR05	5 : 1	No	100/500/1000	10/8/6	2.9/2.3/1.7	200	200	70
2020.00-XXKR01*	1 : 1	No	100/500/1000	1.5/1/0.65	2.1/1.4/0.9	250	250	73

1) The values of F_R apply only when $F_A = 0$ N

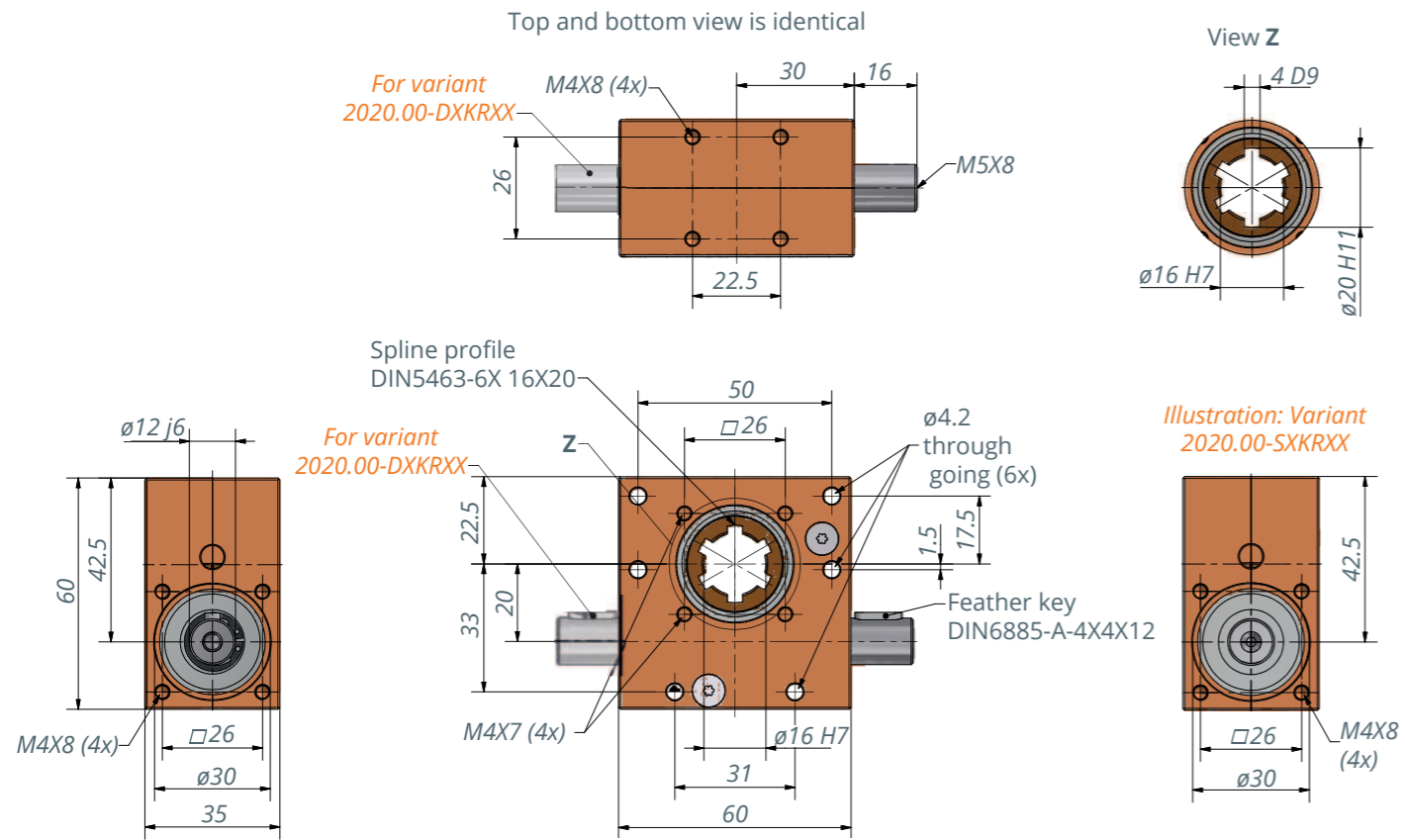
2) The values of F_A apply only when $F_R = 0$ N

* Backlash on the output shaft $2^\circ \pm 0.5^\circ$

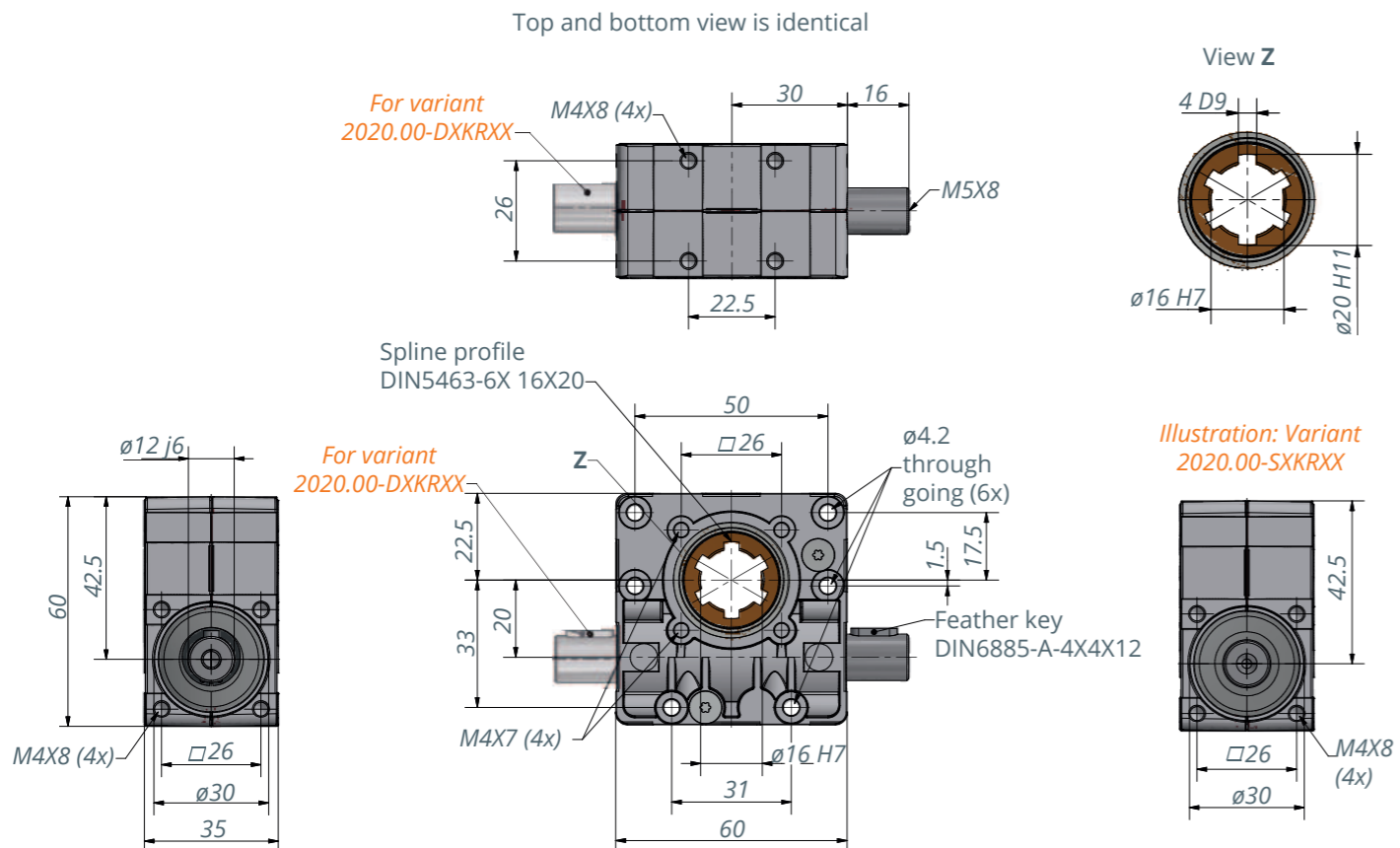
Technical notes

- Variant with **splined shaft connection**: Permissible force on drive side $F_A = 120$ N at $F_R = 0$ N and $F_R = 120$ N at $F_A = 0$ N
- The positions of the feather keys as standard in variant D are not in line. Possible on enquiry if needed

Variant with **Aluminium housing**: With one drive pin or through going axis



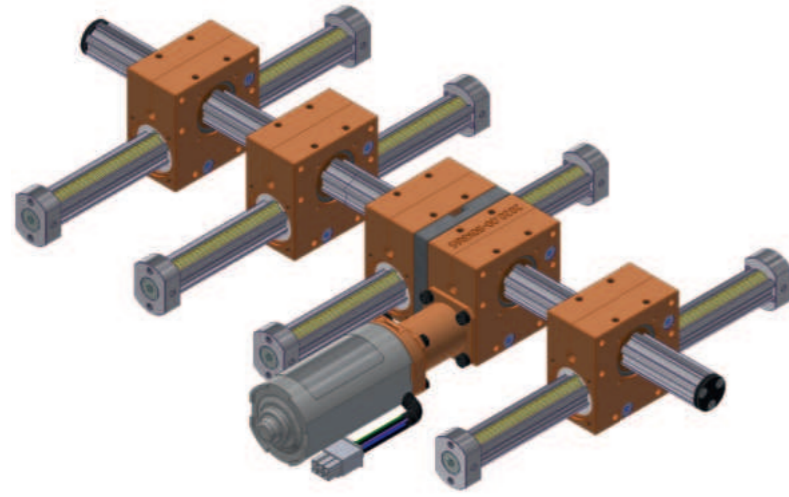
Variant with **Zinc housing**: With one drive pin or through going axis



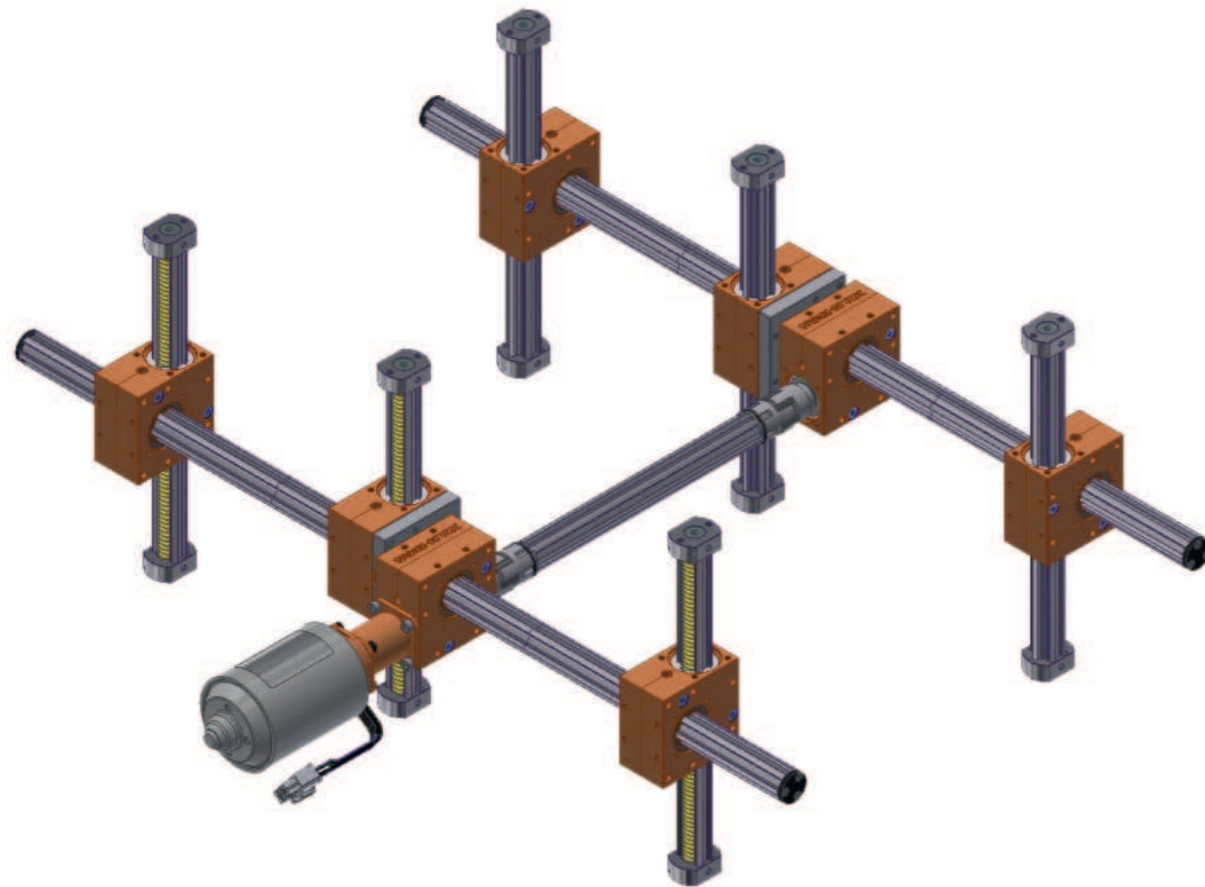
Mechanical accessories

	Item number	Illustration
Multifunction splined shaft profile	2010.11-V02LXXXX Preferred variant 2010.11-V02L1000	DIN5463-6x16x20
End cap for splined shaft profile	2010.02-0001	
Alu Shaft (Gear connector) with feather key DIN6885-A-4x4x12	5708.39-0000	Feather key DIN8085-A-4x4x12 M5 12 deep both sides
Steel Shaft (Gear connector) with feather key DIN6885-A-4x4x12	5708.39-0001	Feather key DIN8085-A-4x4x12 M5 12 deep both sides
Claw coupling D1= 12/ D2= 8 for shaft connection	5790.12-0003	$\phi 12$ (D1= \emptyset -inside) $\phi 8$ (D2= \emptyset -inside) 21.3
Claw coupling D1= 12/ D2= 12 for shaft connection	5790.12-0001	$\phi 12$ (D1= D2) both sides 21.8
Claw coupling D1= 12 for slinde shaft profile (DIN5463-6x12x20)	5790.12-0007	$\phi 12$ (D1) 22.8
Mounting flange 45° latching	2010.15-0001	

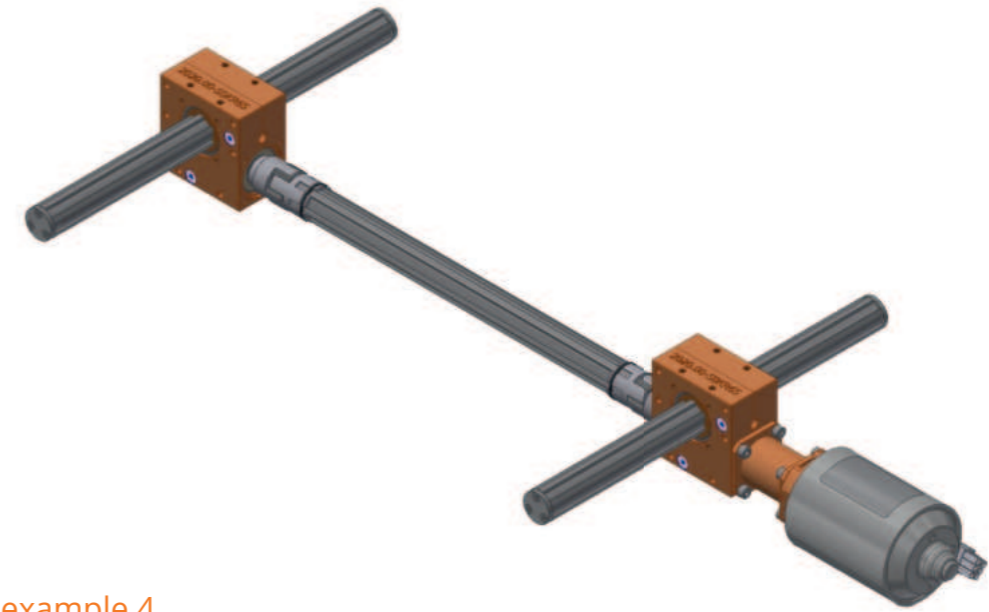
Application example 1



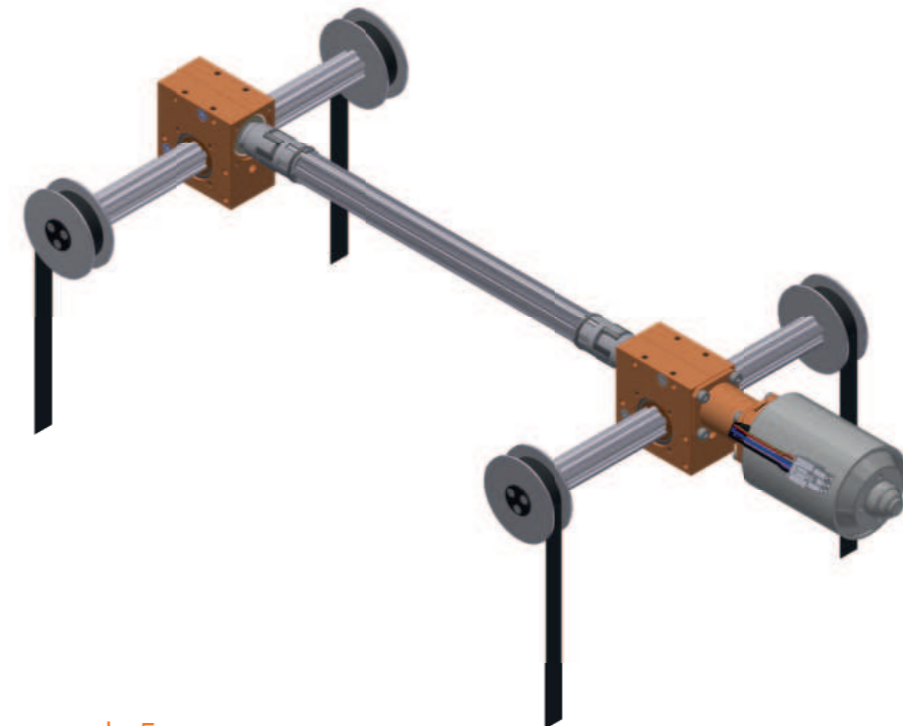
Application example 2



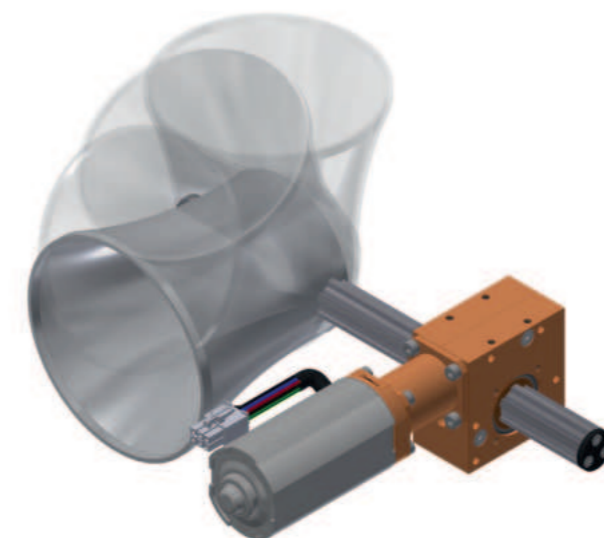
Application example 3



Application example 4



Application example 5



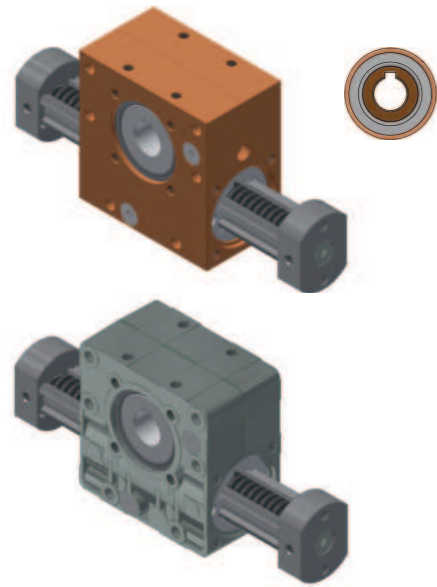
Rack and pinion gear Ket-Motion 2020 ZxP

Description

The function of the universally applicable linear gear units is to convert rotating movements into axial ones. They are used wherever vertical or horizontal transport, lifting, pushing or steering is required. As an electromechanical variant, these special gear-boxes often replace hydraulics and pneumatics. Thanks to a rack that can be freely scaled in length, the stroke can be freely selected to suit the application.

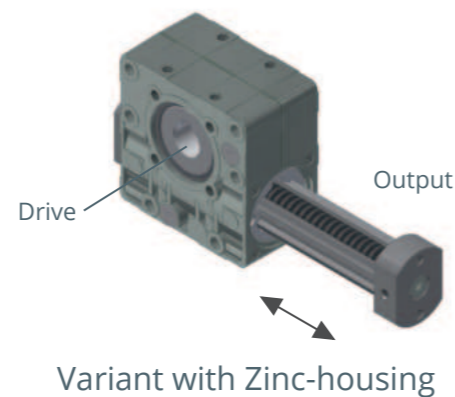
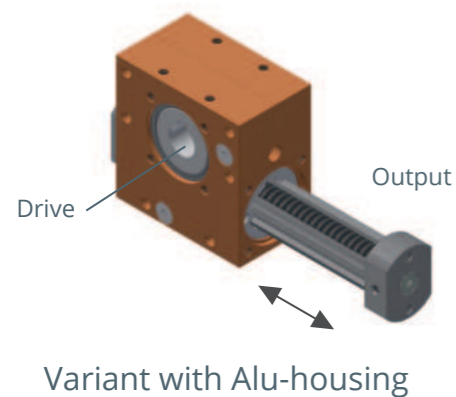
Special features

- **Axis distance 20 mm**
- Housing: Either anodized aluminum (color according to customer's request) or with zinc housing in a material saving design
- Feed per revolution 87 mm
- Backlash < 0.5 mm
- Max. Speed 100 mm/s
- Application temperature -20°C to +60°C
- Lubrication and maintenance free
- Stroke HXXXX: freely selectable



Variant key

Ket-Motion					
2020.00	Z	Linear gear			
Housing: Material & Optics					
	0	Alu, orange anodized (standard)			
	X _i	Alu, Color according to customer requirements			
	Z	Zinc die-cast housing			
Configuration of drive side					
	P	Splined shaft connection			
Stroke H					
	HXXXX	Stroke length in mm			
2020.00-	Z	0	P	H0150	Example



Technical data

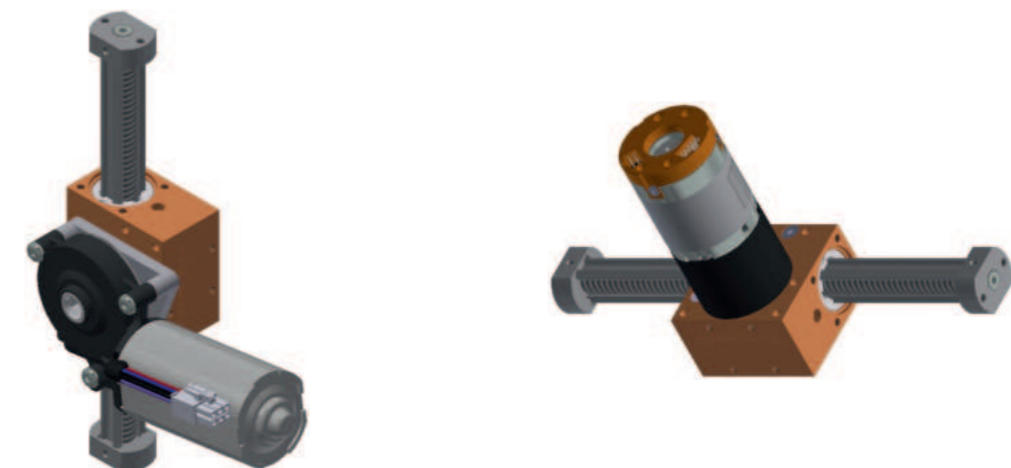
Item number	Stroke XXXX in mm	Feed per revolution in mm	Self locking	Drive torque max. M_A in Nm	Axial force output side	
					max. F_A in N	max. $F_{A peak}^{**}$ in N
2020.00-ZOPHXXXX 2020.00-ZZPHXXXX	variable*					
2020.00-ZOPH0150 2020.00-ZZPH0150	150	87	No	2.3	100	1300
2020.00-ZOPH0250 2020.00-ZZPH0250	250					
2020.00-ZOPH0500 2020.00-ZZPH0500	500					

* Max. stroke length 2500 mm
** Short-term peak load < 1 s

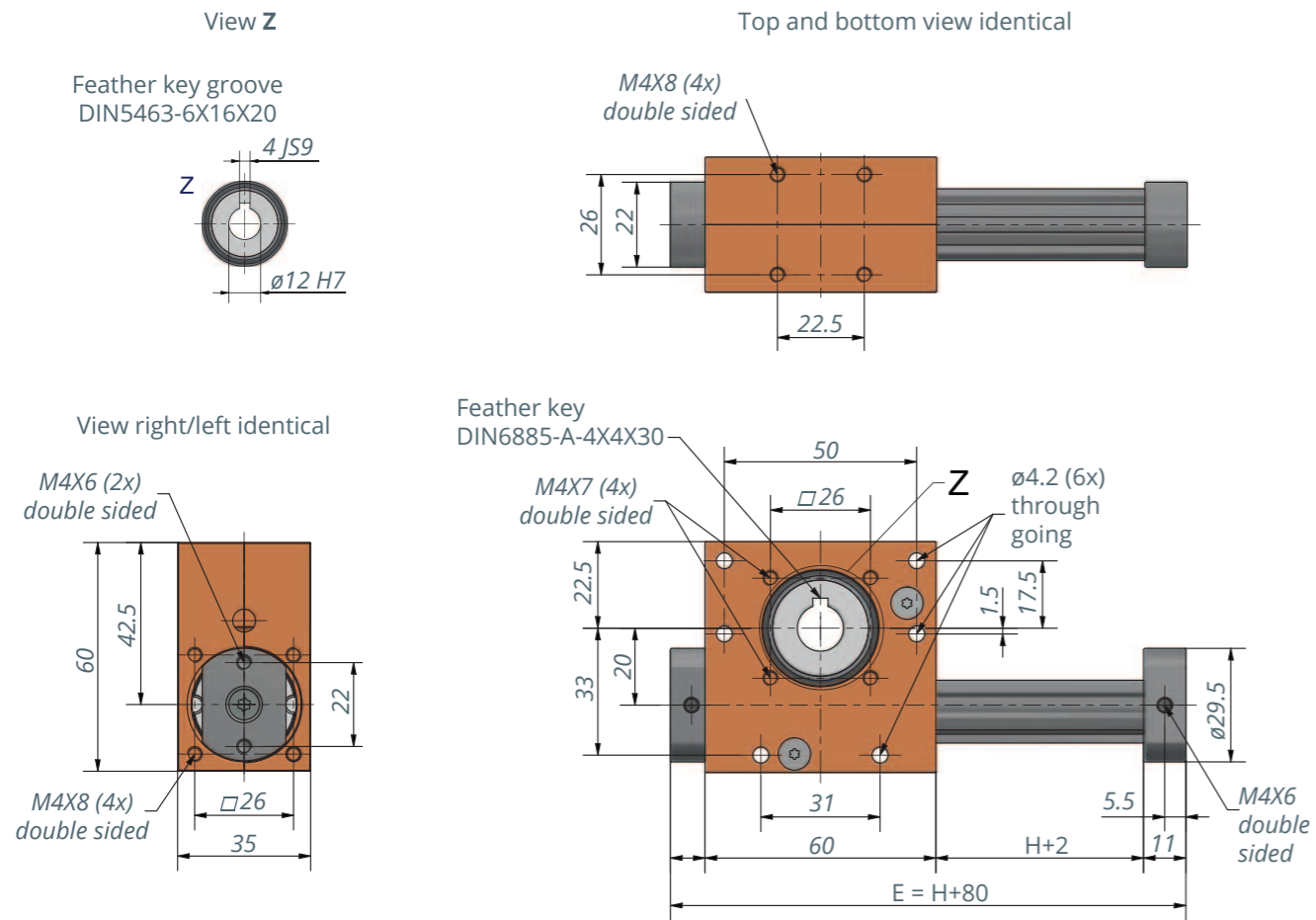
Application examples and accessories

Several gear units can be synchronized by means of connecting flanges, connecting shafts and electronic control. 2020 worm gear units are available with three different motor types. If required, a suitable control system can also be supplied. The parts required for this can be found in our extensive range of accessories.

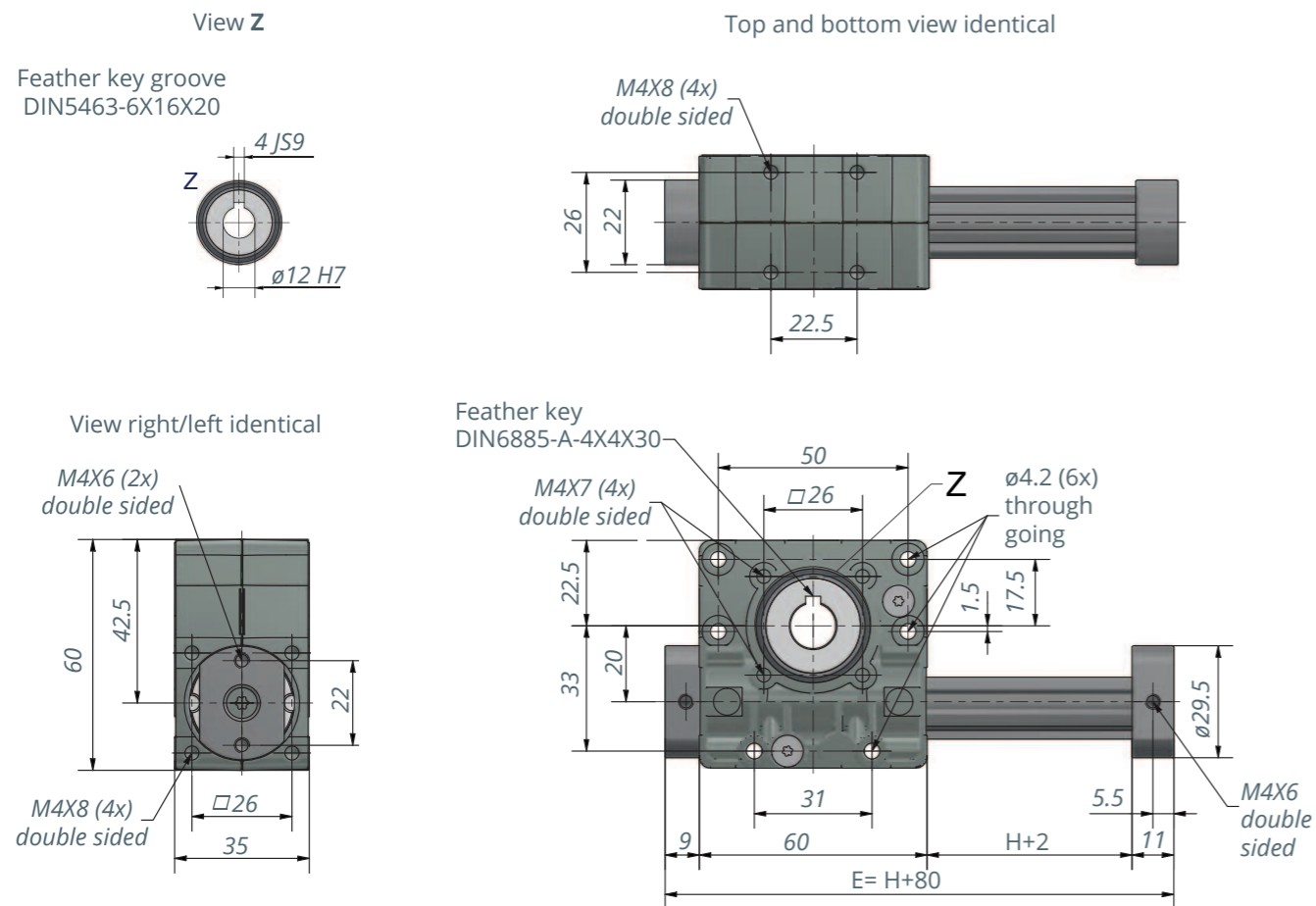
Application examples



Variant with **Aluminium-housing 2020.00-ZOPHXXXX**



Variant with **Zink-housing 2020.00-ZZPHXXXX**



Mechanical accessories

	Item number	Illustration
Alu shaft (Gear connector) with feather key DIN6885-A-4x4x12	5708.39-0000	
Steel shaft (Gear connector) with feather key DIN6885-A-4x4x12	5708.39-0001	
Claw coupling D1= 12/ D2= 8 for shaft connection	5790.12-0003	
Claw coupling D1= 12/ D2= 12 for shaft connection	5790.12-0001	
Claw coupling D1= 12 for splined shaft profile (DIN5463-6x12x20)	5790.12-0007	
Mounting flange 45° latching	2010.15-0001	

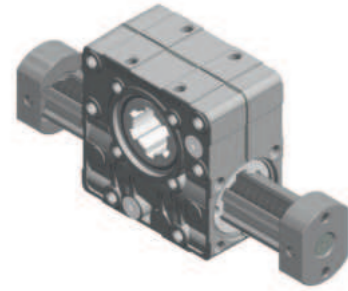
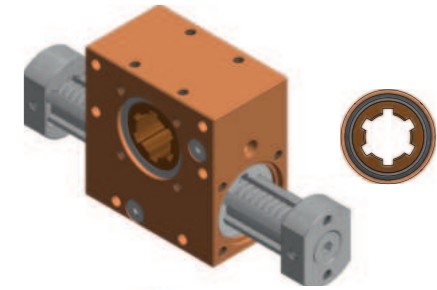
Rack and pinion gear Ket-Motion 2020 ZxK

Description

The function of the universally applicable linear gear units is to convert rotating movements into axial ones. They are used wherever vertical or horizontal transport, lifting, pushing or steering is required. As an electromechanical variant, these special gear-boxes often replace hydraulics and pneumatics. Thanks to a rack that can be freely scaled in length, the stroke can be freely selected to suit the application.

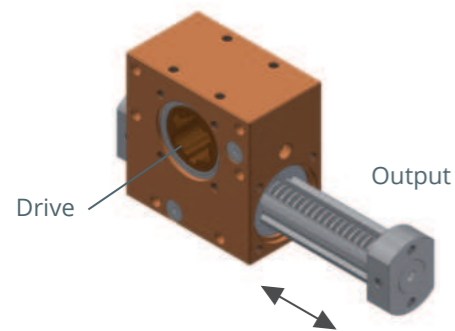
Special features

- **Axis distance 20 mm**
- Housing: Either anodized aluminum (color according to customer's request) or with zinc housing in a material saving design
- Feed per revolution 87 mm
- Backlash < 0.5 mm
- Max. Speed 100 mm/s
- Application temperature -20°C to +60°C
- Lubrication and maintenance free
- Stroke HXXXX: freely selectable

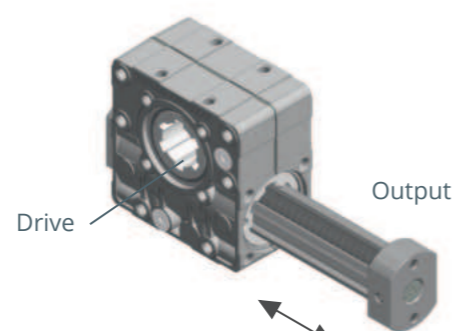


Variant key

Ket-Motion					
2020.00	Z	Linear gear unit			
		Housing: Material & Optics			
		0	Alu, orange anodized (standard)		
		X _i	Alu, Color according to customer requirements		
		Z	Zinc die-cast housing		
		Configuration of drive side			
		K	Splined shaft connection		
		Stroke H			
		HXXXX	Stroke length in mm		
2020.00-	Z	0	K	H0150	Example



Variant with Alu-housing



Variant with Zinc-housing

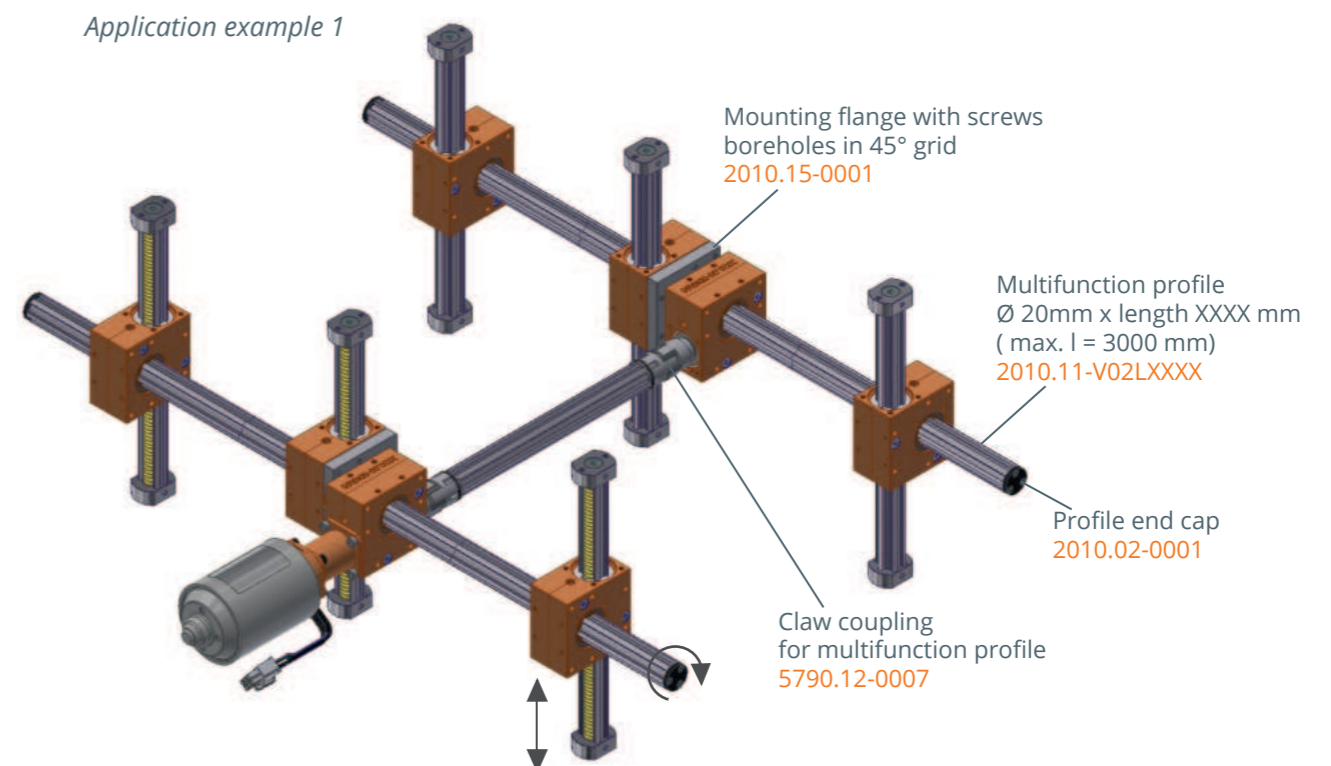
Technical data

Item number	Stroke XXXX in mm	Feed per revolution in mm	Self locking	Drive torque max. M _A in Nm	Axial force output side	
					max. F _A in N	max. F _{A peak} ** in N
2020.00-Z0KHXXXX 2020.00-ZZKHXXXX	variable*					
2020.00-Z0KH0150 2020.00-ZZKH0150	150	87	No	2.3	100	1300
2020.00-Z0KH0250 2020.00-ZZKH0250	250					
2020.00-Z0KH0500 2020.00-ZZKH0500	500					

* Max. stroke length 2500 mm
** Short-term peak load < 1 s

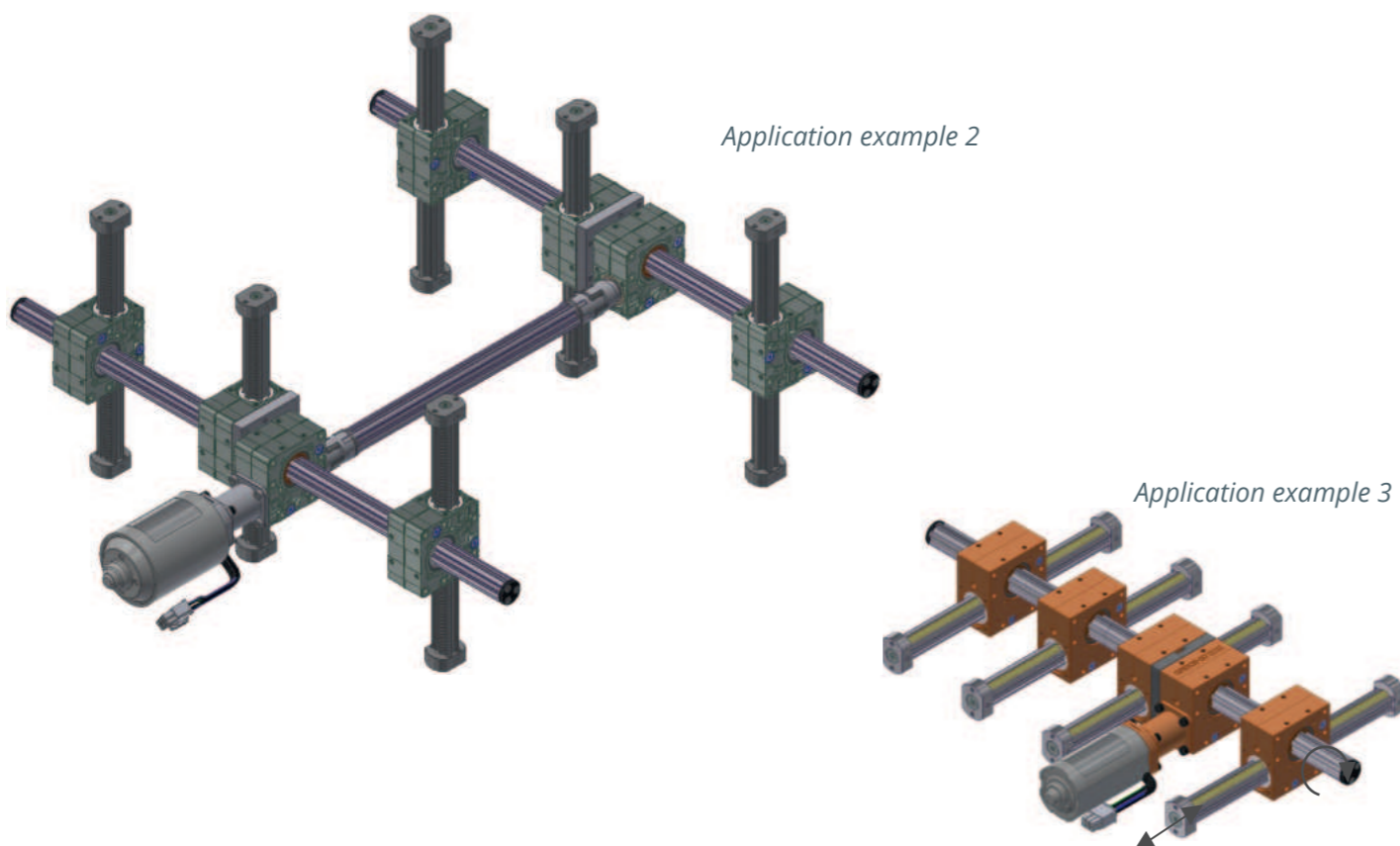
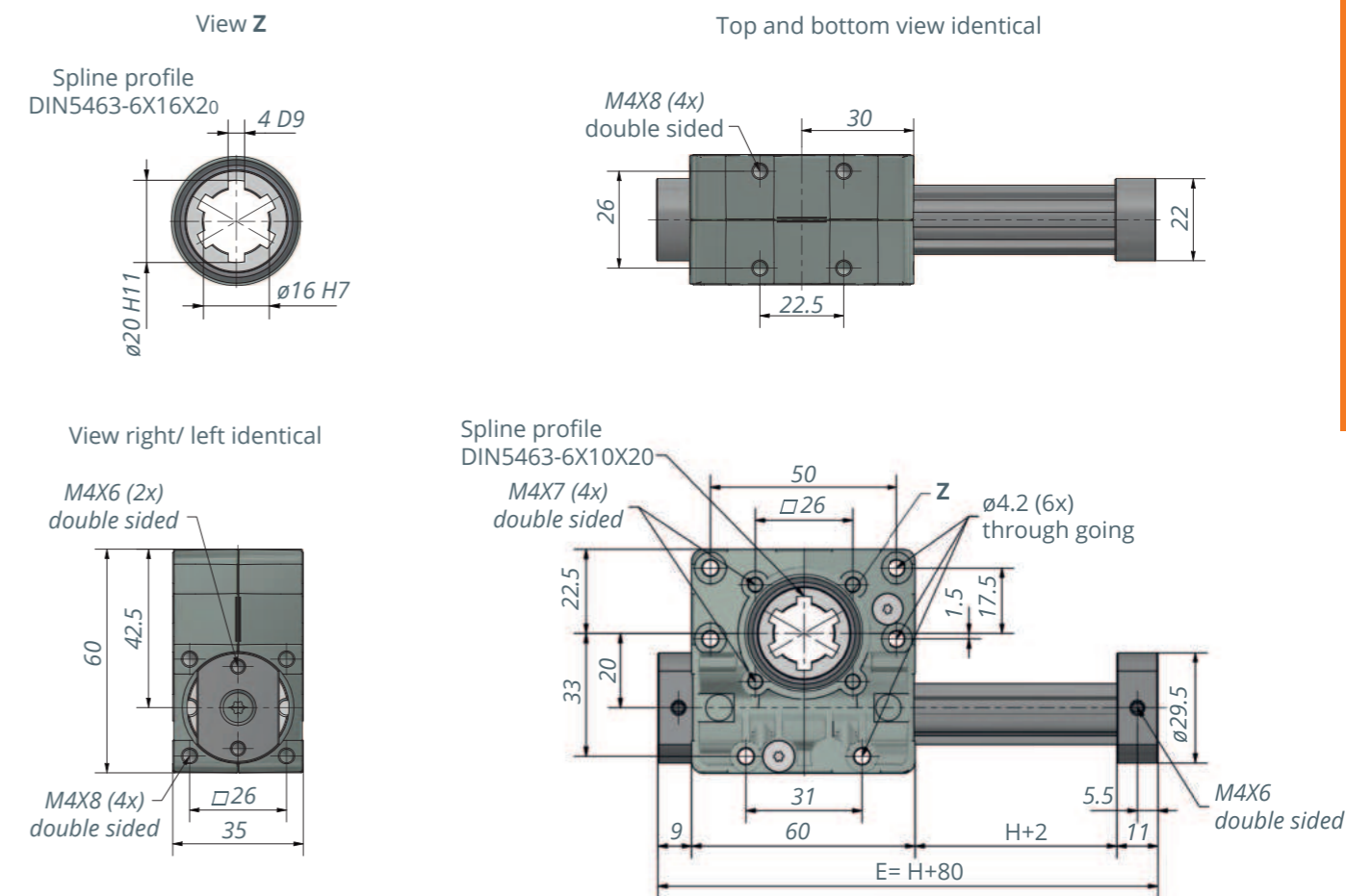
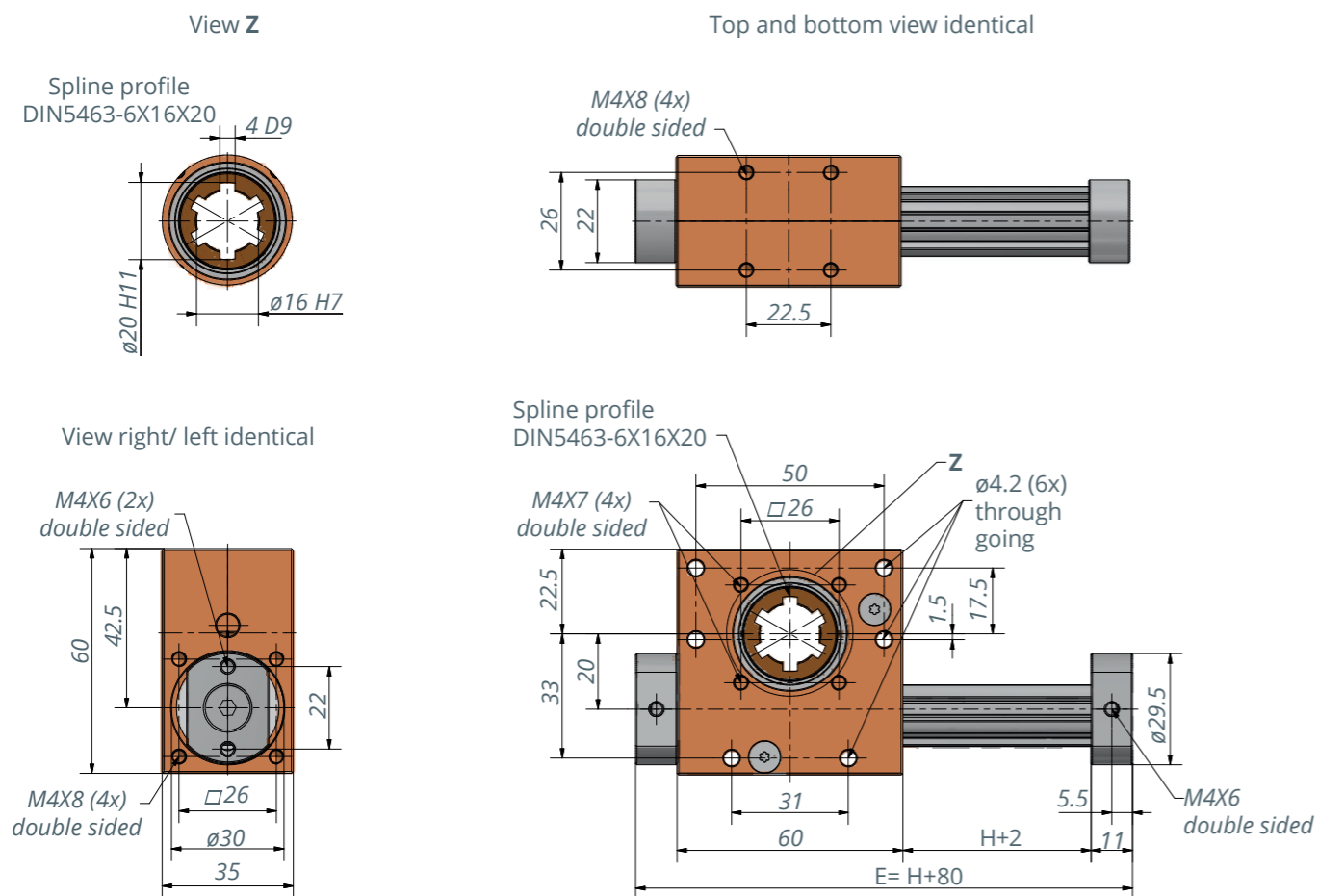
Application examples and accessories

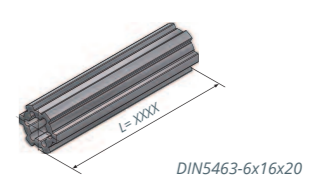
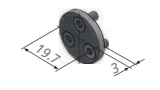
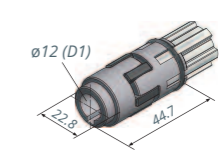
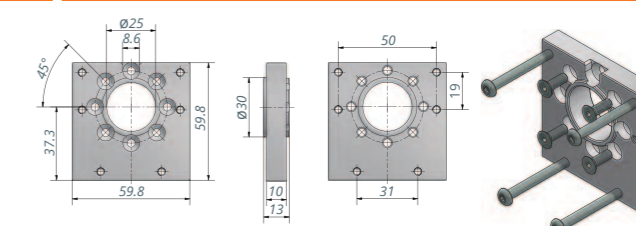
Several gear units can be synchronized by means of connecting flanges, connecting shafts and electronic control. 2020 worm gear units are available with three different motor types. If required, a suitable control system can also be supplied. The parts required for this can be found in our extensive range of accessories.



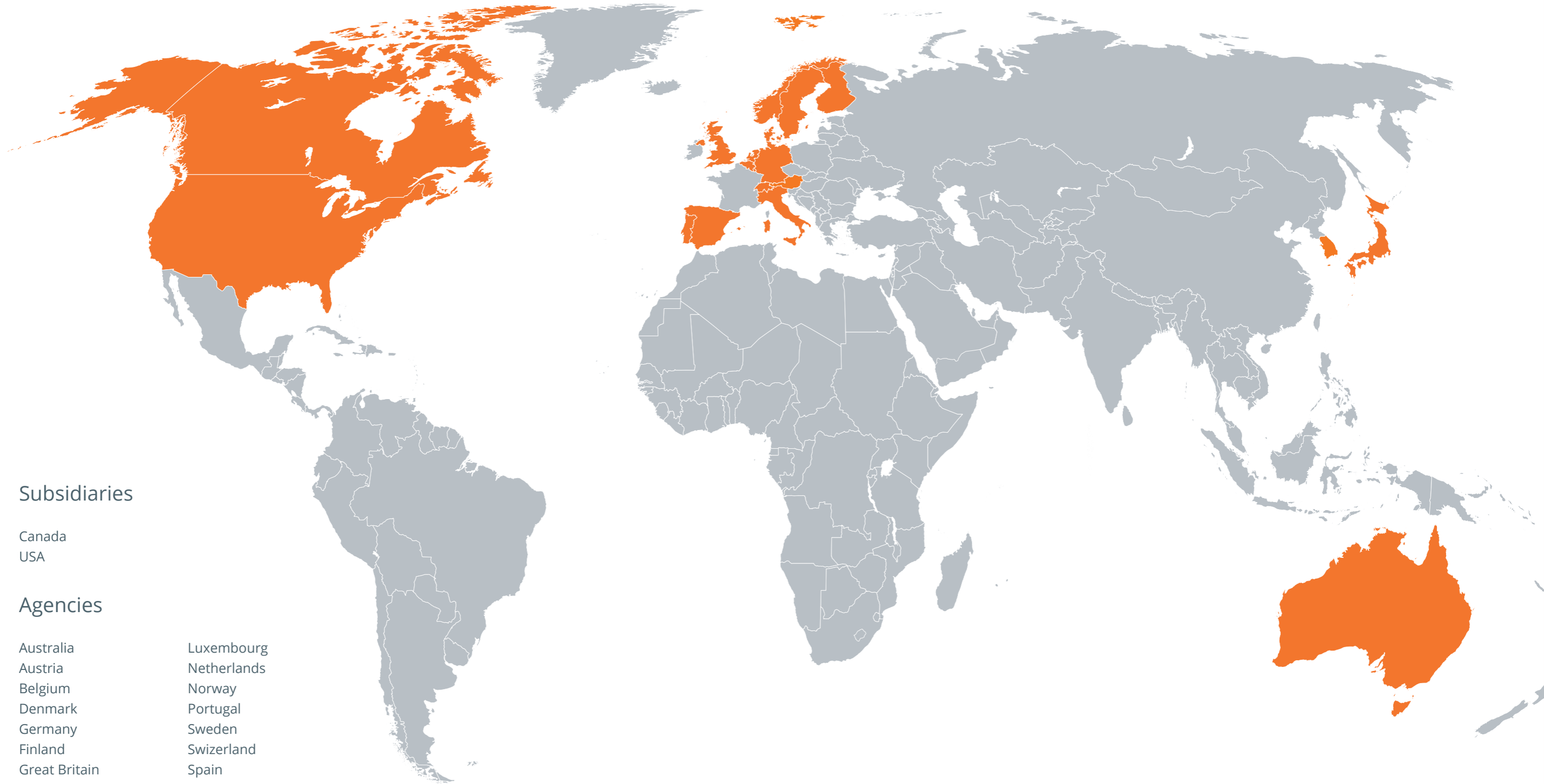
Variant with **Aluminium-housing** 2020.00-Z0KHXXXX

Variant with **Zinc-housing** 2020.00-ZZKHXXXX



Mechanical accessories	Item number	Illustration
Multifunction splined shaft profile	2010.11-V02LXXXX Preferred variant 2010.11-V02L1000	
End cap for splined shaft profile	2010.02-0001	
Claw coupling D1= 12 for splined shaft profile (DIN5463-6x12x20)	5790.12-0007	
Mounting flange 45° latching	2010.15-0001	

USED AROUND THE WORLD



Subsidiaries

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USA

Agencies

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Netherlands
Norway
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Sweden
Switzerland
Spain
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