

## Worm Gear Screw Jack NPK, with Ball Screw Spindle

**Housing:** Made from aluminium alloy in die-cast version. All sides machined. As standard filled with lubricant. Protective tube steel, blank.

**Gearing:** Worm made from ETG100, Gear made from Gbz12. Due to the high efficiency (low friction between spindle and nut), ball screws are not self-locking. To prevent runback, a brake motor should be fitted, for example.

**Spindle:** Ball screw material Cf53 rolled, induction hardened  $60 \pm 2$  HRC and polished.

**Travelling nut (vers. C):** Material 16MnCr5, hardened  $60 \pm 2$  HRC.

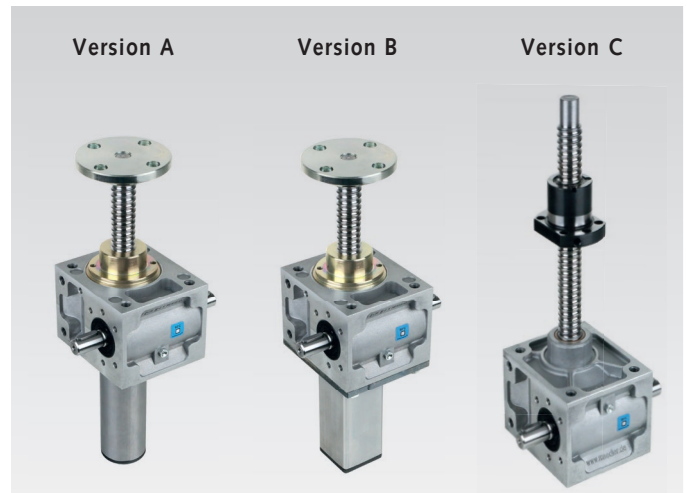
**Lubrication:** The ball screw must be greased by the customer via the grease nipple on the bearing cover or housing neck. For the ball screw nut, via lubrication hole in the flange. Please refer to the operating instructions on the Internet at [www.maedler.de](http://www.maedler.de).

**Stroke:** The standard stroke per worm shaft rotation depends on the size. Version with higher transmission ratio for lower stroke speed on request, see table.

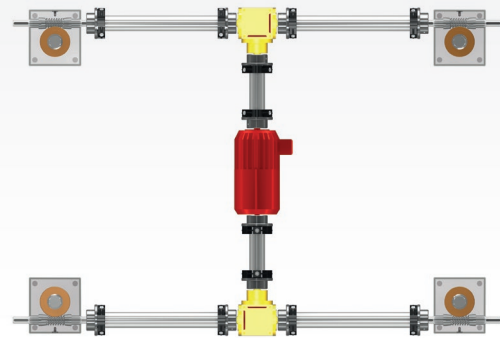
Size	D <sub>4</sub> KGT-Spindle mm	Stroke standard mm	Stroke slow-running mm
1	16 x 5	1,25	0,313
2	20 x 5	1,25	0,313
3	25 x 5	0,83	0,208
3	32 x 5	0,83	0,208
4	40 x 5	0,714	0,179

**Accessorie:** Accessories such as flange plates, mounting feet, etc. can be found from page 978 onwards. Other accessories shown below, such as motor, angular gear or clevis, are available on request.

The product numbers listed on page 977 only refer to the basic gear units without spindle and accessories. Please ask for the price of the complete unit including spindle and accessories as, e.g., flange plate/travelling nut, bellow or coil spring cover, fastening strips.



Drive diagram (example)



### Versions

**Version A:** In this standard version, the ball screw spindle moves in the axial direction. The object to be moved must be secured against rotation.

**Version B:** As version A, but the ball screw is secured against rotation by a square protective sleeve. The load only needs to be applied.

**Version C:** In this version the spindle is fixed to the worm gear. The axial movement is taken over by the ball screw nut running outside the gear unit.

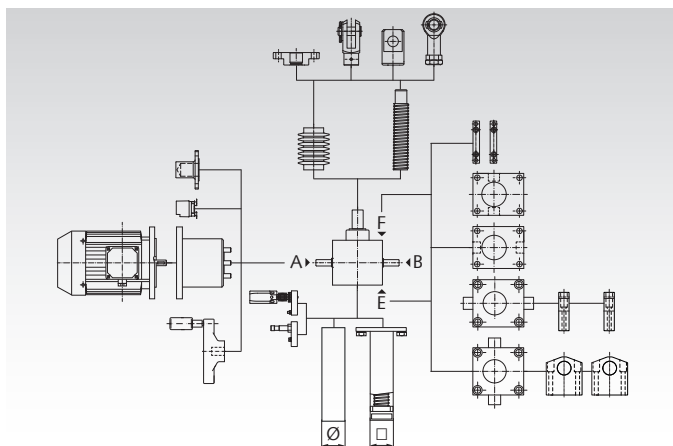
### General Information

These gearboxes with ball screw are always supplied with spindle end safety feature. The spindle is secured before the protective sleeve is mounted so that the stroke is limited in the extended state and the spindle cannot be unscrewed from the gearbox.

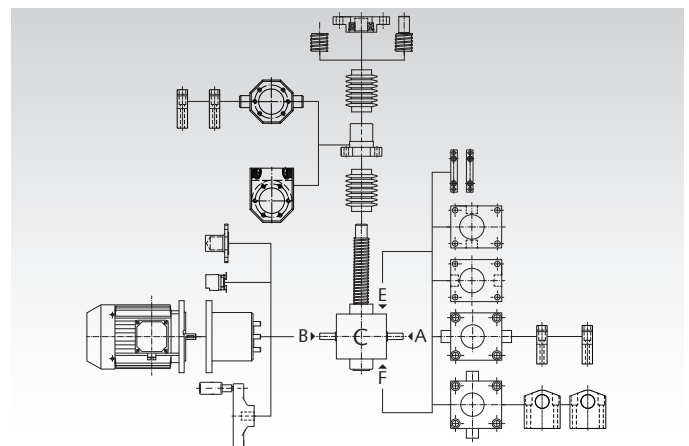
When using a bellows, the required spindle length becomes longer. Dimension C<sub>3</sub> from the dimension table changes for version A/B.

By connecting several worm gear screw jacks with cardan shafts or connecting shafts and angular gearboxes, different drive schemes can be realized in a simple way.

### Accessories for NPK Version A and B



### Accessories for NPK Version C



## Technical Data and Dimensions Tables Worm Gear Screw Jack NPK

### NPK Version A and B

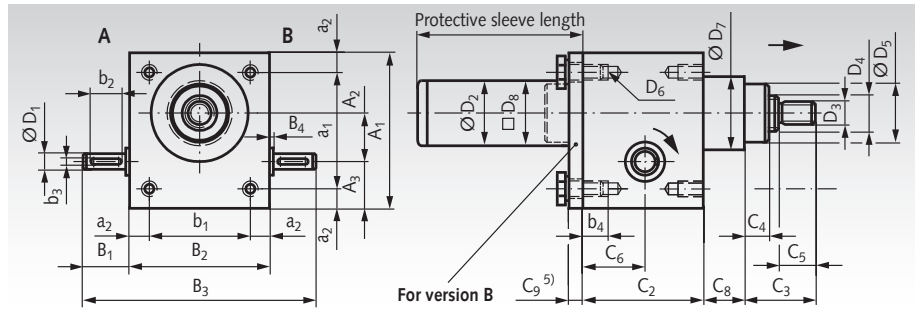
**Version A:** Standard version.

**Version B:** With anti-rotation guide.

The delivery always takes place with the KGT spindle mounted.

Other sizes with different spindle and lead available on request.

Ordering details: e.g.: Prod. No. Type, Size, Stroke Length, accessories



Product No. Version A	Product No. Version B	Size	Load ratings		D <sub>4</sub> KGT-Spindel	η <sup>1)</sup> %	Stroke <sup>2)</sup> mm	MD <sup>3)</sup> Nm	A <sub>1</sub> mm	A <sub>2</sub> mm	A <sub>3</sub> mm	a <sub>1</sub> mm	a <sub>2</sub> mm	B <sub>1</sub> mm	B <sub>2</sub> mm	B <sub>3</sub> mm	B <sub>4</sub> mm
			C dyn. kN	C <sub>0</sub> stat. kN													
475 001 1605	475 011 1605	1	6,3	11,5	16 x 5	70,1 (56,0)	1,25	3,2	80	25	24	60	10	24	72	120	1,5
475 002 2005	475 012 2005	2	7,5	14,7	20 x 5	68,8 (49,3)	1,25	7,0	100	32	28	78	11	27,5	85	140	2,0
475 003 2505	475 013 2505	3	8,0	16,7	25 x 5	68,8 (49,3)	0,83	16	130	45	31	106	12	45	105	195	2,0
475 003 3205	475 013 3205	3	8,9	24,3	32 x 5	68,8 (49,4)	0,83	16	130	45	31	106	12	45	105	195	2,0
475 004 4005	475 014 4005	4	19,0	66,2	40 x 5	69,6 (53,0)	0,714	34	180	63	39	150	15	47,5	145	240	2,5

Size	b <sub>1</sub> mm	b <sub>2</sub> mm	b <sub>3</sub> <sup>P9</sup> mm	b <sub>4</sub> mm	C <sub>2</sub> mm	C <sub>3</sub> mm	C <sub>4</sub> mm	C <sub>5</sub> mm	C <sub>6</sub> mm	C <sub>8</sub> <sup>4)</sup> mm	C <sub>9</sub> <sup>5)</sup> mm	D <sub>1</sub> <sup>h6</sup> mm	D <sub>2</sub> mm	D <sub>3</sub> mm	D <sub>5</sub> mm	D <sub>6</sub> mm	D <sub>7</sub> <sup>4)</sup> mm	D <sub>8</sub> <sup>5)</sup> mm	Protective Sleeve <sup>6)</sup> mm	Weight <sup>7)</sup> kg
1	52	18	3	13	62	35	12	19	32	11	6	10	33,5	M12	30	M8	48	35	Stroke +46 (53)	1,2
2	63	20	5	15	75	45	18	19	37,5	4	6	14	42	M14	39	M8	57	45	Stroke +56 (64)	2,1
3	81	36	5	15	82	50	23	22	41	-	8	16	50	M20	46	M10	-	50,5	Stroke +64 (73)	3,7
3	81	36	5	15	82	50	23	22	41	15	8	16	50	M20	46	M10	76	50,5	Stroke +64 (73)	3,6
4	115	36	6	16	117	65	32	29	58,5	-	10	20	65	M30	60	M12	-	65	Stroke +88 (92)	9,4

<sup>1)</sup> Efficiency. Values in brackets for version with higher transmission ratio (slow-running version).

<sup>2)</sup> Stroke pro full rotation of the input shaft.

<sup>3)</sup> Required torque at max. load (only under optimum conditions).

<sup>4)</sup> The housing neck with the dimensions C<sub>8</sub> and D<sub>7</sub> is not available for all spindle sizes.

<sup>5)</sup> The base plate with dimension C<sub>9</sub> is only available on version B, with square protective tube D<sub>8</sub>. Protective tube and base plate are made of bright steel.

<sup>6)</sup> Values in brackets for version B, with square protective tube D<sub>8</sub> to anti-rotation guide.

<sup>7)</sup> Only weight of gearbox without spindle and accessories.

### NPK Version C

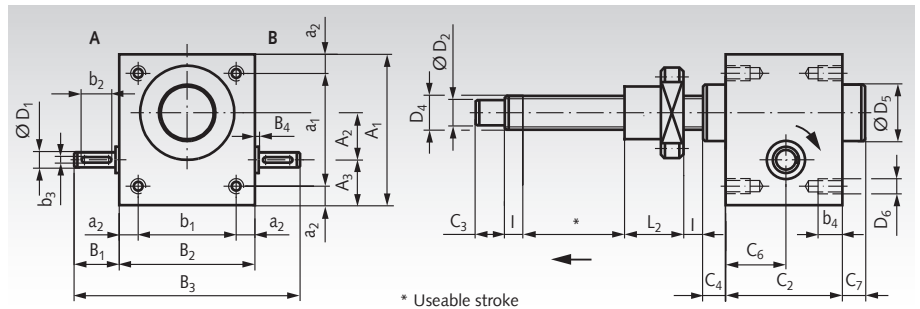
**Version C:** Travelling nut version.

The delivery always takes place with the running nut mounted.

Dimensions of the travelling nut see page 979.

Other sizes with other spindle and lead or other travelling nut on request.

Ordering details: e.g.: Prod. No. Type, Size, Stroke Length, accessories



Product No. Version C	Size	Load ratings		D <sub>4</sub> KGT-Spindel	η <sup>1)</sup> %	Stroke <sup>2)</sup> mm	MD <sup>3)</sup> Nm	A <sub>1</sub> mm	A <sub>2</sub> mm	A <sub>3</sub> mm	a <sub>1</sub> mm	a <sub>2</sub> mm	B <sub>1</sub> mm	B <sub>2</sub> mm	B <sub>3</sub> mm	B <sub>4</sub> mm
		C dyn. kN	C <sub>0</sub> stat. kN													
475 021 1605	1	9,3	13,1	16 x 5	70,0 (59,2)	1,25	1,5	80	25	24	60	10	24	72	120	1,5
475 022 2005	2	10,5	16,6	20 x 5	70,1 (56,0)	1,25	2,9	100	32	28	78	11	27,5	85	140	2,0
475 023 2505	3	12,3	22,5	25 x 5	68,8 (49,4)	0,83	5	130	45	31	106	12	45	105	195	2,0
475 023 3205	3	21,5	49,3	32 x 5	68,8 (49,4)	0,83	5	130	45	31	106	12	45	105	195	2,0
475 024 4005	4	23,8	63,1	40 x 5	69,6 (53,0)	0,714	8,5	180	63	39	150	15	47,5	145	240	2,5

Size	b <sub>1</sub> mm	b <sub>2</sub> mm	b <sub>3</sub> <sup>P9</sup> mm	b <sub>4</sub> mm	C <sub>2</sub> mm	C <sub>3</sub> mm	C <sub>4</sub> mm	C <sub>6</sub> mm	C <sub>7</sub> mm	I mm	D <sub>1</sub> <sup>h6</sup> mm	D <sub>2</sub> <sup>j6</sup> mm	D <sub>5</sub> mm	D <sub>6</sub> mm	L <sub>2</sub> mm	Weight <sup>4)</sup> kg
1	52	18	3	13	62	15	12	32	17	10	10	12	30	M8	42	1,2
2	63	20	5	15	75	20	18	37,5	23	15	14	15	39	M8	42	2,1
3	81	36	5	15	82	25	23	41	28	20	16	20	45	M10	42	3,7
3	81	36	5	15	82	25	23	41	28	20	16	20	46	M10	55	3,6
4	115	36	6	16	117	30	32	58,5	37	25	20	25	60	M12	57	9,4

<sup>1)</sup> Efficiency. Values in brackets for version with higher transmission ratio (slow-running version).

<sup>2)</sup> Stroke pro full rotation of the input shaft.

<sup>3)</sup> Required torque at max. load (only under optimum conditions).

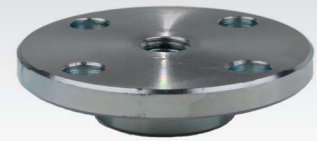
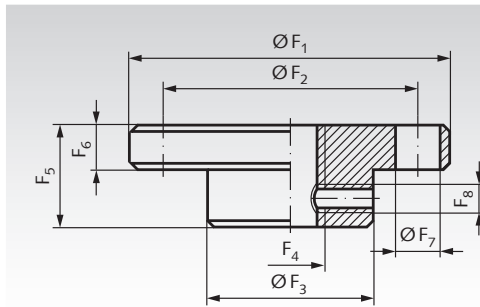
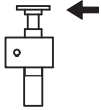
<sup>4)</sup> Only weight of gearbox without spindle and accessories.

## Accessories for Worm Gear Screw jacks

### Flange Plate for NPT and NPK, Version A and B

**Material:** Steel C45, zinc-plated.

Mounting plate with metric fastening thread, for mounting on the end of the spindle.



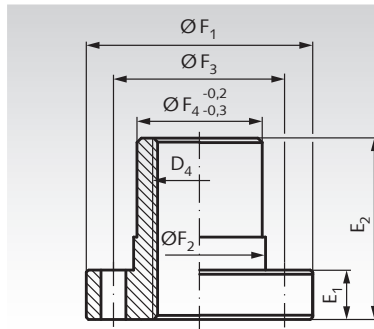
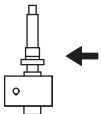
Ordering details: e.g.: Prod. No. 475 000 15, Flange plate for version A and B, Size 0

Product No.	Size	F <sub>1</sub> mm	F <sub>2</sub> mm	F <sub>3</sub> mm	F <sub>4</sub> mm	F <sub>5</sub> mm	F <sub>6</sub> mm	F <sub>7</sub> mm	F <sub>8</sub> mm	Weight kg
475 000 15	0	50	40	26	M10	16	7	4 x Ø7	M4	0,1
475 001 15	1	65	48	29	M12	20	7	4 x Ø9	M5	0,2
475 002 15	2	80	60	39	M14	20	8	4 x Ø11	M6	0,3
475 003 15	3	90	67	46	M20	23	10	4 x Ø11	M8	0,6
475 004 15	4	110	85	60	M30	30	15	4 x Ø13	M8	1,3

### Travelling Nut for NPT Version C, with Trapezoidal Thread

**Material:** Bronze CuSn12-C-GC (2.1052).

Preferred installation position for compressive force: with the flange facing downwards (compressive load on the flange instead of tensile load on the screws).

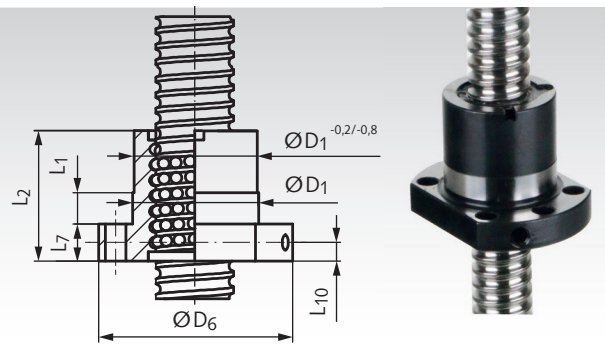
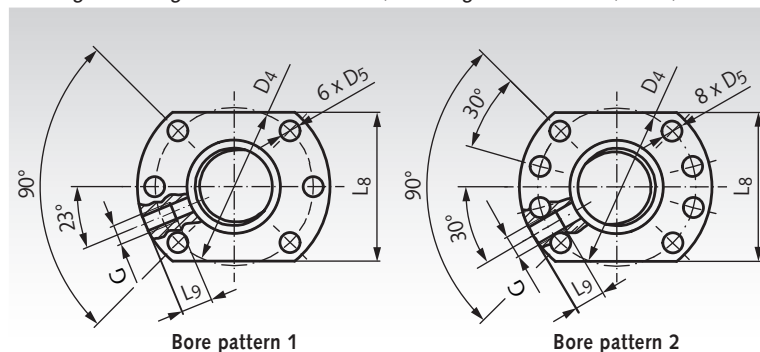


Ordering details: e.g.: Prod. No. 475 000 11, Travelling nut for Version C, with trapezoidal thread, Size 0

Product No.	Size	D4 mm	E <sub>1</sub> mm	E <sub>2</sub> mm	F <sub>1</sub> mm	F <sub>2</sub> <sup>h9</sup> mm	F <sub>3</sub> mm	F <sub>4</sub> mm	Mounting hole mm	Weight kg	Product No. Cardan Adapter KARA Page 518	Product No. Adapter Console KONA Page 518
475 000 16	0	Tr. 16x4	10	25	45	25	35	25	6 x Ø6	0,2	644 701 25	644 702 25
475 001 16	1	Tr. 18x4	12	44	48	28	38	28	6 x Ø6	0,3	644 701 28	644 702 28
475 002 16	2	Tr. 20x4	12	44	55	32	45	32	6 x Ø7	0,4	644 701 32	644 702 32
475 003 16	3	Tr. 30x6	14	46	62	38	50	38	6 x Ø7	0,7	644 701 38	644 702 38
475 004 16	4	Tr. 40x7	16	73	95	63	78	63	6 x Ø9	2,0	644 701 63	644 702 63

### Travelling Nut for NPK Version C, with Ball Thread

Ordering details: e.g.: Prod. No. 475 001 LM1, Travelling nut for Version C, Size 1, with ball thread 16x5



Supplied with assembly tool, without spindle.

Product No.	Size	KGT mm	Bore Pattern	Load Rating		Axial Clearance max. mm	D <sub>1</sub> <sup>g6</sup> mm	D <sub>4</sub> mm	D <sub>5</sub> mm	D <sub>6</sub> mm	L <sub>1</sub> mm	L <sub>2</sub> mm	L <sub>7</sub> mm	L <sub>8</sub> mm	L <sub>9</sub> mm	L <sub>10</sub> mm	G mm	Weight kg
				C <sub>dyn.</sub> kN	C <sub>stat.</sub> kN													
475 001 LM1	1	16 x 5	1	9,3	13,1	0,08	28	38	5,5	48	10	42	10	40	10	5	M6	0,20
475 002 LM1	2	20 x 5	1	10,5	16,6	0,08	36	47	6,6	58	10	42	10	44	10	5	M6	0,25
475 003 LM1	3	25 x 5	1	12,3	22,5	0,08	40	51	6,6	62	10	42	10	48	10	5	M6	0,35
475 003 LM6	3	32 x 5	1	21,5	49,3	0,08	50	65	9	80	10	55	12	62	10	6	M6	0,55
475 004 LM1	4	40 x 5	2	23,8	63,1	0,08	63	78	9	93	10	57	14	70	10	7	M6	0,80

**Note:** For assembly / disassembly, a sleeve must be used as an assembly aid.