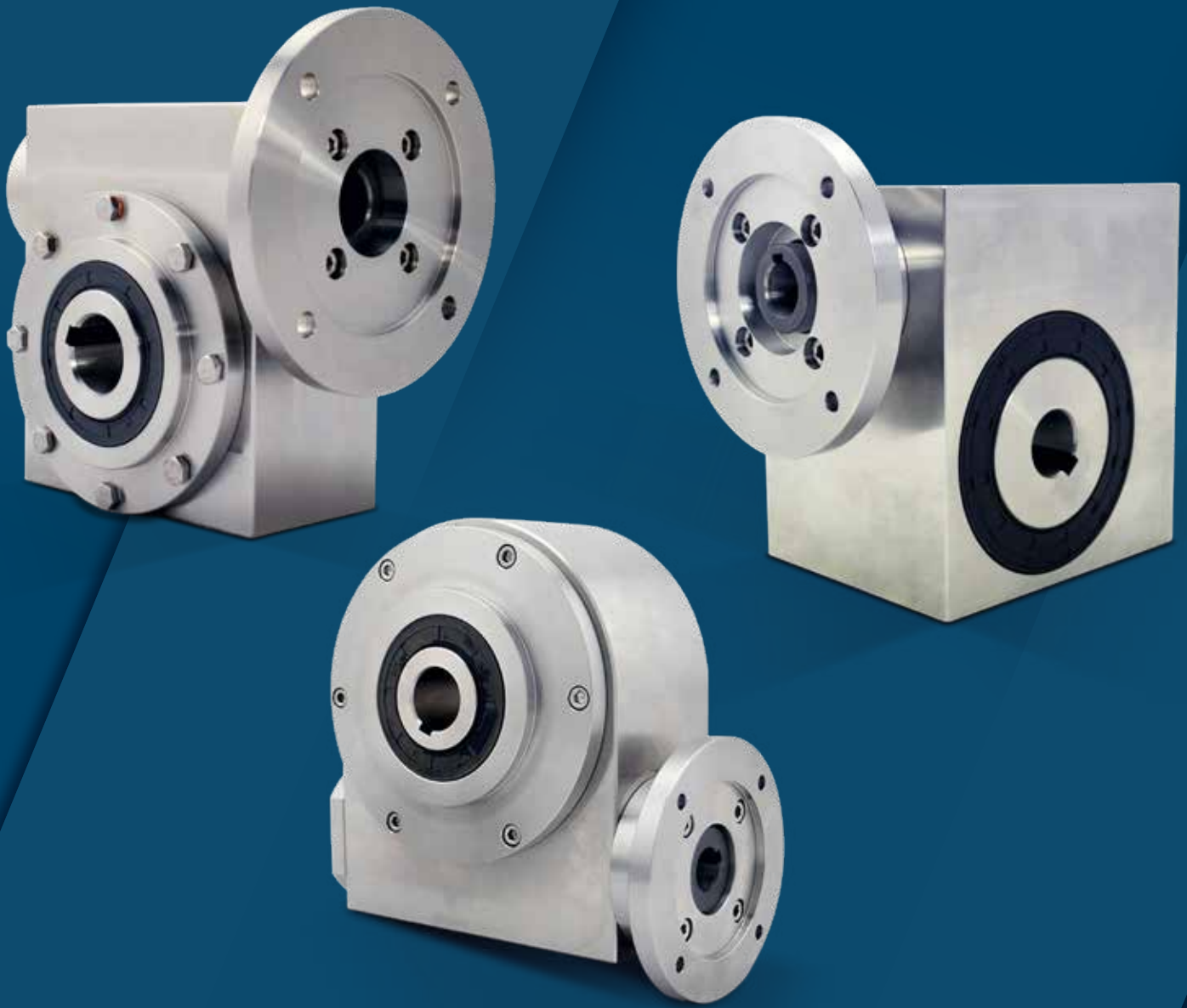


# bj·gear



## Stainless steel worm gearboxes

When demanded by the environment

Customisation is our standard

# Stainless steel worm gearboxes

BJ-Gear A/S manufactures stainless steel worm gearboxes of superior quality. The gearboxes are specifically developed for the food industry and other industries, that continuously make heavier demands to the resistance of material and to a design that is easy-to-clean.

The gearboxes are designed with a smooth, stainless steel gear housing and hollow shaft. The gearboxes are lubricated for life and can be supplied with a lubricant approved for the food industry. The oil sealings are made of nitrile rubber.

In order to reduce the risk of bacteria growth, the design is characterised by smooth surfaces without unnecessary flanges, recesses and mounting holes.

When a completely sanitary gear motor is required, the stainless steel worm gearbox can be fitted with a stainless AC motor or a servo motor.

## Type designation

We believe that an unambiguous type designation of our stainless steel gearboxes eases the communication. Therefore, throughout this brochure the position of each item in the type designation will be shown. The number 1 indicates that it is a worm gearbox.

**Stainless steel housing**

**Angular contact ball bearing**

**Motor flange D-side**

**Oil sealing**

**Worm**

**Worm wheel**

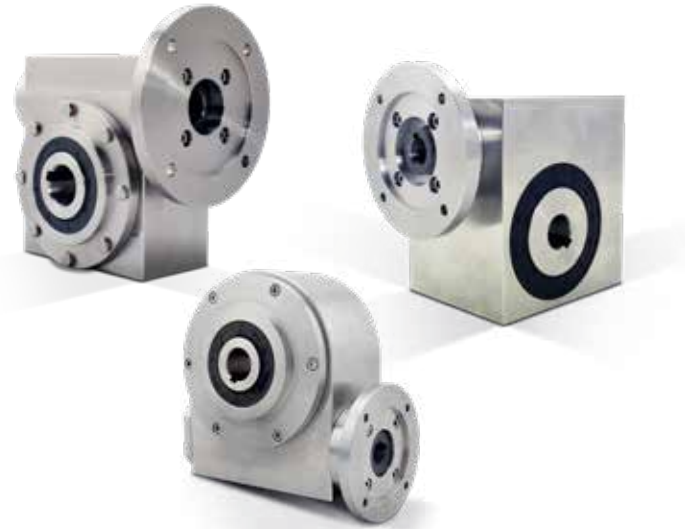
**Deep groove ball bearings / tapered roller bearings**

**Hollow shaft**

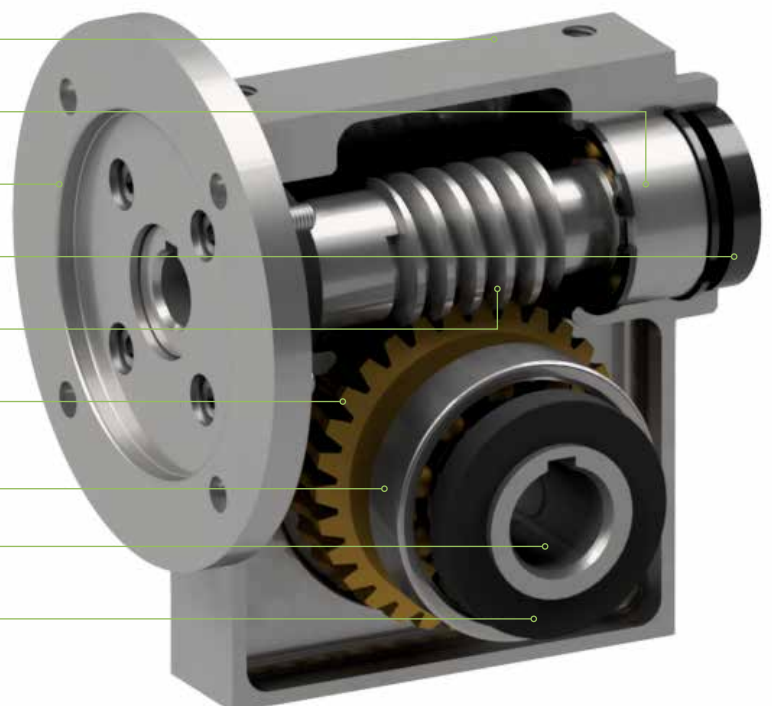
**Dust lip oil sealing**

## IP protection

The protection of the gearboxes are IP65, and IP66 of stainless motors, which ensure that the products can be cleaned with e.g. pressurised water from all directions. To achieve an overall protection of IP66 for the assembly of gearboxes and motors, you need to use a nitrile rubber gasket for the joint.



1	42	S	0	41	2	13	02	01	30	0	1
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## CONTENT

### STANDARD gearbox **Page 5**

BJ-Gear A/S offers a self-produced stainless gearbox range of high quality. The series is developed specifically for the process line in the food industry and other industries where there are continuously stringent requirements for the resistance of the material and easy-to-clean design.

The protection of the gearboxes is IP65, and for stainless motors it is IP66. This ensures that the products can be cleaned with water under pressure from all directions.

The stainless steel worm gearboxes are as standard made in five sizes: **42, 52, 61, 79 and 99**. The number indicates the centre distance of the axles and thus the gear size.

- Up to 88% efficiency
- Easy-to-clean
- Protection degree of minimum IP65
- Ideal for use in the food industry



### PREMIUM gearbox **Page 25**

The stainless steel gearboxes are made of a smooth stainless gear housing, they are life lubricated, and can of course be supplied with oil approved for the food industry. Oil seals are as standard made of nitrile rubber.

To reduce the risk of bacterial growth, the design is characterised by smooth machined surfaces without unnecessary flanges, recesses and mounting holes. It is also possible to order the gearboxes with torque arm, side flange, free worm and plug-in shaft. Other adjustments are performed on request.

The protection of the gearboxes is IP65, and for stainless motors it is IP66. This ensures that the products can be cleaned with water under pressure from all directions.

The stainless steel worm gearboxes are as standard made in three sizes: **31, 42 and 61**. The number indicates the centre distance of the axles and thus the gear size.

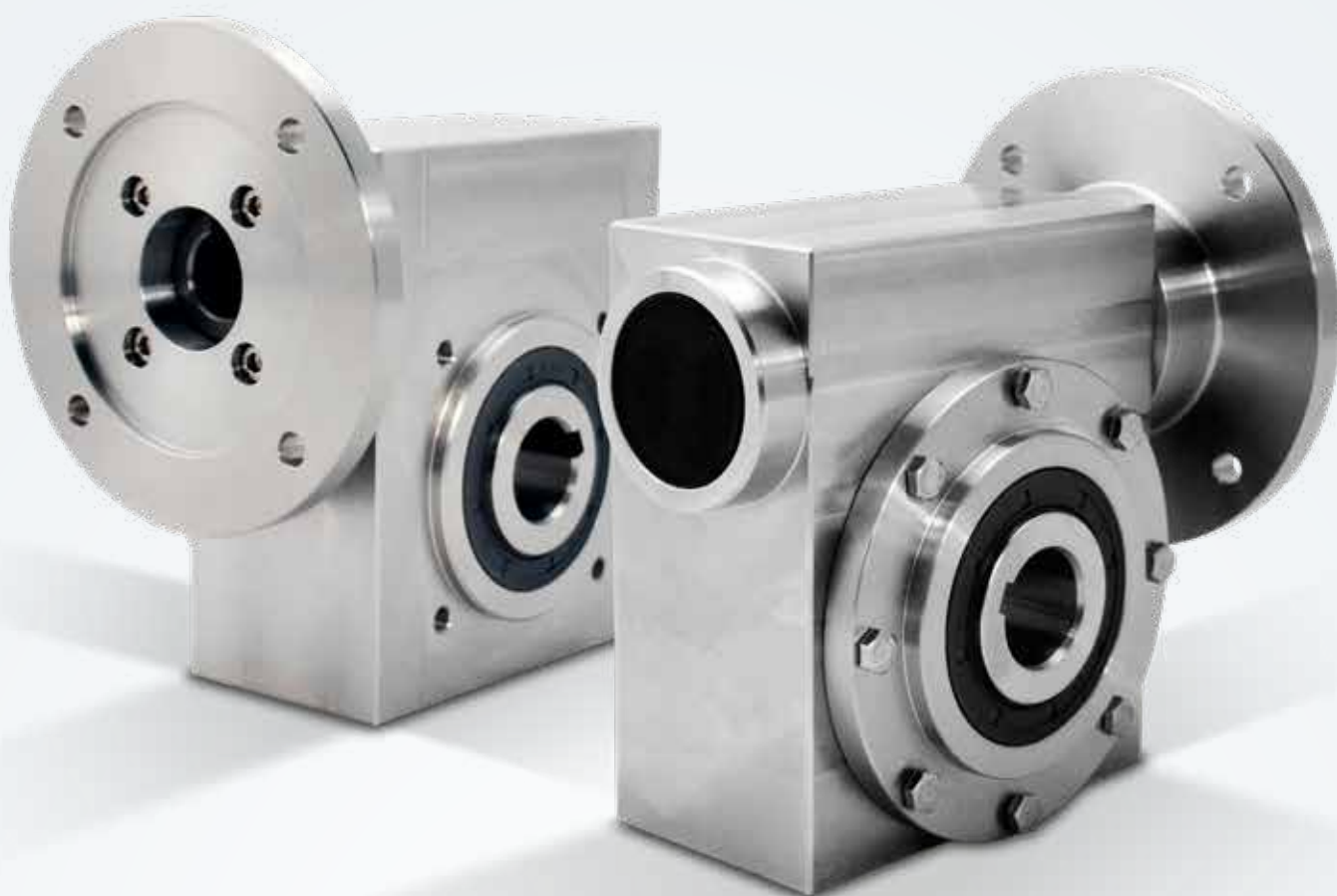
- Up to 88% efficiency
- Smooth surfaces that reduces the risk of bacterial growth
- Unnecessary flanges, recesses and mounting holes
- Hygienic and easy-to-clean
- Protection degree of minimum IP65
- Ideal for use in the food industry



# STANDARD Gearbox

NEW!

Series 42, 52 and 61

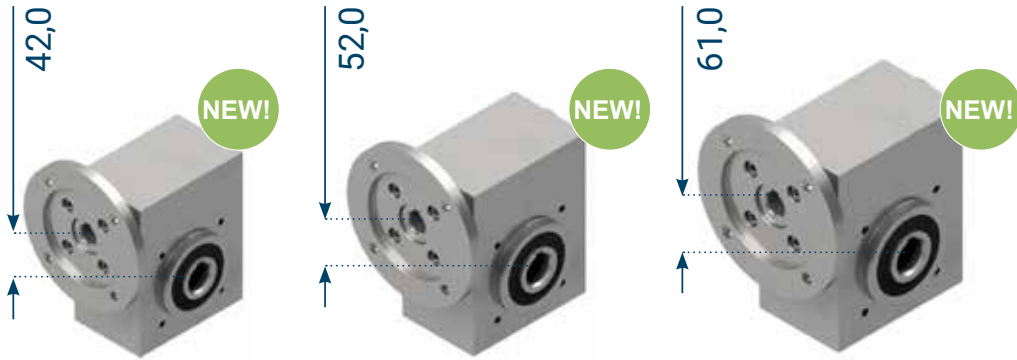


- Up to 88% efficiency
- Easy-to-clean
- Protection degree of minimum IP65
- Ideal for use in the food industry

# STANDARD gearbox sizes

1 42 S 0 41 1 12 02 01 30 0 1

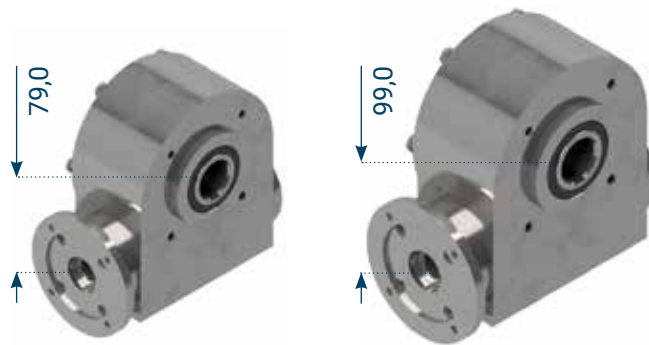
The stainless steel worm gearboxes are as standard made in five sizes: 42, 52, 61, 79 and 99. The number indicates the centre distance of the axles and thus the gear size.



Series 42

Series 52

Series 61



Series 79

Series 99

## Service factor

The operating conditions are of importance to the durability of the gearbox. The gearbox should therefore be dimensioned according to the service factors.

Please note that the values apply for operation with a standard electric AC motor.

$$\text{Service factor} = \frac{M_{\text{gear}} \text{ [Nm]}}{M_{\text{required}} \text{ [Nm]}}$$

Type of load	Number of starts per hour	Operation time per day			
		2	2-8	8-12	12-24
Uniform, smooth load	<50	0,8	0,9	1,0	1,3
	0-500	0,9	1,1	1,2	1,5
	500<	1,0	1,2	1,4	1,7
Moderate impact load	50	0,9	1,1	1,3	1,5
	50-500	1,1	1,3	1,5	1,8
	500<	1,3	1,5	1,7	2,0
Heavy impact load	<50	1,3	1,5	1,6	1,8
	50-500	1,5	1,7	1,9	2,1
	500<	1,7	2,0	2,1	2,4

# Tables of effect

## Strength factor

The strength factor is an expression of the durability of the gearing in relation to breakage. The breakage limit is three times the strength factor.

- Normal use: Include the service factor on page 3 and choose a strength factor > 1.
- In case of special demands on safety or other special conditions: Please contact BJ-Gear A/S for further information.



Series  
42, 52 and 61



Series  
79 and 99

## Tables of effect

## Series 42

Motor		Series 42											
		Gear ratio	5,4:1	7,5:1	10:01	15:01	20:1	25:1	30:1	40:1	50:1	62:1	75:1
	[kW]	n <sub>2</sub> [rpm]	130	93	70	47	35	28	23	18	14	11	9
		Output torque [Nm]/Strength factor											
700	0,09		5,3/8,5	7,1/6,7	9,1/6,7	12/7,0	16/3,7	20/9,2	21/6,5	24/3,7	29/2,4	32/1,6	38/1,0
	0,12		7,2/6,4	9,7/5,0	12/5,1	17/5,0	21/2,9	27/7,0	28/5,0	33/2,8	39/1,8	44/1,2	
	0,18 <sup>2)</sup>		11/4,3	14/3,6	19/3,3	26/3,4	33/1,9	41/4,7	43/3,3	51/1,8			
	0,25 <sup>2)</sup>		15/3,2	20/2,5	26/2,5	37/2,4	46/1,3	57/3,4					
	0,37 <sup>3)</sup>		23/2,1	31/1,6	40/1,6	55/1,6							
	0,55 <sup>3)</sup>		34/1,4	46/1,1									
	[kW]	n <sub>2</sub> [rpm]	167	120	90	60	45	36	30	23	18	15	12
		Output torque [Nm]/Strength factor											
900	0,09					12/7,7	12/4,6	15/11,4	16/8,1	20/4,4	23/2,9	26/1,9	30/1,2
	0,12		5,6/7,5	7,6/5,9	9,7/5,9	13/6,0	17/3,3	21/8,3	23/5,7	28/3,2	32/2,1	36/1,4	
	0,18 <sup>1)</sup>		8,6/5,0	11/4,2	15/3,9	21/3,8	26/2,2	32/5,6	35/3,9	43/2,2	50/1,4		
	0,25 <sup>1)</sup>		12/3,6	16/2,9	21/2,8	29/2,8	37/1,6	46/4,0	49/2,8				
	0,37 <sup>2)</sup>		18/2,5	24/2,0	31/1,9	44/1,9							
	0,55 <sup>2)</sup>		27/1,7	37/1,3	47/1,3								
	0,75 <sup>3)</sup>		37/1,2										
	[kW]	n <sub>2</sub> [rpm]	259	187	140	93	70	56	47	35	28	23	19
		Output torque [Nm]/Strength factor											
1400	0,09				4,6/10	6,5/10	8,3/5,6	10/14,2	11/9,9	14/5,5	15/3,6	17/2,5	20/1,6
	0,12		3,5/9,6	4,7/7,7	6,2/7,6	8,8/7,5	11/4,2	14/10,5	15/7,5	18/4,2	21/2,8	24/1,8	28/1,2
	0,18 <sup>1)</sup>		5,5/6,4	7,4/5,1	9,7/5,0	13/5,3	17/2,9	21/7,2	23/5,1	28/2,8	33/1,8	37/1,2	
	0,25 <sup>1)</sup>		7,8/4,6	10/3,8	13/3,8	19/3,7	24/2,1	30/5,1	33/3,6	40/2,0			
	0,37 <sup>1)</sup>		11/3,3	15/2,6	20/2,5	29/2,4	37/1,4	45/3,5	49/2,4				
	0,55 <sup>2)</sup>		17/2,2	23/1,7	31/1,6	43/1,6							
	0,75 <sup>2)</sup>		24/1,5	32/1,2	42/1,2								
	[kW]	n <sub>2</sub> [rpm]	519	373	280	187	140	112	93	70	56	45	37
		Output torque [Nm]/Strength factor											
2800	0,18 <sup>1)</sup>		2,6/8,7	3,6/6,9	4,7/6,9	6,8/6,7	8,7/3,8	11/9,3	12/6,8	14/4,0	17/2,6	20/1,7	23/1,1
	0,25 <sup>1)</sup>		3,8/6,2	5,2/4,9	6,8/4,9	9,7/4,9	12/2,7	15/7,0	17/4,9	21/2,8	25/1,8	29/1,2	
	0,37 <sup>1)</sup>		5,9/4,1	8,0/3,3	10/3,4	14/3,5	19/1,8	23/4,8	26/3,3	32/1,8			
	0,55 <sup>1)</sup>		8,9/2,8	12/2,2	15/2,3	22/2,2	29/1,2	35/3,2					
	0,75 <sup>2)</sup>		12/2,1	16/1,7	21/1,7	31/1,6							
	1,10 <sup>2)</sup>		18/1,4	24/1,1	32/1,1								
1,50 <sup>1-3)</sup>		25/1,0											

The values are for gearboxes that are well run in and properly heated for operation.

1. Available as stainless steel motor.
2. High output design.
3. Assembly through coupling.

# Tables of effect

# Series 52

Motor			Series 52							
[rpm]	[kW]	Gear ratio n <sub>2</sub> [rpm]	7,5:1	10:1	15:1	19:1	30:1	38:1	51:1	62:1
			93	70	47	37	23	18	14	11
			Output torque [Nm] / Strength factor							
700	0,12		9,5/8,8	12/8,9	17/8,9	21/5,4	29/8,6	34/5,4	40/3,0	45/2,1
	0,18		14/6,2	19/5,8	27/5,7	31/3,8	45/5,7	53/3,6	62/2,0	70/1,4
	0,25		21/4,3	27/4,2	38/4,2	46/2,6	63/4,2	75/2,6	88/1,4	
	0,37		31/2,9	40/2,9	57/2,8	69/1,8	95/2,8	113/1,7	132/1,0	
	0,55		47/1,9	61/1,9	86/1,9	104/1,2				
	0,75 <sup>3)</sup>		65/1,4	83/1,4	118/1,4					
			120	90	60	47	30	24	18	15
			Output torque [Nm] / Strength factor							
900	0,18 <sup>1)</sup>		11/7,2	14/7,1	21/6,7	25/4,3	35/6,8	42/4,2	50/2,4	57/1,6
	0,25 <sup>1)</sup>		16/5,1	21/4,9	29/5,0	36/3,1	50/4,9	60/3,0	71/1,7	81/1,1
	0,37 <sup>1)</sup>		24/3,5	31/3,4	45/3,3	54/2,1	76/3,3	90/2,1	108/1,1	
	0,55 <sup>1)</sup>		37/2,2	47/2,3	67/2,2	82/1,4	114/2,2			
	0,75 <sup>1)</sup>		51/1,6	65/1,6	92/1,6	113/1,0				
	1,10 <sup>1)</sup>		75/1,1	96/1,1						
	1,50 <sup>2)</sup>		102/0,8							
			187	140	93	74	47	37	27	23
			Output torque [Nm] / Strength factor							
1400	0,25 <sup>1)</sup>		10/6,4	13/6,3	18/6,4	23/3,9	32/6,1	39/3,8	46/2,2	53/1,5
	0,37 <sup>1)</sup>		15/4,4	20/4,2	28/4,2	35/2,6	49/4,1	59/2,5	71/1,4	80/1,0
	0,55 <sup>1)</sup>		23/2,9	30/2,8	43/2,8	53/1,8	74/2,8	89/1,8		
	0,75 <sup>1)</sup>		32/2,1	41/2,1	59/2,1	74/1,3	101/2,0			
	1,10 <sup>1)</sup>		48/1,4	62/1,4	88/1,4					
	1,50 <sup>1)</sup>		65/1,1	85/1,0						
			373	280	187	147	93	74	55	45
			Output torque [Nm] / Strength factor							
2800	0,37 <sup>1)</sup>		7,6/5,5	10/5,4	14/5,6	18/3,4	25/5,6	31/3,4	38/1,9	45/1,3
	0,55 <sup>1)</sup>		11/3,9	15/3,9	22/3,6	27/2,3	39/3,7	47/2,3	58/1,3	68/0,9
	0,75 <sup>1)</sup>		16/2,8	21/2,7	30/2,7	38/1,7	54/2,7	66/1,7	81/0,9	
	1,10 <sup>1)</sup>		24/1,9	31/1,9	45/1,8	56/1,2	80/1,8			
	1,50 <sup>1)</sup>		33/1,4	43/1,4	62/1,3	78/0,8				
	2,20 <sup>1)</sup>		49/0,9	64/0,9						

The values are for gearboxes that are well run in and properly heated for operation.

- 1. Available as stainless steel motor.
- 2. High output design.
- 3. Assembly through coupling.



## Tables of effect

## Series 61

Motor		Series 61								
		Gear ratio	7:1	10:1	15:1	21:1	30:1	40:1	48:1	60:1
	[kW]	n <sub>2</sub> [rpm]	100	70	47	33	23	17	15	11
		Output torque [Nm]/Strength factor								
700	0,18		13/17,5	19/9,0	27/8,9	35/17,3	47/8,8	56/5,0	64/3,3	70/2,2
	0,25		19/12,9	27/6,5	39/6,2	50/12,3	67/6,2	82/3,5	90/2,4	99/1,6
	0,37		29/8,7	41/4,3	58/4,3	75/8,3	101/4,2	123/2,4	136/1,6	149/1,1
	0,55		44/5,8	62/2,9	88/2,8	112/5,6	152/2,8	185/1,6		
	0,75 <sup>2)</sup>		61/4,2	85/2,1	121/2,1	154/4,1	208/2,1			
	1,10 <sup>3)</sup>		90/2,9	126/1,4	178/1,4					
	1,50 <sup>3)</sup>		123/2,1	172/1,1						
	[kW]	n <sub>2</sub> [rpm]	129	90	60	43	30	23	19	15
		Output torque [Nm]/Strength factor								
900	0,25 <sup>1)</sup>		15/14,6	21/7,4	30/7,3	39/14,1	52/7,3	64/4,1	72/2,8	80/1,8
	0,37 <sup>1)</sup>		23/9,6	32/5,0	45/5,0	58/9,6	79/4,9	97/2,7	109/1,9	120/1,2
	0,55 <sup>1)</sup>		34/6,7	48/3,4	69/3,3	88/6,4	119/3,3	146/1,8	164/1,3	
	0,75 <sup>1)</sup>		47/4,8	66/2,4	95/2,4	121/4,7	164/2,4			
	1,10 <sup>1)</sup>		70/3,3	98/1,7	140/1,6	179/3,2				
	1,50 <sup>2)</sup>		96/2,4	134/1,2						
	2,20 <sup>3)</sup>		141/1,6							
	[kW]	n <sub>2</sub> [rpm]	200	140	93	67	47	35	29	23
		Output torque [Nm]/Strength factor								
1400	0,25 <sup>1)</sup>		9,6/17,8	13/9,5	19/9,4	25/17,4	33/9,2	41/5,1	47/3,6	53/2,3
	0,37 <sup>1)</sup>		14/12,5	20/6,3	29/6,3	38/11,8	51/6,2	62/3,5	72/2,4	80/1,5
	0,55 <sup>1)</sup>		22/8,1	31/4,2	45/4,1	57/8,0	77/4,1	94/2,3	109/1,6	122/1,0
	0,75 <sup>1)</sup>		30/6,0	42/3,1	62/3,0	79/5,8	106/3,0	129/1,7	151/1,2	
	1,10 <sup>1)</sup>		45/4,1	63/2,1	91/2,1	117/4,0	157/2,1			
	1,50 <sup>1)</sup>		62/3,0	86/1,5	125/1,5					
	2,20 <sup>2)</sup>		91/2,0	128/1,0						
	[kW]	n <sub>2</sub> [rpm]	400	280	187	133	93	70	58	47
		Output torque [Nm]/Strength factor								
2800	0,37 <sup>1)</sup>		7/15,1	10/8,1	14/8,3	18/15,2	25/8,3	32/4,5	37/3,2	43/2,0
	0,55 <sup>1)</sup>		11/10,0	15/5,5	22/5,4	28/10,1	39/5,5	49/3,0	57/2,1	65/1,4
	0,75 <sup>1)</sup>		15/7,5	21/4,0	30/4,0	39/7,4	55/3,9	68/2,2	80/1,5	91/1,0
	1,10 <sup>1)</sup>		22/5,2	32/2,7	45/2,7	58/5,1	82/2,7	102/1,5	119/1,1	
	1,50 <sup>1)</sup>		31/3,7	44/2,0	63/2,0	81/3,6	112/2,0			
	2,20 <sup>1)</sup>		46/2,5	65/1,4	93/1,3	119/2,5				
	3,00 <sup>1)</sup>		63/1,8	89/1,0						
	4,00 <sup>3)</sup>		84/1,4							

The values are for gearboxes that are well run in and properly heated for operation.

1. Available as stainless steel motor.
2. High output design.
3. Assembly through coupling.

# Tables of effects

# Series 79

Motor		Series 79								
		Gear ratio	7,33:1	10:1	15:1	21:1	30:1	42:1	50:1	62:1
	[kW]	n <sub>2</sub> [rpm]	95	70	47	33	23	17	14	11
		Output torque [Nm]/Strength factor								
700	0,37		31/16,4	43/8,5	59/8,5	79/4,2	104/8,3	136/4,2	153/3,0	171/1,9
	0,55		47/11,0	65/5,7	90/5,6	120/2,8	157/5,6	205/2,8	230/2,0	258/1,3
	0,75 <sup>2)</sup>		65/8,0	89/4,2	124/4,1	165/2,1	216/4,1	282/2,1	316/1,5	
	1,10 <sup>3)</sup>		97/5,4	132/2,9	183/2,8	245/1,4				
	1,50 <sup>3)</sup>		133/4,0	181/2,1	251/2,1					
	2,20		196/2,7							
	[kW]	n <sub>2</sub> [rpm]	123	90	60	43	30	21	18	15
		Output torque [Nm]/Strength factor								
900	0,55 <sup>1)</sup>		36/12,7	48/6,6	69/6,5	94/3,3	123/6,4	166/3,3	183/2,3	214/1,5
	0,75 <sup>1)</sup>		50/9,3	67/4,8	96/4,7	130/2,4	169/4,7	228/2,4	252/1,7	294/1,1
	1,10 <sup>1)</sup>		75/6,3	99/3,3	142/3,2	192/1,6	250/3,2	337/1,6		
	1,50 <sup>2)</sup>		103/4,6	136/2,4	195/2,4	263/1,2				
	2,20 <sup>3)</sup>		152/3,1	200/1,6	287/1,6					
	3,00 <sup>3)</sup>		208/2,3							
	[kW]	n <sub>2</sub> [rpm]	191	140	93	67	47	33	28	23
		Output torque [Nm]/Strength factor								
1400	0,75 <sup>1)</sup>		32/11,2	42/6,0	62/5,8	82/3,1	112/5,8	149/3,0	167/2,1	196/1,4
	1,10 <sup>1)</sup>		47/7,8	63/4,1	92/4,0	122/2,1	166/4,0	221/2,1	248/1,4	291/0,9
	1,50 <sup>1)</sup>		65/5,7	88/2,9	127/2,9	168/1,5	228/2,9			
	2,20 <sup>1)</sup>		96/3,8	130/2,0	188/2,0	248/1,0				
	3,00 <sup>1)</sup>		133/2,8	178/1,5	258/1,5					
	4,00		178/2,1	238/1,1						
	[kW]	n <sub>2</sub> [rpm]	382	280	187	133	93	67	56	45
		Output torque [Nm]/Strength factor								
2800	1,10 <sup>1)</sup>		23/9,6	31/5,2	46/5,0	63/2,7	63/5,0	114/2,7	134/1,9	153/1,2
	1,50 <sup>1)</sup>		32/7,1	44/3,7	64/3,7	87/2,0	117/3,6	158/2,0	185/1,4	212/0,9
	2,20 <sup>1)</sup>		48/4,8	64/2,5	95/2,5	129/1,3	173/2,5			
	3,00 <sup>1)</sup>		66/3,5	90/1,8	131/1,8	177/1,0				
	4,00 <sup>3)</sup>		88/2,6	120/1,4	175/1,4					
	5,00 <sup>3)</sup>		122/1,9	167/1,0						

The values are for gearboxes that are well run in and properly heated for operation.

- 1) Available as stainless steel motor.
- 2) High output design.
- 3) Assembly through coupling.

## Tables of effects

## Series 99




Motor		Series 99								
		Gear ratio	7:1	10:1	15:1	20:1	30:1	40:1	50:1	60:1
	[kW]	n <sub>2</sub> [rpm]	100	70	47	35	23	18	14	11
		Output torque [Nm]/Strength factor								
700	0,75		61/8,8	86/7,5	124/3,7	159/4,1	218/7,3	271/4,1	319/2,6	359/1,8
	1,10		91/5,9	128/5,0	183/5,0	236/2,8	323/5,0	401/2,8	472/1,8	531/1,2
	1,50		125/4,4	175/3,7	251/3,7	323/2,1	442/3,6	549/2,0	647/1,3	724/0,9
	2,20 <sup>2)</sup>		185/3,0	258/2,5	370/2,5	474/1,4	652/2,5			
	3,00 <sup>2)</sup>		253/2,2	353/1,9	506/1,8	647/1,0	891/1,8			
	4,00 <sup>2)</sup>		338/1,6	472/1,4						
	5,50 <sup>2)</sup>		465/1,2	650/1,0						
	[kW]	n <sub>2</sub> [rpm]	129	90	60	45	30	23	18	15
		Output torque [Nm]/Strength factor								
900	0,75 <sup>1)</sup>		47/10,0	66/8,4	97/8,3	124/4,7	171/8,3	213/4,7	250/3,0	282/2,1
	1,10 <sup>1)</sup>		70/6,8	98/5,7	143/5,7	185/3,2	253/5,6	315/3,2	371/2,1	418/1,4
	1,50 <sup>1)</sup>		97/4,9	134/4,2	197/4,2	253/2,4	348/4,1	432/2,3	509/1,5	574/1,0
	2,20 <sup>1)</sup>		143/3,4	198/2,9	290/2,8	374/1,6	513/2,8	637/1,6		
	3,00		196/2,4	271/2,1	398/2,1	511/1,2	697/2,1	866/1,2		
	4,00 <sup>2)</sup>		262/1,8	362/1,6	531/1,5					
	5,50 <sup>2)</sup>		361/1,3	500/1,2						
	7,50 <sup>2)</sup>		494/1,0							
	[kW]	n <sub>2</sub> [rpm]	200	140	93	70	47	35	28	23
		Output torque [Nm]/Strength factor								
1400	1,10 <sup>1)</sup>		45/8,0	63/6,9	92/6,8	119/3,8	165/6,8	212/3,9	247/2,5	284/1,7
	1,50 <sup>1)</sup>		62/5,8	87/5,0	127/5,0	164/2,8	228/4,9	292/2,8	340/1,8	390/1,3
	2,20 <sup>1)</sup>		91/4,0	126/3,5	188/3,4	242/1,9	337/3,4	431/1,9	502/1,2	
	3,00 <sup>1)</sup>		125/2,9	177/2,5	257/2,5	331/1,4	461/2,5	591/1,4		
	4,00 <sup>1)</sup>		168/2,2	238/1,9	345/1,9	443/1,1				
	5,50 <sup>2)</sup>		232/1,6	328/1,4	475/1,3					
	7,50 <sup>2)</sup>		317/1,2	448/1,0						
	[kW]	n <sub>2</sub> [rpm]	400	280	187	140	93	70	56	47
		Output torque [Nm]/Strength factor								
2800	1,50 <sup>1)</sup>		30/7,1	42/6,2	63/6,0	81/3,5	112/6,0	149/3,5	174/2,2	201/1,6
	2,20 <sup>1)</sup>		45/4,8	63/4,2	93/4,1	121/2,4	166/4,1	222/2,4	259/1,5	298/1,1
	3,00 <sup>1)</sup>		62/3,5	87/3,0	127/3,0	166/1,7	228/3,0	305/1,7	356/1,1	
	4,00 <sup>1)</sup>		83/2,6	116/2,3	171/2,3	223/1,3	306/2,3	409/1,3		
	5,50		115/1,9	161/1,7	236/1,7	308/0,9	423/1,6			
	7,50		158/1,4	220/1,2	323/1,2					
	11,00 <sup>2)</sup>		232/1,0							

The values are for gearboxes that are well run in and properly heated for operation.

- 1) Available as stainless steel motor.
- 2) High output design.
- 3) Assembly through coupling.

## Mounting of the gearbox

1 42 S 0 41 1 12 02 01 30 0 1

	Mounting in gear housing	Mounting in side flange
Stainless housing series 42, 52 and 61		
Stainless housing series 79 and 99		
Standard	40	41

There are different opportunities for types of housing depending on gearbox assembly. "4" indicates that the housing is of stainless steel.




Second digit in the itemnumber is defined by the choice between a bearing cover or a side flange.

For series 42, 52 and 61 there are two options; a standard bearing cover (0) or a side flange (1). For series 79 and 99 the bearing cover is standard.

## Output shaft

1 42 S 0 41 1 12 02 01 30 0 1

### Mounting holes


	Extra mounting holes, right	Extra mounting holes, left	Without extra mounting holes
Hollow shaft			
Standard, stainless steel shaft	4 (*6 for Ø38)	5 (*7 for Ø38)	0 (*8 for Ø38)

Other mounting solutions available, contact BJ-Gear A/S.

### Shaft size

1 42 S 0 41 1 12 02 01 30 0 1

BCD \ Series	42	52	61	79	99
Ø18	7	7			
Ø20	1	1			
Ø25			3		
Ø30			4	4	
Ø35				5	5
Ø38				5*	5*
Ø40				8	8
Ø45					9
Ø48					6



The second digit indicates the size of the hollow shaft. If the requested size is not mentioned, please feel free to contact us for further information.

# Output shaft material

1 42 S 0 41 1 12 02 01 30 0 1

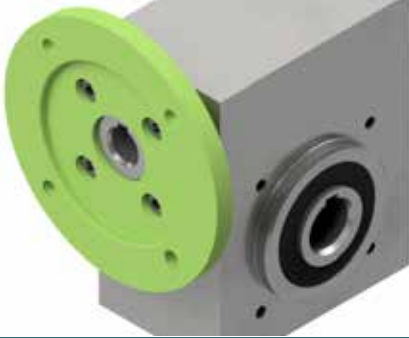
1	Standard, stainless steel shaft
3	Stainless steel shaft, tapered roller bearings

This digit indicates the material of the shaft, where "1" is the standard stainless steel shaft. Options are available.

# D-side

1 42 S 0 41 1 12 02 01 30 0 1

IEC norm (B14)	Motor flange [BCD]	42	52	61	79	99
No flange		00	00	00	00	00
56	65	-	-	-	-	-
63	75	11	11	11	-	-
71	85	12	12	12	-	-
80	100	13	13	13	13	-
90	115	14	14	14	14	14
100/112	130	15	15	15	15	15
132	165	-	-	16	16	16
	215	-	-	-	17	17



# Input shaft

1 42 S 0 41 1 12 02 01 30 0 1

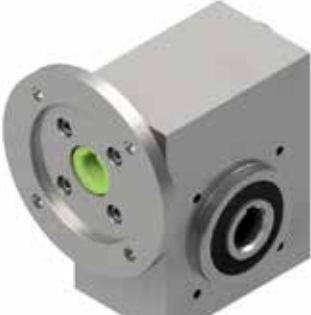

	42	52	61	79	99
Ø9	-	-	-	-	-
Ø11	01	01	-	-	-
Ø14	02	02	02	-	-
Ø19	-	-	03	03	-
Ø24	-	-	04	04	03
Ø28	-	-	-	05	04
Ø38	-	-	-	-	05
Ø9 Free shaft on ND side	20	-	-	-	-
Ø11 Free shaft on ND side	21	21	-	-	-
Ø14 Free shaft on ND side	22	22	22	-	-
Ø19 Free shaft on ND side	-	-	23	23	-
Ø24 Free shaft on ND side	-	-	24	24	23
Ø28 Free shaft on ND side	-	-	-	25	24
Ø38 Free shaft on ND side	-	-	-	-	25a



## Motor size and power



Standard motors	Size 63	Size 71	Size 80	Size 90	Size 100/112	Size 132
Motor power [kW] for 700 min <sup>-1</sup>	0,06	0,09	0,18	0,37	0,75	2,2
	-	0,12	0,25	0,55	1,1	3,0
	-	-	-	-	1,5	-
Motor power [kW] for 900 min <sup>-1</sup>	0,12	0,18	0,37	0,75	1,5	3,0
	-	0,25	0,55	1,1	2,2	4,0
	-	-	-	-	-	5,5
Motor power [kW] for 1400 min <sup>-1</sup>	0,12	0,25	0,55	1,1	2,2	5,5
	0,18	0,37	0,75	1,5	3,0	7,5
	-	-	-	-	4,0	-
Motor power [kW] for 2800 min <sup>-1</sup>	0,18	0,37	0,75	1,5	3,0	5,5
	0,25	0,55	1,1	2,2	4,0	7,5
	-	-	-	-	5,5	-

## D-side and input shaft for gearboxes without motor

	Closed ND-side	Throughgoing worm with free shaft on ND-side
Free worm shaft on D-side		
Item number	1-42-40411-1202-01-30-01	1-42-40411-1222-01-30-01

## ND-side

1 42 S 0 41 1 12 02 01 30 0 1

Closed end cover, standard. Available for worm without free shaft on the ND-side	Open end cover. For worm with free shaft on the ND-side
	
01	30

## Gear ratios

1 42 S 0 41 1 12 02 01 30 0 1

Ratio code	42	52	61
	Gear ratio $n_2$ [rpm]	Gear ratio $n_2$ [rpm]	Gear ratio $n_2$ [rpm]
05	5,4:1	-	-
07	7,5:1	7,5:1	7:1
10	10:1	10:1	10:1
15	15:1	15:1	15:1
20	20:1	19:1	21:1
25	25:1	-	-
30	30:1	30:1	30:1
40	40:1	38:1	40:1
50	50:1	51:1	48:1
60	62:1	62:1	60:1
75	75:1	-	-

## Choice of lubricants

1 42 S 0 41 1 12 02 01 30 0 1

	Description	Application	Viscosity	Lubricant
0	Fully synthetic gear oil, standard	Normal load and ambient temp. -25°C to +40°C	220	Klübersynth GH 6 - 220
1	Fully synthetic gear oil	Heavy load and ambient temp. -20°C to >+40°C	460	Klübersynth GH 6 - 460
2	Fully synthetic gear oil	Heavy load and ambient temp. -20°C to >+40°C	680	Klübersynth GH 6 - 680
3	Liquid grease	Normal load and ambient temp. -40°C to >+40°C	1200	Klübersynth GE 46 - 1200
4	Special lubricating oil for food and pharmaceutical industries	Normal load and ambient temp. -20°C to +40°C	460	Klübersynth UH1 6 - 460

Ambient temperatures are guide values depending on the lubricant's composition, the intended use and the application method.

All data is based on synthetic oil. Do not mix synthetic oil with mineral oil.

## Choice of finish

1 42 S 0 41 1 12 02 01 30 0 1

1	No treatment (Standard for stainless steel gearboxes)
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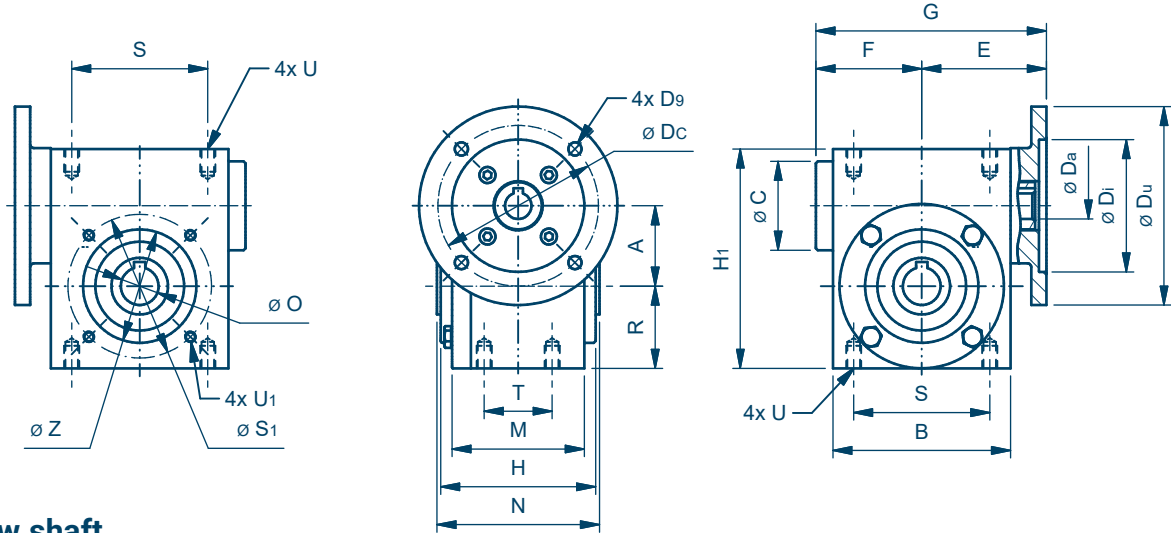
# Dimensional drawings

# Serie 42, 52 and 61

## 1 XX 303XX 1X0X 01

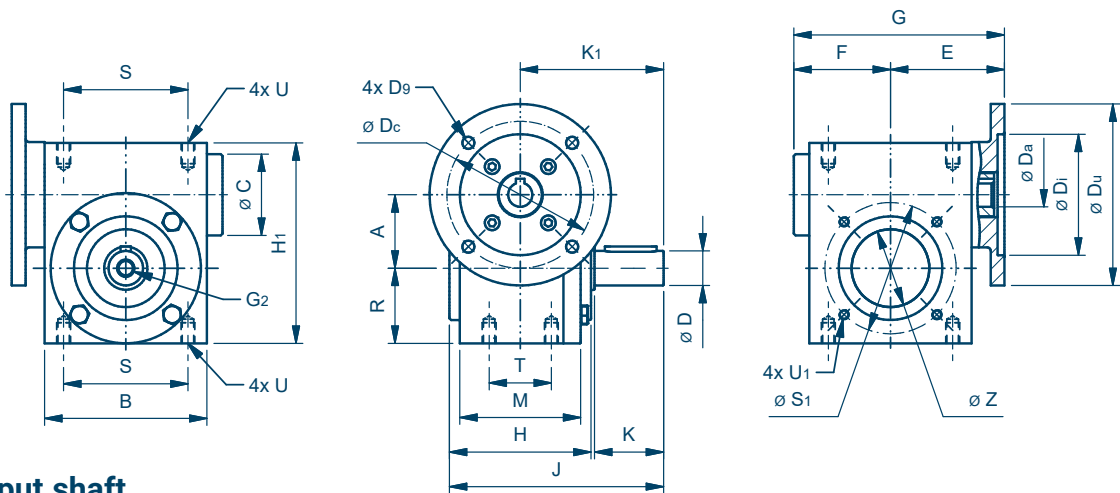
Gear housing type 3. Housing with support, worm at bottom, double free shaft, closed end cover.

Worm at top, side flange with hollow shaft right



### Hollow shaft

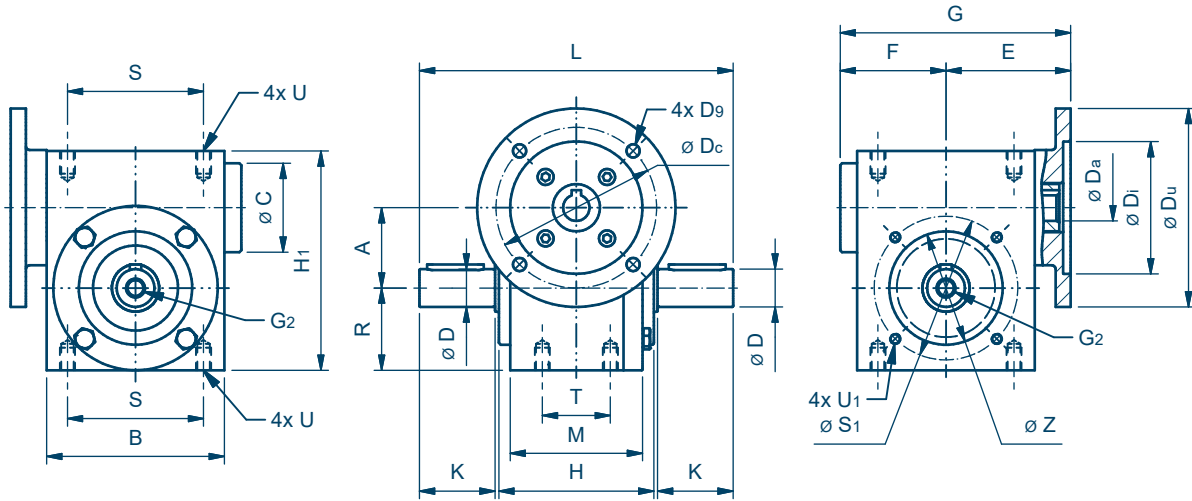
Gear size	A	B	ØC	Motor size	Flange B14 size ØDc	ØDu	ØD1 (F6)	ØDa	D9	E	F	G	H	H1	M	N	ØO (F6)	R	S	ØS1	T	U	U1	ØZ +0,0 -0,2		
42	42,5	94	47	63	75	90	60	11	6	66	56	122	82	116	70	86	20	43,5	72	76	36	M8x12	M6x9	60		
				71	85	105	70	14	7	82		150														
52	52,5	116	58	80	100	120	80	19	7	82	68	150	92	143,5	80	96	24	55	85	95	40	M10x12	M6x9	65		
				90	115	140	95	24	9	92		160														
				71	85	105	70	14	7	91		173														
61	61,0	134	60	80	100	120	80	19	7	91	82	173	94	160	83	98	25	63	106	108	42	M10x12	M8x12	90		
				90	115	140	95	24	9	101		183														
																				30						



### Free output shaft

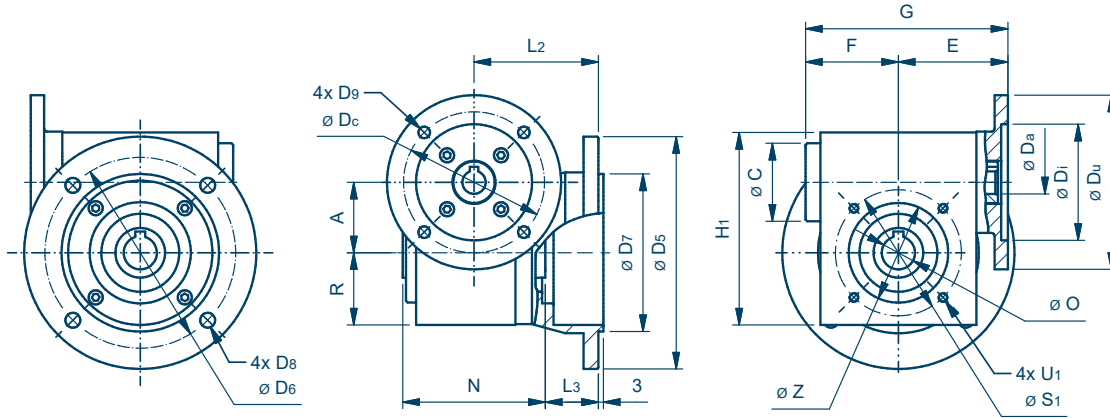
Gear size	A	B	ØC	Motor size	Flange B14 size ØDc	ØDu	ØD1 (F6)	ØDa	D9	E	F	G	G2	H	H1	ØD (k6)	K	K1	J	M	R	S	ØS1	T	U	U1	ØZ +0,0 -0,2	
42	42,5	94	47	63	75	90	60	11	6	66	56	122	M10x18	82	116	20	40	83	124	70	43,5	72	76	36	M8x12	M6x9	60	
				71	85	105	70	14	7	82		150																
52	52,5	116	58	80	100	120	80	19	7	82	68	150	M10x15	92	143,5	24	50	95	144	80	55	85	95	40	M10x12	M6x9	65	
				90	115	140	95	24	9	92		160																
				71	85	105	70	14	7	91		173																
61	61,0	134	60	80	100	120	80	19	7	91	82	173	M10x18	94	160	32	60	109	156	83	63	106	108	42	M10x12	M8x12	90	
				90	115	140	95	24	9	101		183																





### Double free output shaft

Gear size	A	B	ØC	Motor size	Flange B14 size ØDc	ØDu	ØD <sub>1</sub> (F6)	ØD <sub>2</sub>	D <sub>9</sub>	E	F	G	G <sub>2</sub>	H	H <sub>1</sub>	ØD (k6)	K	L	M	R	S	ØS <sub>1</sub>	T	U	U <sub>1</sub>	ØZ +0,0 -0,2			
42	42,5	94	47	63	75	90	60	11	6	66	56	122	M10x18	82	116	20	40	166	70	43,5	72	76	36	M8x12	M6x9	60			
				71	85	105	70	14	7	82	150																		
52	52,5	116	58	71	85	105	70	14	7	82	68	150	M10x15	92	143,5	24	50	196	80	55	85	95	40	M10x12	M6x9	65			
				80	100	120	80	19	7	82	160																		
				90	115	140	95	24	9	92	173																		
61	61,0	134	60	71	85	105	70	14	7	91	82	173	M10x18	94	160	32	60	218	83	63	106	108	42	M10x12	M8x12	90			
				80	100	120	80	19	7	91	183																		
				90	115	140	95	24	9	101																			



### Hollow shaft side cover

Gear size	A	ØC	Motor size	Flange B14 size ØDc	ØDu	ØD <sub>1</sub> (F6)	ØD <sub>2</sub>	D <sub>9</sub>	E	F	G	H <sub>1</sub>	L <sub>2</sub>	L <sub>3</sub>	ØD <sub>5</sub>	ØD <sub>5</sub>	ØD <sub>7</sub> (H6)	D <sub>8</sub>	N	ØO (F6)	R	ØS <sub>1</sub>	U <sub>1</sub>	ØZ +0,0 -0,2		
42	42,5	47	63	75	90	60	11	6	66	56	122	116	75	32	140	115	95	9	86	20	43,5	76	M6x9	60		
			71	85	105	70	14	7	82	150																
52	52,5	58	71	85	105	70	14	7	82	68	150	143,5	80	32	140	115	95	9	96	24	55	95	M6x9	65		
			80	100	120	80	19	7	82	160																
			90	115	140	95	24	9	92	173																
61	61,0	60	71	85	105	70	14	7	91	82	173	160	85	36	200	165	130	11	98	25	63	108	M8x12	90		
			80	100	120	80	19	7	91	183											30					
			90	115	140	95	24	9	101																	

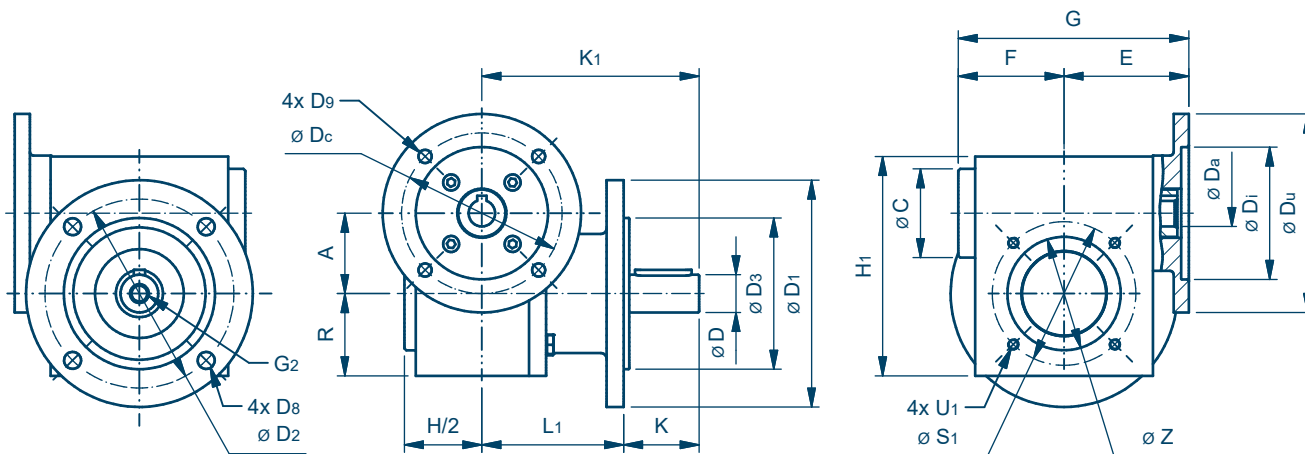
# Dimensional drawings

# Serie 42, 52 and 61

## 1 XX 303XX 1X0X 01

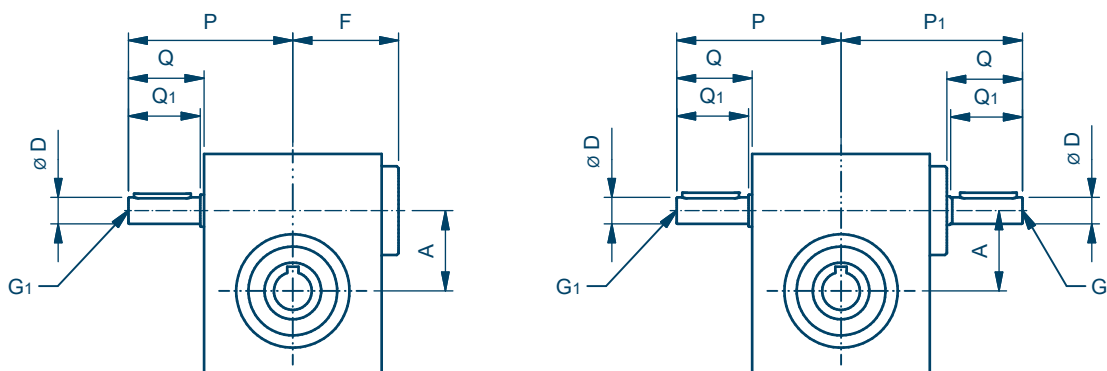
Gear housing type 3. Housing with support, worm at bottom, double free shaft, closed end cover.

Worm at top, side flange with hollow shaft right



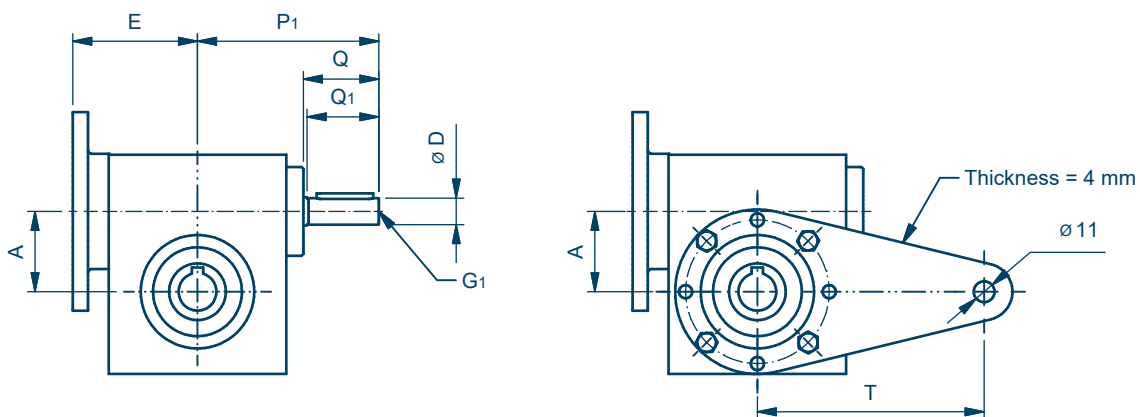
## Output flange

Gear size	A	∅C	Motor size	Flange B14 size ∅Dc	∅D <sub>u</sub>	∅D <sub>1</sub> (F6)	∅D <sub>a</sub>	D <sub>9</sub>	E	F	G	G <sub>2</sub>	H	H <sub>1</sub>	K	K <sub>1</sub>	L <sub>1</sub>	∅D (k6)	∅D <sub>1</sub>	∅D <sub>2</sub>	∅D <sub>3</sub> (h6)	D <sub>8</sub>	R	∅S <sub>1</sub>	U <sub>1</sub>	∅Z +0,0 -0,2	
42	42,5	47	63	75	90	60	11	6	66	56	122	M10x18	41	116	40	115	75	20	120	100	80	9	43,5	76	M6x9	60	
			71	85	105	70	14	7																			
52	52,5	58	71	85	105	70	14	7	82	68	150	M10x18	46	143,5	50	130	80	24	140	115	95	9	55	95	M6x9	65	
			80	100	120	80	19	7			82																150
			90	115	140	95	24	9			92																160
61	61,0	60	71	85	105	70	14	7	91	82	173	M10x18	47	160	60	145	85	30	160	130	110	9	63	108	M8x12	90	
			80	100	120	80	19	7			91																173
			90	115	140	95	24	9			101																183



## Free shaft

Gear size	A	∅D (k6)	F	G <sub>1</sub>	P	P <sub>1</sub>	Q	Q <sub>1</sub>
42	42,5	14	56	M6x14	87	96	40	38
52	52,5	16	68	M6x14	100	110	42	40
61	61,0	19	82	M8x15	109	124	42	40



**Free shaft ND-side / torque arm**

Gear size	A	ØD (k6)	G <sub>1</sub>	P <sub>1</sub>	P <sub>1</sub>	Q	T
42	42,5	14	M6x14	96	40	38	120
52	52,5	16	M6x14	110	42	40	140
61	61,0	19	M8x15	124	42	40	160

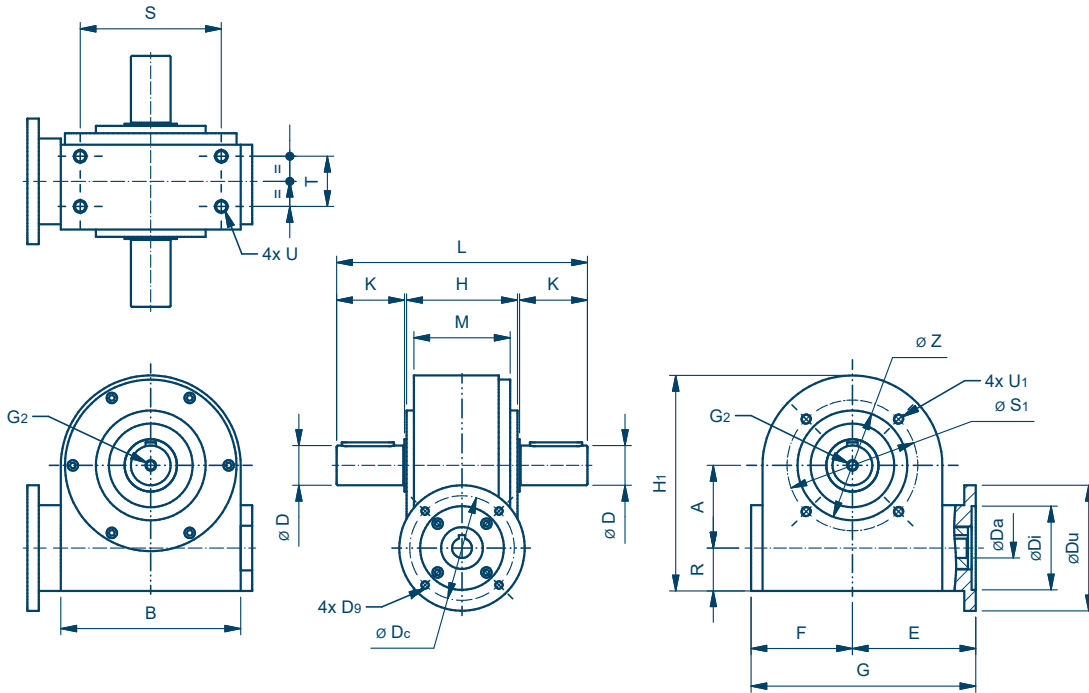
# Dimensional drawings

# Serie 79 and 99

1 XX 303XX 1X0X 01

Gear housing type 3. Housing with support, worm at bottom, double free shaft, closed end cover.

Worm at bottom, hollow shaft, right



## Double free output shaft

Gear size	A	B	Motor size	Flange B14 size ØDc	ØD <sub>u</sub>	ØD <sub>1</sub> (F6)	ØD <sub>a</sub>	D9	E	F	G	G <sub>2</sub>	H	H <sub>1</sub>	ØD (k6)	K	L	M	R	S	ØS <sub>1</sub>	T	U	U <sub>1</sub>	ØZ (h6)
79	79,0	172	80	100	120	80	19	7	118		215														
			90	115	140	95	24	9	118	97	215	M10x20	106	206	38	65	240	92	41	135	125	48	M12x18	M10x12	105
			100/112	130	160	110	28	9	126		223														
99	99,0	218	90	115	140	95	24	9	150		277														
			100/112	130	157	110	28	9	150	127	277	M10x18	142	265,5	48	90	326	120	57,5	170	165	60	M12x18	M12x20	120

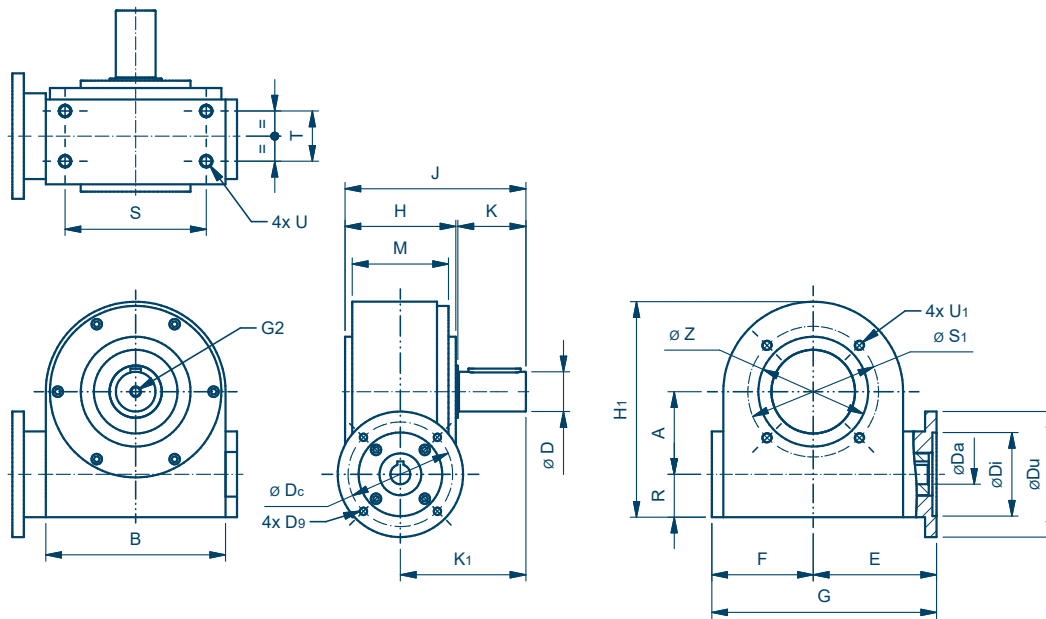
# Dimensional drawings

# Serie 79 and 99

1 XX 304XX 1X0X 01

Gear housing type 3. Housing with support, worm at bottom, hollow shaft, mounting holes right / left.

Worm at bottom, free shaft, right



## Free output shaft

Gear size	A	B	Motor size	Flange B14 size ØDc	ØD <sub>u</sub>	ØD <sub>1</sub> (F6)	ØD <sub>a</sub>	D9	E	F	G	G <sub>2</sub>	H	H <sub>1</sub>	ØD (k6)	J	K	K <sub>1</sub>	M	R	S	ØS <sub>1</sub>	T	U	U <sub>1</sub>	ØZ (h6)	
79	79,0	172	80	100	120	80	19	7	118		215																
			90	115	140	95	24	9	118	97	215	M10x20	106	206	38	173	65	120	92	41	135	125	48	M12x18	M10x12	105	
			100/112	130	160	110	28	9	126		223																
99	99,0	218	90	115	140	95	24	9	150		277																
			100/112	130	157	110	28	9	150	127	277	M10x18	142	265,5	48	234	90	163	120	57,5	170	165	60	M12x18	M12x20	120	

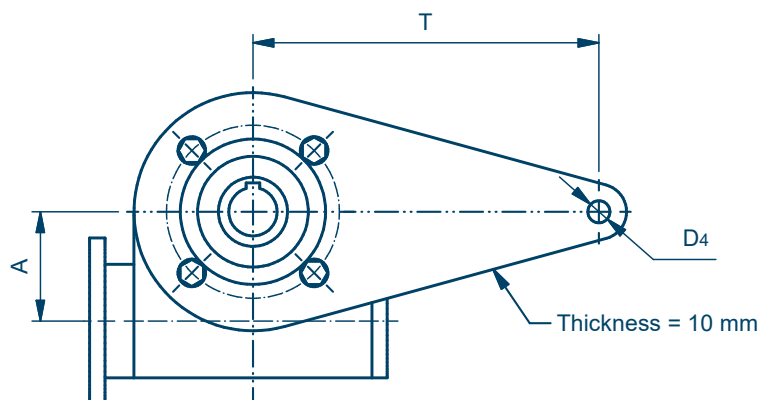
## Dimensional drawings

## Serie 79 and 99

### 1 XX 303XX 1X0X 01

Gear housing type 3. Housing with support, worm at bottom, double free shaft, closed end cover.

Worm at bottom, torque arm



### Torque arm

Gear size	A	D <sub>4</sub>	T
79	79,0	16	250
99	99,0	17	350

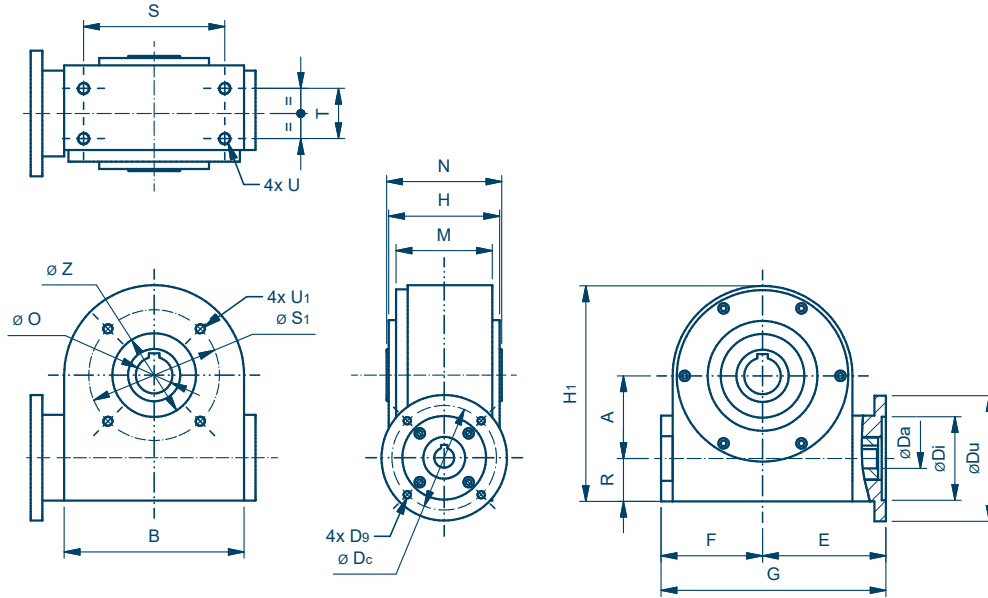
# Dimensional drawings

# Serie 79 and 99

1 XX 304XX 1X0X 01

Gear housing type 3. Housing with support, worm at bottom, hollow shaft, mounting holes right / left.

Worm at bottom, hollow shaft, right

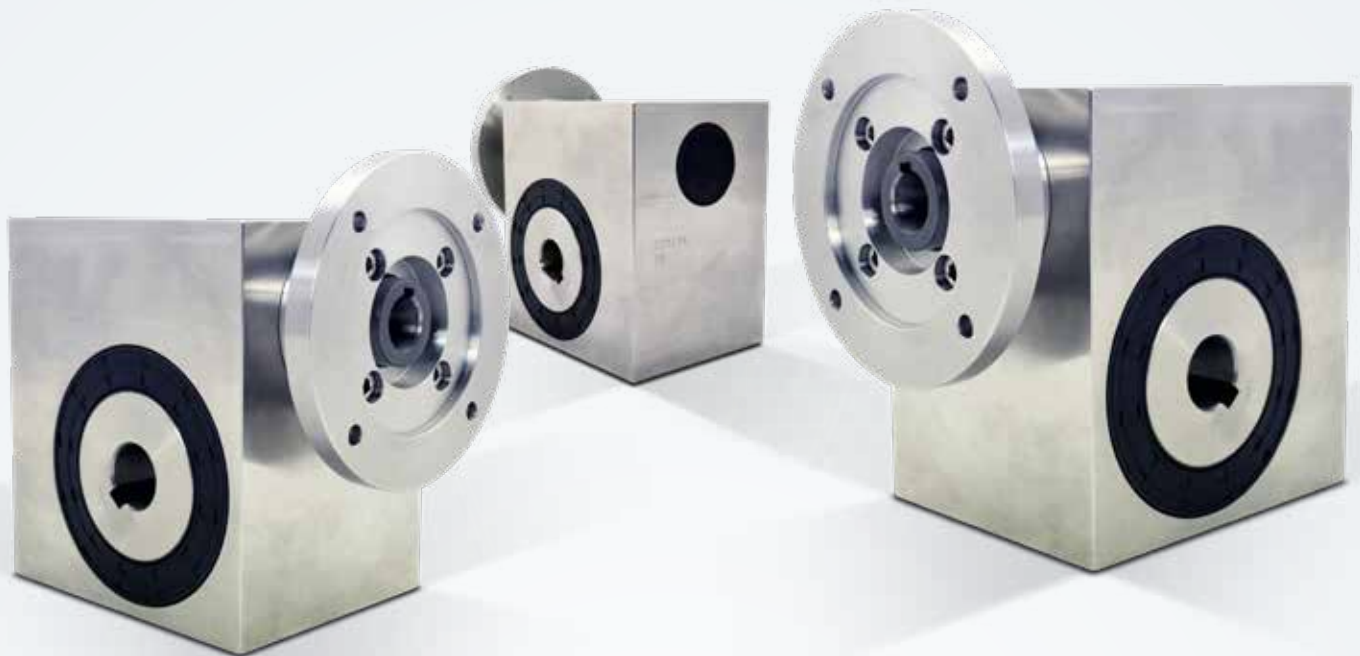


## Hollow shaft

Gear size	A	B	Motor size	Flange B14 size ØDc	ØD <sub>u</sub>	ØD <sub>i</sub> (F6)	ØD <sub>s</sub>	D9	E	F	G	H	H <sub>1</sub>	M	N	ØO (F6)	R	S	ØS <sub>1</sub>	T	U	U <sub>1</sub>	ØZ (h6)
79	79,0	172	80	100	120	80	19	7	118	97	215	106	206	92	110	24	41	135	125	48	M12x18	M10x12	105
			90	115	140	95	24	9	118		215												
			100/112	130	160	110	28	9	126		223												
99	99,0	218	90	115	140	95	24	9	150	127	277	142	265,5	120	146	48	57,5	170	165	60	M12x18	M12x20	120
			100/112	130	157	110	28	9	150		277												

# PREMIUM Gearbox

Series 31, 42 and 61



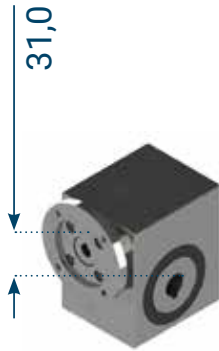
- **Up to 88% efficiency**
- **Smooth surfaces that reduces the risk of bacterial growth**
- **Unnecessary flanges, recesses and mounting holes**
- **Hygienic and easy-to-clean**
- **Protection degree of minimum IP65**
- **Ideal for use in the food industry**



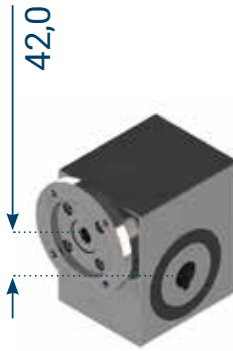
## PREMIUM gearbox sizes

1	42	4	0	41	1	12	02	01	30	0	1
---	----	---	---	----	---	----	----	----	----	---	---

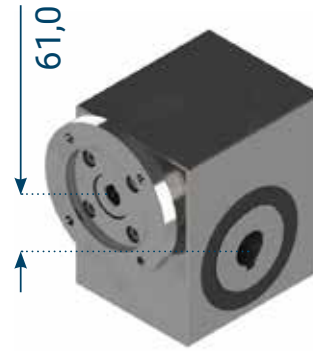
The stainless steel worm gearboxes are as standard made in five sizes: 31, 42 and 61. The number indicates the centre distance of the axles and thus the gear size.



Series 31



Series 42



Series 61

## Service factor

The operating conditions are of importance to the durability of the gearbox. The gearbox should therefore be dimensioned according to the service factors.

Please note that the values apply for operation with a standard electric AC motor.

$$\text{Service factor} = \frac{M_{\text{gear}} \text{ [Nm]}}{M_{\text{required}} \text{ [Nm]}}$$

Type of load	Number of starts per hour	Operation time per day			
		2	2-8	8-12	12-24
Uniform, smooth load	<50	0,8	0,9	1,0	1,3
	0-500	0,9	1,1	1,2	1,5
	500<	1,0	1,2	1,4	1,7
Moderate impact load	50	0,9	1,1	1,3	1,5
	50-500	1,1	1,3	1,5	1,8
	500<	1,3	1,5	1,7	2,0
Heavy impact load	<50	1,3	1,5	1,6	1,8
	50-500	1,5	1,7	1,9	2,1
	500<	1,7	2,0	2,1	2,4

# Tables of effect

## Strength factor

The strength factor is an expression of the durability of the gearing in relation to breakage. The breakage limit is three times the strength factor.

- Normal use: Include the service factor on page 27 and choose a strength factor > 1.
- In case of special demands on safety or other special conditions: Please contact BJ-Gear A/S for further information.

## Tables of effect

## Series 31

Motor		Series 31											
		Gear ratio	05:1	07:1	10:1	15:1	20:1	25:1	30:1	38:1	50:1	60:1	75:1
	[kW]	n <sub>2</sub> [rpm]	180	129	90	60	45	36	30	24	18	15	12
	Output torque [Nm]/Strength factor												
900	0,06		2,6/4,6	3,6/3,5	4,6/2,6	6,6/2,1	8,1/1,6	8,8/1,5	10/1,3	12,6/1,2	12,7/0,9	13,8/0,8	15/0,6
	0,12		5,2/2,3	7,1/1,7	9,3/1,3	13,2/1,0	16,3/0,8	18/0,8	20/0,6	25,2/0,6			
	0,18 <sup>2)</sup>		7,8/1,5	10,7/1,2	13,9/0,9	19,8/0,7							
	[kW]	n <sub>2</sub> [rpm]	280	200	140	93	70	56	47	37	28	23	19
	Output torque [Nm]/Strength factor												
1400	0,06		1,7/6,6	2,3/5,0	3,1/3,7	4,4/2,9	5,4/2,3	5,8/2,1	6,8/1,8	8,4/1,6	8,6/1,2	9,3/1,0	10/0,9
	0,09		2,5/4,4	3,5/3,3	4,6/2,5	6,5/1,9	8,1/1,5	8,7/1,4	10/1,2	12,6/1,1			
	0,12		3,4/3,3	4,6/2,5	6,1/1,8	8,7/1,5	11/1,1	12/1,1	14/0,9				
	0,18 <sup>1)</sup>		5,1/2,2	7,0/1,7	9,2/1,2	13/1,0							
	[kW]	n <sub>2</sub> [rpm]	560	400	280	187	140	112	93	74	56	47	37
	Output torque [Nm]/Strength factor												
2800	0,09		1,3/8,0	1,85/5,8	2,4/4,3	3,4/3,3	4,2/2,6	4,7/2,4	5,4/2,0	6,6/1,8	7,1/1,4	7,7/1,1	8,0/0,9
	0,12		1,7/6,0	2,4/4,3	3,2/3,2	4,5/2,5	5,6/1,9	6,2/1,8	7,2/1,5	8,9/1,4	9,4/1,0		
	0,18 <sup>1)</sup>		2,6/4,0	3,6/2,9	4,7/2,1	6,8/1,7	8,5/1,3	9,4/1,2	10,9/1,0	13,3/0,9			
	0,25 <sup>1)</sup>		3,3/3,0	5,0/2,1	6,6/1,5	9,5/1,2	11,8/0,9	13,0/0,9					

The values are for gearboxes that are well run in and properly heated for operation.

1. Available as stainless steel motor.
2. High output design.

## Tables of effect

## Series 42

Motor		Series 42											
		Gear ratio	5,4:1	7,5:1	10:01	15:01	20:1	25:1	30:1	40:1	50:1	62:1	75:1
	[kW]	n <sub>2</sub> [rpm]	130	93	70	47	35	28	23	18	14	11	9
Output torque [Nm]/Strength factor													
700	0,09		5,3/8,5	7,1/6,7	9,1/6,7	12/7,0	16/3,7	20/9,2	21/6,5	24/3,7	29/2,4	32/1,6	38/1,0
	0,12		7,2/6,4	9,7/5,0	12/5,1	17/5,0	21/2,9	27/7,0	28/5,0	33/2,8	39/1,8	44/1,2	
	0,18 <sup>2)</sup>		11/4,3	14/3,6	19/3,3	26/3,4	33/1,9	41/4,7	43/3,3	51/1,8			
	0,25 <sup>2)</sup>		15/3,2	20/2,5	26/2,5	37/2,4	46/1,3	57/3,4					
	0,37 <sup>3)</sup>		23/2,1	31/1,6	40/1,6	55/1,6							
	0,55 <sup>3)</sup>		34/1,4	46/1,1									
	[kW]	n <sub>2</sub> [rpm]	167	120	90	60	45	36	30	23	18	15	12
Output torque [Nm]/Strength factor													
900	0,09					12/7,7	12/4,6	15/11,4	16/8,1	20/4,4	23/2,9	26/1,9	30/1,2
	0,12		5,6/7,5	7,6/5,9	9,7/5,9	13/6,0	17/3,3	21/8,3	23/5,7	28/3,2	32/2,1	36/1,4	
	0,18 <sup>1)</sup>		8,6/5,0	11/4,2	15/3,9	21/3,8	26/2,2	32/5,6	35/3,9	43/2,2	50/1,4		
	0,25 <sup>1)</sup>		12/3,6	16/2,9	21/2,8	29/2,8	37/1,6	46/4,0	49/2,8				
	0,37 <sup>2)</sup>		18/2,5	24/2,0	31/1,9	44/1,9							
	0,55 <sup>2)</sup>		27/1,7	37/1,3	47/1,3								
	0,75 <sup>3)</sup>		37/1,2										
	[kW]	n <sub>2</sub> [rpm]	259	187	140	93	70	56	47	35	28	23	19
Output torque [Nm]/Strength factor													
1400	0,09				4,6/10	6,5/10	8,3/5,6	10/14,2	11/9,9	14/5,5	15/3,6	17/2,5	20/1,6
	0,12		3,5/9,6	4,7/7,7	6,2/7,6	8,8/7,5	11/4,2	14/10,5	15/7,5	18/4,2	21/2,8	24/1,8	28/1,2
	0,18 <sup>1)</sup>		5,5/6,4	7,4/5,1	9,7/5,0	13/5,3	17/2,9	21/7,2	23/5,1	28/2,8	33/1,8	37/1,2	
	0,25 <sup>1)</sup>		7,8/4,6	10/3,8	13/3,8	19/3,7	24/2,1	30/5,1	33/3,6	40/2,0			
	0,37 <sup>1)</sup>		11/3,3	15/2,6	20/2,5	29/2,4	37/1,4	45/3,5	49/2,4				
	0,55 <sup>2)</sup>		17/2,2	23/1,7	31/1,6	43/1,6							
	0,75 <sup>2)</sup>		24/1,5	32/1,2	42/1,2								
	[kW]	n <sub>2</sub> [rpm]	519	373	280	187	140	112	93	70	56	45	37
Output torque [Nm]/Strength factor													
2800	0,18 <sup>1)</sup>		2,6/8,7	3,6/6,9	4,7/6,9	6,8/6,7	8,7/3,8	11/9,3	12/6,8	14/4,0	17/2,6	20/1,7	23/1,1
	0,25 <sup>1)</sup>		3,8/6,2	5,2/4,9	6,8/4,9	9,7/4,9	12/2,7	15/7,0	17/4,9	21/2,8	25/1,8	29/1,2	
	0,37 <sup>1)</sup>		5,9/4,1	8,0/3,3	10/3,4	14/3,5	19/1,8	23/4,8	26/3,3	32/1,8			
	0,55 <sup>1)</sup>		8,9/2,8	12/2,2	15/2,3	22/2,2	29/1,2	35/3,2					
	0,75 <sup>2)</sup>		12/2,1	16/1,7	21/1,7	31/1,6							
	1,10 <sup>2)</sup>		18/1,4	24/1,1	32/1,1								
	1,50 <sup>1-3)</sup>		25/1,0										

The values are for gearboxes that are well run in and properly heated for operation.

1. Available as stainless steel motor.
2. High output design.
3. Assembly through coupling.

# Tables of effect

# Series 61


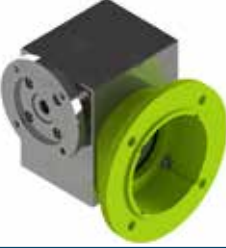
Motor		Series 61								
	Gear ratio	7:1	10:1	15:1	21:1	30:1	40:1	48:1	60:1	
	[kW]	n <sub>2</sub> [rpm]	100	70	47	33	23	17	15	11
Output torque [Nm]/Strength factor										
700	0,18		13/17,5	19/9,0	27/8,9	35/17,3	47/8,8	56/5,0	64/3,3	70/2,2
	0,25		19/12,9	27/6,5	39/6,2	50/12,3	67/6,2	82/3,5	90/2,4	99/1,6
	0,37		29/8,7	41/4,3	58/4,3	75/8,3	101/4,2	123/2,4	136/1,6	149/1,1
	0,55		44/5,8	62/2,9	88/2,8	112/5,6	152/2,8	185/1,6		
	0,75 <sup>2)</sup>		61/4,2	85/2,1	121/2,1	154/4,1	208/2,1			
	1,10 <sup>3)</sup>		90/2,9	126/1,4	178/1,4					
	1,50 <sup>3)</sup>		123/2,1	172/1,1						
	[kW]	n <sub>2</sub> [rpm]	129	90	60	43	30	23	19	15
Output torque [Nm]/Strength factor										
900	0,25 <sup>1)</sup>		15/14,6	21/7,4	30/7,3	39/14,1	52/7,3	64/4,1	72/2,8	80/1,8
	0,37 <sup>1)</sup>		23/9,6	32/5,0	45/5,0	58/9,6	79/4,9	97/2,7	109/1,9	120/1,2
	0,55 <sup>1)</sup>		34/6,7	48/3,4	69/3,3	88/6,4	119/3,3	146/1,8	164/1,3	
	0,75 <sup>1)</sup>		47/4,8	66/2,4	95/2,4	121/4,7	164/2,4			
	1,10 <sup>1)</sup>		70/3,3	98/1,7	140/1,6	179/3,2				
	1,50 <sup>2)</sup>		96/2,4	134/1,2						
	2,20 <sup>3)</sup>		141/1,6							
	[kW]	n <sub>2</sub> [rpm]	200	140	93	67	47	35	29	23
Output torque [Nm]/Strength factor										
1400	0,25 <sup>1)</sup>		9,6/17,8	13/9,5	19/9,4	25/17,4	33/9,2	41/5,1	47/3,6	53/2,3
	0,37 <sup>1)</sup>		14/12,5	20/6,3	29/6,3	38/11,8	51/6,2	62/3,5	72/2,4	80/1,5
	0,55 <sup>1)</sup>		22/8,1	31/4,2	45/4,1	57/8,0	77/4,1	94/2,3	109/1,6	122/1,0
	0,75 <sup>1)</sup>		30/6,0	42/3,1	62/3,0	79/5,8	106/3,0	129/1,7	151/1,2	
	1,10 <sup>1)</sup>		45/4,1	63/2,1	91/2,1	117/4,0	157/2,1			
	1,50 <sup>1)</sup>		62/3,0	86/1,5	125/1,5					
	2,20 <sup>2)</sup>		91/2,0	128/1,0						
	[kW]	n <sub>2</sub> [rpm]	400	280	187	133	93	70	58	47
Output torque [Nm]/Strength factor										
2800	0,37 <sup>1)</sup>		7/15,1	10/8,1	14/8,3	18/15,2	25/8,3	32/4,5	37/3,2	43/2,0
	0,55 <sup>1)</sup>		11/10,0	15/5,5	22/5,4	28/10,1	39/5,5	49/3,0	57/2,1	65/1,4
	0,75 <sup>1)</sup>		15/7,5	21/4,0	30/4,0	39/7,4	55/3,9	68/2,2	80/1,5	91/1,0
	1,10 <sup>1)</sup>		22/5,2	32/2,7	45/2,7	58/5,1	82/2,7	102/1,5	119/1,1	
	1,50 <sup>1)</sup>		31/3,7	44/2,0	63/2,0	81/3,6	112/2,0			
	2,20 <sup>1)</sup>		46/2,5	65/1,4	93/1,3	119/2,5				
	3,00 <sup>1)</sup>		63/1,8	89/1,0						
	4,00 <sup>3)</sup>		84/1,4							

The values are for gearboxes that are well run in and properly heated for operation.

- 1. Available as stainless steel motor.
- 2. High output design.
- 3. Assembly through coupling.

## Mounting of the gearbox

1 42 4 0 41 1 12 02 01 30 0 1

	Mounting in gear housing	Mounting in side flange
Stainless housing series 31, 42 and 61		
Standard	40	41

There are different opportunities for types of housing depending on gearbox assembly. "4" indicates that the housing is of stainless steel.

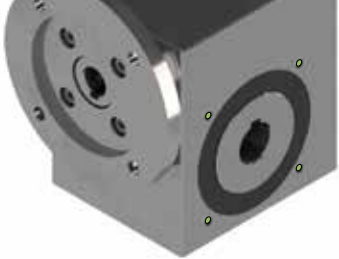
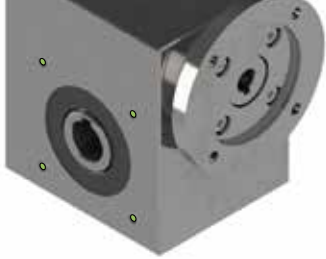
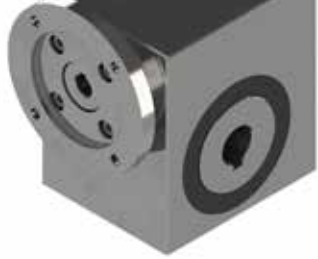
Second digit in the itemnumber is defined by the choice between a bearing cover or a side flange.

For series 31, 42, and 61 there are two options; a standard bearing cover (0) or a side flange (1).

## Output shaft

1 42 4 0 41 1 12 02 01 30 0 1

### Mounting holes

	Extra mounting holes, right	Extra mounting holes, left	Without extra mounting holes
Hollow shaft			
Standard, stainless steel shaft	4 (*6 for Ø38)	5 (*7 for Ø38)	0 (*8 for Ø38)

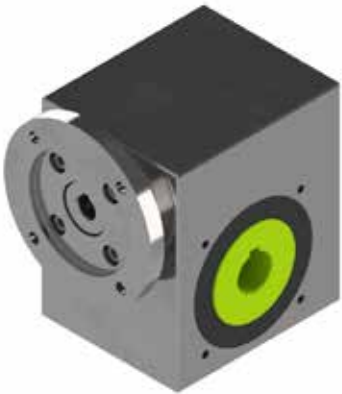
BJ-Gear A/S offers different choices of output shafts.

For stainless steel worm gearboxes the options are either right sided, left sided or with no extra mounting holes.

### Shaft size

1 42 4 0 41 1 12 02 01 30 0 1

BCD \ Series	31	42	61
Ø18		7	
Ø20		1	
Ø25			3
Ø30			4



The second digit indicates the size of the hollow shaft. If the requested size is not mentioned, please feel free to contact us for further information.

# Output shaft material

1 42 4 0 41 1 12 02 01 30 0 1

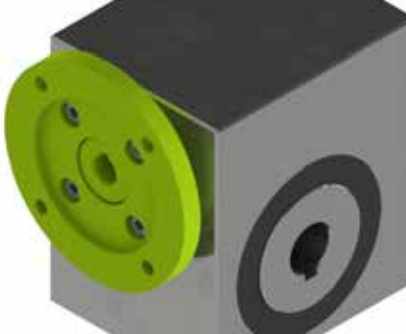
1	Standard, stainless steel shaft
3	Stainless steel shaft, tapered roller bearings

This digit indicates the material of the shaft, where "1" is the standard stainless steel shaft. Options are available.

# D-side

1 42 4 0 41 1 12 02 01 30 0 1

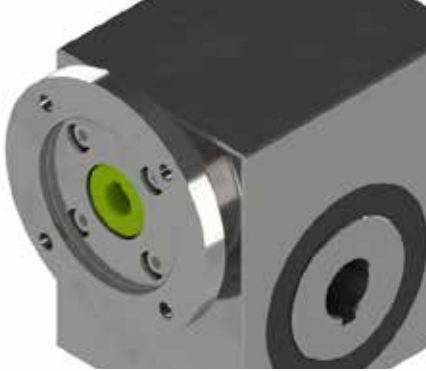
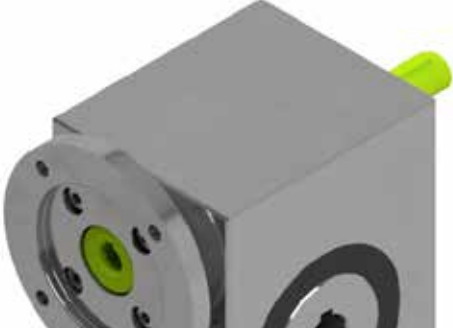
IEC norm (B14)	Motor flange [BCD]	31	42	61
No flange		00	00	00
56	65	-	-	-
63	75	11	11	11
71	85	12	12	12
80	100	13	13	13
90	115	14	14	14
100/112	130	15	15	15
132	165	-	-	16
	215	-	-	-



# Input shaft

1 42 4 0 41 1 12 02 01 30 0 1

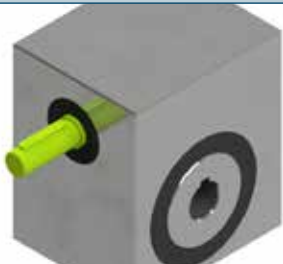
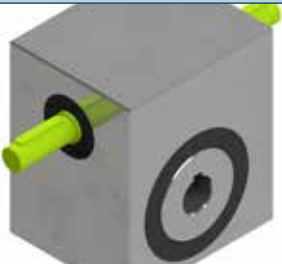
	31	42	61
Ø9	-	-	-
Ø11	01	01	-
Ø14	02	02	02
Ø19	-	-	03
Ø24	-	-	04
Ø28	-	-	-
Ø38	-	-	-
Free shaft on ND side Ø9x	20	20	-
Free shaft on ND side Ø11	21	21	-
Free shaft on ND side Ø14	22	22	22
Free shaft on ND side Ø19	-	-	23
Free shaft on ND side Ø24	-	-	24
Free shaft on ND side Ø28	-	-	-
Free shaft on ND side Ø38	-	-	-

## Motor size and power

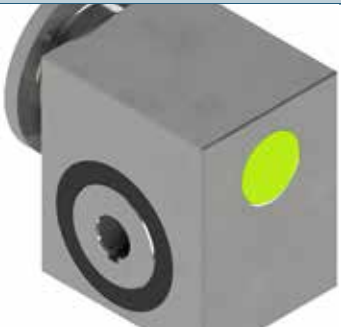
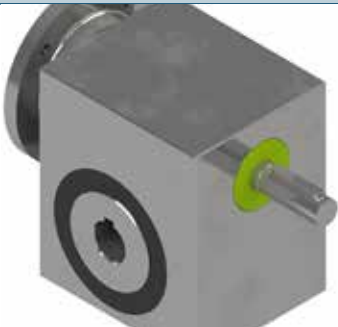
Standard motors	Size 63	Size 71	Size 80	Size 90	Size 100/112	Size 132
Motor power [kW] for 700 min <sup>-1</sup>	0,06	0,09	0,18	0,37	0,75	2,2
	-	0,12	0,25	0,55	1,1	3,0
	-	-	-	-	1,5	-
Motor power [kW] for 900 min <sup>-1</sup>	0,12	0,18	0,37	0,75	1,5	3,0
	-	0,25	0,55	1,1	2,2	4,0
	-	-	-	-	-	5,5
Motor power [kW] for 1400 min <sup>-1</sup>	0,12	0,25	0,55	1,1	2,2	5,5
	0,18	0,37	0,75	1,5	3,0	7,5
	-	-	-	-	4,0	-
Motor power [kW] for 2800 min <sup>-1</sup>	0,18	0,37	0,75	1,5	3,0	5,5
	0,25	0,55	1,1	2,2	4,0	7,5
	-	-	-	-	5,5	-

## D-side and input shaft for gearboxes without motor

	Closed ND-side	Throughgoing worm with free shaft on ND-side
Free worm shaft on D-side		
Item number	1-42-S0411-3040-01-30-01	1-42-S0411-3050-01-30-01

## ND-side

1 42 4 0 41 1 12 02 01 30 0 1

Closed end cover, standard. Available for worm without free shaft on the ND-side	Open end cover. For worm with free shaft on the ND-side
	
01	30

## Gear ratios

1 42 4 0 41 1 12 02 01 30 0 1

Ratio code	31	42	61
	Gear ratio $n_2$ [rpm]	Gear ratio $n_2$ [rpm]	Gear ratio $n_2$ [rpm]
05	5:1	5:1	-
07	7:1	7:1	7:1
10	10:1	10:1	10:1
15	15:1	15:1	15:1
20	20:1	20:1	21:1
25	25:1	25:1	-
30	30:1	30:1	30:1
40	38:1	38:1	40:1
50	50:1	50:1	48:1
60	60:1	60:1	60:1
75	75:1	75:1	-

## Choice of lubricants

1 42 4 0 41 1 12 02 01 30 0 1

	Description	Application	Viscosity	Lubricant
0	Fully synthetic gear oil, standard	Normal load and ambient temp. -25°C to +40°C	220	Klübersynth GH 6-220
1	Fully synthetic gear oil	Heavy load and ambient temp. -20°C to >+40°C	460	Klübersynth GH 6-460
2	Fully synthetic gear oil	Heavy load and ambient temp. -20°C to >+40°C	680	Klübersynth GH 6-680
3	Liquid grease	Normal load and ambient temp. -40°C to >+40°C	1200	Klübersynth GE 46-1200
4	Special lubricating oil for food and pharmaceutical industries	Normal load and ambient temp. -20°C to +40°C	460	Klüberoil 4 UH1-460 N

Ambient temperatures are guide values depending on the lubricant's composition, the intended use and the application method.

All data is based on synthetic oil. Do not mix synthetic oil with mineral oil.

## Choice of finish

1 42 4 0 41 1 12 02 01 30 0 1

1	No treatment (Standard for stainless steel gearboxes)
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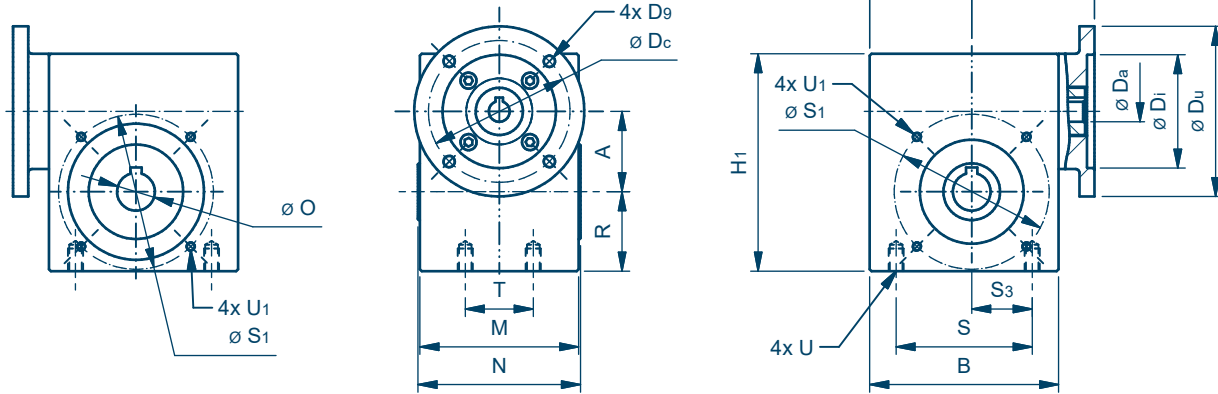
# Dimensional drawings

# Serie 31, 42, 61

## 1 XX 303XX 1X0X 01

Gear housing type 3. Housing with support, worm at bottom, double free shaft, closed end cover.

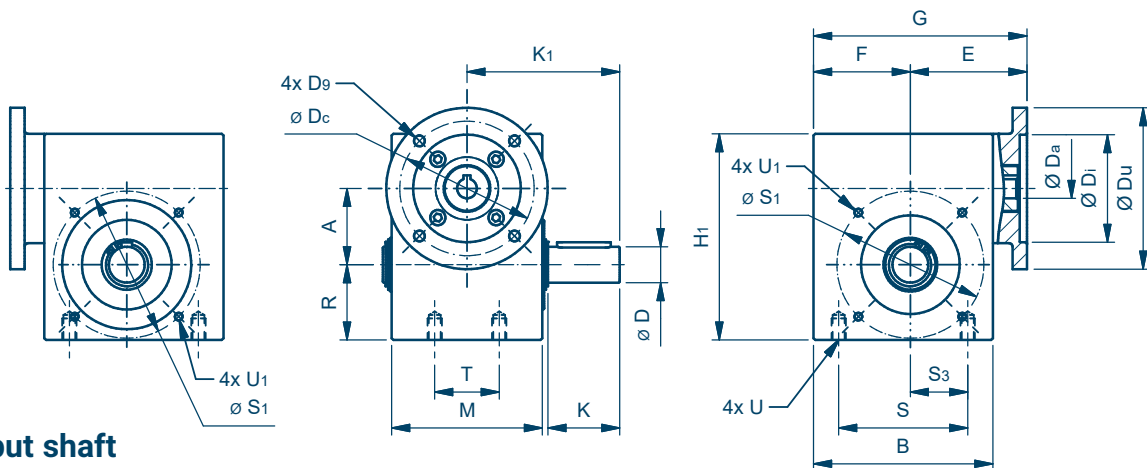
Worm at top, side flange with hollow shaft right



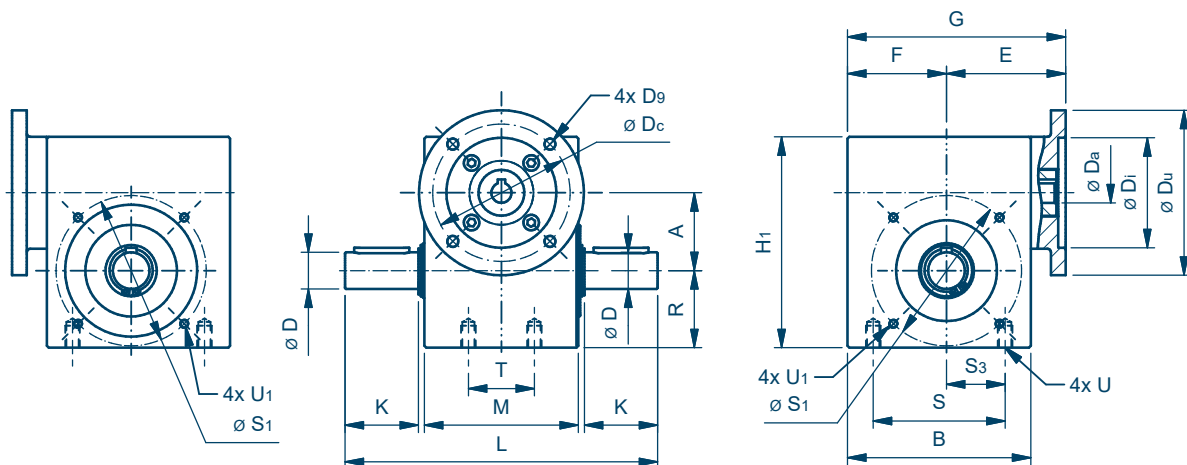
## Hollow shaft

Gear size	A	B	Motor size	Flange B14 size ØDc	ØDu	ØD <sub>i</sub> (F6)	ØD <sub>a</sub>	D <sub>9</sub>	E	F	G	H <sub>1</sub>	M	N	ØD (k6)	R	S	ØS <sub>1</sub>	S <sub>3</sub>	T	U	U <sub>1</sub>
31	31,0	79	56	65	80	50	9	6	51	45	96	88	60	62	14	33,5	60	63	28	40	M6x9	M4x6
			63	75	90	60	11	6														
42	42,5	100	63	75	90	60	11	6	65	54	119	115	84	86	20	42	72	82	32	36	M8x12	M5x8
			71	85	105	70	14	7														
61	61,0	135	71	85	105	70	14	7	91	79	170	153	108	110	25 30	56	106	114	41	42	M10x15	M6x9
			80	100	120	80	19	7	91													
			90	115	140	95	24	9	101													

## Free output shaft

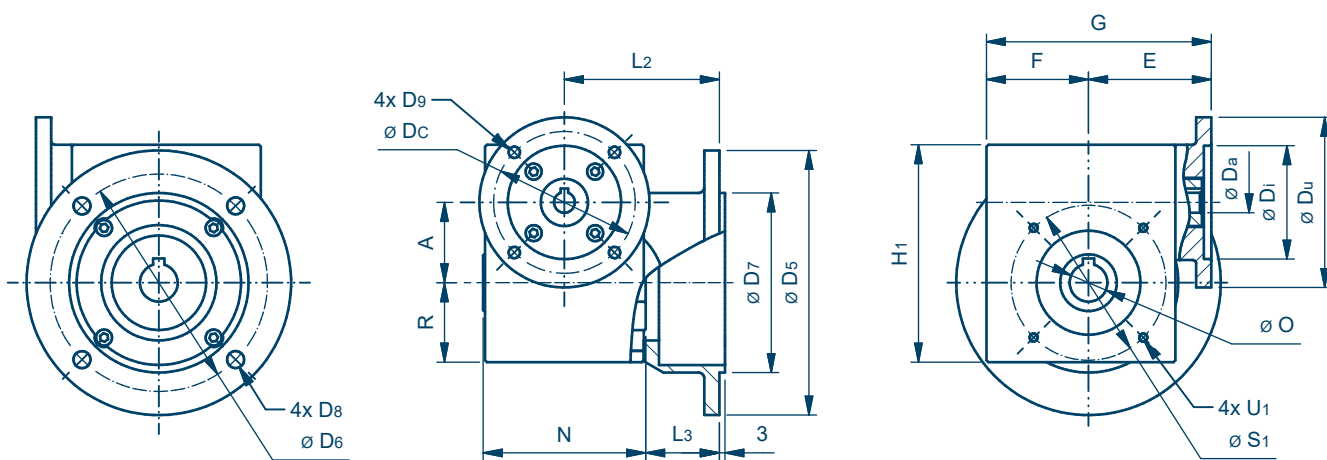


Gear size	A	B	Motor size	Flange B14 size ØDc	ØDu	ØD <sub>i</sub> (F6)	ØD <sub>a</sub>	D <sub>9</sub>	E	F	G	H <sub>1</sub>	ØD (k6)	K	K <sub>1</sub>	M	R	S	ØS <sub>1</sub>	S <sub>3</sub>	T	U	U <sub>1</sub>
31	31,0	79	56	65	80	50	9	6	51	45	96	88	14	30	63	60	33,5	60	63	28	40	M6x9	M4x6
			63	75	90	60	11	6															
42	42,5	100	63	75	90	60	11	6	65	54	119	115	20	40	85,2	84	42	72	82	32	36	M8x12	M5x8
			71	85	105	70	14	7															
61	61,0	135	71	85	105	70	14	7	91	79	170	153	30	60	117,5	108	56	106	114	41	42	M10x15	M6x9
			80	100	120	80	19	7	91														
			90	115	140	95	24	9	101														



### Double free output shaft

Gear size	A	B	Motor size	Flange B14 size ØDc	ØD <sub>u</sub>	ØD <sub>i</sub> (F6)	ØD <sub>a</sub>	D <sub>9</sub>	E	F	G	H <sub>1</sub>	ØD (k6)	K	L	M	R	S	ØS <sub>1</sub>	S <sub>3</sub>	T	U	U <sub>1</sub>
31	31,0	79	56	65	80	50	9	6	51	45	96	88	14	30	106,2	60	33,5	60	63	28	40	M6x9	M4x6
			63	75	90	60	11	6															
42	42,5	100	63	75	90	60	11	6	65	54	119	115	20	40	170,6	84	42	72	82	32	36	M8x12	M5x8
			71	85	105	70	14	7															
61	61,0	135	71	85	105	70	14	7	91	79	170	153	30	60	235,2	108	56	106	114	41	42	M10x15	M6x9
			80	100	120	80	19	7	91														
			90	115	140	95	24	9	101														



### Hollow shaft side cover

Gear size	A	B	Motor size	Flange B14 size ØDc	ØD <sub>u</sub>	ØD <sub>i</sub> (F6)	ØD <sub>a</sub>	D <sub>9</sub>	E	F	G	H <sub>1</sub>	ØD <sub>5</sub>	ØD <sub>6</sub>	ØD <sub>7</sub> (f6)	D <sub>8</sub>	L <sub>2</sub>	L <sub>3</sub>	N	ØO (F6)	R	ØS <sub>1</sub>	U <sub>1</sub>
31	31,0	79	56	65	80	50	9	6	51	45	96	88	115	100	80	7	59	28	62	14	33,5	63	M4x6
			63	75	90	60	11	6															
42	42,5	100	63	75	90	60	11	6	65	54	119	115	140	115	95	9	82	39	86	20	42	82	M5x8
			71	85	105	70	14	7															
61	61,0	135	71	85	105	70	14	7	91	79	170	153	200	165	130	11	104	49	110	25 30	56	114	M6x9
			80	100	120	80	19	7	91														
			90	115	140	95	24	9	101														

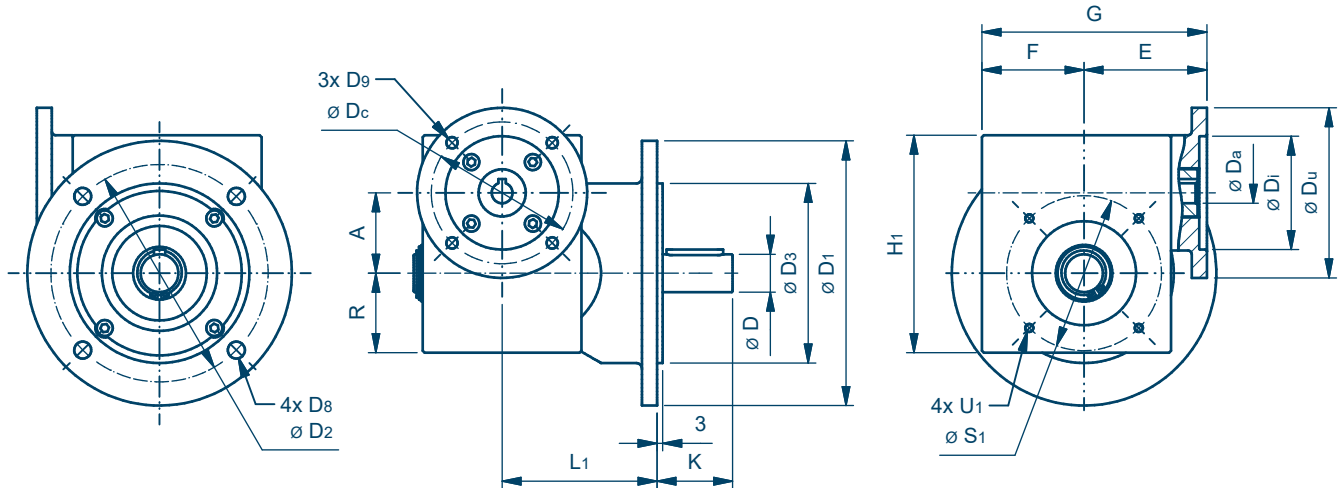
# Dimensional drawings

# Serie 31, 42, 61

1 XX 303XX 1X0X 01

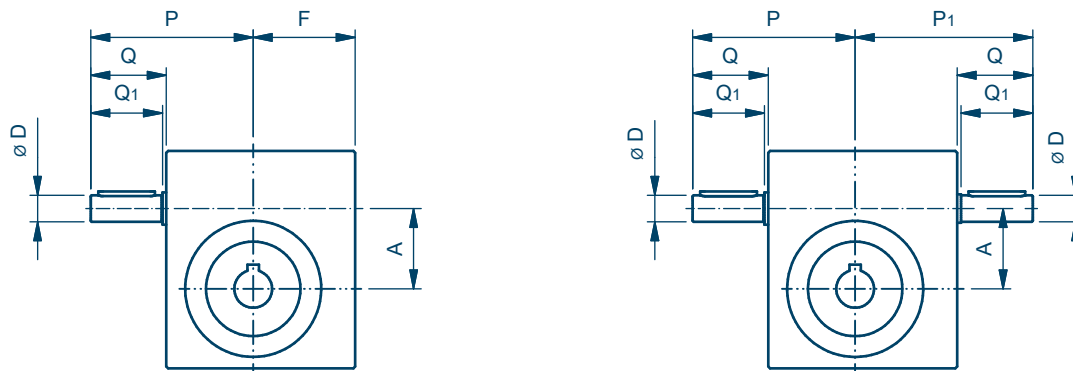
Gear housing type 3. Housing with support, worm at bottom, double free shaft, closed end cover.

Worm at top, side flange with hollow shaft right



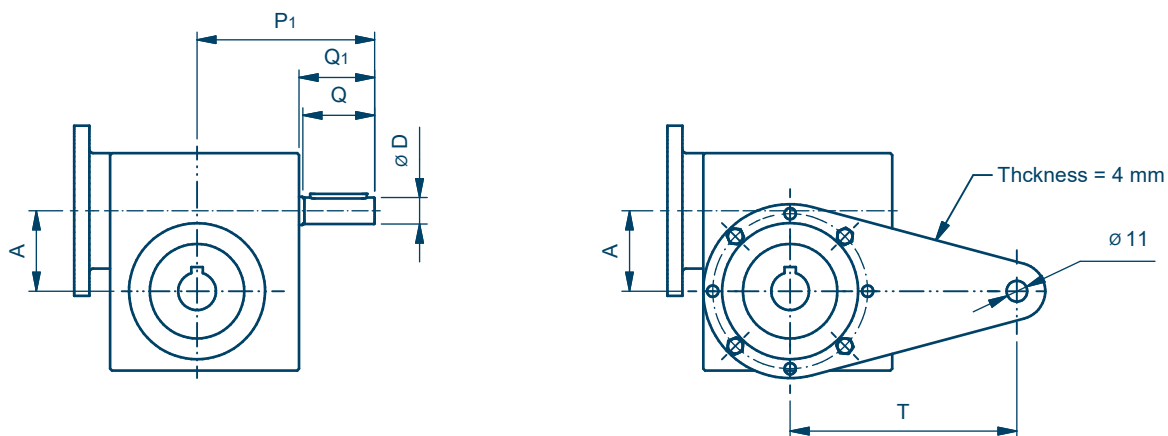
## Side cover

Gear size	A	Motor size	Flange B14 size ØDc	ØD <sub>u</sub>	ØD <sub>1</sub> (F6)	ØD <sub>a</sub>	D9	E	F	G	H <sub>1</sub>	ØD (k6)	ØD <sub>1</sub>	ØD <sub>2</sub>	ØD <sub>3</sub> (f6)	D <sub>8</sub>	K	R	ØS <sub>1</sub>	U <sub>1</sub>	
31	31,0	56	65	80	50	9	6	51	45	96	88	14	115	100	80	7	30	33,5	63	M4x6	
		63	75	90	60	11	6														
42	42,5	63	75	90	60	11	6	65	54	119	115	20	140	115	95	9	40	42	82	M5x8	
		71	85	105	70	14	7														
61	61,0	71	85	105	70	14	7	91	79	170	153	30	200	165	130	11	60	56	114	M6x9	
		80	100	120	80	19	7	91													170
		90	115	140	95	24	9	101													180



## Free shaft

Gear size	A	ØD (k6)	F	P	P <sub>1</sub>	Q	Q <sub>1</sub>
31	31,0	9	45	56	67	22	20
42	42,5	14	54	86	94	40	38
61	61,0	19	79	98	121	42	40



**Free shaft ND-side / torque arm**

Gear size	A	ØD (k6)	P <sub>1</sub>	Q	Q <sub>1</sub>	T
31	31,0	9	67	22	20	100
42	42,5	14	94	40	38	120
61	61,0	19	121	42	40	160

# Accessories for complete solutions

BJ-Gear A/S manufactures a wide range of stainless steel products. In addition to our manufactured gearboxes and actuators, we supply transmission components of recognised brands, which makes it possible to supply complete transmission solutions at short notice.

When choosing BJ-Gear A/S as a total supplier, you are guaranteed correct assembly of all components with a functional test subsequently. All components are stocked or manufactured for prompt delivery.

## Stainless steel motors

The stainless steel AC motors are of acid-resistant steel and in protection classes from IP66 to IP69K. They are available as TENV (Totally Enclosed Non-Ventilated) up to effects of 0.75 kW or as TEFV up to effects of 7.5 kW (Totally Enclosed Fan Cooled). The motors are equipped with thermistors as standard. The completely smooth surface makes them ideal for use within the food industry or where an easy-to-clean design is paramount.



## Brakes of stainless steel

The stainless steel brakes from BJ-Gear A/S meet the high demands and standards required by e.g. the food industry for products to be used directly in a process line. They have a hygienic design with a smooth surface and are easy and simple to incorporate. The brakes are available in three sizes with a torque from 5-20 Nm. They fit IEC motor sizes 63, 71, 80 and 90 (B14). Other sizes can be made on request.

The brakes are designed to be mounted between a flanged motor and a gearbox, where the output shaft is not to be subjected to additional axial or radial loads. The protection is IP68/69 when mounted between gearbox and motor.



Motor frame size	Brake size	MbN* (Nm)	P 20 °C (Watt)	Cable length standard (M)
63,71	08	5	22	1
80	10	10	28	1
90	13	20	24	1

\* Braking torque after completion of run-in. The brake is designed to be mounted between a flanged motor and a gearbox, hence the output shaft is not to be subjected to additional axial or radial loads.

# Stainless steel products

BJ-Gear A/S manufactures a wide range of stainless steel gearboxes, actuators and worm gear screw jacks. The stainless steel products are developed specifically for the food industry and industries where the requirements for material resistance and an easy-to-clean design are continuously stringent. The gearboxes are life lubricated and can be supplied with lubricants approved for the food industry. The products of stainless steel can be customised according to your needs.

## Worm gearboxes

### Features and advantages

- Hygienic design
- Sturdy and reliable
- Compact design
- High quality
- Can be equipped with stainless AC motors, servo motors, encoders & brakes
- High efficiency or self locking
- Custom design



Premium stainless steel worm gearbox



Standard stainless steel worm gearbox



Stainless worm gearbox with a special motor flange for DC motor and a stainless motor shield



Integrated stainless steel worm gearbox with enhanced bearings and special output shaft



Standard stainless steel worm gearbox

## Helical and helical bevel gearboxes

The helical bevel gearboxes are characterised by high power density and an efficiency of up to 96%. The compact and modular design makes the gearbox easy to incorporate in numerous applications.

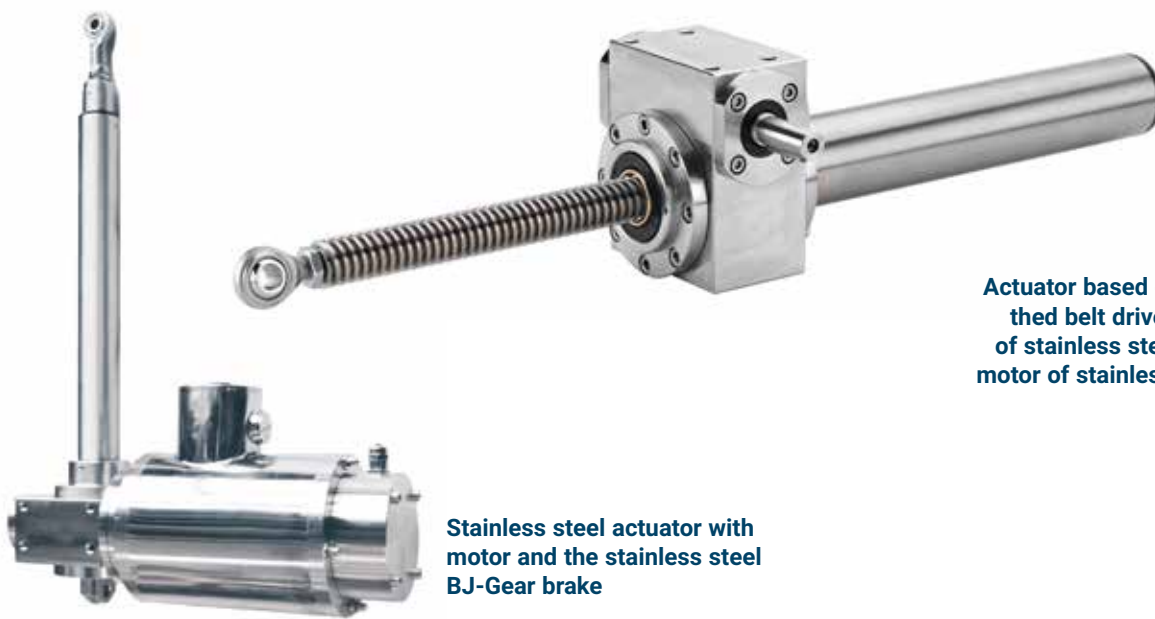
### Features and advantages

- Reliable performance
- Compact design. Available in hygienic design
- Quiet, reliable and efficient operation
- High quality
- Can be equipped with AC, DC or servo motors, encoders and brakes
- Custom design



## Actuators & worm gear screw jacks

Actuator in stainless steel  
with trapezoidal spindle or ball screw



Actuator based on toothed belt drive made of stainless steel with motor of stainless steel

Stainless steel actuator with motor and the stainless steel BJ-Gear brake



## NG flange bearings

Our Blue NG Bearings are crafted from high-quality blue polyurethane (PUR), making them ideal for the food industry. These bearings feature steel-reinforced mounting holes for added durability and strength. The blue color allows for easy identification of dirt and debris, ensuring a hygienic environment. Additionally, they come with hygienic bolts, nuts, and spacers, including spacers designed for easy cleaning access.

We also offer bearing units of stainless steel.

### Features and advantages

- Solid housings
- Easy assembly
- IP66 & IP67 (IP68 and IP69K on request).
- Maintenance free bearings
- USDA accepted
- Food grade acc. to reg. (EC) No. 1935/2004
- FDA food grade acc. to CFR 175.300
- NSF H1 registered grease



# bj·gear

Customisation is our standard



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