

8G planetary gearboxes

System overview

Version: **1.2 (April 2021)**

Order no.: -

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1 Product overview.....	3
2 8G - Order key.....	5
2.1 Gearbox type (e).....	6
2.2 Series (ff).....	6
2.3 Size (ggg).....	7
2.4 Variants (hh).....	7
2.5 Gear ratio (iii).....	8
2.6 Backlash (k).....	8
2.7 Output shaft type (l).....	9
2.8 Motor mounting (mm).....	10
3 Motor-gearbox combinations.....	11
3.1 Standard planetary gearboxes (servomotors 8LS...-3, 8LV, 8JS, 8LSN).....	12
3.2 Standard planetary gearboxes (stepper motors / ACOPOSmotor).....	13
3.3 Premium planetary gearboxes (servo motors 8LS...-3, 8JS, 8LSN).....	14
3.4 Premium planetary gearboxes (stepper motors / ACOPOSmotor).....	15
3.5 Economy planetary gearboxes.....	16

1 Product overview

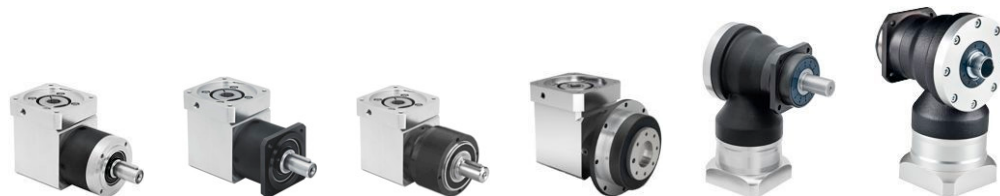
Planetary gearboxes with output shaft - 8GP

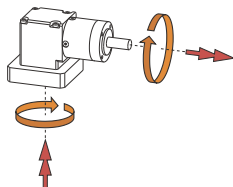
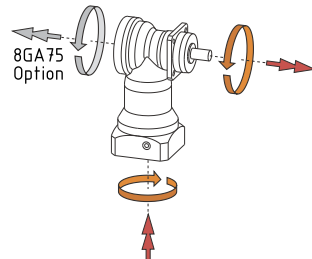


	8GP30	8GP40	8GP45	8GP50	8GP55	8GP60 / 8GP70
Class	Economy	Standard				Premium
Size	040, 060, 080, 120	040, 060, 080, 120	067, 089, 121	050, 070, 090, 120, 155	60, 80, 120	070, 090, 115, 142, 190
Tooth type	Straight					Straight/Helical
Degree of protection	IP54				IP65	
Backlash [arcmin]:						
1-stage	≤8 - ≤15	≤7 - ≤15	≤8 - ≤12	≤8 - ≤15	≤8 - ≤12	≤1 - ≤3
2-stage	≤12 - ≤19	≤12 - ≤19	≤12 - ≤15	≤12 - ≤19	≤12 - ≤15	≤1 - ≤5
3-stage	---	≤14 - ≤22	≤14 - ≤18	---	---	---
Gear ratio:						
1-stage	5, 10	3 - 10	3 - 10	3 - 10	3 - 10	3 - 10
2-stage	25	9 - 100	9 - 100	9 - 100	9 - 100	12 - 100
3-stage	---	60 - 512	60 - 512	---	---	---
Nominal output torque [Nm]	5 - 172	5 - 260	15 - 260	5 - 460	15 - 260	27 - 1,800
Radial load 20,000 h [N] ¹⁾	200 - 1,750	200 - 1,750	900 - 2,950	800 - 5,200	3200 - 6,000	3200 - 21,000
Axial load 20,000 h [N] ¹⁾	200 - 2,500	200 - 2,500	1,000 - 2,500	1,000 - 7,000	4,400 - 8,000	4,400 - 21,000
Smooth shaft	---	Yes	Yes	Yes	Yes (Standard)	Yes (Standard)
Keyed shaft	Yes (Standard)	Yes (Standard)	Yes (Standard)	Yes (Standard)	Yes	Yes
Toothed shaft	---	---	---	---	---	Yes

- 1) Refers to the center of the output shaft. Values refer to drive shaft speed $n_2 = 100 \text{ min}^{-1}$ and application factor $K_A = 1$ as well as S1 operation for electrical machines and $T = 30^\circ\text{C}$. Depends on the diameter of the respective motor shaft.

Angular planetary gearboxes - 8GA



	8GA40	8GA45	8GA50	8GA55	8GA60	8GA75
Class	Standard				Premium	
Size	040, 060, 080, 120	067, 089, 121	050, 070, 090, 120	064, 090, 110	070, 090, 115, 142	070, 090, 115, 142
Tooth type	Straight				Spiral bevel	
Degree of protection	IP54				IP65	
Backlash [arcmin]:						
1-stage	≤12 - ≤21	≤12 - ≤14	≤12 - ≤21	≤12 - ≤17	≤5	≤5
2-stage	≤16 - ≤25	≤16 - ≤18	≤16 - ≤25	≤14 - ≤19	≤7	---
3-stage	≤18 - ≤28	≤18 - ≤20	---	---	---	---
Gear ratio:						
1-stage	3 - 10	3 - 10	3 - 10	3 - 10	4 - 10	4 - 10
2-stage	9 - 100	9 - 100	9 - 100	9 - 100	16 - 100	---
3-stage	60 - 512	60 - 512	---	---	---	---
Nominal output torque [Nm]	4.5 - 260	38 - 260	4.5 - 195	14 - 260	22 - 800	22 - 800
Radial load 20,000 h [N] ¹⁾	200 - 1,750	900 - 2,950	800 - 2,500	550 - 2,400	3,200 - 11,400	3,200 - 11,400
Axial load 20,000 h [N] ¹⁾	200 - 2,500	1,000 - 2,500	1,000 - 4,000	1,200 - 3,300	4,300 - 15,000	4,300 - 15,000
Smooth shaft	Yes	Yes	Yes	---	Yes (Standard)	---
Keyed shaft	Yes (Standard)	Yes (Standard)	Yes (Standard)	---	Yes	---
Hollow shaft (one side)	---	---	---	---	---	Yes (Standard)
Hollow shaft (both sides)	---	---	---	---	---	Yes
Drive flange	---	---	---	Yes (Standard)	---	---
Direction of rotation						

1) Refers to the center of the output shaft. Values refer to drive shaft speed $n_2 = 100 \text{ min}^{-1}$ and application factor $K_A = 1$ as well as S1 operation for electrical machines and $T = 30^\circ\text{C}$. Depends on the diameter of the respective motor shaft.

Planetary gearboxes with output flange - 8GF



	8GF40	8GF60	8GF70
Class	Standard	Premium	
Size	064, 090, 110	064, 090, 110, 140, 200	064, 090, 110, 140, 200
Tooth type	Straight		Helical
Degree of protection	IP54	IP65	
Backlash [arcmin]:			
1-stage	≤8 - ≤12	≤1 - ≤3	≤1 - ≤3
2-stage	≤12 - ≤16	≤1 - ≤5	≤1 - ≤5
3-stage	---	---	---
Gear ratio:			
1-stage	3 - 10	4 - 10	4 - 10
2-stage	9 - 100	16 - 100	16 - 100
3-stage	---	---	---
Nominal output torque [Nm]	15 - 260	27 - 1,800	27 - 1,800
Radial load 20,000 h [N] ¹⁾	550 - 2,400	2,400 - 33,000	2,400 - 33,000
Axial load 20,000 h [N] ¹⁾	1,200 - 3,300	4,300 - 25,000	4,300 - 25,000
Drive flange	Yes (Standard)	Yes (Standard)	Yes (Standard)

1) Refers to the center of the output shaft. Values refer to drive shaft speed $n_2 = 100 \text{ min}^{-1}$ and application factor $K_A = 1$ as well as S1 operation for electrical machines and $T = 30^\circ\text{C}$. Depends on the diameter of the respective motor shaft.

2 8G - Order key

8G e ff . ggg hh iii k l mm

Gearbox type

P ... Planetary gearbox with output shaft
F ... Planetary gearbox with output flange
A ... Angular planetary gearbox
 see "Gearbox type (e)" on page 6

Series

Economy ... **30**
 Standard ... **40, 45, 50, 55**
 Premium ... **60, 70, 75**
 see "Series (ff)" on page 6

Size

Example: **040, 050, ... 142, 190, 200** see "Size (ggg)" on page 7

Variants

-- ... Standard
-F ... Food-safe (not available for 8GP30)
-L ... Low temperature (not available for 8GP30 / 8GA60 / 8GA75)
 see "Variants (hh)" on page 7

Gear ratio

Example: **003, 004, ... 256, 320, 512** see "Gear ratio (iii)" on page 8

Backlash

S ... Standard
R ... Reduced backlash (only available for 8GP60 / 8GP70 / 8GF60 / 8GF70)
 see "Backlash (k)" on page 8

Output shaft type

0 ... Output flange (8GF40 / 8GA55 with dowel pin hole and 8GF60 / 8GF70 without dowel pin hole)
5 ... Output flange (8GF60 / 8GF70 with dowel pin hole)
1 ... Smooth shaft (8GAxx / 8GPxx)
2 ... Keyed shaft (8GAxx / 8GPxx)
4 ... Toothed shaft (8GP60 / 8GP70)
6 ... Hollow shaft on one side (8GA75)
7 ... Hollow shaft on both sides (8GA75)
 see "Output shaft type (l)" on page 9

Motor mounting

For example: **L2, V3, ...** see "Motor mounting (mm)" on page 10

Note:

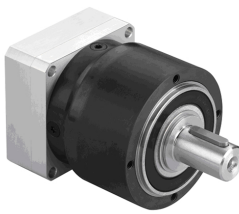
Order keys only provide information about possible combinations in exceptional cases. Information about possible combinations is available in the CAD configurator (cad.br-automation.com).

2.1 Gearbox type (e)

8G e ff . ggg hh iii k l mm

B&R gearboxes are available as angular planetary gearboxes, planetary gearboxes with a coaxial output shaft and with an output flange.

The gearbox type is specified with a letter (**e**) in the order key.

Gearbox type (e)		
P	F	A
Planetary gearbox with output shaft	Planetary gearbox with output flange	Angular planetary gearbox
		

2.2 Series (ff)

8G e ff . ggg hh iii k l mm

The gearboxes are divided into different series. The series is specified as a two-digit number (**ff**) in the order key.

Series (ff)		
30	40, 45, 50, 55	60, 70, 75
Economy	Standard	Premium
Is a cost-effective alternative. This gearbox is cost-optimized by simplifying the clamping system between motor shaft and gearbox. The output torque and gear ratios have been reduced to a standard market level. The output shaft is only available with a key. The degree of protection corresponds to the IP54 standard.	Offers the perfect solution for most applications with an optimized price/performance ratio. The unique modular system allows a great variety with regard to gear ratio, flange, design and much more.	For applications that demand high precision. In addition to standard spur toothing, helical gearing, which runs even smoother and quieter, is also possible. The angular gearbox is also available with a hollow shaft through which cables, lines or material strands can be fed to save space. This additionally opens up new possibilities in machine design.

2.3 Size (ggg)

8G e ff . ggg hh iii k l mm

B&R gearboxes are available in different sizes.

The different sizes are distinguished by three numbers (**ggg**) in the order number. The larger these numbers, the larger the flange dimensions and power data of the respective gearbox.

8GP

Gearbox series	1-stage ¹⁾	2-stage ¹⁾	3-stage ¹⁾
8GP30	040, 060, 080, 120	040, 060, 080, 120	---
8GP40	040, 060, 080, 120	040, 060, 080, 120	040, 060, 080, 120
8GP45	067, 089, 121	067, 089, 121	067, 089, 121
8GP50	050, 070, 090, 120.155	050, 070, 090, 120.155	---
8GP55	060, 080, 120	060, 080, 120	---
8GP60	070, 090, 115, 142, 190	070, 090, 115, 142, 190	---
8GP70	070, 090, 115, 142, 190	070, 090, 115, 142, 190	---

8GF

Gearbox series	1-stage ¹⁾	2-stage ¹⁾	3-stage ¹⁾
8GF40	064, 090, 110	064, 090, 110	---
8GF60	064, 090, 110, 140, 200	064, 090, 110, 140, 200	---
8GF70	064, 090, 110, 140, 200	064, 090, 110, 140, 200	---

8GA

Gearbox series	1-stage ¹⁾	2-stage ¹⁾	3-stage ¹⁾
8GA40	040, 060, 080, 120	040, 060, 080, 120	040, 060, 080, 120
8GA45	067, 089, 121	067, 089, 121	067, 089, 121
8GA50	050, 070, 090, 120	050, 070, 090, 120	---
8GA55	064, 090, 110	064, 090, 110	---
8GA60	070, 090, 115	070, 090, 115, 142	---
8GA75	070, 090, 115.142	---	---

1) 1-stage, 2-stage or 3-stage: Defined by the selected gear ratio.

2.4 Variants (hh)

8G e ff . ggg hh iii k l mm

B&R gearboxes are available with various lubrications.

The different versions are distinguished by two characters (**hh**) in the order number.

Design code	Variant	Availability
--	Standard	All gearboxes
-F	Food-grade lubrication H1-compliant Same properties as standard lubrication	Not available for 8GP30
-L	Low-temperature lubrication T _{min} = - 40°C Optimal operating temperature: Maximum 50°C	Not available for 8GP30 / 8GA60 / 8GA75

2.5 Gear ratio (iii)

8G e ff . ggg hh iii k l mm

B&R gearboxes are available with different gear ratios.

The code (iii) in the order number contains the gear ratio.

8GP

Gearbox series	1-stage:	2-stage:	3-stage:
8GP30	005, 010	025	---
8GP40	003, 004, 005, 007, 008, 010	009, 012, 015, 016, 020, 025, 032, 040, 064, 100	060, 080, 120, 160, 200, 256, 320, 512
8GP45	003, 004, 005, 007, 008, 010	009, 012, 015, 016, 020, 025, 032, 040, 064, 100	060, 080, 120, 160, 200, 256, 320, 512
8GP50	003, 004, 005, 007, 008, 010	009, 012, 015, 016, 020, 025, 032, 040, 064, 100	---
8GP50-155	004, 005, 010	016, 020, 025, 040, 050, 100	---
8GP55	003, 004, 005, 007, 008, 010	009, 012, 015, 016, 020, 025, 032, 040, 064, 100	---
8GP60	003, 004, 005, 007, 008, 010	012, 015, 016, 020, 025, 032, 040, 064, 100	---
8GP70	003, 004, 005, 007, 010	012, 015, 016, 020, 025, 035, 040, 050, 070, 100	---

8GF

Gearbox series	1-stage:	2-stage:	3-stage:
8GF40	003, 004, 005, 007, 008, 010	009, 012, 015, 016, 020, 025, 032, 040, 064, 100	---
8GF60	004, 005, 007, 008, 010	016, 020, 025, 032, 040, 050, 064, 100	---
8GF70	004, 005, 007, 010	016, 020, 025, 035, 040, 050, 070, 100	---

8GA

Gearbox series	1-stage:	2-stage:	3-stage:
8GA40	003, 004, 005, 007, 008, 010	009, 012, 015, 016, 020, 025, 032, 040, 064, 100	060, 080, 120, 160, 200, 256, 320, 512
8GA45	003, 004, 005, 007, 008, 010	009, 012, 015, 016, 020, 025, 032, 040, 064, 100	060, 080, 120, 160, 200, 256, 320, 512
8GA50	003, 004, 005, 007, 008, 010	009, 012, 015, 016, 020, 025, 032, 040, 064, 100	---
8GA55	003, 004, 005, 007, 008, 010	009, 012, 015, 016, 020, 025, 032, 040, 064, 100	---
8GA60	004, 005, 008, 010	016, 020, 025, 032, 040, 064, 100	---
8GA75	004, 005, 008, 010	---	---

2.6 Backlash (k)

8G e ff . ggg hh iii k l mm

B&R premium gearboxes are also available with reduced backlash.

Backlash is specified with a letter (k) in the order key.

	Availability	
	S Standard backlash	R Reduced backlash
Economy ¹⁾	Yes	---
Standard ¹⁾	Yes	---
Premium ²⁾	Yes	Yes

1) Value "Max. backlash" is specified in the technical data.

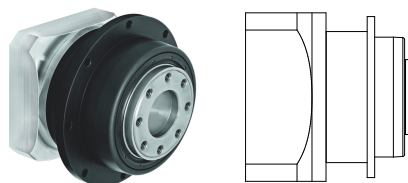
2) Premium gearboxes: 8GP60, 8GP70 / 8GA60, 8GA75 / 8GF60, 8GF70

2.7 Output shaft type (I)

8G e ff . ggg hh iii k **I** mm

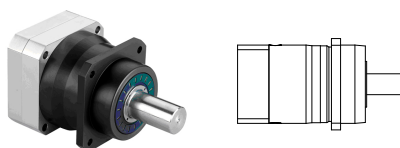
The shape of the output shaft is specified with a digit in the order key (I).

Flange output shaft



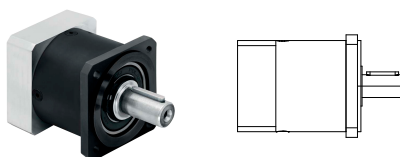
Code (I)	Gearbox series	Flange output shaft	Dowel pin hole
0	8GF40	Yes	Yes
0	8GF60 / 8GF70	Yes	No
5		Yes	Yes

Smooth shaft



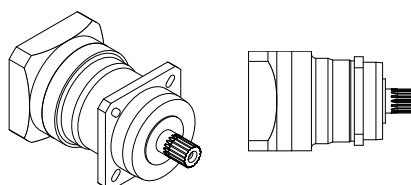
Code (I)	Gearbox series	Smooth shaft
1	8GA.. / 8GP..	Yes

Keyed shaft (per DIN 6885)



Code (I)	Gearbox series	Keyed shaft (per DIN 6885)
2	8GA.. / 8GP..	Yes

Toothed shaft (per DIN 5480)



Code (I)	Gearbox series	Toothed shaft (per DIN 5480)
4	8GP60 / 8GP70	Yes

Hollow shaft



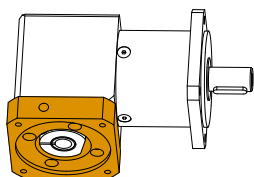
Code (I)	Gearbox series	Hollow shaft (one side)	Hollow shaft (two sides)
6	8GA75	Yes	---
7	8GA75	---	Yes

2.8 Motor mounting (mm)

8G e ff . ggg hh iii k l mm

B&R gearboxes perfectly match the extensive B&R portfolio of synchronous and stepper motors.

The motor mounting is specified with two characters in the order key (**mm**).



The code (**mm**) for the suitable mounting flange – for motor mounting – must be determined from the following table.

Example:

8LVA servo motor, motor size 2

1st character = V

2nd character = 2 (motor size)

Code (**mm**) = **V2**

Servo motors		1st character	2nd character
8LVA		V	1, 2 or 3 (motor size)
8LS	8LSAA	J	3
	8LSA5A/8LSC5A	L	5
	8LSA5B/8LSC5B	O	5
	8LSA5C/8LSC5C	O	5
	8LSA76/77/78 and 8LSC76/77/78	Q	7
	8LSA85/8LSA86	M	8
	All other 8LSA / 8LSC	L	2, 3, 4, 5, 6, 7 or 8 (motor size)
8LSN		N	4 or 5 (motor size)
8JSA		J	2, 3, 4, 5, 6 or 7 (motor size)
Stepper motors		1st character	2nd character
80MPD (flange 56 mm = NEMA 23)		P	D
80MPF (flange 60 mm = NEMA 23)		P	F
80MPH (flange 86 mm = NEMA 34)		P	H
ACOPOSmotor		1st character	2nd character
8DI3x0...		V	3
8DI4x0...		L	4
8DI5x0...		L	5

3 Motor-gearbox combinations

The possible combinations of B&R gearboxes with B&R motors are listed in the following tables.

Standard planetary gearboxes (8Gx40..., 8Gx45..., 8Gx50..., 8Gx55...)

For servo motors, [see "Standard planetary gearboxes \(servomotors 8LS...-3, 8LV, 8JS, 8LSN\)" on page 12.](#)

For ACOPOSmotor, [see "Standard planetary gearboxes \(stepper motors / ACOPOSmotor\)" on page 13.](#)

Premium planetary gearboxes (8Gx60..., 8Gx70..., 8Gx75...)

For servo motors, [see "Premium planetary gearboxes \(servo motors 8LS...-3, 8JS, 8LSN\)" on page 14.](#)

For ACOPOSmotor, [see "Premium planetary gearboxes \(stepper motors / ACOPOSmotor\)" on page 15.](#)

Economy planetary gearboxes (8GP30...)

[see "Economy planetary gearboxes" on page 16.](#)

3.1 Standard planetary gearboxes (servomotors 8LS...-3, 8LV, 8JS, 8LSN)

		Servo motors																					
		8LSA...-3			8LSA...-3 / 8LSC...-3							8LV			8JS							8SLN	
Size		2	A	3	4		5			5	6	1	2	3	2	3	4	5	6	7	4	5	
Motor code		L2	J3	L3	L4		L5			O5	L6 L7 Q7	V1	V2	V3	J2	J3	J4	J5	J6	J7	N4	N5	
Length		*	*	*	3-4	5-6	3-4	5-6	7	A	B/C	*	3	2-3	3	*	*	*	*	*	*	*	
Gearbox type/ratio																							
8GP40	040	X											X			X							
	060	X	X	6										X	X	X	X	4					
	080		X	X	X	C								X	X		X	X	4			5	
	120			X	X	X	X	X	X	C	O							X	X	X		X	8
8GP45	067	X	X	6										X	X	X	X	4					
	089		X	X	X	C								X	X		X	X	4			5	
	121			X	X	X	X	X	X	C	O							X	X	X		X	8
8GP50	050	X											X			X							
	070	X	X	6										X	X	X	X	4					
	090		X	X	X	C								X	X		X	X	4			5	
	120			X	X	X	X	X	X	C	O							X	X	X		X	8
8GP55	155				X	X	X	X	X	X	X	X							X	X	X	X	X
	060	X	X	6										X	X	X	X	4					
	080		X	X	X	C								X	X		X	X	4			5	
8GA40	120			X	X	X	X	X	X	C	O							X	X	X		X	8
	040	X											X			4							
	060	X	4	4										X		X	X						
	080		X	X	C	O								X	X		X	X				4	
8GA45	120			X	X	X	X	C	O	O								X	X			X	6
	067	X	4	4										X		X	X						
	089		X	X	C	O								X	X		X	X				4	
	121			X	X	X	X	C	O	O								X	X			X	6
8GA50	050	X											X			4							
	070	X	4	4										X		X	X						
	090		X	X	C	O								X	X		X	X				4	
	120			X	X	X	X	C	O	O								X	X			X	6
8GA55	064	X	4	4										X		X	X						
	090		X	X	C	O								X	X		X	X				4	
	110			X	X	X	X	C	O	O								X	X			X	6
8GF40	064	X	X	6										X	X	X	X	4					
	090		X	X	X	C								X	X		X	X	4			5	
	110			X	X	X	X	X	X	C	O							X	X	X		X	8

* All lengths

4 Combination **only possible with vertical mounting orientation starting with motor length 4**5 Combination **only possible with vertical mounting orientation starting with motor length 5**6 Combination **only possible with vertical mounting orientation starting with motor length 6**8 Combination **only possible with vertical mounting orientation starting with motor length 8**

C Combination possible (8LSA possible with vertical and horizontal mounting orientation / 8LSC only possible with vertical mounting orientation)

O Combination **only possible with vertical mounting orientation**

X Combination possible

3.2 Standard planetary gearboxes (stepper motors / ACOPOSmotor)

		Stepper motors			ACOPOSmotor		
Size		80MPD	80MPF	80MPH	8DI3	8DI4	8DI5
Motor code		PD	PF	PH	V3	L4	L5
Length		All lengths					
Gearbox type/ratio							
8GP40	040	X	X				
	060	X	X	X	X	X	
	080			X	X	X	X
	120			X		X	X
8GP45	067	X	X	X	X	X	
	089			X	X	X	X
	121			X		X	X
8GP50	050	X	X				
	070	X	X	X	X	X	
	090			X	X	X	X
	120			X		X	X
	155					X	X
8GP55	060	X	X	X	X	X	
	080			X	X	X	O
	120			X		X	X
8GA40	040	X	X				
	060	X	X	O			
	080			X	X	X	X
	120			X		X	X
8GA45	067	X	X	O			
	089			X	X	O	
	121			X		X	X
8GA50	050	X	X				
	070	X	X	O			
	090			X	X	X	
	120			X		X	X
8GA55	064	X	X	O			
	090			X	X	O	
	110			X		X	X
8GF40	064	X	X	X	X	O	
	090			X	X	X	X
	110			X		X	X

O Combination **only possible with vertical mounting orientation**

X Combination possible

3.3 Premium planetary gearboxes (servo motors 8LS...-3, 8JS, 8LSN)

		Servo motors																						
		8LSA...-3			8LSA...-3 / 8LSC...-3										8JS								8SLN	
Size		2	A	3	4	5	5	6	7	7	8	8	8	2	3	2	3	4	5	6	7	4	5	
Motor code		L2	J3	L3	L4	L5	O5	L6	L7	Q7	L8	M8	V2	V3	J2	J3	J4	J5	J6	J7	N4	N5		
Length		*	*	*	3-4	5-6	3-6	7/A	B	C	*	*	*	*	5	6	2-3	3	*	*	*	*	*	
Gearbox type/ratio																								
8GP60	070	X	X	X										X	X	X	X	X						
	090		X	X	X	X								X	X		X	X	X			X		
	115			X	X	X	X	X	X	C					X			X	X	X		X	X	
	142				X	X	X	X	X	X	X	X	X						X	X	X	X	X	
	190						X	X	X	X	X	X	X	C	O					X	X	X	X	
8GP70	070	X	X	X										X	X	X	X	X						
	090 ¹⁾	X	X	X	X	X								X	X	X	X	X	X			X		
	090 ²⁾	X	X	X	X	C								X	X	X	X	X				6		
	115 ¹⁾		X	X	X	X	X	X	X	C					X		X	X	X	X		X	X	
	115 ²⁾		X	X	X	X	X	C						X	X		X	X	X			X	8	
	142 ¹⁾				X	X	X	X	X	X	X	X	X					X	X	X		X	X	
	142 ²⁾			X	X	X	X	X	X	C	X	X			X			X	X	X		X	X	
	190 ¹⁾						X	X	X	X	X	X	X	C	O				X	X	X		X	
190 ²⁾				X	X	X	X	X	X	X	X	4	O	O				X	X	X	X	X		
8GA60	070	X	X	X										X	X	X	X	X						
	090 ¹⁾	X	X	X	X	X								X	X	X	X	X	X			X		
	090 ²⁾	X	X	X	C	O								X	X	X	X	X				4		
	115 ¹⁾		X	X	X	X	X	X	O	O					X			X	X	X	X		X	
	115 ²⁾		X	X	X	X	C	O						X	X		X	X	X			X	6	
	142 ¹⁾				X	X	X	X	X	X	X	X	8					X	X	X	X	X	X	
	142 ²⁾			X	X	X	X	X	X	C	X	X			X			X	X	X		X	X	
8GA75	070 ¹⁾	X	X	X										X	X	X	X	X						
	090 ¹⁾		X	X	X	X								X	X		X	X	X			X		
	115 ¹⁾			X	X	X	X	X	O	O					X			X	X	X		X	X	
	142 ¹⁾				X	X	X	X	X	X	X	8							X	X	X	X	X	
8GF60	064	X	X	X										X	X	X	X	X						
	090 ¹⁾	X	X	X	X	X								X	X	X	X	X	X			X		
	090 ²⁾	X	X	X	X	C								X	X	X	X	X				6		
	110 ¹⁾		X	X	X	X	X	X	X	C					X			X	X	X	X		X	
	110 ²⁾		X	X	X	X	C							X	X		X	X	X			X	8	
	140 ¹⁾				X	X	X	X	X	X	X	X	X					X	X	X	X	X	X	
	140 ²⁾			X	X	X	X	X	X	C	X	X			X			X	X	X		X	X	
	200 ¹⁾						X	X	X	X	X	X	X	C	O				X	X	X		X	
200 ²⁾				X	X	X	X	X	X	X	X	4	O	O				X	X	X	X	X		
8GF70	064	X	X	X										X	X	X	X	X						
	090 ¹⁾	X	X	X	X	X								X	X	X	X	X	X			X		
	090 ²⁾	X	X	X	X	C								X	X	X	X	X				6		
	110 ¹⁾		X	X	X	X	X	X	X	C					X			X	X	X	X		X	
	110 ²⁾		X	X	X	X	C							X	X		X	X	X			X	8	
	140 ¹⁾				X	X	X	X	X	X	X	X						X	X	X		X	X	
	140 ²⁾			X	X	X	X	X	X	C	X	X			X			X	X	X		X	X	
	200 ¹⁾						X	X	X	X	X	X	X	C	O				X	X	X	X	X	
200 ²⁾				X	X	X	X	X	X	X	X	4	O	O					X	X	X	X		

1) 1-stage:

2) 2-stage:

* All lengths

4 Combination **only possible with vertical mounting orientation starting with motor length 4**6 Combination **only possible with vertical mounting orientation starting with motor length 6**8 Combination **only possible with vertical mounting orientation starting with motor length 8**C Combination possible (**8LSA** possible with vertical and horizontal mounting orientation / **8LSC** only possible with vertical mounting orientation)O Combination **only possible with vertical mounting orientation**

X Combination possible

3.4 Premium planetary gearboxes (stepper motors / ACOPOSmotor)

		Stepper motors	ACOPOSmotor			
Size		80MPH	8DI3	8DI4	8DI5	
Motor code		PH	V3	L4	L5	
Length		All lengths				
Gearbox type/ratio						
8GP60	070	X	X	X		
	090	X	X	X	X	
	115	X	X	X	X	
	142			X	X	
	190				X	
8GP70	070	X	X	X		
	090 ¹⁾	X	X	X	X	
	090 ²⁾	X	X	X		
	115 ¹⁾	X	X	X	X	
	115 ²⁾	X	X	X	X	
	142 ¹⁾			X	X	
	142 ²⁾	X	X	X	X	
	190 ¹⁾				X	
190 ²⁾			X	X		
8GA60	070	X	X	X		
	090 ¹⁾	X	X	X	X	
	090 ²⁾	X	X	X		
	115 ¹⁾	X	X	X	X	
	115 ²⁾	X	X	X	X	
	142 ¹⁾			X	X	
	142 ²⁾	X	X	X	X	
8GA75	070 ¹⁾	X	X	X		
	090 ¹⁾	X	X	X	X	
	115 ¹⁾	X	X	X	X	
	142 ¹⁾			X	X	
8GF60	064	X	X	X		
	090 ¹⁾	X	X	X	X	
	090 ²⁾	X	X	X		
	110 ¹⁾	X	X	X	X	
	110 ²⁾	X	X	X	X	
	140 ¹⁾			X	X	
	140 ²⁾	X	X	X	X	
	200 ¹⁾				X	
200 ²⁾			X	X		
8GF70	064	X	X	X		
	090 ¹⁾	X	X	X	X	
	090 ²⁾	X	X	X		
	110 ¹⁾	X	X	X	X	
	110 ²⁾	X	X	X	X	
	140 ¹⁾			X	X	
	140 ²⁾	X	X	X	X	
	200 ¹⁾				X	
200 ²⁾			X	X		

1) 1-stage:

2) 2-stage:

X Combination possible

3.5 Economy planetary gearboxes

		Servo motors															
Size		8LSA....-3			8LSA....-3 / 8LSC....-3						8LV			8JS			
		2	A	3	4		5				1	2	3	2	3	4	5
Motor code		L2	J3	L3	L4		L5				V1	V2	V3	J2	J3	J4	J5
Length		*	*	*	3/4	5/6	3/4	5/6	7	A	3	2/3	3	*	*	*	*
Gearbox type/ratio																	
8GP30	040	X									X			X			
	060	X	X	6								X		X	X		
	080		X	X	X	C						X	X		X	X	
	120			X	X	X	X	X	X	C						X	X

* All lengths

6 Combination **only possible with vertical mounting orientation starting with motor length 6**

C Combination possible (8LSA possible with vertical and horizontal mounting orientation / 8LSC only possible with vertical mounting orientation)

O Combination **only possible with vertical mounting orientation**

X Combination possible

		Stepper motors			ACOPOSmotor		
Size		80MPD	80MPF	80MPH	8DI3	8DI4	8DI5
Motor code		PD	PF	PH	V3	L4	L5
Length		All lengths					
Gearbox type/ratio							
8GP30	040	X	X				
	060	X	X	X			
	080			X	X	X	
	120			X		X	X

X Combination possible

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