

# DPG Series Planetary Gearbox

## Inline+Right-Angle Product Catalog

### Part Number

**DPGS - 60 - S1 - 10 - 14 - 00**

①                      ②                      ③                      ④                      ⑤                      ⑥

① Gearbox Type	DPGS	Inline
	DPGL	Right-Angle

② Frame Size	40	40mm
	60	60mm
	80	80mm
	130	130mm

③ Stage	S1	1-Stage
	S2	2-Stage
	S3	3-Stage

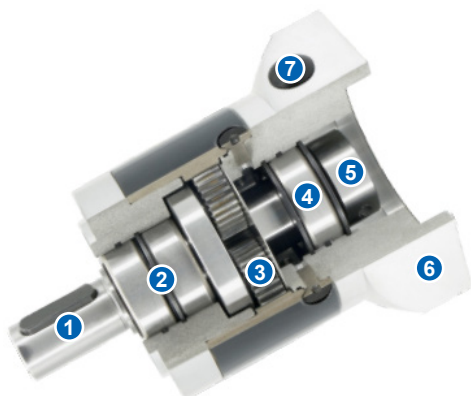
④ Reduction Ratio	1-Stage	3, 4, 5, 8, 10
	2-Stage	9, 12, 15, 16, 20, 25, 32, 40, 64
	3-Stage	60, 80, 100, 120, 160, 200, 256, 320, 516

⑤ Input Shaft Diameter	08	8mm	DST Motor Pair	405, 410
	14	14mm		620, 640
	19	19mm		880, 11A
	22	22mm		115, 120

⑥ Custom Options	00	Standard
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### Construction



1. Output Shaft - With Keyway and Center Tap
2. Dual Output Shaft Bearing
3. Internal Gear
4. Sunwheel Bearing
5. Motor Shaft Clamp - DST Servo Motor Standard Shaft Diameter
6. Input Motor Mount - DST Servo Motor Standard Mount with Threaded Holes
7. Shaft Clamp Access - With Removable Seal

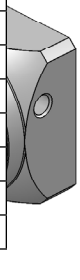
### DST Servo Motor Pair

DST Motor Prefix	Output	Frame	Shaft Diameter	Inline, 2-Stage, 20:1 Reduction Gearbox Part# Example
405, 410	50W, 100W	40mm	8mm	DPGS-40-S2-20-08-00
620, 640	200W, 400W	60mm	14mm	DPGS-60-S2-20-14-00
880	750W	80mm	19mm	DPGS-80-S2-20-19-00
11A	1.0kW	130mm	19mm	DPGS-130-S2-20-19-00
115, 120	1.3kW, 1.8kW	130mm	22mm	DPGS-130-S2-20-22-00

**DPGS Inline - Specifications**

Rated Output Torque	Units	Stage	Reduction	Frame Size:	40mm	60mm	80mm	130mm	
	Nm	1-Stage	3			5	12	40	80
4					6	16	50	110	
5					6	16	50	110	
8					5	15	45	100	
10					4	12	40	80	
2-Stage		9			17	40	100	210	
		12			17	40	100	210	
		15			17	40	100	210	
		16			20	44	120	260	
		20			20	44	120	260	
		25			18	40	110	230	
		32			20	44	120	260	
		40			18	40	110	230	
3-Stage		64			8	18	45	100	
		60			17	40	100	210	
		80			20	44	120	260	
		100			20	44	120	260	
		120			17	40	100	210	
		160			20	44	120	260	
		200			18	40	110	230	
		256			20	44	120	260	
320				18	40	110	230		
512				8	18	45	100		
Max Output Torque		Nm	2.0 Times Rated Output Torque						

Moment of Inertia	Units	Stage	Reduction	Frame Size:	40mm	60mm	80mm	130mm
	kg-cm <sup>2</sup>	1-Stage	3			0.031	0.135	0.77
4					0.022	0.093	0.52	1.79
5					0.019	0.078	0.45	1.53
8					0.017	0.065	0.39	1.32
10					0.015	0.054	0.34	1.14
2-Stage		9			0.022	0.131	0.74	2.62
		12			0.022	0.088	0.5	2.56
		15			0.019	0.077	0.44	1.79
		16			0.022	0.088	0.5	1.75
		20			0.019	0.075	0.44	1.5
		25			0.019	0.075	0.44	1.49
		32			0.017	0.064	0.39	1.3
		40			0.016	0.064	0.39	1.3
3-Stage		64			0.016	0.064	0.39	1.3
		60			0.019	0.075	0.5	1.5
		80			0.019	0.075	0.5	1.5
		100			0.019	0.075	0.44	1.49
		120			0.016	0.064	0.39	1.3
		160			0.016	0.064	0.39	1.3
		200			0.016	0.064	0.39	1.3
		256			0.016	0.064	0.39	1.3
320				0.016	0.064	0.39	1.3	
512				0.016	0.064	0.39	1.3	



## DPGS Inline - Specifications

Backlash	Units	Frame Size	Stage	Specification	
	arc-min	40		1-Stage	<12
				2-Stage	<15
				3-Stage	<18
		60		1-Stage	<8
				2-Stage	<12
				3-Stage	<15
		80		1-Stage	<8
				2-Stage	<12
				3-Stage	<15
	130		1-Stage	<8	
			2-Stage	<12	
			3-Stage	<15	

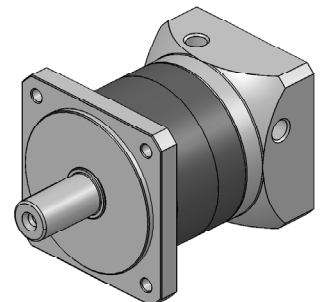
Weight	Units	Frame Size	Stage	Specification	
	kg	40		1-Stage	0.4
				2-Stage	0.5
				3-Stage	0.6
		60		1-Stage	0.9
				2-Stage	1.1
				3-Stage	1.3
		80		1-Stage	2.1
				2-Stage	2.6
				3-Stage	3.1
	130		1-Stage	6	
			2-Stage	8	
			3-Stage	9.5	

	Frame Size	Units	Specification
Output Shaft Max Radial Load	40mm	N	160
	60mm		450
	80mm		900
	130mm		2100
Output Shaft Max Axial Load	40mm		80
	60mm		225
	80mm		450
	130mm		1050

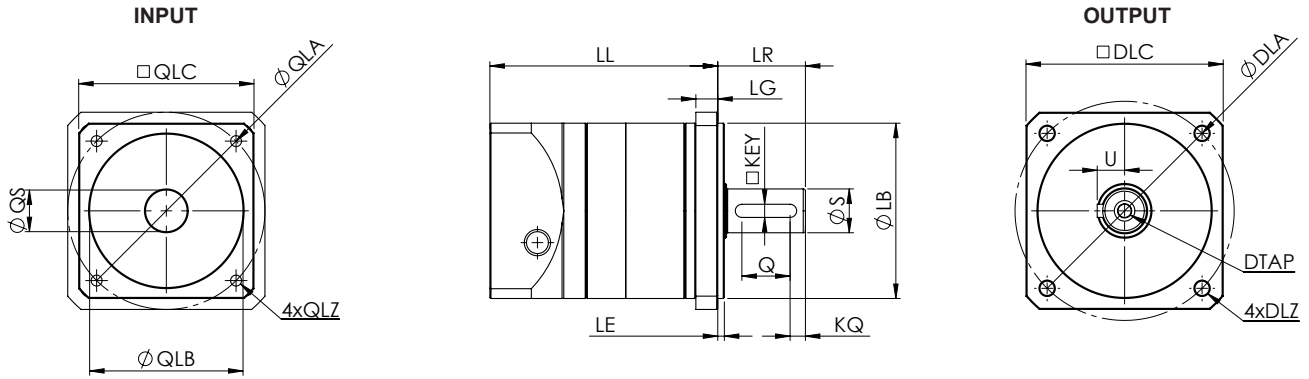
Efficiency	Stage	Units	Specification
	1-Stage	%	96%
	2-Stage		94%
	3-Stage		90%

Noise	Frame Size	Units	Specification
	40mm	dB(A)	55
	60mm		58
	80mm		60
130mm	65		

Ingress Protection	IP54
Rated Speed	3,000rpm
Max Input Speed	5,000rpm
Lifetime	20,000 Hours
Operating Temperature	-25°C ~ 90°C

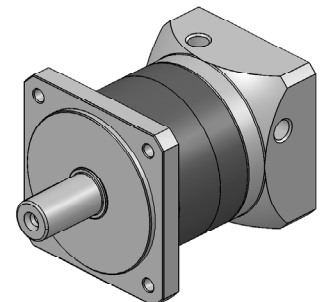


# DPGS Inline - Dimensions



All dimensions in [mm]

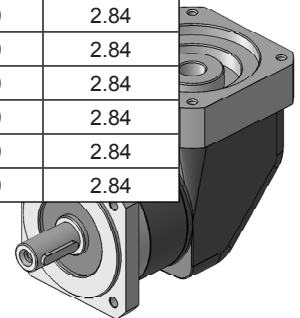
Frame		40mm			60mm			80mm			130mm		
Stage		1	2	3	1	2	3	1	2	3	1	2	3
Dimension	Description												
<b>Gearbox Dimensions</b>													
LL	Gearbox Body Length	67.5	80.5	93	78.5	91.5	104	104	122	139.5	140.2	168	195.5
LR	Output Shaft Length	26			35			40			55		
LG	Output Flange Thickness	6			8			10			15		
LE	Output Spigot Length	2			3			3			4		
LB	Output Spigot Diameter	Φ26h7			Φ50h7			Φ80h7			Φ110h7		
S	Output Shaft Diameter	Φ10h7			Φ14h7			Φ20h7			Φ25h7		
Q	Key Length	16			25			28			40		
KEY	Key Square Width	3			5			6			8		
KQ	Key-Shaft Position	2.5			2.5			4			5		
<b>Input Dimensions</b>													
QLC	Input Flange Square	□40			□60			□80			□130		
QLA	Input Mount Diameter	Φ46			Φ70			Φ90			Φ145		
QS	Input Shaft Diameter	Φ8G7			Φ14G7			Φ19G7			Φ19G7, Φ22G7		
QLZ	Input Mount (Threaded)	4xM4			4xM5			4xM6			4xM8		
QLB	Input Spigot Diameter	Φ30G7			Φ50G7			Φ70G7			Φ110G7		
<b>Output Dimensions</b>													
DLC	Output Flange Square	□45			□60			□90			□120		
DLA	Output Mount Diameter	Φ50			Φ70			Φ100			Φ130		
DLZ	Output Mount Hole Diameter	4xΦ3.5			4xΦ5.5			4xΦ6.5			4xΦ8.5		
DTAP	Output Shaft Centertap	M3x9			M5x12			M6x16			M10x22		
U	Key Height	6.2			9			12.5			15.5		



## DPGL Right Angle - Specifications

Rated Output Torque	Units	Stage	Reduction	Frame Size:	60mm	80mm	130mm	
	Nm	1-Stage	3			12	40	80
4					16	50	110	
5					16	50	110	
8					15	45	100	
10					12	40	80	
2-Stage		9			40	100	210	
		12			40	100	210	
		15			40	100	210	
		16			44	120	260	
		20			44	120	260	
		25			40	110	230	
		32			44	120	260	
		40			40	110	230	
3-Stage		64			18	45	100	
		60			40	100	210	
		80			44	120	260	
		100			44	120	260	
		120			40	100	210	
		160			44	120	260	
		200			40	110	230	
		256			44	120	260	
320				40	110	230		
512				18	45	100		
Max Output Torque		Nm	2.0 Times Rated Output Torque					

Moment of Inertia	Units	Stage	Reduction	Frame Size:	60mm	80mm	130mm
	kg-cm <sup>2</sup>	1-Stage	3			0.246	1.89
4					0.204	0.939	3.91
5					0.189	0.869	3.35
8					0.176	0.809	2.89
10					0.152	0.73	2.54
2-Stage		9			0.242	1.159	5.73
		12			0.199	0.919	3.83
		15			0.188	0.859	3.28
		16			0.199	0.919	3.83
		20			0.186	0.859	3.28
		25			0.186	0.859	3.26
		32			0.175	0.809	2.84
		40			0.175	0.809	2.84
3-Stage		64			0.175	0.809	2.84
		60			0.186	0.919	3.28
		80			0.186	0.919	3.28
		100			0.186	0.859	3.26
		120			0.175	0.809	2.84
		160			0.175	0.809	2.84
		200			0.175	0.809	2.84
		256			0.175	0.809	2.84
320				0.175	0.809	2.84	
512				0.175	0.809	2.84	



## DPGL Right Angle - Specifications

Backlash	Units	Frame Size	Stage	Specification
	arc-min	60	1-Stage	<30
			2-Stage	<35
			3-Stage	<40
		80	1-Stage	<25
			2-Stage	<30
			3-Stage	<35
	130	1-Stage	<25	
		2-Stage	<30	
		3-Stage	<35	

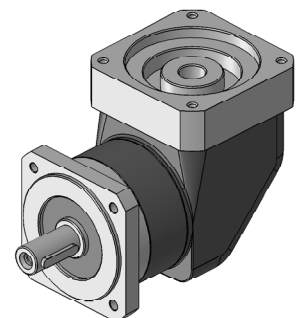
Weight	Units	Frame Size	Stage	Specification
	kg	60	1-Stage	1.7
			2-Stage	1.9
			3-Stage	2.1
		80	1-Stage	4.4
			2-Stage	5
			3-Stage	5.5
		130	1-Stage	12
			2-Stage	14
			3-Stage	16

	Frame Size	Units	Specification
Output Shaft Max Radial Load	60mm	N	450
	80mm		900
	130mm		2100
Output Shaft Max Axial Load	60mm		225
	80mm		450
	130mm		1050

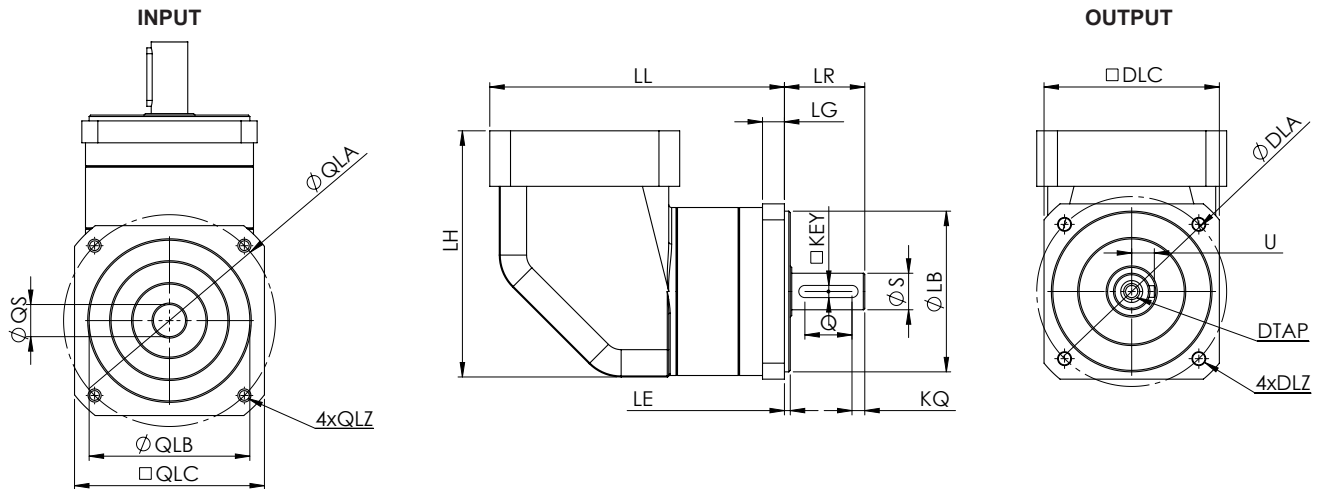
Efficiency	Stage	Units	Specification
	1-Stage	%	94
	2-Stage		92
	3-Stage		88

Noise	Frame Size	Units	Specification
	60mm	dB	65
	80mm		68
	130mm		70

Ingress Protection	IP54
Rated Speed	3,000rpm
Max Input Speed	5,000rpm
Lifetime	20,000 Hours
Operating Temperature	-25°C ~ 90°C

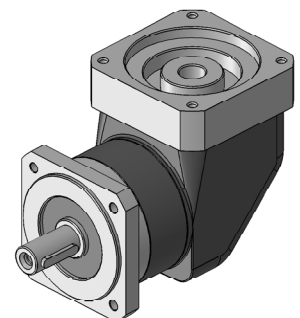


## DPGS Inline - Dimensions



All dimensions in [mm]

Frame		60mm			80mm			130mm		
Stage		1	2	3	1	2	3	1	2	3
Dimension	Description									
<b>Gearbox Dimensions</b>										
LL	Gearbox Body Length	115	128	140.5	144.5	162.5	180	194.2	222	249.5
LH	Gearbox Body Height	93			119.5			167.5		
LR	Output Shaft Length	35			40			55		
LG	Output Flange Tickness	8			10			15		
LE	Output Spigot Length	3			3			4		
LB	Output Spigot Diameter	$\phi$ 50h7			$\phi$ 80h7			$\phi$ 110h7		
S	Output Shaft Diameter	$\phi$ 14h7			$\phi$ 20h7			$\phi$ 25h7		
Q	Key Length	25			28			40		
KEY	Key Square Width	5			6			8		
KQ	Key-Shaft Position	2.5			4			5		
<b>Input Dimensions</b>										
QLC	Input Flange Square	$\square$ 60			$\square$ 80			$\square$ 130		
QLA	Input Mount Diameter	$\phi$ 70			$\phi$ 90			$\phi$ 145		
QS	Input Shaft Diameter	$\phi$ 14G7			$\phi$ 19G7			$\phi$ 19G7, $\phi$ 22G7		
QLZ	Input Mount (Threaded)	4xM5			4xM6			4xM8		
QLB	Input Spigot Diameter	$\phi$ 50G7			$\phi$ 70G7			$\phi$ 110G7		
<b>Output Dimensions</b>										
DLC	Output Flange Square	$\square$ 60			$\square$ 90			$\square$ 120		
DLA	Output Mount Diameter	$\phi$ 70			$\phi$ 100			$\phi$ 130		
DLZ	Output Mount Hole Diameter	4x $\phi$ 5.5			4x $\phi$ 6.5			4x $\phi$ 8.5		
DTAP	Output Shaft Centertap	M5x12			M6x16			M10x22		
U	Key Height	9			12.5			15.5		



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