



SSS Series

Square output flange
Straight type gearbox, Standard / Premium



SAS Series

Square output flange
Right-angle type gearbox, Standard / Premium

- Best-in-class backlash
- High output torque
- Low noise level
- High efficiency
- Maintenance free
- Balanced motor pinion
- Gear ratios available from 3:1 up to 200:1
- No need to replace lubrication to expand the lifespan

		SSS					
Stage	Gear ratio	045	060	090	115	142	180
1A	3~10	○	○	○	○	○	○
2B	15~100	⊗	○	○	○	○	○
2A	15~100	○	○	○	○	○	○
1M/2M	3~100	⊗	⊗	⊗	⊗	⊗	⊗

		SAS				
Stage	Gear ratio	045	060	090	115	142
1A	3~10	○	○	○	○	-
	14, 20	⊗	○	○	○	-
2B	15, 20	⊗	⊗	⊗	⊗	-
	25~100	⊗	○	○	○	-
	120~200	⊗	⊗	○	○	-
2A	15, 20	○	⊗	⊗	⊗	-
	25~100	○	○	○	○	-
	120~200	⊗	○	○	○	-
1M/2M	3~200	⊗	⊗	⊗	⊗	-

○ : Standard, △ : Custom made, ⊗ : Contact sales person.

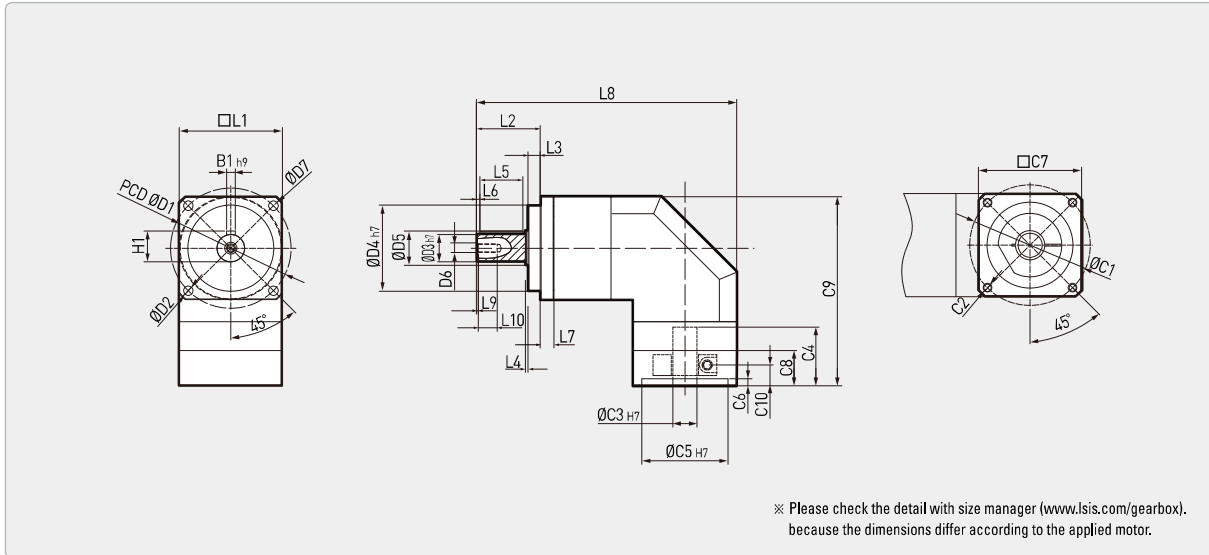


Division	Stage	Gear ratio	045	060	090	115	142	
Nominal Output Torque (Nm)	1	3	★	55	138	255	448	
		4	17	49	134	280	517	
		5	18	53	146	304	580	
		7	16	46	132	279	512	
		9	13	40	110	229	431	
		10	13	40	108	238	451	
		14	-	46	132	278	512	
		15	19	-	-	-	-	
		20	17	40	108	238	451	
	2	25	18	53	146	304	580	
		30	★	48	138	281	533	
		35	16	46	132	279	512	
		40	17	49	134	280	517	
		45	13	40	108	236	446	
		50	18	53	146	304	580	
		63	17	48	138	281	533	
		70	16	46	132	284	512	
		81	13	40	110	229	431	
		90	13	40	110	229	431	
		100	13	40	108	238	451	
		120	-	-	138	255	448	
		140	-	-	132	279	512	
		180	-	-	110	229	431	
		200	-	-	108	238	451	
Emergency Stop Torque (Nm)	1,2	3-200	3 times nominal output torque					
Nominal Input Speed (rpm)	1,2	3-200	5,000	5,000	4,000	4,000	3,000	
Max. Input Speed (rpm)	1,2	3-200	10,000	10,000	8,000	8,000	6,000	
Torsional Rigidity (Nm/Arcmin)	1,2	3-200	3	6	12	22	50	
Max. Radial Load (N)	1,2	3-200	700	1,200	3,200	6,800	9,300	
Max. Axial Load (N)	1,2	3-200	360	650	1,600	3,400	4,500	
Backlash (Arcmin)	S	1	3-20	≤ 10	≤ 10	≤ 10	≤ 10	≤ 10
		2	25-200	≤ 12	≤ 12	≤ 12	≤ 12	≤ 12
	P	1	3-20	≤ 7	≤ 7	≤ 7	≤ 7	≤ 7
		2	25-200	≤ 9	≤ 9	≤ 9	≤ 9	≤ 9
Service Life (Hrs)	1,2	3-200	20,000 (10,000 under continuous operation)					
Efficiency (%)	1	3-20	≥ 97					
	2	25-100	≥ 94					
Weight (kg)	1A	3-20	≤ 0.9	≤ 1.5	≤ 6.0	≤ 12.0	≤ 24.0	
	2A	25-200	≤ 1.2	≤ 2.0	≤ 7.5	≤ 13.5	≤ 26.0	
	2B	25-200	-	≤ 1.9	≤ 7.3	≤ 12.8	≤ 25.0	
Operating Temp (°C)	1,2	3-200	-10 ~ 90					
Lubrication	1,2	3-200	Grease (VIGO Grease RE #0)					
Degree of Gearbox Protection	1,2	3-200	IP65					
Noise (dB)	1,2	3-200	≤ 61	≤ 63	≤ 66	≤ 69	≤ 71	
Inertia (kgcm²)	1A	3-10	0.09	0.36	2.27	6.88	23.50	
		14,20	-	0.08	1.89	6.23	21.75	
	2B	15, 20	-	-	-	-	-	
		25-100	-	0.09	0.36	2.27	6.88	
		120-200	-	-	0.32	1.89	6.23	
	2A	15, 20	0.09	-	-	-	-	
		25-100	0.09	0.36	2.27	6.88	23.50	
		120-200	-	-	1.89	6.23	21.75	

Please contact LSIS sales person for ★ gear ratio. (1) Considering safety factors, nominal output torque is calculated. (2) Max. output torque is equivalent to 60% of the emergency stop torque.

Single Stage

Drawing of Planetary Gearbox



Dimension	SAS0451A	SAS0601A	SAS0901A	SAS1151A	SAS1421A
D1	50	70	100	130	165
D2	3.5	5.5	6.8	8.7	11
D3 h7	13	16	22	32	40
D4 h7	35	50	80	110	130
D5	15	20	30	39.5	60
D6	M4 X 0.7P	M5 X 0.8P	M8 X 1.25P	M12 X 1.75P	M16 X 2.0P
D7	58	80	116	152	185
L1	45	60	90	115	142
L2	26.5	37	48	64	97
L3	5.5	7	10	12	15
L4	1	1.5	1.5	2	3
L5	15	25	32	40	65
L6	2	2	3	5	5
L7	6.5	8	11	12	19
* L8	114	151.2	203	270	333
L9	1.5	1.5	1.5	2	2
L10	9.5	10.5	13.5	18	34
* C1	46	70	90	145	200
* C2	M4 X 0.7P	M5 X 0.8P	M6 X 1.0P	M8 X 1.25P	M12 X 1.75P
* C3 h7	8	14	19	24	35
* C4	26.5	34	43.1	62	82
* C5 h7	30	50	70	110	114.3
* C6	4	4	6	7	7
* C7	45	60	90	132	180
* C8	17	20.5	23.5	42	47
* C9	83	110	152	200	240
* C10	10	12	13.4	28	29.5
B1 h9	5	5	6	10	12
H1	15	18	24.5	35	43

(1) C1-C10 is dimension for input shaft parts. Dimensions differ by motor types and makers. Find CAD file for exact dimensions of gearbox in www.lsis.com/gearbox.

(2) In XX_{yy}, yy means fit tolerance (KS B 0401).

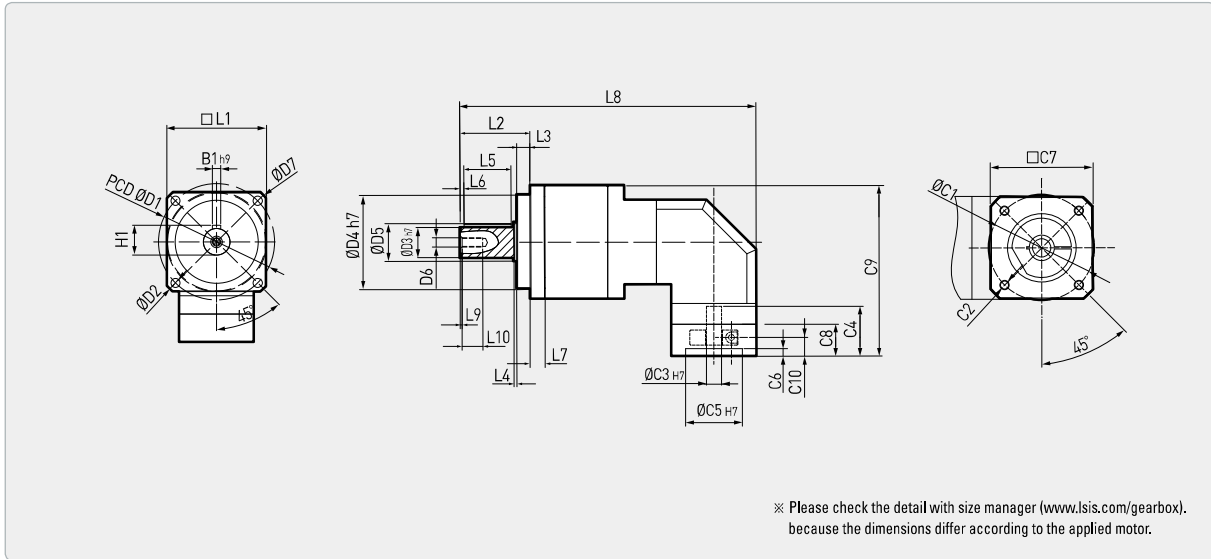
(3) () is M Type-made to order.



SAS Series

Double Stage B Type

Drawing of Planetary Gearbox



Dimension	SAS0602B	SAS0902B	SAS1152B	SAS1422B
D1	70	100	130	165
D2	5.5	6.8	8.7	11
D3 h7	16	22	32	40
D4 h7	50	80	110	130
D5	20	30	39.5	60
D6	M5 X 0.8P	M8 X 1.25P	M12 X 1.75P	M16 X 2.0P
D7	80	116	152	185
L1	60	90	115	142
L2	37	48	64	97
L3	7	10	12	15
L4	1.5	1.5	2	3
L5	25	32	40	65
L6	2	3	5	5
L7	8	11	12	19
* L8	157	205.7	275.5	367.5
L9	1.5	1.5	2	2
L10	10.5	13.5	18	34
* C1	46	70	90	145
* C2	M4 X 0.7P	M5 X 0.8P	M6 X 1.0P	M8 X 1.25P
* C3 H7	8	14	19	24
* C4	26.5	34	43.1	62
* C5 H7	30	50	70	110
* C6	4	4	6	7
* C7	45	60	90	132
* C8	17	20.5	23.5	42
* C9	90.5	125	164.5	213.5
* C10	10	12	13.4	28
B1 h9	5	6	10	12
H1	18	24.5	35	43

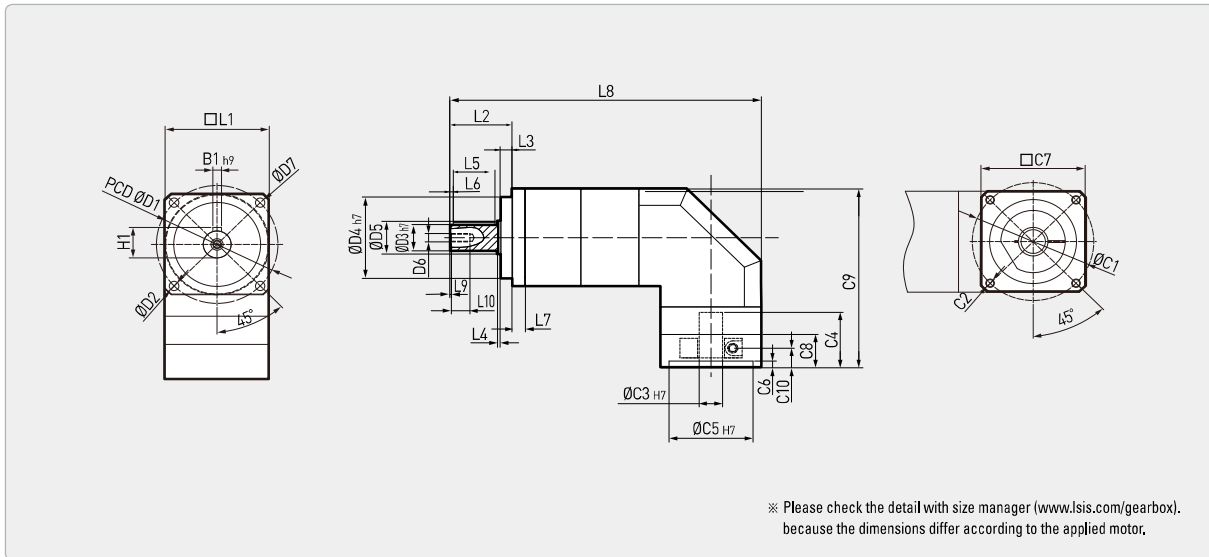
(1) C/C1-C10 is dimension for input shaft parts. Dimensions differ by motor types and makers. Find CAD file for exact dimensions of gearbox in www.lsis.com/gearbox.

(2) In XXYY, YY means fit tolerance (KS B 0401).

(3) (is M Type-made to order.

Double Stage A Type

Drawing of Planetary Gearbox



Dimension	SAS0452A	SAS0602A	SAS0902A	SAS1152A	SAS1422A
D1	50	70	100	130	165
D2	3.5	5.5	6.8	8.7	11
D3 h7	13	16	22	32	40
D4 h7	35	50	80	110	130
D5	15	20	30	39.5	60
D6	M4 X 0.7P	M5 X 0.8P	M8 X 1.25P	M12 X 1.75P	M16 X 2.0P
D7	58	80	116	152	185
L1	45	60	90	115	142
L2	26.5	37	48	64	97
L3	5.5	7	10	12	15
L4	1	1.5	1.5	2	3
L5	15	25	32	40	65
L6	2	2	3	5	5
L7	6.5	8	11	12	19
* L8	143	185.7	247	295.5	392.5
L9	1.5	1.5	1.5	2	2
L10	9.5	10.5	13.5	18	34
* C1	46	70	90	145	200
* C2	M4 X 0.7P	M5 X 0.8P	M6 X 1.0P	M8 X 1.25P	M12 X 1.75P
* C3 H7	8	14	19	24	35
* C4	26.5	34	43.1	62	82
* C5 H7	30	50	70	110	114.3
* C6	4	4	6	7	7
* C7	45	60	90	132	180
* C8	17	20.5	23.5	42	47
* C9	83	110	152	184.4	232
* C10	10	12	13.4	28	29.5
B1 h9	5	5	6	10	12
H1	15	18	24.5	35	43

(1) C1-C10 is dimension for input shaft parts. Dimensions differ by motor types and makers. Find CAD file for exact dimensions of gearbox in www.lsis.com/gearbox.

(2) In XXYY, YY means fit tolerance (KS B 0401).

(3) (is M Type-made to order.