



MSR Series

Circle output flange
Straight type gearbox, Standard



MAR Series

Circle output flange
Right-angle type gearbox, Standard

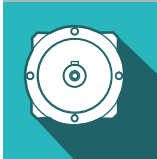
MSR / MAR

- 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

		MSR					
Stage	Gear ratio	045	070	090	120	155	205
1A	3~10	○	○	○	○	○	○
2B	15~100	⊗	○	○	○	○	○
2A	15~100	○	○	○	○	○	○
1M/2M	3~100	⊗	⊗	⊗	⊗	⊗	⊗

		MAR					
Stage	Gear ratio	050	070	090	120	155	205
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.



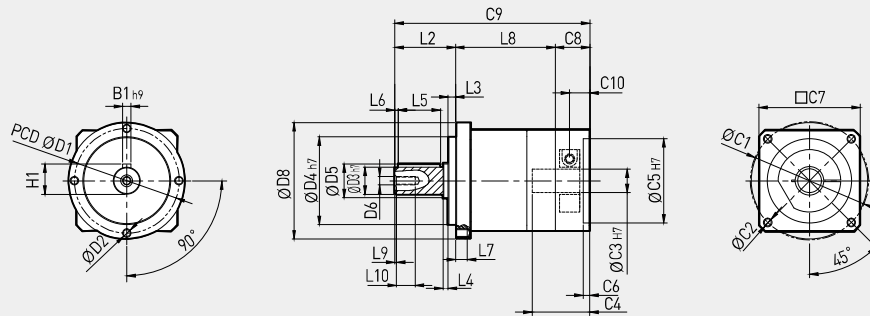
MSR Series

Division	Stage	Gear ratio	050	070	090	120	155	205	
Nominal Output Torque (Nm)	1	3	20	57	148	272	484	897	
		4	18	51	143	295	549	1,060	
		5	19	54	160	332	634	1,195	
		6	18	50	151	311	592	1,109	
		7	17	48	145	305	562	1,104	
		8	16	44	132	279	527	1,035	
		9	14	42	123	254	483	947	
		10	14	42	121	262	500	980	
		2	15	20	57	148	272	484	897
			20	18	51	143	295	549	1,060
	25		19	54	160	332	634	1,195	
	30		18	50	151	311	592	1,109	
	35		17	48	145	305	562	1,104	
	40		16	44	132	279	527	1,035	
	45		14	42	123	254	483	947	
	50		19	54	160	332	634	1,195	
	60		18	50	151	311	592	1,109	
	70		17	48	145	305	562	1,104	
	80	16	44	132	279	527	1,035		
	90	14	42	123	254	483	947		
100	14	42	121	262	500	980			
Emergency Stop Torque (Nm)	1,2	3~100	3 times nominal output torque						
Nominal Input Speed (rpm)	1,2	3~100	5,000	5,000	4,000	4,000	3,000	3,000	
Max. Input Speed (rpm)	1,2	3~100	10,000	10,000	8,000	8,000	6,000	6,000	
Torsional Rigidity (Nm/Arcmin)	1,2	3~100	3	7	14	26	55	143	
Max. Radial Load (N)	1,2	3~100	750	1,280	3,200	6,800	9,300	15,100	
Max. Axial Load (N)	1,2	3~100	390	690	1,600	3,400	4,500	7,500	
Backlash (Arcmin)	S	1	3~10	≤ 7	≤ 7	≤ 7	≤ 7	≤ 7	
		2	15~100	≤ 9	≤ 9	≤ 9	≤ 9	≤ 9	
Service Life (Hrs)	1,2	3~100	20,000 (10,000 under continuous operation)						
Efficiency (%)	1	3~10	≥ 97						
	2	15~100	≥ 94						
Weight (kg)	1A	3~10	≤ 0.6	≤ 1.3	≤ 3.8	≤ 7.6	≤ 15.0	≤ 26.0	
	2A	15~100	≤ 0.8	≤ 1.8	≤ 5.0	≤ 10.3	≤ 19.6	≤ 30.0	
	2B	15~100	-	≤ 1.6	≤ 4.7	≤ 9.6	≤ 18.0	≤ 30.0	
Operating Temp (°C)	1,2	3~100	-10 ~ 90						
Lubrication	1,2	3~100	Grease (VIGO Grease RE #0)						
Degree of Gearbox Protection	1,2	3~100	IP65						
Noise (dB)	1,2	3~100	≤ 52	≤ 54	≤ 56	≤ 59	≤ 62	≤ 64	
Inertia (kgcm ²)	1A	3	0.03	0.17	0.64	3.12	9.23	29.98	
		4	0.03	0.15	0.51	2.84	7.66	24.78	
		5	0.03	0.13	0.48	2.81	7.52	24.29	
		6	0.03	0.13	0.47	2.75	7.34	23.89	
		7	0.03	0.13	0.45	2.69	7.16	23.48	
		8	0.03	0.13	0.45	2.64	7.11	23.56	
		9	0.03	0.13	0.44	2.59	7.05	23.63	
		10	0.03	0.13	0.44	2.59	7.05	23.51	
	2B	15~45	0.03	0.03	0.13	0.48	2.81	7.52	
		50~100	0.03	0.03	0.13	0.44	2.69	7.05	
	2A	15~45	-	0.13	0.48	2.81	7.52	24.29	
		50~100	-	0.13	0.44	2.69	7.05	23.63	

(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



※ Please check the detail with size manager (www.lselectric.com/gearbox), because the dimensions differ according to the applied motor.

Dimension	MSR0501A	MSR0701A	MSR0901A	MSR1201A	MSR1551A	MSR2051A
D1	44	62	80	108	140	184
D2	M4 X 0.7P	M5 X 0.8P	M6 X 1.0P	M8 X 1.25P	M10 X 1.5P	M12 X 1.75P
D3 h7	12	16	22	32	40	55
D4 h7	35	52	68	90	120	160
D5	13	20	30	40	60	75
D6	M4 X 0.7P	M5 X 0.8P	M8 X 1.25P	M12 X 1.75P	M16 X 2.0P	M20 X 2.5P
D7	-	-	-	-	-	-
D8	49	69	94	119	155	205
L1	-	-	-	-	-	-
L2	24.5	36	46	70	97	100
L3	4	4.5	6	7	15	15
L4	2.5	3	3.5	5	3	3
L5	14	25	32	40	65	70
L6	2	2	3	10	5	6
L7	6.5	7.5	10	12	15	20
L8	47.5	59	80.9	101.5	116.5	144
L9	1.5	1.5	1.5	2	2	2
L10	9.5	10.5	13.5	18	34	42
* C1	46	70	90	145	200	200
* C2	M4 X 0.7P	M5 X 0.8P	M6 X 1.0P	M8 X 1.25P	M12 X 1.75P	M12 X 1.75P
* C3 H7	8 (14)	14 (19)	19 (24)	24 (35)	35 (42)	42 (55)
* C4	26.5	34	43.1	62	82	86
* C5 H7	30	50	70	110	114.3	114.3
* C6	4	4	6	7	7	7
* C7	45	60	90	132	180	180
* C8	17	20.5	23.5	42	47	47
* C9	89	115.5	150.4	213.5	260.5	291
* C10	10	12	13.4	28	29.5	28.5
B1 h9	4	5	6	10	12	16
H1	13.5	18	24.5	35	43	59

(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.lselectric.com/gearbox.

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

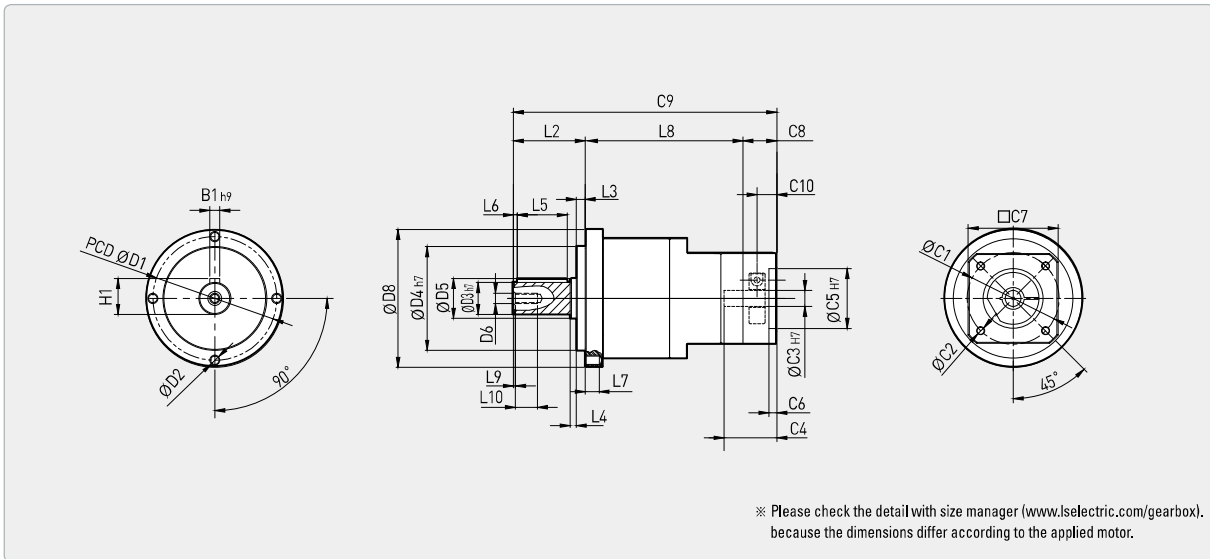
(3) (is M Type-made to order.



MSR Series

Double Stage B Type

Drawing of Planetary Gearbox



Dimension	MSR0702B	MSR0902B	MSR1202B	MSR1552B	MSR2052B
D1	62	80	108	140	184
D2	M5 X 0.8P	M6 X 1.0P	M8 X 1.25P	M10 X 1.5P	M12 X 1.75P
D3 h7	16	22	32	40	55
D4 h7	52	68	90	120	160
D5	20	30	40	60	75
D6	M5 X 0.8P	M8 X 1.25P	M12 X 1.75P	M16 X 2.0P	M20 X 2.5P
D7	-	-	-	-	-
D8	69	94	119	155	205
L1	-	-	-	-	-
L2	36	46	70	97	100
L3	4.5	6	7	15	15
L4	3	3.5	5	3	3
L5	25	32	40	65	70
L6	2	3	10	5	6
L7	7.5	10	12	15	20
L8	79	103.5	140.4	161	203
L9	1.5	1.5	2	2	2
L10	10.5	13.5	18	34	42
* 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)	14 (19)	19 (24)	24 (35)	35 (42)
* 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	132	170	233.9	300	350
* C10	10	12	13.4	28	29.5
B1 h9	5	6	10	12	16
H1	18	24.5	35	43	59

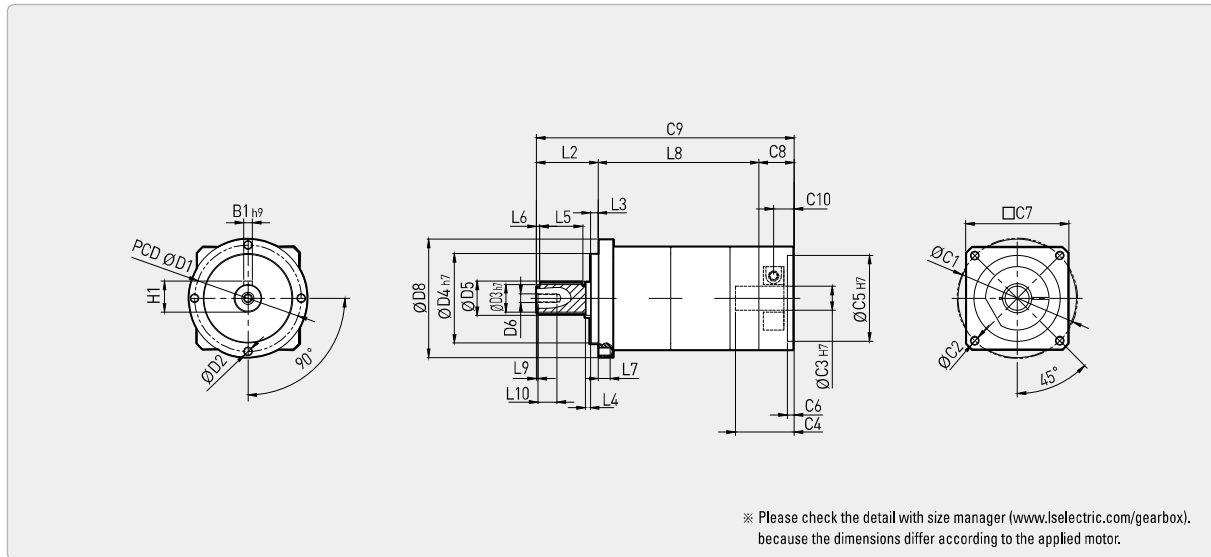
(1) C(C1-C10)is dimension for input shaft parts. Dimensions differ by motor types and makers. Find CAD file for exact dimensions of gearbox in www.lselectric.com/gearbox.

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

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

Double Stage A Type

Drawing of Planetary Gearbox



Dimension	MSR0502A	MSR0702A	MSR0902A	MSR1202A	MSR1552A	MSR2052A
D1	44	62	80	108	140	184
D2	M4 X 0.7P	M5 X 0.8P	M6 X 1.0P	M8 X 1.25P	M10 X 1.5P	M12 X 1.75P
D3 h7	12	16	22	32	40	55
D4 h7	35	52	68	90	120	160
D5	13	20	30	40	60	75
D6	M4 X 0.7P	M5 X 0.8P	M8 X 1.25P	M12 X 1.75P	M16 X 2.0P	M20 X 2.5P
D7	-	-	-	-	-	-
D8	49	69	94	119	155	205
L1	-	-	-	-	-	-
L2	24.5	36	46	70	97	100
L3	4	4.5	6	7	15	15
L4	2.5	3	3.5	5	3	3
L5	14	25	32	40	65	70
L6	2	2	3	10	5	6
L7	6.5	7.5	10	12	15	20
L8	76.5	93.5	124.9	141.8	174.5	203
L9	1.5	1.5	1.5	2	2	2
L10	9.5	10.5	13.5	18	34	42
* C1	46	70	90	145	200	200
* C2	M4 X 0.7P	M5 X 0.8P	M6 X 1.0P	M8 X 1.25P	M12 X 1.75P	M12 X 1.75P
* C3 H7	8 (14)	14 (19)	19 (24)	24 (35)	35 (42)	42 (55)
* C4	26.5	34	43.1	62	82	82
* C5 H7	30	50	70	110	114.3	114.3
* C6	4	4	6	7	7	7
* C7	45	60	90	132	180	180
* C8	17	20.5	23.5	42	47	47
* C9	118	150	194.4	253.8	318.5	350
* C10	10	12	13.4	28	29.5	28.5
B1 h9	4	5	6	10	12	16
H1	13.5	18	24.5	35	43	59

(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.lselectric.com/gearbox.

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