

Performance - MD Gearbox

Model No.	Stage	Ratio ⁽¹⁾	MD064	MD090	MD110	MD140	MD200	MD255	MD285	MD355	MD450	
Nominal Output Torque T_{2N} By n_{1N}	1	4	100	205	380	765	1,415	2,190	4,035	-	-	
		5	85	185	325	660	1,225	1,905	3,505	6,250	12,105	
		7	60	135	260	515	980	1,530	2,530	5,045	10,260	
		10	24	55	160	315	700	1,070	1,810	3,345	7,160	
	2	16	85	195	385	805	1,485	2,295	4,215	-	-	
		20	80	190	370	795	1,495	1,990	3,660	-	-	
		21	90	195	345	700	1,295	2,005	3,685	6,525	12,495	
		25	90	195	345	700	1,295	2,005	3,685	-	-	
		28	60	180	345	755	1,510	2,335	4,290	-	-	
		31	60	135	280	560	1,050	1,620	2,590	5,280	10,595	
		35	75	195	350	705	1,310	2,030	3,725	-	-	
		40	40	96	220	615	1,260	2,360	4,280	-	-	
		46	24	55	160	335	660	1,005	1,700	3,400	7,125	
		50	50	120	275	715	1,325	2,050	3,765	-	-	
		61	60	135	285	585	1,095	1,670	2,675	5,445	10,895	
		70	60	135	285	585	1,095	1,670	2,675	-	-	
		91	24	55	160	345	660	1,005	1,700	3,400	7,000	
		100	24	55	160	345	660	1,005	1,700	-	-	
Emergency Stop Torque T_{2NOT}	Nm	1,2	4~100	3 times T_{2N}								
Max. Acceleration Torque T_{2B}	Nm	1,2	4~100	1.5 times T_{2N}								
No Load Running Torque ⁽³⁾	Nm	1	4~10	0.45	0.7	1.4	3.5	7	11	14	25	40
		2	16~100	0.2	0.3	0.6	1.3	2.2	3.5	4.5	13	21
Backlash ⁽²⁾	arcmin	1	4~10	≤ 3	≤ 3	≤ 3	≤ 3	≤ 3	≤ 3	≤ 3	≤ 3	≤ 3
		2	16~100	≤ 4	≤ 4	≤ 4	≤ 4	≤ 4	≤ 4	≤ 4	≤ 4	≤ 4
Torsional Rigidity	Nm/arcmin	1,2	4~100	8	22	60	115	395	650	1,050	2,850	5,700
Nominal Input Speed n_{1N}	rpm	1	4~10	5,000	3,600	3,600	3,000	2,700	2,400	2,100	1,500	1,000
		2	16~100	5,000	4,600	4,600	4,000	3,700	3,400	3,100	2,500	2,000
Max. Input Speed n_{1B}	rpm	1	4~10	7,000	6,000	6,000	5,000	4,500	4,000	3,500	3,000	2,500
		2	16~100	7,000	7,000	7,000	6,000	5,500	5,000	4,500	4,000	3,500
Max. Axial Load F_{2a} ⁽⁴⁾	N	1,2	4~100	1,690	2,220	4,070	8,530	17,000	26,900	39,200	101,500	143,700
Max. Tilting Moment M_{2K} ⁽⁴⁾	Nm	1,2	4~100	120	280	480	1,310	3,530	5,920	9,230	29,100	63,300
Operating Temp	°C	1,2	4~100	-10° C ~ 90° C								
Degree of Gearbox Protection		1,2	4~100	IP67								
Lubrication		1,2	4~100	Synthetic lubrication grease								
Mounting Position		1,2	4~100	All directions								
Running Noise ⁽³⁾	dB(A)	1	4~10	≤ 58	≤ 59	≤ 64	≤ 65	≤ 66	≤ 66	≤ 66	≤ 68	≤ 70
		2	16~100	≤ 58	≤ 59	≤ 60	≤ 63	≤ 66	≤ 66	≤ 66	≤ 68	≤ 70
Efficiency η	%	1	4~10	≥ 97%								
		2	16~100	≥ 94%								

(1) Ratio ($i = N_{in} / N_{out}$).

(2) Backlash is measured at 2% of Nominal Output Torque T_{2N} .

(3) The values are measured by gearbox with ratio 10 (1-stage) or ratio 100 (2-stage), no loading at 3,000 RPM or at the respective Nominal Input Speed by bigger model size.
By lower ratio and/or higher RPM, the values could be higher.

(4) Applied to the output flange center at 100 rpm.

(5) Continuous operation is not recommended.