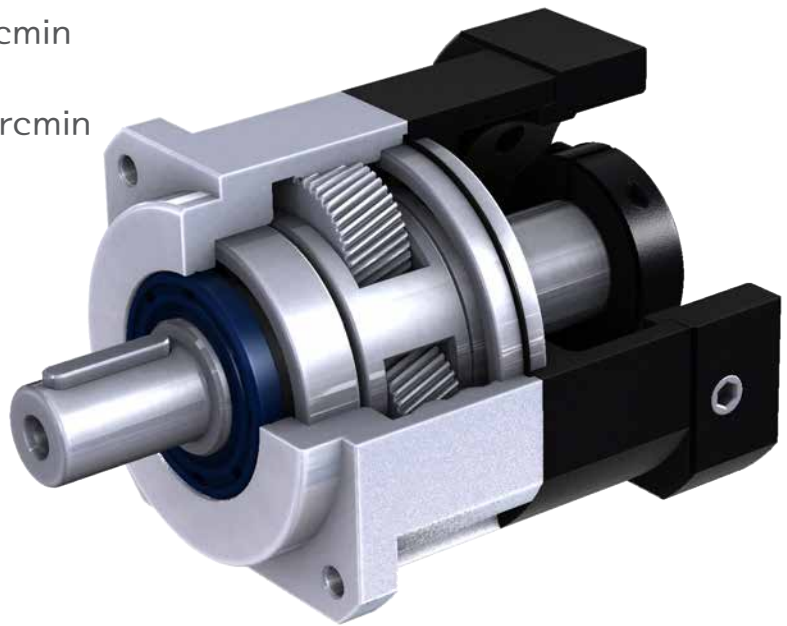


PGX-H Series

■ 1-Stage Backlash $\leq$ 8 arcmin

■ 2-Stage Backlash $\leq$ 10 arcmin



Indication of Model Numbers

PGX	90	H	10	Key Type	MOTOR
Type	Model	Helical	Ratio	Output Shaft Keyway	Motor Type
PGX	44	H	1-Stage 3, 4, 5, 6, 7, 8, 9, 10	□ : 무표기 Standard (Keyway)	Motor Brand & Model No.
PGX-S	62		2-Stage 15, 20, 25, 30, 35, 40, 50, 60, 70, 80, 90, 100	N : 표기 Solid Output Shaft (No Keyway)	
	90				
	120				
	142				
	180				
	220				

저소음

헬리컬기어 사용으로 부드럽고 조용한 운전가능

Quiet operation

Helical gears contribute to reduce vibration and noise.

고강성과 높은 토크

uncage needle bearing 사용, 강성과 토크를 높임

High Torque

High output torque is in comparison with spur gear planetary gear reducers.

고효율

1-Stage 97%이상, 2-Stage 94%이상

High Efficiency

Efficiency for 1-Stage model exceeds 97%
2-Stage model exceeds 94%.

Features of PGX-H Series

PGX-H Series 제품 특성



Integrated Planetary Arm Bracket

Planetary Arm bracket와 출력 Shaft는 일체형 구조입니다. 이는 비틀림 강성과 높은 정확도를 보장합니다.

The planetary arm bracket and the output shaft are one-piece constructed to increase torsional rigidity and accuracy.



Full Needle Roller Bearing Design

Planetary 변속기어는 접촉면 증가를 위한 Retainer 없는 Full Needle Bearing 구조입니다. 구조적 강도와 출력 회전력을 상승시킨 것입니다.

The planetary gear transmission employs full needle roller bearings without retainer to increase the contact surface, which greatly upgrades structural rigidity and service life.



Collet Locking Mechanism

감속기의 입력축과 모터 출력축을 연결하기 위한 Collet Clamp 방식으로 역학상 확실한 체결력과 동심도를 보장하여 높은 속도에서 구동할 때에도 백래쉬가 발생하지 않고 동력을 전달합니다.

The input-end and the motor are coupled through a collet locking mechanism. It has passed dynamical balance analysis to assure concentricity and balance on the connection and no backlash for power transmission while running at high speed.



One-piece Helical Gear Box body

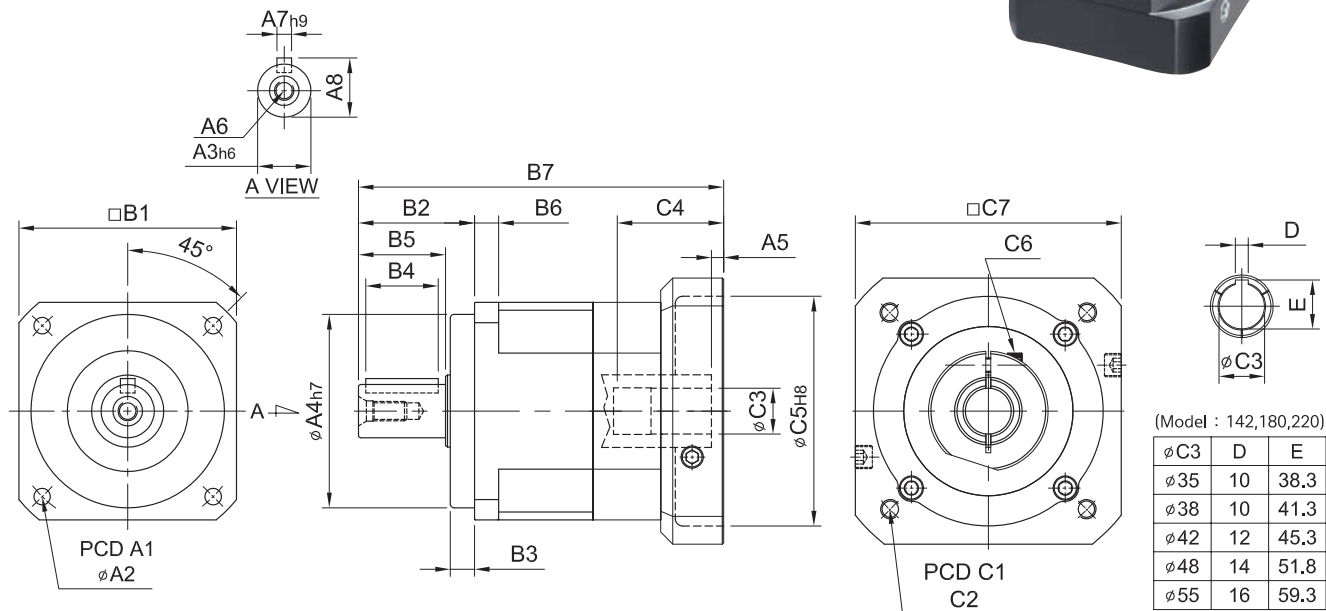
감속기 케이스에 내치기어를 일체형으로 정밀 가공하였고, 헬리컬기어로 되어 있으며 기어의 교합율은 일반 스퍼기어의 2배 이상이며 원활한 운전과 낮은 소음으로 높은 회전출력과 낮은 백래쉬를 특징으로 합니다.

The gear box and internal gear are one-piece constructed. The speed reduction mechanism employs helical gears, which provides two times meshing rate of teeth when comparing with regular spur gears. In addition, it also has features of extremely smooth running, low noise, high output torque and low backlash.

MODEL : PGX-H

1-Stage

RATIO : 3, 4, 5, 6, 7, 8, 9, 10



unit : mm

Model		44	62	90	120	142	180	220
Code								
A	A1	50	70	100	130	165	215	250
	A2	4.5	5.5	6.8	9	11	13	17
	A3	13	16	22	32	40	55	75
	A4	35	50	80	110	130	160	180
	A5	5	6	9	10	10	11.5, 13.5	12.5, 14.5
	A6	M4 x P0.7	M5 x P0.8	M8 x P1.25	M10 x P1.5	M12 x P1.75	M14 x P2.0	M16 x P2.0
	A7	5	5	6	10	12	16	20
	A8	15	18	24.5	35	43	59	79.5
B	B1	44	62	90	120	142	180	220
	B2	26	36	48	65	92	106	139
	B3	5	7	10	12	15	20	30
	B4	15	20	30	40	65	70	90
	B5	20	28	36	50	74	82	104
	B6	5	8	10	12	15	16	20
	B7	95	115, 123	151.5, 164.5	205	260.5	323.5, 325.5	367.5, 369.5
C	C1	46, 60, 63	70, 75, 90	90, 100, 115, 145	115, 145, 165	145, 165, 215	200, 215, 265	200, 265, 300
	C2	M3, M4, M5	M4, M5, M6	M5, M6, M8	M6, M8, M10	M8, M10, M12	M10, M12	M12, M16
	C3	8, (11)	14, (19)	19, (24)	24, (32)	35, (38)	38, 42, 48, 55	42, 48, 55
	C4	26	33.5, 41.5	46, 59	67	84.5	114.5, 116.5	117.5, 119.5
	C5	30, 40, 50	50, 60, 70	70, 80, 95, 110	95, 110, 130	110, 130, 180	114.3, 180, 230	114.3, 230, 250
	C6	M4 x P0.7	M5 x P0.8	M6 x P1.0	M8 x P1.25	M10 x P1.5	M10 x P1.5	M10 x P1.5
	C7	46, 55	64, 70, 80	92, 110, 130	122, 130, 150	146, 150, 190	182, 200, 250	222, 250, 265

Characteristic of PGX-H 1-Stage

Model No.		Unit	Ratio	44	62	90	120	142	180	220
Rated Output Torque (Nominal output torque)	T_{2N}	Nm	3	17	54	145	301	553	1,067	1,786
			4	15	48	128	269	491	940	1,587
			5	14	45	132	278	510	1,050	1,770
			6	13	41	125	252	466	985	1,680
			7	13	41	123	258	473	975	1,645
			8	12	39	115	241	442	942	1,605
			9	11	40	120	227	412	875	1,490
			10	12	40	116	246	452	930	1,565
Max. Acceleration Torque	T_{2B}	Nm	3~10	1.8 Times of Rated Output Torque						
Max. Output Torque Emergency Stop Torque	T_{2NOT}	Nm	3~10	3 Times of Rated Output Torque						
Rated Input Speed	n_{1N}	rpm	3~10	3,000	3,000	3,000	3,000	3,000	3,000	2,000
Max. Input Speed	n_{1B}	rpm	3~10	6,000	6,000	6,000	5,000	5,000	4,000	3,000
Backlash	j_t	arcmin	3~10	≤ 8	≤ 8	≤ 8	≤ 8	≤ 8	≤ 8	≤ 8
Torsional Rigidity		Nm/arcmin	3~10	3	6	14	27	60	140	240
Max. Radial Force	F_{2rB}	N	3~10	720	1,120	3,040	6,460	8,830	14,820	48,450
Max. Axial Force	F_{2aB}	N	3~10	360	560	1,520	3,230	4,410	7,410	24,225
Service Life	L_H	hr	3~10	S5 Cycle Operation : 30,000 hrs (S1 Continuous Operation : 15,000 hrs)						
Efficiency	η	%	3~10	$\geq 97\%$						
Operating Temperature		$^{\circ}\text{C}$	3~10	$-25^{\circ}\text{C} \sim +90^{\circ}\text{C}$						
Lubrication			3~10	VIGO GREASE RE #0						
Protection Class			3~10	IP65						
Mounting Position			3~10	Any						
Noise Level		dB	3~10	≤ 56	≤ 58	≤ 60	≤ 63	≤ 65	≤ 67	≤ 70
Weight $\pm 3\%$		kg	3~10	0.58	1.35	3.69	8.63	14.55	28.3	42.5

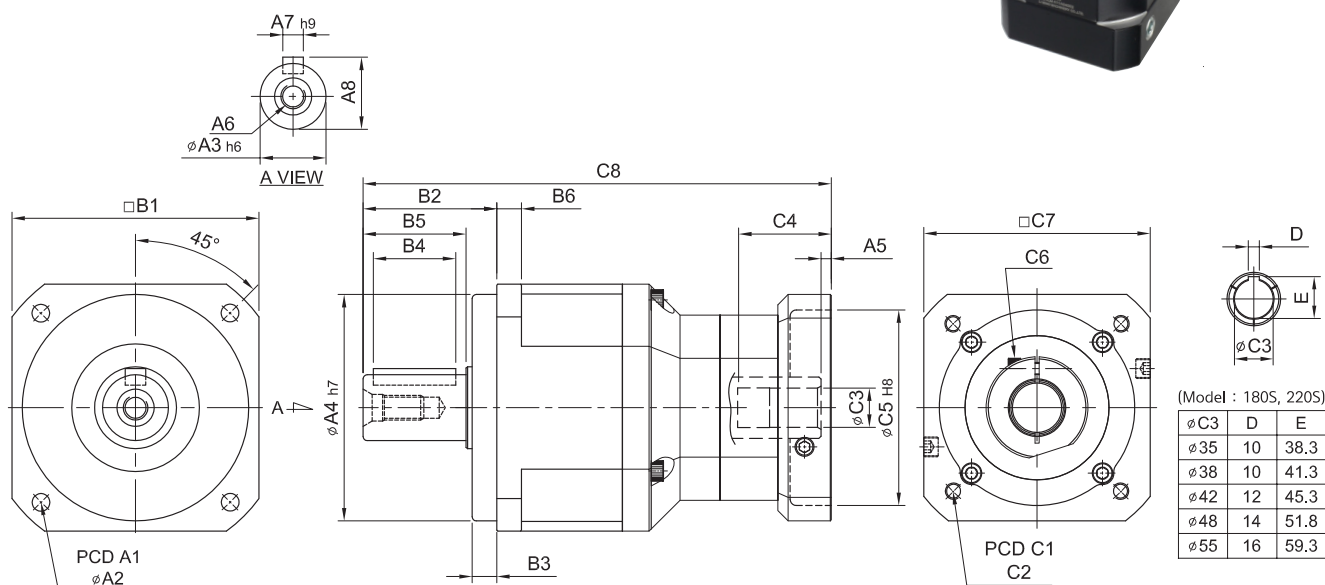
Mass Moments of Inertia (kg.cm²)

Ratio	44	62	90	120	142	180	220
3	0.03	0.16	0.61	3.25	9.21	28.98	59.61
4	0.03	0.14	0.48	2.74	7.54	23.67	54.37
5	0.03	0.13	0.47	2.74	7.42	23.29	53.27
6	0.03	0.13	0.45	2.65	7.25	22.75	51.72
7	0.03	0.13	0.45	2.62	7.14	22.48	50.97
8	0.03	0.13	0.44	2.58	7.07	22.59	50.84
9	0.03	0.13	0.44	2.57	7.04	22.53	50.63
10	0.03	0.13	0.44	2.57	7.03	22.51	50.56

MODEL : PGX-S-H

2-Stage

RATIO : 15, 20, 25, 30, 35, 40, 50, 60, 70, 80, 90, 100



unit : mm

Model		62S	90S	120S	142S	180S	220S
Code							
A	A1	70	100	130	165	215	250
	A2	5.5	6.8	9	11	13	17
	A3	16	22	32	40	55	75
	A4	50	80	110	130	160	180
	A5	5	6	9	10	10	11.5, 13.5
	A6	M5 x P0.8	M8 x P1.25	M10 x P1.5	M12 x P1.75	M14 x P2.0	M16 x P2.0
	A7	5	6	10	12	16	20
	A8	18	24.5	35	43	59	79.5
B	B1	62	90	120	142	180	220
	B2	36	48	65	92	106	139
	B3	7	10	12	15	20	30
	B4	20	30	40	65	70	90
	B5	28	36	50	74	82	104
	B6	8	10	12	15	16	20
C	C1	46, 60, 63	70, 75, 90	90, 100, 115, 145	115, 145, 165	145, 165, 200	200, 215, 265
	C2	M3, M4, M5	M4, M5, M6	M5, M6, M8	M6, M8, M10	M8, M10, M12	M10, M12
	C3	8	14	19	24	35	38, 42, 48, 55
	C4	26	33.5	46	67	84.5	114.5, 116.5
	C5	30, 40, 50	50, 60, 70	70, 80, 95, 110	95, 110, 130	110, 114.3, 130	114.3, 180, 230
	C6	M4 x P0.7	M5 x P0.8	M6 x P1.0	M8 x P1.25	M10 x P1.5	M10 x P1.5
	C7	46, 55	64, 70, 80	92, 110, 130	122, 130, 150	146, 150, 180	182, 200, 250
	C8	139.5	172.5	228	298.5	358.5	446.5, 448.5

Characteristic of PGX-S-H 2-Stage

Model No.		Unit	Ratio	62S	90S	120S	142S	180S	220S
Rated Output Torque (Nominal output torque)	T_{2N}	Nm	15	54	145	301	553	1,067	1,786
			20	48	128	269	491	940	1,587
			25	45	132	278	510	1,050	1,770
			30	41	125	252	466	985	1,680
			35	41	123	258	473	975	1,645
			40	39	115	241	442	942	1,605
			50	45	132	278	510	1,050	1,770
			60	41	125	252	466	985	1,680
			70	41	123	258	473	975	1,645
			80	39	115	241	442	942	1,605
			90	40	120	227	412	875	1,490
			100	40	116	246	452	930	1,565
Max. Acceleration Torque	T_{2B}	Nm	15~100	1.8 Times of Rated Output Torque					
Max. Output Torque Emergency Stop Torque	T_{2NOT}	Nm	15~100	3 Times of Rated Output Torque					
Rated Input Speed	n_{1N}	rpm	15~100	3,000	3,000	3,000	3,000	3,000	3,000
Max. Input Speed	n_{1B}	rpm	15~100	6,000	6,000	6,000	5,000	5,000	4,000
Backlash	j_t	arcmin	15~100	≤ 10	≤ 10	≤ 10	≤ 10	≤ 10	≤ 10
Torsional Rigidity		Nm/arcmin	15~100	6	14	27	60	140	240
Max. Radial Force	F_{2rB}	N	15~100	1,120	3,040	6,460	8,830	14,820	48,450
Max. Axial Force	F_{2aB}	N	15~100	560	1,520	3,230	4,410	7,410	24,225
Service Life	L_H	hr	15~100	S5 Cycle Operation : 30,000 hrs (S1 Continuous Operation : 15,000 hrs)					
Efficiency	η	%	15~100	$\geq 94\%$					
Operating Temperature		$^{\circ}\text{C}$	15~100	$-25^{\circ}\text{C} \sim +90^{\circ}\text{C}$					
Lubrication			15~100	VIGO GREASE RE #0					
Protection Class			15~100	IP65					
Mounting Position			15~100	Any					
Noise Level		dB	15~100	≤ 58	≤ 60	≤ 63	≤ 65	≤ 67	≤ 70
Weight $\pm 3\%$		kg	15~100	1.6	4.04	9.49	17	34.1	57.3

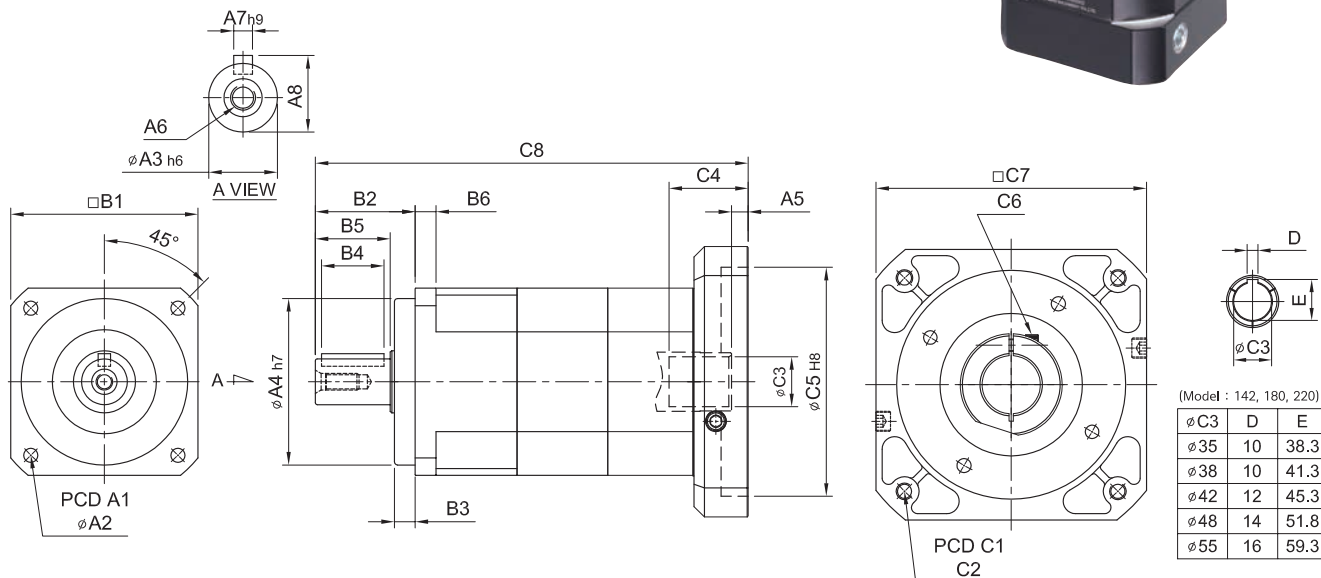
Mass Moments of Inertia (kg.cm²)

Ratio	62S	90S	120S	142S	180S	220S
15	0.03	0.14	0.46	2.63	7.30	22.79
20	0.03	0.14	0.46	2.63	7.30	22.79
25	0.03	0.14	0.46	2.63	7.10	22.79
30	0.03	0.14	0.46	2.43	7.10	22.59
35	0.03	0.14	0.44	2.43	7.10	22.59
40	0.03	0.14	0.44	2.43	6.92	22.59
50	0.03	0.14	0.44	2.43	6.92	22.59
60	0.03	0.14	0.43	2.39	6.72	21.83
70	0.03	0.14	0.43	2.39	6.72	21.83
80	0.03	0.14	0.43	2.39	6.72	21.83
90	0.03	0.14	0.40	2.39	6.72	21.60
100	0.03	0.14	0.40	2.39	6.72	21.60

MODEL : PGX-H

2-Stage

RATIO : 15, 20, 25, 30, 35, 40, 50, 60, 70, 80, 90, 100



unit : mm

Model Code		44	62	90	120	142	180	220
A	A1	50	70	100	130	165	215	250
	A2	4.5	5.5	6.8	9	11	13	17
	A3	13	16	22	32	40	55	75
	A4	35	50	80	110	130	160	180
	A5	5	6	9	10	10	11.5, 13.5	12.5, 14.5
	A6	M4 x P0.7	M5 x P0.8	M8 x P1.25	M10 x P1.5	M12 x P1.75	M14 x P2.0	M16 x P2.0
	A7	5	5	6	10	12	16	20
	A8	15	18	24.5	35	43	59	79.5
B	B1	44	62	90	120	142	180	220
	B2	26	36	48	65	92	106	139
	B3	5	7	10	12	15	20	30
	B4	15	20	30	40	65	70	90
	B5	20	28	36	50	74	82	104
	B6	5	8	10	12	15	16	20
C	C1	46, 60, 63	70 , 75, 90	90, 100, 115, 145	115, 145, 165	145, 165, 215	200, 215, 265	200, 265, 300
	C2	M3, M4, M5	M4, M5, M6	M5, M6, M8	M6, M8, M10	M8, M10, M12	M10, M12	M12, M16
	C3	8, (11)	14, (19)	19, (24)	24, (32)	35, (38)	38, 42, 48, 55	42, 48, 55
	C4	26	33.5, 41.5	46, 59	67	84.5	114.5, 116.5	117.5, 119.5
	C5	30, 40, 50	50, 60, 70	70, 80, 95, 110	95, 110, 130	110, 130, 180	114.3, 180, 230	114.3, 230, 250
	C6	M4 × P0.7	M5 × P0.8	M6 × P1.0	M8 × P1.25	M10 × P1.5	M10 × P1.5	M10 × P1.5
	C7	46, 55	64, 70, 80	92, 110, 130	122, 130, 150	146, 150, 190	182, 200, 250	222, 250, 265
	C8	121	148.8, 156.8	195, 208	261	327	404.5, 406.5	460.5, 462.5

* () 안은 주문형입니다.

Characteristic of PGX-H 2-Stage

Model No.		Unit	Ratio	44	62	90	120	142	180	220
Rated Output Torque (Nominal output torque)	T_{2N}	Nm	15	17	54	145	301	553	1,067	1,786
			20	15	48	128	269	491	940	1,587
			25	14	45	132	278	510	1,050	1,770
			30	13	41	125	252	466	985	1,680
			35	13	41	123	258	473	975	1,645
			40	12	39	115	241	442	942	1,605
			50	14	45	132	278	510	1,050	1,770
			60	13	41	125	252	466	985	1,680
			70	13	41	123	258	473	975	1,645
			80	12	39	115	241	442	942	1,605
			90	11	40	120	227	412	875	1,490
			100	12	40	116	246	452	930	1,565
Max. Acceleration Torque	T_{2B}	Nm	15~100	1.8 Times of Rated Output Torque						
Max. Output Torque Emergency Stop Torque	T_{2NOT}	Nm	15~100	3 Times of Rated Output Torque						
Rated Input Speed	n_{1N}	rpm	15~100	3,000	3,000	3,000	3,000	3,000	3,000	2,000
Max. Input Speed	n_{1B}	rpm	15~100	6,000	6,000	6,000	5,000	5,000	4,000	3,000
Backlash	j_t	arcmin	15~100	≤ 10	≤ 10	≤ 10	≤ 10	≤ 10	≤ 10	≤ 10
Torsional Rigidity		Nm/arcmin	15~100	3	6	14	27	60	140	240
Max. Radial Force	F_{2rB}	N	15~100	720	1,120	3,040	6,460	8,830	14,820	48,450
Max. Axial Force	F_{2aB}	N	15~100	360	560	1,520	3,230	4,410	7,410	24,225
Service Life	L_H	hr	15~100	S5 Cycle Operation : 30,000 hrs (S1 Continuous Operation : 15,000 hrs)						
Efficiency	η	%	15~100	$\geq 94\%$						
Operating Temperature		°C	15~100	-25°C ~ +90°C						
Lubrication			15~100	VIGO GREASE RE #0						
Protection Class			15~100	IP65						
Mounting Position			15~100	Any						
Noise Level		dB	15~100	≤ 56	≤ 58	≤ 60	≤ 63	≤ 65	≤ 67	≤ 70
Weight $\pm 3\%$		kg	15~100	0.86	2	5.48	10	21.4	42	59

Mass Moments of Inertia (kg.cm²)

Ratio	44	62	90	120	142	180	220
15	0.03	0.14	0.46	2.63	7.30	22.79	56.98
20	0.03	0.14	0.46	2.63	7.30	22.79	56.98
25	0.03	0.14	0.46	2.63	7.10	22.79	56.98
30	0.03	0.14	0.46	2.43	7.10	22.59	56.48
35	0.03	0.14	0.44	2.43	7.10	22.59	56.48
40	0.03	0.14	0.44	2.43	6.92	22.59	56.48
50	0.03	0.14	0.44	2.43	6.92	22.59	56.48
60	0.03	0.14	0.43	2.39	6.72	21.83	54.58
70	0.03	0.14	0.43	2.39	6.72	21.83	54.58
80	0.03	0.14	0.43	2.39	6.72	21.83	54.58
90	0.03	0.14	0.40	2.39	6.72	21.60	54.00
100	0.03	0.14	0.40	2.39	6.72	21.60	54.00