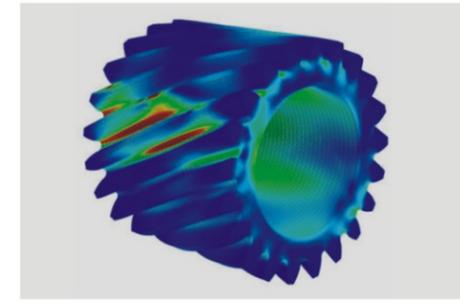




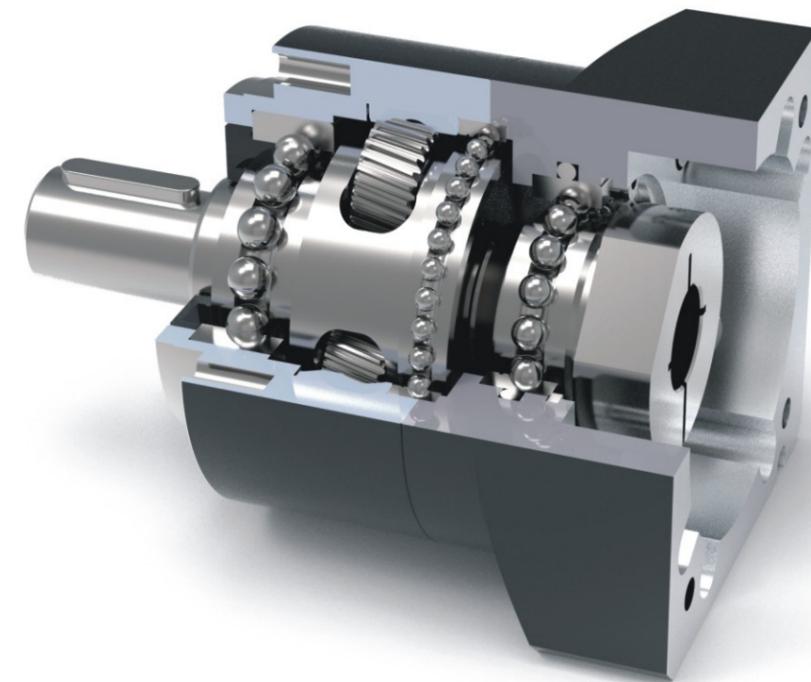
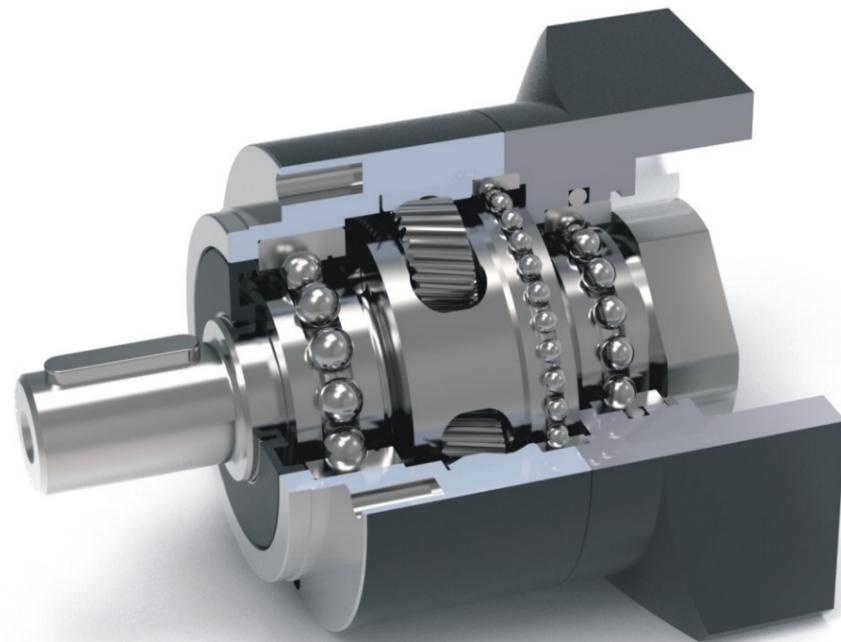
Helical Gear System Technology

Thanks to the tooth to tooth compact ratio more than 60%. The helical gearing and full needle bearing bring the benefits including higher torque capacity, smooth and lower noise running, decreased backlash and higher efficiency. Integrated housing engineering with super skiving gearing tooling craft.



Super Gear Grinding and Heat Treatment Technology

The global leading gear grinding technology brings the great improvement for the tooth profile optimization, with the high level carburizing and quenching heat treatment technology to reach high precision and gear harden performance.



Master CageSpindle Planetary Carrier

The patented Master CageSpindle integrated planetary carrier support planetary gearbox to increase constructional strength running stability and rigidity significantly. Synthetic grease lubrication allows maintenance free for gearbox whole service life.



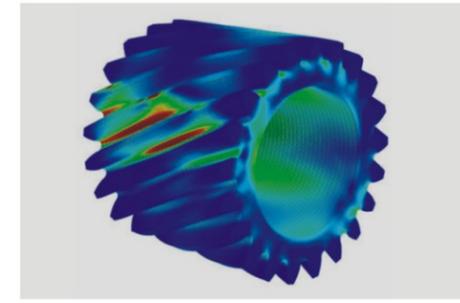
Dynamic Balance Clamping and Sealing System

For the gearbox input dynamic balance clamping design with perfect concentricity to decrease backlash and increase gearbox operation stability. The ultra sealing system offers grease leakage protection and support gearbox to reach IP65.



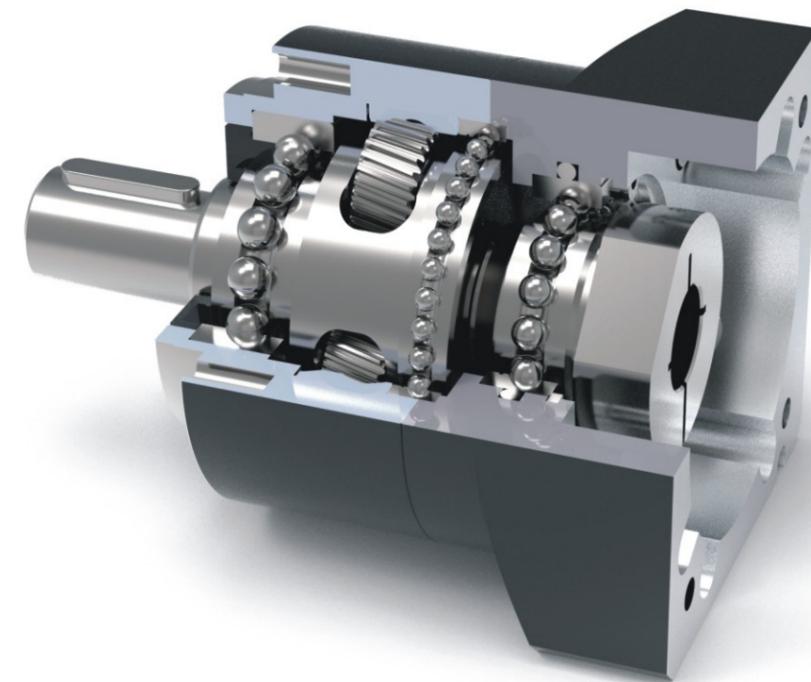
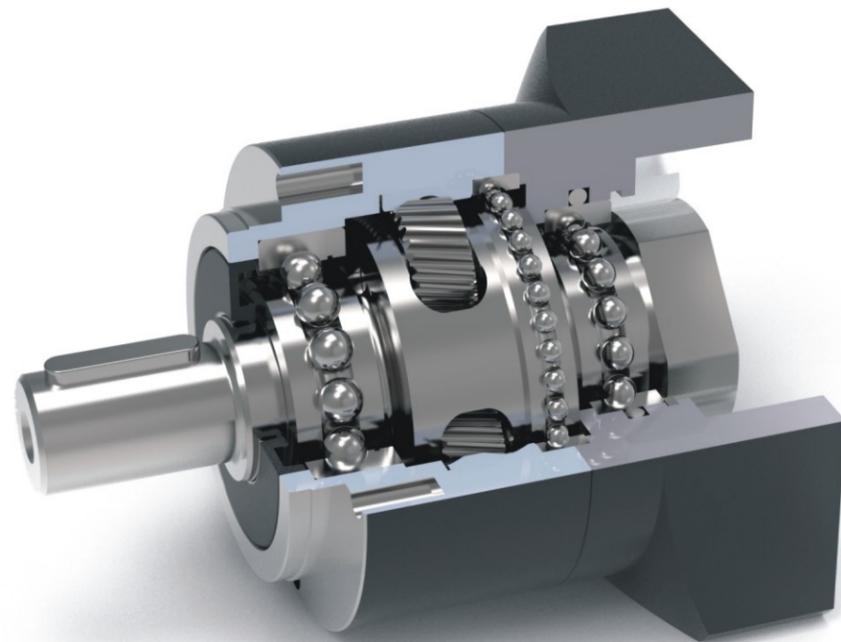
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For the gearbox input dynamic balance clamping design with perfect concentricity to decrease backlash and increase gearbox operation stability. The ultra sealing system offers grease leakage protection and support gearbox to reach IP65.

XA050 1-stage

		1-stage									
Ratio	i		3	4	5	6	7	8	9	10	
Nominal Output Torque		Nm	20	21	21	20	19	18	14	14	
		in.lb	177	186	186	177	168	159	124	124	
Emergency Stop Torque	T_{2Not}	Nm	60	63	63	60	57	54	42	42	
		in.lb	531	558	558	531	504	478	372	372	
Maximum Acceleration Torque	T_{2B}	Nm	36	37.8	37.8	36	34.2	32.4	25.2	25.2	
		in.lb	319	335	335	319	303	287	223	223	
Maximum Torque	T_{2a}	Nm	40	42	42	40	38	36	28	28	
		in.lb	354	372	372	354	336	319	248	248	
Permitted Average Input Speed	n_{in}	rpm	4000								
Maximum Input Speed	n_{1Max}	rpm	8000								
Mean No Load Running Torque	T_{012}	Nm	0.11	0.1	0.09	0.09	0.08	0.08	0.08	0.08	
		in.lb	0.97	0.89	0.80	0.80	0.71	0.71	0.71	0.71	
Standard Backlash P1	j_i	arcmin	≤6								
Reduced Low Backlash P0	j_i	arcmin	≤4								
Torsional Rigidity	C_{D1}	Nm/arcmin	3								
		in.lb/arcmin	26.55								
Maximum Radial Load	F_{2AMax}	N	770								
		lb _r	173								
Maximum Axial Load	F_{2OMax}	N	380								
		lb _r	85								
Max. Tilting Moment	M_{2KMax}	Nm	19								
		in.lb	168								
Mass Moment of Inertia	j_i	kgcm ²	0.031	0.022	0.019	0.017	0.017	0.017	0.017	0.017	
Operating Noise Level	L_{PA}	dB(A)	< 56								
Efficiency at Full loading	η	%	97								
Operating Temperature		°C	-25 to +90								
		F	-13 to +194								
Lubrication			Synthetic Lubrication Grease								
Mouting Position			Any Directions								
Protection Class			IP 65								
Service lifetime	L_n	h	S5 Cycle Operation: >30,000 (S1 Continuous Operation: >15,000 hrs)								
Weight	m	kg	0.6								
		lb _m	1.3								

XA050 2-stage

		2-stage														
Ratio	i		15	20	25	30	35	40	45	50	60	70	80	90	100	
Nominal Output Torque		Nm	20	21	21	21	21	21	21	21	20	19	18	14	14	
		in.lb	177	186	186	186	186	186	186	186	177	168	159	124	124	
Emergency Stop Torque	T_{2Not}	Nm	60	63	63	63	63	63	63	63	60	57	54	42	42	
		in.lb	531	558	558	558	558	558	558	558	531	504	478	372	372	
Maximum Acceleration Torque	T_{2B}	Nm	36	37.8	37.8	37.8	37.8	37.8	37.8	37.8	36	34.2	32.4	25.2	25.2	
		in.lb	319	335	335	335	335	335	335	335	319	303	287	223	223	
Maximum Torque	T_{2a}	Nm	40	42	42	42	42	42	42	42	40	38	36	28	28	
		in.lb	354	372	372	372	372	372	372	372	354	336	319	248	248	
Permitted Average Input Speed	n_{in}	rpm	4000													
Maximum Input Speed	n_{1Max}	rpm	8000													
Mean No Load Running Torque	T_{012}	Nm	0.1	0.1	0.1	0.09	0.09	0.09	0.09	0.09	0.08	0.08	0.08	0.08	0.08	
		in.lb	0.89	0.89	0.89	0.80	0.80	0.80	0.80	0.80	0.71	0.71	0.71	0.71	0.71	
Standard Backlash P1	j_i	arcmin	≤8													
Reduced Low Backlash P0	j_i	arcmin	≤6													
Torsional Rigidity	C_{D1}	Nm/arcmin	3													
		in.lb/arcmin	26.55													
Maximum Radial Load	F_{2AMax}	N	770													
		lb _r	173													
Maximum Axial Load	F_{2OMax}	N	380													
		lb _r	85													
Max. Tilting Moment	M_{2KMax}	Nm	19													
		in.lb	168													
Mass Moment of Inertia	j_i	kgcm ²	0.027	0.019	0.017	0.016	0.016	0.016	0.016	0.016	0.016	0.016	0.016	0.016	0.016	
Operating Noise Level	L_{PA}	dB(A)	< 56													
Efficiency at Full loading	η	%	95													
Operating Temperature		°C	-25 to +90													
		F	-13 to +194													
Lubrication			Synthetic Lubrication Grease													
Mouting Position			Any Directions													
Protection Class			IP 65													
Service lifetime	L_n	h	S5 Cycle Operation: >30,000 (S1 Continuous Operation: >15,000 hrs)													
Weight	m	kg	0.9													
		lb _m	2													

XA Series Servo Planetary Gearbox

XA Series Servo Planetary Gearbox

XA050 1-stage

		1-stage									
Ratio	i		3	4	5	6	7	8	9	10	
Nominal Output Torque		Nm	20	21	21	20	19	18	14	14	
		in.lb	177	186	186	177	168	159	124	124	
Emergency Stop Torque	T_{2Not}	Nm	60	63	63	60	57	54	42	42	
		in.lb	531	558	558	531	504	478	372	372	
Maximum Acceleration Torque	T_{2B}	Nm	36	37.8	37.8	36	34.2	32.4	25.2	25.2	
		in.lb	319	335	335	319	303	287	223	223	
Maximum Torque	T_{2a}	Nm	40	42	42	40	38	36	28	28	
		in.lb	354	372	372	354	336	319	248	248	
Permitted Average Input Speed	n_{1N}	rpm	4000								
Maximum Input Speed	n_{1Max}	rpm	8000								
Mean No Load Running Torque	T_{012}	Nm	0.11	0.1	0.09	0.09	0.08	0.08	0.08	0.08	
		in.lb	0.97	0.89	0.80	0.80	0.71	0.71	0.71	0.71	
Standard Backlash P1	j_1	arcmin	≤6								
Reduced Low Backlash P0	j_1	arcmin	≤4								
Torsional Rigidity	C_{D1}	Nm/arcmin	3								
		in.lb/arcmin	26.55								
Maximum Radial Load	F_{2AMax}	N	770								
		lb _r	173								
Maximum Axial Load	F_{2OMax}	N	380								
		lb _r	85								
Max. Tilting Moment	M_{2KMax}	Nm	19								
		in.lb	168								
Mass Moment of Inertia	j_1	kgcm ²	0.031	0.022	0.019	0.017	0.017	0.017	0.017	0.017	
Operating Noise Level	L_{PA}	dB(A)	< 56								
Efficiency at Full loading	η	%	97								
Operating Temperature		°C	-25 to +90								
		F	-13 to +194								
Lubrication			Synthetic Lubrication Grease								
Mouting Position			Any Directions								
Protection Class			IP 65								
Service lifetime	L_n	h	S5 Cycle Operation: >30,000 (S1 Continuous Operation: >15,000 hrs)								
Weight	m	kg	0.6								
		lb _m	1.3								

XA050 2-stage

		2-stage														
Ratio	i		15	20	25	30	35	40	45	50	60	70	80	90	100	
Nominal Output Torque		Nm	20	21	21	21	21	21	21	21	20	19	18	14	14	
		in.lb	177	186	186	186	186	186	186	186	177	168	159	124	124	
Emergency Stop Torque	T_{2Not}	Nm	60	63	63	63	63	63	63	63	60	57	54	42	42	
		in.lb	531	558	558	558	558	558	558	558	531	504	478	372	372	
Maximum Acceleration Torque	T_{2B}	Nm	36	37.8	37.8	37.8	37.8	37.8	37.8	37.8	36	34.2	32.4	25.2	25.2	
		in.lb	319	335	335	335	335	335	335	335	319	303	287	223	223	
Maximum Torque	T_{2a}	Nm	40	42	42	42	42	42	42	42	40	38	36	28	28	
		in.lb	354	372	372	372	372	372	372	372	354	336	319	248	248	
Permitted Average Input Speed	n_{1N}	rpm	4000													
Maximum Input Speed	n_{1Max}	rpm	8000													
Mean No Load Running Torque	T_{012}	Nm	0.1	0.1	0.1	0.09	0.09	0.09	0.09	0.09	0.08	0.08	0.08	0.08	0.08	
		in.lb	0.89	0.89	0.89	0.80	0.80	0.80	0.80	0.80	0.71	0.71	0.71	0.71	0.71	
Standard Backlash P1	j_1	arcmin	≤8													
Reduced Low Backlash P0	j_1	arcmin	≤6													
Torsional Rigidity	C_{D1}	Nm/arcmin	3													
		in.lb/arcmin	26.55													
Maximum Radial Load	F_{2AMax}	N	770													
		lb _r	173													
Maximum Axial Load	F_{2OMax}	N	380													
		lb _r	85													
Max. Tilting Moment	M_{2KMax}	Nm	19													
		in.lb	168													
Mass Moment of Inertia	j_1	kgcm ²	0.027	0.019	0.017	0.016	0.016	0.016	0.016	0.016	0.016	0.016	0.016	0.016	0.016	
Operating Noise Level	L_{PA}	dB(A)	< 56													
Efficiency at Full loading	η	%	95													
Operating Temperature		°C	-25 to +90													
		F	-13 to +194													
Lubrication			Synthetic Lubrication Grease													
Mouting Position			Any Directions													
Protection Class			IP 65													
Service lifetime	L_n	h	S5 Cycle Operation: >30,000 (S1 Continuous Operation: >15,000 hrs)													
Weight	m	kg	0.9													
		lb _m	2													

XA Series Servo Planetary Gearbox

XA Series Servo Planetary Gearbox

XA070 1-stage

		1-stage									
Ratio	i		3	4	5	6	7	8	9	10	
Nominal Output Torque		Nm	56	52	52	50	50	45	42	42	
		in.lb	496	460	460	443	443	398	372	372	
Emergency Stop Torque	T_{2Not}	Nm	168	156	156	150	150	135	126	126	
		in.lb	1487	1381	1381	1328	1328	1195	1115	1115	
Maximum Acceleration Torque	T_{2a}	Nm	100.8	93.6	93.6	90	90	81	75.6	75.6	
		in.lb	892	828	828	797	797	717	669	669	
Maximum Torque	T_{2a}	Nm	112	104	104	100	100	90	84	84	
		in.lb	991	920	920	885	885	797	743	743	
Permitted Average Input Speed	n_{1N}	rpm	3000								
Maximum Input Speed	n_{1Max}	rpm	6000								
Mean No Load Running Torque	T_{012}	Nm	0.24	0.2	0.17	0.15	0.15	0.15	0.15	0.15	
		in.lb	2.12	1.77	1.50	1.33	1.33	1.33	1.33	1.33	
Standard Backlash P1	j_i	arcmin	≤5								
Reduced Low Backlash P0	j_i	arcmin	≤3								
Ultra Low Backlash PU	j_i	arcmin	≤1								
Torsional Rigidity	C_{121}	Nm/arcmin	7								
		in.lb/arcmin	61.95								
Maximum Radial Load	F_{2AMax}	N	1500								
		lb _r	337								
Maximum Axial Load	F_{2OMax}	N	760								
		lb _r	171								
Max. Tilting Moment	M_{2KMax}	Nm	90								
		in.lb	797								
Mass Moment of Inertia	j_1	kgcm ²	0.16	0.14	0.13	0.13	0.13	0.13	0.13	0.13	
Operating Noise Level	L_{PA}	dB(A)	< 58								
Efficiency at Full loading	η	%	97								
Operating Temperature		°C	-25 to +90								
		F	-13 to +194								
Lubrication			Synthetic Lubrication Grease								
Mouting Position			Any Directions								
Protection Class			IP 65								
Service lifetime	L_n	h	S5 Cycle Operation: >30,000 (S1 Continuous Operation: >15,000 hrs)								
Weight	m	kg	1.4								
		lb _m	3.1								

XA070 2-stage

		2-stage																
Ratio	i		15	20	25	30	32	35	40	45	50	60	70	80	90	100		
Nominal Output Torque		Nm	56	52	52	52	52	52	52	52	52	50	50	45	42	42		
		in.lb	496	460	460	460	460	460	460	460	460	460	443	443	398	372	372	
Emergency Stop Torque	T_{2Not}	Nm	168	156	156	156	156	156	156	156	156	150	150	135	126	126		
		in.lb	1487	1381	1381	1381	1381	1381	1381	1381	1381	1328	1328	1195	1115	1115		
Maximum Acceleration Torque	T_{2a}	Nm	100.8	93.6	93.6	93.6	93.6	93.6	93.6	93.6	93.6	90	90	81	75.6	75.6		
		in.lb	892	828	828	828	828	828	828	828	828	797	797	717	669	669		
Maximum Torque	T_{2a}	Nm	112	104	104	104	104	104	104	104	104	100	100	90	84	84		
		in.lb	991	920	920	920	920	920	920	920	920	885	885	797	743	743		
Permitted Average Input Speed	n_{1N}	rpm	3000															
Maximum Input Speed	n_{1Max}	rpm	6000															
Mean No Load Running Torque	T_{012}	Nm	0.17	0.17	0.17	0.15	0.2	0.15	0.15	0.15	0.17	0.15	0.15	0.15	0.15	0.15		
		in.lb	1.50	1.50	1.50	1.33	1.77	1.33	1.33	1.33	1.50	1.33	1.33	1.33	1.33	1.33		
Standard Backlash P1	j_i	arcmin	≤7															
Reduced Low Backlash P0	j_i	arcmin	≤5															
Ultra Low Backlash PU	j_i	arcmin	≤3															
Torsional Rigidity	C_{121}	Nm/arcmin	7															
		in.lb/arcmin	61.95															
Maximum Radial Load	F_{2AMax}	N	1500															
		lb _r	337															
Maximum Axial Load	F_{2OMax}	N	760															
		lb _r	171															
Max. Tilting Moment	M_{2KMax}	Nm	90															
		in.lb	797															
Mass Moment of Inertia	j_1	kgcm ²	0.124	0.075	0.075	0.064	0.064	0.064	0.064	0.064	0.064	0.064	0.064	0.064	0.064	0.064		
Operating Noise Level	L_{PA}	dB(A)	< 58															
Efficiency at Full loading	η	%	95															
Operating Temperature		°C	-25 to +90															
		F	-13 to +194															
Lubrication			Synthetic Lubrication Grease															
Mouting Position			Any Directions															
Protection Class			IP 65															
Service lifetime	L_n	h	S5 Cycle Operation: >30,000 (S1 Continuous Operation: >15,000 hrs)															
Weight	m	kg	1.60															
		lb _m	3.5															

XA070 1-stage

		1-stage									
Ratio	i		3	4	5	6	7	8	9	10	
Nominal Output Torque		Nm	56	52	52	50	50	45	42	42	
		in.lb	496	460	460	443	443	398	372	372	
Emergency Stop Torque	T_{2Not}	Nm	168	156	156	150	150	135	126	126	
		in.lb	1487	1381	1381	1328	1328	1195	1115	1115	
Maximum Acceleration Torque	T_{2a}	Nm	100.8	93.6	93.6	90	90	81	75.6	75.6	
		in.lb	892	828	828	797	797	717	669	669	
Maximum Torque	T_{2a}	Nm	112	104	104	100	100	90	84	84	
		in.lb	991	920	920	885	885	797	743	743	
Permitted Average Input Speed	n_{1N}	rpm	3000								
Maximum Input Speed	n_{1Max}	rpm	6000								
Mean No Load Running Torque	T_{012}	Nm	0.24	0.2	0.17	0.15	0.15	0.15	0.15	0.15	
		in.lb	2.12	1.77	1.50	1.33	1.33	1.33	1.33	1.33	
Standard Backlash P1	j_i	arcmin	≤5								
Reduced Low Backlash P0	j_i	arcmin	≤3								
Ultra Low Backlash PU	j_i	arcmin	≤1								
Torsional Rigidity	C_{121}	Nm/arcmin	7								
		in.lb/arcmin	61.95								
Maximum Radial Load	F_{2AMax}	N	1500								
		lb _r	337								
Maximum Axial Load	F_{2OMax}	N	760								
		lb _r	171								
Max. Tilting Moment	M_{2KMax}	Nm	90								
		in.lb	797								
Mass Moment of Inertia	j_1	kgcm ²	0.16	0.14	0.13	0.13	0.13	0.13	0.13	0.13	
Operating Noise Level	L_{PA}	dB(A)	< 58								
Efficiency at Full loading	η	%	97								
Operating Temperature		°C	-25 to +90								
		F	-13 to +194								
Lubrication			Synthetic Lubrication Grease								
Mouting Position			Any Directions								
Protection Class			IP 65								
Service lifetime	L_h	h	S5 Cycle Operation: >30,000 (S1 Continuous Operation: >15,000 hrs)								
Weight	m	kg	1.4								
		lb _m	3.1								

XA070 2-stage

		2-stage																
Ratio	i		15	20	25	30	32	35	40	45	50	60	70	80	90	100		
Nominal Output Torque		Nm	56	52	52	52	52	52	52	52	52	50	50	45	42	42		
		in.lb	496	460	460	460	460	460	460	460	460	460	443	443	398	372	372	
Emergency Stop Torque	T_{2Not}	Nm	168	156	156	156	156	156	156	156	156	150	150	135	126	126		
		in.lb	1487	1381	1381	1381	1381	1381	1381	1381	1381	1328	1328	1195	1115	1115		
Maximum Acceleration Torque	T_{2a}	Nm	100.8	93.6	93.6	93.6	93.6	93.6	93.6	93.6	93.6	90	90	81	75.6	75.6		
		in.lb	892	828	828	828	828	828	828	828	828	797	797	717	669	669		
Maximum Torque	T_{2a}	Nm	112	104	104	104	104	104	104	104	104	100	100	90	84	84		
		in.lb	991	920	920	920	920	920	920	920	920	885	885	797	743	743		
Permitted Average Input Speed	n_{1N}	rpm	3000															
Maximum Input Speed	n_{1Max}	rpm	6000															
Mean No Load Running Torque	T_{012}	Nm	0.17	0.17	0.17	0.15	0.2	0.15	0.15	0.15	0.17	0.15	0.15	0.15	0.15	0.15		
		in.lb	1.50	1.50	1.50	1.33	1.77	1.33	1.33	1.33	1.50	1.33	1.33	1.33	1.33	1.33		
Standard Backlash P1	j_i	arcmin	≤7															
Reduced Low Backlash P0	j_i	arcmin	≤5															
Ultra Low Backlash PU	j_i	arcmin	≤3															
Torsional Rigidity	C_{121}	Nm/arcmin	7															
		in.lb/arcmin	61.95															
Maximum Radial Load	F_{2AMax}	N	1500															
		lb _r	337															
Maximum Axial Load	F_{2OMax}	N	760															
		lb _r	171															
Max. Tilting Moment	M_{2KMax}	Nm	90															
		in.lb	797															
Mass Moment of Inertia	j_1	kgcm ²	0.124	0.075	0.075	0.064	0.064	0.064	0.064	0.064	0.064	0.064	0.064	0.064	0.064	0.064		
Operating Noise Level	L_{PA}	dB(A)	< 58															
Efficiency at Full loading	η	%	95															
Operating Temperature		°C	-25 to +90															
		F	-13 to +194															
Lubrication			Synthetic Lubrication Grease															
Mouting Position			Any Directions															
Protection Class			IP 65															
Service lifetime	L_h	h	S5 Cycle Operation: >30,000 (S1 Continuous Operation: >15,000 hrs)															
Weight	m	kg	1.60															
		lb _m	3.5															

XA Series Servo Planetary Gearbox

XA Series Servo Planetary Gearbox

XA090 1-stage

		1-stage									
Ratio	i		3	4	5	6	7	8	9	10	
Nominal Output Torque		Nm	160	145	155	145	145	142	142	142	
		in.lb	1416	1283	1372	1283	1283	1257	1257	1257	
Emergency Stop Torque	T_{2Not}	Nm	480	435	465	435	435	426	426	426	
		in.lb	4248	3850	4116	3850	3850	3770	3770	3770	
Maximum Acceleration Torque	T_{2a}	Nm	288	261	279	261	261	255.6	255.6	255.6	
		in.lb	2549	2310	2469	2310	2310	2262	2262	2262	
Maximum Torque	T_{2a}	Nm	320	290	310	290	290	284	284	284	
		in.lb	2832	2567	2744	2567	2567	2514	2514	2514	
Permitted Average Input Speed	n_{1N}	rpm	3000								
Maximum Input Speed	n_{1Max}	rpm	6000								
Mean No Load Running Torque	T_{012}	Nm	0.38	0.36	0.31	0.29	0.25	0.25	0.25	0.25	
		in.lb	3.36	3.19	2.74	2.57	2.21	2.21	2.21	2.21	
Standard Backlash P1	j_1	arcmin	≤5								
Reduced Low Backlash P0	j_1	arcmin	≤3								
Ultra Low Backlash PU	j_1	arcmin	≤1								
Torsional Rigidity	C_{121}	Nm/arcmin	14								
		in.lb/arcmin	123.91								
Maximum Radial Load	F_{2AMax}	N	3200								
		lb _r	719								
Maximum Axial Load	F_{2OMax}	N	1600								
		lb _r	360								
Max. Tilting Moment	M_{2KMax}	Nm	214								
		in.lb	1894.05								
Mass Moment of Inertia	j_1	kgcm ²	0.61	0.48	0.47	0.47	0.47	0.45	0.44	0.44	
Operating Noise Level	L_{PA}	dB(A)	< 60								
Efficiency at Full loading	η	%	97								
Operating Temperature		°C	-25 to +90								
		F	-13 to +194								
Lubrication			Synthetic Lubrication Grease								
Mouting Position			Any Directions								
Protection Class			IP 65								
Service lifetime	L_n	h	S5 Cycle Operation: >30,000 (S1 Continuous Operation: >15,000 hrs)								
Weight	m	kg	3.3								
		lb _m	7.3								

XA090 2-stage

		2-stage																
Ratio	i		15	20	25	30	32	35	40	45	50	60	70	80	90	100		
Nominal Output Torque		Nm	160	145	155	155	155	155	155	155	155	145	145	142	142	142		
		in.lb	1416	1283	1372	1372	1372	1372	1372	1372	1372	1283	1283	1257	1257	1257		
Emergency Stop Torque	T_{2Not}	Nm	480	435	465	465	465	465	465	465	465	435	435	426	426	426		
		in.lb	4248	3850	4116	4116	4116	4116	4116	4116	4116	3850	3850	3770	3770	3770		
Maximum Acceleration Torque	T_{2a}	Nm	288	261	279	279	279	279	279	279	279	261	261	255.6	255.6	255.6		
		in.lb	2549	2310	2469	2469	2469	2469	2469	2469	2469	2310	2310	2262	2262	2262		
Maximum Torque	T_{2a}	Nm	320	290	310	310	310	310	310	310	310	290	290	284	284	284		
		in.lb	2832	2567	2744	2744	2744	2744	2744	2744	2744	2567	2567	2514	2514	2514		
Permitted Average Input Speed	n_{1N}	rpm	3000															
Maximum Input Speed	n_{1Max}	rpm	6000															
Mean No Load Running Torque	T_{012}	Nm	0.31	0.31	0.31	0.31	0.25	0.25	0.25	0.25	0.25	0.25	0.25	0.25	0.25	0.25		
		in.lb	2.74	2.74	2.74	2.74	2.21	2.21	2.21	2.21	2.21	2.21	2.21	2.21	2.21	2.21		
Standard Backlash P1	j_1	arcmin	≤7															
Reduced Low Backlash P0	j_1	arcmin	≤5															
Ultra Low Backlash PU	j_1	arcmin	≤3															
Torsional Rigidity	C_{121}	Nm/arcmin	14															
		in.lb/arcmin	123.91															
Maximum Radial Load	F_{2AMax}	N	3200															
		lb _r	719															
Maximum Axial Load	F_{2OMax}	N	1600															
		lb _r	360															
Max. Tilting Moment	M_{2KMax}	Nm	214															
		in.lb	1894															
Mass Moment of Inertia	j_1	kgcm ²	0.44	0.44	0.44	0.39	0.39	0.39	0.39	0.39	0.39	0.39	0.39	0.39	0.39			
Operating Noise Level	L_{PA}	dB(A)	< 60															
Efficiency at Full loading	η	%	95															
Operating Temperature		°C	-25 to +90															
		F	-13 to +194															
Lubrication			Synthetic Lubrication Grease															
Mouting Position			Any Directions															
Protection Class			IP 65															
Service lifetime	L_n	h	S5 Cycle Operation: >30,000 (S1 Continuous Operation: >15,000 hrs)															
Weight	m	kg	4.50															
		lb _m	9.9															

XA Series Servo Planetary Gearbox

XA Series Servo Planetary Gearbox

XA090 1-stage

		1-stage									
Ratio	i		3	4	5	6	7	8	9	10	
Nominal Output Torque		Nm	160	145	155	145	145	142	142	142	
		in.lb	1416	1283	1372	1283	1283	1257	1257	1257	
Emergency Stop Torque	T_{2Not}	Nm	480	435	465	435	435	426	426	426	
		in.lb	4248	3850	4116	3850	3850	3770	3770	3770	
Maximum Acceleration Torque	T_{2a}	Nm	288	261	279	261	261	255.6	255.6	255.6	
		in.lb	2549	2310	2469	2310	2310	2262	2262	2262	
Maximum Torque	T_{2a}	Nm	320	290	310	290	290	284	284	284	
		in.lb	2832	2567	2744	2567	2567	2514	2514	2514	
Permitted Average Input Speed	n_{1N}	rpm	3000								
Maximum Input Speed	n_{1Max}	rpm	6000								
Mean No Load Running Torque	T_{012}	Nm	0.38	0.36	0.31	0.29	0.25	0.25	0.25	0.25	
		in.lb	3.36	3.19	2.74	2.57	2.21	2.21	2.21	2.21	
Standard Backlash P1	j_i	arcmin	≤5								
Reduced Low Backlash P0	j_i	arcmin	≤3								
Ultra Low Backlash PU	j_i	arcmin	≤1								
Torsional Rigidity	C_{121}	Nm/arcmin	14								
		in.lb/arcmin	123.91								
Maximum Radial Load	F_{2AMax}	N	3200								
		lb _r	719								
Maximum Axial Load	F_{2OMax}	N	1600								
		lb _a	360								
Max. Tilting Moment	M_{2KMax}	Nm	214								
		in.lb	1894.05								
Mass Moment of Inertia	j_1	kgcm ²	0.61	0.48	0.47	0.47	0.47	0.45	0.44	0.44	
Operating Noise Level	L_{PA}	dB(A)	< 60								
Efficiency at Full loading	η	%	97								
Operating Temperature		°C	-25 to +90								
		F	-13 to +194								
Lubrication			Synthetic Lubrication Grease								
Mouting Position			Any Directions								
Protection Class			IP 65								
Service lifetime	L_n	h	S5 Cycle Operation: >30,000 (S1 Continuous Operation: >15,000 hrs)								
Weight	m	kg	3.3								
		lb _m	7.3								

XA090 2-stage

		2-stage																
Ratio	i		15	20	25	30	32	35	40	45	50	60	70	80	90	100		
Nominal Output Torque		Nm	160	145	155	155	155	155	155	155	155	145	145	142	142	142		
		in.lb	1416	1283	1372	1372	1372	1372	1372	1372	1372	1283	1283	1257	1257	1257		
Emergency Stop Torque	T_{2Not}	Nm	480	435	465	465	465	465	465	465	465	435	435	426	426	426		
		in.lb	4248	3850	4116	4116	4116	4116	4116	4116	4116	3850	3850	3770	3770	3770		
Maximum Acceleration Torque	T_{2a}	Nm	288	261	279	279	279	279	279	279	279	261	261	255.6	255.6	255.6		
		in.lb	2549	2310	2469	2469	2469	2469	2469	2469	2469	2310	2310	2262	2262	2262		
Maximum Torque	T_{2a}	Nm	320	290	310	310	310	310	310	310	310	290	290	284	284	284		
		in.lb	2832	2567	2744	2744	2744	2744	2744	2744	2744	2567	2567	2514	2514	2514		
Permitted Average Input Speed	n_{1N}	rpm	3000															
Maximum Input Speed	n_{1Max}	rpm	6000															
Mean No Load Running Torque	T_{012}	Nm	0.31	0.31	0.31	0.31	0.25	0.25	0.25	0.25	0.25	0.25	0.25	0.25	0.25	0.25		
		in.lb	2.74	2.74	2.74	2.74	2.21	2.21	2.21	2.21	2.21	2.21	2.21	2.21	2.21	2.21		
Standard Backlash P1	j_i	arcmin	≤7															
Reduced Low Backlash P0	j_i	arcmin	≤5															
Ultra Low Backlash PU	j_i	arcmin	≤3															
Torsional Rigidity	C_{121}	Nm/arcmin	14															
		in.lb/arcmin	123.91															
Maximum Radial Load	F_{2AMax}	N	3200															
		lb _r	719															
Maximum Axial Load	F_{2OMax}	N	1600															
		lb _a	360															
Max. Tilting Moment	M_{2KMax}	Nm	214															
		in.lb	1894															
Mass Moment of Inertia	j_1	kgcm ²	0.44	0.44	0.44	0.39	0.39	0.39	0.39	0.39	0.39	0.39	0.39	0.39	0.39			
Operating Noise Level	L_{PA}	dB(A)	< 60															
Efficiency at Full loading	η	%	95															
Operating Temperature		°C	-25 to +90															
		F	-13 to +194															
Lubrication			Synthetic Lubrication Grease															
Mouting Position			Any Directions															
Protection Class			IP 65															
Service lifetime	L_n	h	S5 Cycle Operation: >30,000 (S1 Continuous Operation: >15,000 hrs)															
Weight	m	kg	4.50															
		lb _m	9.9															

XA Series Servo Planetary Gearbox

XA Series Servo Planetary Gearbox

XA120 1-stage

		1-stage									
Ratio	i		3	4	5	6	7	8	9	10	
Nominal Output Torque		Nm	335	300	320	300	300	295	295	295	
		in.lb	2965	2655	2832	2655	2655	2611	2611	2611	
Emergency Stop Torque	T_{2Not}	Nm	1005	900	960	900	900	885	885	885	
		in.lb	8895	7966	8497	7966	7966	7833	7833	7833	
Maximum Acceleration Torque	T_{2B}	Nm	603	540	576	540	540	531	531	531	
		in.lb	5337	4779	5098	4779	4779	4700	4700	4700	
Maximum Torque	T_{2a}	Nm	670	600	640	600	600	590	590	590	
		in.lb	5930	5310	5664	5310	5310	5222	5222	5222	
Permitted Average Input Speed	n_{1N}	rpm	3000								
Maximum Input Speed	n_{1Max}	rpm	6000								
Mean No Load Running Torque	T_{012}	Nm	1	0.95	0.85	0.81	0.78	0.78	0.78	0.78	
		in.lb	8.85	8.41	7.52	7.17	6.90	6.90	6.90	6.90	
Standard Backlash P1	j_i	arcmin	≤5								
Reduced Low Backlash P0	j_i	arcmin	≤3								
Ultra Low Backlash PU	j_i	arcmin	≤1								
Torsional Rigidity	C_{121}	Nm/arcmin	26								
		in.lb/arcmin	230.12								
Maximum Radial Load	F_{2AMax}	N	6700								
		lb _r	1506								
Maximum Axial Load	F_{2OMax}	N	3300								
		lb _a	742								
Max. Tilting Moment	M_{2KMax}	Nm	603								
		in.lb	5337								
Mass Moment of Inertia	j_i	kgcm ²	3.25	2.74	2.71	2.62	2.62	2.62	2.62	2.57	
Operating Noise Level	L_{PA}	dB(A)	< 63								
Efficiency at Full loading	η	%	97								
Operating Temperature		°C	-25 to +90								
		F	-13 to +194								
Lubrication			Synthetic Lubrication Grease								
Mouting Position			Any Directions								
Protection Class			IP 65								
Service lifetime	L_n	h	S5 Cycle Operation: >30,000 (S1 Continuous Operation: >15,000 hrs)								
Weight	m	kg	5.5								
		lb _m	12.1								

XA120 2-stage

		2-stage																
Ratio	i		15	20	25	30	32	35	40	45	50	60	70	80	90	100		
Nominal Output Torque		Nm	335	300	320	320	320	320	320	320	320	300	300	295	295	295		
		in.lb	2965	2655	2832	2832	2832	2832	2832	2832	2832	2655	2655	2611	2611	2611		
Emergency Stop Torque	T_{2Not}	Nm	1005	900	960	960	960	960	960	960	960	900	900	885	885	885		
		in.lb	8895	7966	8497	8497	8497	8497	8497	8497	8497	7966	7966	7833	7833	7833		
Maximum Acceleration Torque	T_{2B}	Nm	603	540	576	576	576	576	576	576	576	540	540	531	531	531		
		in.lb	5337	4779	5098	5098	5098	5098	5098	5098	5098	4779	4779	4700	4700	4700		
Maximum Torque	T_{2a}	Nm	670	600	640	640	640	640	640	640	640	600	600	590	590	590		
		in.lb	5930	5310	5664	5664	5664	5664	5664	5664	5664	5310	5310	5222	5222	5222		
Permitted Average Input Speed	n_{1N}	rpm	3000															
Maximum Input Speed	n_{1Max}	rpm	6000															
Mean No Load Running Torque	T_{012}	Nm	0.85	0.85	0.85	0.81	0.78	0.78	0.78	0.78	0.78	0.81	0.78	0.78	0.78	0.78		
		in.lb	7.52	7.52	7.52	7.17	6.90	6.90	6.90	6.90	6.90	7.17	6.90	6.90	6.90	6.90		
Standard Backlash P1	j_i	arcmin	≤7															
Reduced Low Backlash P0	j_i	arcmin	≤5															
Ultra Low Backlash PU	j_i	arcmin	≤3															
Torsional Rigidity	C_{121}	Nm/arcmin	26															
		in.lb/arcmin	230.12															
Maximum Radial Load	F_{2AMax}	N	6700															
		lb _r	1506															
Maximum Axial Load	F_{2OMax}	N	3300															
		lb _a	742															
Max. Tilting Moment	M_{2KMax}	Nm	603															
		in.lb	5337															
Mass Moment of Inertia	j_i	kgcm ²	2.58	1.5	1.49	1.3	1.3	1.3	1.3	1.3	1.3	1.3	1.3	1.3	1.3	1.3		
Operating Noise Level	L_{PA}	dB(A)	< 63															
Efficiency at Full loading	η	%	95															
Operating Temperature		°C	-25 to +90															
		F	-13 to +194															
Lubrication			Synthetic Lubrication Grease															
Mouting Position			Any Directions															
Protection Class			IP 65															
Service lifetime	L_n	h	S5 Cycle Operation: >30,000 (S1 Continuous Operation: >15,000 hrs)															
Weight	m	kg	8.00															
		lb _m	17.6															

XA Series Servo Planetary Gearbox

XA Series Servo Planetary Gearbox

XA120 1-stage

		1-stage									
Ratio	i		3	4	5	6	7	8	9	10	
Nominal Output Torque		Nm	335	300	320	300	300	295	295	295	
		in.lb	2965	2655	2832	2655	2655	2611	2611	2611	
Emergency Stop Torque	T_{2Not}	Nm	1005	900	960	900	900	885	885	885	
		in.lb	8895	7966	8497	7966	7966	7833	7833	7833	
Maximum Acceleration Torque	T_{2B}	Nm	603	540	576	540	540	531	531	531	
		in.lb	5337	4779	5098	4779	4779	4700	4700	4700	
Maximum Torque	T_{2a}	Nm	670	600	640	600	600	590	590	590	
		in.lb	5930	5310	5664	5310	5310	5222	5222	5222	
Permitted Average Input Speed	n_{1N}	rpm	3000								
Maximum Input Speed	n_{1Max}	rpm	6000								
Mean No Load Running Torque	T_{012}	Nm	1	0.95	0.85	0.81	0.78	0.78	0.78	0.78	
		in.lb	8.85	8.41	7.52	7.17	6.90	6.90	6.90	6.90	
Standard Backlash P1	j_1	arcmin	≤5								
Reduced Low Backlash P0	j_1	arcmin	≤3								
Ultra Low Backlash PU	j_1	arcmin	≤1								
Torsional Rigidity	C_{121}	Nm/arcmin	26								
		in.lb/arcmin	230.12								
Maximum Radial Load	F_{2AMax}	N	6700								
		lb _r	1506								
Maximum Axial Load	F_{2OMax}	N	3300								
		lb _a	742								
Max. Tilting Moment	M_{2KMax}	Nm	603								
		in.lb	5337								
Mass Moment of Inertia	j_1	kgcm ²	3.25	2.74	2.71	2.62	2.62	2.62	2.62	2.57	
Operating Noise Level	L_{PA}	dB(A)	< 63								
Efficiency at Full loading	η	%	97								
Operating Temperature		°C	-25 to +90								
		F	-13 to +194								
Lubrication			Synthetic Lubrication Grease								
Mouting Position			Any Directions								
Protection Class			IP 65								
Service lifetime	L_h	h	S5 Cycle Operation: >30,000 (S1 Continuous Operation: >15,000 hrs)								
Weight	m	kg	5.5								
		lb _m	12.1								

XA120 2-stage

		2-stage																
Ratio	i		15	20	25	30	32	35	40	45	50	60	70	80	90	100		
Nominal Output Torque		Nm	335	300	320	320	320	320	320	320	320	300	300	295	295	295		
		in.lb	2965	2655	2832	2832	2832	2832	2832	2832	2832	2655	2655	2611	2611	2611		
Emergency Stop Torque	T_{2Not}	Nm	1005	900	960	960	960	960	960	960	960	900	900	885	885	885		
		in.lb	8895	7966	8497	8497	8497	8497	8497	8497	8497	7966	7966	7833	7833	7833		
Maximum Acceleration Torque	T_{2B}	Nm	603	540	576	576	576	576	576	576	576	540	540	531	531	531		
		in.lb	5337	4779	5098	5098	5098	5098	5098	5098	5098	4779	4779	4700	4700	4700		
Maximum Torque	T_{2a}	Nm	670	600	640	640	640	640	640	640	640	600	600	590	590	590		
		in.lb	5930	5310	5664	5664	5664	5664	5664	5664	5664	5310	5310	5222	5222	5222		
Permitted Average Input Speed	n_{1N}	rpm	3000															
Maximum Input Speed	n_{1Max}	rpm	6000															
Mean No Load Running Torque	T_{012}	Nm	0.85	0.85	0.85	0.81	0.78	0.78	0.78	0.78	0.78	0.81	0.78	0.78	0.78	0.78		
		in.lb	7.52	7.52	7.52	7.17	6.90	6.90	6.90	6.90	6.90	7.17	6.90	6.90	6.90	6.90		
Standard Backlash P1	j_1	arcmin	≤7															
Reduced Low Backlash P0	j_1	arcmin	≤5															
Ultra Low Backlash PU	j_1	arcmin	≤3															
Torsional Rigidity	C_{121}	Nm/arcmin	26															
		in.lb/arcmin	230.12															
Maximum Radial Load	F_{2AMax}	N	6700															
		lb _r	1506															
Maximum Axial Load	F_{2OMax}	N	3300															
		lb _a	742															
Max. Tilting Moment	M_{2KMax}	Nm	603															
		in.lb	5337															
Mass Moment of Inertia	j_1	kgcm ²	2.58	1.5	1.49	1.3	1.3	1.3	1.3	1.3	1.3	1.3	1.3	1.3	1.3	1.3		
Operating Noise Level	L_{PA}	dB(A)	< 63															
Efficiency at Full loading	η	%	95															
Operating Temperature		°C	-25 to +90															
		F	-13 to +194															
Lubrication			Synthetic Lubrication Grease															
Mouting Position			Any Directions															
Protection Class			IP 65															
Service lifetime	L_h	h	S5 Cycle Operation: >30,000 (S1 Continuous Operation: >15,000 hrs)															
Weight	m	kg	8.00															
		lb _m	17.6															

XA Series Servo Planetary Gearbox

XA Series Servo Planetary Gearbox

XA160 1-stage

		1-stage									
Ratio	i		3	4	5	6	7	8	9	10	
Nominal Output Torque		Nm	630	550	620	600	575	550	510	510	
		in.lb	5576	4868	5487	5310	5089	4868	4514	4514	
Emergency Stop Torque	T_{2Not}	Nm	1890	1650	1860	1800	1725	1650	1530	1530	
		in.lb	16728	14604	16462	15931	15267	14604	13542	13542	
Maximum Acceleration Torque	T_{2a}	Nm	1134	990	1116	1080	1035	990	918	918	
		in.lb	10037	8762	9877	9559	9160	8762	8125	8125	
Maximum Torque	T_{2a}	Nm	1260	1100	1240	1200	1150	1100	1020	1020	
		in.lb	11152	9736	10975	10621	10178	9736	9028	9028	
Permitted Average Input Speed	n_{1N}	rpm	3000								
Maximum Input Speed	n_{1Max}	rpm	6000								
Mean No Load Running Torque	T_{012}	Nm	2.55	2.45	2.3	2.2	2.2	2.2	2.2	2.2	
		in.lb	22.57	21.68	20.36	19.47	19.47	19.47	19.47	19.47	
Standard Backlash P1	j_i	arcmin	≤5								
Reduced Low Backlash P0	j_i	arcmin	≤3								
Ultra Low Backlash PU	j_i	arcmin	≤1								
Torsional Rigidity	C_{121}	Nm/arcmin	52								
		in.lb/arcmin	460.24								
Maximum Radial Load	F_{2AMax}	N	9600								
		lb _r	2158								
Maximum Axial Load	F_{2OMax}	N	4800								
		lb _r	1079								
Max. Tilting Moment	M_{2KMax}	Nm	1275								
		in.lb	11285								
Mass Moment of Inertia	j_1	kgcm ²	12.31	7.54	7.42	7.25	7.25	7.14	7.14	7.14	
Operating Noise Level	L_{PA}	dB(A)	< 65								
Efficiency at Full loading	η	%	97								
Operating Temperature		°C	-25 to +90								
		F	-13 to +194								
Lubrication			Synthetic Lubrication Grease								
Mouting Position			Any Directions								
Protection Class			IP 65								
Service lifetime	L_h	h	S5 Cycle Operation: >30,000 (S1 Continuous Operation: >15,000 hrs)								
Weight	m	kg	20								
		lb _m	44.1								

XA160 2-stage

		2-stage															
Ratio	i		15	20	25	30	32	35	40	45	50	60	70	80	90	100	
Nominal Output Torque		Nm	630	550	620	620	620	620	620	620	620	600	575	550	510	510	
		in.lb	5576	4868	5487	5487	5487	5487	5487	5487	5487	5310	5089	4868	4514	4514	
Emergency Stop Torque	T_{2Not}	Nm	1890	1650	1860	1860	1860	1860	1860	1860	1860	1800	1725	1650	1530	1530	
		in.lb	16728	14604	16462	16462	16462	16462	16462	16462	16462	15931	15267	14604	13542	13542	
Maximum Acceleration Torque	T_{2a}	Nm	1134	990	1116	1116	1116	1116	1116	1116	1116	1080	1035	990	918	918	
		in.lb	10037	8762	9877	9877	9877	9877	9877	9877	9877	9559	9160	8762	8125	8125	
Maximum Torque	T_{2a}	Nm	1260	1100	1240	1240	1240	1240	1240	1240	1240	1200	1150	1100	1020	1020	
		in.lb	11152	9736	10975	10975	10975	10975	10975	10975	10975	10621	10178	9736	9028	9028	
Permitted Average Input Speed	n_{1N}	rpm	3000														
Maximum Input Speed	n_{1Max}	rpm	6000														
Mean No Load Running Torque	T_{012}	Nm	2.4	2.4	2.4	2.3	2.3	2.3	2.3	2.3	2.3	2.3	2.3	2.3	2.3	2.3	
		in.lb	21.24	21.24	21.24	20.36	20.36	20.36	20.36	20.36	20.36	20.36	20.36	20.36	20.36	20.36	
Standard Backlash P1	j_i	arcmin	≤7														
Reduced Low Backlash P0	j_i	arcmin	≤5														
Ultra Low Backlash PU	j_i	arcmin	≤3														
Torsional Rigidity	C_{121}	Nm/arcmin	52														
		in.lb/arcmin	460.24														
Maximum Radial Load	F_{2AMax}	N	9600														
		lb _r	2158														
Maximum Axial Load	F_{2OMax}	N	4800														
		lb _r	1079														
Max. Tilting Moment	M_{2KMax}	Nm	1275														
		in.lb	11285														
Mass Moment of Inertia	j_1	kgcm ²	12.35	6.65	5.81	6.34	6.34	5.36	4.08	5.36	4.08	7.4	7.4	7.4	7.4	7.4	
Operating Noise Level	L_{PA}	dB(A)	< 65														
Efficiency at Full loading	η	%	95														
Operating Temperature		°C	-25 to +90														
		F	-13 to +194														
Lubrication			Synthetic Lubrication Grease														
Mouting Position			Any Directions														
Protection Class			IP 65														
Service lifetime	L_h	h	S5 Cycle Operation: >30,000 (S1 Continuous Operation: >15,000 hrs)														
Weight	m	kg	25.00														
		lb _m	55.1														

XA Series Servo Planetary Gearbox

XA Series Servo Planetary Gearbox

XA160 1-stage

		1-stage									
Ratio	i		3	4	5	6	7	8	9	10	
Nominal Output Torque		Nm	630	550	620	600	575	550	510	510	
		in.lb	5576	4868	5487	5310	5089	4868	4514	4514	
Emergency Stop Torque	T_{2Not}	Nm	1890	1650	1860	1800	1725	1650	1530	1530	
		in.lb	16728	14604	16462	15931	15267	14604	13542	13542	
Maximum Acceleration Torque	T_{2B}	Nm	1134	990	1116	1080	1035	990	918	918	
		in.lb	10037	8762	9877	9559	9160	8762	8125	8125	
Maximum Torque	T_{2a}	Nm	1260	1100	1240	1200	1150	1100	1020	1020	
		in.lb	11152	9736	10975	10621	10178	9736	9028	9028	
Permitted Average Input Speed	n_{1N}	rpm	3000								
Maximum Input Speed	n_{1Max}	rpm	6000								
Mean No Load Running Torque	T_{012}	Nm	2.55	2.45	2.3	2.2	2.2	2.2	2.2	2.2	
		in.lb	22.57	21.68	20.36	19.47	19.47	19.47	19.47	19.47	
Standard Backlash P1	j_i	arcmin	≤5								
Reduced Low Backlash P0	j_i	arcmin	≤3								
Ultra Low Backlash PU	j_i	arcmin	≤1								
Torsional Rigidity	C_{121}	Nm/arcmin	52								
		in.lb/arcmin	460.24								
Maximum Radial Load	F_{2AMax}	N	9600								
		lb _r	2158								
Maximum Axial Load	F_{2OMax}	N	4800								
		lb _r	1079								
Max. Tilting Moment	M_{2KMax}	Nm	1275								
		in.lb	11285								
Mass Moment of Inertia	j_1	kgcm ²	12.31	7.54	7.42	7.25	7.25	7.14	7.14	7.14	
Operating Noise Level	L_{PA}	dB(A)	< 65								
Efficiency at Full loading	η	%	97								
Operating Temperature		°C	-25 to +90								
		F	-13 to +194								
Lubrication			Synthetic Lubrication Grease								
Mouting Position			Any Directions								
Protection Class			IP 65								
Service lifetime	L_n	h	S5 Cycle Operation: >30,000 (S1 Continuous Operation: >15,000 hrs)								
Weight	m	kg	20								
		lb _m	44.1								

XA160 2-stage

		2-stage																
Ratio	i		15	20	25	30	32	35	40	45	50	60	70	80	90	100		
Nominal Output Torque		Nm	630	550	620	620	620	620	620	620	620	600	575	550	510	510		
		in.lb	5576	4868	5487	5487	5487	5487	5487	5487	5487	5310	5089	4868	4514	4514		
Emergency Stop Torque	T_{2Not}	Nm	1890	1650	1860	1860	1860	1860	1860	1860	1860	1800	1725	1650	1530	1530		
		in.lb	16728	14604	16462	16462	16462	16462	16462	16462	16462	15931	15267	14604	13542	13542		
Maximum Acceleration Torque	T_{2B}	Nm	1134	990	1116	1116	1116	1116	1116	1116	1116	1080	1035	990	918	918		
		in.lb	10037	8762	9877	9877	9877	9877	9877	9877	9877	9559	9160	8762	8125	8125		
Maximum Torque	T_{2a}	Nm	1260	1100	1240	1240	1240	1240	1240	1240	1240	1200	1150	1100	1020	1020		
		in.lb	11152	9736	10975	10975	10975	10975	10975	10975	10975	10621	10178	9736	9028	9028		
Permitted Average Input Speed	n_{1N}	rpm	3000															
Maximum Input Speed	n_{1Max}	rpm	6000															
Mean No Load Running Torque	T_{012}	Nm	2.4	2.4	2.4	2.3	2.3	2.3	2.3	2.3	2.3	2.3	2.3	2.3	2.3	2.3		
		in.lb	21.24	21.24	21.24	20.36	20.36	20.36	20.36	20.36	20.36	20.36	20.36	20.36	20.36	20.36		
Standard Backlash P1	j_i	arcmin	≤7															
Reduced Low Backlash P0	j_i	arcmin	≤5															
Ultra Low Backlash PU	j_i	arcmin	≤3															
Torsional Rigidity	C_{121}	Nm/arcmin	52															
		in.lb/arcmin	460.24															
Maximum Radial Load	F_{2AMax}	N	9600															
		lb _r	2158															
Maximum Axial Load	F_{2OMax}	N	4800															
		lb _r	1079															
Max. Tilting Moment	M_{2KMax}	Nm	1275															
		in.lb	11285															
Mass Moment of Inertia	j_1	kgcm ²	12.35	6.65	5.81	6.34	6.34	5.36	4.08	5.36	4.08	7.4	7.4	7.4	7.4	7.4		
Operating Noise Level	L_{PA}	dB(A)	< 65															
Efficiency at Full loading	η	%	95															
Operating Temperature		°C	-25 to +90															
		F	-13 to +194															
Lubrication			Synthetic Lubrication Grease															
Mouting Position			Any Directions															
Protection Class			IP 65															
Service lifetime	L_n	h	S5 Cycle Operation: >30,000 (S1 Continuous Operation: >15,000 hrs)															
Weight	m	kg	25.00															
		lb _m	55.1															

XA Series Servo Planetary Gearbox

XA Series Servo Planetary Gearbox

XA205 1-stage

		1-stage									
Ratio	i		3	4	5	6	7	8	9	10	
Nominal Output Torque		Nm	1220	1170	1170	1100	1100	1060	1060	1060	
		in.lb	10798	10355	10355	9736	9736	9382	9382	9382	
Emergency Stop Torque	T_{2Not}	Nm	3660	3510	3510	3300	3300	3180	3180	3180	
		in.lb	32394	31066	31066	29207	29207	28145	28145	28145	
Maximum Acceleration Torque	T_{2a}	Nm	2196	2106	2106	1980	1980	1908	1908	1908	
		in.lb	19436	18640	18640	17524	17524	16887	16887	16887	
Maximum Torque	T_{2a}	Nm	2440	2340	2340	2200	2200	2120	2120	2120	
		in.lb	21596	20711	20711	19472	19472	18763	18763	18763	
Permitted Average Input Speed	n_{1N}	rpm	3000								
Maximum Input Speed	n_{1Max}	rpm	4000								
Mean No Load Running Torque	T_{012}	Nm	3.5	3.3	3.15	3	3	3	3	3	
		in.lb	30.98	29.21	27.88	26.55	26.55	26.55	26.55	26.55	
Standard Backlash P1	j_1	arcmin	≤5								
Reduced Low Backlash P0	j_1	arcmin	≤3								
Ultra Low Backlash PU	j_1	arcmin	≤1								
Torsional Rigidity	C_{121}	Nm/arcmin	138								
		in.lb/arcmin	1221.4								
Maximum Radial Load	F_{2AMax}	N	14000								
		lb _r	3147								
Maximum Axial Load	F_{2OMax}	N	7000								
		lb _r	1574								
Max. Tilting Moment	M_{2KMax}	Nm	2013								
		in.lb	17816								
Mass Moment of Inertia	j_1	kgcm ²	28.98	23.67	22.75	22.48	22.48	22.59	22.59	22.55	
Operating Noise Level	L_{PA}	dB(A)	< 67								
Efficiency at Full loading	η	%	97								
Operating Temperature		°C	-25 to +90								
		F	-13 to +194								
Lubrication			Synthetic Lubrication Grease								
Mouting Position			Any Directions								
Protection Class			IP 65								
Service lifetime	L_h	h	S5 Cycle Operation: >30,000 (S1 Continuous Operation: >15,000 hrs)								
Weight	m	kg	31								
		lb _m	68.3								

XA205 2-stage

		2-stage																
Ratio	i		15	20	25	30	32	35	40	45	50	60	70	80	90	100		
Nominal Output Torque		Nm	1220	1170	1170	1170	1170	1170	1170	1170	1170	1100	1100	1060	1060	1060		
		in.lb	10798	10355	10355	10355	10355	10355	10355	10355	10355	10355	9736	9736	9382	9382	9382	
Emergency Stop Torque	T_{2Not}	Nm	3660	3510	3510	3510	3510	3510	3510	3510	3510	3300	3300	3180	3180	3180		
		in.lb	32394	31066	31066	31066	31066	31066	31066	31066	31066	29207	29207	28145	28145	28145		
Maximum Acceleration Torque	T_{2a}	Nm	2196	2106	2106	2106	2106	2106	2106	2106	2106	1980	1980	1908	1908	1908		
		in.lb	19436	18640	18640	18640	18640	18640	18640	18640	18640	17524	17524	16887	16887	16887		
Maximum Torque	T_{2a}	Nm	2440	2340	2340	2340	2340	2340	2340	2340	2340	2200	2200	2120	2120	2120		
		in.lb	21596	20711	20711	20711	20711	20711	20711	20711	20711	19472	19472	18763	18763	18763		
Permitted Average Input Speed	n_{1N}	rpm	3000															
Maximum Input Speed	n_{1Max}	rpm	4000															
Mean No Load Running Torque	T_{012}	Nm	2.3	2.3	2.3	2.2	2.2	2.2	2.2	2.2	2.2	2.2	2.2	2.2	2.2	2.2		
		in.lb	20.36	20.36	20.36	19.47	19.47	19.47	19.47	19.47	19.47	19.47	19.47	19.47	19.47	19.47		
Standard Backlash P1	j_1	arcmin	≤7															
Reduced Low Backlash P0	j_1	arcmin	≤5															
Ultra Low Backlash PU	j_1	arcmin	≤3															
Torsional Rigidity	C_{121}	Nm/arcmin	138															
		in.lb/arcmin	1221.40															
Maximum Radial Load	F_{2AMax}	N	14000															
		lb _r	3147															
Maximum Axial Load	F_{2OMax}	N	7000															
		lb _r	1574															
Max. Tilting Moment	M_{2KMax}	Nm	2013															
		in.lb	17816															
Mass Moment of Inertia	j_1	kgcm ²	12.3	7.42	7.54	7.14	7.14	7.14	7.14	7.14	7.14	7.14	7.14	7.14	7.14	7.14		
Operating Noise Level	L_{PA}	dB(A)	< 67															
Efficiency at Full loading	η	%	95															
Operating Temperature		°C	-25 to +90															
		F	-13 to +194															
Lubrication			Synthetic Lubrication Grease															
Mouting Position			Any Directions															
Protection Class			IP 65															
Service lifetime	L_h	h	S5 Cycle Operation: >30,000 (S1 Continuous Operation: >15,000 hrs)															
Weight	m	kg	39.00															
		lb _m	86															

XA Series Servo Planetary Gearbox

XA Series Servo Planetary Gearbox

XA205 1-stage

		1-stage									
Ratio	i		3	4	5	6	7	8	9	10	
Nominal Output Torque		Nm	1220	1170	1170	1100	1100	1060	1060	1060	
		in.lb	10798	10355	10355	9736	9736	9382	9382	9382	
Emergency Stop Torque	T_{2Not}	Nm	3660	3510	3510	3300	3300	3180	3180	3180	
		in.lb	32394	31066	31066	29207	29207	28145	28145	28145	
Maximum Acceleration Torque	T_{2a}	Nm	2196	2106	2106	1980	1980	1908	1908	1908	
		in.lb	19436	18640	18640	17524	17524	16887	16887	16887	
Maximum Torque	T_{2a}	Nm	2440	2340	2340	2200	2200	2120	2120	2120	
		in.lb	21596	20711	20711	19472	19472	18763	18763	18763	
Permitted Average Input Speed	n_{1N}	rpm	3000								
Maximum Input Speed	n_{1Max}	rpm	4000								
Mean No Load Running Torque	T_{012}	Nm	3.5	3.3	3.15	3	3	3	3	3	
		in.lb	30.98	29.21	27.88	26.55	26.55	26.55	26.55	26.55	
Standard Backlash P1	j_1	arcmin	≤5								
Reduced Low Backlash P0	j_1	arcmin	≤3								
Ultra Low Backlash PU	j_1	arcmin	≤1								
Torsional Rigidity	C_{121}	Nm/arcmin	138								
		in.lb/arcmin	1221.4								
Maximum Radial Load	F_{2AMax}	N	14000								
		lb _r	3147								
Maximum Axial Load	F_{2OMax}	N	7000								
		lb _r	1574								
Max. Tilting Moment	M_{2KMax}	Nm	2013								
		in.lb	17816								
Mass Moment of Inertia	j_1	kgcm ²	28.98	23.67	22.75	22.48	22.48	22.59	22.59	22.55	
Operating Noise Level	L_{PA}	dB(A)	< 67								
Efficiency at Full loading	η	%	97								
Operating Temperature		°C	-25 to +90								
		F	-13 to +194								
Lubrication			Synthetic Lubrication Grease								
Mouting Position			Any Directions								
Protection Class			IP 65								
Service lifetime	L_n	h	S5 Cycle Operation: >30,000 (S1 Continuous Operation: >15,000 hrs)								
Weight	m	kg	31								
		lb _m	68.3								

XA205 2-stage

		2-stage																
Ratio	i		15	20	25	30	32	35	40	45	50	60	70	80	90	100		
Nominal Output Torque		Nm	1220	1170	1170	1170	1170	1170	1170	1170	1170	1100	1100	1060	1060	1060		
		in.lb	10798	10355	10355	10355	10355	10355	10355	10355	10355	10355	9736	9736	9382	9382	9382	
Emergency Stop Torque	T_{2Not}	Nm	3660	3510	3510	3510	3510	3510	3510	3510	3510	3300	3300	3180	3180	3180		
		in.lb	32394	31066	31066	31066	31066	31066	31066	31066	31066	29207	29207	28145	28145	28145		
Maximum Acceleration Torque	T_{2a}	Nm	2196	2106	2106	2106	2106	2106	2106	2106	2106	1980	1980	1908	1908	1908		
		in.lb	19436	18640	18640	18640	18640	18640	18640	18640	18640	17524	17524	16887	16887	16887		
Maximum Torque	T_{2a}	Nm	2440	2340	2340	2340	2340	2340	2340	2340	2340	2200	2200	2120	2120	2120		
		in.lb	21596	20711	20711	20711	20711	20711	20711	20711	20711	19472	19472	18763	18763	18763		
Permitted Average Input Speed	n_{1N}	rpm	3000															
Maximum Input Speed	n_{1Max}	rpm	4000															
Mean No Load Running Torque	T_{012}	Nm	2.3	2.3	2.3	2.2	2.2	2.2	2.2	2.2	2.2	2.2	2.2	2.2	2.2	2.2		
		in.lb	20.36	20.36	20.36	19.47	19.47	19.47	19.47	19.47	19.47	19.47	19.47	19.47	19.47	19.47		
Standard Backlash P1	j_1	arcmin	≤7															
Reduced Low Backlash P0	j_1	arcmin	≤5															
Ultra Low Backlash PU	j_1	arcmin	≤3															
Torsional Rigidity	C_{121}	Nm/arcmin	138															
		in.lb/arcmin	1221.40															
Maximum Radial Load	F_{2AMax}	N	14000															
		lb _r	3147															
Maximum Axial Load	F_{2OMax}	N	7000															
		lb _r	1574															
Max. Tilting Moment	M_{2KMax}	Nm	2013															
		in.lb	17816															
Mass Moment of Inertia	j_1	kgcm ²	12.3	7.42	7.54	7.14	7.14	7.14	7.14	7.14	7.14	7.14	7.14	7.14	7.14	7.14		
Operating Noise Level	L_{PA}	dB(A)	< 67															
Efficiency at Full loading	η	%	95															
Operating Temperature		°C	-25 to +90															
		F	-13 to +194															
Lubrication			Synthetic Lubrication Grease															
Mouting Position			Any Directions															
Protection Class			IP 65															
Service lifetime	L_n	h	S5 Cycle Operation: >30,000 (S1 Continuous Operation: >15,000 hrs)															
Weight	m	kg	39.00															
		lb _m	86															

XA Series Servo Planetary Gearbox

XA Series Servo Planetary Gearbox

XA235 1-stage

		1-stage									
Ratio	i		3	4	5	6	7	8	9	10	
Nominal Output Torque		Nm	2050	2000	2000	1900	1900	1800	1800	1800	
		in.lb	18144	17701	17701	16816	16816	15931	15931	15931	
Emergency Stop Torque	T_{2Not}	Nm	6150	6000	6000	5700	5700	5400	5400	5400	
		in.lb	54432	53104	53104	50449	50449	47794	47794	47794	
Maximum Acceleration Torque	T_{2a}	Nm	3690	3600	3600	3420	3420	3240	3240	3240	
		in.lb	32659	31863	31863	30269	30269	28676	28676	28676	
Maximum Torque	T_{2a}	Nm	4100	4000	4000	3800	3800	3600	3600	3600	
		in.lb	36288	35403	35403	33633	33633	31863	31863	31863	
Permitted Average Input Speed	n_{1N}	rpm	2000								
Maximum Input Speed	n_{1Max}	rpm	4000								
Mean No Load Running Torque	T_{012}	Nm	5.2	5	4.85	4.67	4.67	4.67	4.67	4.67	
		in.lb	46.02	44.25	42.93	41.33	41.33	41.33	41.33	41.33	
Standard Backlash P1	j_1	arcmin	≤5								
Reduced Low Backlash P0	j_1	arcmin	≤3								
Ultra Low Backlash PU	j_1	arcmin	≤1								
Torsional Rigidity	C_{121}	Nm/arcmin	220								
		in.lb/arcmin	1947.2								
Maximum Radial Load	F_{2AMax}	N	16000								
		lb _r	3597								
Maximum Axial Load	F_{2OMax}	N	8000								
		lb _r	1798								
Max. Tilting Moment	M_{2KMax}	Nm	2676								
		in.lb	23684								
Mass Moment of Inertia	j_1	kgcm ²	69.61	54.37	53.27	50.84	50.84	50.84	50.84	50.56	
Operating Noise Level	L_{PA}	dB(A)	< 70								
Efficiency at Full loading	η	%	97								
Operating Temperature		°C	-25 to +90								
		F	-13 to +194								
Lubrication			Synthetic Lubrication Grease								
Mouting Position			Any Directions								
Protection Class			IP 65								
Service lifetime	L_h	h	S5 Cycle Operation: >30,000 (S1 Continuous Operation: >15,000 hrs)								
Weight	m	kg	53								
		lb _m	117								

XA235 2-stage

		2-stage															
Ratio	i		15	20	25	30	32	35	40	45	50	60	70	80	90	100	
Nominal Output Torque		Nm	2050	2000	2000	2000	2000	2000	2000	2000	2000	1900	1900	1800	1800	1800	
		in.lb	18144	17701	17701	17701	17701	17701	17701	17701	17701	16816	16816	15931	15931	15931	
Emergency Stop Torque	T_{2Not}	Nm	6150	6000	6000	6000	6000	6000	6000	6000	6000	5700	5700	5400	5400	5400	
		in.lb	54432	53104	53104	53104	53104	53104	53104	53104	53104	50449	50449	47794	47794	47794	
Maximum Acceleration Torque	T_{2a}	Nm	3690	3600	3600	3600	3600	3600	3600	3600	3600	3420	3420	3240	3240	3240	
		in.lb	32659	31863	31863	31863	31863	31863	31863	31863	31863	30269	30269	28676	28676	28676	
Maximum Torque	T_{2a}	Nm	4100	4000	4000	4000	4000	4000	4000	4000	4000	3800	3800	3600	3600	3600	
		in.lb	36288	35403	35403	35403	35403	35403	35403	35403	35403	33633	33633	31863	31863	31863	
Permitted Average Input Speed	n_{1N}	rpm	2000														
Maximum Input Speed	n_{1Max}	rpm	4000														
Mean No Load Running Torque	T_{012}	Nm	3.15	3.15	3.15	3	3	3	3	3	3	3	3	3	3	3	
		in.lb	27.88	27.88	27.88	26.55	26.55	26.55	26.55	26.55	26.55	26.55	26.55	26.55	26.55	26.55	
Standard Backlash P1	j_1	arcmin	≤7														
Reduced Low Backlash P0	j_1	arcmin	≤5														
Ultra Low Backlash PU	j_1	arcmin	≤3														
Torsional Rigidity	C_{121}	Nm/arcmin	220														
		in.lb/arcmin	1947.15														
Maximum Radial Load	F_{2AMax}	N	16000														
		lb _r	3597														
Maximum Axial Load	F_{2OMax}	N	8000														
		lb _r	1798														
Max. Tilting Moment	M_{2KMax}	Nm	2676														
		in.lb	23684														
Mass Moment of Inertia	j_1	kgcm ²	28.92	22.75	22.75	22.59	22.59	22.59	22.59	22.59	22.59	22.59	22.59	22.59	22.59	22.59	
Operating Noise Level	L_{PA}	dB(A)	< 70														
Efficiency at Full loading	η	%	95														
Operating Temperature		°C	-25 to +90														
		F	-13 to +194														
Lubrication			Synthetic Lubrication Grease														
Mouting Position			Any Directions														
Protection Class			IP 65														
Service lifetime	L_h	h	S5 Cycle Operation: >30,000 (S1 Continuous Operation: >15,000 hrs)														
Weight	m	kg	66.00														
		lb _m	145.5														

XA235 1-stage

		1-stage									
Ratio	i		3	4	5	6	7	8	9	10	
Nominal Output Torque		Nm	2050	2000	2000	1900	1900	1800	1800	1800	
		in.lb	18144	17701	17701	16816	16816	15931	15931	15931	
Emergency Stop Torque	T_{2Not}	Nm	6150	6000	6000	5700	5700	5400	5400	5400	
		in.lb	54432	53104	53104	50449	50449	47794	47794	47794	
Maximum Acceleration Torque	T_{2a}	Nm	3690	3600	3600	3420	3420	3240	3240	3240	
		in.lb	32659	31863	31863	30269	30269	28676	28676	28676	
Maximum Torque	T_{2a}	Nm	4100	4000	4000	3800	3800	3600	3600	3600	
		in.lb	36288	35403	35403	33633	33633	31863	31863	31863	
Permitted Average Input Speed	n_{1N}	rpm	2000								
Maximum Input Speed	n_{1Max}	rpm	4000								
Mean No Load Running Torque	T_{012}	Nm	5.2	5	4.85	4.67	4.67	4.67	4.67	4.67	
		in.lb	46.02	44.25	42.93	41.33	41.33	41.33	41.33	41.33	
Standard Backlash P1	j_i	arcmin	≤5								
Reduced Low Backlash P0	j_i	arcmin	≤3								
Ultra Low Backlash PU	j_i	arcmin	≤1								
Torsional Rigidity	C_{121}	Nm/arcmin	220								
		in.lb/arcmin	1947.2								
Maximum Radial Load	F_{2AMax}	N	16000								
		lb _r	3597								
Maximum Axial Load	F_{2OMax}	N	8000								
		lb _r	1798								
Max. Tilting Moment	M_{2KMax}	Nm	2676								
		in.lb	23684								
Mass Moment of Inertia	j_1	kgcm ²	69.61	54.37	53.27	50.84	50.84	50.84	50.84	50.56	
Operating Noise Level	L_{PA}	dB(A)	< 70								
Efficiency at Full loading	η	%	97								
Operating Temperature		°C	-25 to +90								
		F	-13 to +194								
Lubrication			Synthetic Lubrication Grease								
Mouting Position			Any Directions								
Protection Class			IP 65								
Service lifetime	L_n	h	S5 Cycle Operation: >30,000 (S1 Continuous Operation: >15,000 hrs)								
Weight	m	kg	53								
		lb _m	117								

XA235 2-stage

		2-stage															
Ratio	i		15	20	25	30	32	35	40	45	50	60	70	80	90	100	
Nominal Output Torque		Nm	2050	2000	2000	2000	2000	2000	2000	2000	2000	1900	1900	1800	1800	1800	
		in.lb	18144	17701	17701	17701	17701	17701	17701	17701	17701	16816	16816	15931	15931	15931	
Emergency Stop Torque	T_{2Not}	Nm	6150	6000	6000	6000	6000	6000	6000	6000	6000	5700	5700	5400	5400	5400	
		in.lb	54432	53104	53104	53104	53104	53104	53104	53104	53104	50449	50449	47794	47794	47794	
Maximum Acceleration Torque	T_{2a}	Nm	3690	3600	3600	3600	3600	3600	3600	3600	3600	3420	3420	3240	3240	3240	
		in.lb	32659	31863	31863	31863	31863	31863	31863	31863	31863	30269	30269	28676	28676	28676	
Maximum Torque	T_{2a}	Nm	4100	4000	4000	4000	4000	4000	4000	4000	4000	3800	3800	3600	3600	3600	
		in.lb	36288	35403	35403	35403	35403	35403	35403	35403	35403	33633	33633	31863	31863	31863	
Permitted Average Input Speed	n_{1N}	rpm	2000														
Maximum Input Speed	n_{1Max}	rpm	4000														
Mean No Load Running Torque	T_{012}	Nm	3.15	3.15	3.15	3	3	3	3	3	3	3	3	3	3	3	
		in.lb	27.88	27.88	27.88	26.55	26.55	26.55	26.55	26.55	26.55	26.55	26.55	26.55	26.55	26.55	
Standard Backlash P1	j_i	arcmin	≤7														
Reduced Low Backlash P0	j_i	arcmin	≤5														
Ultra Low Backlash PU	j_i	arcmin	≤3														
Torsional Rigidity	C_{121}	Nm/arcmin	220														
		in.lb/arcmin	1947.15														
Maximum Radial Load	F_{2AMax}	N	16000														
		lb _r	3597														
Maximum Axial Load	F_{2OMax}	N	8000														
		lb _r	1798														
Max. Tilting Moment	M_{2KMax}	Nm	2676														
		in.lb	23684														
Mass Moment of Inertia	j_1	kgcm ²	28.92	22.75	22.75	22.59	22.59	22.59	22.59	22.59	22.59	22.59	22.59	22.59	22.59	22.59	
Operating Noise Level	L_{PA}	dB(A)	< 70														
Efficiency at Full loading	η	%	95														
Operating Temperature		°C	-25 to +90														
		F	-13 to +194														
Lubrication			Synthetic Lubrication Grease														
Mouting Position			Any Directions														
Protection Class			IP 65														
Service lifetime	L_n	h	S5 Cycle Operation: >30,000 (S1 Continuous Operation: >15,000 hrs)														
Weight	m	kg	66.00														
		lb _m	145.5														

XA Series Servo Planetary Gearbox

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