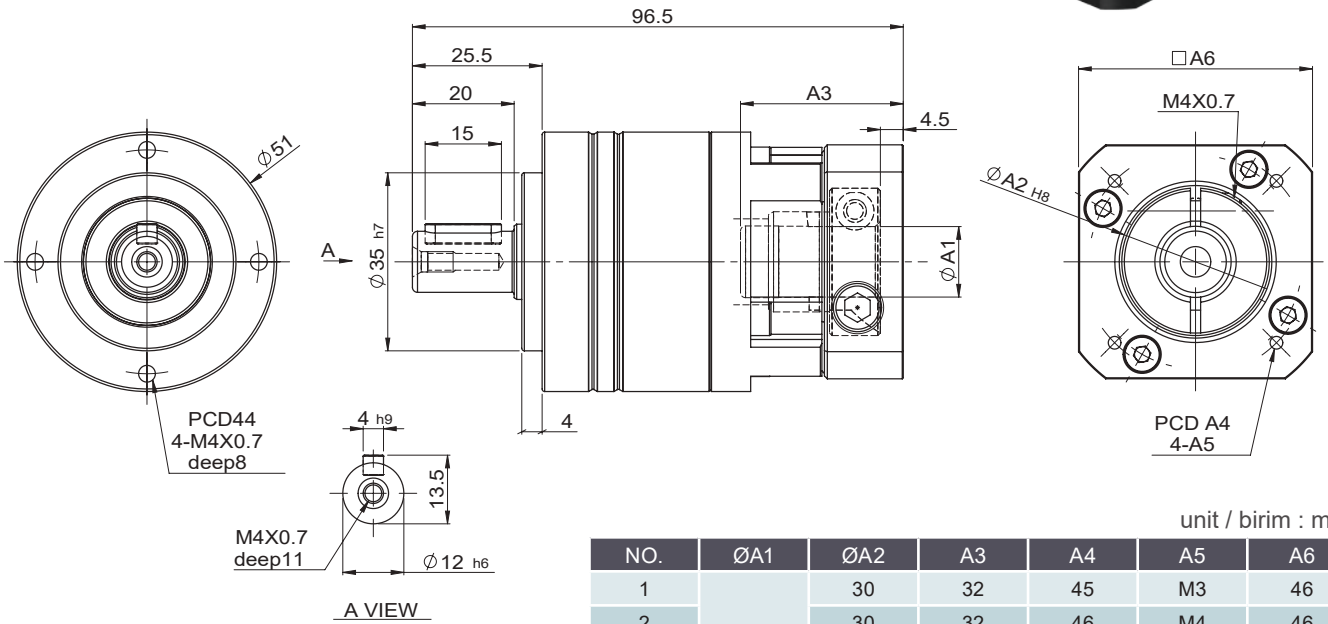


# SERVOBOX

## MODEL : SA50

1-Stage / Kademe

RATIO / ÇEVİRİM : 3, 4, 5, 7, 10



unit / birim : mm

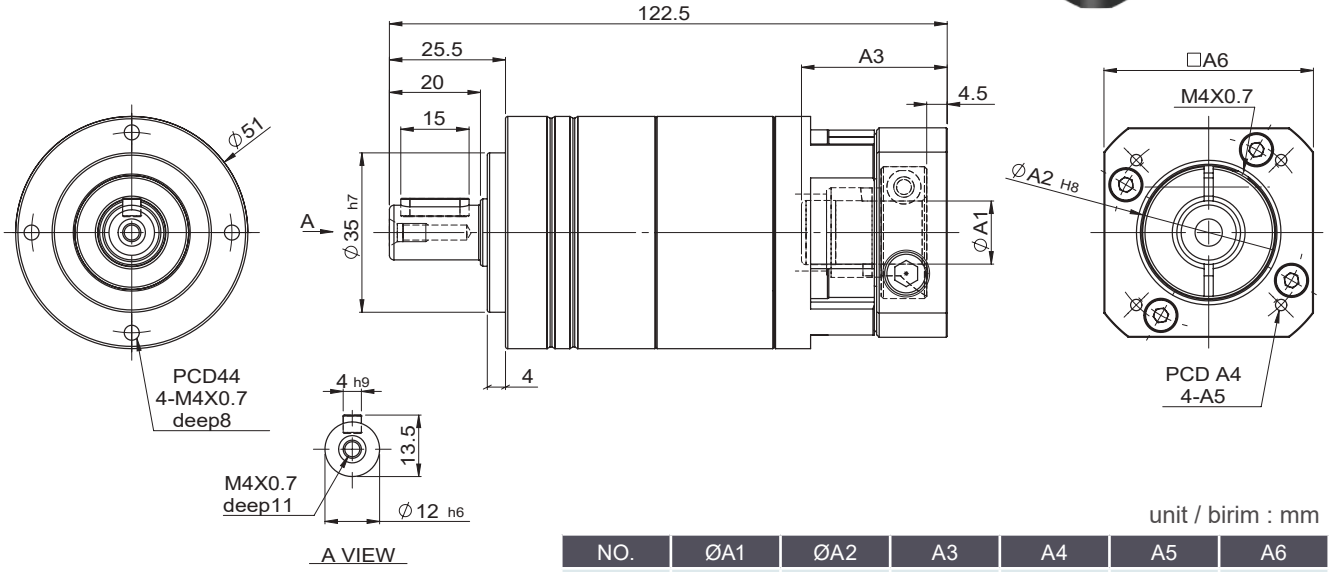
NO.	ØA1	ØA2	A3	A4	A5	A6
1	11 · 14	30	32	45	M3	46
2		30	32	46	M4	46
3		30	32	48.5	M3	55
4		40	32	63	M5	55
5		50	32	70	M5	60

Model No.		Unit/Birim	3	4	5	7	10
Nominal output torque / Nominal Çıkış Torku	$T_{2N}$	Nm	17	15	14	13	12
Max. Acceleration Torque / Max. İvmelenme Torku	$T_{2B}$	Nm	31	27	25	23	22
Mass Moment of Inertia / Atalet Ağırlık Momenti		kg.cm <sup>2</sup>	0.03	0.03	0.03	0.03	0.03
Max. Output Torque / Max. Çıkış Torku	$T_{2NOT}$	Nm	3 Times of Rated Output Torque / 3 x Nominal Çıkış Torku				
Rated Input Speed / Nominal Giriş Devri	$n_{IN}$	rpm	3,000				
Max. Input Speed / Max. Giriş Devri	$n_{1B}$	rpm	5,000				
Torsional Rigidity / Burulma Direnci		Nm/arcmin	3				
Max. Radial Force / Max. Radyal Yük	$F_{2rB}$	N	320				
Max. Axial Force / Max. Aksiyel Yük	$F_{2aB}$	N	160				
Service Life / Hizmet Ömrü	$L_H$	hr	S5 Döngüsel Çalışma: >30,000 (S1 Sürekli Çalışma: >15,000 saat) S5 Cycle Operation: >30,000 (S1 Continuous Operation: >15,000 hrs)				
Efficiency / Verim	$\eta$	%	$\geq 97\%$				
Operating Temperature / Çalışma Sıcaklığı		°C	- 25° C ~ + 90° C				
Lubrication / Yağlama			Synthetic Grease / Sentetik Gres				
Protection Class / Koruma Sınıfı			IP65				
Mounting Position / Montaj Pozisyonu			Any / Her Yönde				
Noise Level / Ses Seviyesi		dB	$\leq 58$ dB				
Weight / Ağırlık $\pm 3\%$		Kg					

# MODEL : SA50

2-Stage / Kademe

RATIO / ÇEVİRİM : 15, 20, 25, 30, 35, 40, 50, 70, 100



unit / birim : mm

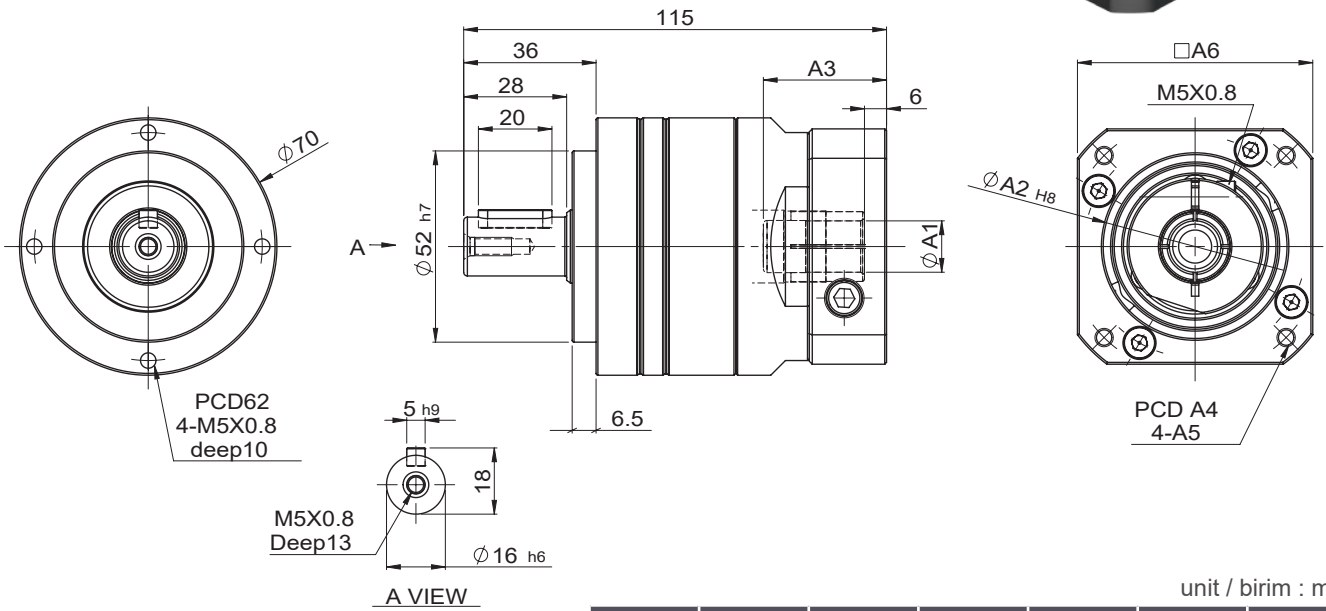
Model No.		Unit/Birim	15	20	25	30	35	40	50	70	100
Nominal output torque / Nominal Çıkış Torku	$T_{2N}$	Nm	17	15	14	13	13	12	14	13	12
Max. Acceleration Torque / Max. İvmelenme Torku	$T_{2B}$	Nm	31	27	25	23	23	22	25	23	22
Mass Moment of Inertia / Aalet Ağırlık Momenti		kg.cm <sup>2</sup>	0.03	0.03	0.03	0.03	0.03	0.03	0.03	0.03	0.03
Max. Output Torque / Max. Çıkış Torku	$T_{2NOT}$	Nm	3 Times of Rated Output Torque / 3 x Nominal Çıkış Torku								
Rated Input Speed / Nominal Giriş Devri	$n_{IN}$	rpm	3,000								
Max. Input Speed / Max. Giriş Devri	$n_{IB}$	rpm	5,000								
Torsional Rigidity / Burulma Direnci		Nm/arcmin	3								
Max. Radial Force / Max. Radyal Yük	$F_{2rB}$	N	320								
Max. Axial Force / Max. Aksiyel Yük	$F_{2aB}$	N	160								
Service Life / Hizmet Ömrü	$L_H$	hr	S5 Döngüsel Çalışma: >30,000 (S1 Sürekli Çalışma: >15,000 saat) S5 Cycle Operation: >30,000 (S1 Continuous Operation: >15,000 hrs)								
Efficiency / Verim	$\eta$	%	$\geq 95\%$								
Operating Temperature / Çalışma Sıcaklığı		°C	- 25° C ~ + 90° C								
Lubrication / Yağlama			Synthetic Grease / Sentetik Gres								
Protection Class / Koruma Sınıfı			IP65								
Mounting Position / Montaj Pozisyonu			Any / Her Yönde								
Noise Level / Ses Seviyesi		dB	$\leq 60$ dB								
Weight / Ağırlık $\pm 3\%$		Kg									

# SERVOBOX

## MODEL : SA70

1-Stage / Kademe

RATIO / ÇEVİRİM : 3, 4, 5, 7, 10



unit / birim : mm

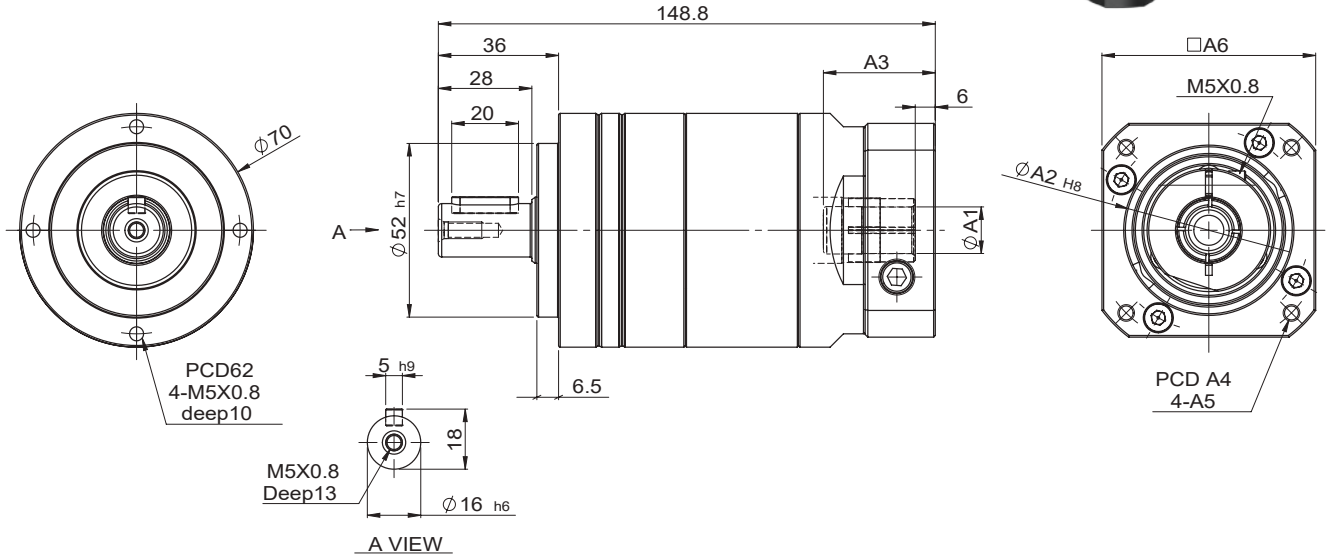
NO.	ØA1	ØA2	A3	A4	A5	A6
1	14 · 19	50	33.5	70	M5	70
2		60	33.5	75	M6	75
3		70	33.5 · 41	90	M6	80

Model No.		Unit/Birim	3	4	5	7	10
Nominal output torque / Nominal Çıkış Torku	$T_{2N}$	Nm	54	48	45	41	40
Max. Acceleration Torque / Max. İvmelenme Torku	$T_{2B}$	Nm	97	86	81	74	72
Mass Moment of Inertia / Aalet Ağırlık Momenti		kg.cm <sup>2</sup>	0.15	0.15	0.13	0.13	0.13
Max. Output Torque / Max. Çıkış Torku	$T_{2NOT}$	Nm	3 Times of Rated Output Torque / 3 x Nominal Çıkış Torku				
Rated Input Speed / Nominal Giriş Devri	$n_{1N}$	rpm	3,000				
Max. Input Speed / Max. Giriş Devri	$n_{1B}$	rpm	5,000				
Torsional Rigidity / Burulma Direnci		Nm/arcmin	3				
Max. Radial Force / Max. Radyal Yük	$F_{2rB}$	N	800				
Max. Axial Force / Max. Aksiyel Yük	$F_{2aB}$	N	400				
Service Life / Hizmet Ömrü	$L_H$	hr	S5 Döngüsel Çalışma: >30,000 (S1 Sürekli Çalışma: >15,000 saat) S5 Cycle Operation: >30,000 (S1 Continuous Operation: >15,000 hrs)				
Efficiency / Verim	$\eta$	%	$\geq 97\%$				
Operating Temperature / Çalışma Sıcaklığı		°C	- 25° C ~ + 90° C				
Lubrication / Yağlama			Synthetic Grease / Sentetik Gres				
Protection Class / Koruma Sınıfı			IP65				
Mounting Position / Montaj Pozisyonu			Any / Her Yönde				
Noise Level / Ses Seviyesi		dB	$\leq 58$ dB				
Weight / Ağırlık $\pm 3\%$		Kg					

# MODEL : SA70

2-Stage / Kademe

RATIO / ÇEVİRİM : 15, 20, 25, 30, 35, 40, 50, 70, 100



unit / birim : mm

NO.	ØA1	ØA2	A3	A4	A5	A6
1	14 · 19	50	33.5	70	M5	70
2		60	33.5	75	M6	75
3		70	33.5 · 41	90	M6	80

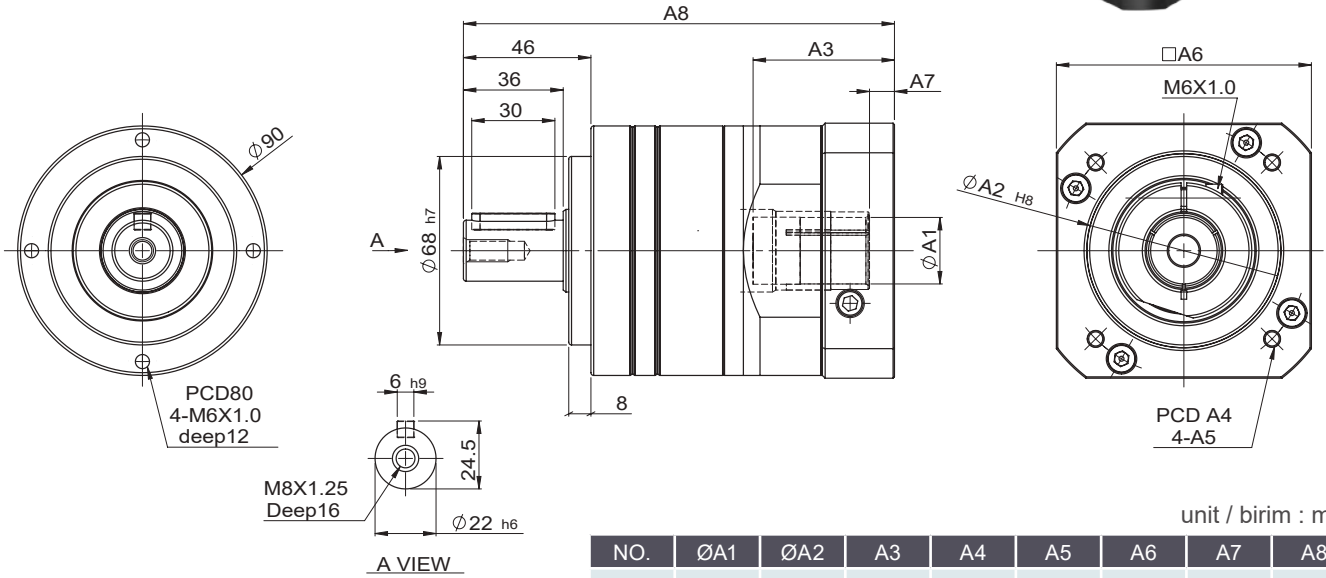
Model No.		Unit/Birim	15	20	25	30	35	40	50	70	100
Nominal output torque / Nominal Çıkış Torqu	$T_{2N}$	Nm	54	48	45	41	41	39	45	41	40
Max. Acceleration Torque / Max. İvmelenme Torqu	$T_{2B}$	Nm	97	86	81	74	74	70	81	74	72
Mass Moment of Inertia / Atalet Ağırlık Momenti		kg.cm <sup>2</sup>	0.13	0.13	0.13	0.13	0.13	0.13	0.13	0.13	0.13
Max. Output Torque / Max. Çıkış Torqu	$T_{2NOT}$	Nm	3 Times of Rated Output Torque / 3 x Nominal Çıkış Torqu								
Rated Input Speed / Nominal Giriş Devri	$n_{1N}$	rpm	3,000								
Max. Input Speed / Max. Giriş Devri	$n_{1B}$	rpm	5,000								
Torsional Rigidity / Burulma Direnci		Nm/arcmin	3								
Max. Radial Force / Max. Radyal Yük	$F_{2rB}$	N	800								
Max. Axial Force / Max. Aksiyel Yük	$F_{2aB}$	N	400								
Service Life / Hizmet Ömrü	$L_H$	hr	S5 Döngüsel Çalışma: >30,000 (S1 Sürekli Çalışma: >15,000 saat) S5 Cycle Operation: >30,000 (S1 Continuous Operation: >15,000 hrs)								
Efficiency / Verim	$\eta$	%	$\geq 95\%$								
Operating Temperature / Çalışma Sıcaklığı		°C	- 25° C ~ + 90° C								
Lubrication / Yağlama			Synthetic Grease / Sentetik Gres								
Protection Class / Koruma Sınıfı			IP65								
Mounting Position / Montaj Pozisyonu			Any / Her Yönde								
Noise Level / Ses Seviyesi		dB	$\leq 60$ dB								
Weight / Ağırlık $\pm 3\%$		Kg									

# SERVOBOX

## MODEL : SA90

1-Stage / Kademe

RATIO / ÇEVİRİM : 4, 5, 7, 10



unit / birim : mm

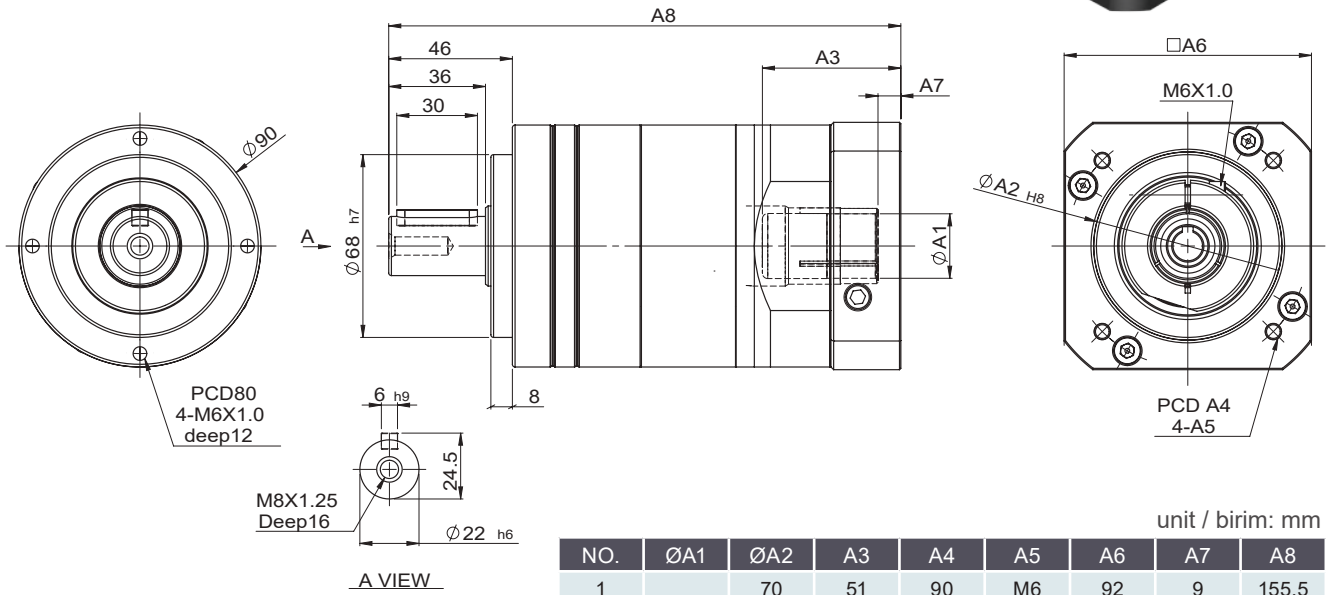
NO.	ØA1	ØA2	A3	A4	A5	A6	A7	A8
1	19-24	70	51	90	M6	92	9	155.5
2		80	51	100	M6	92	9	155.5
3		95	51	115	M6	110	9	155.5
4		95	51	115	M8	110	9	155.5
5		110	51	145	M8	130	9	155.5
6		110	65.5	145	M8	130	23.5	170

Model No.		Unit/Birim	4	5	7	10
Nominal output torque / Nominal Çıkış Torku	$T_{2N}$	Nm	146	155	142	136
Max. Acceleration Torque / Max. İvmelenme Torku	$T_{2B}$	Nm	1.8 Times of Rated Output Torque / 1,8 x Nominal Çıkış Torku			
Mass Moment of Inertia / Aalet Ağırlık Momenti		kg.cm <sup>2</sup>	0.51	0.45	0.42	0.42
Max. Output Torque / Max. Çıkış Torku	$T_{2NOT}$	Nm	3 Times of Rated Output Torque / 3 x Nominal Çıkış Torku			
Rated Input Speed / Nominal Giriş Devri	$n_{1N}$	rpm	3,000			
Max. Input Speed / Max. Giriş Devri	$n_{1B}$	rpm	5,000			
Torsional Rigidity / Burulma Direnci		Nm/arcmin	15			
Max. Radial Force / Max. Radyal Yük	$F_{2rB}$	N	4,150			
Max. Axial Force / Max. Aksiyel Yük	$F_{2aB}$	N	3,780			
Service Life / Hizmet Ömrü	$L_H$	hr	S5 Döngüsel Çalışma: >30,000 (S1 Sürekli Çalışma: >15,000 saat) S5 Cycle Operation: >30,000 (S1 Continuous Operation: >15,000 hrs)			
Efficiency / Verim	$\eta$	%	$\geq 97\%$			
Operating Temperature / Çalışma Sıcaklığı		°C	- 25° C ~ + 90° C			
Lubrication / Yağlama			Synthetic Grease / Sentetik Gres			
Protection Class / Koruma Sınıfı			IP65			
Mounting Position / Montaj Pozisyonu			Any / Her Yönde			
Noise Level / Ses Seviyesi		dB	$\leq 60$ dB			
Weight / Ağırlık $\pm 3\%$		Kg				

# MODEL : SA90

2-Stage / Kademe

RATIO / ÇEVİRİM : 20, 25, 35, 40, 50, 70, 100



NO.	ØA1	ØA2	A3	A4	A5	A6	A7	A8
1	19 - 24	70	51	90	M6	92	9	155.5
2		80	51	100	M6	92	9	155.5
3		95	51	115	M6	110	9	155.5
4		95	51	115	M8	110	9	155.5
5		110	51	145	M8	130	9	155.5
6		110	65.5	145	M8	130	23.5	170

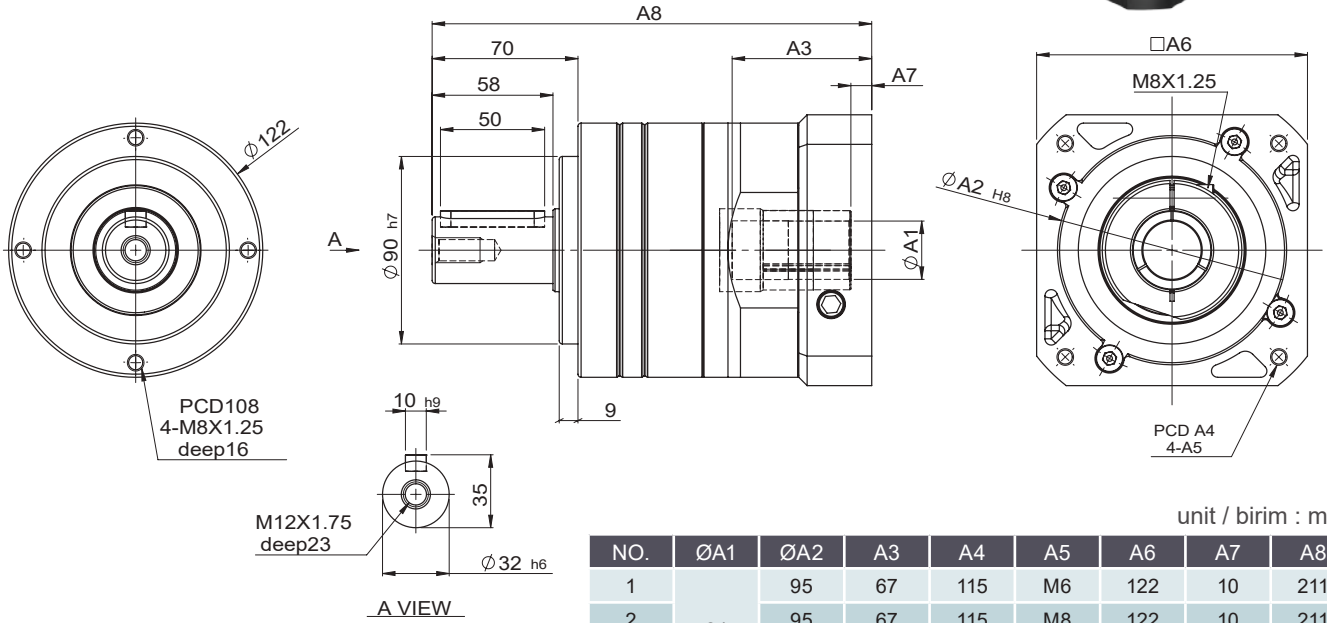
Model No.		Unit/Birim	20	25	35	40	50	70	100
Nominal output torque / Nominal Çıkış Torku	$T_{2N}$	Nm	126	158	128	123	138	128	121
Max. Acceleration Torque / Max. İvmelenme Torku	$T_{2B}$	Nm	1.8 Times of Rated Output Torque / 1,8 x Nominal Çıkış Torku						
Mass Moment of Inertia / Atalet Ağırlık Momenti		kg.cm <sup>2</sup>	0.13	0.13	0.13	0.13	0.13	0.13	0.13
Max. Output Torque / Max. Çıkış Torku	$T_{2NOT}$	Nm	3 Times of Rated Output Torque / 3 x Nominal Çıkış Torku						
Rated Input Speed / Nominal Giriş Devri	$n_{1N}$	rpm	3,000						
Max. Input Speed / Max. Giriş Devri	$n_{1B}$	rpm	6,000						
Torsional Rigidity / Burulma Direnci		Nm/arcmin	15						
Max. Radial Force / Max. Radyal Yük	$F_{2rB}$	N	4,150						
Max. Axial Force / Max. Aksiyel Yük	$F_{2aB}$	N	3,780						
Service Life / Hizmet Ömrü	$L_H$	hr	S5 Döngüsel Çalışma: >30,000 (S1 Sürekli Çalışma: >15,000 saat) S5 Cycle Operation: >30,000 (S1 Continuous Operation: >15,000 hrs)						
Efficiency / Verim	$\eta$	%	$\geq 94\%$						
Operating Temperature / Çalışma Sıcaklığı		°C	- 25° C ~ + 90° C						
Lubrication / Yağlama			Synthetic Grease / Sentetik Gres						
Protection Class / Koruma Sınıfı			IP65						
Mounting Position / Montaj Pozisyonu			Any / Her Yönde						
Noise Level / Ses Seviyesi		dB	$\leq 63$ dB						
Weight / Ağırlık $\pm 3\%$		Kg							

# SERVOBOX

## MODEL : SA120

1-Stage / Kademe

RATIO / ÇEVİRİM : 4, 5, 7, 10



unit / birim : mm

NO.	ØA1	ØA2	A3	A4	A5	A6	A7	A8
1	24 28 32	95	67	115	M6	122	10	211
2		95	67	115	M8	122	10	211
3		110	67	145	M8	130	10	211
4		110	77	145	M8	130	20	221
5		130	67	165	M10	150	10	211

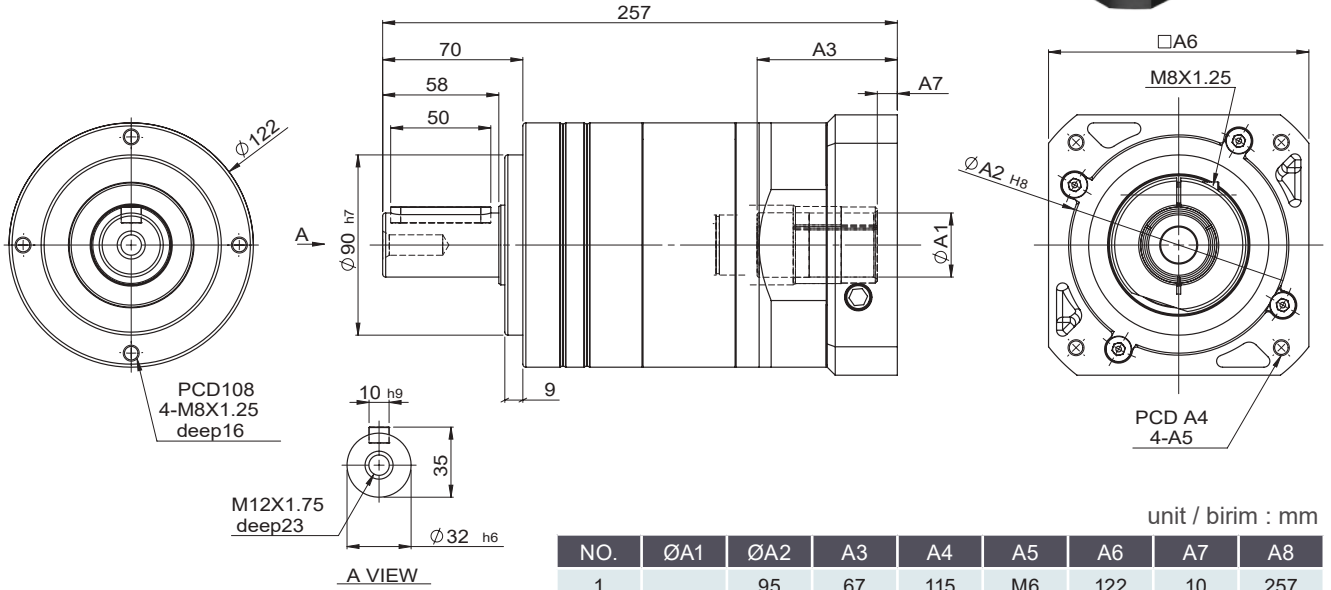
Model No.		Unit/Birim	4	5	7	10
Nominal output torque / Nominal Çıkış Torku	$T_{2N}$	Nm	208	333	309	294
Max. Acceleration Torque / Max. İvmelenme Torku	$T_{2B}$	Nm	1.8 Times of Rated Output Torque / 1,8 x Nominal Çıkış Torku			
Mass Moment of Inertia / Aalet Ağırlık Momenti		kg.cm <sup>2</sup>	2.8	2.71	2.54	2.51
Max. Output Torque / Max. Çıkış Torku	$T_{2NOT}$	Nm	3 Times of Rated Output Torque / 3 x Nominal Çıkış Torku			
Rated Input Speed / Nominal Giriş Devri	$n_{1N}$	rpm	3,000			
Max. Input Speed / Max. Giriş Devri	$n_{1B}$	rpm	6,000			
Torsional Rigidity / Burulma Direnci		Nm/arcmin	27			
Max. Radial Force / Max. Radyal Yük	$F_{2rB}$	N	8,760			
Max. Axial Force / Max. Aksiyel Yük	$F_{2aB}$	N	7,500			
Service Life / Hizmet Ömrü	$L_H$	hr	S5 Döngüsel Çalışma: >30,000 (S1 Sürekli Çalışma: >15,000 saat) S5 Cycle Operation: >30,000 (S1 Continuous Operation: >15,000 hrs)			
Efficiency / Verim	$\eta$	%	$\geq 97\%$			
Operating Temperature / Çalışma Sıcaklığı		°C	- 25° C ~ + 90° C			
Lubrication / Yağlama			Synthetic Grease / Sentetik Gres			
Protection Class / Koruma Sınıfı			IP65			
Mounting Position / Montaj Pozisyonu			Any / Her Yönde			
Noise Level / Ses Seviyesi		dB	$\leq 63$ dB			
Weight / Ağırlık $\pm 3\%$		Kg				



# MODEL : SA120

2-Stage / Kademe

RATIO / ÇEVİRİM : 20, 25, 35, 40, 50, 70, 100



unit / birim : mm

NO.	ØA1	ØA2	A3	A4	A5	A6	A7	A8
1	24 28 32	95	67	115	M6	122	10	257
2		95	67	115	M8	122	10	257
3		110	67	145	M8	130	10	257
4		110	77	145	M8	130	20	267
5		130	67	165	M10	150	10	257

Model No.		Unit/Birim	20	25	35	40	50	70	100
Nominal output torque / Nominal Çıkış Torku	$T_{2N}$	Nm	267	296	275	265	296	275	262
Max. Acceleration Torque / Max. İvmelenme Torku	$T_{2B}$	Nm	1.8 Times of Rated Output Torque / 1,8 x Nominal Çıkış Torku						
Mass Moment of Inertia / Atalet Ağırlık Momenti		kg.cm <sup>2</sup>	0.47	0.47	0.47	0.47	0.44	0.44	0.44
Max. Output Torque / Max. Çıkış Torku	$T_{2NOT}$	Nm	3 Times of Rated Output Torque / 3 x Nominal Çıkış Torku						
Rated Input Speed / Nominal Giriş Devri	$n_{1N}$	rpm	3,000						
Max. Input Speed / Max. Giriş Devri	$n_{1B}$	rpm	5,000						
Torsional Rigidity / Burulma Direnci		Nm/arcmin	27						
Max. Radial Force / Max. Radyal Yük	$F_{2rB}$	N	8,760						
Max. Axial Force / Max. Aksiyel Yük	$F_{2aB}$	N	7,500						
Service Life / Hizmet Ömrü	$L_H$	hr	S5 Döngüsel Çalışma: >30,000 (S1 Sürekli Çalışma: >15,000 saat) S5 Cycle Operation: >30,000 (S1 Continuous Operation: >15,000 hrs)						
Efficiency / Verim	$\eta$	%	$\geq 94\%$						
Operating Temperature / Çalışma Sıcaklığı		°C	- 25° C ~ + 90° C						
Lubrication / Yağlama			Synthetic Grease / Sentetik Gres						
Protection Class / Koruma Sınıfı			IP65						
Mounting Position / Montaj Pozisyonu			Any / Her Yönde						
Noise Level / Ses Seviyesi		dB	$\leq 63$ dB						
Weight / Ağırlık $\pm 3\%$		Kg							

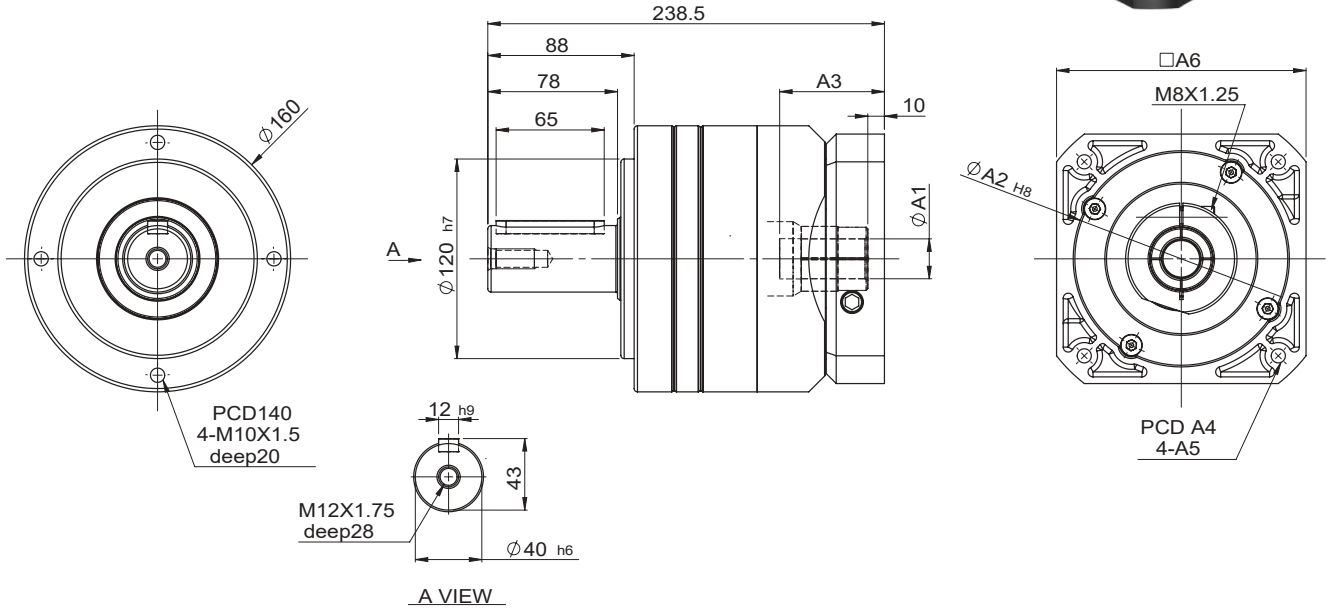


# SERVOBOX

## MODEL : SA160

1-Stage / Kademe

RATIO / ÇEVİRİM : 3, 4, 5, 7, 10



unit / birim : mm

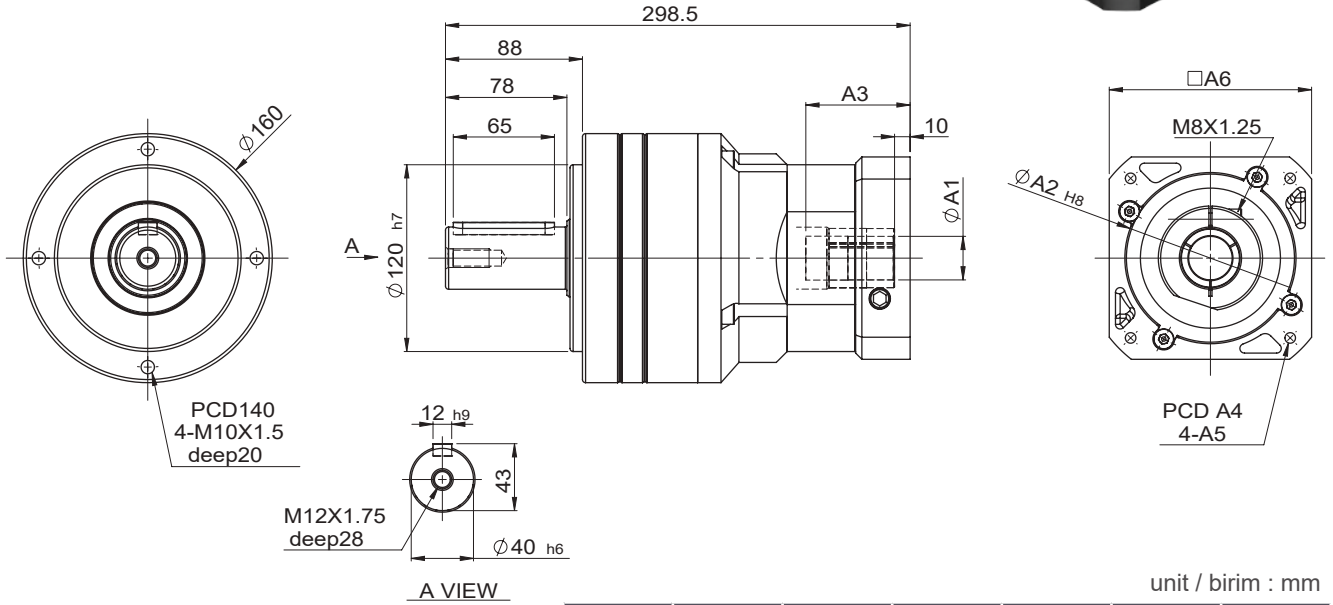
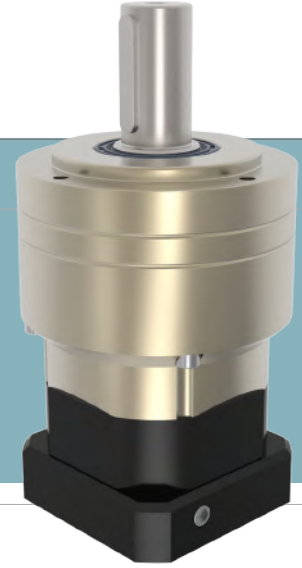
NO.	ØA1	ØA2	A3	A4	A5	A6
1	35	130	63	165	M10	150

Model No.		Unit/Birim	3	4	5	7	10
Nominal output torque / Nominal Çıkış Torku	$T_{2N}$	Nm	625	555	618	573	549
Max. Acceleration Torque / Max. İvmelenme Torku	$T_{2B}$	Nm	1.8 Times of Rated Output Torque / 1,8 x Nominal Çıkış Torku				
Mass Moment of Inertia / Atalet Ağırlık Momenti		kg.cm <sup>2</sup>	9.21	7.54	7.42	7.14	7.03
Max. Output Torque / Max. Çıkış Torku	$T_{2NOT}$	Nm	3 Times of Rated Output Torque / 3 x Nominal Çıkış Torku				
Rated Input Speed / Nominal Giriş Devri	$n_{1N}$	rpm	3,000				
Max. Input Speed / Max. Giriş Devri	$n_{1B}$	rpm	5,000				
Torsional Rigidity / Burulma Direnci		Nm/arcmin	60				
Max. Radial Force / Max. Radyal Yük	$F_{2rB}$	N	9,300				
Max. Axial Force / Max. Aksiyel Yük	$F_{2aB}$	N	4,650				
Service Life / Hizmet Ömrü	$L_H$	hr	S5 Döngüsel Çalışma: >30,000 (S1 Sürekli Çalışma: >15,000 saat) S5 Cycle Operation: >30,000 (S1 Continuous Operation: >15,000 hrs)				
Efficiency / Verim	$\eta$	%	$\geq 97\%$				
Operating Temperature / Çalışma Sıcaklığı		°C	- 25° C ~ + 90° C				
Lubrication / Yağlama			Synthetic Grease / Sentetik Gres				
Protection Class / Koruma Sınıfı			IP65				
Mounting Position / Montaj Pozisyonu			Any / Her Yönde				
Noise Level / Ses Seviyesi		dB	$\leq 65$ dB				
Weight / Ağırlık $\pm 3\%$		Kg					

# MODEL : SA160

2-Stage / Kademe

RATIO / ÇEVİRİM : 15, 20, 25, 30, 35, 40, 50, 70, 100



unit / birim : mm

NO.	ØA1	ØA2	A3	A4	A5	A6
1	35	95	67	115	M6	122
2		110	67	145	M8	130
3		130	67	165	M10	150

Model No.		Unit/Birim	15	20	25	30	35	40	50	70	100
Nominal output torque / Nominal Çıkış Torku	$T_{2N}$	Nm	625	555	618	583	573	553	618	573	549
Max. Acceleration Torque / Max. İvmelenme Torku	$T_{2B}$	Nm	1.8 Times of Rated Output Torque / 1,8 x Nominal Çıkış Torku								
Mass Moment of Inertia / Atalet Ağırlık Momenti		kg.cm <sup>2</sup>	2.63	2.63	2.63	2.43	2.43	2.43	2.43	2.39	2.39
Max. Output Torque / Max. Çıkış Torku	$T_{2NOT}$	Nm	3 Times of Rated Output Torque / 3 x Nominal Çıkış Torku								
Rated Input Speed / Nominal Giriş Devri	$n_{1N}$	rpm	3,000								
Max. Input Speed / Max. Giriş Devri	$n_{1B}$	rpm	5,000								
Torsional Rigidity / Burulma Direnci		Nm/arcmin	60								
Max. Radial Force / Max. Radyal Yük	$F_{2rB}$	N	9,300								
Max. Axial Force / Max. Aksiyel Yük	$F_{2aB}$	N	4,650								
Service Life / Hizmet Ömrü	$L_H$	hr	S5 Döngüsel Çalışma: >30,000 (S1 Sürekli Çalışma: >15,000 saat) S5 Cycle Operation: >30,000 (S1 Continuous Operation: >15,000 hrs)								
Efficiency / Verim	$\eta$	%	$\geq 94\%$								
Operating Temperature / Çalışma Sıcaklığı		°C	- 25° C ~ + 90° C								
Lubrication / Yağlama			Synthetic Grease / Sentetik Gres								
Protection Class / Koruma Sınıfı			IP65								
Mounting Position / Montaj Pozisyonu			Any / Her Yönde								
Noise Level / Ses Seviyesi		dB	$\leq 65$ dB								
Weight / Ağırlık $\pm 3\%$		Kg									