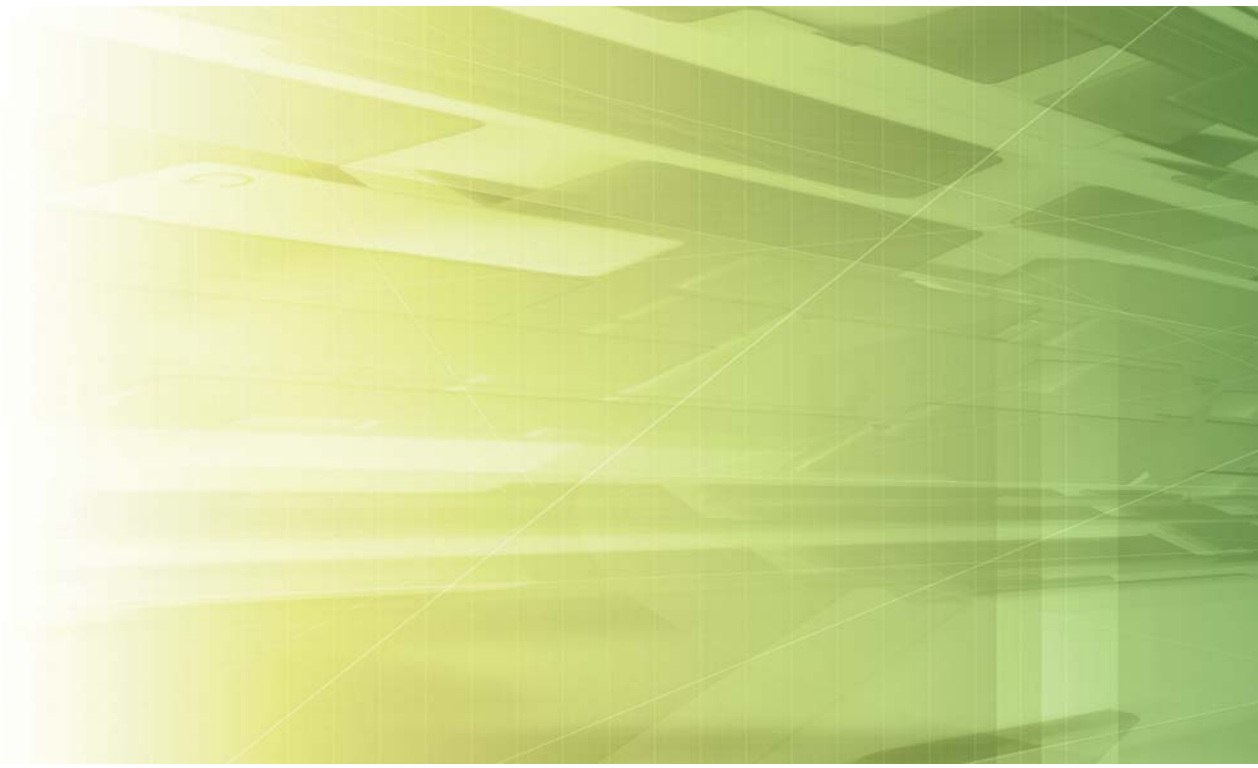
Alpha Double Robot

AD

Ball Screw Series



Characteristics

- Double slide table type
  더블 슬라이더 테이블 타입
- Gantry typed slide configurated in both sdies on Y axis
  갠트리시리즈 슬라이드를 양측에 구성
- Compact and high rigid structure with standardized ball screw of Alpha robotics
  알파로보틱스 표준 Ball screw 직각좌표 로봇 AD series는 컴팩트한 디자인의 고강성 구조
- Excellent positioning repeatability with high speed and high durability
  고속, 고정밀 위치결정 성능이 탁월하며 다양한 제품모델을 갖추고 있음
- Wide-ranging application with various models
  위치정밀도, 동작범위 및 부하에 따른 내구성이 강하며 다양한 응용분야에 대응 가능
- Easy maintenance and high reliability
  유지보수 간편한 구조, 높은 신뢰성 실현
- Positioning repeatability ±0.02mm (Option : ±0.005mm)
  반복위치 정밀도가 ±0.02mm (Option : ±0.005mm)로 고정도 실현
- With dedicated AC servo motor for robot, convenience of maintenance and high realibility guaranteed
  로봇 전용 AC Servo Motor를 채택하여 유지보수의 편리성 및 높은 신뢰성 실현

ORDER INFORMATION

A AD SERIES

AD120	-	S	1	-	500	-	20	N	-	H
1		2	3		4		5	6		7

1 SERIES
2 SHAPE
3 SLIDE TABLE TYPE
4 STROKE (mm)
5 MOTOR RATED OUTPUT
6 BRAKE OPTION
7 SPEED (mm/s)

B Options

I	-	D	LF	B	55	-	W	-	N	-	F00
1		2	3	4	5		6		7		8

1 SENSOR
2 3 4 5 CABLEVEYOR
6 COLOR OF ROBOT
7 SURFACE TREATMENT
8 CABLE LENGTH

ORDER INFORMATION

AD SERIES — ALPHA Double Robot


AD120

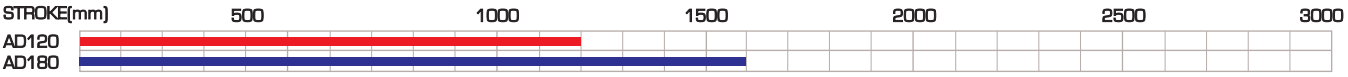

AD180

S  Straight Normal Type

P  Parallel Type

1 Normal Type 

2 Plane Type 



20 200W **40** 400W **75** 750W

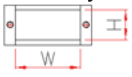
N Without Brake **B** With Brake

L Low Speed Type 250 mm/s **N** Normal Speed Type 500 mm/s **H** High Speed Type 1000 mm/s

I Internal Sensor (Standard) **E** External Sensor

2 Attaching Type
N None **D** Double

4 Cableveyor selection (Hmm × Wmm)



Standard	CPS	B	28×35
Cleanroom	IGUS	F	29×40
	TSUBAKI	J	28×40

5 The radius of curvature (mm)
55 R50 ~ R55

3 Cableveyor direction
LF Left - Front **RF** Right - Front
LR Left - Rear **RR** Right - Rear

* Please see the catalogue A40.3 for more information of cableveyor.

W White (Standard) **B** Black Anodizing

N Surface Treatment (Standard) **R** Raydent Surface Treatment (LM Rail)

Flexible Cable
F00 None **F03** 3m **F05** 5m **F07** 7m **F10** 10m

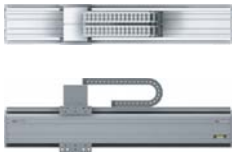
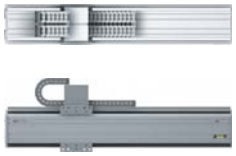
* Please do not hesitate to contact us when the cable is applied more than 10m.

B ORDER INFORMATION - OPTIONS

2 3 4 5 Cableveyor Selecting Options

Series	Applicable Type			
	Horizontal	Wall Hanging	Rear	Double
AD				●

2 3

Applicable Type	Cableveyor Directions			
N None NOTE1	L F Left-Front	R F Right-Front	L R Left-Rear	R R Right-Rear
H Horizontal				
W Wall Hanging				
R Rear				
D Double 				

3

Cableveyor Directions

L F
Cableveyor Mounted Direction
Cable Outlet Direction

Cableveyor Mounted Direction

L Left 

R Right 

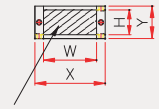
Cable Outlet Direction

F Front

R Rear

4 5 * Cableveyor Selecting

Unit : mm



Wiring space (Pic 10-1)

STANDARD								CLEANROOM													
Selecting Item	Internal dimentions H	Internal dimentions W	External dimentions Y	External dimentions X	Radius R	Capacity (mm²) NOTE2 Origin		Selecting Item	Internal dimentions H	Internal dimentions W	External dimentions Y	External dimentions X	Radius R	Capacity (mm²) NOTE2 Origin	Selecting Item	Internal dimentions H	Internal dimentions W	External dimentions Y	External dimentions X	Radius R	Capacity (mm²) NOTE2 Origin
A	24	47	31	59.5	45	1128		F	29	40	35	59.5	45	1160	J	28	40	35	60	45	1120
B	28	35	35	79.5	55	980		G		60		79.5	55	1740	K		60		80	55	1680
C		55		99.5	75	1540		H		80		99.5	75	2320	L		80		100	75	2240
D		75		119.5	95	2100		I		100		119.5	95	2900	M		100		120	95	2800
E		100		139.5	100	2800		-			-	-	100	-	-			-	-	100	-

CAUTION

*Be sure to install in the direction as specified individually.
*Installation in any other way will cause a failure.
*For requirement of installation in any way other than the above standard installation, please consult Head Office and Agent.

NOTE1 In case that cableveyor is not affixed, it does not need to mark cableveyor specification and instead, just mark 'N'(none).
NOTE2 Please select the floor area ratio by user's using environment, using condition at below 60%

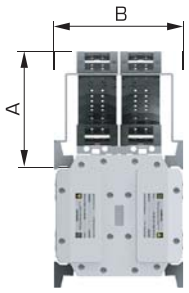
주의

*반드시 개별적으로 지정한 방향으로 설치해 주십시오.
*상기 표준 이외의 방법으로 설치하는 것은 고장의 원인이 됩니다.
*상기 표준 이외의 방법으로 설치할 경우에는 대리점 및 당사에 문의바랍니다.

NOTE1 케이블베어를 장착하지 않을 경우에는 "N"(None)만 표기하고 다른 케이블베어 사양은 표기하지 않습니다.
NOTE2 용적률은 사용자의 용적으로 검토해 주십시오.
용적률은 사용자의 사용환경, 사용조건에 따라 60%이하로 적절히 선정하십시오.

B ORDER INFORMATION

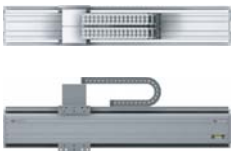
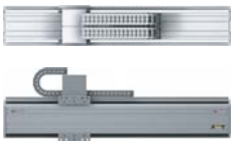
2 D Double Type



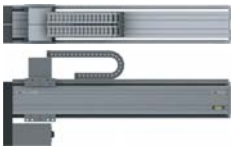
BASE SIZE	CABLEVEYOR		S1		S2	
	Bending radius R	Internal dimentions	A	B	A	B
AD120	R055	35	174	160	174	160
		35	174	160	174	160
AD180	R055	35	174	200	174	200
		35	174	200	174	200

3 NOTE2 Cableveyor Directions

S type

L F Left - Front 	R F Right - Front
L R Left - Rear 	R R Right - Rear

P type

L F Left - Front 	R F Right - Front
L R Left - Rear 	R R Right - Rear

NOTE1 This is a minimum space allowance between Cableveyor and external interference when robot drives.
NOTE2 For the information of Cable veyor of blank, please contact a distributor or our company.

NOTE1 로봇을 구동할 때에 케이블베어와 외부 간섭과의 최소여유치수입니다.
NOTE2 빈칸의 케이블베어 장착은 영업점 및 폐사에 문의 바랍니다.

ALPHA ROBOT SPECIFICATIONS

Product		Rated Output	Ball Screw ※1		Max. Speed ※3		Max. Load (H)					Max. Load (V)				
		w	E.D	Lead		mm/s	50	100	150	200	kg	50	100	150	200	kg
AD SERIES	120	200	ϕ15	10	N	500					50					20
		200	ϕ15	20	H	1000					28					10
		400	ϕ15	10	N	500					50					38
		400	ϕ15	20	H	1000					45					20
	180	400	ϕ20 ※2	10	N	500					70					40
		400	ϕ20 ※2	20	H	1000					25					20
		750	ϕ20 ※2	10	N	500					80					60
		750	ϕ20 ※2	20	H	1000					70					40
		750	ϕ25 ※2	10	N	500					80					60
		750	ϕ25 ※2	20	H	1000					70					40

※1 : Accuracy class of Ball screw is C7 ※2 : Below stroke 800mm, Φ20 applied. Above stroke 800mm, Φ25 applied

PRO GRAM | mm | mm/s | kg

Repeatability	Max. Stroke ※4																									Page no.
mm	100	200	300	400	500	600	700	800	900	1000	1100	1200	1300	1400	1500	1600	1700	1800	1900	2000	2100	2200	2300	2400	2500	mm	
±0.02					500		474	375	304	251	211	180														1200	B41.1 ~ 2
±0.02					1000		948	750	608	503	423	361														1200	B41.1 ~ 2
±0.02					500		474	375	304	251	211	180														1200	B41.1 ~ 2
±0.02					1000		948	750	608	503	423	361														1200	B41.1 ~ 2
±0.02					500			478	391	325	275	235	204													1300	B42.1 ~ 2
±0.02					1000			957	782	651	550	471	408	357	314	279										1600	B42.1 ~ 2
±0.02					500			478	391	325	275	235	204													1300	B42.1 ~ 2
±0.02					1000			957	782	651	550	471	408	357	314	279										1600	B42.1 ~ 2
±0.02					500					424	358	307	266													1300	B42.1 ~ 2
±0.02					1000					848	717	614	532	465	410	364										1600	B42.1 ~ 2

※3 : In case of 1k and 1.5kW, Maximum speed in an operation of 2000min ※4 : Figures of Max.Stroke of bar graph indicate Max.Speed of each stroke

Model | **AD120-S** | AD120-P

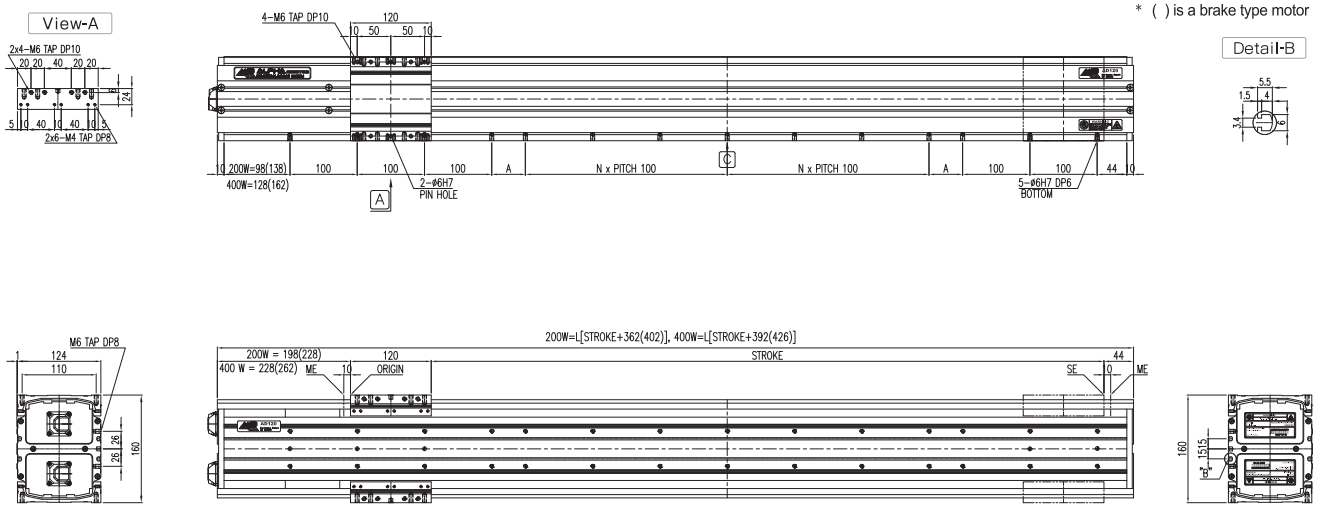
Values of ( ) is in case of speed of 1000mm/sec. / H of Max. Load indicares Horizontal use and V of Max.Load indicates Vertical use.

Specification		Unit	AD120-S1/2-20N/40N	
AD120-S1	AD120-S2			
Rated Output		W	200W, 3000 min^{-1}	400W, 3000 min^{-1}
Max. Speed	Note1	mm/s	500 (1000)	
Max. Load	Note2	kg	H:50 (28) V:20 (10)	H:50 (45) V:38 (20)
Stroke Range		mm	100 ~ 1200	
Repeatability		mm	± 0.02	
Drive Type		-	BALL SCREW	

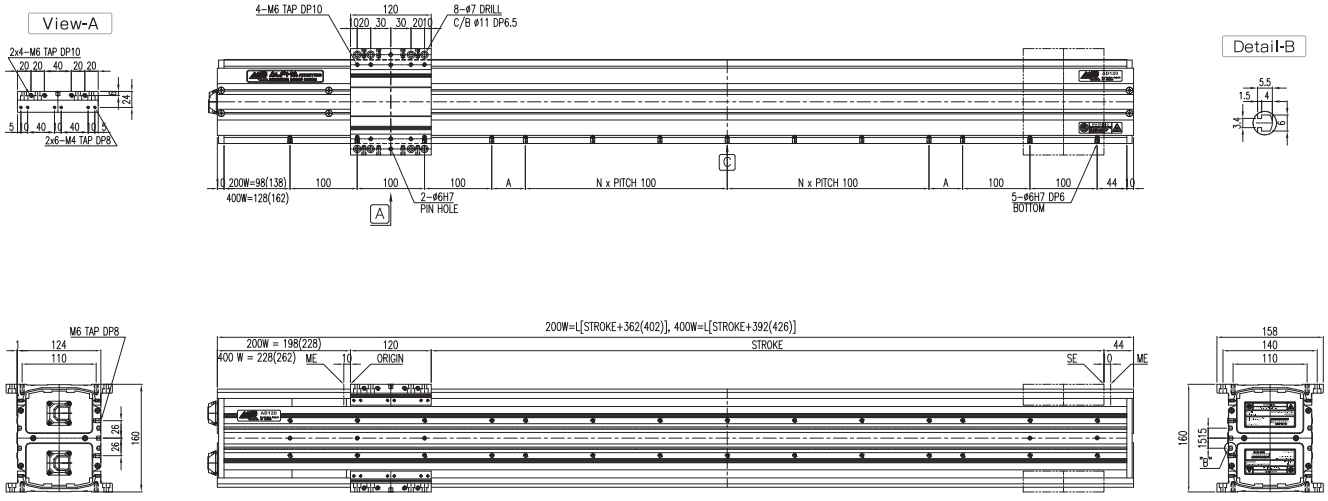
Specification		Unit	Data			
Acceleration		G	0.3			
Load		kg	20	30	40	50
Allowable Overhang Distance - mm	Horizontal Use	0°	700	475	350	273
		45°	700	558	408	320
		90°	700	700	700	700
	Wall Installation Use	0°	700	460	336	263
		45°	481	315	231	182
		90°	700	510	375	295
	Vertical Use	0°	700	490	370	295
		45°	475	319	241	189
		90°	700	490	360	290
Note3	Estimated Condition	Max Speed : 1000 mm/s	Acceleration : 0.3 G (2.94 m/s^2)			
		Life in traveled distance : 30000 km				

AD120-S1

* All dimensions in mm
* ( ) is a brake type motor



AD120-S2



Weight	Model \ Stroke	Units	100	200	300	400	500	600	700	800	900	1000	Offset(100)
	AD120-S-20N	kg	19.8	21.9	24.0	26.1	28.2	30.3	32.4	34.5	36.5	38.6	2.09
	AD120-S-40N	kg	21.6	23.7	25.7	27.8	29.9	32.0	34.1	36.2	38.3	40.4	2.09
Speed	Model \ Stroke	Units	100	200	300	400	500	600	700	800	900	1000	Offset(100)
	AD120-S-N	mm/s	500						474	375	304	251	Note4
	AD120-S-H	mm/s	1000						948	750	608	503	Note4

⚠ CAUTION

Please be careful of surrounding interference when it is returning to origin because of the slide moves to ME. ·ME : Mechanical End ·SE : Stroke End
Standard stroke changes by 50mm distance, and values of "A" change by 25, 50, 75, 100

NOTE1 In case of the short stroke, it may not be reached at maximum speed.
NOTE2 It is changed by operating conditions.
NOTE3 In case of use of products beyond allowable overhang value, it may result in malfunction of products.
NOTE4 Regarding speed of over 1,000 stroke products which are not listed on the table, please refer the Specification(40.5page).

Model | AD120-S | **AD120-P**

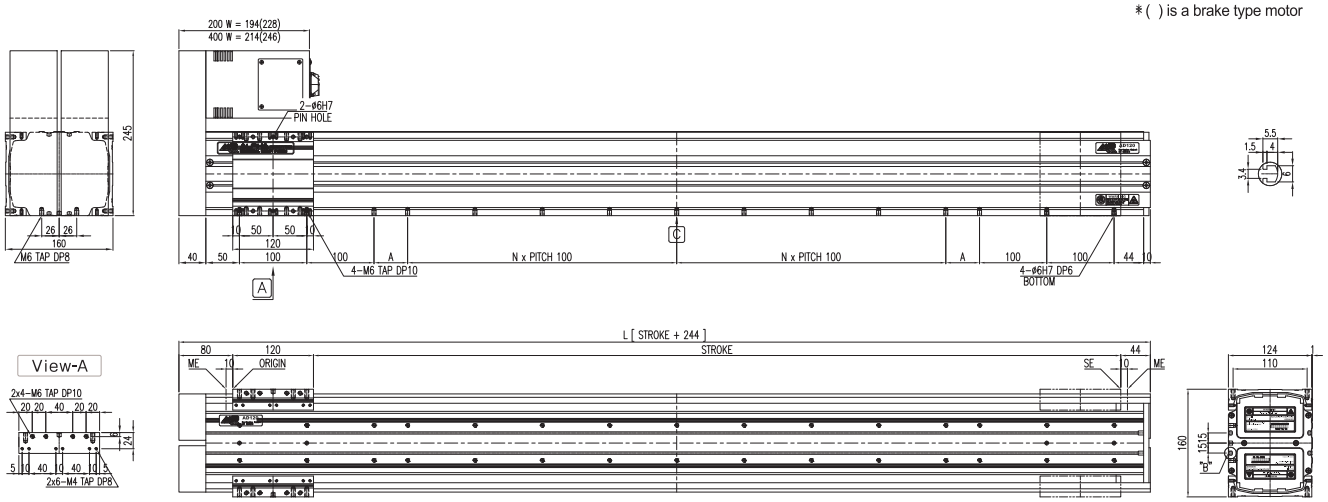
Values of ( ) is in case of speed of 1000mm/sec. / H of Max. Load indicares Horizontal use and V of Max.Load indicates Vertical use.

Specification		Unit	AD120-P1/2-20N/40N	
AD120-P1 			AD120-P2 	
Rated Output		W	200W, 3000 min^{-1}	400W, 3000 min^{-1}
Max. Speed	Note1	mm/s	500 (1000)	
Max. Load	Note2	kg	H:50 (28) V:20 (10)	H:50 (45) V:38 (20)
Stroke Range		mm	100 ~ 1200	
Repeatability		mm	± 0.02	
Drive Type		-	BALL SCREW	

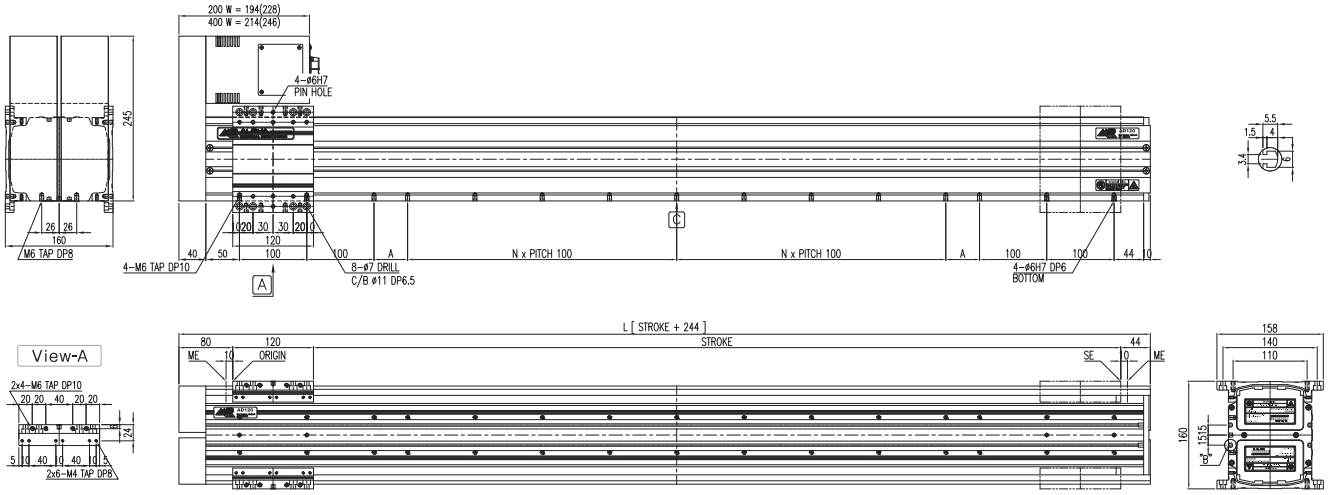
Specification			Unit	Data			
Acceleration			G	0.3			
Load			kg	20	30	40	50
Allowable Overhang Distance - mm	Horizontal Use 	0°		700	475	350	273
		45°		700	558	408	320
		90°		700	700	700	700
	Wall Installation Use 	0°		700	460	336	263
		45°		481	315	231	182
		90°		700	510	375	295
	Vertical Use 	0°		700	490	370	295
		45°		475	319	241	189
		90°		700	490	360	290
Note3	Estimated Condition			Max Speed : 1000 mm/s		Acceleration : 0.3 G (2.94 m/s^2)	
				Life in traveled distance : 30000 km			

AD120-P1

* All dimensions in mm
* ( ) is a brake type motor



AD120-P2



	Model \ Stroke	Units	100	200	300	400	500	600	700	800	900	1000	Offset(100)
Weight	AD120-P-20N	kg	17.5	19.6	21.7	23.8	25.9	28.0	30.1	32.1	34.2	36.3	2.09
	AD120-P-40N	kg	18.6	20.7	22.8	24.9	27.0	29.1	31.2	33.2	35.3	37.4	2.09
Speed	Model \ Stroke	Units	100	200	300	400	500	600	700	800	900	1000	Offset(100)
	AD120-P-N	mm/s	500						474	375	304	251	Note4
	AD120-P-H	mm/s	1000						948	750	608	503	Note4

⚠ CAUTION

Please be careful of surrounding interference when it is returning to origin because of the slide moves to ME. ·ME : Mechanical End ·SE : Stroke End
Standard stroke changes by 50mm distance, and values of "A" change by 25, 50, 75, 100

NOTE1 In case of the short stroke, it may not be reached at maximum speed.
NOTE2 It is changed by operating conditions.
NOTE3 In case of use of products beyond allowable overhang value, it may result in malfunction of products.
NOTE4 Regarding speed of over 1,000 stroke products which are not listed on the table, please refer the Specification(40.5page).

Model | **AD180-S** | AD180-P

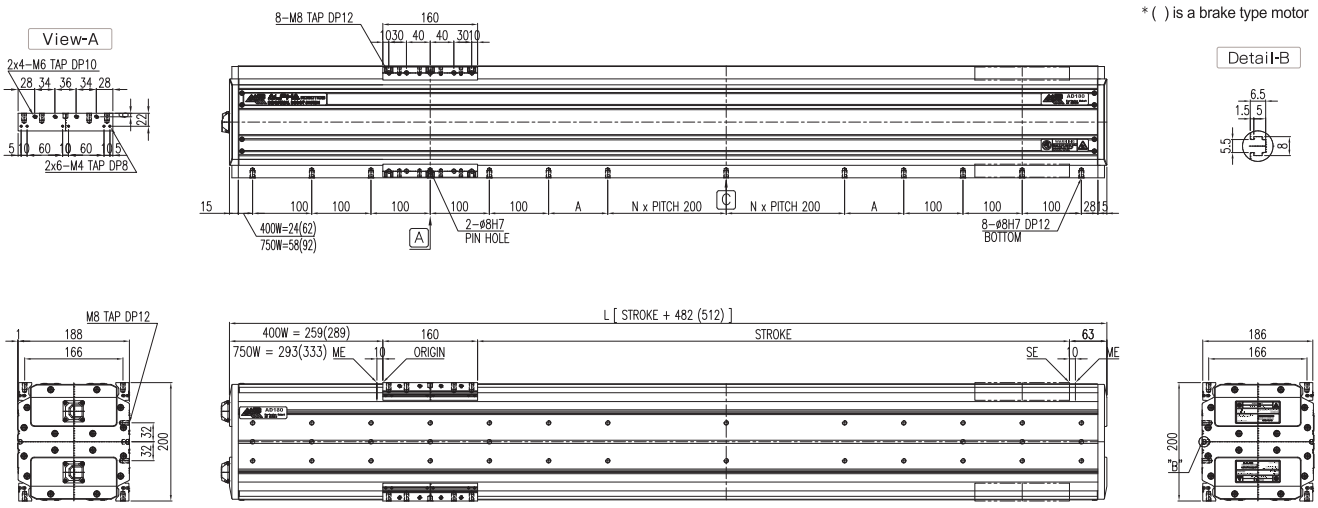
Values of ( ) is in case of speed of 1000mm/sec. / H of Max. Load indicares Horizontal use and V of Max.Load indicates Vertical use.

Specification		Unit	AD180-S1/2-40N/75N	
AD180-S1			AD180-S2	
Rated Output		W	400W, 3000 min^{-1}	750W, 3000 min^{-1}
Max. Speed	Note1	mm/s	500 (1000)	
Max. Load	Note2	kg	H:70 (25) V:40 (20)	H:80 (70) V:60 (40)
Stroke Range		mm	100 ~ 1300 (1600)	
Repeatability		mm	± 0.02	
Drive Type		-	BALL SCREW	

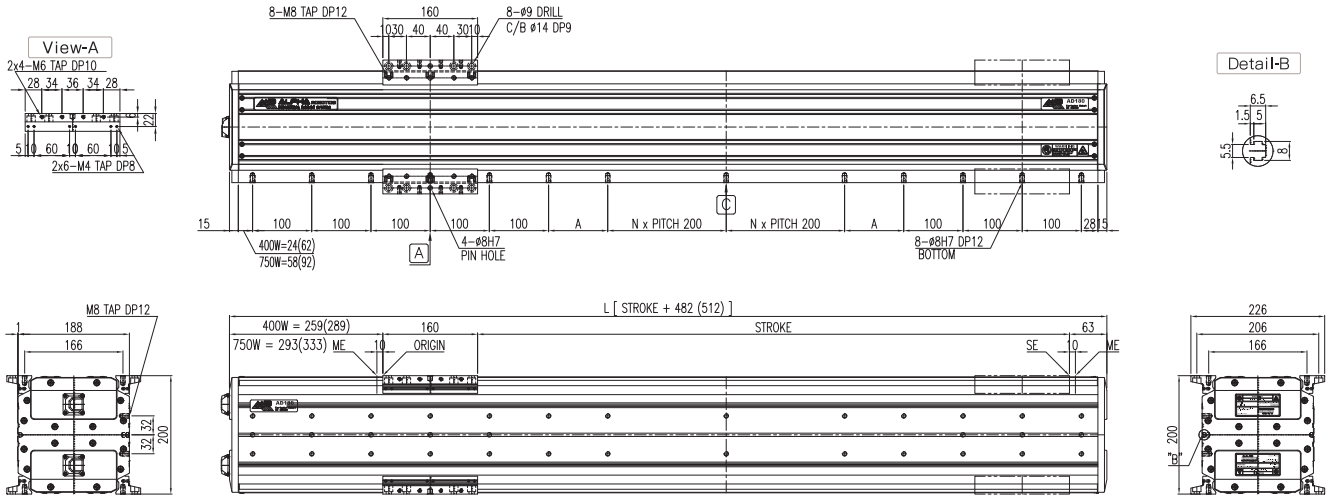
Specification		Unit	Data			
Acceleration		G	0.3			
Load		kg	20	40	60	80
Allowable Overhang Distance - mm	Horizontal Use	0°	850	850	560	405
		45°	850	850	660	476
		90°	850	850	850	850
	Wall Installation Use	0°	850	635	410	296
		45°	850	494	319	231
		90°	850	850	605	440
	Vertical Use	0°	850	680	455	340
		45°	850	442	286	221
		90°	850	680	450	340
Note3	Estimated Condition		Max Speed : 1000 mm/s		Acceleration : 0.3 G (2.94 m/s^2)	
			Life in traveled distance : 30000 km			

AD180-S1

* All dimensions in mm
* ( ) is a brake type motor



AD180-S2



Weight	Model \ Stroke	Units	100	200	300	400	500	600	700	800	900	1000	Offset(100)
	AD180-S-40N	kg	41.3	45.6	49.8	54.1	58.3	62.6	66.8	71.1	75.3	79.6	4.25
	AD180-S-75N	kg	45.5	49.8	54.0	58.3	62.5	66.8	71.0	75.3	79.5	83.8	4.25

Speed	Model \ Stroke	Units	100	200	300	400	500	600	700	800	900	1000	Offset(100)
	AD180-S-N	mm/s	500							478	391	325	Note4
	AD180-S-H	mm/s	1000							957	782	651	Note4

⚠ CAUTION

Please be careful of surrounding interference when it is returning to origin because of the slide moves to ME. :ME : Mechanical End :SE : Stroke End
Standard stroke changes by 50mm distance, and values of "A" change by 225,50,75,100,125,150,175,200

NOTE1 In case of the short stroke, it may not be reached at maximum speed.
NOTE2 It is changed by operating conditions.
NOTE3 In case of use of products beyond allowable overhang value, it may result in malfunction of products.
NOTE4 Regarding speed of over 1,000 stroke products which are not listed on the table, please refer the Specification (40.5page). The speed on the table is for diameter 20 of Ball Screw and please refer the Specification(40.5page) for diameter 25 of Ball Screw.

Model	AD180-S	AD180-P

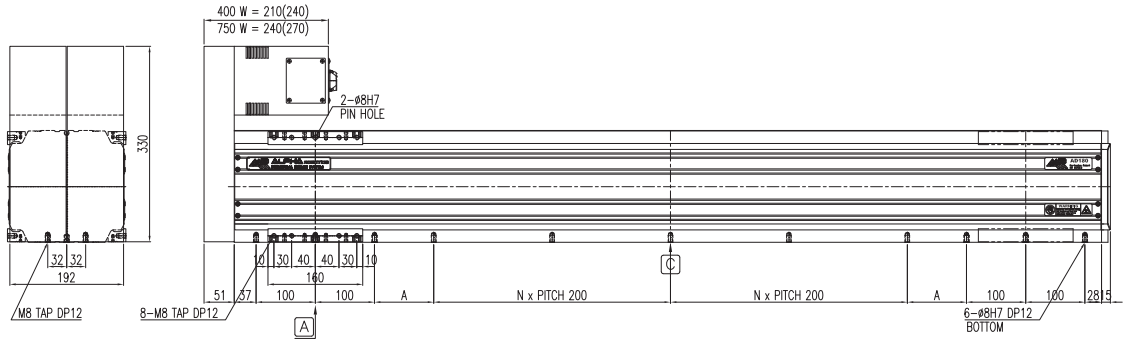
Values of ( ) is in case of speed of 1000mm/sec. / H of Max. Load indicares Horizontal use and V of Max.Load indicates Vertical use.

Specification	Unit	AD180-P1/2-40N/75N	
AD180-P1 		AD180-P2 	
Rated Output	W	400W, 3000 min^{-1}	750W, 3000 min^{-1}
Max. Speed Note1	mm/s	500 (1000)	
Max. Load Note2	kg	H:70 (25) V:40 (20)	H:80 (70) V:60 (40)
Stroke Range	mm	100 ~ 1300 (1600)	
Repeatability	mm	± 0.02	
Drive Type	-	BALL SCREW	

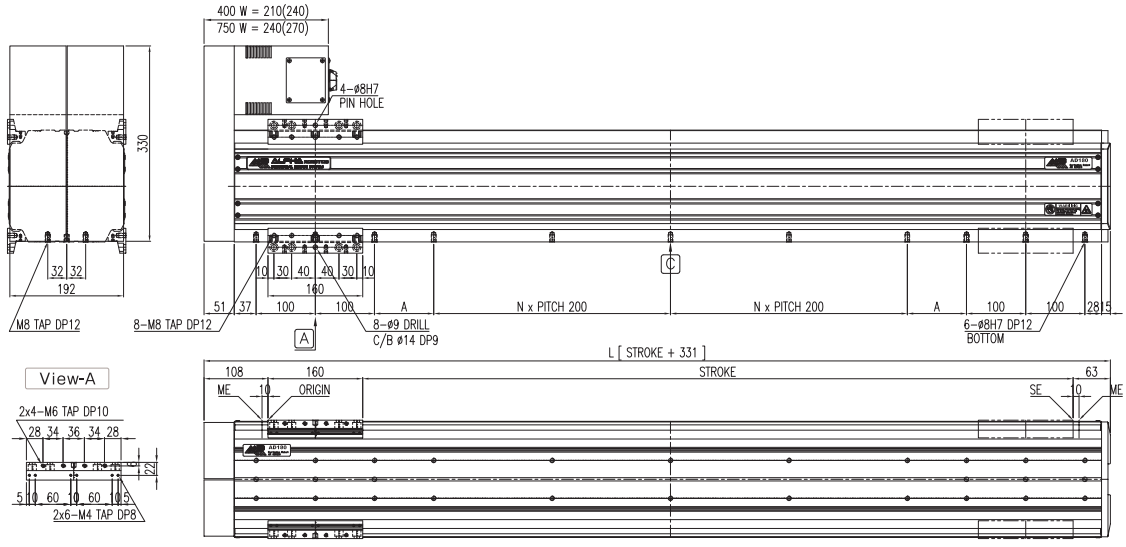
Specification		Unit	Data			
Acceleration		G	0.3			
Load		kg	20	40	60	80
Allowable Overhang Distance - mm	Horizontal Use 	0°	850	850	560	405
		45°	850	850	660	476
		90°	850	850	850	850
	Wall Installation Use 	0°	850	635	410	296
		45°	850	494	319	231
		90°	850	850	605	440
	Vertical Use 	0°	850	680	455	340
		45°	850	442	286	221
		90°	850	680	450	340
Note3	Estimated Condition	Max Speed : 1000 mm/s	Acceleration : 0.3 G (2.94 m/s^2)			
		Life in traveled distance : 30000 km				

AD180-P1

* All dimensions in mm
* Brake Motor dimension



AD180-P2



	Model \ Stroke	Units	100	200	300	400	500	600	700	800	900	1000	Offset(100)
Weight	AD180-P-40N	kg	33.7	38.0	42.2	46.5	50.7	55.0	59.2	63.5	67.7	72.0	4.25
	AD180-P-75N	kg	36.6	40.9	45.1	49.4	53.6	57.9	62.1	66.4	70.6	74.9	4.25
Speed	AD180-P-N	mm/s	500							478	391	325	Note4
	AD180-P-H	mm/s	1000							957	782	651	Note4

⚠ CAUTION

Please be careful of surrounding interference when it is returning to origin because of the slide moves to ME. :ME : Mechanical End :SE : Stroke End
Standard stroke changes by 50mm distance, and values of "A" change by 225,50,75,100,125,150,175,200

NOTE1 In case of the short stroke, it may not be reached at maximum speed.
NOTE2 It is changed by operating conditions.
NOTE3 In case of use of products beyond allowable overhang value, it may result in malfunction of products.
NOTE4 Regarding speed of over 1,000 stroke products which are not listed on the table, please refer the Specification (40.5page). The speed on the table is for diameter 20 of Ball Screw and please refer the Specification(40.5page) for diameter 25 of Ball Screw.