

Stand-alone Belt-type Stepless Speed Changer

AP

Standard applied motor output	0.2 kW to 1.5 kW (4-pole)
Speed change ratio	Approx. 1:2
External pulley diameter	86 mm to 164 mm

Speed Change without Changing the Distance between Shafts



- Using a Standard V-Belt
- An Adapter Facilitates Mounting
- Speed Can Be Changed without Changing the Distance between Shafts
- AP Is Used in Combination with P

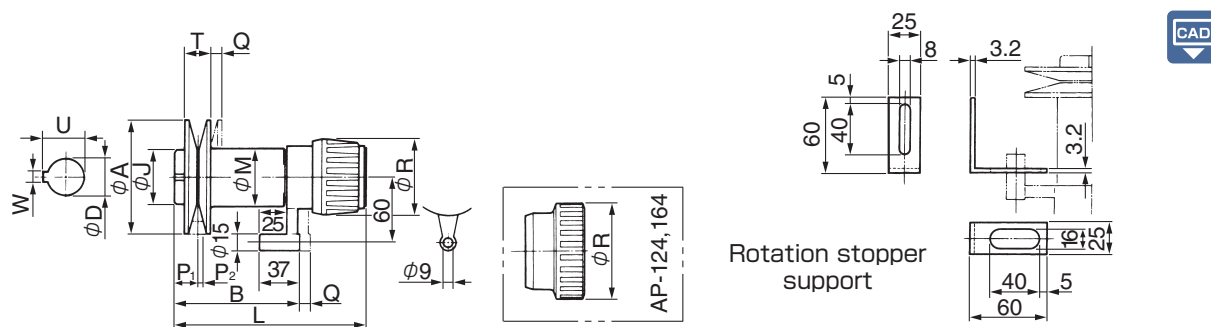
Specifications

Model	Motor in use	Driven side speed changer	Belt	Speed change ratio	50Hz		60Hz	
					Output rotation speed [min ⁻¹]	Output torque [N · m]	Output rotation speed [min ⁻¹]	Output torque [N · m]
AP - 86-MA	0.2 kW4P	P-86-MA	A	1:2.2	950 ~ 2150	1.6 ~ 0.7	1140 ~ 2590	1.4 ~ 0.6
	0.2 kW4P	P-98-MA	A	1:2	820 ~ 1720	1.9 ~ 0.9	990 ~ 2060	1.6 ~ 0.8
AP - 98-MA	0.4 kW4P	P-98-MA	A	1:2	1000 ~ 2050	3.1 ~ 1.5	1200 ~ 2460	2.6 ~ 1.3
	0.4 kW4P	P-124-MA	A	1:1.9	890 ~ 1710	3.5 ~ 1.8	1070 ~ 2060	2.9 ~ 1.5
AP-124-MA	0.75kW4P	P-124-MA	B	1:2.2	950 ~ 2150	6.1 ~ 2.7	1140 ~ 2590	5.1 ~ 2.3
	0.75kW4P	P-164-MA	B	1:2	810 ~ 1660	7.2 ~ 3.5	970 ~ 2000	6.0 ~ 2.9
AP-164-MA	1.5 kW4P	P-164-MA	C	1:2.4	920 ~ 2230	12.7 ~ 5.2	1110 ~ 2680	10.5 ~ 4.4
	1.5 kW4P	P-218	C	1:2	680 ~ 1360	17.2 ~ 8.6	810 ~ 1640	14.4 ~ 7.1

Belt Number and Distance between Shafts

Model	Driven side speed changer	Belt number	Belt number	Belt number	Belt number	Belt number	Belt number
		Distance between shafts [mm]	Distance between shafts [mm]	Distance between shafts [mm]	Distance between shafts [mm]	Distance between shafts [mm]	Distance between shafts [mm]
AP-86-MA	P-86-MA	A-20	A-21	A-22	A-23	A-24	A-25
		153	165	179	191	204	216
AP-86-MA	P-98-MA	A-20	A-21	A-22	A-23	A-24	A-25
		143	155	169	181	194	206
AP-98-MA	P-98-MA	A-21	A-22	A-23	A-24	A-25	A-26
		147	160	172	186	198	211
AP-98-MA	P-124-MA	A-23	A-24	A-25	A-26	A-27	A-28
		163	177	189	202	215	227
AP-124-MA	P-124-MA	B-25	B-26	B-27	B-28	B-29	B-30
		168	181	194	206	220	232
AP-124-MA	P-164-MA	B-28	B-29	B-30	B-31	B-32	B-33
		190	203	216	228	241	254
AP-164-MA	P-164-MA	C-32	C-33	C-34	C-35	C-36	C-37
		211	224	237	249	262	275
AP-164-MA	P-218	C-38	C-39	C-40	C-41	C-42	C-43
		241	254	267	279	293	305

Dimensions



(4-pole motor, 50 Hz 1430 min⁻¹, 60 Hz 1720 min⁻¹)

Unit [mm]

Model	A	B	J	L	M	P ₁	P ₂	Q	R	T	D	W	U	max. P.D.	min. P.D.	Mass [kg]
AP-86-MA	86	93	46	156	54	18	3.5	7	70	18	11	—	—	77	51	1.7
AP-98-MA	98	103	50	166	54	19	3.5	7	70	20	14	5	16	89	62	1.9
AP-124-MA	124	126	68	196	62	22	5	10	88	24	19	6	21.5	113	75	3.2
AP-164-MA	164	137	68	211	66	25	7	14.5	88	30	24	8	27	150	96	4.8

* Use 1800 min⁻¹ or less for the input rotation speed. (The 4-pole motor drive is appropriate)

Model	Bore depth [mm]	Supported shaft diameters (adapter bore) ϕ D [mm]													
		10	11	12	13	14	15	16	18	19	20	22	24	25	
AP - 86-MA	30	⊙	⊙	⊙	⊙	⊙	⊙	⊙							
AP - 98-MA	40		⊙	⊙	⊙	●	●	●	●	●					
AP-124-MA	50					●	●	●	●	●	●	●	●	●	
AP-164-MA	50					●	●	●	●	●	●	○	○	○	

* Bore diameters marked with symbols above are available. ●, ⊙, and ○ indicate adapter type, and ▲ indicate straight type.

* Adapters indicated as ⊙ do not have a keyway. Before using with a shaft having a key, first remove the key.

* ○ indicates model that includes an L key, since adapter specifications prevent a parallel key from fitting. Use this L key when mounting.

* Bore diameters for the L key distinguish between the old JIS and new JIS codes. Specify when ordering.

How to Place an Order

AP-86-MA-11

Size — Bore diameter

How to Mount to the Motor Shaft

Adapter method

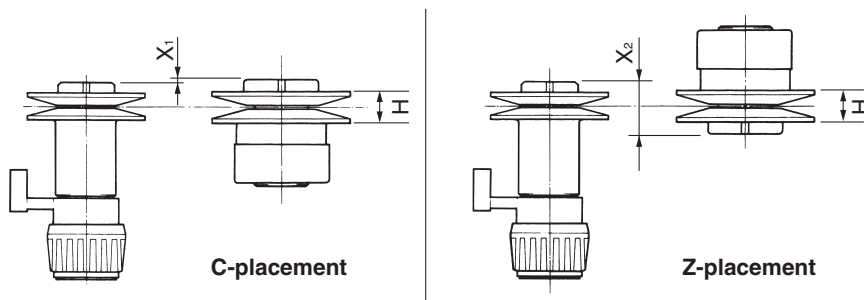
Models using the adapter method use a tapered sleeve (adapter) for mounting the device to motors or other shafts in order to avoid subjecting the speed changer to shock.

Insert the adapter into the tapered hole of the inner wheel and tighten the nut (P nut) to push the adapter in to secure it to the shaft with a wedge effect.

Follow the following procedure to mount the device to the motor shaft.

- ① Insert the P nut.
- ② Attach the adapter.
- ③ If the key sticks out higher than the adapter, file it down. If the key is too wide and the adapter fitting too tight, file the key down so that the fit is looser.
- ④ Attach the speed changer and then tighten the P nut. If the speed changer wiggles, repeat the above steps to center it.
- ⑤ Tighten the locking screw of the P nut.

Placement



The belt travel lines X are shown as below.

Combination	AP-86-MA P-86-MA	AP-86-MA P-98-MA	AP-98-MA P-98-MA	AP-98-MA P-124-MA	AP-124-MA P-124-MA	AP-124-MA P-164-MA	AP-164-MA P-164-MA	AP-164-MA P-218
H	25	24.5	25	31	34	39.5	44	42.5
C-placement X ₁	0	1	0	3	0	3	0	1.5
Z-placement X ₂	39.5	40.5	41.5	44.5	49	52	57	58.5

COUPLINGS

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CHANGERS AND
REDUCERS

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STEPLESS SPEED
CHANGER
UNITS

STAND-ALONE
BELT-TYPE
STEPLESS SPEED
CHANGERS

ZERO-MAX
(STEPLESS SPEED
CHANGERS)

DC MOTORS

ROTATION SPEED
INDICATORS

MODELS

P
AP
PL
PK
PF
R/RK/RH
L
U
T

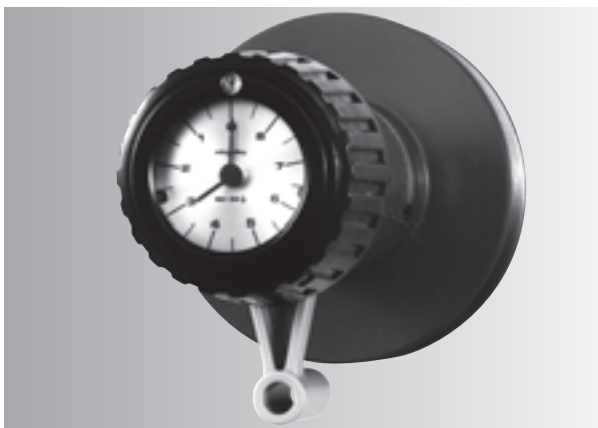
AP Models

Items Checked for Design Purposes

1. Use the AP model on the drive (motor) side and the P model on the driven side.
2. Use 900 to 1800 min⁻¹ for the input rotation speed range.
3. Before mounting the AP model, be sure to lock the rotation stopper rod part of the AP model with the included rotation stopper support.
If the included rotation stopper support cannot be used, secure the rotation stopper so that it can be slid effortlessly.
4. Avoid a humid or dusty place, a place where the ambient temperature is high, a place exposed to water or oil, and a place where corrosive and flammable gases are present in the atmosphere, and select a well-ventilated place. Mount the device in a location that provides easy access for inspection. The operating ambient temperature range is -10°C to 40°C.
5. Securely mount the device to the shaft. When mounting the device to the machine, provide the rotating part with a cover.
6. Do not turn the handle when the speed changer is stopped.
7. If you will use the device for a machine where normal-reverse operation is performed, or a repeated or impact load is imposed, please consult with us.

Options

Handle with Turn Indicator



A rotation speed indicator (SD model) can be mounted in the standard handle part.

Model	Number of handle turns	SD model
AP-86 -MA- □ -SD	3.5	SD-53B-5L
AP-98 -MA- □ -SD	3.5	
AP-124-MA- □ -SD	5	SD-75B-9L
AP-164-MA- □ -SD	7	