

# ACW Series



Direct drive,  
brushless motor



fully integrated with  
encoder and bearing



Low cogging torque



Precise homing  
through index pulse



Large centre hole



Low profile

# ACW

## Specifications

ACW Specifications		ACW120	ACW170	ACW220
Model	Units			
Table diameter	mm	120	170	220
Table height	mm	37	37	42
Number of poles		16	16	16
Continuous torque	Nm	0.6	3.4	10.3
Peak torque	Nm	2.1	11.9	35.9
Cogging torque	Nm	0	0	0
Torque constant	Nm/Arms	0.12	0.68	2.05
Back EMF constant	Vpeak/rpm	0.015	0.082	0.248
Continuous current	Arms	5.0	5.0	5.0
Peak current	Arms	17.5	17.5	17.5
Continuous thermal power	W	35.8	69.0	126.5
Peak thermal power	W	437.9	845.3	1549.6
Max bus voltage	Vdc	330.0	330.0	330.0
Resistance <sup>①</sup>	ohms	1.43	2.76	5.06
Inductance <sup>①</sup>	mH	0.47	1.65	4.72
Motor constant	Nm/Sqrt(W)	0.10	0.41	0.91
Mass	kg	2.0	3.7	7.0
Rotor Inertia	kg·m <sup>2</sup>	0.000658	0.002020	0.008354
Rec. max speed @230V AC <sup>③</sup> (DIGITAL/SINCOS)	rpm	400	350	300
AB optical SINCOS encoder	Lines/rev	3934	5560	7500
DIGITAL Resolution (at 64 X interpolation)	Counts/rev	251776	355840	480000
SINCOS Resolution (at 512 X interpolation)	Counts/rev	2,014,208	2,846,720	3,840,000
SINCOS Resolution (at 4096 X interpolation)	Counts/rev	16,113,664	22,773,760	30,720,000
Accuracy	arc sec	+/- 30	+/- 30	+/- 30
Repeatability	arc sec	+/- 3	+/- 3	+/- 3
Radial runout @ Max speed	um	15	18	18
Radial runout @ 120rpm	um	(10,5) <sup>②</sup>	(10,5) <sup>②</sup>	(10,5) <sup>②</sup>
Axial runout @ Max speed	um	15	18	18
Axial runout @ 120rpm	um	(10,5) <sup>②</sup>	(10,5) <sup>②</sup>	(10,5) <sup>②</sup>
Axial load rating	N	150.0	230.0	300.0
Moment load rating	Nm	14.7	31.7	55.2

① Optional runout

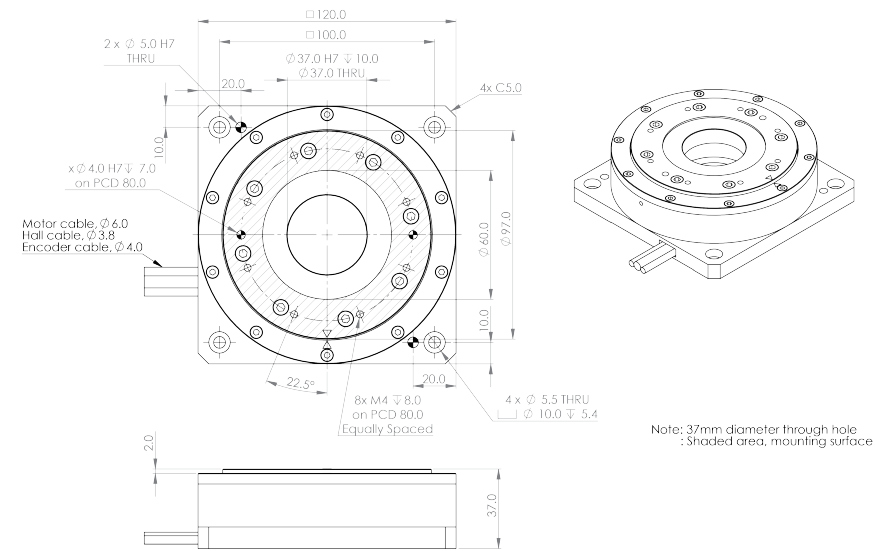
② Terminal to terminal, at 25 Deg C

③ Max speed applicable to standard radial and axial runout

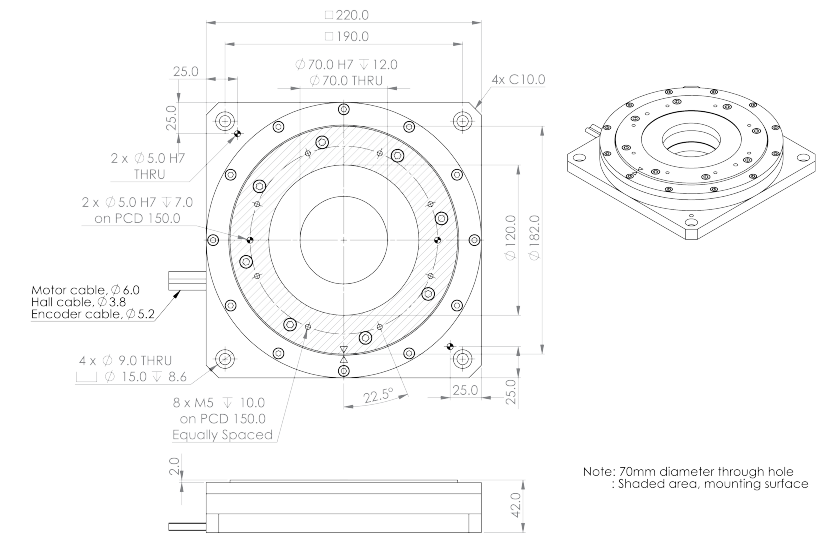
# ACW

## Dimensions

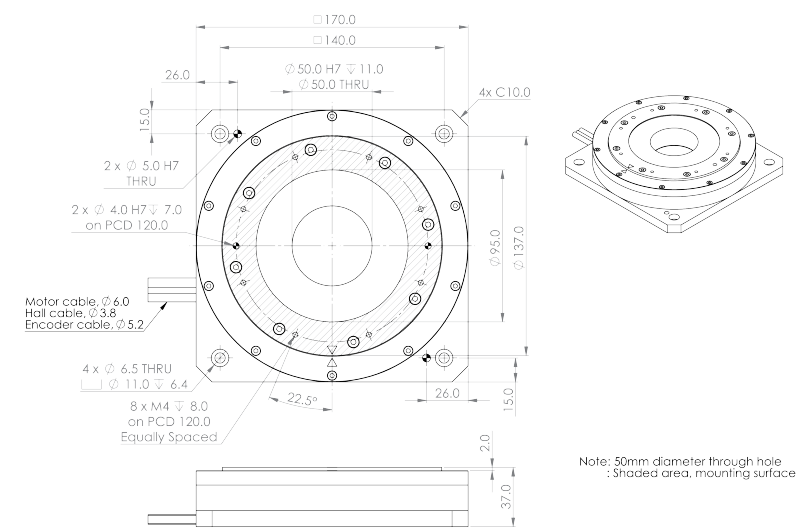
### ACW120



### ACW220

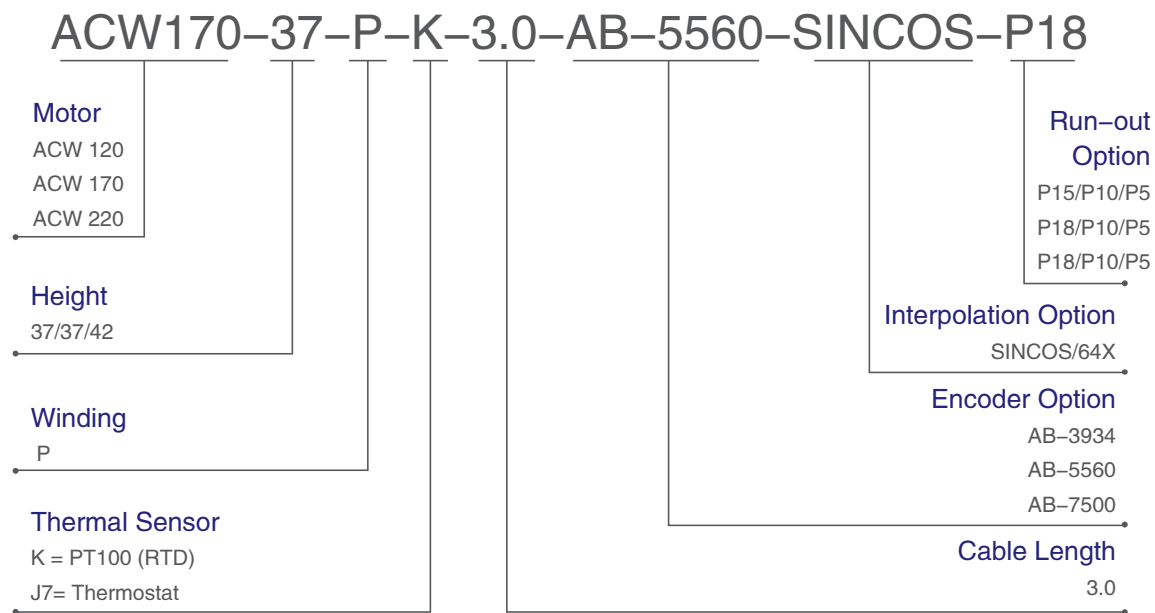


### ACW170

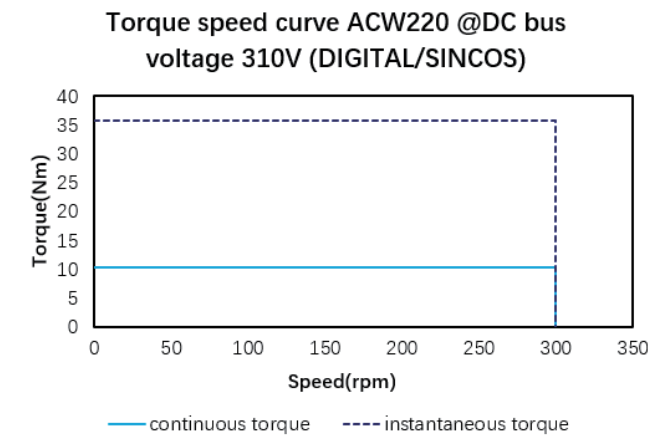
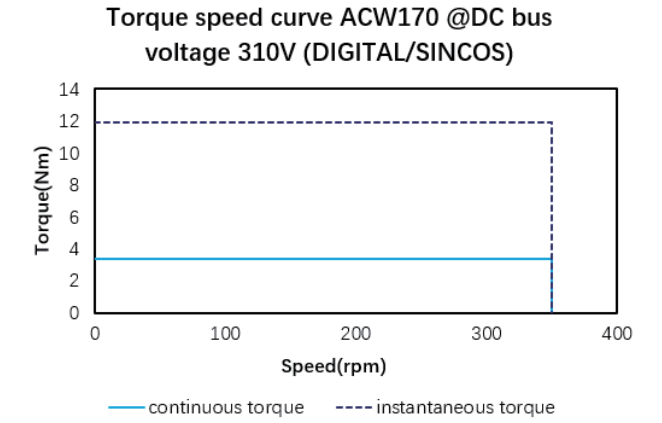
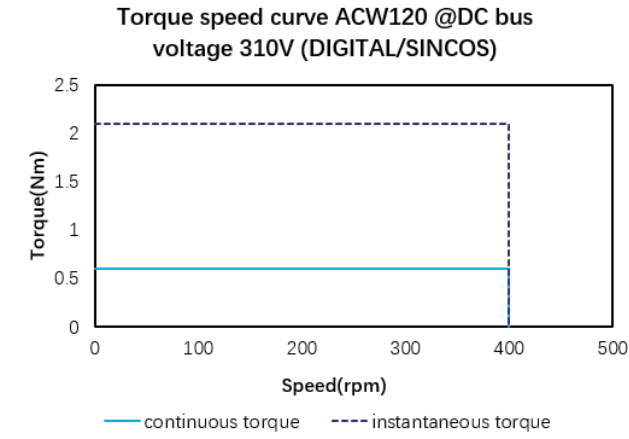


# ACW

## Part Numbering



## Torque-Speed-Curve



P18 = Axial Runout 18um, Radial Runout is 18um  
 P10 = Axial Runout 10um, Radial Runout is 10um  
 P5 = Axial Runout 5um, Radial Runout is 5um