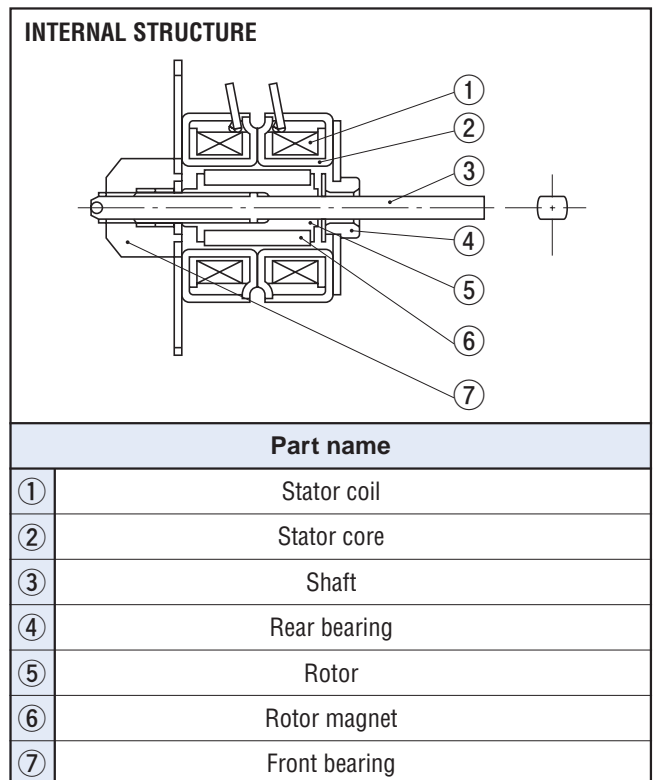
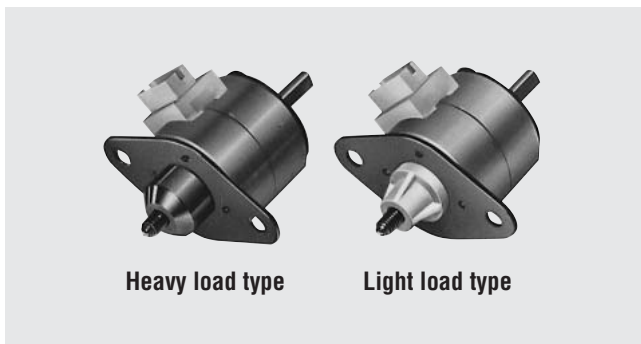


SPS20

STEPPING MOTORS

The SPS20 series uses a screw construction in the front shaft, creating an actuator for converting rotational force into linear force. The shaft extends as it rotates, and there is steel ball on the end for pushing the object. The motor is a normal PM stepping motor and can be driven with a standard stepping motor driver. The characteristics assume intermittent driving. Power consumption during continuous operation is about 1 W (without heat sink), 5 W (B5 1 mm steel plate attached).

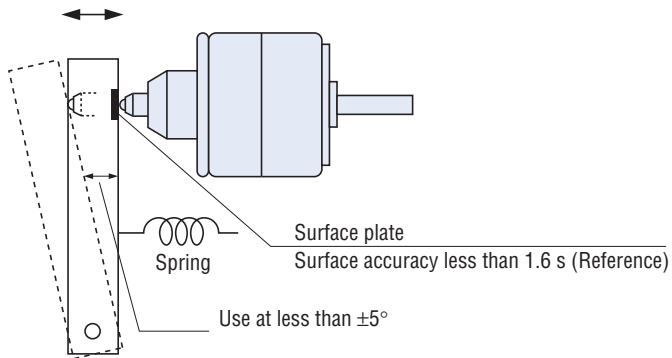


FEATURES

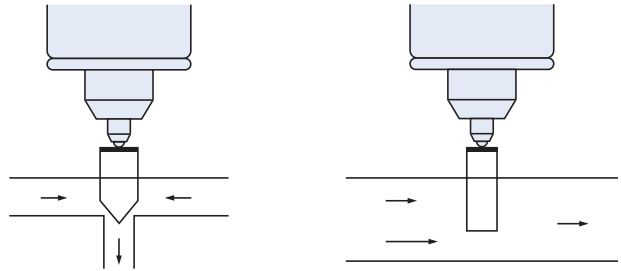
- Precision position control is possible (25 μ m/step, $\pm 7 \mu$ m: initial value)
- Compact, high thrust
- Internal self holding function: Position can be held with power off
- Soft running is possible
- Proportional control is easy
- RoHS compliant

APPLICATIONS

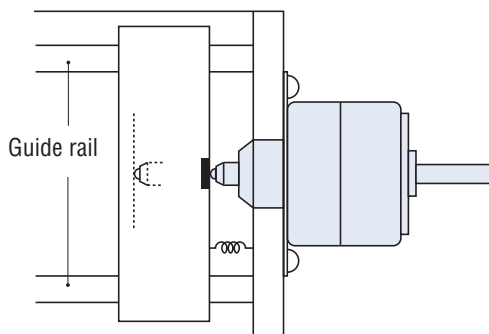
● Lever operation



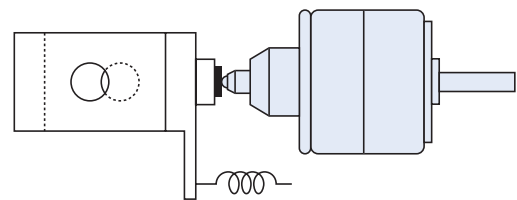
● Flow control



● Precision positioning control



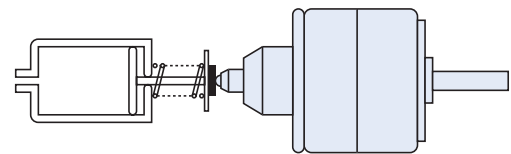
● Opening and closing hole



● Others

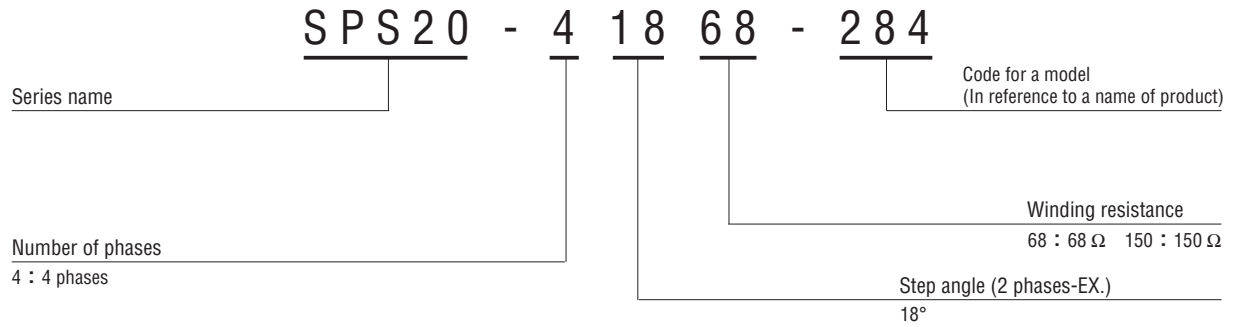
- Printer ribbon up/down
- Minute movement of X-Y table
- Airconditioner regulation

● Pump



SPS20 STEPPING MOTORS

■ PART NUMBER DESIGNATION



■ LIST OF PART NUMBERS

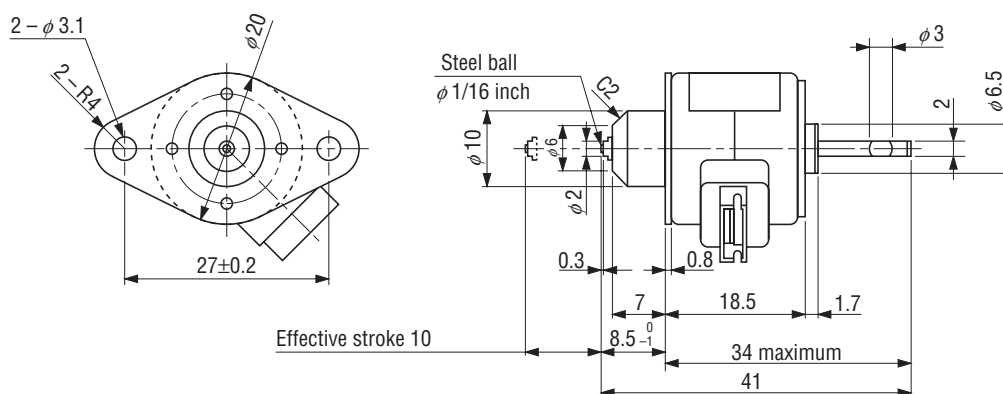
Series	Winding resistance	
	68 Ω	150 Ω
High load type	SPS20-41868-285	SPS20-418150-288
Low load type	SPS20-41868-284	SPS20-418150-287

※ Verify the above part numbers when placing orders.

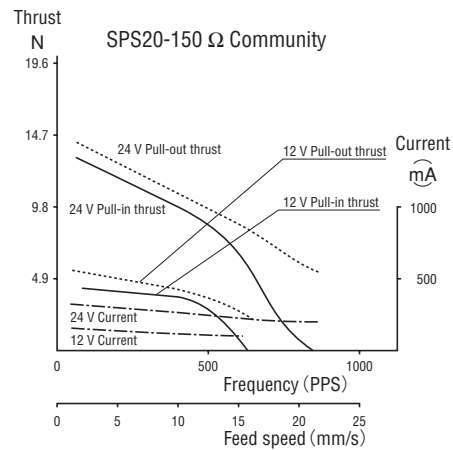
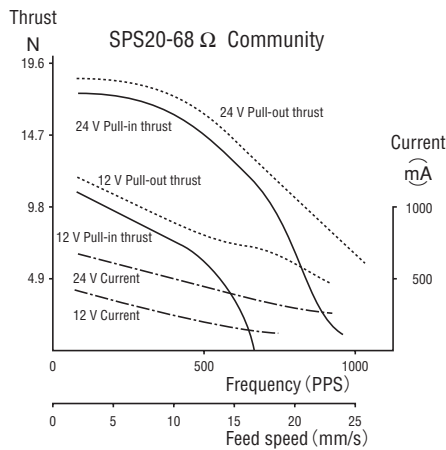
■ OUTLINE DIMENSIONS

(Unit: mm)

Outline dimensions are common in SPS20 series.



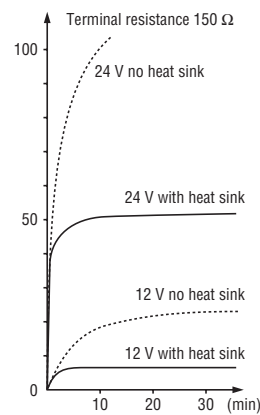
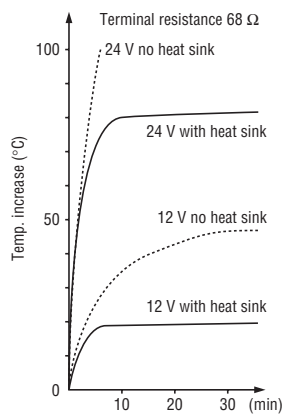
PERFORMANCE CURVES (Reference values)



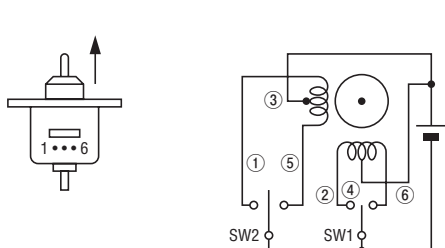
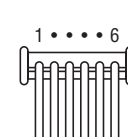
※These performance curves show actual value, not guaranteed value.

TEMPERATURE CHARACTERISTICS

(at 500 pps-2 phases-EX., Heat sink 180 mm × 255 mm × 1 mm steel plate)



STANDARD SPECIFICATIONS

Item	SPS20				Remarks																																		
	41868-285	418150-288	41868-284	418150-287																																			
Number of phases	2 phases unipolar				—																																		
Steps	20				2 phases-EX.																																		
Screw pitch	0.5 mm				—																																		
Step size	25 μm				2 phases-EX.																																		
Winding resistance	68 Ω	150 Ω	68 Ω	150 Ω	—																																		
Allowable thrust	49 N		9.8 N		—																																		
Thrust	7.85 N		2.94 N		Reference value																																		
Voltage	Refer to PERFORMANCE CURVES				Initial strength value																																		
Current																																							
Pull-in thrust																																							
Pull-out thrust																																							
Temperature increase	Refer to TEMPERATURE CHARACTERISTICS				—																																		
Insulation resistance	30 MΩ minimum				DC500 V																																		
Dielectric strength	500 Vrms				AC, 1 min																																		
Effective mechanical stroke	12 mm				—																																		
Effective stroke	10 mm																																						
Operating temperature range	0 ~ 50 °C																																						
Storage temperature range	-30 ~ 60 °C																																						
Life	1 million cycles		800 thousand cycles		Reference value ※1																																		
	at a load of 7.4 N		at a load of 2.5 N																																				
Net weight	Approx. 45 g				—																																		
Wiring diagram	 <p>1→4 When excitation is in order the motor shaft moves ahead.</p> <table border="1" data-bbox="909 1724 1212 1926"> <thead> <tr> <th></th> <th colspan="2">SW1</th> <th colspan="2">SW2</th> </tr> <tr> <th></th> <th>⑥</th> <th>②</th> <th>⑤</th> <th>①</th> </tr> </thead> <tbody> <tr> <td>1</td> <td>ON</td> <td></td> <td>ON</td> <td></td> </tr> <tr> <td>2</td> <td></td> <td>ON</td> <td>ON</td> <td></td> </tr> <tr> <td>3</td> <td></td> <td>ON</td> <td></td> <td>ON</td> </tr> <tr> <td>4</td> <td>ON</td> <td></td> <td></td> <td>ON</td> </tr> <tr> <td>1</td> <td>ON</td> <td></td> <td>ON</td> <td></td> </tr> </tbody> </table> <p>06ZR-8M Or ZHR-6 Connector Made by J.S.T. Mfg. Co., Ltd</p> 					SW1		SW2			⑥	②	⑤	①	1	ON		ON		2		ON	ON		3		ON		ON	4	ON			ON	1	ON		ON	
	SW1		SW2																																				
	⑥	②	⑤	①																																			
1	ON		ON																																				
2		ON	ON																																				
3		ON		ON																																			
4	ON			ON																																			
1	ON		ON																																				

※1 : Life depends on greatly how to use it. Please use after confirmation to us.