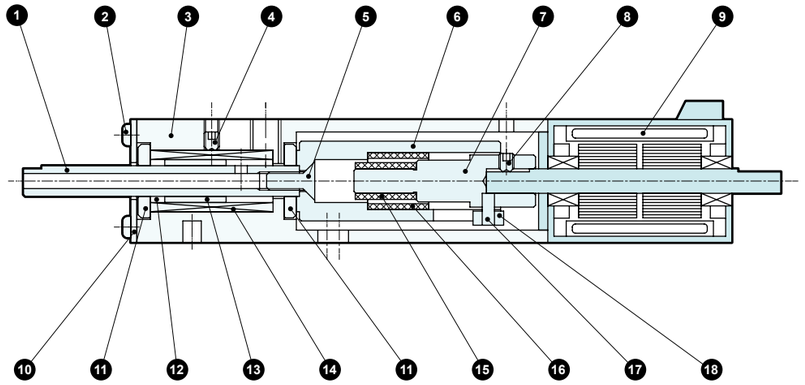
Internal Structure Diagram/Materials



Part No.	Part Name	Material	Remarks	Part No.	Part Name	Material	Remarks
1	Shaft	High Carbon Chromium Bearing Steel		10	Cap	Stainless steel	
2	Phillips pan head machine screw	Stainless steel		11	Washer	Polyacetal resin	
3	Body	Aluminum alloy	Electroless nickel plating	12	Outer cylinder cap	Aluminum alloy	
4	Hexagon Socket Set Screw	Stainless steel		13	Retainer	-	
5	Cross Recessed Countersunk Head Machine Screw	Stainless steel		14	Outer cylinder	Steel	
6	Movable Shaft	Aluminum alloy	Trivalent chromate treatment	15	Ring magnet	Plastic magnet	
7	Fixed Shaft	Stainless steel		16	Ring magnet	Plastic magnet	
8	Hexagon Socket Set Screw	Stainless steel		17	Parallel pin	Stainless steel	
9	Stepping Motor	-		18	Small diameter ball bearing	Stainless steel	

Pneumatic Components

To Use This Product Safely

Be sure to read this before use.
For general pneumatic components precautions, refer to Intro 15 for details.

Individual Precautions: Active Fine Buffer AFB-RB Series

Design / Selection

DANGER

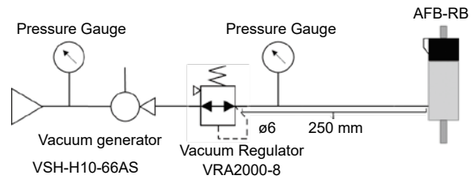
- Do not use in locations where hazardous materials such as ignitable, flammable, or explosive substances are present. There is a risk of ignition, fire, or explosion.
- Ensure that the product is free of water droplets and oil droplets. This can cause fire or malfunction.
- When installing the product, ensure it is securely held and fixed. Product tipping, falling, abnormal operation, etc., can cause injury.
- Use a DC stabilized power supply (24 VDC ±10%) for the motor and control. Direct connection to an AC power supply can cause fire, bursting, damage, etc.

Warning

- This product has a built-in magnet.
  Do not use in locations with magnetic chips, dust, etc. This can cause damage or malfunction.
- Use hexagon socket head cap screws to secure the product.
- Mount the product vertically.
  Lateral loads or moment forces on the shaft will affect characteristics and service life.
- Design a safety circuit or equipment so that damage to equipment, injury to persons, etc., does not occur when the machine stops in the event of a system failure such as emergency stop or power outage.
- Install indoors with low humidity.
  In locations exposed to rainwater or high humidity (80% humidity or higher, where condensation occurs), there is a risk of electrical leakage or fire accidents. Oil drops and oil mist are strictly prohibited.
- Observe the ambient temperature for use and storage. Be sure there is no condensation present on the product when using or storing it.
  Failure to do so can cause abnormal product stoppage or reduced service life. Ventilate if heat builds up.
- Install in a location free from direct sunlight, dust, and corrosive gas/explosive gas/inflammable gas/combustibles, and away from heat sources. Additionally, chemical resistance has not been considered.
  Failure to do so can cause malfunction, explosion, or fire.
- Use and store in a location free from strong electromagnetic waves, ultraviolet rays, and radiation.
  Failure to do so can cause malfunction or failure.
- Limit positive pressure to a max. of 50KPa when applying vacuum burst, and do not use so as to constantly apply pressure.

Caution

- The load (jig and suctioned workpiece) on the shaft must not exceed the payload.
- Jig and workpiece weight should be 50 g or less and moment of inertia should be 2.45×10^{-6}kg·m^2 or less.
- When conveying the workpiece, acceleration should not be more than 4 G. Excessive acceleration may cause product damage.
- A gap seal structure is used to improve pressing force stability and repeatability. Therefore, vacuum leakage will occur. The amount of vacuum leakage varies depending on the air circuit and equipment used.
  [Reference] The pressure drop will be 10 kPa or less compared to the initial pressure of -80kPa when the following pneumatic components is used.



- Supplying vacuum during a stroke may prevent the seal from performing effectively. Therefore, for vacuum suction, initiate the stroke after supplying vacuum.
- While wiring, ensure that inductive noise is not applied and that high-current or strong magnetic field locations or large motor power lines for other devices do not use the same piping and wiring (through multi-core cables, etc.). Also, pay attention to inverter power supplies used for robots, etc., and their wiring sections (do not use the same wiring/piping). Apply frame grounding for the same power supply and always insert a filter at the output section.

■ If the product's output section shares a power supply with inductive loads that generate surges (such as solenoid valves, relays), surge current can flow into the output section, causing damage. Therefore, separate the output system acting as the inductive load from this product's output power supply. If a separate power supply cannot be used, connect surge absorbers directly in parallel with all inductive loads.

■ Select a motor power supply which provides ample capacity based on the number of installed products. Insufficient capacity may lead to malfunctions.

■ Do not disassemble the product.

■ The lead wires cannot be used in applications involving repeated bending.

■ The customer is responsible for confirming the compatibility of CKD products with the customer's systems, machines and equipment.

MEMO

For precautions regarding mounting, installation, adjustment, operation, and maintenance, please refer to the CKD Equipment Product Site (https: //www.ckd.co.jp/kiki/en/) → 'model No.' → Instruction Manual

Precision Components
LBC
GFM
PVP
FBU2
AFB-RB
Ending