

Varibale Air Damper Motor

Description

The Actuator is intended for ON-OFF and floating point controls in HVAC systems. It can easily mount on an 1/2" round or square shaft with solid screw sets. Angle of rotation is mechanically limited to 90°. When the actuator reaches its maximum position, the device will automatically stop. An override lever is provided on the side to manually disengage the gear. Two mechanical stops are provided for extra adjustments. The device is equipped with a safety overload-proof to avoid burn-outs and allow consistent running time independent to the load.

Highlights:

- Simple Direct Mounting
- Stall-Proof Synchronous AC Motor
- Adjustable Angle of Rotation with Mech. Stops
- Manual Over PRODUCT DESCRIPTION rride Lever
- Consistent running time
- Visual Position Indicator
- DM-8, DM-8-MOD



Stroke limiter(Stopper)

Big set screws

Small set screws

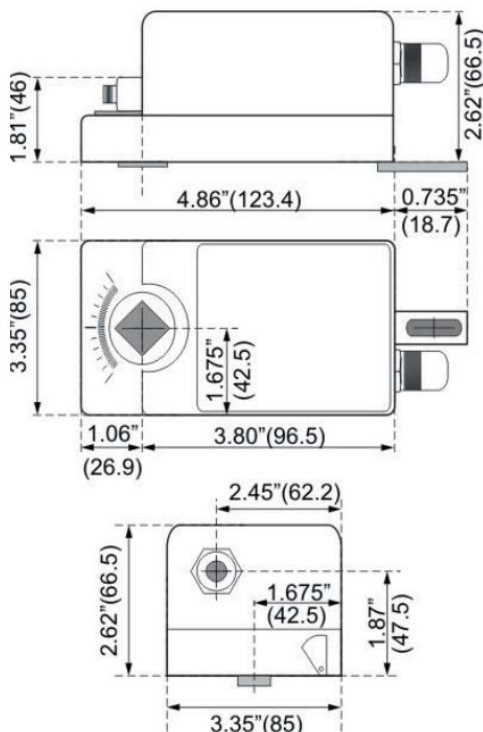
Hub adapter

Big set screw: That's for the damper actuator installation bracket use.

Small set screw: For stroke limiter.

Hub adapter: If shaft is too small can use the hub adpter to fix the shaft hub adapter.

Specifications



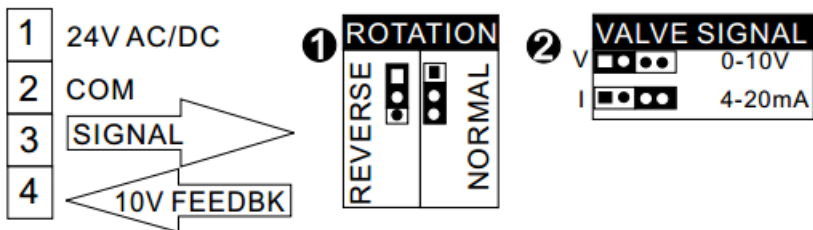
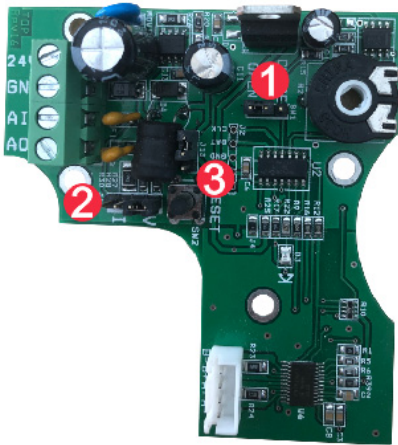
TEMCO Variable Air Damper Motor SRD02-0624Power

Supply	24Vac ±20%, 50-60Hz
Power consumption	2.5W
Recommended Wire Sizing	3V
Control	ON-OFF/ Floating point
Angle	max 90, with adjustable mech. stops
Torque6Nm
Running Time	110s
Manual Override	external lever
Temperature:Ambient	-30 ° C to +50° C
Storage	-40° C to +80° C
Humidity	5 to 95% RH
Position indication	mechanical

Applications

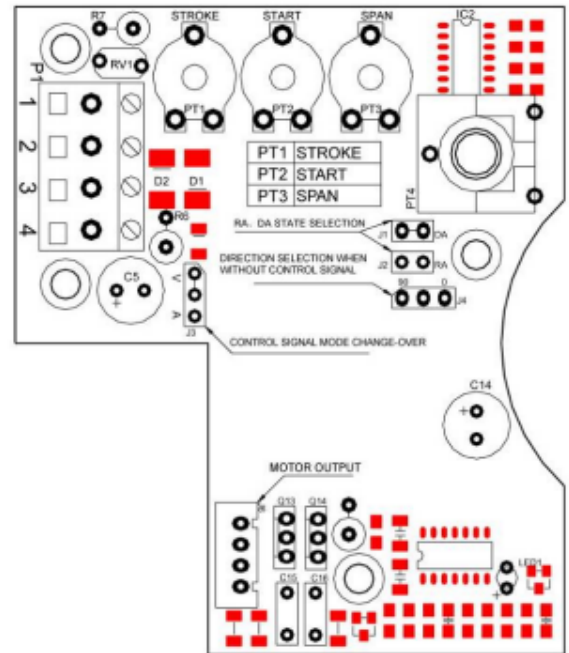
- Position Control of Dampers and Valves in HVAC systems

Wiring Example and Installation



3 HOLD BUTTON DOWN DURING POWER ON TO SET FULL STROKE

PCB Setting Diagram



Mounting and Usage

1 - Make sure Damper blade is at its fully closed position.

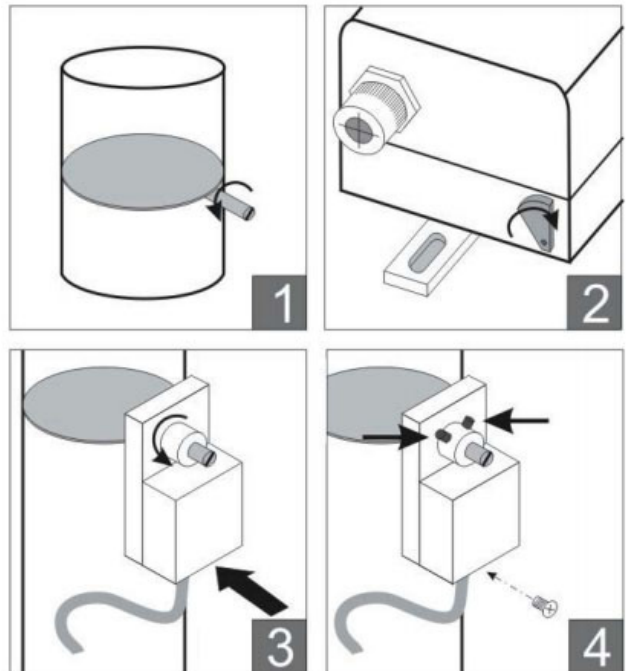
2 - From the bottom view, with the manual override lever pushed to the right. Rotate actuator angle close to zero, depending on damper seal design.

3 - With Actuator angle set at almost zero, slide in actuator over shaft.

4. Install lower screw to secure the damper motor. Set the min and max position by adjusting the two end of travel stops.

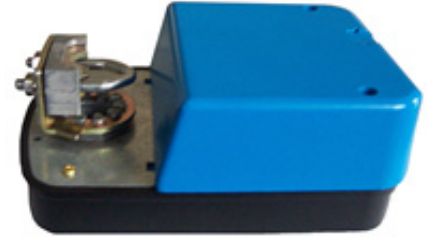
Note:

- The actuator should be mounted in a non corrosive area or sealed against unwanted agents.

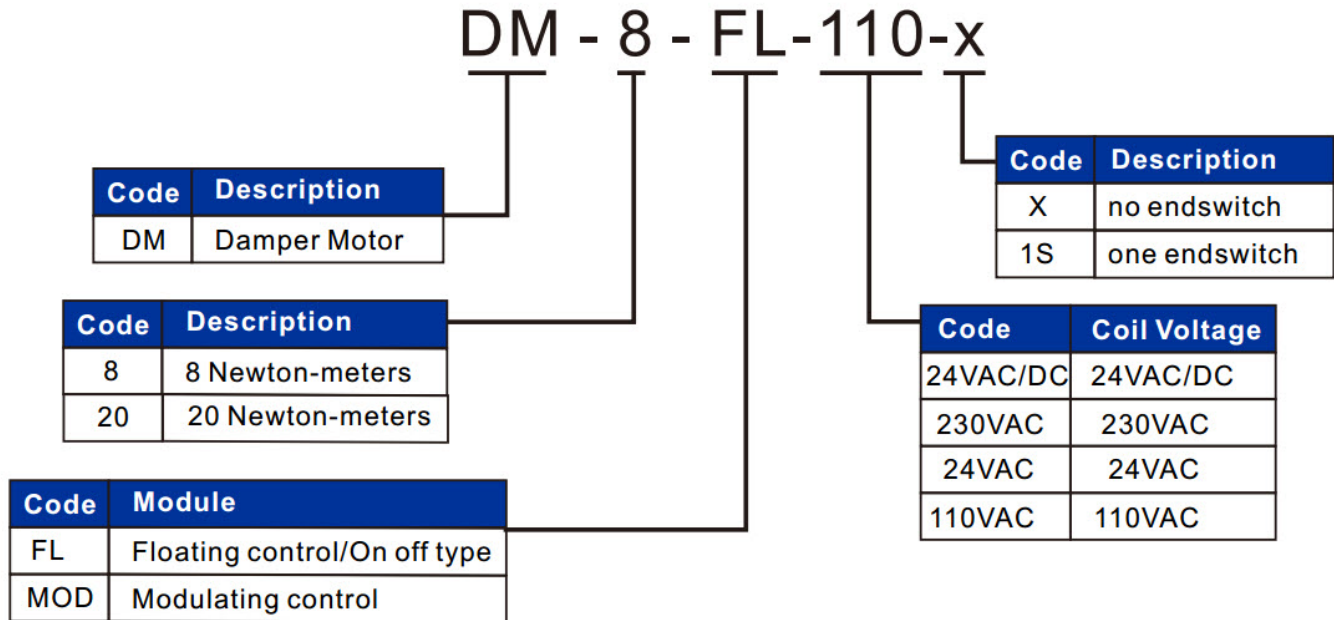


Description

The Actuator continuously modulating type damper actuator is controlled by DC 0(2)~10V or 4~20mA signal, and can provide 0~10VDC position feedback signal. They are widely applied for damper controls of HVAC systems.



Part Number Scheme



Characteristics

- VARIOUS SIGNALS CONTROL

Standard type: 0~10Vdc control; the setting position of J3 is at point V

If you want 2~10Vdc or 4~20mA control type, please inform about it in your order. We will adjust the PCB in factory. You can use J3 setting to switch the control signals between 2~10Vdc and 4~20mA: point "V" is for 2~10Vdc control; point A is for 4~20mA control.

- SIMPLE INSTALLATION

Fix the damper actuator on the damper shaft by universal holder. (Various special actuator holding bracket are supplied according to customers' requirements.) The rotating angle of the actuator can be set by internal potentiometer (PT1). The match between working range and feedback signal is automatically done by the actuator.

- MANUAL OPERATION

It can be operated manually if needed: press the manual button on the actuator, the gearings inside the actuator will break away. The damper can be operated manually when keep pressing the manual button. PLEASE DO NOT OPERATE WHEN POWER ON!

- HIGH DEPENDABLE PERFORMANCE

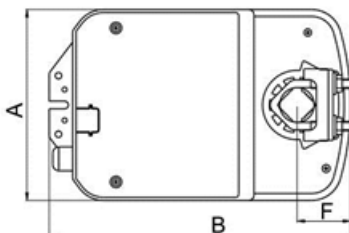
SRD02 modulating type damper actuator uses bi-directional magnetic clutch synchronous motor. It has overload protection and overtime protection. The actuator will stop automatically when it runs to the end. And the damper actuator has a precision of 10° adjustable mechanical limiter.

Specifications and Technical Data

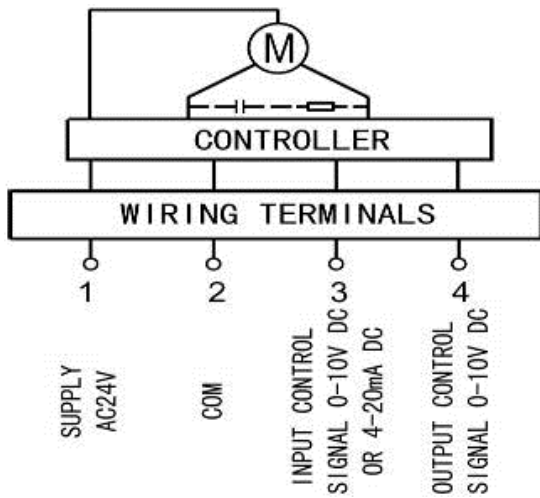
MODEL	DM-8-MOD -24VAC	DM-15-MOD -24VAC	DM-20-MOD -24VAC	DM-30-MOD -24VAC
Torque	≥10Nm	≥15Nm	≥20Nm	≥30Nm
OPERATION TIME(50Hz/90°)	≈66s	≈90s	≈125s	≈165s
RATED VOLTAGE (50/60Hz)	24VAC±10%			
CABLE	0.5~1.5mm ²			
POWER CONSUMPTION	5.5VA when operating			
CONTROL SIGNAL	0(2)~10V dc (input impedance: 200KΩ) OR 4~20mA dc (input impedance: 500Ω)			
FEEDBACK SIGNA	0~10V DC (1mA)			
FACTORY SETTING	Working condition: DA (J1) Axle rotates to 0°(J4) when signal is lost			
POSITION PRECISION	±5%			
ROTATE ANGEL	90°<Mechanical limitation≤95°			
NOISE LEVEL	Maximum 45dB(A)			
POSITION INDICATOR	Mechanical indication			
PROTECTION CLASS	IP42			
AMBIENT TEMPERATURE	-5°C~+50°C			
STORAGE TEMPERATURE	-30°C ~+70°C			
USAGE LIFE	>60000 cycles			
CLAMP FASTENER	A	Standard: Damper shafe size range : Ø16~23 □12~16		
	B	Option: Damper shafe size range : Ø10~25, □8~18 with auto-matic centering function		

Dimensions

Model	Dimensions(mm)					
	A	B	C	D	E	F
DM-8-MOD-24VAC	108	174	70	39	26	31
DM-15-MOD-24VAC	108	174	70	39	26	31
DM-20-MOD-24VAC	124	196	69	39	26	35
DM-30-MOD-24VAC	124	196	69	39	26	35

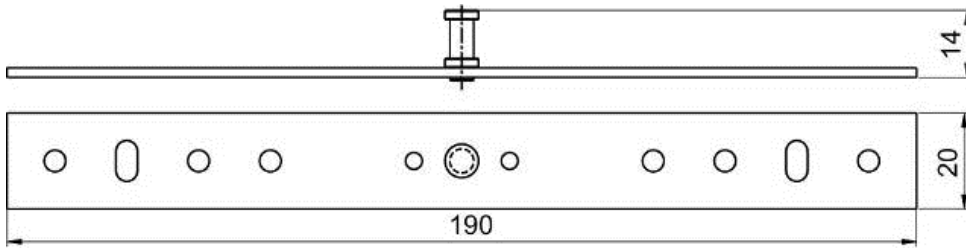


Wiring Diagram



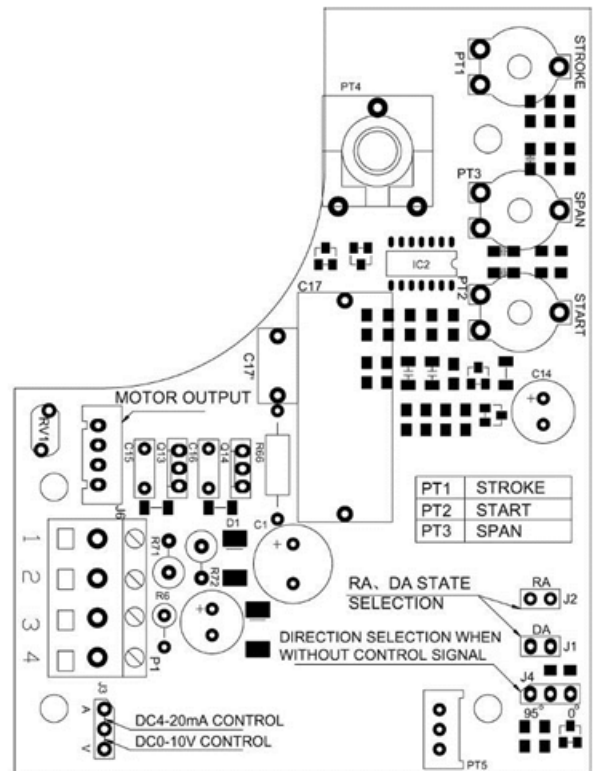
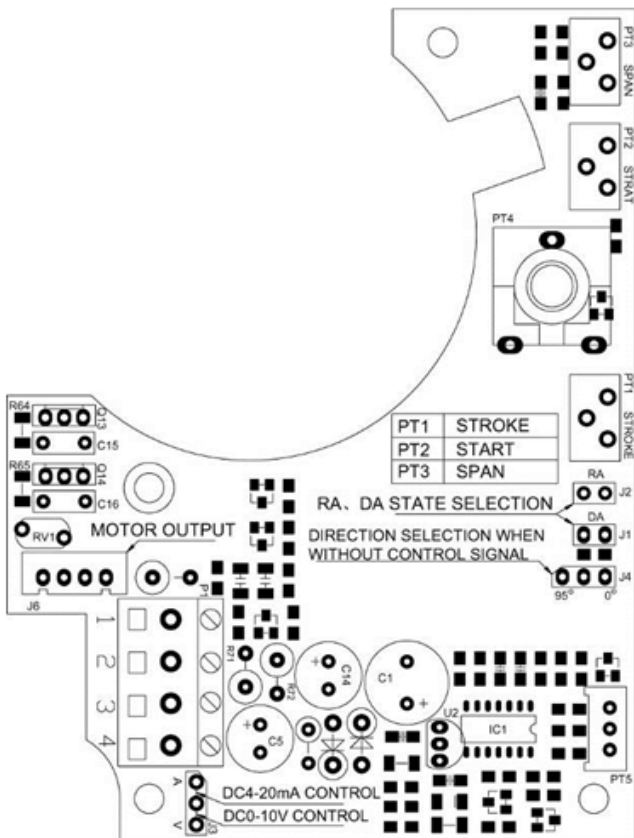
INPUT CONTROL SIGNAL		ROTATE DIRECTION
DA	RA	
INCREASING	DECREASING	
DECREASING	INCREASING	

Standard Setting Bracket

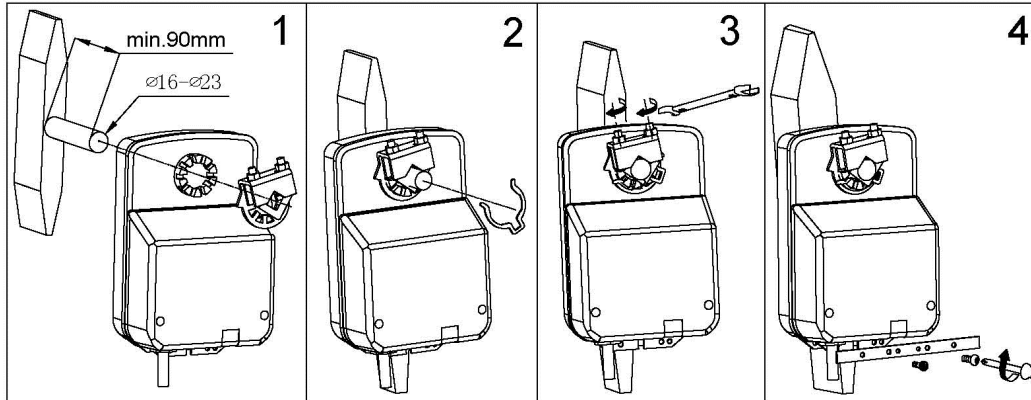


PCB Setting For 10Nm,15Nm

PCB Setting For 20Nm,30Nm



Installation Diagram



The accessories include 2 pcs limitative baffles, 2 pcs setscrews for baffle (M3×6), 1 pcs actuator setting gasket, and 2 pcs setscrews for setting gasket (ST4.2×10).

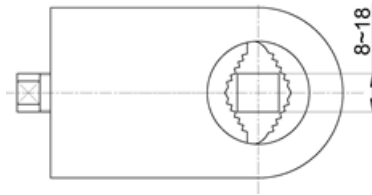
Clamp Fastner Type



TypeA



TypeB



Installation Drawing of Square Shaft for Type B Clamp Fastener

How to adjust the potentiometers

PCB circuit board Settings are more complicated, has been adjusted before delivery, so do not allow the user to start potentiometer “start” and span potentiometer “span” for adjustment, the two potentiometer factory has been in the surface of the potentiometer coated with red glue to prevent users from mixing. The stroke potentiometer is adjusted to the actuator opening of 90 degrees when leaving the factory. If the user thinks that the opening of 90 degrees is not needed, you can fine-adjust the “stroke” potentiometer to the actuator opening according to the actual need to reduce the opening Angle, but it is not recommended to adjust too small (the opening is recommended to be greater than 45 degrees), because the Angle of the potentiometer is too small, When the input signal is of low voltage value, the actuator may swing back and forth, and the phenomenon can not be stopped. The jumper in J1 represents the DA state, and the jumper in J2 represents the RA state. The factory default jumper in J1 represents the DA state, and the user can switch. After the switch, the actuator turns to the opposite direction.

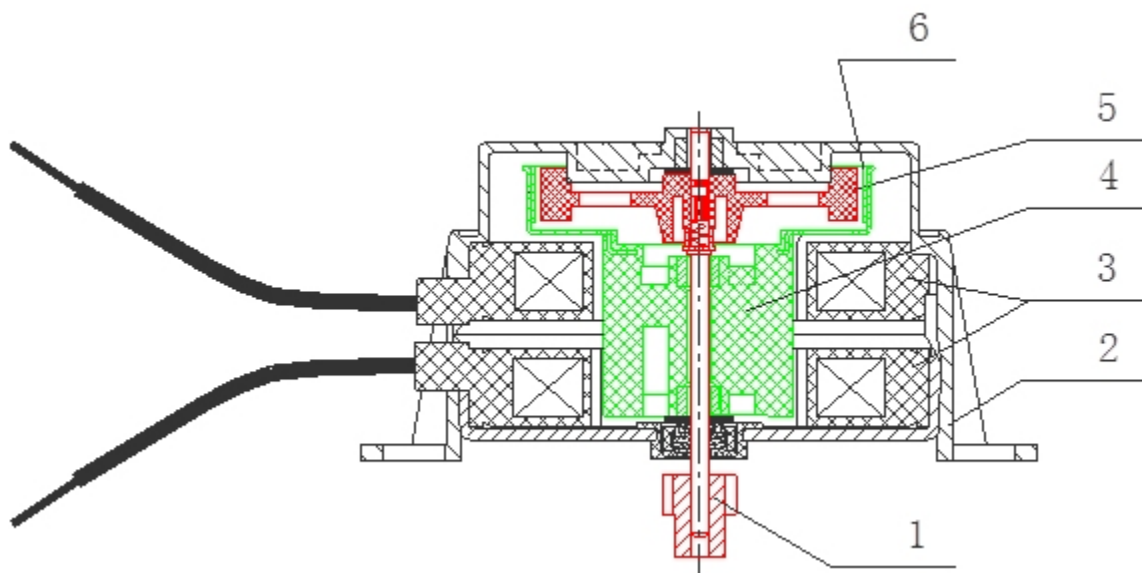
“start” is 0~10V. The start adjustment of 0V in DA state coincides with the start adjustment of 10V in RA state. (Coated with red glue, user cannot adjust)

“span” is 0~10V, the basis-point adjustment of 10V in DA state, which coincides with the basis-point adjustment of 0V in RA state; (Coated with red glue, user cannot adjust)

“stroke” is the stroke Angle setting of the actuator, and the factory setting is 90 degrees. (Users can fine-tune, the recommended opening is greater than 45 degrees)

The actuator is equipped with a two-way AC synchronous motor with magnetic clutch, which has overload protection function, no limit switch is needed, overload and blocking turn when running to the end or during the running process, and the motor will clutch itself (the clutch assembly of the motor output head wheel stops running, while the motor rotor is still idling). At the same time, the actuator PCB circuit board detects that the PT4 potentiometer does not turn and the value does not change. After a few seconds, the power supply to the motor is cut off, and the motor clutch stops idling.

The structure of two-way AC synchronous motor with magnetic clutch is shown as follows:



No. 1: motor output head wheel;

No. 2: Plastic rear cover of motor;

No. 3: motor coil

No. 4: Motor rotor, and No. 6 clutch steel ring, green part is a whole,

No. 5: Clutch assembly, and No. 1 motor output head wheel, red part is a whole