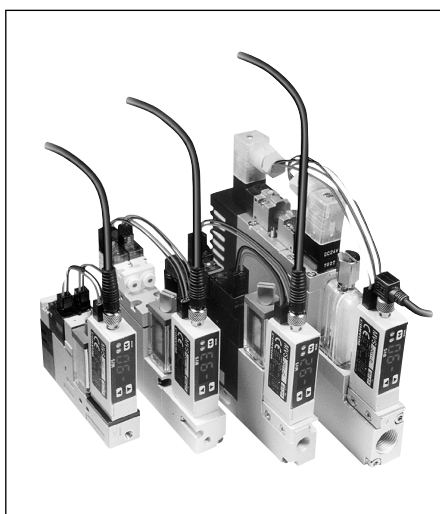


Energy-saving CONVUM ejector

Vacuum ejector unit with electromagnetic control-valve function

MC series with MVS-201sensor



●Greatly reduced air consumption

Thanks to the built-in control circuit of the electromagnetic valve for the vacuum ejector supply, and the possibility to set the desired vacuum pressure, the electromagnetic valve is automatically controled, the air supply is turned ON/OFF and the vacuum pressure is maintained. Due to this, as the air is not continually supplied, the air consumption is greatly reduced.

●Reduced wiring

Traditionally wiring was required for the pressure sensor, the electromagnetic valve for control of the air supply and the electromagnetic valve for controlling vacuum breaking, but now there is a built-in control circuit for the electromagnetic valve in the pressure sensor, which requires wiring to the sensor only, making wiring to the electromagnetic valve unnecessary.

●The energy-saving mode reduces the current of the pressure sensor

With the energy-saving mode the current consumed by the pressure sensor is reduced from 32 mA to 26 mA.

Pressure sensor MVS-201 with electromagnetic control function ⇒P642 Reference

The pressure sensor with built-in energy-saving control circuit makes it possible to observe the vacuum pressure and to operate the electromagnetic valve for vacuum generation only when required.

Applicable CONVUM units: MC22, MC72 series ⇒P543, 562 Reference

When ordering, please use the model number of the applicable CONVUM unit with pressure sensor 201 (MVS201).

Example of reduced air consumption: 1/50 with a nozzle diameter of 1.0

Usage conditions	CONVUM used	MC22S10HS type
	Pressure	0.5MPa
	Nozzle diameter	φ1.0
	Piping	Polyamide type φ4 × 2.5 Length 800 mm
	Max. vacuum pressure	-86.6kPa
	Suction time	5s

Calculation of air consumption

Traditionally

Air consumption of MC22 10HS 44 ℓ /min ANR

Calculation of air consumption in terms of suction time

Consumption is reduced even during suction.

Suction time 5 seconds

$$Q1 = 44 \times (5/60) = 3.76 \text{ ℓ /min ANR}$$

Energy-saving CONVUM ejector

Air consumption of MC22 10HS 44 ℓ /min ANR

Calculation of air consumption in terms of suction time

As the electromagnetic valve is OFF during suction, no air is consumed.

Time until the set vacuum pressure is reached 0.1 second

$$Q2 = 44 \times (0.1/60) = 0.073 \text{ ℓ /min ANR}$$

Resulting reduction

Reduced air consumption per unit: $3.76 - 0.073 = 3.6 \text{ ℓ /min ANR}$

In case of using 10 units and gripping work pieces 10 times/minute, and being in operation 10 hours/day for 20 days:

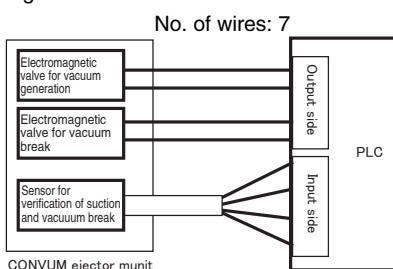
The amount of reduced air consumption is: $10 \times 10 \times 60 \times 10 \times 20 = 1,200,000 \text{ ℓ ANR} = 1200\text{m}^3\text{ANR}$

If estimating that the cost of 1 m^3 of compressed air is 5 yen, the cost corresponding to the air reduced is 6,000 yen per month, which is 72,000 per year.

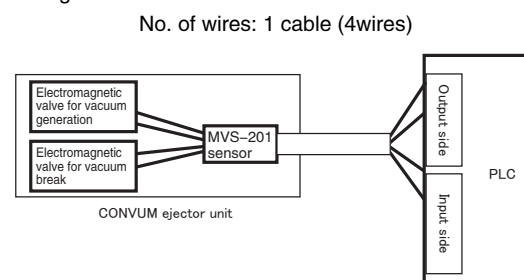
$$\text{Reduction ratio compared to the traditional method : } Q2/Q1 = 0.073/3.76 = 1/50$$

Example of reduced wiring

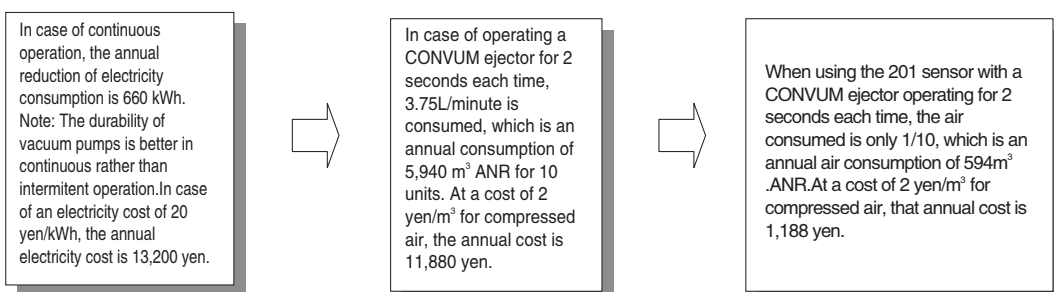
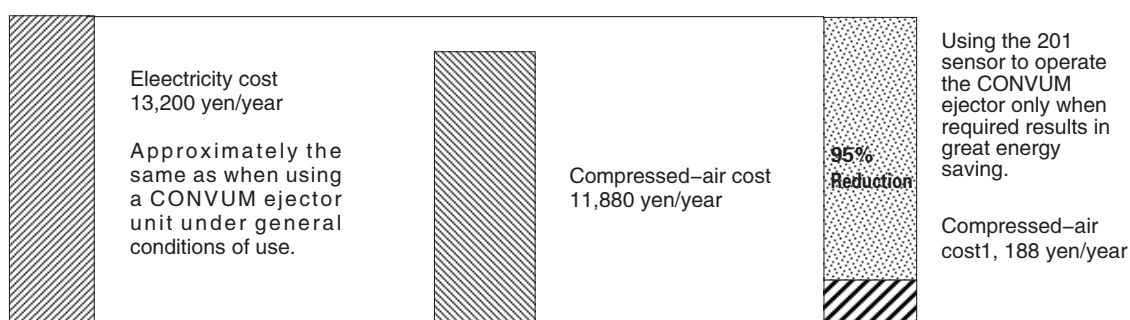
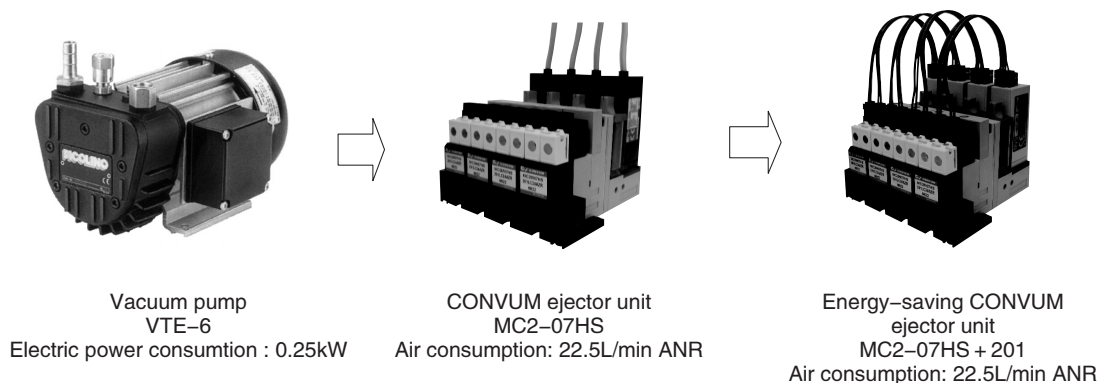
Traditional wiring



Wiring for sensor MVS-201



Comparison of a vacuum pump and a CONVUM ejector



- <Condition of comparison> Compared with identical suction flow
- ① Using ten f80 suction pads 5 times/minute at a suction time of 2 seconds,
 - ② The total suction flow is 100L/min ANR, choosing a vacuum pressure of -80 kPa,
 - ③ The operation time is 10h/day, 22 days /month, 12 months/year = 2640h/year.