Vacuum suction unit with emphasis on functions
Fast and stable suction transport without positive pressure source

Pressure sensor

Vacuum filter

MV3QRA1
MV3QRB1
Series
3QR negative pressure switching unit

Ideal for suction transport of small articles!

Vacuum release without positive pressure to prevent small chips from being blown away.

Electrical response and pressure waveform

Overshoot present

* Small workpieces may be blown away

Air blow-out 0!!

No overshoot!

CKD

Suction/transport of electronic parts

4GA/B
M4GA/B
MN4GA/B
4GA/B (master)
4GB With sensor
4GD/E
M4GD/E
MN4GD/E
4GA4/B4
MN3E MN4E
W4GA/B2
W4GB4
MN3S0 MN4S0
4SA/B0
4KA/B
4KA/B (master)
4F
4F (master)
PV5G GMF
PV5 GMF
PV5S-0
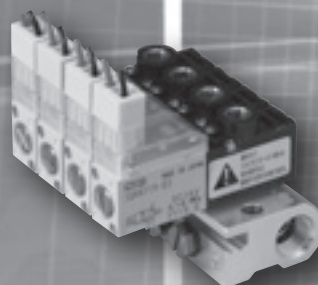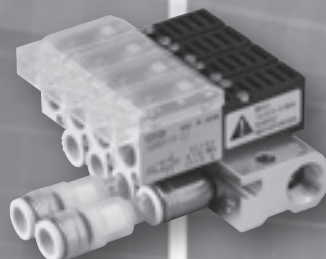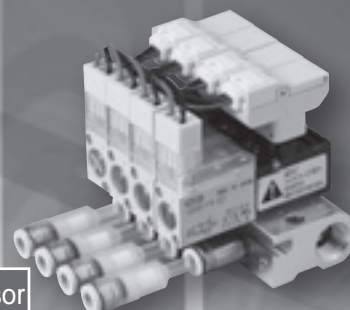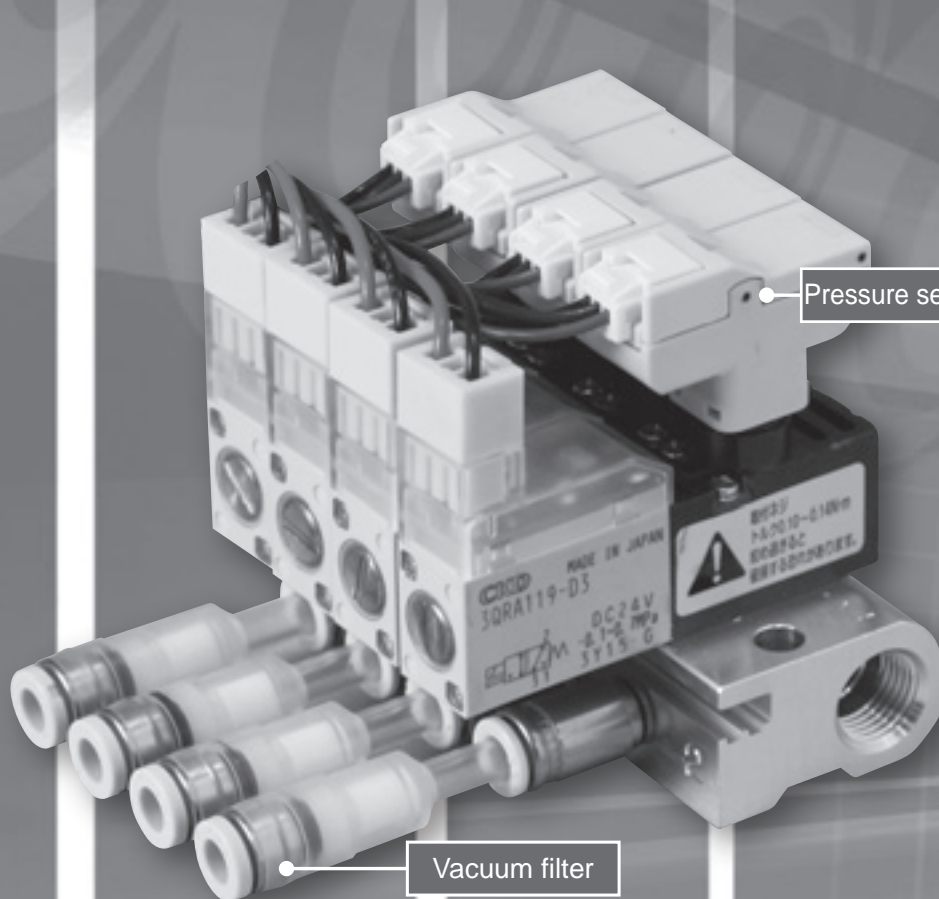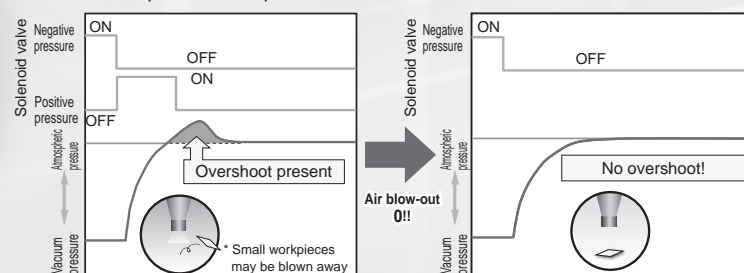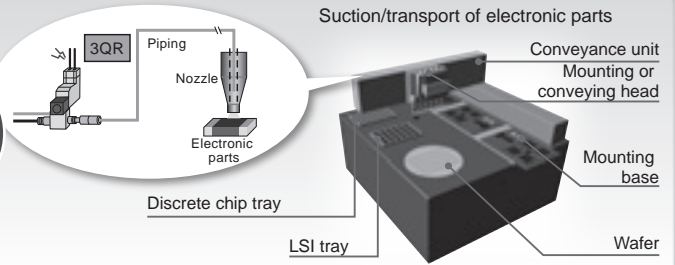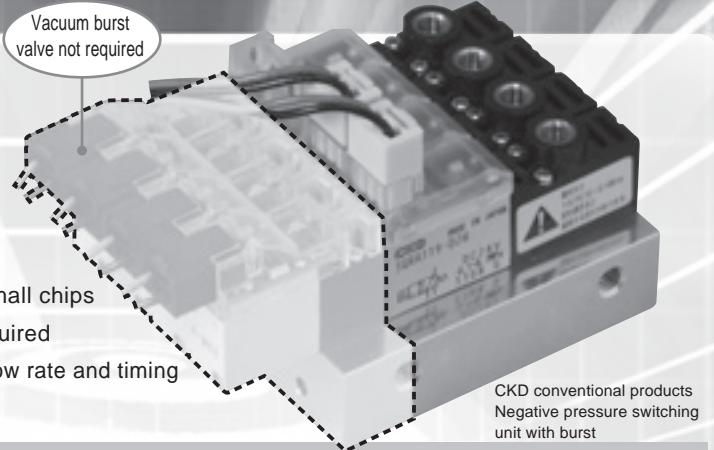3Q
MV3QR
3MA/B0
3PA/B
P/M/B
NP/NAP NVP
4G*0EJ
4F*0EX
4F*0E
HMV HSV
2QV 3QV
SKH
Silencer
TotAirSys (Total Air)
TotAirSys (Gamma)
Ending

Example of applications

3QR — Piping — Nozzle — Electronic parts — Discrete chip tray — LSI tray

Conveyance unit
Mounting or conveying head
Mounting base
Wafer

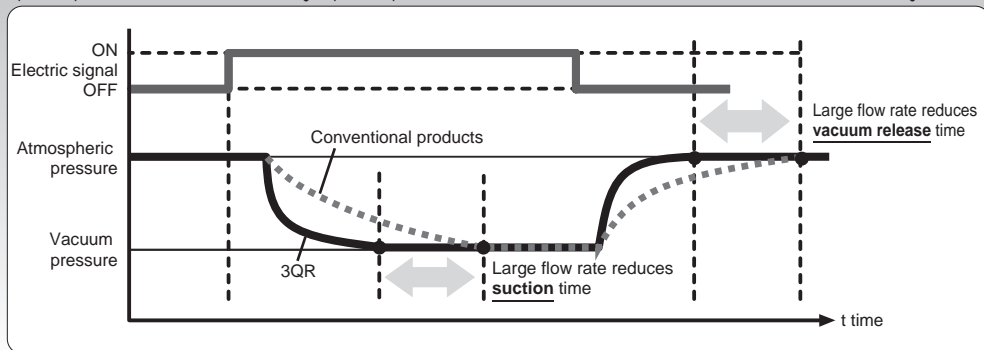Vacuum burst valve not required

1 Vacuum burst valve not required

• Vacuum release without positive pressure to prevent small chips from being blown away. No further countermeasure required
• No need for burdensome adjustment of burst pressure, flow rate and timing
• Slimmer with no vacuum burst valve

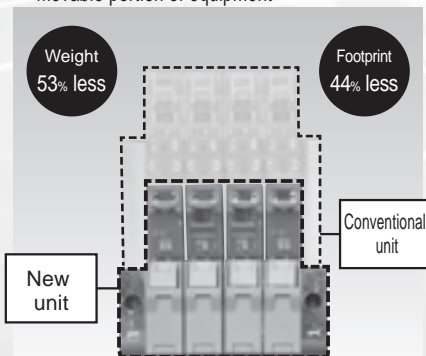CKD conventional products Negative pressure switching unit with burst

Speeds up the vacuum release in returning to positive pressure and shortens suction time with the use of solenoid valve with large flow rate

Response time Diagram

ON / OFF Electric signal

Atmospheric pressure

Conventional products

Large flow rate reduces **vacuum release** time

Vacuum pressure

3QR

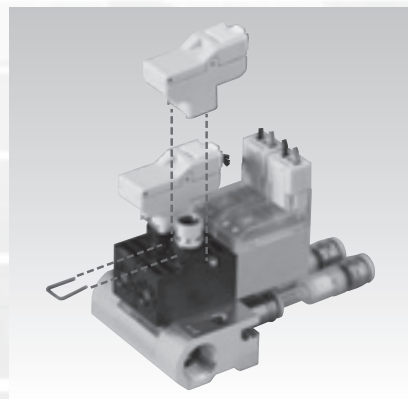Large flow rate reduces **suction** time

t time

2 Footprint minimized

● The footprint has been reduced by 44% and weight by 53% as compared with CKD's conventional unit with burst. Ideal for downsizing manufacturing equipment
● Allows installation in tight space, increasing the flexibility in design
● Lighter weight makes it easier to be installed on a movable portion of equipment

Weight 53% less
Footprint 44% less

New unit
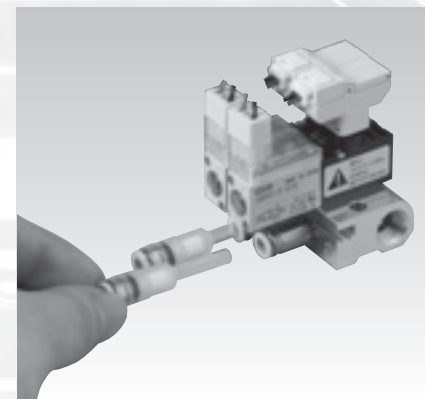Conventional unit

CKD conventional unit comparison with burst

3 Pressure sensor can be equipped

● Downsizing made possible by integrating the vacuum pressure sensor.
● Capable of detecting negative pressure without taking up space
● The pressure sensor is tightened by clips, improving maintainability

4 Vacuum filter can be equipped

● No need to install filters in the middle of the piping
● The vacuum filter can be replaced in one step, improving maintainability

CKD 1575