

# CHELIC®

Ver. 1 - 2

CAT - 1903

## 2019 | NEW PRODUCT CATALOGS



One of industrial 4.0 participant.



**SHANGHAI**  
SHANGHAI CHELIC PNEUMATIC CORP.



**ZHEJIANG**  
ZHEJIANG BANGYE AUTOMATION  
TECHNOLOGY CO., LTD.



**ZHEJIANG**  
CHELIC TECHNOLOGY (ZHEJIANG) CO., LTD.



**TAIWAN CHELIC CO.,LTD.**

## ABOUT CHELIC

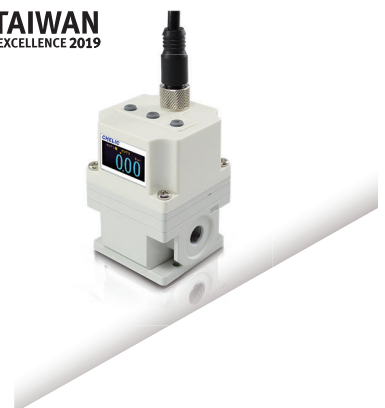
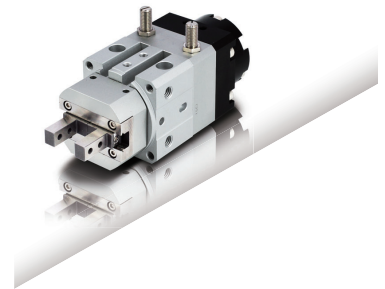
**CHELIC** was founded in 1986 and with headquarter in New Taipei City of Taiwan. Our main manufacture sites are Taiwan New Taipei Factory and Shanghai Song Jiang Factory. We have specialized in manufacturing pneumatic and electric actuator automation components including air units, control valves, actuators, pneumatic accessories, vacuum units, automatic modularized products and electro-control unit which are allocated and used widely in machinery sectors such as production facilities, inspection machines, packing machines, forming machines, repairment equipment and factory automation.

**CHELIC** has been a well-known brand in automation industry for years, and we have global distribution network; furthermore, we are the qualified OEM suppliers for tier-one international automation companies.

With our driven for innovation and quality improvement, we have dedicated to enhance customers production efficiency and lower the cost. We trust we will become a good partner and royalty backup.

## COMPANY HISTORY

- 1986** TAIWAN CHELIC CO.,LTD. founded and located in New Taipei City
- 1990** In cooperation with KOGANEI Japan for air unit to import advanced equipment and production technology
- 1991** Air cylinders and valves launched
- 1995** Obtained ISO 9002 implementing Quality System thoroughly
- 1998** Obtained ISO 9001 invigorating Research and Development
- 2001** TUV accredited that Electrical Safety qualification conformed to CE MARK
- 2001** Shanghai Chelic Pneumatic Corp. established in Shanghai City
- 2002** Enterprise Resource Planning system (ERP) implemented
- 2003** Rotary vane cylinder launched
- 2004** Slide table cylinder introduced
- 2005** Air grippers released
- 2008** Rodless cylinder rolled out
- 2009** Qualified and classified as ODM supplier by TAIYO Japan company
- 2010** The automated warehouse system and computerized management activated of new building located in Taishan of New Taipei City
- 2011** Integrating all systems and information through out the Group
- 2013** The new plant in Songjiang, Shanghai started to operate.
- 2014** The Shenzhen branch activated providing service to domestic customers from southern China
- 2015** The phase 2 construction of Taishan facility completed and operated
- 2015** Being publicly listed company with stock code 4555
- 2015** Four designs included Precision regulator and Horizontal rotary cylinder awarded by 2016 TAIWAN EXCELLENCE
- 2016** Electric actuators launched
- 2016** Six designs included Rotary gripper and Modularized vacuum ejector awarded by 2017 TAIWAN EXCELLENCE
- 2017** Taiwan Chelic Corp. Ltd. founded and located in New Taipei City
- 2017** 8 type designs included direct operated solenoid valve, energy saving vacuum equipment, energy saving precision pressure regulator won the 2018 TAIWAN EXCELLENCE AWARD.
- 2018** 8 type designs included Electro-pneumatic regulator, Modularized vacuum ejector with manifold, Miniature pick up cylinder won the 2019 TAIWAN EXCELLENCE AWARD.



# COLLECTIONS

## MODULAR SERIES

**ERX series**  
PRECISION  
REGULATOR



**UC series**  
COMBINATION



**DM series**  
LARGE - SIZED  
FILTER

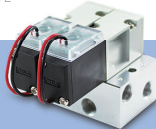


## SOLENOID VALVE SERIES

**ISO4 series**  
SOLENOID VALVE



**SKB 300U series**  
SOLENOID VALVE



**SR series**  
SOLENOID VALVE

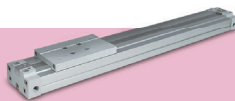


## CYLINDER SERIES

**MVS series**  
MINI CYLINDER  
(VACUUM)



**PRE series**  
OVAL RODLESS CYLINDER



**RMF series**  
ROTARY CYLINDER



## GRIPPER SERIES

**HDQM series**  
THREE FINGERS GRIPPER  
(WITH DUST COVER)



**HMW series**  
PARRALLEL GRIPPER



**RMT series**  
180° ROTARY GRIPPER



## VACUUM / PAD SERIES

**VKM15 series**  
VACUUM EJECTOR



**VK series**  
VACUUM EJECTOR



**PAG series**  
Thin Vacuum Pad



## FITTING SERIES

**CQSC series**  
SPEED CONTROLLER



**QHV series**  
HAND VALVE



**SQ series**  
UNIVERSAL ELBOW



## ACCESSORIES SERIES

**CJ series**  
CYLINDER FLOAT JOINT



**SLP series**  
PLASTIC SILENCER



**PU series**  
PU TUBING



## DIRECTIONAL CONTROL SERIES

**CVTR series**  
DIRECTIONAL  
CONTROL VALVE



**FC series**  
FLOW SWITCH



**PSS series**  
PRECISION PRESSURE SENSOR



## MODULAR SERIES

### Combinations - UC 400 series



- The F.R.L combination is comprised of filter, regulator and lubricator.
- Different air sources are applicable and can be detected by pressure switch.

| Item                    | Model                     | 400                        |
|-------------------------|---------------------------|----------------------------|
| Fluid                   |                           | Air                        |
| Port size               | Rc                        | 1/4、3/8、1/2                |
| Filter grade            | μm                        | 5μm                        |
| Proof pressure range    | kgf/cm <sup>2</sup> (kPa) | 15 (1500)                  |
| Max. service pressure   | kgf/cm <sup>2</sup> (kPa) | 10 (1000)                  |
| Temperature             | °C                        | 5~60                       |
| Min. dripping flow rate | L/min                     | 45                         |
| Recommended lubricants  |                           | ISO VG32                   |
| Weight                  | kg                        | 1.3                        |
| Material                | Body                      | Aluminum alloy die-casting |
|                         | Bowl                      | Relieving type             |

### FR.L. Combination - UFC 400 series



- The F.R.L combination is comprised of filter, regulator and lubricator.
- By applying mounting bracket that can supply oil-free air.

| Item                    | Model                     | 400                        |
|-------------------------|---------------------------|----------------------------|
| Fluid                   |                           | Air                        |
| Port size               | Rc                        | 1/4、3/8、1/2                |
| Filter grade            | μm                        | 5μm                        |
| Proof pressure range    | kgf/cm <sup>2</sup> (kPa) | 15 (1500)                  |
| Max. service pressure   | kgf/cm <sup>2</sup> (kPa) | 10 (1000)                  |
| Temperature             | °C                        | 5~60                       |
| Min. dripping flow rate | L/min                     | 45                         |
| Recommended lubricants  |                           | ISO VG32                   |
| Weight                  | kg                        | 1.05                       |
| Material                | Body                      | Aluminum alloy die-casting |
|                         | Bowl                      | Relieving type             |

### Filter - UF 400 series



- The filtered density about 5μm, max. port size to 1/2.
- Auto drain in option for users to apply small space of equipment or the place not easy to manage.

| Item                   | Model                     | 400                        |
|------------------------|---------------------------|----------------------------|
| Fluid                  |                           | Air                        |
| Port size              | Rc                        | 1/4、3/8、1/2                |
| Filter grade           | μm                        | 5μm                        |
| Proof pressure range   | kgf/cm <sup>2</sup> (kPa) | 15 (1500)                  |
| Max. service pressure  | kgf/cm <sup>2</sup> (kPa) | 10 (1000)                  |
| Temperature            | °C                        | 5~60                       |
| Drain holding capacity | cc                        | 100cc                      |
| Weight                 | kg                        | 0.392                      |
| Material               | Body                      | Aluminum alloy die-casting |
|                        | Bowl                      | Relieving type             |

## MODULAR SERIES

### F.R.L.Combination - UFR 400 series



- The filtered density about 5μm, max. port size to 1/2.
- Auto drain in option for users to apply small space of equipment or the place not easy to manage.
- Modularize with U series .

| Item                   | Model                     | 400                        |
|------------------------|---------------------------|----------------------------|
| Fluid                  |                           | Air                        |
| Port size              | Rc                        | 1/4 、 3/8 、 1/2            |
| Filter grade           | μm                        | 5μm                        |
| Proof pressure range   | kgf/cm <sup>2</sup> (kPa) | 15 (1500)                  |
| Max. service pressure  | kgf/cm <sup>2</sup> (kPa) | 10 (1000)                  |
| Temperature            | °C                        | 5~60                       |
| Drain holding capacity | CC                        | 100cc                      |
| Weight                 | kg                        | 0.591                      |
| Material               | Body                      | Aluminum alloy die-casting |
|                        | Bowl                      | Relieving type             |

### Regulator - UR 400 series



- Modularize with U series.
- Provide lubricate required in pipings; the oil amount can be adjusted according to the need.

| Item                  | Model                     | 400                        |
|-----------------------|---------------------------|----------------------------|
| Fluid                 |                           | Air                        |
| Port size             | Rc                        | 1/4 、 3/8 、 1/2            |
| Filter grade          | μm                        | 5μm                        |
| Proof pressure range  | kgf/cm <sup>2</sup> (kPa) | 15 (1500)                  |
| Max. service pressure | kgf/cm <sup>2</sup> (kPa) | 10 (1000)                  |
| Temperature           | °C                        | 5~60                       |
| Weight                | kg                        | 0.458                      |
| Material              | Body                      | Aluminum alloy die-casting |

### Lubricator - UL 400 series



- Supply the lubricant to actuators. With the function of adjusting the oil output, the oil lubrication function can be adjusted according to actual needs.

| Item                    | Model                     | 400                        |
|-------------------------|---------------------------|----------------------------|
| Fluid                   |                           | Air                        |
| Port size               | Rc                        | 1/4 、 3/8 、 1/2            |
| Proof pressure range    | kgf/cm <sup>2</sup> (kPa) | 15 (1500)                  |
| Max. service pressure   | kgf/cm <sup>2</sup> (kPa) | 10 (1000)                  |
| Temperature             | °C                        | 5~60                       |
| Min. dripping flow rate | L/min                     | 45                         |
| Recommended lubricants  |                           | ISO VG32                   |
| Drain holding capacity  | CC                        | 100cc                      |
| Weight                  | kg                        | 0.376                      |
| Material                | Body                      | Aluminum alloy die-casting |
|                         | Bowl                      | Relieving type             |

## MODULAR SERIES

### Start-up Valve - UV 400 series



- Initial air supply with slow speed (The needle valve is required).
- Maximum flow range: 7000 (L/min).
- Silencer embedded (option).
- Air consumption saving (While main valve working).

| Item                         | Model                     | 400            |
|------------------------------|---------------------------|----------------|
| Fluid                        |                           | Air            |
| Port size                    | 1(P) · 2(A) Rc/G/NPT      | 1/2            |
|                              | 3(R)                      | 1/2            |
| Pressure range               | kgf/cm <sup>2</sup> (kPa) | 2~10 (20~1000) |
| Proof pressure               | kgf/cm <sup>2</sup> (kPa) | 15 (1500)      |
| Ambient of fluid temperature |                           | 0~50           |
| Weight                       | kg                        | 0.80           |

### Shut-off Valve - UHS 400 series



- OHS standard, with locking-hole to prevent incorrection.
- Modularize with U series.

| Item                            | Model                     | 400                        |
|---------------------------------|---------------------------|----------------------------|
| Fluid                           |                           | Air                        |
| Port size                       |                           | 1/4, 3/8, 1/2              |
| Proof pressure range            | kgf/cm <sup>2</sup> (kPa) | 15 (1500)                  |
| Max. service pressure           | kgf/cm <sup>2</sup> (kPa) | 10 (1000)                  |
| Temperature                     | °C                        | 5~60                       |
| Operation lever switching angle |                           | 90°                        |
| Number of position port         |                           | 3 PORTS 2 WAYS             |
| Weight                          | kg                        | 0.329                      |
| Material                        | Body                      | Aluminum alloy die-casting |
|                                 | Bowl                      | Relieving type             |

### Precision Regulator (Energy Saving) - ERX series



- New patent in circuit design.
- No air consumed and saving energy.
- Embedded valve is able to be modularized with N series.

| Item                     | Model                     | 200                                                           | 300  | 400                         |
|--------------------------|---------------------------|---------------------------------------------------------------|------|-----------------------------|
| Fluid                    |                           | Air                                                           |      |                             |
| Max. pressure            | kgf/cm <sup>2</sup> (kPa) | 10 (1000)                                                     |      |                             |
| Min. pressure            | kgf/cm <sup>2</sup> (kPa) | Setting pressure +0.5 (50)                                    |      | Setting pressure +1.0 (100) |
| Pressure range           | kgf/cm <sup>2</sup> (kPa) | L2:0.1~2 (10~200), L4:0.1~4 (10~400) Standard: 0.1~8 (10~800) |      |                             |
| Sensitivity              |                           | F.S.的 ±1% 以内                                                  |      |                             |
| Air consumption          | L/min(ANR)                | 0 (0)                                                         |      |                             |
| Port size                | Rc(PT)                    | 1/8                                                           | 1/4  | 1/4, 3/8, 1/2               |
| Pressure gauge port size | Rc(PT)                    | 1/8 (2 sides)                                                 |      |                             |
| Temperature              | °C                        | 5~60                                                          |      |                             |
| Weight                   | kg                        | 0.21                                                          | 0.41 | 0.51                        |

## DIRECTIONAL CONTROL SERIES

### Direct Operated Precision Regulator - ERP series



- Simplified design and less components.
- Fast exhaust secondary pressure brings precise regulation and stable pressure.
- Pressure precision reach to  $\pm 1.0$  F.S.

| Item                  |  | Model                     | 200                            | 300      |
|-----------------------|--|---------------------------|--------------------------------|----------|
| Fluid                 |  |                           | Air                            |          |
| Port size             |  |                           | 1/8, 1/4                       | 1/4, 3/8 |
| Pressure range        |  | 2kgf/cm <sup>2</sup>      | 0.05 ~ 2.0 kgf/cm <sup>2</sup> |          |
|                       |  | 4kgf/cm <sup>2</sup>      | 0.05 ~ 4.0 kgf/cm <sup>2</sup> |          |
|                       |  | 6kgf/cm <sup>2</sup>      | 0.08 ~ 6.0 kgf/cm <sup>2</sup> |          |
| Air consumption       |  | 2kgf/cm <sup>2</sup>      | 0.6 L/min(ANR)以下               |          |
|                       |  | 4kgf/cm <sup>2</sup>      | 1 L/min(ANR)以下                 |          |
|                       |  | 6kgf/cm <sup>2</sup>      | 1.6 L/min(ANR)以下               |          |
| Max. service pressure |  | kgf/cm <sup>2</sup> (kPa) | 7.0 (700)                      |          |
| Min. setting pressure |  | kgf/cm <sup>2</sup> (kPa) | Setting pressure +0.5 (50)     |          |
| Temperature           |  | °C                        | -5 ~ 60 (no freezing)          |          |
| Weight                |  | kg                        | 0.2                            | 0.25     |
| Body material         |  |                           | Aluminum alloy die-casting     |          |

### Electro-pneumatic Regulator - CVTR series



- OLED screen configuration.
- Simplified system unit to reduce manual cost.
- Applicable sequence adjustment to air pressure.
- Applicable remote control and program control.
- Applicable to air, nitrogen, argon, CO<sub>2</sub>.

| Item                           |  | Model   | 101□                                                  | 105□ | 109□ |
|--------------------------------|--|---------|-------------------------------------------------------|------|------|
|                                |  |         | 201□                                                  | 205□ | 209□ |
| Pressure range setting         |  | MPa     | 301□                                                  | 305□ | 309□ |
| Power Voltage                  |  |         | 0.005~0.1                                             |      |      |
| Input signal                   |  | Current | 0.005~0.5                                             |      |      |
|                                |  | Voltage | 0.005~0.9                                             |      |      |
| Output signal (Monitor output) |  | Analog  | DC24V $\pm$ 10%                                       |      |      |
|                                |  | Switch  | 4~20mA                                                |      |      |
| Linearity                      |  |         | DC0.5~4.5V(Load Impedance Approx : 20k $\Omega$ )     |      |      |
| Hysteresis                     |  |         | DC4~20mA(Load Impedance Approx : 0.3k $\Omega$ )      |      |      |
| Repeatability                  |  |         | NPN output : Max. 30V , 80mA ; PNP output : Max. 80mA |      |      |
| Sensitivity                    |  |         | $\pm 1\%$ F.S. within                                 |      |      |
|                                |  |         | $\pm 0.5\%$ F.S. within                               |      |      |
|                                |  |         | $\pm 0.5\%$ F.S. within                               |      |      |
|                                |  |         | 0.2%F.S. within                                       |      |      |

### Electro-pneumatic Vacuum Regulator - CVAR series



- OLED screen configuration.
- Simplified system unit to reduce manual cost.
- Applicable sequence adjustment to air pressure.
- Applicable remote control and program control.
- Applicable to air, nitrogen, argon, CO<sub>2</sub>.

| Item                           |         | Model | 2900                                                  |
|--------------------------------|---------|-------|-------------------------------------------------------|
| Pressure range setting         |         | MPa   | -1.3~-80kPa                                           |
| Power Voltage                  |         |       | DC24V $\pm$ 10%                                       |
| Input signal                   | Current |       | 4~20mA                                                |
|                                | Voltage |       | DC 0~5V , DC 0~10V                                    |
| Output signal (Monitor output) | Analog  |       | DC0.5~4.5V(Load Impedance Approx : 20k $\Omega$ )     |
|                                | Switch  |       | DC4~20mA(Load Impedance Approx : 0.3k $\Omega$ )      |
| Linearity                      |         |       | NPN output : Max. 30V , 80mA ; PNP output : Max. 80mA |
| Hysteresis                     |         |       | $\pm 1\%$ F.S.以下                                      |
| Repeatability                  |         |       | 0.5%F.S.以下                                            |
| Sensitivity                    |         |       | $\pm 0.5\%$ F.S.以下                                    |
|                                |         |       | 0.2%F.S.以下                                            |

# DIRECTIONAL CONTROL SERIES

## Flow Switch - FC series



- Dual screen display and two-color display.
- Flow Range 0.5L~1000L.
- Accuracy within  $\pm 3\%$ F.S.
- Temperature characteristics within  $\pm 0.2\%$ F.S./°C (baseline 25 °C).
- Within repeatability  $\pm 1\%$ F.S.

| Item                        | Model | FCS                                                   | FCM      | FCH       |
|-----------------------------|-------|-------------------------------------------------------|----------|-----------|
| Flow rate                   | L/min | 0.5 ~ 20                                              | 50 ~ 200 | 500~ 1000 |
| Min. operating pressure     | MPa   | -0.09                                                 |          |           |
| Max. operating pressure     | MPa   | 0.7                                                   |          |           |
| Proof pressure              | MPa   | 1                                                     |          |           |
| Operating range             |       | 3 ~ 100% F.S.                                         |          |           |
| Linearity                   |       | $\pm 3\%$ F.S. within (The secondary-side atmosphere) |          |           |
| Pressure characteristics    |       | $\pm 5\%$ F.S. within                                 |          |           |
| Temperature characteristics |       | $\pm 0.2\%$ F.S./°C within ( 15~35°C 、 25°C )         |          |           |
| Repeatability               |       | $\pm 1\%$ F.S. within                                 |          |           |

## Digital Separation Flow Switch - FC-D series



- Separated display for easy data management.
- Dual screen display and two-color display.
- Flow Range 0.5L~1000L.
- Accuracy within  $\pm 3\%$ F.S.
- Temperature characteristics within  $\pm 0.2\%$ F.S./°C (baseline 25 °C).
- Within repeatability  $\pm 1\%$ F.S.

| Item                        | Model | FCSD                                                  | FCMD     | FCHD      |
|-----------------------------|-------|-------------------------------------------------------|----------|-----------|
| Flow rate                   | L/min | 0.5 ~ 20                                              | 50 ~ 200 | 500~ 1000 |
| Min. operating pressure     | MPa   | -0.09                                                 |          |           |
| Max. operating pressure     | MPa   | 0.7                                                   |          |           |
| Proof pressure              | MPa   | 1                                                     |          |           |
| Operating range             |       | 3 ~ 100% F.S.                                         |          |           |
| Linearity                   |       | $\pm 3\%$ F.S. within (The secondary-side atmosphere) |          |           |
| Pressure characteristics    |       | $\pm 5\%$ F.S. within                                 |          |           |
| Temperature characteristics |       | $\pm 0.2\%$ F.S./°C within ( 15~35°C 、 25°C )         |          |           |
| Repeatability               |       | $\pm 1\%$ F.S. within                                 |          |           |

## Digital Speed Regulating Flow Switch - FC-R series



- Integrated flow device.
- Dual screen display and two-color display.
- Flow Range 0.5L~200L.
- Accuracy within  $\pm 3\%$ F.S.
- Temperature characteristics within  $\pm 0.2\%$ F.S./°C (baseline 25 °C).
- Within repeatability  $\pm 1\%$ F.S.

| Item                        | Model | FCSR                                                  | FCMR     |
|-----------------------------|-------|-------------------------------------------------------|----------|
| Flow rate                   | L/min | 0.5 ~ 20                                              | 50 ~ 200 |
| Min. operating pressure     | MPa   | -0.09                                                 |          |
| Max. operating pressure     | MPa   | 0.7                                                   |          |
| Proof pressure              | MPa   | 1                                                     |          |
| Operating range             |       | 3 ~ 100% F.S.                                         |          |
| Linearity                   |       | $\pm 3\%$ F.S. within (The secondary-side atmosphere) |          |
| Pressure characteristics    |       | $\pm 5\%$ F.S. within                                 |          |
| Temperature characteristics |       | $\pm 0.2\%$ F.S./°C within ( 15~35°C 、 25°C )         |          |
| Repeatability               |       | $\pm 1\%$ F.S. within                                 |          |

## SOLENOID VALVE SERIES

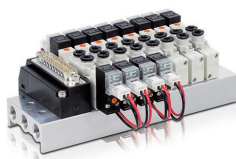
### Large Flow Solenoid Valve - ISO series



- 5/2 way large flow valve.
- Aluminum alloy main body for anti-corrosion.
- Dust proof terminal box.
- With indicator light.

| Item                           | Model                     | 200                            | 300                | 400        |
|--------------------------------|---------------------------|--------------------------------|--------------------|------------|
| Fluid                          |                           | Air                            |                    |            |
| Pressure range                 | kgf/cm <sup>2</sup> (kPa) | 2 ~ 7 (200~700)                |                    |            |
| Temperature range              | °C                        | 0 ~ 50                         |                    |            |
| Type of actuation              |                           | Air pilot                      |                    |            |
| Number of positions            |                           | 5 port 2 positions             | 5 port 3 positions |            |
| Valve type                     |                           | Mid close / Mid row / Mid open |                    |            |
| Orifice area                   | mm <sup>2</sup> (CV)      | 30(Cv=1.66)                    | 40(Cv=2.22)        | 68(Cv=3.8) |
| Manual override                |                           | Twirling the hand-press button |                    |            |
| Caliber                        |                           | PT 1/4                         | PT 3/8             | PT 1/2     |
| Lubrication                    |                           | Lubrication free               |                    |            |
| Installation size on sub-plate |                           | Complied with ISO 5599-1       |                    |            |

### 300/500 Solenoid Valve Assembly - SRVB series



- 2-12 valves connect in parallel.
- 1~3M D-sub(25 pins) cable.
- Collocate with SR300 and SR500.

| Item                 | Model                     | 300                   | 500                |
|----------------------|---------------------------|-----------------------|--------------------|
| Fluid                |                           | Air                   |                    |
| Pressure range       | kgf/cm <sup>2</sup> (kPa) | 1.5~7 (150~700)       |                    |
| Temperature range    | °C                        | 0~50                  |                    |
| Type of actuation    |                           | Air pilot             |                    |
| Number of positions  |                           | 5 port 2 positions    | 5 port 3 positions |
| Valve type           |                           | NC Normal closed      |                    |
| Orifice area         | mm <sup>2</sup> (CV)      | 3.6(0.2)              | 9(0.5)             |
| Caliber              | (PT/PF/NPT)               | M5, Rc1/8, Ø4, Ø6, Ø8 |                    |
| Lubrication          |                           | Lubrication free      |                    |
| Power supply         |                           | 12VDC, 24VDC          |                    |
| Number of seats      |                           | 2~12                  |                    |
| Applicable connector |                           | D-Sub(25pin)          |                    |

### Solenoid Valve - 3 Ports 2 Postitions Solenoid Valve - SKV 507 series



- Direct operated for vacuum, negative pressure and zero pressure difference occasion.
- Aluminum alloy main body for anti-corrosion.
- Reverse current protecting (one way).

| Item                | Model                     | 507                        |
|---------------------|---------------------------|----------------------------|
| Fluid               |                           | Air                        |
| Pressure range      | kgf/cm <sup>2</sup> (kPa) | 0~7 (0~700)                |
| Temperature range   | °C                        | 0~50                       |
| Type of actuation   |                           | Direct operated type       |
| Number of positions |                           | 3 port 2 positions         |
| Valve type          |                           | NC Normal closed           |
| Orifice area        | mm <sup>2</sup> (CV)      | 0.3                        |
| Port size           | (PT/PF/NPT)               | 1/8 1/4                    |
| Rated Voltage       |                           | 24VDC / 5.5W               |
| Electrical entry    |                           | Grommet(W) DIN terminal(K) |

## SOLENOID VALVE SERIES

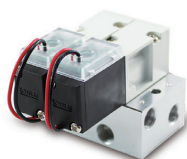
### ▣ Solenoid Valve - 3 Ports 2 Postitions Solenoid Valve - SKV 507U series



- Manifold design for saving space
- Suitable for positive/ negative pressure, vacuum and zero pressure difference occasion.
- Aluminum alloy main body for anti-corrosion.

| Item                | Model                     | 507U                       |
|---------------------|---------------------------|----------------------------|
| Fluid               |                           | Air                        |
| Pressure range      | kgf/cm <sup>2</sup> (kPa) | 0~7 (0~700)                |
| Temperature range   | °C                        | 0~50                       |
| Type of actuation   |                           | Direct operated type       |
| Number of positions |                           | 3 port 2 positions         |
| Valve type          |                           | NC Normal closed           |
| Orifice area        | mm <sup>2</sup> (CV)      | 0.19                       |
| Port size           | (PT/PF/NPT)               | 1/8                        |
| Rated Voltage       |                           | 24VDC / 5.5W               |
| Electrical entry    |                           | Grommet(W) DIN terminal(K) |

### ▣ Solenoid Valve - 3 Ports 2 Postitions Solenoid Valve - SKB 300U series



- Manifold design for saving space
- Suitable for positive/ negative pressure, vacuum and zero pressure difference occasion
- Aluminum alloy main body for anti-corrosion.

| Item                | Model                     | 300U                       |
|---------------------|---------------------------|----------------------------|
| Fluid               |                           | Air                        |
| Pressure range      | kgf/cm <sup>2</sup> (kPa) | 0~7 (0~700)                |
| Temperature range   | °C                        | 0~50                       |
| Type of actuation   |                           | Direct operated type       |
| Number of positions |                           | 3 port 2 positions         |
| Valve type          |                           | NC Normal closed           |
| Orifice area        |                           | 0.23                       |
| Port size           | (PT/PF/NPT)               | 1/8                        |
| Rated Voltage       |                           | 24VDC / 5.9W               |
| Electrical entry    |                           | Grommet(W) DIN terminal(K) |

### ▣ Solenoid Valve - 2 Ports 2 Postitions Solenoid Valve - SUB series



- External air source control.
- Large flow.
- Various fluid: gas or liquid.
- Brass base for anti-corrosion.

| Item                | Model                     | SUB - Air pilot type                                            |     | SUB - Coil type |     |
|---------------------|---------------------------|-----------------------------------------------------------------|-----|-----------------|-----|
|                     |                           | 8                                                               | 10  | 15              | 20  |
| Fluid               |                           | Air                                                             |     |                 |     |
| Pressure range      | kgf/cm <sup>2</sup> (kPa) | (NC type) 0~1 (0~100) / (NO type & Double acting) 0~10 (0~1000) |     |                 |     |
| Temperature range   | °C                        | -10~60                                                          |     |                 |     |
| Type of actuation   |                           | Air pilot                                                       |     |                 |     |
| Number of positions |                           | 2 port 2 positions                                              |     |                 |     |
| Valve type          |                           | Normal-close / Normal-open / Double acting                      |     |                 |     |
| Port size           | (mm)                      | 10                                                              | 10  | 15              | 16  |
| Caliber             | (PT/PF/NPT)               | 1/4                                                             | 3/8 | 1/2             | 3/4 |

## SOLENOID VALVE SERIES

### ➤ Solenoid Valve - 2 Ports 2 Postitions Solenoid Valve - SUG series



- External air source control.
- Large flow.
- Various fluid: gas or liquid.
- Brass base for anti-corrosion.

Note: This product is not suitable for high temperature liquid, solid fluid while cooling, corrosive fluid and viscosity exceed 20 CST.

| Item                        | Model                     | 10                   | 15     | 20     | 25      | 35      | 40      | 50      |
|-----------------------------|---------------------------|----------------------|--------|--------|---------|---------|---------|---------|
| Fluid                       |                           | Air, water and oil   |        |        |         |         |         |         |
| Temperature range           | °C                        | -5 ~ 100             |        |        |         |         |         |         |
| Type of actuation           |                           | Direct operated type |        |        |         |         |         |         |
| Applicable medium viscosity |                           | Below 50 CST         |        |        |         |         |         |         |
| Cylinder bore size          | (mm)                      | 20                   | 20     | 20     | 32      | 50      | 50      | 63      |
| Port size                   |                           | PT 1/4               | PT 1/2 | PT 3/4 | PT 1    | G 1 1/4 | G 1 1/2 | G 2     |
| Orifice diameter            | (mm)                      | 16                   | 16     | 20     | 25      | 35      | 40      | 50      |
| CV value                    |                           | 4.8                  | 4.8    | 12     | 7.6     | 24      | 29      | 48      |
| Pressure range              | kgf/cm <sup>2</sup> (kPa) | 0 ~ 7 ( 0 ~ 700 )    |        |        |         |         |         |         |
| Withstand pressure          | kgf/cm <sup>2</sup> (kPa) | 10.5 ( 1050 )        |        |        |         |         |         |         |
| Range of control pressure   | kgf/cm <sup>2</sup> (kPa) | 3 ~ 6 ( 300~600 )    |        |        |         |         |         |         |
| Material                    | Body                      | Brass                |        |        |         |         |         |         |
|                             | Oil seal                  | PTFE                 |        |        |         |         |         |         |
| Main port size              |                           | 2-M5 x 0.8P          |        |        | 2-G 1/8 | 2-G 1/4 | 2-G 1/4 | 2-G 1/4 |

### ➤ Solenoid Valve - Direct operated Solenoid Valve (General) - SUD2 series



- 2 ports 2 positions.
- Compact, save space.
- Main body: Forge Brass.
- Option: Din terminal box or grommet.

Note: This product is not suitable for high temperature liquid, solid fluid while cooling, corrosive fluid and viscosity exceed 20 CST.

| Item                     | Model        | 6                                               | 8   | 10                     |
|--------------------------|--------------|-------------------------------------------------|-----|------------------------|
| Fluid                    |              | Air, water, oil and water vapour                |     |                        |
| Temperature range        | °C           | -5°C ~ 80°C                                     |     |                        |
| Number of position ports |              | 2 ports 2 positions solenoid valve              |     |                        |
| Valve type               |              | Normal close(default) / Normal open(selectable) |     |                        |
| Type of actuation        |              | Direct operated (General)                       |     |                        |
| Port size                | Rc           | 1/8                                             | 1/4 | 3/8                    |
| Orifice diameter         | (mm)         | 2.5                                             |     | 4                      |
| CV value                 |              | 0.23                                            |     | 0.6                    |
| Pressure range           | Air          | 0 ~ 7<br>( 0 ~ 700 )                            |     | 0 ~ 10<br>( 0 ~ 1000 ) |
|                          | Water        |                                                 |     |                        |
|                          | Oil          |                                                 |     |                        |
|                          | Water vapour |                                                 |     |                        |

### ➤ Solenoid Valve - Direct diaphragm Solenoid Valve (High flow) - SUW2 series



- 2 ports 2 positions.
- Large flow, it can be the switch for air or liquid.
- Main body: Forge Brass.
- Option: Din terminal box or grommet

Note: This product is not suitable for high temperature liquid, solid fluid while cooling, corrosive fluid and viscosity exceed 20 CST.

| Item                     | Model | 10                                              | 15     | 20     | 25   | 35      | 40      | 50  |
|--------------------------|-------|-------------------------------------------------|--------|--------|------|---------|---------|-----|
| Fluid                    |       | Air, water and oil                              |        |        |      |         |         |     |
| Temperature range        | °C    | -5°C ~ 80°C                                     |        |        |      |         |         |     |
| Number of position ports |       | 2 ports 2 positions solenoid valve              |        |        |      |         |         |     |
| Valve type               |       | Normal close(default) / Normal open(selectable) |        |        |      |         |         |     |
| Type of actuation        |       | Direct diaphragm (High flow)                    |        |        |      |         |         |     |
| Port size                |       | Rc 3/8                                          | Rc 1/2 | Rc 3/4 | Rc 1 | G 1 1/4 | G 1 1/2 | G 2 |
| Orifice diameter         | (mm)  | 10                                              | 15     | 20     | 25   | 35      | 40      | 50  |
| CV value                 |       | 2.4                                             | 4.5    | 8.6    | 12   | 24      | 28      | 48  |
| Pressure range           | Air   | 0 ~ 7 ( 0 ~ 700 )                               |        |        |      |         |         |     |
|                          | Water |                                                 |        |        |      |         |         |     |
|                          | Oil   |                                                 |        |        |      |         |         |     |

## CYLINDER SERIES

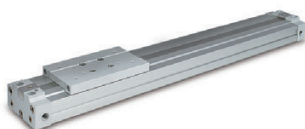
### Miniature Pick Up Cylinder - MVS series



- Separate vacuum air port to protect air tube.
- Light weight, easy to install.
- With internal cushion to protect workpiece.
- Twin guide design to prevent cylinder rotation.

| Item                   | Model                     | 06            | 10 |    |
|------------------------|---------------------------|---------------|----|----|
| Valve type             |                           | Double acting |    |    |
| Stroke                 | (mm)                      | 10            | 10 | 15 |
| Fluid                  |                           | Air           |    |    |
| Pressure range         | kgf/cm <sup>2</sup> (kPa) | 1~7 (100~700) |    |    |
| Temperature range      | °C                        | 5~60°C        |    |    |
| Vacuum pad type        |                           | PA-02~15      |    |    |
| Shock absorbing stroke | (mm)                      | 3             |    |    |
| Port size              |                           | M3            |    |    |

### Oval Rodless Cylinder - PRE series



- With air cushion.
- Multiple ways of piping port.
- Low in height.
- Speedy actuation.

| Item                  | Model        | 20               | 25    | 32 | 40    |
|-----------------------|--------------|------------------|-------|----|-------|
| Valve type            |              | Double acting    |       |    |       |
| Fluid                 |              | Air              |       |    |       |
| Pressure range        | kgf/cm2(kPa) | 1.5~7 (150~700)  |       |    |       |
| Max. service pressure | kgf/cm2(kPa) | 8 (800)          |       |    |       |
| Temperature range     | °C           | 0~60             |       |    |       |
| Piston speed          | (mm/sec)     | 50~1000          |       |    |       |
| Lubrication           |              | Lubrication free |       |    |       |
| Cushion device        |              | Air cushion      |       |    |       |
| Port size             |              | M5               | PT1/8 |    | PT1/4 |
| Sensing device        |              | With sensor      |       |    |       |

### Slide Table Cylinder - MDQ series



- Left/right pipe port.
- Max loading: 4kgs.
- High precise parallelism 0.03(mm).
- Stainless steel slide for anti-corrosion.
- Dual piston design provides double force.
- Recirculating ball design for better bolster and stability.

| Item                    | Model                     | 06                                | 08    | 12     | 16     | 20     | 25     |
|-------------------------|---------------------------|-----------------------------------|-------|--------|--------|--------|--------|
| Stroke                  | (mm)                      | 10-50                             | 10-75 | 10-100 | 10-125 | 10-150 | 10-150 |
| Valve type              |                           | Double acting(Recirculating ball) |       |        |        |        |        |
| Pressure range          | kgf/cm <sup>2</sup> (kPa) | 1-8.5 (100-850)                   |       |        |        |        |        |
| Max. operating pressure | kgf/cm <sup>2</sup> (kPa) | 9.5 (950)                         |       |        |        |        |        |
| Temperature range       | °C                        | 0-60                              |       |        |        |        |        |
| Piston speed            | (mm/sec)                  | 500-700                           |       |        |        |        |        |
| Port size               |                           | M5 x 0.8                          |       |        |        | Rc 1/8 |        |
| Sensing device          |                           | With magnet                       |       |        |        |        |        |
| Cushion device          |                           | Hydraulic shock absorber          |       |        |        |        |        |

## CYLINDER SERIES

### Clamp Cylinder - HCK series



- Compact, light weight and easy mounting.
- Lever type clamping, and multiple plate selection.
- Optional magnetic induction.

| Item                    | Model                     | 25                                          | 32     | 40 | 50     | 63 |
|-------------------------|---------------------------|---------------------------------------------|--------|----|--------|----|
| Stroke                  |                           | 20                                          | 20     | 25 | 30     | 35 |
| Valve type              |                           | Double acting                               |        |    |        |    |
| Fluid                   |                           | Air                                         |        |    |        |    |
| Pressure range          | Kgf/cm <sup>2</sup> (kPa) | 1~7(100~700)                                |        |    |        |    |
| Max. operating pressure | Kgf/cm <sup>2</sup> (kPa) | 9(900)                                      |        |    |        |    |
| Temperature range       | °C                        | -10~60                                      |        |    |        |    |
| Lubrication             |                           | Lubrication free                            |        |    |        |    |
| Port size               |                           | M5x0.8                                      | Rc 1/8 |    | Rc 1/4 |    |
| Sensing device          |                           | Option (-S: indicates with magnet embedded) |        |    |        |    |

### Clamp Cylinder - HLK series



- Cylinder will be self-locked, even system shut down.
- Compact design and space saving.
- Optional magnetic induction.

| Item                    | Model                     | 20               |
|-------------------------|---------------------------|------------------|
| Stroke                  |                           | 3                |
| Valve type              |                           | Double acting    |
| Fluid                   |                           | Air              |
| Pressure range          | Kgf/cm <sup>2</sup> (kPa) | 2~8.5 (200~850)  |
| Max. operating pressure | Kgf/cm <sup>2</sup> (kPa) | 9.5 (950)        |
| Temperature range       | °C                        | -10~60           |
| Lubrication             |                           | Lubrication free |
| Port size               |                           | M5x0.8           |
| Sensing device          |                           | With magnet      |

### Standard Cylinder - DMB2 series



- Self-oiling bearing, no extra lubricator needed.
- With air cushion.
- High temperature(150°C) endurable packing(Optional).
- Multiple mounting ways.
- With magnetic induction.

| Item              | Model                     | 32                                                          | 40    | 50 | 63    | 80 | 100   |
|-------------------|---------------------------|-------------------------------------------------------------|-------|----|-------|----|-------|
| Valve type        |                           | Double acting                                               |       |    |       |    |       |
| Fluid             |                           | Air                                                         |       |    |       |    |       |
| Bracket           |                           | FA、FB、CA、CB、LB、TC                                           |       |    |       |    |       |
| Pressure range    | kgf/cm <sup>2</sup> (kPa) | 1.5 ~ 9 (150 ~ 900)                                         |       |    |       |    |       |
| Temperature range | °C                        | 0 ~ 60                                                      |       |    |       |    |       |
| Piston speed      | mm/sec                    | 50 ~ 700                                                    |       |    |       |    |       |
| Tubing material   |                           | Aluminum alloy                                              |       |    |       |    |       |
| Cushion device    |                           | Air cushion                                                 |       |    |       |    |       |
| Lubrication       |                           | Lubrication free                                            |       |    |       |    |       |
| Port size         |                           | G 1/8                                                       | G 1/4 |    | G 3/8 |    | G 1/2 |
| Sensing device    |                           | With magnet                                                 |       |    |       |    |       |
| Stroke            | mm                        | 50、75、100、125、150、175、200、250、300、350、400、450、500、(600、700) |       |    |       |    |       |

## GRIPPER SERIES

### Reversing Clamping Cylinder - RMT series



- Modular gripper mechanism.
- With shock absorber.
- External angle adjuster for minor adjustment.

| Item                            | Model                     | 25              | 50    |
|---------------------------------|---------------------------|-----------------|-------|
| Matching gripper                |                           | HDQ 、 HMQ 、 HDW |       |
| Valve type                      | Rotary cylinder           | Double acting   |       |
|                                 | Gripper                   | Double acting   |       |
| Fluid                           |                           | Air             |       |
| Pressure range                  | kgf/cm <sup>2</sup> (kPa) | 1.5~7(150~700)  |       |
| Max. service pressure           | kgf/cm <sup>2</sup> (kPa) | 7.5(750)        |       |
| Temperature range               | °C                        | 0~60            |       |
| Port size                       | Rotary cylinder           | M5              |       |
|                                 | Gripper                   | M5              | PT1/8 |
| Cushion type to rotary cylinder |                           | Shock absorber  |       |

### Power Gripper - HMW series



- Wedge design for stable gripping force.
- With magnet for reed switch and PLC system.
- Hard-anodized finishing main body to prolong lifetime.

| Item                       | Model                     | 18                  | 22   | 27   | 34   | 44   | 55    | 66   | 92    | 125   |
|----------------------------|---------------------------|---------------------|------|------|------|------|-------|------|-------|-------|
| Valve type                 |                           | Double acting       |      |      |      |      |       |      |       |       |
| Opening and closing stroke | mm                        | 2.5                 | 4    | 6    | 8    | 10   | 13    | 16   | 20    | 30    |
| Gripping force             | Close N                   | 77                  | 121  | 188  | 253  | 377  | 731   | 1059 | 1814  | 3649  |
|                            | Open N                    | 83                  | 125  | 190  | 303  | 431  | 810   | 1125 | 2266  | 3927  |
| Recommend workpiece weight | kg                        | 0.4                 | 0.6  | 1    | 1.5  | 2.2  | 4.1   | 5.7  | 11.5  | 20    |
| Open/close time            | s                         | 0.02                | 0.03 | 0.04 | 0.07 | 0.1  | 0.35  | 0.45 |       |       |
| Repeatability              | mm                        |                     |      | 0.01 |      |      | 0.02  | 0.05 |       |       |
| Fluid                      |                           | Air                 |      |      |      |      |       |      |       |       |
| Pressure range             | kgf/cm <sup>2</sup> (kPa) | 2 ~ 8 ( 200 ~ 800 ) |      |      |      |      |       |      |       |       |
| Temperature range          | °C                        | 5 ~ 80              |      |      |      |      |       |      |       |       |
| Lubrication                |                           | Lubrication free    |      |      |      |      |       |      |       |       |
| Port size                  |                           | M3                  |      | M5   |      |      | G 1/8 |      | G 1/4 |       |
| Weight                     | kg                        | 0.11                | 0.19 | 0.29 | 0.5  | 0.77 | 1.42  | 2.76 | 5.06  | 13.26 |

### 3 Finger Gripper - HMQ series



- Wedge design and enlarged grippers provides more stable gripping force.
- Hard-anodized finishing main body to prolong lifetime.

| Item                       | Model                     | 25                  | 32   | 44    | 55  | 70   | 92   | 125   | 160  |
|----------------------------|---------------------------|---------------------|------|-------|-----|------|------|-------|------|
| Valve type                 |                           | Double acting       |      |       |     |      |      |       |      |
| Opening and closing stroke | mm                        | 2.5                 | 4    | 5.5   | 8   | 10   | 13   | 16    | 20   |
| Gripping force             | Close N                   | 129                 | 239  | 377   | 731 | 1195 | 1814 | 3649  | 6011 |
|                            | Open N                    | 157                 | 265  | 431   | 810 | 1306 | 2266 | 3927  | 6434 |
| Recommend workpiece weight | kg                        | 0.8                 | 3.8  | 2.2   | 4.1 | 6.6  | 11.5 | 20    | 32.8 |
| Open/close time            | s                         | 0.025               | 0.03 | 0.05  | 0.1 | 0.2  | 0.25 | 0.3   | 0.35 |
| Repeatability              | mm                        |                     |      | 0.01  |     |      | 0.02 | 0.05  |      |
| Fluid                      |                           | Air                 |      |       |     |      |      |       |      |
| Pressure range             | kgf/cm <sup>2</sup> (kPa) | 2 ~ 8 ( 200 ~ 800 ) |      |       |     |      |      |       |      |
| Temperature range          | °C                        | 5 ~ 80              |      |       |     |      |      |       |      |
| Lubrication                |                           | Lubrication free    |      |       |     |      |      |       |      |
| Main port size             |                           | M5                  |      | G 1/8 |     |      |      | G 1/4 |      |
| Weight                     | kg                        | 0.22                | 0.5  | 0.85  | 1.6 | 2.7  | 2.8  | 4.9   | 9.7  |

# GRIPPER SERIES

## Parallel Gripper - HDQ2 series



- Hard-anodized body and heat-treated grippers provides better movement and stable gripping force.
- Simplified installation with mounting hole.

| Item                     | Model                     |   | 16                  | 20  | 25  | 32  | 40  | 50  | 63     | 80  | 100    |
|--------------------------|---------------------------|---|---------------------|-----|-----|-----|-----|-----|--------|-----|--------|
| Bore size                | mm                        |   | Ø16                 | Ø20 | Ø25 | Ø32 | Ø40 | Ø50 | Ø63    | Ø80 | Ø100   |
| Valve type               |                           |   | Double acting       |     |     |     |     |     |        |     |        |
| Fluid                    |                           |   | Air                 |     |     |     |     |     |        |     |        |
| Pressure range           | kgf/cm <sup>2</sup> (kPa) |   | 3 ~ 7 ( 300 ~ 700 ) |     |     |     |     |     |        |     |        |
| Temperature range        | ℃                         |   | 0 ~ 60              |     |     |     |     |     |        |     |        |
| Repeatability            | mm                        |   | ±0.01               |     |     |     |     |     |        |     |        |
| Max. operating frequency | min                       |   | 120                 |     |     | 60  |     |     | 30     |     |        |
| Lubrication              |                           |   | Lubrication free    |     |     |     |     |     |        |     |        |
| Gripping force           | Close                     | N | 21                  | 37  | 63  | 111 | 177 | 280 | 502    | 710 | 1068   |
|                          | Open                      | N | 23                  | 42  | 71  | 123 | 195 | 306 | 537    | 748 | 1111   |
| Finger open/close stroke | mm                        |   | 4                   | 4   | 6   | 8   | 8   | 12  | 16     | 20  | 24     |
| Port size                | Side                      |   | M3                  |     |     | M5  |     |     | PT 1/8 |     | PT 1/4 |
|                          | Bottom                    |   | -                   |     |     | M5  |     |     | PT 1/8 |     | PT 1/8 |
| Sensing device           |                           |   | With magnetic       |     |     |     |     |     |        |     |        |

Note: The gripping force is under 0.5MPa acting pressure and gripping point at 20mm.

## Parallel Gripper - HDQ3 series



- Hard-anodized body and heat-treated grippers provides better movement and stable gripping force.
- Simplified installation with mounting hole.

| Item                     | Model                     |    | 16                  | 20  | 25  | 32  | 40  | 50  | 63  | 80     | 100  |        |
|--------------------------|---------------------------|----|---------------------|-----|-----|-----|-----|-----|-----|--------|------|--------|
| Bore size                | mm                        |    | Ø16                 | Ø20 | Ø25 | Ø32 | Ø40 | Ø50 | Ø63 | Ø80    | Ø100 |        |
| Valve type               |                           |    | Double acting       |     |     |     |     |     |     |        |      |        |
| Fluid                    |                           |    | Air                 |     |     |     |     |     |     |        |      |        |
| Pressure range           | kgf/cm <sup>2</sup> (kPa) |    | 3 ~ 7 ( 300 ~ 700 ) |     |     |     |     |     |     |        |      |        |
| Temperature range        | °C                        |    | 0 ~ 60              |     |     |     |     |     |     |        |      |        |
| Repeatability            | mm                        |    | ± 0.01              |     |     |     |     |     |     |        |      |        |
| Max. operating frequency | min                       |    | 120                 |     |     | 60  |     |     | 30  |        |      |        |
| Lubrication              |                           |    | Lubrication free    |     |     |     |     |     |     |        |      |        |
| Gripping force           | Close                     | N  | 14                  | 25  | 30  | 70  | 131 | 282 | 446 | 578    | 946  |        |
|                          | Open                      | N  | 16                  | 28  | 35  | 82  | 149 | 314 | 496 | 641    | 1009 |        |
| Finger open/close stroke | mm                        |    | 4                   | 4   | 6   | 8   | 8   | 12  | 16  | 20     | 24   |        |
| Port size                | Side                      | M3 |                     |     | M5  |     |     |     |     | PT 1/8 |      | PT 1/4 |
|                          | Bottom                    | -  |                     |     | M5  |     |     |     |     |        |      | PT 1/8 |
| Sensing device           |                           |    | With magnetic       |     |     |     |     |     |     |        |      |        |

Note: The gripping force is under 0.5MPa acting pressure and gripping point at 20mm.

## Parallel Gripper - HDQ4 series



- Hard-anodized body and heat-treated grippers provides better movement and stable gripping force.
- Simplified installation with mounting hole.

| Item                     | Model        |   | 16                  | 20  | 25  | 32  | 40  | 50  | 63     | 80  | 100    |
|--------------------------|--------------|---|---------------------|-----|-----|-----|-----|-----|--------|-----|--------|
| Bore size                | mm           |   | Ø16                 | Ø20 | Ø25 | Ø32 | Ø40 | Ø50 | Ø63    | Ø80 | Ø100   |
| Valve type               |              |   | Double acting       |     |     |     |     |     |        |     |        |
| Fluid                    |              |   | Air                 |     |     |     |     |     |        |     |        |
| Pressure range           | kgf/cm2(kPa) |   | 3 ~ 7 ( 300 ~ 700 ) |     |     |     |     |     |        |     |        |
| Temperature range        | °C           |   | 0 ~ 60              |     |     |     |     |     |        |     |        |
| Repeatability            | mm           |   | ± 0.01              |     |     |     |     |     |        |     |        |
| Max. operating frequency | min          |   | 120                 |     |     | 60  |     |     | 30     |     |        |
| Lubrication              |              |   | Lubrication free    |     |     |     |     |     |        |     |        |
| Gripping force           | Close        | N | 10                  | 19  | 31  | 55  | 88  | 140 | 251    | 355 | 534    |
|                          | Open         | N | 12                  | 21  | 35  | 61  | 97  | 153 | 268    | 374 | 555    |
| Finger open/close stroke | mm           |   | 4                   | 4   | 6   | 8   | 8   | 12  | 16     | 20  | 24     |
| Port size                | Side         |   | M3                  |     |     | M5  |     |     | PT 1/8 |     | PT 1/4 |
|                          | Bottom       |   | -                   |     |     | M5  |     |     |        |     | PT 1/8 |
| Sensing device           |              |   | With magnetic       |     |     |     |     |     |        |     |        |

Note: The gripping force is under 0.5MPa acting pressure and gripping point at 20mm.

## GRIPPER SERIES

### 3 Finger Gripper (With Dust Cover) - HDQM series



- Preventing dust and fringer lubrication oil.

| Item                     | Bore size (mm) |   | 25               | 32 | 40  | 50  |
|--------------------------|----------------|---|------------------|----|-----|-----|
| Valve type               |                |   | Double acting    |    |     |     |
| Fluid                    |                |   | Air              |    |     |     |
| Pressure range           | Kgf/cm2(kPa)   |   | 3~6 (300~600)    |    |     |     |
| Temperature range        | °C             |   | 0~60             |    |     |     |
| Max. operating frequency | min            |   | 120              | 60 |     |     |
| Lubrication              |                |   | Lubrication free |    |     |     |
| Gripping force           | Close          | N | 30               | 70 | 131 | 282 |
|                          | Open           | N | 35               | 82 | 149 | 314 |
| Finger open/close stroke | mm             |   | 6                | 8  | 8   | 12  |
| Port size                |                |   | M5               |    |     |     |
| Sensing device           |                |   | With magnetic    |    |     |     |

Note: The gripping force is under 0.5MPa acting pressure and gripping point at 20mm.

### 2 Finger Gripper (With Dust Cover) - HDWM series



- Preventing dust and fringer lubrication oil.

| Item                     | Model         | 25                                 | 32 | 40 | 50 |
|--------------------------|---------------|------------------------------------|----|----|----|
| Bore size                | mm            | 25                                 | 32 | 40 | 50 |
| Valve type               |               | Double acting                      |    |    |    |
| Fluid                    |               | Air                                |    |    |    |
| Pressure range           | kgf/cm2 (kPa) | 3 ~ 7 ( 300 ~ 700 )                |    |    |    |
| Temperature range        | °C            | -5~60 (with nonfreezing condition) |    |    |    |
| Max. operating frequency | min           | 80                                 |    | 60 |    |
| Lubricated               |               | Not required                       |    |    |    |

### Parallel Gripper - HDU series

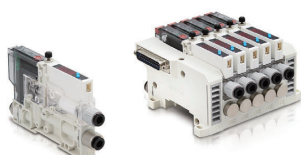


- Dustproof.
- Electroless Nickel coating on body for anti-oxidation and anti-corrosion.

| Item                         | Model                     | 10                 | 16 | 20      | 25 | 32 |
|------------------------------|---------------------------|--------------------|----|---------|----|----|
| Bore size                    | mm                        | 10                 | 16 | 20      | 25 | 32 |
| Valve type                   |                           | Double acting      |    |         |    |    |
| Fluid                        |                           | Air                |    |         |    |    |
| Pressure range               | kgf/cm <sup>2</sup> (kPa) | 1.5 ~ 7(150 ~ 700) |    |         |    |    |
| Temperature range            | °C                        | 0 ~ 60             |    |         |    |    |
| Max. operating frequency     | min                       | 100                |    |         |    |    |
| Lubricated                   |                           | Lubrication free   |    |         |    |    |
| Max. gripper point length(L) | mm                        | 25                 | 35 | 55      | 65 | 80 |
| Finger open/close stroke     | mm                        | 4                  | 8  | 12      | 14 | 16 |
| Port size                    |                           | M3X0.5P            |    | M5X0.8P |    |    |
| Sensing device               |                           | With magnetic      |    |         |    |    |

Note: P: Acting pressure=5kgf/cm². L: Gripper point length=30mm.

## Modularized Vacuum Ejector With Manifold - VKM15 series



- Simplified and flexible expansion.
- Modularized sets for space saving.
- Easy piping.
- With 2-staged vacuum ejectors to boost inhalation.
- 2 sets of output.

| Item                 | Model                     | 15                    |
|----------------------|---------------------------|-----------------------|
| Fluid                |                           | Air                   |
| Pressure range       | kgf/cm <sup>2</sup> (kPa) | 2.5 ~ 7 (250~700)     |
| Proof pressure       | kgf/cm <sup>2</sup> (kPa) | 5 (500)               |
| Max. Vacuum pressure | kPa (mmHg)                | -91.8 ( -690 )        |
| Nozzle size          | mm                        | 1.0                   |
| Suction flow         | L/min                     | 45                    |
| Temperature range    | °C                        | 5 ~ 60                |
| Material             | Body                      | Brass (nickel plated) |
|                      | Plastic                   | NYLON , PBT           |
| Port size            | mm                        | Ø6 ~ Ø8               |
| Control valve        |                           | SR2 - 100             |
| Voltage              | V                         | 24±10%VDC             |
| Consumed power       | W                         | 1.4                   |

## Modularized Vacuum Ejector - VK20 series



- Simplified.
- Modularized sets for space saving.
- With digital pressure display.
- 2 sets of output.

| Item                 | Model                     | 20B · 20S · 20T · 20ST |
|----------------------|---------------------------|------------------------|
| Fluid                |                           | Air                    |
| Pressure range       | kgf/cm <sup>2</sup> (kPa) | 2.5~7 (250~700)        |
| Proof pressure       | kgf/cm <sup>2</sup> (kPa) | 5 (500)                |
| Max. Vacuum pressure | kPa (mmHg)                | -91.8 ( -690 )         |
| Nozzle size          | mm                        | 0.5 , 0.7 , 1.0        |
| Suction flow         | L/min                     | 22                     |
| Temperature range    | °C                        | 5~60                   |
| Material             | Body                      | Brass (nickel plated)  |
|                      | Plastic                   | NYLON , PBT            |
| Port size            | mm                        | Ø6                     |
| Control valve        |                           | SR2-100                |
| Voltage              | V                         | 24±10%VDC              |
| Consumed power       | W                         | 1.4                    |

## Modularized Vacuum Ejector - VK30 series



- Simplified.
- Modularized sets for space saving.
- With digital pressure display.
- 2 sets of output.

| Item                 | Model                     | 30T · 30ST            |
|----------------------|---------------------------|-----------------------|
| Fluid                |                           | Air                   |
| Pressure range       | kgf/cm <sup>2</sup> (kPa) | 2.5~7 (250~700)       |
| Proof pressure       | kgf/cm <sup>2</sup> (kPa) | 5 (500)               |
| Max. Vacuum pressure | kPa (mmHg)                | -91.8 ( -690 )        |
| Nozzle size          | mm                        | 2.0                   |
| Suction flow         | L/min                     | 64                    |
| Temperature range    | °C                        | 5~60                  |
| Material             | Body                      | Brass (nickel plated) |
|                      | Plastic                   | NYLON , PBT           |
| Port size            | mm                        | Ø10                   |
| Control valve        |                           | SR2-100               |
| Voltage              | V                         | 24±10%VDC             |
| Consumed power       | W                         | 1.4                   |

## Energy-saving Vacuum Ejector - VQ20series



- Easy to installation.
- Simple structure, indicator included.
- Energy maintenance: 80% Air consumption reduced.
- For both vacuum ejection/ breaking vacuum.

| Item                 | Model                     | 20B · 20S · 20T · 20ST |
|----------------------|---------------------------|------------------------|
| Fluid                |                           | Air                    |
| Pressure range       | Kgf/cm <sup>2</sup> (kPa) | 4~7 (400~700)          |
| Operating pressure   | Kgf/cm <sup>2</sup> (kPa) | 6 (600)                |
| Max. Vacuum pressure | kPa (mmHg)                | -91.8 ( -690 )         |
| Nozzle size          | mm                        | 1.0                    |
| Suction flow         | L/min                     | 22                     |
| Temperature range    | °C                        | 5~60                   |
| Material             | Body                      | NYLON , PBT            |
|                      | Plastic                   | NYLON , PBT            |
| Port size            | mm                        | Ø6                     |
| Control valve        |                           | SR2-100                |
| Voltage              | V                         | 24±10%VDC              |
| Consumed power       | W                         | 1.4                    |

## Thin Vacuum Pad - PAG series



- Perfect sealed by thin suction lips and suitable for labile form pieces.
- Available in a variety of sizes.

| Model | Bracket type                                                                                                                     | Suction cup diameter               | Material                                                                                                                        |
|-------|----------------------------------------------------------------------------------------------------------------------------------|------------------------------------|---------------------------------------------------------------------------------------------------------------------------------|
| PAG   | F : Upright piping<br>K : Upright piping Connector<br>T : Lateral piping<br>FS : Upright spring type<br>TS : Lateral spring type | Ø10 · Ø15 · Ø20<br>Ø25 · Ø35 · Ø50 | NBR: Rubber<br>SI: Silicon Rubber<br>PU: Rubber<br>SE: Anti-Static Rubber<br>E: Low Resistance & Anti-Static electricity Rubber |

## Non-slip Vacuum Pad - PAO series



- Large lateral force.
- NBR material: good oil resistance.
- Available in a variety of sizes.

| Model | Bracket type                                                                                                                     | Suction cup diameter         | Material    |
|-------|----------------------------------------------------------------------------------------------------------------------------------|------------------------------|-------------|
| PAO   | F : Upright piping<br>K : Upright piping Connector<br>T : Lateral piping<br>FS : Upright spring type<br>TS : Lateral spring type | Ø10 · Ø20 · Ø30<br>Ø40 · Ø50 | NBR: Rubber |

### ▣ Oval Vacuum Equipment - PAW series



| Model | Bracket type                                                                                                                     | Suction cup diameter                                                                     | Material                                                                                                                              |
|-------|----------------------------------------------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------|
| PAW   | F : Upright piping<br>K : Upright piping Connector<br>T : Lateral piping<br>FS : Upright spring type<br>TS : Lateral spring type | 2x4 、3.5x7、<br>4x10 、4x20 、4x30、<br>5x10 、5x20 、5x30、<br>6x10 、6x20 、6x30、<br>8x20 、8x30 | NBR: Rubber<br>SI: Silicon Rubber<br>PU: Rubber<br>SE: Anti-Static Rubber<br>E: Low Resistance &<br>Anti-Static electricity<br>Rubber |

- Suction pad is made of plastics. Not easily happen the suction mark.
- Simple structure/Small size/Easy to replace.
- Available in a variety of sizes.

### ▣ Flat Type Vacuum Equipment - PAP series



| Model | Bracket type                                                                                                                     | Suction cup diameter      | Material                                                                                                                              |
|-------|----------------------------------------------------------------------------------------------------------------------------------|---------------------------|---------------------------------------------------------------------------------------------------------------------------------------|
| PAP   | F : Upright piping<br>K : Upright piping Connector<br>T : Lateral piping<br>FS : Upright spring type<br>TS : Lateral spring type | Ø5 、Ø10、Ø15 、<br>Ø20 、Ø30 | NBR: Rubber<br>SI: Silicon Rubber<br>PU: Rubber<br>SE: Anti-Static Rubber<br>E: Low Resistance &<br>Anti-Static electricity<br>Rubber |

- With special suction pad design to boost suction efficiency.
- Various sizes available.

### ▣ No Trace Vacuum Equipment - PAQ series



| Model | Bracket type                                                                                                                     | Suction cup diameter                       | Material                                                    |
|-------|----------------------------------------------------------------------------------------------------------------------------------|--------------------------------------------|-------------------------------------------------------------|
| PAQ   | F : Upright piping<br>K : Upright piping Connector<br>T : Lateral piping<br>FS : Upright spring type<br>TS : Lateral spring type | Ø6 、Ø8 、Ø10、<br>Ø15 、Ø20 、Ø30、<br>Ø40 、Ø50 | P: Plastic copper<br>K: PEEK<br>KE: Electrical conductivity |

- Suction pad is made of plastics. Not easily happen the suction mark.
- Simple structure/Small size/Easy to replace.
- Available in a variety of sizes.

## FITTING

### ✦ Fitting - SQ3 series



| Port size          |                           | Ø4 , Ø6 , Ø8 , Ø10 , Ø12      |
|--------------------|---------------------------|-------------------------------|
| Fluid              |                           | Air                           |
| Pressure range     | kgf/cm <sup>2</sup> (kPa) | 0 ~ 9 ( 0 ~ 900 )             |
| Withstand pressure | kgf/cm <sup>2</sup> (kPa) | 10 ( 1000 )                   |
| Vacuum pressure    | kPa                       | -100                          |
| Temperature range  | °C                        | 5 ~ 60                        |
| Material           | Body                      | Brass (nickel plated)         |
|                    | Plastic                   | NYLON, PBT, PP                |
| Port size          | Rc(PT/NPT)                | M5x0.8p(10/32), 1/8, 1/4, 3/8 |
| Thread             |                           | With glue                     |

- Straight/L type/Multi-tube connector...various types available.
- Compact, lightweight, space saving.

### ✦ Hand Valve - QHV3 series



| Item               | Model                     | Ø6 , Ø8 , Ø10 , Ø12   |
|--------------------|---------------------------|-----------------------|
| Fluid              |                           | Air                   |
| Pressure range     | kgf/cm <sup>2</sup> (kPa) | 0 ~ 9 ( 0 ~ 900 )     |
| Withstand pressure | kgf/cm <sup>2</sup> (kPa) | 10 ( 1000 )           |
| Vacuum pressure    | kPa                       | -100                  |
| Temperature range  | °C                        | 5 ~ 60                |
| Material           | Body                      | Brass (nickel plated) |
|                    | Plastic                   | NYLON , PBT , PP      |
| Port size          | Rc (PT)                   | 1/8 , 1/4 , 3/8       |
| Thread             |                           | With glue             |

- Option: 2 ports/3 ports.
- 2 ports-dual way valve without exhaust function.
- 3 ports-with exhaust function to release excessive air.

## ACCESSORIES

### Precision Pressure Switch - PSS series



- Hydraulic isolating gas and silicon wafer chip sensor.
- No contact measurement.
- Both air or liquid can be measured.
- Stainless steel, antirust and corrosion resistant.

| Specification                                       | Positive pressure                                |
|-----------------------------------------------------|--------------------------------------------------|
| Rated pressure range      kgf/cm <sup>2</sup> (kPa) | 0 ~ 10 (0~1000)                                  |
| Temperature error                                   | ±2% F.S.(0/50°C), ±3% F.S.(-10/60°C)             |
| Tolerance                                           | ±0.5% F.S.                                       |
| Precision                                           | ±0.5% F.S.(25°C)                                 |
| Repeatability                                       | < ± 0.1% F.S.(25°C)                              |
| Enclosure                                           | IP65                                             |
| Operation                      °C                   | -10 ~ 60                                         |
| Connector thread                                    | 1/4 NPT-18std*1/4 PT-19std*1/4 BSPF-19std        |
| Material                                            | C3604+EN (Outer case); SS#316L(Connector/Sensor) |

### Rotary Joint - CRJF series



- High intense internal bearing provides stable and smooth rotary.
- Optional for 4, 6 and 8 circuits.
- Internal sleeve increases accuracy by shortening gap between piston rod and main body.

| Model                                          | M5-04            | 01-04 | M5-06 | 01-06 | M5-08 | 01-08 | M5-12 | M5-16 |
|------------------------------------------------|------------------|-------|-------|-------|-------|-------|-------|-------|
| Fluid                                          | Air              |       |       |       |       |       |       |       |
| Pressure range              MPa                | -100kPa ~ 0.7MPa |       |       |       |       |       |       |       |
| Temperature range         °C                   | 5~60             |       |       |       |       |       |       |       |
| Number of circuits                             | 4                |       | 6     |       | 8     |       | 12    | 16    |
| Port size                                      | M5               | Rc1/8 | M5    | Rc1/8 | M5    | Rc1/8 | M5    | M5    |
| Allowable rotation number   min <sup>-1</sup>  | 350              | 240   | 240   | 170   | 200   | 140   | 175   | 155   |
| Rotation torque            (N.M)               | 0.05             | 0.07  | 0.12  | 0.17  | 0.2   | 0.4   | 0.85  | 1.5   |
| Orifice                        mm <sup>2</sup> | 4.9              | 12.5  | 4.9   | 12.5  | 4.9   | 12.5  | 4.9   | 4.9   |
| Weight                        Kg               | 0.11             | 0.28  | 0.16  | 0.50  | 0.38  | 0.90  | 0.70  | 1.3   |



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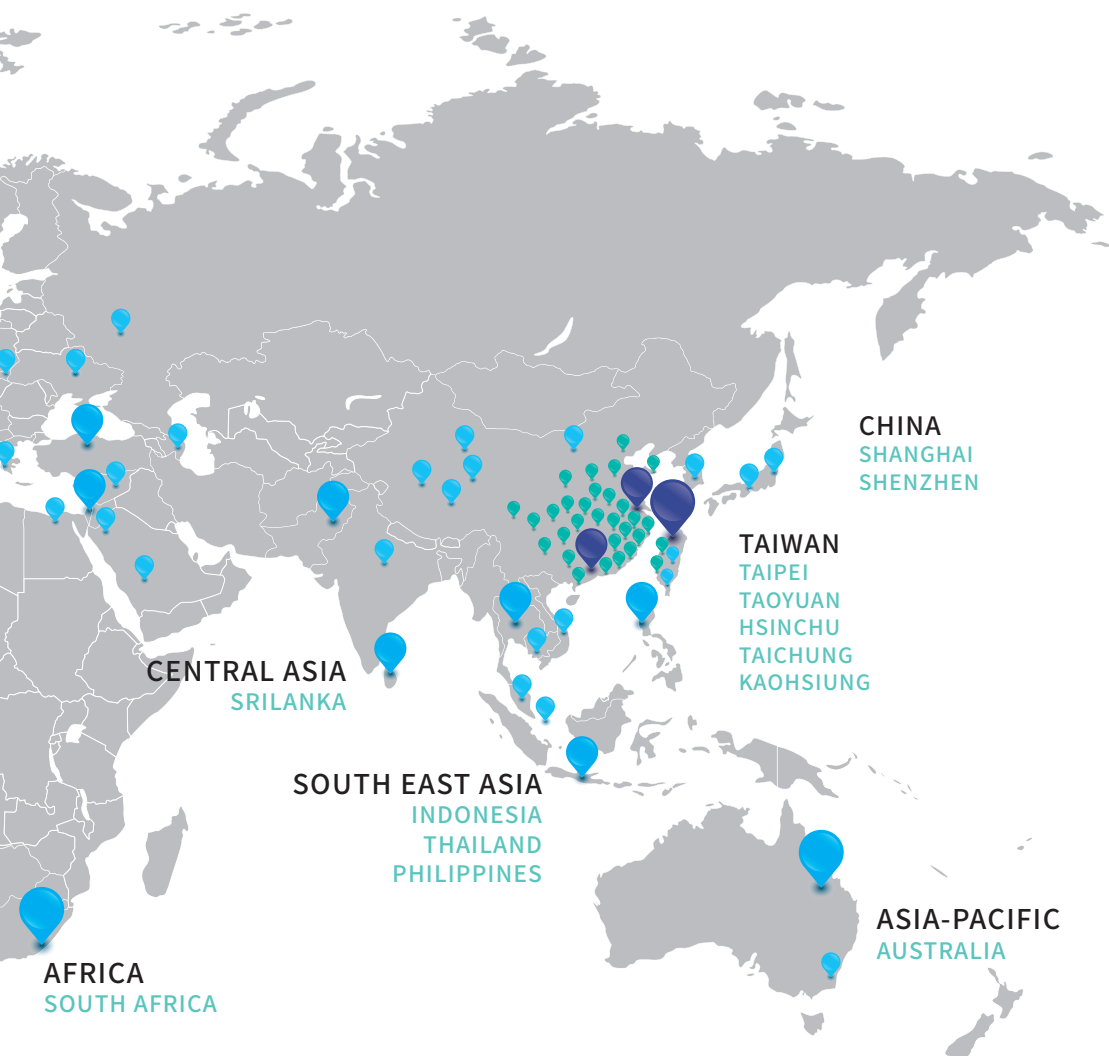
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