Products guide for machine tool
Continuing to meet new needs!

With insatiable pursuit and reliable technologies, we offer a broad lineup to meet the needs of machine tool as your manufacturing partner.
Air Supply Components

- Air unit
- FRL
- Super dryer
- Shut-off valve
- Pneumatic valve
- Pressure switch

Coolant Control

- Coolant valve
- Coolant check valve
- Coolant pressure switch

Processing Jig

- Seating confirmation switch
- Close contact confirmation switch
- Coolant proof cylinder

Processing Tool

- Cutting tool broken detecting switch
- Solenoid valve for compressed air

Automatic Door / Carrier Device

- Electric actuator
- Rodless cylinder
- Stopper cylinder
- High speed cylinder
- Unit
- Hand and chuck

With insatiable pursuit and reliable technologies, we offer a broad lineup to meet the needs of machine tool as your manufacturing partner. Continuing to meet new needs!
CKD, under the slogan "rendering troublesome piping unnecessary" advocates, through the "CXU" Series air unit, a piping revolution in the machining tool industry. Besides air units, various air pressure devices required for various design of machining tool products are offered in large numbers. Building on a wealth of compressed air management experience, we gave shape customers' ideas about desirable features.

A revolution in piping! Hassle free air unit!

Piping no longer needed! No troublesome piping work! Flexible combination!
Modularization of various air instruments that are essential to the actuator drive, and from the filter regulator to the valve. Dramatically reduces conventional design piping layout labor.

CXU Series

With the high scalability, guaranteed to flexibly meet your needs in the design of the machining tools.

Carry out piping layout freely
Vertical and horizontal pipes can be arranged freely.
Solenoid valves can also be connected directly.
Layout is also easy, with significant reductions in piping layout work.
(Patent pending)

Change and expand freely
Module joining enables air components to be changed and expanded freely. Removable from the instrument face. Easy maintenance.

FRL modular type covers medium range pressure

Integrated medium pressure filter, oil mist filter and regulator.
Compatible with medium pressure supply needs in overseas markets.
Enabled module connection.

High oil-removal performance oil mist filter

10 times the capability of the conventional oil mist filter!
Polo silicate micro fiber for quick isolation of oil to prevent pressure loss.
Ideal for a variety of applications that require high purification of oil-less air such as laser processing machines and optical positioning devices.
Drain separation efficiency 99%!

Solenoid type shut-off valve that can reliably detect the open and closed states

3 port solenoid valve with spool position detection
SNP Series

Actuation: NC (normally closed) type
Working pressure: 0.2MPa~0.7MPa
Port size: Rc3/8, Rc1/2, Rc3/4

The limit switch can output a valve opening and closing signal. Two safety cut-off circuit is available by modular connection with 2 stations. Unitization with FRL unit is also available.

High performance, energy saving, compact regulator

Precision regulator
RP Series, RPE Series

Set pressure: More than 0.003 MPa
(RP1000-8-02)
Repeatability: Within ±0.5% of full scale
Port size: Rc1/4, Rc3/8

Stable flow rate with small pressure drop! High precision pressure control!
Sensitivity: Within ±0.2% of full scale *1000 RP within ±0.1% sensitivity!
RPE Series with greatly reduced air bleed and 70% lowered air consumption is also available.

Safety and flexibility of high air pressure valve

3, 5 port pilot operated valve
4GA/B1 to 3 Series

Applicable cylinder bore size: up to ø100
Response time: 12ms±2ms (4G1 Series)

Accident prevention with protective cover. Tool-free manual equipment.
Flexible increase/decrease of station No. Service life 60 million cycles and over!
Fluorine rubber specification with anti-corrosion, anti-deterioration properties of the packing also available.

Strong protection from the external environment and easy expand

3, 5 port pilot operated valve
Plug-in manifold
W4GB2/W4GB4 Series

Applicable cylinder bore size: up to ø80 (W4GB2), up to ø125 (W4GB4)
Degree of protection: IP65

Upgraded in all performances, including installation space, workability, life, and power consumption. Connector wiring method is used between manifold blocks.

A wide range of variations for ease of use

Electronic pressure switch with digital display
PPD3 Series

Working pressure: −100kPa to 980kPa
(R10 type)
Switch output type: Output 2 point or output 1 point + analog output
Degree of protection: IP65

Use integrated sensor or sensor separation-type according to your purpose.
Source pressure, suction and seating check.
Measurement from vacuum to positive pressure possible.
Compatible with degree of protection IP65 which can respond in bad environments.

Pressure sensor with twin display

Digital pressure sensor
PPX Series

Pressure range: −0.1MPa to 1.000MPa
(R10 type)
Switch output type: Output 2 point or output 1 point + analog output

The "current value" and "set value" of the pressure can be displayed simultaneously, the sensor state can be checked "at-a-glance" with the 3-color display. You can select a mode according to your intended use.

Easy-to-use unit type dryer

Super dryer
SD/SU Series

Outlet air atmospheric pressure dew point:
① −10°C, ② −20°C, ③ −40°C (All 0.7 MPa)
Processing air flow rate:
① 75 to 4500/min, ② 125 to 7500/min, ③ 35 to 8900/min
Port size: Rc3/8

Easy piping by simple direct connection to air pressure source without power supply.
Features long life with no mechanical moving part for stable supply of dry air. Unit type with an integrated prefilter, etc., is available.
Coolant control

Low pressure loss and large flow rate! We offer a variety of variations of "CVS" coolant valves such as those with 2-port, 3-Port and manifold specifications, and items that are ideal for preventing coolant contamination with foreign matter, chips, etc.

**Low pressure loss and large flow rate coolant valve**

Coolant valve

**CVSE2 Series**

**CVSE3 Series**

<table>
<thead>
<tr>
<th>Working pressure differential</th>
<th>0 to 0.5Mpa, 0.5 to 1.0Mpa, or 0 to 3.0Mpa</th>
</tr>
</thead>
</table>

Port size: 10A to 80F

With reliable direct acting, power consumption can be reduced 50% (CKD comparison). Zero pressure loss target valve flow path shape. Metal seal type valve structure resistant to contamination from cutting powder, grains, etc. Contribute to downsizing of coolant pump and energy saving of coolant system. Custom order up to 20Mpa is available.

**Coolant valve module connection!**

**Module coolant valve**

**GCVE2 Series**

**GCVSE2 Series**

<table>
<thead>
<tr>
<th>Working pressure differential</th>
<th>0 to 0.5Mpa, 0.5 to 1.0Mpa (Low pressure), 0 to 1.6Mpa, 0 to 3.0Mpa (Middle pressure), or 0 to 7.0Mpa (High pressure)</th>
</tr>
</thead>
</table>

Port size: 15A (IN: 20A), 20A (IN: 25A)

Valve pitch: 15A: 50mm, 20A: 60mm

Coolant valve CVSE Series body to change shape and connect to the module. Up to 5 stations are available. Header space no longer required and space saving. This has a reduction effect on piping arrangement work, and total cost of equipment will be reduced.

**Mechanical pressure switch for coolant**

**Mechanical pressure switch for coolant**

**CPE Series**

<table>
<thead>
<tr>
<th>Rated pressure: 0 to 1.0Mpa</th>
</tr>
</thead>
<tbody>
<tr>
<td>Set pressure: 0.05 to 0.8Mpa</td>
</tr>
<tr>
<td>Port size: Rc1/4</td>
</tr>
<tr>
<td>Degree of protection: IP65</td>
</tr>
</tbody>
</table>

Mechanical pressure switch for low pressure applicable for coolant. Diaphragm structure has been adopted for pressure receiving portion. Machining tool coolant pressure and hydraulic/oil pressure of various other industrial machinery can be checked.

**Electronic pressure switch for coolant**

**Electronic pressure switch for coolant**

**CPD Series**

<table>
<thead>
<tr>
<th>Rated pressure: 0 to 7.0Mpa</th>
</tr>
</thead>
<tbody>
<tr>
<td>Set pressure: 0 to 7.0Mpa</td>
</tr>
<tr>
<td>Port size: Rc1/4</td>
</tr>
<tr>
<td>Degree of protection: IP65</td>
</tr>
</tbody>
</table>

Electronic pressure switch applicable for coolant (with digital display). Diaphragm structure has been adopted for pressure receiving portion. Machining tool coolant pressure and hydraulic/oil pressure of various other industrial machinery can be checked.

**Foreign matter-resistant coolant check valve**

**Coolant check valve**

**CCH Series**

| Max. working pressure: 7.0Mpa |
| Proof pressure: 14Mpa |
| Port size: 10A, 15A, 20A |
| Cranking pressure: 5kpa |

Foreign matter-resistant flow path structure. We have adopted a seal structure that reduces O-ring deformation, and resists high pressure (Proof pressure 14.0 MPa).
Trusted and proven! CKD seating switch "GPS2" Series, and cutting oil special measures structure cylinder "G2, G3" Series enable highly accurate and stable clamp/positioning.

**Processing jig**

Bridge circuit provides stable non-contact detection

Seating confirmation switch
- **GPS2 Series**
- **UGPS2 Series**

- Detection distance range: 0.03 to 0.25mm, 0.03 to 0.4mm
- Repeatability: ±0.01mm
- Port size: R1/4 (detection port), R1/4 (supply port, pressure gauge port)
- Degree of protection: IP65 equivalent (connector type), IP64 equivalent (2A terminal box)

Air sensor used to check the workpiece seating and the clamp. Air bridge circuit prevents the effect of the fluctuations in the supply pressure. The product can be used in the environment where coolant, etc., splash, due to the degree of protection IP-67 (connector type).

**Close contact confirmation detection!**

Min. detection distance 0.01mm! High precision detection!

**GPS2 Series**

- Detection distance range: 0.01 to 0.2mm, 0.02 to 0.4mm, 0.03 to 0.6mm
- Repeatability: ±0.01mm
- Port size: R1/4 (detection port, R1/4 (supply port, pressure gauge port)
- Degree of protection: IP65 equivalent (connector type), IP64 equivalent (2A terminal box)

Precision linear needle mechanism enables highly accurate variable-adjustment. Stable detection, unaffected by fluctuation of supply pressure, is possible with the air bridge circuit. Can be supported in the environment where coolant, etc., splash, due to the degree of protection IP-67.

**Cylinder that resists coolant**

Cylinder switch that withstands proximity 2-wire, 3-wire type cooling environment and responds to cutting oil

- **Coolant proof cylinder**
  - **G2 Series/G3 Series**
  - Applicable degree of protection: G2: Powerful nitrile rubber scraper for coolant intrusion prevention was adopted. G3: In addition to G2, swelling prevention fluorine rubber packing was adopted.
  - The powerful scraper prevents working oil from entering! Applicable to various cylinders.

Non-contact air sensor used to detect broken or chipped drills and taps used in the metal machining line even during rotation. Detection nozzles are special nozzle units tailored to the cutting tool. Detection is possible without the influence of supply pressure fluctuations by adopting the air bridge type.

**Cylinder switch for coolant**

- **SW-T2YLH (V) Series**
- **SW-T3YLH (V) Series**

- Degree of protection: IP67
- Lead wire: Oil resistant vinyl captyre cable

Cylinder switch that withstands proximity 2-wire, 3-wire type cooling environment and responds to cutting oil

**Processing tool**

Nips errors/failure in the bud! Highly efficient air blow that prevents workpiece from floating by chips caught in the machinery! Small sized, large air blow valve available. Small-diameter tool damage is stably detected by the air sensor and the machine is stopped immediately.

Detection of cutting tool breakage of 1mm

Cutting tool broken detecting switch
- **TLPS Series**
- **UTLPS Series**

- Detection cutting tool diameter: ø0.3 to ø30
- Cutting edge detecting position: 1 mm and over from end
- Port size: R1/8 (detection port), R1/4 (supply port, pressure gauge port)
- Degree of protection: IP67 equivalent (connector type), IP64 equivalent (2A terminal box)

Non-contact air sensor used to detect broken or chipped drills and taps used in the metal machining line even during rotation. Detection nozzles are special nozzle units tailored to the cutting tool. Detection is possible without the influence of supply pressure fluctuations by adopting the air bridge type.

Large flow rate and low power consumption solenoid valve for the compressed air

- **2 port pilot operated solenoid valve for compressed air**
  - **EXA Series**
  - **GEXA Series**

- Max. working pressure: 0.7MPa
- Working pressure differential: 0.01 to 0.7MPa
- Proof pressure (water): 1.05MPa

Flow Rate 450ℓ/min or more (if primary-side pressure at 0.5 MPa), power consumption of 0.6W, large flow rate and low power consumption. Optimization of the materials used ensures compactness and lightness! Easily layout piping due to the body design with push-in fittings. Manifold also supported.

**Snug fit in the compressed air**

2 port direct acting solenoid valve for compressed air
- **FAB Series**

- Working pressure: 0 to 1.4MPa
- Degree of protection: IP65 equivalent
- Proof pressure (water): 2.1MPa

Direct-acting poppet solenoid valve. 5 models with coil width 18 to 40mm. Moving parts in the special structure to prevent wear and long service life.
Pneumatic and electric actuators with guide required for autoloader/palletizer can be selected from wide variations of the products. Hand, fitted to workpiece shape, and chuck with cover, resistant to chips and coolant, provide stable unattended operation. For simple transfer, complete multi-axis units are also available.

Motorless actuator

<table>
<thead>
<tr>
<th>Electric actuator</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>ETS Series</strong></td>
</tr>
<tr>
<td>Max. load capacity: up to 150kg (horizontal)</td>
</tr>
<tr>
<td>Max. stroke length: 1500mm</td>
</tr>
<tr>
<td>Max. speed: up to 2000mm/sec</td>
</tr>
<tr>
<td>Repeatability: ±0.02mm</td>
</tr>
<tr>
<td>Applicable motor size: 100W, 200W, 400W, 750W</td>
</tr>
</tbody>
</table>

Supporting various servo motor manufacturers, familiar motors can be mounted. Diverse range of variations available.

Easy operation with light indication

<table>
<thead>
<tr>
<th>Electric actuator</th>
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</thead>
<tbody>
<tr>
<td><strong>ERL2 Series</strong></td>
</tr>
<tr>
<td>Max. load capacity: up to 30kg (horizontal)</td>
</tr>
<tr>
<td>Max. stroke length: 700mm</td>
</tr>
<tr>
<td>Max. speed: up to 600mm/sec</td>
</tr>
<tr>
<td>Max. pressure force: 640N</td>
</tr>
<tr>
<td>Repeatability: ±0.02mm</td>
</tr>
</tbody>
</table>

With the controller common on all models and installation of actuator automatic recognition, flexible combination of actuator and controller is available.

High performance actuator using absolute motor

<table>
<thead>
<tr>
<th>Electric actuator</th>
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</thead>
<tbody>
<tr>
<td><strong>KBB Series</strong></td>
</tr>
<tr>
<td>Max. load capacity: up to 150kg (horizontal)</td>
</tr>
<tr>
<td>Max. stroke length: 2500mm</td>
</tr>
<tr>
<td>Max. speed: up to 2000mm/sec (belt axis type)</td>
</tr>
<tr>
<td>Repeatability: ±0.01mm (Ballscrew type)</td>
</tr>
</tbody>
</table>

2 to 4 axis enables various combinations. Absolute specifications adopted to eliminate need for encoder origin return. There are 9 types of ballscrew and 7 types of the timing belt for axis. The motor installation position can be selected from one of the four directions for each axis.

As easy control as pneumatics!

<table>
<thead>
<tr>
<th>Electric driven actuator</th>
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</thead>
<tbody>
<tr>
<td><strong>ESSD Series</strong></td>
</tr>
<tr>
<td>Max. load capacity: up to 25kg (vertical)</td>
</tr>
<tr>
<td>Max. stroke length: 200mm</td>
</tr>
<tr>
<td>Max. speed: up to 400mm/sec</td>
</tr>
<tr>
<td>Repeatability: from ±0.05mm</td>
</tr>
</tbody>
</table>

New electric actuators that are easy to use as pneumatic components! Operates with the same sequence as a solenoid valve that control cylinders. Cylinder switches can also be mounted to detect position.

Compact and light weight actuator

<table>
<thead>
<tr>
<th>Electric driven actuator</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>KBZ Series</strong></td>
</tr>
<tr>
<td>Max. load capacity: up to 6kg (horizontal)</td>
</tr>
<tr>
<td>Max. stroke length: 500mm</td>
</tr>
<tr>
<td>Max. speed: up to 800mm/sec</td>
</tr>
<tr>
<td>Repeatability: ±0.02mm</td>
</tr>
</tbody>
</table>

Compact, high output servo motor. Slider/table/rod type available (three types) Can be combined with KBB axis.

Rodless cylinder with dust-proof cover

<table>
<thead>
<tr>
<th>Rodless cylinder</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>SRL3-J Series</strong></td>
</tr>
<tr>
<td>Bore size: ø25, ø32, ø40, ø50, ø63</td>
</tr>
<tr>
<td>Max. stroke length: to 3000mm</td>
</tr>
<tr>
<td>Max. working pressure: 0.7MPa</td>
</tr>
</tbody>
</table>

Rodless cylinder with metal cover that is resistant to bad environments. Safe even in places that take metal powder, cutting oil, etc. directly.
Able to withstand high loads and is space-saving

Ideal for door opening/closing!

High speed, high energy absorption are available. Compared to the conventional cylinder, features are approximately 5 times the shock absorbing capacity. Ideal for use in medium speed range with heavy load.

High speed operation, high energy absorption

High speed cylinder-compatible with piston speed of 3000mm/s. Even with high speed sliding, the excellent new materials adopted are durable enough.

Powerfully absorbs shocks

Guided cylinder powerful guide rod type

STG-K Series

Load resistant, impact resistant series. Ideal for stoppage of workpiece with strong impact.

Absorber-integrated stopper cylinder

Stopper cylinder

STA2 Series

With the adoption of the adjustable shock absorber, you can adjust in accordance with workpiece weight and conveyor speed. Replacing the shock absorber alone is possible. Resin or steel is selectable as the roller materials.

Assembly as if assembling plastic model

New handling system

NHS Series

Small object parts transfer kit which offers compact design with flexible combination. X-axis, Z-axis, and attachment are appropriately selected according to the use. Selection, design manhours, assembling manhours and control manhours can be reduced.

2-action pneumatic robot

Hybrid robot

HR Series

Pick & place unit that basically consists of the horizontal drive R-axis and vertical drive Z-axis. Position detection switch, shock absorber and speed control valve are provided as standard. Position locking mechanism can be installed according to applications.

Small size and high retention lock unit

Linear guide lock

LML Series

Due to the same height as the linear guide blocks, optimal free space use possible. Ideal for retention and fall prevention during linear guide stoppage. Also available with a scraper as dust-proof measures.
**Extensive variation allows for application to various workpiece shape**

### Parallel hand

**Small wide parallel hand**

**HMF Series**

- Operational stroke length: 30, 40, 50, 70, 100mm
- Gripping force (Indication): 30 to 400N

**Bearing parallel hand**

**HEP Series**

- Operational stroke length: 24, 36, 50, 60mm
- Gripping force (Indication): 80 to 1000N

### Chuck

**3-way jaw bearing chuck**

**CKG Series**

- Operational stroke length: 6, 8, 11, 16mm
- Gripping force (Indication): 10 to 200N

**3-way jaw long stroke chuck**

**CK Series**

- Operational stroke length: 20, 40mm
- Gripping force (Indication): 10 to 100N

**3-way jaw thin chuck**

**CKA Series**

- Operational stroke length: 5, 6, 7, 9, 10, 12, 16, 20, 25, 30, 38mm
- Gripping force (Indication): 5 to 700N

**Thin chuck**

**CKS Series**

- Operational stroke length: 10, 12, 16, 20, 28, 32mm
- Gripping force (Indication): 10 to 400N

**Ultra long stroke chuck**

**CKJ Series**

- Operational stroke length: Standard 80, 130mm
- Short 40, 65mm
- Gripping force (Indication): 30 to 1500N

**High gripping force powerful chuck**

**CKH2 Series**

- Operational stroke length: 6, 8, 10, 12mm
- Gripping force (Indication): 250 to 1500N

* Supply pressure 0.5 MPa, general jaws length gripping force range.
You can download CKD products PDF catalog or CAD data.

http://www.ckd.co.jp/english/

PDF/DXF data of general catalog is
- CKD website Component Products > CKD products catalogs Download Service

New products DXF/PDF data is
- CKD website Component Products > New Product Information

2D and 3D CAD data is
- CKD website Component Products > 2D・3D CAD Data library

Adding a model search function

We have added a simple model search to Equipment top page to allow you to navigate easily to information page.

Global service network

CKD builds customers trusts through its global network.

In order to deliver optimal products, technology and services promptly from a customer's standpoint, we are promoting development of our foreign and domestic bases, and building customers trusts. In particular, in the overseas bases, we have established offices in major regions of Asia, Europe, North America and we have been building closer relationships with customers of various regions of the world.