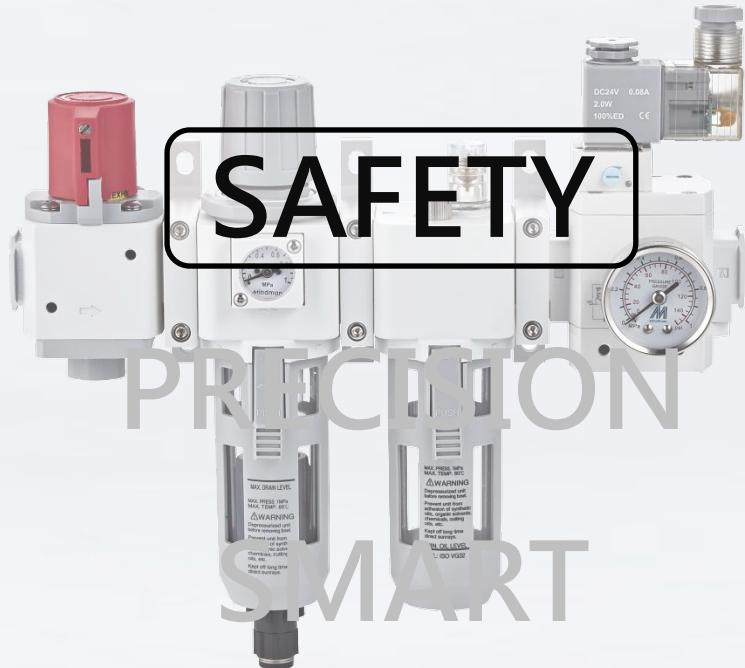




ISO9001 · ISO14001 · OHSAS18001

# Air units





# TEMPERING TREATMENT

Eliminate residual stress which makes the inner case more solid and reduces fracture possibility when operating.



# Nonoxidizable for 336hrs under neutral salt spray test

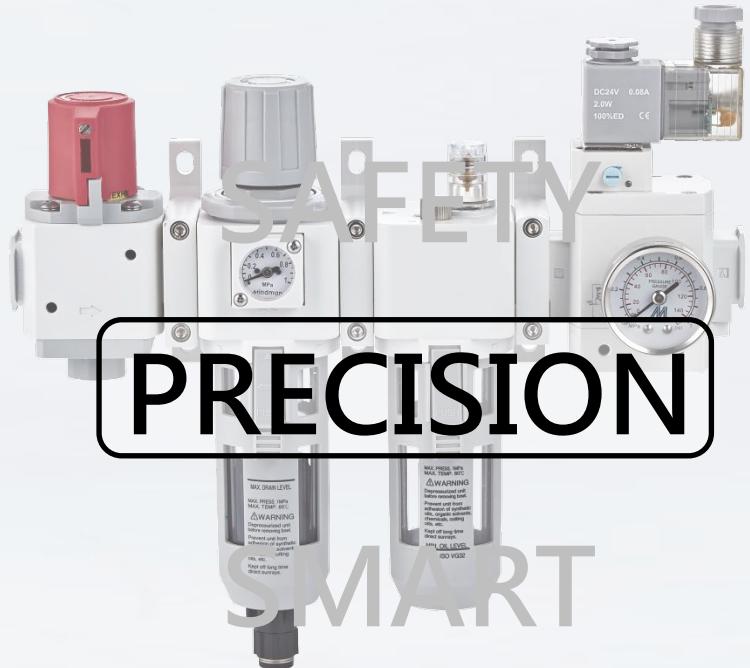
Body with SurTec 650 surface treatment enhance  
the resistance of oxidation from acid-base.



# SELF-LOCKING

Pressed-in and self-locking mechanism  
to ensure stability.





# FILTER

93%+  
Water removal rate



# PRECISION FILTER

99%  
Water removal rate



# PRECISION REGULATOR

Repeatability under  
 $\pm 0.5\%$  F.S.



# Example of application

## Electronic industry

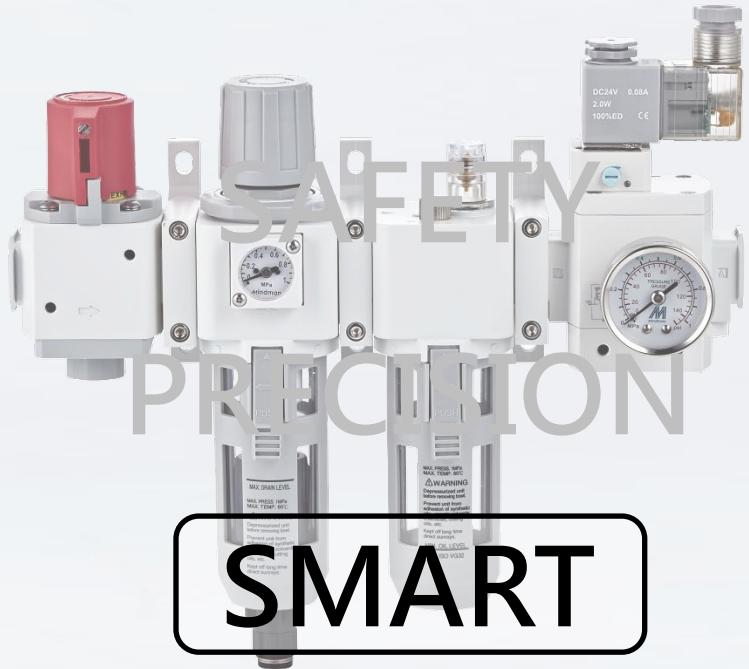
Air treatment solution :

Solve the problem of water leak and prevent packing seal expansion of solenoid valve and cylinder while function.

Applied products :

MWC Series filter for turbine type  
MACP302 Series F.R.L.





# REMOTE MONITORING

Achieve remote monitoring through the feedback of electric signal and stepless control of the thrust force.



# DIVERSIFIED COMBINATION

Diversified modular products can be applied in the different instances.



# Example of application

## Machine tool industry

Total solution of air treatment and control through modular integration

Applied products :  
MACP302 Series F.R.L.  
MVSC Series Solenoid valve



# Example of application

## Machine tool industry

Total solution of air treatment and control through modular integration

Applied products :

MACP300L-10A-D F.R.L.

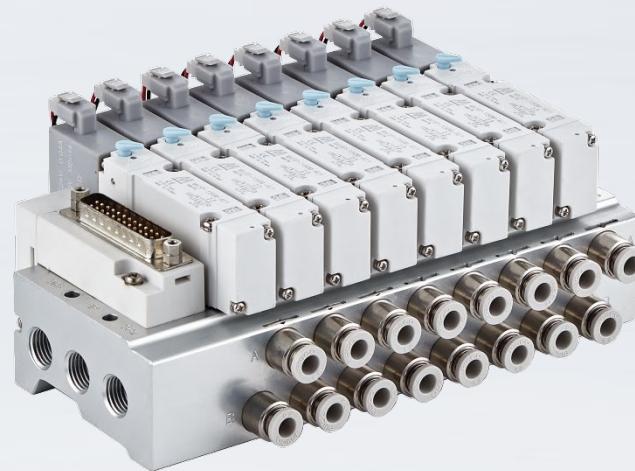
MP47P-01-F1 High precision digital pressure switch

MAR200-8A Regulator

MVSC-220-4E1-DC24 Solenoid valve



# Solenoid valve



# 50,000,000cycles

Adopt HNBR for spool seal (lip seal) to achieve high wear resistance and sealability. Lifetime can reach 50 million cycles. Wide working temperature from -35°C(-31°F) to 150°C(302°F).



# PLUNGER MATERIAL

Resulfurized stainless steel with 17% chromium and 1.5% silicon. Provide a very low coercive magnetic field and a very high permeability.



*Connector*



*certified*

**-15%** temperature increase

Adopts Nylon 6(PA6) for connector housing to prevent temperature increasing on the surface.



# CONTACT SPRING

Contact spring makes wiring quick and easy.  
Also, it prevents wire damage.



# Max operating temperature **180°C**

Adopts insulation class : H class cooper wire which allowed max operating temperature up to 180°C (356°F).



# LOW-NOISE

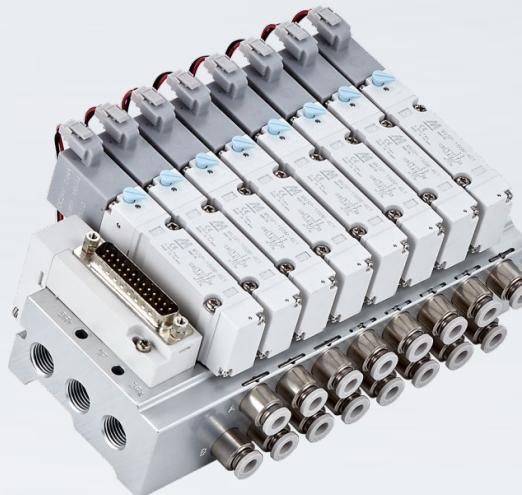
Bridge rectifier design to eliminate the noise from the AC coil when AC current transfer to DC current.



# MULTI CONNECTOR SYSTEM

## SIMPLIFICATION

Multi connector system simplifies piping and wiring work and reduces air consumption.



# Example of application

## Automatic assembly machine

Simplify piping and wiring work  
substantially

Increase space usage efficiency

Applied products :

MVB-100/156 Multi connector system  
MVSY(P)-100/156 Solenoid valve



# Cylinder



**SPACE-SAVING**

PRECISION

RELIABILITY

# NON-ROTATING CYLINDER

**-50%** installment space

Hexagon bush and piston rod allow the cylinder to have non-rotating feature without additional mechanism required.

Rod non-rotating accuracy is  $\pm 0.5^\circ$ . If it is zero tolerance, the lifetime would decrease due to high abrasion.



# RODLESS CYLINDER

**-50%** installment space

Rodless cylinder makes 50% space saved when compared to conventional cylinders.





SPACE-SAVING

**PRECISION**

RELIABILITY

# SLIDE CYLINDER

The linear rails been

## HEAT AND SUBZERO TREATMENT

Forming precisely grinding V-grooves. It is suitable for limited stroke linear motion system with high accuracy.



# Example of application

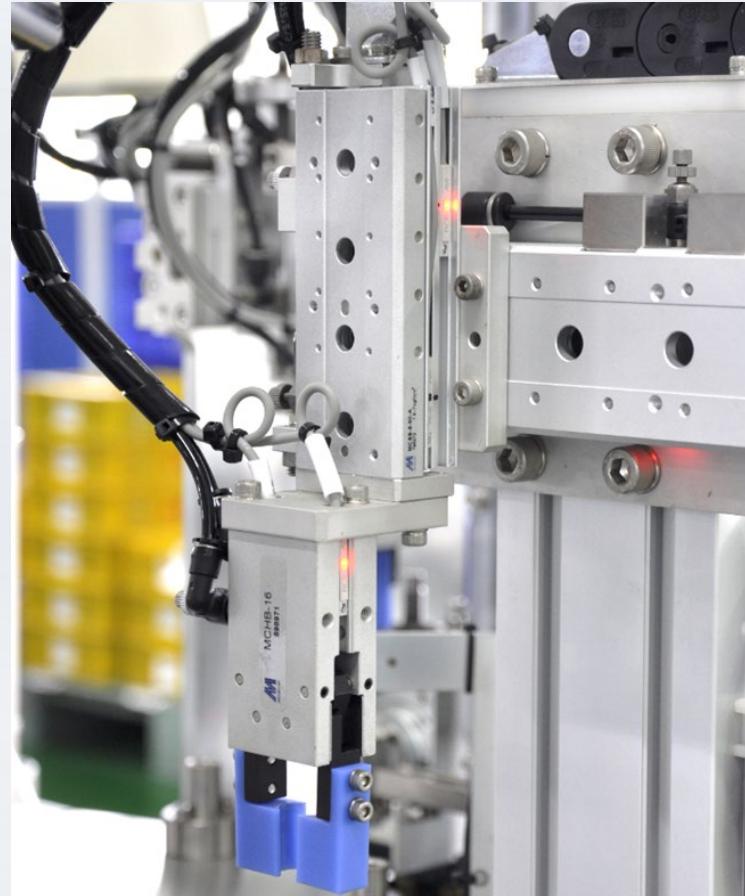
## Automatic assembly machine

MCSS linear rail is equipped with roller bearing, having higher rigidity, loading, precisionness and longer lifetime.

Applied to precision assembly when connect with gripper.

Applied products :

MCSS-8-50-A Slide cylinders with adjuster  
MCHB-16 Parallel two-finger gripper



# Example of application

## Automatic assembly machine

Applied to short distance installment. MCSH linear rail is equipped with ball bearing which allows the slide to actuate with high speed and low friction

Applied products :  
MCSH Compact slide





SPACE-SAVING  
PRECISION  
**RELIABILITY**

# TWIN-GUIDE CYLINDER

Lifetime increase **50%**

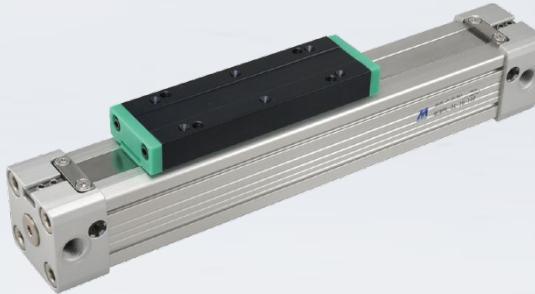
By further machining, bores acquire better roughness, parallelism and roundness. Moreover, it adopted high hardness packing seal to improve the abrasion resistance.



# RODLESS CYLINDER

## SUPERIOR LIFETIME

Adopt stainless steel sealing strip, tube and parts with rigorous and high end German engineering techniques.



# RODLESS CYLINDER

## HIGH STIFFNESS

The long stroke shows high stiffness which prevents flexure while function.

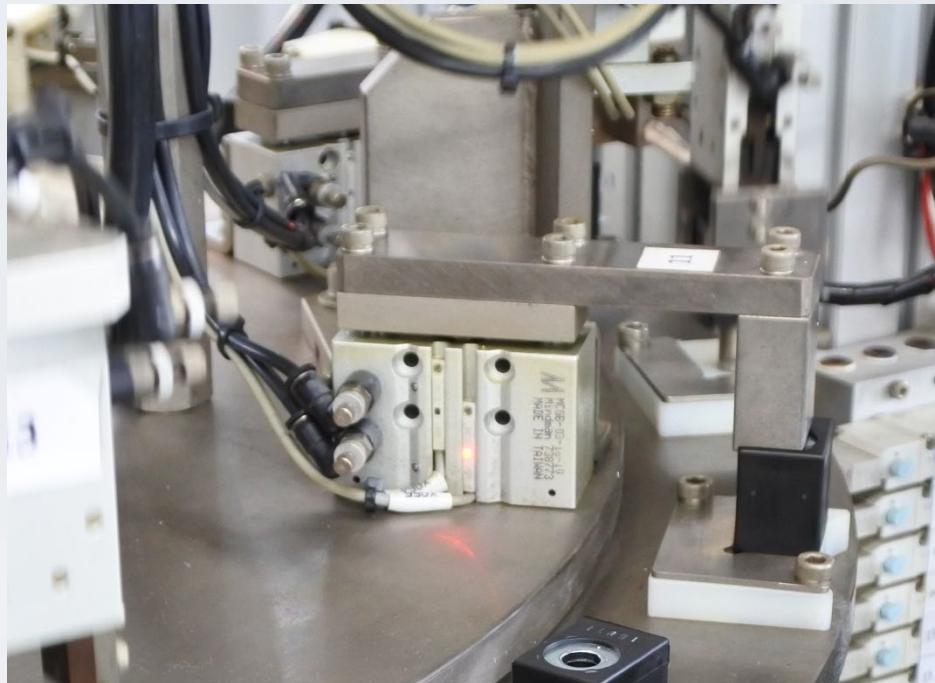


# Example of application

## Automatic assembly machine

Applied to the instance of stop,  
lift and push.

Applied products :  
MCGB Twin-guide cylinder



# Example of application

## Automatic assembly machine

High cantilever and direct loads can be taken on piston. Linear rail integrated model is also available which load strength is **400%** higher.

Applied products :  
MCRPLF Rodless cylinder



# Gripper



# HOLDING FORCE

LIGHTWEIGHT

RELIABILITY



# HIGH HOLDING PERFORMANCE

Testing under the same condition, we can see Mindman gripper has better holding force.

Mindman Parallel gripper (3 finger)	Stroke Per-Jaw (mm)	Holding Force (N)	Recommended Work-Piece Loading (Safety Factor-10 times) (kg)	Recommended Work-Piece Loading (Safety Factor-20 times) (kg)
MCHJ-50	4	450	4.5	2.25
MCHJ-66	6	750	7.5	3.8
MCHJ-80	8	1200	12	6.0
MCHJ-100	10	2000	20	10.0
MCHJ-125	12	3500	35	17.5
MCHJ-160	16	6500	65	32.5
MCHJ-200	20	8200	82	41
MCHJ-300	30	15300	153	76.5

Japanese brand Parallel gripper (3 finger)	Stroke Per-Jaw (mm)	Holding Force (N)	Recommended Work-Piece Loading (Safety Factor-10 times) (kg)	Recommended Work-Piece Loading (Safety Factor-20 times) (kg)
Bore 50mm	6	187	1.87	0.94
Bore 63mm	8	335	3.35	1.68
Bore 80mm	10	500	5	2.5
Bore 100mm	12	750	7.5	3.75
Bore 125mm	16	1270	12.7	6.35

# Example of application

## Truss manipulator industry

Application: Mainly used for large truss manipulator equipment for clamping heavy workpieces such as iron parts.

Applied products :

MCHJ-50/66/80 Parallel three-finger gripper  
MCHS-125 Parallel two-finger gripper  
MCRQ-20R/32R Rotary actuator  
MVSP Series Solenoid valve





HOLDING FORCE

**LIGHT WEIGHT**

RELIABILITY

# LIGHT WEIGHT AND COMPACT

Mindman gripper has light and compact body without sacrificing the performance.

Mindman Parallel gripper (3 finger)	Stroke Per-Jaw (mm)	Holding Force (N)	Body Dimension (mm)	Weights (kg)
MCHJ-50	4	450	Ø57	0.22
MCHJ-66	6	750	Ø74	0.5
MCHJ-80	8	1200	Ø92	0.85
MCHJ-100	10	2000	Ø114	1.6
MCHJ-125	12	3500	Ø139	2.7
MCHJ-160	16	6500	Ø179	5.1
MCHJ-200	20	8200	Ø218	9.6
MCHJ-300	30	15300	Ø292	24

Japanese brand Parallel gripper (3 finger)	Stroke Per-Jaw (mm)	Holding Force (N)	Body Dimension (mm)	Weights (kg)
Bore 50mm	6	187	Ø70	0.541
Bore 63mm	8	335	Ø86	0.992
Bore 80mm	10	500	Ø106	1.85
Bore 100mm	12	750	Ø134	3.34
Bore 125mm	16	1270	Ø166	6.46

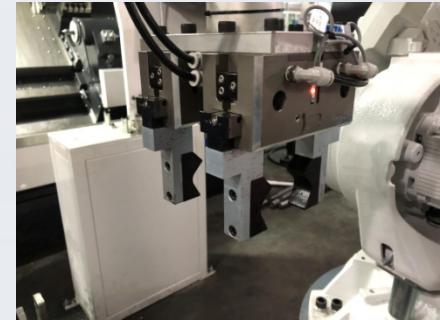
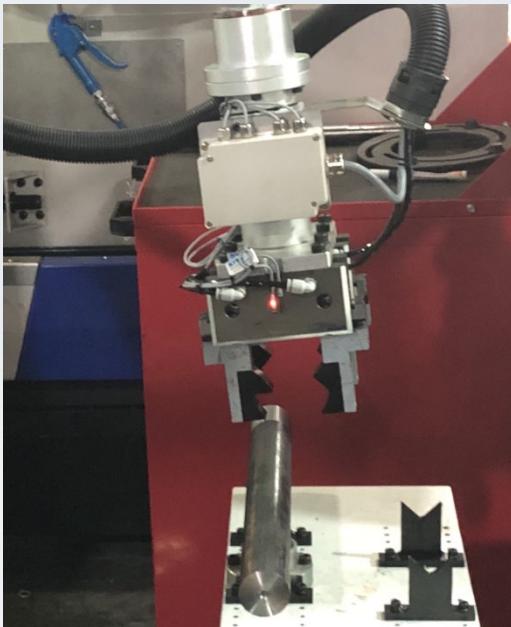
# Example of application

## Machine tool industry

Application: The pick-and-place of the machine tool is carried out by the cooperation of the robot arm and the gripper.

Applied products :

MCHJ-80/125 Parallel three-finger gripper  
MCHS-66/125 Parallel two-finger gripper  
MAFR Series F.R.  
MVSY Series Solenoid valve

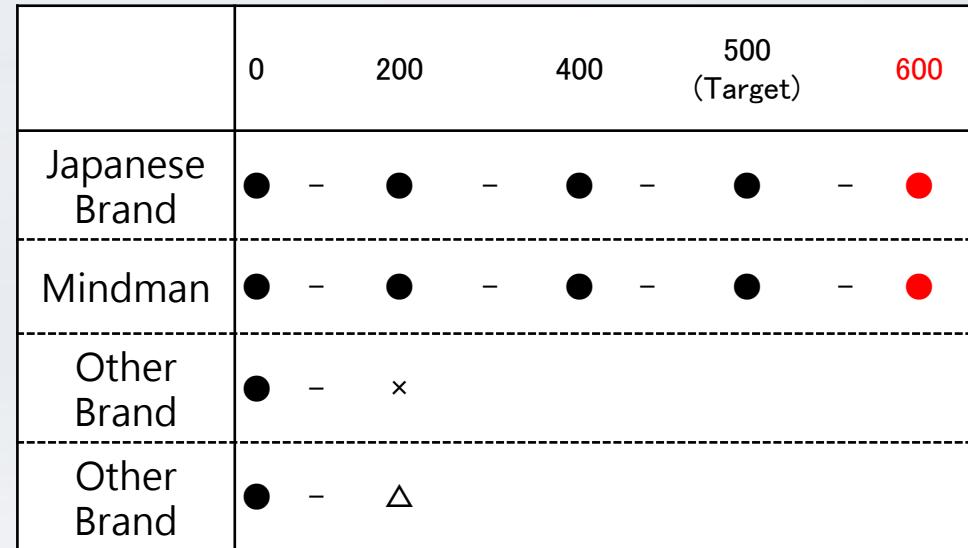




**HOLDING FORCE**  
**LIGHTWEIGHT**  
**RELIABILITY**

# 6,000,000 cycles

Under eccentric and full loading, Mindman gripper is able to reach 6 million cycles while the other brands failed at less than 1 million cycles.

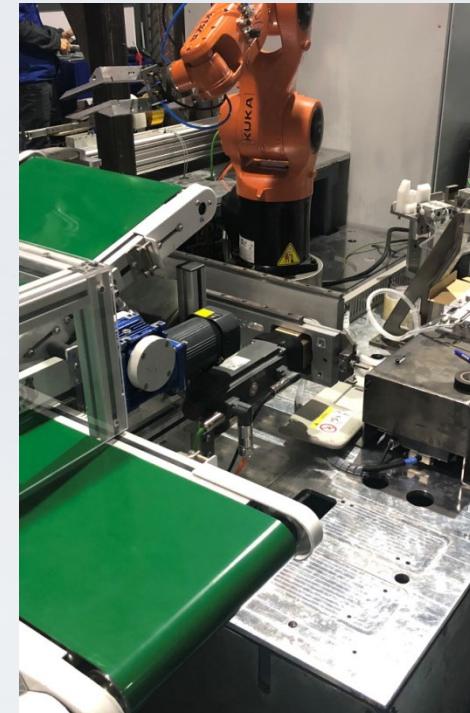


# Example of application

## Automotive interior parts processing industry

Application: Robotic arm with gripper is picking up automotive interior parts (sun visor) for processing and transfer.

Applied products :  
MCHJ-80/100 Parallel three-finger gripper  
MVSY Series Solenoid valve



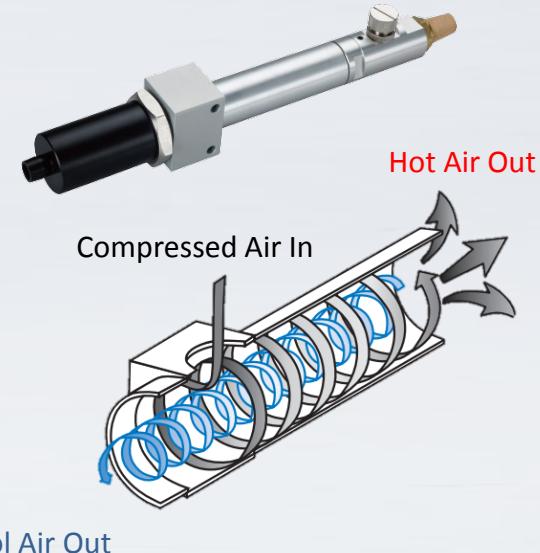
# Auxiliary Equipment



# JET COOLER

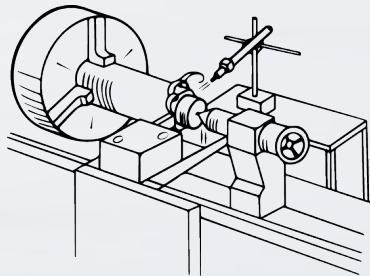
**Max temperature drop  
60°C(140°F)**

Does not require coolant or electrical source.  
No moving parts are used in construction,  
hence with long life sustainability.

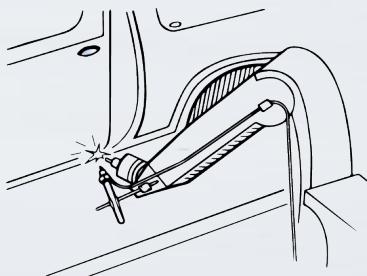


# Example of application

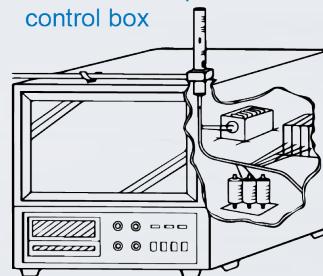
■ Plastic machining cool



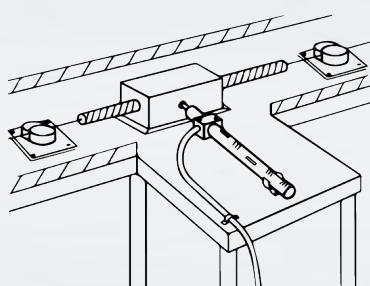
■ Spot welding cool



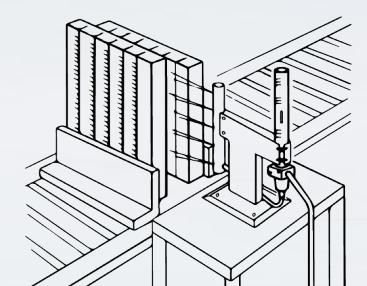
■ Monitoring camera case cool and dust-proof inside control box



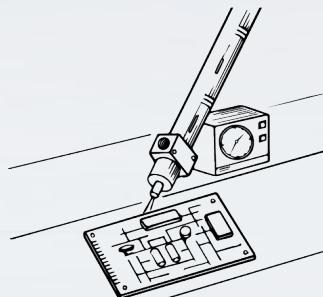
■ Wire cut harden



■ Adherent quick cool



■ Welding quick cool



# PU TUBE

Tube O.D. Tolerance  
 $\pm 0.07\text{mm}$

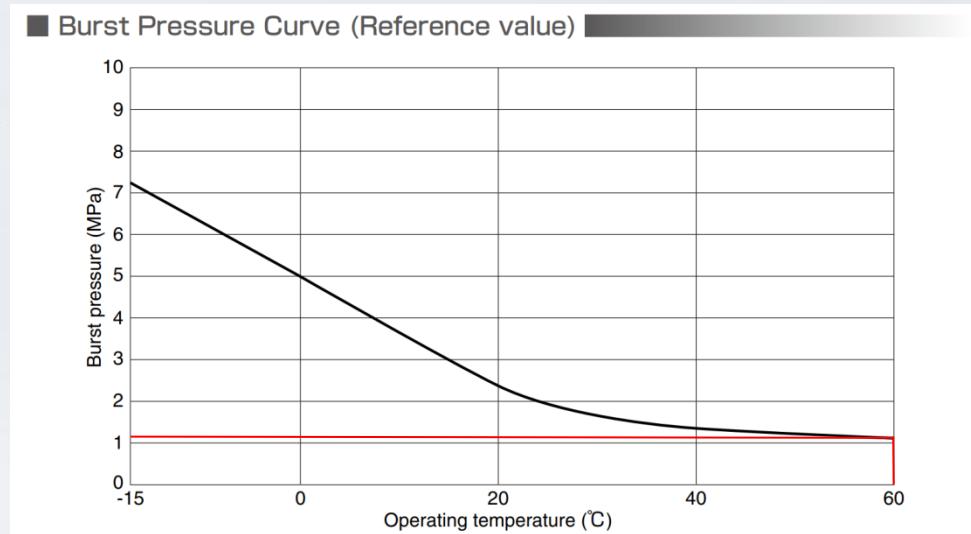
Piping work can be easier and more efficient when using a high quality tube. And any color is customizable.



# PU TUBE

Under operating  
temperature  
**60°C(140°F)**  
burst pressure can  
reach over 10 bar

High pressure resistance under high  
temperature environment.



# FITTINGS

## SMOOTH CONNECTION

Since the high quantity of jaws, drag force will be dispersed on every piece of jaw when connecting. No longer worry about finger pain.

抜群の操作性

PISCO

適用チューブ外径 : 12mm

ロック爪 : 18枚



爪が多数あることにより、爪一枚一枚にかかる力を分散。

# FITTINGS

## EASY REMOVE

Even the tube that has been installed for 10 years can also be removed smoothly without mark of jaws.

