

QUICK CONNECTIVE FLUID COUPLING



NEW-MACHINE CO., LTD. TOKYO-JAPAN



Catalog No. EC1-1

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Coupling / Pipe Clamp Selection Method

Check the following five items to select the right coupling for your application requirement.

(1) Fluid Type

Check the application fluid Air, Water, Oil etc.

Example :

Air Application - UNIC Series

Water Application - YSP, NSP Series

Select the coupling with body, packing, and O-ring material to suit the fluid type.

We provide different body materials and packing materials to suit various types of fluids.

(2) Fluid Pressure

Couplings, Pipe Clamps have different pressure resistance to suit fluid application requirements. Select a coupling with pressure resistance to suit fluid pressure.

Example : Pressure 20.6 MPa (210 kgf/cm²) SPH-050 Series

(3) Fluid Temperature

Fluid working temperature is important to select O-ring and packing material. There are different packing materials to suit different fluid working temperature.

Example : Nitrogen Butadiene Rubber is used for fluid working temperature from -20°C to + 80°C

(4) Size, Connection Type, Valve Structure and Body Material

- a. **Size:** Select suitable size 1/8"~2", (Diameter 3.18 mm to 31.75 mm)
- b. **Connection Type:** Male / Female thread, Hose nipple, Nut, Plug
- c. **Valve structure:** Select from different valve structures Two-way shut-off, One-way shut-off or Straight through types
- d. **Body Material:** Select body material brass, stainless steel to suit requirements

(5) Working Environment

Check the working environment such as temperature, dust, and vibrations etc. while choosing coupling for safe operation

Example : Avoid unnecessary vibrations, impacts and operating under dirty, dust environment.

Precaution

Wrong selection of the coupling could cause trouble to the operation system. Select the coupling by checking operating conditions, suitability to the system, operating conditions, temperatures, fluids etc.

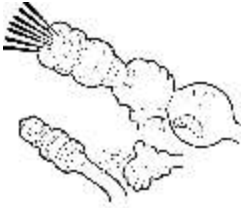
Manufacturer is not responsible for wrong selection of products.

Precaution Notes on Using Couplings

Read the precaution notes before operating the coupling

Precautions for Couplings usage :

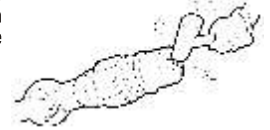
- Don't connect/disconnect any external tools when pressure is applied. It may cause damage
- Don't leave the socket and plug disconnected when pressure is applied.



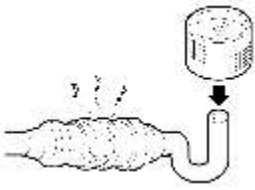
- Don't use couplings where metal dust, debris may enter causing damage to the sealing. This may cause damage or leakage.
- Couplings shipped with dust protection caps should never keep open. Install the dust cap when couplings are disconnected.



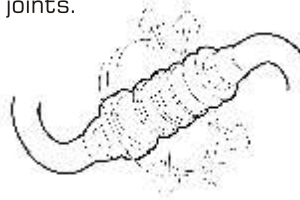
- Don't use tools like hammer, impact device causing extraordinary vibrations. This will reduce endurance. External pressure and impact can cause dangerous situation.
- Don't hit tip of the valve to exhaust the residual pressure. Valve structure may malfunction for Open / Close operation.



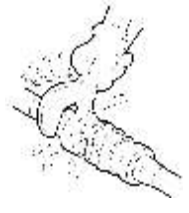
- Remove the foreign particles from the fluid flowing through the coupling using filter. Accumulation of foreign particles may cause malfunction of valve open/close operation.



- Never use the coupling instead of rotating devices like rotary joints and swivel joints.



- Don't tighten the nut fittings, screw type fittings in excess of the maximum torque. Excess torque application may cause damage. Therefore, apply proper torque for tightening.



Glossary

The following terms are used for coupling specifications mentioned this catalogue.

Body Material

The material used for the socket and plug body that form the fluid path. Internal valve mechanism components may have different materials.

Pressure

Working Pressure : Standard continuous allowable pressure when coupling is in use.

Pressure Resistance : Maximum allowable pressure for momentary time, that will not affect the performance of the coupling.

Packing Material

This shows the material used for O-ring and Packing seals used in the coupling.

Maximum Tightening Torque

This indicates the maximum torque value that can be applied when coupling fittings are being tightened.

Working Temperature Range

This indicates the minimum and maximum working temperatures for which coupling and packing materials can be used.

Size

This indicates pipe or hose diameter to be connected.

Pressure Loss

This shows loss of pressure (drop in pressure) when the fluid flows through the coupling.

Performance Characteristics & Control Limits

The figures described in performance characteristics and sketch dimensions are mean values for reference information.

Interchangeability

New Machine couplings are designed considering global coupling standards and interchangeability with other manufacturers products.

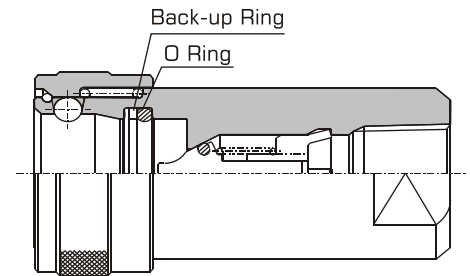
Inspection & Replacement of O-Ring

Inspect the couplings periodically for leakage. O-ring or Back-up ring installed in the socket should be replaced with new one when fluid (Air, gas and Oil etc.) leakage is noticed due to worn or deterioration or being cut.

1. Remove the O-ring (or Back-up ring) from the socket using bent end tool (L-shaped hook, pin or needle) by stretching it and pulling towards your side. Wipe the groove with a clean cloth after removing the O-ring.
2. Insert the new O-ring (or Back-up ring) in to the socket. To install it, press one part of O-ring in the groove and press remaining part using bent end tool (R-shaped hook, pine etc.) High pressure application sockets have back-up ring along with an O-ring. Back-up ring should be installed in front of the O-ring, seeing from your side. Refer the sketch.

3. After replacing the O-ring, apply silicon grease for gas fluid, or oil being used as fluid. Proper lubricant should be used to suit the fluid.

Note : We recommend to use our original spare parts (O-ring, Back-up ring and other replaceable parts) for better coupling performance.



(High Pressure Application Socket)

Connecting and disconnecting of the coupling

◆ YSP-TYPE, NSP-TYPE, UNIC TYPE etc

Connecting : Insert the plug into the socket with sleeve kept pulled toward your side and sleeve will return to original position automatically. The sleeve is attached on the socket

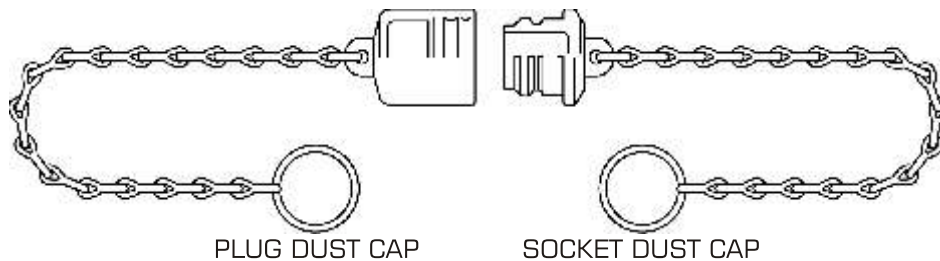
Disconnecting : Slide the sleeve and the plug and the socket will be disconnected automatically.

◆ MSP-TYPE, CA-OO TYPE, AP TYPE etc. (One-touch operation type)

Connecting : Only inserting makes the coupling connect

Disconnecting : Slide the sleeve and the plug and the socket will be disconnected automatically.

Safekeeping of the coupling



Fastning Torque

1. Body Material : Steel, Stainless Steel



















SIZE	1/8"	1/4"	3/8"	1/2"	3/4"	1"	1 1/4"	1 1/2"	2"
Torque Range Nm.(kgf.cm)	9 (92)	14 (143)	22 (224)	60 (612)	90 (918)	120 (1224)	240 (2448)	280 (2856)	500 (5100)

2. Body Material : Brass (BSBM)



















SIZE	1/8"	1/4"	3/8"	1/2"	3/4"	1"	1 1/4"	1 1/2"	2"
Torque Range Nm.(kgf.cm)	5 (51)	9 (92)	12 (122)	30 (306)	50 (510)	65 (663)	150 (1530)	180 (1836)	260 (2652)

New Machine Couplings: Global recognition, High quality Standards

Quick Connective Fluid Couplings

Model	Coupling View	Pipe Size Dia. mm	Applicable Pressure MPa (Kg/cm ²)		Features	Valve Construction	Page
			Working	Resistance			
High Pressure Auto Coupling SPH050 Series		1/4"~2"	20.6 (210)	30.9 (315)	<ul style="list-style-type: none"> Designed for pressure applications up to 20.6 Mpa Proven reliable operation performance and working safety Applications in hydraulic/ industrial equipments, machines, hydraulic press rolling machines, Plant hydraulic circuits, aircraft, agriculture machinery etc. 	 ● VALVE TWO-WAY SHUT-OFF	7
High Pressure Auto Coupling SPH070 Series		1/4"~1"	20.6 (210)	30.9 (315)	<ul style="list-style-type: none"> Designed for pressure applications up to 20.6 Mpa Proven reliable operation performance and working safety Applications in hydraulic/ industrial equipments, machines, hydraulic press rolling machines, Plant hydraulic circuits, aircraft, agriculture machinery etc. 	 ● VALVE TWO-WAY SHUT-OFF	9
High Pressure No Spill Coupling N350 Series		3/8"~1"	34.3 (350)	51.5 (525)	<ul style="list-style-type: none"> Airless valve mechanism to minimize air mixing while connecting socket and plug Minimum pressure loss Applications in hydraulic, industrial equipments, snow plough, Crain vehicles, hydraulic press rolling machines, Plant hydraulic circuits etc. 	 ● VALVE TWO-WAY SHUT-OFF	11
High Pressure High Lock Coupling KSP700 Series		3/8"	68.6 (700)	98.0 (1000)	<ul style="list-style-type: none"> Unique screw lock design for high endurance to vibrations and impact when connected Metal touch type valve design for excellent durability Applications in hydraulic lifting, jack, puncher, pipe bender, hydraulic very high-pressure requirements etc. 	 ● VALVE TWO-WAY SHUT-OFF	13
Auto Coupling YSP Series		1/8"~2"	Brass 4.9 (50) Stainless Steel 7.4 (75)	Brass 7.4 (75) Stainless Steel 9.8 (100)	<ul style="list-style-type: none"> Insertion of plug automatically opens the valve to allow fluid flow Excellent airtight specification (1 x 10⁻³ mm Hg/sec) Applications in pneumatic piping, plant piping, Industrial machines, equipments, Heaters etc. 	 ● VALVE TWO-WAY SHUT-OFF	15
Charge Coupling SPR Series		1/8"~1/2"	Brass 4.9 (50) Stainless Steel 7.4 (75)	Brass 7.4 (75) Stainless Steel 9.8 (100)	<ul style="list-style-type: none"> Insertion of plug automatically opens the valve to allow fluid flow Excellent airtight specification (1 x 10⁻³ mm Hg/sec) Applications in pneumatic piping, plant piping, Industrial machines, equipments, Replenishing new refrigerant, Gas, Vacuum, Drinks, Water etc. 	 ● VALVE TWO-WAY SHUT-OFF	17
Valve-less Coupling NSP Series		1/8"~2"	Brass 4.9 (50) Stainless Steel 7.8 (80)	Brass 7.4 (75) Stainless Steel 9.8 (100)	<ul style="list-style-type: none"> Two way free coupling. Both socket and plug have valve less design construction. Minimum pressure loss in high viscosity fluids Applications in mould cooling device, Gas piping, Car washing machines, Hydraulic devices, Chemical plants, Medical equipments etc. 	 ● VALVE THROUGH	19
UNIC Coupling UNIC Series		1/4"~1"	0.98 (10)	1.47 (15)	<ul style="list-style-type: none"> Highly reliable general purpose air connection applications. Efficient operations even at low pressures Fluid flows from socket to plug Safe and reliable applications in Pneumatic circuit, Oil, Oxygen, Nitrogen etc. Connections 	 ● VALVE 1-WAY SHUT-OFF	21
Super Tube Coupling (With Nut) UNIC300 Series		Hose O.D. ø 8 mm ø 10 mm ø 12 mm	0.98 (10)	1.47 (15)	<ul style="list-style-type: none"> For lightweight polyurethane hose connection No protruding of hose clamp bolts. The design doesn't let couplings get caught while hose is moved. Thus avoids hose damage. Applications in general Pneumatic circuit, Oil, Oxygen, Nitrogen, water etc. Connections 	 ● VALVE 1-WAY SHUT-OFF	23

Customer Satisfaction through Superior Quality, Economical Prices, Long-life Reliability,
Ergonomic Design, Numerous Applications, Custom Designed Coupling Solutions
Coupling Series

Model	Coupling View	Pipe Size Dia. mm	Applicable Pressure MPa (Kg/cm ²)		Features	Valve Construction	Page
			Working	Resistance			
Super Joint S200 Series		Hose O.D. ø 8 mm ø 10 mm 1/8" ~ 1/4"	0.98 (10)	1.47 (15)	<ul style="list-style-type: none"> Lightweight, One-touch connection. No protruding of hose clamp bolts. The design doesn't let couplings get caught while hose is moved. Thus avoids hose damage. Suitable for applications in air compressor piping, pneumatic circuit, control panel inside air piping, painting device etc. 	<ul style="list-style-type: none"> ● VALVE  1-WAY SHUT-OFF	25
Micro Super Mini Coupling CA00 Series		Hose ø 5 x 3 mm ø 6 x 4 mm M5 x P0.8, 1/8"	0.98 (10)	1.47 (15)	<ul style="list-style-type: none"> Simple one touch push operation Super mini size automatic joints. Applications to meet various requirements in modern scientific equipments 	<ul style="list-style-type: none"> ● VALVE  1-WAY SHUT-OFF	27
Quick Tube Connector CAP Series		Hose O.D. ø 4 mm ø 6 mm ø 8 mm	0.98 (10)	1.47 (15)	<ul style="list-style-type: none"> Designed for tube connections Double airtight mechanism. No leakages while making connections! Super compact, lightweight, one touch push-in tube connector Applications in various air and vacuum unit piping 	<ul style="list-style-type: none"> ● VALVE  1-WAY SHUT-OFF	29
New Auto Joint AP Series		1/8" ~ 3/8"	0.98 (10)	1.47 (15)	<ul style="list-style-type: none"> Lightweight, compact and high flow capacity Double safety airtight construction with three valves Leakage proof applications for connections of air, water, oil, gas etc. in Semiconductor equipments, Scientific equipments, Instrumentation devices, Pneumatic and Hydraulic circuits etc. 	 1-WAY SHUT-OFF  TWO-WAY SHUT-OFF  THROUGH	31
Mould Coupling MSP Series		For Hose 1/8" ~ 3/8"	0.98 (10)	1.47 (15)	<ul style="list-style-type: none"> Designed for applications in mould cooling devices Quick replacement of coolant hose to mould and die One touch operation, Quick coolant hose connection 	<ul style="list-style-type: none"> ● VALVE  1-WAY SHUT-OFF	33
New Coupling SAP Series		Hose ø 5.8, ø8.2, ø10.3 Thread M16, P1.5	0.98 (10)	1.47 (15)	<ul style="list-style-type: none"> For pipe connections to Welding, Gas cutting, Plasma cutting machines One touch connection with double safety lock construction Ideal applications in fabrication, welding shops and equipments 	<ul style="list-style-type: none"> ● VALVE  1-WAY SHUT-OFF	35
Quick Disconnecter N205 Series		In Out	0.39 (4)	0.98 (10)	<ul style="list-style-type: none"> Designed for applications in carbonic acid gas charging to syrup tank of drink fluid and supplying syrup in to dispenser Very low pressure loss and minimum flow drift Quick and easy connection of pin lock joint Approved to food hygienic regulations standards and Taste test. 	<ul style="list-style-type: none"> ● VALVE  TWO-WAY SHUT-OFF	37
Quick Disconnecter BL Series		In Out	0.39 (4)	0.98 (10)	<ul style="list-style-type: none"> Designed for applications in carbonic acid gas charging to syrup tank of drink fluid and supplying syrup in to dispenser Very low pressure loss and minimum flow drift Quick and easy connection of ball lock joint Approved to food hygienic regulations standards and Taste test. 	<ul style="list-style-type: none"> ● VALVE  TWO-WAY SHUT-OFF	39



* The Specifications mentions in this Catalog are subject to change for Improvements.

For the rationalized Coupling of fluids.

NEW



NEW-MACHINE CO. LTD.

Address Head Office & Plant :

2-8-1 Kehinjima, Oota-ku, Tokyo-143-0003 Japan

Tel. : 081-3-3799-7111 Fax.: 081-3-3799-7116

Website: <http://www.nmcouplings.com>

Email: sales_asia@nmcouplings.com

sales_europe@nmcouplings.com

sales_america@nmcouplings.com