

Sang-A



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SANG-A PNEUMATIC



Page | Contents

6	Company History
8	Explanations according to function
10	Basic Construction of Fitting
12	Classification of Warning Indication
	Common Precautions
	Using Precautions of Fitting Series

FITTING Series

Metric Size-R(PT) Thread Type

14	One-Touch Fittings
50	Compact One-Touch Fittings
64	Speed Controllers
70	Metal Body Speed Controllers
74	Rotary Joints
80	Stop Fittings
84	Check Valves
88	Ball Valves
94	Main Blocks
100	Hand Valves
104	Hand Slide Valves
108	Two-Touch Fittings

Metric Size-G(PF) Thread Type

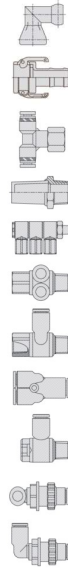
114	One-Touch Fittings
136	Compact One-Touch Fittings
142	Speed Controllers
146	Metal Body Speed Controllers
150	Rotary Joints
156	Stop Fittings
160	Check Valves
164	Ball Valves
168	Hand Valves

Inch Size-NPT Thread Type

172	One-Touch Fittings
200	Compact One-Touch Fittings
214	Speed Controllers
218	Rotary Joints
224	Stop Fittings
228	Check Valves
232	Ball Valves

Inch Size-R(PT) Thread Type

238	One-Touch Fittings
248	Compact One-Touch Fittings
254	Speed Controllers
258	Rotary Joints
262	INSERT FITTING
270	SILENCERS
282	AIR GUN
286	TUBE SERIES
292	HOSE BAND
296	AUTO ACE COUPLER
300	ACE COUPLER
304	COMPACT ACE COUPLER
306	MINOR COUPLER
312	HP COUPLER
314	MOLD COUPLER
318	CAM-LOCK COUPLER
326	ADJUSTABLE COOLANT NOZZLE



[SANG-A PNEUMATIC]

ABOUT SANG-A

Creative and challenging! Into the future with high technology - SANG-A will leap into leading company through management innovation and challenge.

- 1980 07 | Established 'Daewoo Polymer Co.'
- 1989 05 | Changed the company name to 'Sang - A Pneumatic Co., Ltd.'
- 1993 10 | Opened Seong-Seo Plant(Dalseo wolamdong)
- 1995 11 | Awarded 'US\$1 million export monument'
- 1996 03 | Converted to incorporation of Sang-A Pneumatic Co., Ltd. (Capital u\$3 Millions)
- 1996 08 | Designated as 'A Potential Advanced Technology Enterprise' by SMBA.
- 1997 04 | Moved head office to Daegu Dalseo wolamdong
- 1997 05 | Registration of a utility model (couplings for piping / 0269779)
- 1998 07 | Designated as 'An Advanced Technology Enterprise' by SMBA.
- 1998 09 | Awarded excellent world capital goods
- 1998 11 | Awarded a Prize for 'Superior Quality Products' from Ministry of Commerce
- 2000 11 | Awarded a Prize for 'New Technology Utilization' from Ministry of Commerce
- 2001 12 | Awarded a grand prize Medium & Small Enterprise CEO
- 2001 05 | Designated as 'Promising Medium & Small Enterprise' by SMBA
- 2001 11 | Awarded 'US\$5 million export monument'
- 2002 01 | Established 2nd Plant in Seong Seo for Plastic business.
- 2002 01 | Selected 'World Class Capital Goods'.
- 2002 04 | Opened Shanghai Sang -A Pneumatic Co., Ltd.
- 2002 04 | Established 'Deymorow Co., Ltd.
- 2002 06 | Registered 3rd plant in Waegwan
- 2002 07 | Registered patent tubes and tube couple rings lock claw coupling /10-1002788 / 2 other cases
- 2002 11 | Awarded 'Iron Tower Medal'
- 2002 12 | Obtain certification of 'Worldwide First Class Goods'
- 2007 03 | Designated technology innovation company
- 2010 01 | Obtained ISO 9001/14001(K01720-QE)
- 2010 02 | Recognized research institute Korea Occupational Safety and Technology Association
- 2010 07 | Selected Star Company Daegu 2010
- 2012 07 | Moved Seongseo 6th industrial complex
- 2013 07 | Excellent selection of Star Enterprise



[Explanation according to function]



One-Touch Fitting

- One touch air connector used in pneumatic piping.
- Easy connection/disconnection of tube by one touch only.
- Various models and sizes.



Compact One-Touch Fitting

- Miniature one-touch air connector used in pneumatic piping.
- 40% smaller volume ratio and 20% smaller O.D. ratio in comparison to the conventional type.
- Used easily in confined spaces.



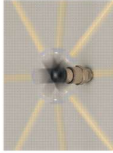
Speed Controllers

- Precisely permit the optimal rate of airflow for the smooth cylinder movement of a driving device.
- Uni-directional airflow is available for either exhaust or inlet flow control method.
- Connection of the pipe is not limited, given the rotating structure of the main body.
- Needle is equipped with a stopping apparatus, allowing it to function perfectly.



Metal Body Speed Controllers

- Valve used for controlling the operation speed of a driving device.
- Using the pipe which connected to actuator.
- Easy speed control, permit constant speed in low flow area.



Rotary Joint

- Used for swiveling and swinging connections.
- Used in rotating parts ranging from 500~1500rpm.
- Built-in bearing accommodates the rotation and swiveling of pneumatic connections.



Stop Fitting

- The double-passage mechanism prevent the airflow upon the tubing disconnection.
- The complete prevention of airflow upon the tubing disconnection provides safety when repairing pneumatic equipments.
- Used at laboratory or for instructing pneumatic connections.



Check Valve

- Used for the directional checking of air.
- Minimum pressure is 0.1kg/cm². Keeps 1.42PSI in vacuum.



Ball Valve

- Used for the control air supply in the opened and closed positions.
- PPS resin body construction allows air & water applications.



Main Block

- Used for assembling of various types of manifold blocks for concentrated branching.
- Min Blocks provide comparable flow rates to steel piping



Hand Valve / Hand Slide Valve

- Used for turning air pressure on and off for pneumatic devices.
- Three-way valve which allows the discharge of residual pressure of machine or preserve the life of the machine, and also allowing repairs to be made.



Insert Fitting

- Screw-type fitting for multi-purpose.
- Tightening the screws of the tube method can be used in a way permanently.
- Resistance to mechanical vibration and vacuum performance.
- Compared with plastic material is suitable for high-temperature heat-resistant specifications.



Two-Touch Fitting

- Nut-tightened air connector used for pneumatic piping.
- Higher tightening capabilities of two-touch connections allow use in rocking and impact parts.

Silencers

- Used for suppressing the noise of air release.
- Made of plastic: lightweight and increased life span.
- Compact size allows for installation in narrow spaces.



Air Gun

- Light-weight and impact-resistant plastic material.
- Various nozzle sizes make easy cleaning of machinery and goods.
- Easy control of air release.



Tube

- Superior flexibility, oil and cold resistant, lightweight, durable.
- Used in pneumatic piping as well as coating machines, chemical plants, automobiles, medical instruments, food industry and so on.



Hose Band

- Used for joints and leak-proof hose.
- It is made of Stainless Steel (SUS304). Corrosion-resistant, heat-resistant, strong surface is clean permanently.
- The whole band is polished twice, it does not damage hose.
- It is very safely no leak at high temperature, high pressure.



Fluid Coupler

- Uni-directional shut-off coupler with an automatic shut-off valve built in the socket.
- Various material and shape for multi-purpose.
- Easy to link plug and socket



Cam-Lock Coupler

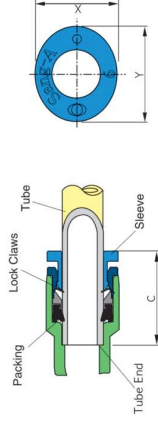
- Liquids, vapors, gases, powders, air leaks, such as the contents can be transported safely.
- Various products for various transport properties (acid, alkali, high temperature, low temperature, food, etc.), you can select the most suitable products.



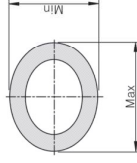
Adjustable Coolant Nozzle

- Easy control of angle, length and diameter of the nozzle.
- Can be applied widely for a variety of chemical.
- Chemical, impact, heat resistance is excellent.

[Basic Construction of Fitting]



When installing the tube into the one-touch fitting, use the tube cutter to make a straight 90 degree cut.
 Tube should be pushed into the fitting completely past the packing, allowing the lock claws to fully retain the tube in place. If this is not done, leakage may occur.
 For removal of the tube, press the sleeve to recess the lock claws, then pull out the tube.



▶ Tube Size of Bend Radius

Tube Size	Ø4	Ø6	Ø8	Ø10	Ø12	Ø3	Ø4	Ø6
R	20	30	50	80	150	15	20	30

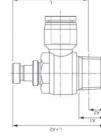
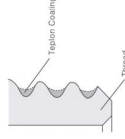
Tube Size	Ø5/32	Ø3/16	Ø1/4	Ø5/16	Ø3/8	Ø1/2	Ø18	Ø5/32	Ø1/4
R	20	25	30	50	80	150	15	20	30



The taper pipe thread is coated with teflon, thus requiring no additional teflon tape or sealing treatment.
 Metric fittings are sealed with gaskets, thus requiring no additional sealing treatment.
 For installation, use the recommended tightening torque specified below for proper sealing. Note that excessive tightening may damage the thread.

▶ Recommended Torque per Thread Size

Thread Type	Thread Size	Torque (kgf/cm)
Metric Thread	M3	15-19
	M6	20-27
	M8	70-90
	R 1/2	120-140
	R 3/4	200-240
	R 1	280-300
UNF (Unified) Thread	No. 10-32	15-19
	UNF	70-90
NPT Thread	NPT 1/8	120-140
	NPT 1/4	200-240
	NPT 3/8	220-240
	NPT 1/2	280-300



After installing the equipment on the instrument, the "L" is the product of the subtraction value of thread part (A2) from the main body.
 The "L" size plus "A2" makes the total length of the fitting.

▶ Size of thread parts

Thread Type	Metric thread	Taper thread
Thread Size	M5	M6
A1	3.5	4.5
A2	3.5	4.5
		R1/8
		R1/4
		R3/8
		R1/2

▶ Standard size of metric thread

Thread Code	Thread Size	Name of products applied
M3	M3 × 0.5	All products available
M5	M5 × 0.8	
M6	M6 × 1.0	
M6	M6 × 0.75	
M8	M8 × 0.75	
M8	M8 × 0.75	

▶ Depth of Assembling tube with Fitting

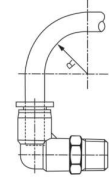
Tube Size	Ø4	Ø6	Ø8	Ø10	Ø12	Ø16	Ø3	Ø4	Ø6
C	16.0	17.0	18.5	21.0	22.5	25	9.6	11.5	12.5

Tube Size	Ø5/32	Ø3/16	Ø1/4	Ø5/16	Ø3/8	Ø1/2	Ø18	Ø5/32	Ø1/4
C	15.5	17	17.2	18.5	21	22.5	9.2	11.3	11.3

▶ Depth of Assembling tube with Fitting

Tube Size	Ø4	Ø6	Ø8	Ø10	Ø12	Ø16	Ø3	Ø4	Ø6
X	10	12	14	17	21	24	6	8	10
Y	12	14	16	19	23	27	7	10	12

Tube Size	Ø5/32	Ø3/16	Ø1/4	Ø5/16	Ø3/8	Ø1/2	Ø18	Ø5/32	Ø1/4
X	10	11	12	14	17	21	6.2	8	10
Y	12	13	14	16	19	23	7.2	10	12



Tube has a tolerance of $\pm 0.1\text{mm}$, and ellipticity of within 0.2mm (between Max and Min diameter) is allowed for the tube.
 The tube must not be bent excessively near the joint. For installation of the tube, use the recommendation below.

Classification of Warning Indication

⚠ DANGER Risk of death or serious injury.
(The most dangerous condition.)

⚠ WARNING Potential risk of danger, death or serious injury.
(Potential danger)

⚠ CAUTION Potential risk of danger and of financial damage.

Common Precautions

⚠ DANGER ▶ Never use for the following:

- ① As equipment for the purpose of the maintenance and management of human life.
- ② As equipment for the purpose of movement of human transportation.
- ③ As equipment requiring essential safety.

⚠ WARNING ▶ Never use on the following environment:

- ① Using for applications other than originally intended.
- ② Place consisting of corrosive gas, inflammable/flammable gas, chemicals, sea water, water and vapor.
- ▶ Never disassemble or remodel the equipment; this may cause malfunction or leakage.
- ▶ When repairing or checking equipment, remove air pressure first.
- ▶ Never tamper with the sleeve of fitting when pressure is on.

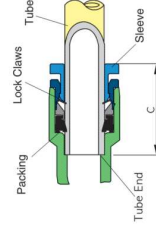
⚠ CAUTION ▶ Never assemble with parts from other manufacturers; this may cause leakage or damage to the equipment.

Sang-A Pneumatic Co., Ltd. is not responsible for damage or injury that may occur due to interchanging of parts outside of the Sang-A Pneumatic brand.

Using Precautions of Fitting Series

Never fail to check the following

- ⚠ WARNING**
1. Never use for fluids other than air and water (Water available in case of special order only)
 2. Never use at the place of spatter to avoid fire.
 3. Be sure to use with Rotary Joint to prevent damage or leakage at the place of rotation.
 4. Never use with water hotter than 60°C. This causes breakage of resin due to hydrolysis or heat.
 5. Be sure to use after checking static electricity prevention requirements.
 6. Avoid external impact such as bending, twisting and drawing on fittings.



▶ The Size of Sleeve

SLEEVE SIZE	Ø3	Ø4	Ø5	Ø6	Ø8	Ø10	Ø12	Ø16
General Specification	Ø18	Ø22	Ø27	Ø31	Ø36	Ø43	Ø48	Ø51
General Specification	10.4	12	14	14.4	16	17.4	19	21.2
General Specification	7.6	10.8	12	10				

- Minimum insertion part of tube is as follows and be sure to use leaving as much as the following size as margin.

TUBE SIZE	Ø3	Ø4	Ø6	Ø8	Ø10	Ø12	Ø16
General Specification	Ø18	Ø22	Ø31	Ø36	Ø43	Ø48	Ø51
General Specification	16	17	18.5	21	22	25	
General Specification	9.5	11.5	12.5				

⚠ Cautions on disconnecting tube:

- Before disconnecting tube, be sure to confirm that the pressure inside the tube is at zero.
- Before disconnecting tube, pull it out after pressing the sleeve equally on both sides. Unequal pressing strength will make scratch on tube by insufficient open of lock claws, this will cause air leakage.
- Be sure not to shake or make 360 degree rotation when disconnecting the tube. The scratch made by the misuses will cause air leakage.

⚠ Cautions on treatment of the equipment body:

- When fastening the body onto the six-angle part of the inside and outside of the fitting, choose the correct tool and size.
- When fastening the thread, please refer to the "Torque Recommended" (P11). If torque is higher than the recommended, this may cause damage or air leakage. If torque is lower than the recommended, this may cause air leakage.
- After fastening the thread, most of Sang-A equipment allows control of the direction of the pipe.



⚠ CAUTION ▶ Be sure to meet the following conditions for the tube, otherwise it may cause leakage of air or inferiority of the application.

SIZE	POLYURETHANE TUBE	NYLON TUBE	SIZE	POLYURETHANE TUBE	NYLON TUBE
Ø 3mm	± 0.08	Ø 1.8	± 0.10	± 0.10	± 0.08
Ø 4mm	± 0.10	± 0.08	Ø 5/32	± 0.10	± 0.08
Ø 6mm	± 0.12	± 0.10	Ø 3/16	± 0.12	± 0.10
Ø 8mm	± 0.12	± 0.10	Ø 1/4	± 0.12	± 0.10
Ø 10mm	± 0.15	± 0.12	Ø 5/16	± 0.15	± 0.12
Ø 12mm	± 0.15	± 0.12	Ø 3/8	± 0.15	± 0.12
Ø 16mm	± 0.15	± 0.15	Ø 1/2	± 0.15	± 0.15

⚠ Cautions in the application of tube:

- Be sure to confirm that the section of tube is cut at a right angle. Make sure that there is no indication of damage to the outside of the tube.
- Be sure to refer to the following for application and removal of the tube. Sang-A Pneumatic equipment is made to follow a 2-step insertion of tubing into the fitting.
 - The 1st step goes past the Lock Claws, and the 2nd step goes into the Packing.
 - Make sure that the second step has been acquired.
- The elliptical design of the sleeve makes for a simple and easy application. (Please order the round sleeve if there are restrictions)