

Instruction manual for FCC Pneumatic Press Model:FCP-100,200,500,750H,1000 (Ver.3.01)



Make sure to read this manual before using this press. Then, store it in a safe location. The specifications may be changed without prior notice.



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Thank you very much for purchasing our pneumatic press.

In order to get the most out of this product, make sure to read all of this manual before using the press. Store this manual carefully in order to refer it when necessary, and make full use of the press for a long time.

- **This press was designed for use inside Japan.**

Responsibility of administrators

The Labor Health and Safety Law defines a pneumatic press as any kind of power press. This press is a pneumatic press. Therefore, administrators are responsible for the following activities.

Safety Execution Act 6-7: When your site uses five or more presses, an "operation chief" should be appointed. He/she must complete the technical training course for a Press machine Chief of Operations.

Health and Safety Regulation 134-3: A periodic inspection should be carried out by the shop management at least once each year.

If you will be using the machine outside Japan, make sure to follow the safety regulations in the country where the press will be used.

GENERAL WARNING:

Pneumatic presses are dangerous machines, if not handled carefully and correctly by trained personnel. Misuse of a press can result in death or serious injury.

Incorrect automatic operation can result in death or serious injury. Only trained and qualified personnel, who have also read and understood this manual, should be allowed to operate a press equipped with this controller.

PRECAUTION FOR SAFETY

The precautions below are indispensable in using the press appropriately and avoiding injury to people or damage to the press and other equipment. The following symbols are used in this manual to alert the reader to potentially hazardous situations. The information given in each case is intended to prevent damage to the objects and injury to people.

 WARNING	Failure to follow the advice given may result in death or serious injury.
 CAUTION	Failure to follow the advice given may result in bodily injury and/or damage to equipment.

Unless otherwise specified, "raise" and "lower" means raising and lowering the press ram.

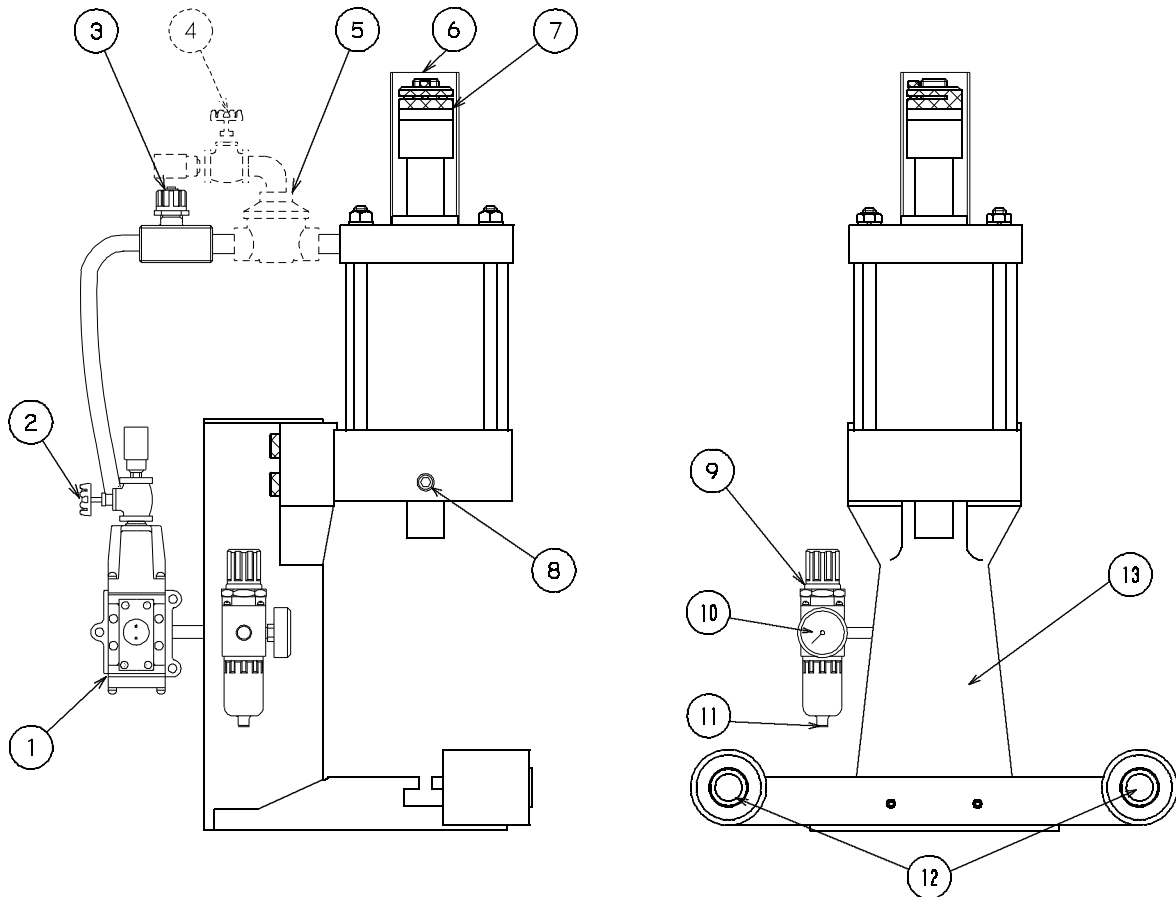
Power source	This press requires 100 VAC$\pm$10%, 50/60 Hz.  CAUTION: Connecting a power supply that is different from this specification may cause a fire or result in bodily injury.
Supplied air pressure	The compressed air pressure used with this press should be 0.2 to 0.5 MPa.  CAUTION: Use of compressed air at pressures greater than 0.5 MPa may cause the pipes or hoses to burst.
Workbench	 WARNING: Use this press only after securing it on a working bench that is sturdy enough to support the weight of the press. If it is not secured, the machine may fall and injure someone.
Acrylic safety cover	 WARNING: Make sure to install the acrylic safety cover on the mechanical stopper before operation. If you operate the press without the cover, people may become entangled in the press.
Adjustment of the mechanical stopper	 WARNING: Adjust the mechanical stopper only when the press ram has been raised and is stopped. Make sure that no one is near the controls. If anyone operates the controls while you are adjusting the mechanical stopper, you may be injured.
Press operation (1)	Before starting operation, make sure that no one is touching any part of the press. Especially, when matching mold parts, or when more than one worker is involved in press preparations, he/she may be injured. Never touch the mechanical stopper, jig, metal die, rotation stopper arm, photo sensor light shielding plate, etc.  WARNING: When two or more people are working near a press, they must use a system for communicating that leaves no doubt of their intent. The chances for an accident increase if there is a misunderstanding about what action will take place next. In a noisy work environment, hand signals can be used. Failure to communicate clearly with people in the immediate area can result in accidents, serious injury and even death.
Press operation (2)	When operating the press, make sure to push both Two-handed pushbutton switches, one with each hand. If you modify or disable either of the two switches, or if you set up a foot switch to operate the press, you may become caught in the jig or metal die and you may be injured. If you have to operate the press using only one hand, or by using a foot switch, equip the press with a light beam interlock device to ensure the safety of the operator. (Make sure to consult us about these kinds of operations before working this area.)  WARNING: Pneumatic presses have moving parts that can crush you and you can die. Make sure to stay clear of any press while it is moving. Turn off all electrical and pneumatic sources of power before attempting to adjust the machine.

When removing the hose from the air supply inlet	 CAUTION: Never touch the jig or metal die. When compressed air is not supplied, the press ram may fall and you may be crushed by the jig or metal die when removing the hose from the air supply inlet.
Instruction manual	 CAUTION: If you sell or loan the press to someone else, make sure to give them this instruction manual.
Modifications, disassembly, repair	 WARNING: Never modify, disassemble, or repair this press. Unauthorized changes can lead to serious injury. Make sure to contact us if you need any change or repair. We will not accept liability for any problem or accident if you do make changes or repairs without approval.

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Name and function of each part on the Press



No.	NAME	FUNCTION
①	Main solenoid valve	An electrically operated solenoid valve, 100 VAC 50/60 Hz.
②	Inching valve	By closing this valve, the air exhaust path is blocked and the press ram will stop rising. Used for Mold matching operations. Normally this valve is left completely open.
③	Speed controller for lowering the press ram	Adjust it to controll the speed of lowering the press ram.
④	Inching valve for Quick exhaust valve model	By closing this valve, the air exhaust path is blocked and the press ram will stop rising. Used for Mold matching operations. Normally this valve is left completely open. (This valve is installed only on the FCP-750H.)
⑤	Quick exhaust valve	This valve increases the exhaust capacity of air. (This unit is installed only on the FCP-750H.)
⑥	Acrylic safety cover	A safety cover used to keep body parts from getting caught between the cylinder top and the mechanical stopper. ⚠ WARNING: Make sure to keep the cover installed unless adjusting the mechanical stopper.
⑦	Mechanical stopper	To adjust the ram stroke and bottom dead point, see "Stroke adjustment" on page 4.
⑧	Rotation stopper	A bolt which keeps the press ram from rotating.
⑨	Filter and regulator (built-in type)	Adjusts the pressure of the compressed air supply. It limits the maximum pressure to 0.5 MPa, which will allow the press to work at the rated output. See the "Press output chart" on page 10. To adjust the setting, pull up on the knob to turn it. After the pressure is adjusted, push the knob down until a click is heard.

⑩	Pressure gauge	Shows the air pressure after the pressure is adjusted by the regulator. Normally, operate the press within the range of 0.2 to 0.5 MPa.  CAUTION: Operating the press with pressures outside this range can lead a malfunction and possible injury.
⑪	Drain outlet	Used to drain off water that accumulates in the filter and regulator. Dirty water may splash out when opened. Put a cup under the drain to catch the water when you open it.
⑫	Two-handed pushbutton switches	Both switches must be pressed at the same time to start the press ram.  WARNING: Make sure to use the both hands for this operation, in order to avoid injury.
⑬	Column	The column contains an integrated air tank. This tank keeps the press output constant, even if there is a fluctuation in the compressed air supplied. (This tank is not installed on the FCP-100 and FCP-200.)

Installation and preparation for operation

1. Installation Method

- 1) The pneumatic press is delivered in a wooden crate. The bottom of the crate is a pallet and forklift forks can be inserted under it. The press housing is attached to the pallet using bolts and nuts.
- 2) Move the press to the installation position as though it were a wooden crate, using a forklift or a similar transportation device.
- 3) Unpack the wooden crate and remove the bolts and nuts that secure the press to the pallet.



CAUTION

Be careful when unpacking because nails and splinters of wood may scatter and you could be injured.

- 4) While putting the press on the workbench, look out for other workers and obstacles in the installation location.



WARNING

Use a workbench that is strong enough and stable enough to support the weight of the press and jig. If the workbench is too weak, the machine may fall and injure someone.

- 5) Secure the press to the workbench using bolts. (You may use the same bolts and nuts that were used for delivery.)
- 6) Choose a location for the installation where there is not too much dust, oil, or electrical noise.
- 7) Select a pneumatic hose that is large enough to deliver a stable supply of compressed air.

2. Preparation

- 1) Installation of the upper jig

Insert the upper jig into the ram shank, and tighten the bolt so that each end matches the other.

- 2) Supply compressed air to the air inlet of the filter & regulator from the factory's compressed air line. The available air pressure should be from 0.2 to 0.5 MPa. Adjust the air pressure using a regulator to achieve the required output for the press. See page 10 "Press output chart."
- 3) Then, connect the power plug to a power outlet 100 VAC 10% (50/60 Hz).

Adjustment of each section

1. Mold Matching (inching operation)



WARNING

Make sure that no one is standing near the press and that all obstacles have been removed. If you are not careful, the press may catch a part of your body and you may be injured.



WARNING

Make sure the acrylic safety cover is installed. If it isn't, you may be injured.

- 1) Turn the inching valve all the way clockwise until it is fully closed.
- 2) Use both hands to press the two-handed pushbutton switches simultaneously. The press ram will be lowered. If you take either hand away from the switch, the press ram will stop.
- 3) Open the inching valve and the press ram will be raised.



WARNING

Do not come near the machine while the press ram is moving up. You may be injured.

- 4) Repeat steps 3) and 4) above to set the mold position. Closing the regulator and speed controller some may make the operation easier.

Fine adjustments to the jig: While the press ram is stopped in an inching operation, lower the pneumatic pressure using the regulator and the ram will lower slowly. Increase the pneumatic pressure to raise the ram. These operations will let you match the mold positions easily.

- 5) After the mold matching is complete, open the inching valve all the way.



WARNING

When the inching valve is fully opened, the press ram will rise. Do not come near the machine while the press ram is moving up. You may be injured.

2. Stroke Adjustment

Adjust the lower stroke of the press ram by adjusting the mechanical stopper. First loosen the cap screw on the upper section of the stopper. The stopper itself is threaded and will turn. (Turn the stopper clockwise to shorten the press ram stroke.) After adjusting the stopper position, tighten the cap screw again. Make sure to reinstall the acrylic safety cover after making adjustments.

Example of when to use the mechanical stopper:

- 1) To prevent the press from hitting bottom if no workpiece is present.
- 2) Set the press fit dimension (thickness) of a workpiece by adjusting the press stroke.

3. Adjust the Press Output and Lowering Speed

- 1) The press output can be adjusted by adjusting the regulator. See "Preparation" on page 3.



CAUTION

Do not make the press output larger than the maximum load that the load cell is rated for. Overloading the load cell may permanently deform it or break it.

- 2) The lowering speed of the press ram can be adjusted using the lowering speed controller.

Options

Devices listed below are available as options for our pneumatic presses. Please contact us for more information.

1. Timer Box

Maintenance

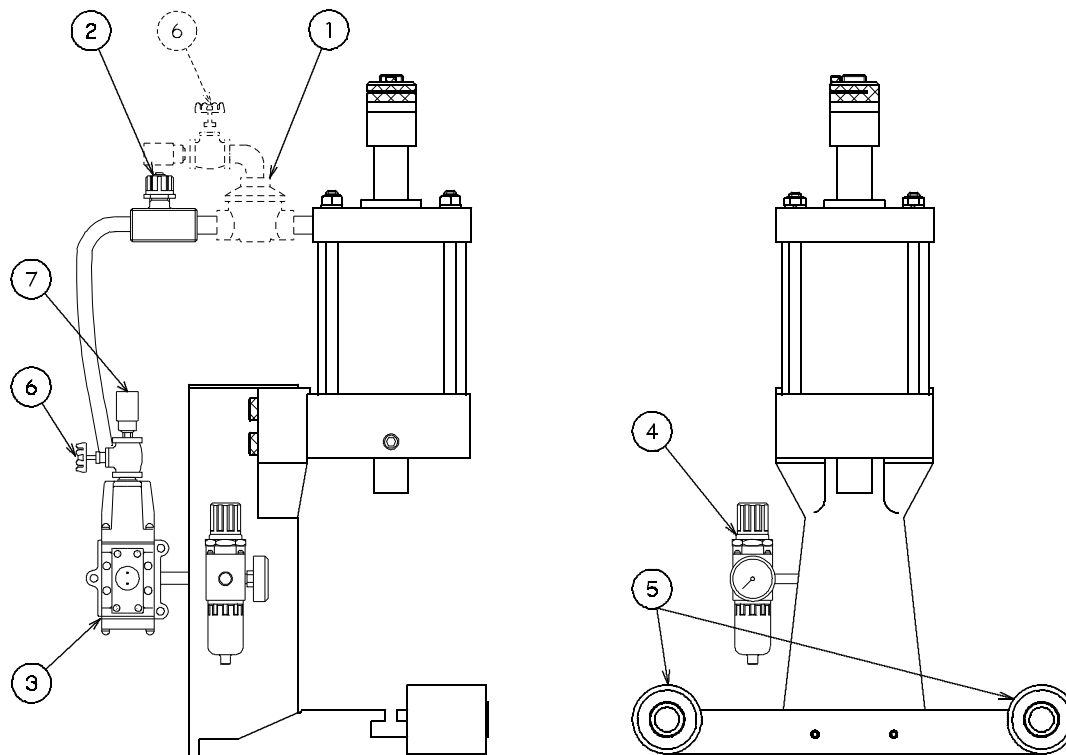
- 1) If water collects in the filter (built into the reducing valve), drain it off right away.
- 2) Apply grease to the press ram rotation stopper every month.
- 3) Periodically check for loose terminals on the machines.

Contact telephone for user support (Engineering division): 81-3-3265-5437 (only in Japanese)

Or, ask questions by e-mail please. E-mail:sales@fujicon.net

Please make sure to check the model name and serial number before calling.

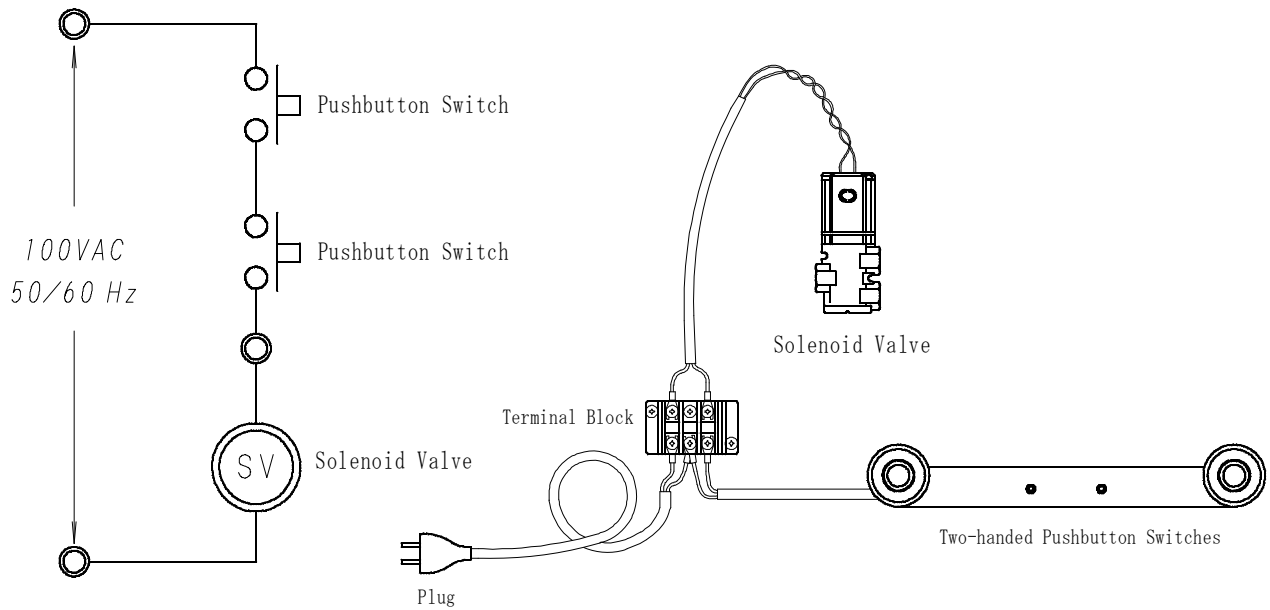
Spare parts



Parts	Model No,					Suppliers
	FCP-100	FCP-200	FCP-500	FCP-750H	FCP-1000	
① Quick Exhaust Valve				AQ400-03		SMC
② Speed Controllor	AS2201F-02-08S	AS4000-02	AS4000-03	AS4000-03	AS4000-02	SMC
③ Sorenoid Valve	VF1120-1GC-01	VP342-1G-01	VT325-021G	VT325-021G	VS4120-021	SMC
④ Filtre & Regulatr	AW20-02G	AW20-02G	AW30-02G	AW30-02G	AW30-02G	SMC
⑤ Switch	WS3400	WS3400				Matsushita Denko
			ZAP-G	ZAP-G	ZAP-G	OMRON
⑥ Inching Valve		A (1/4)	A (1/4)	A (3/8)	A (1/4)	KITZ
⑦ Silencer	AN120-M5	2510-002	2510-002	2510-002 & 2510-003	2510-002 X 2	SMC

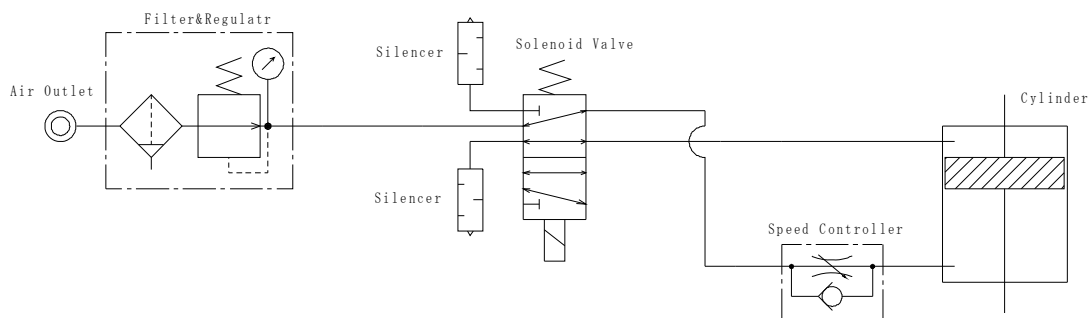
For your information	
Company name	URL
Matsushita Denko	http://www.mew.co.jp/ac/e/index.jsp
OMRON	http://www.omron.com/index2.html
SMC	http://www.smcworld.com/2002/index3_e.htm
KITZ	http://www.kitz.co.jp/english/index.html

Wiring diagram

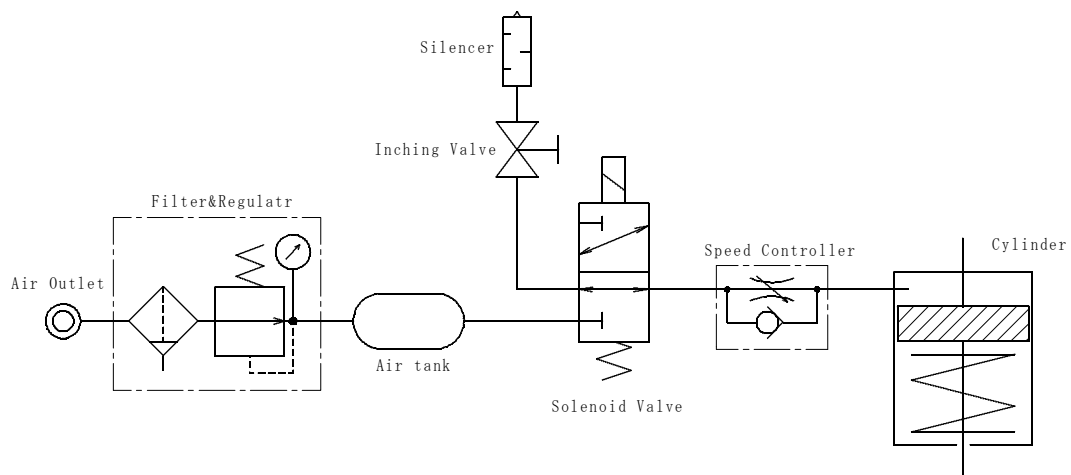


Diagrams of Air circuit

FCP-100

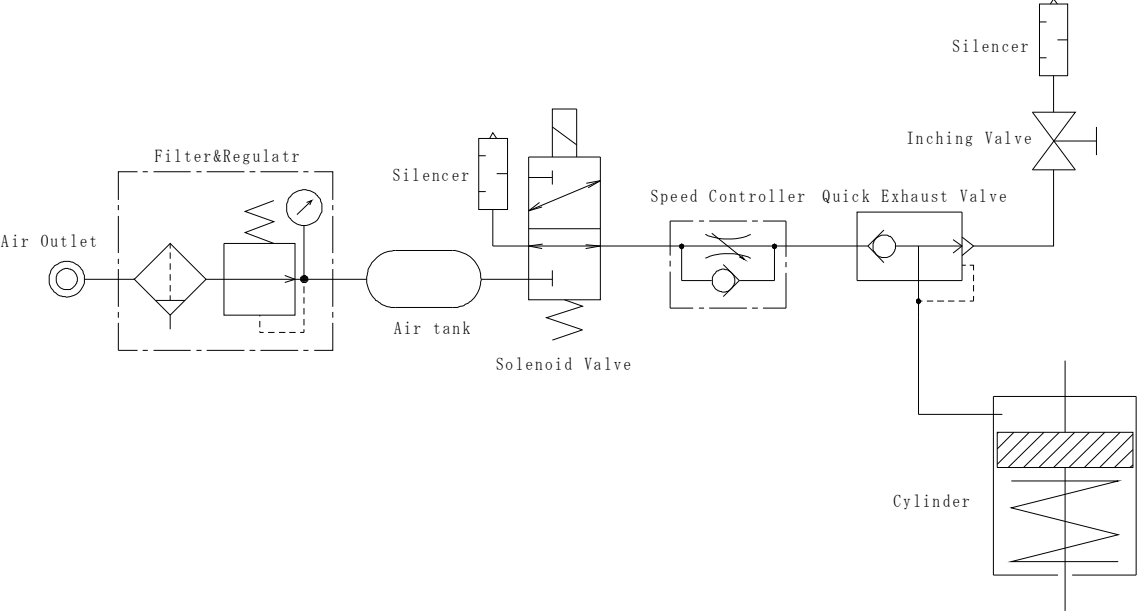


FCP-200 and FCP-500

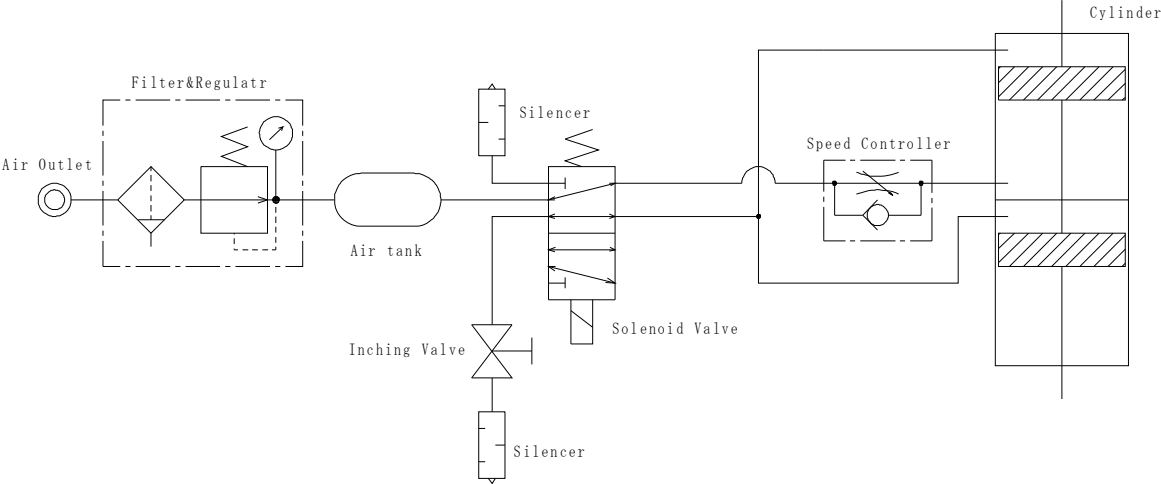


* The air tank is not installed on the FCP-200.

FCP-750H

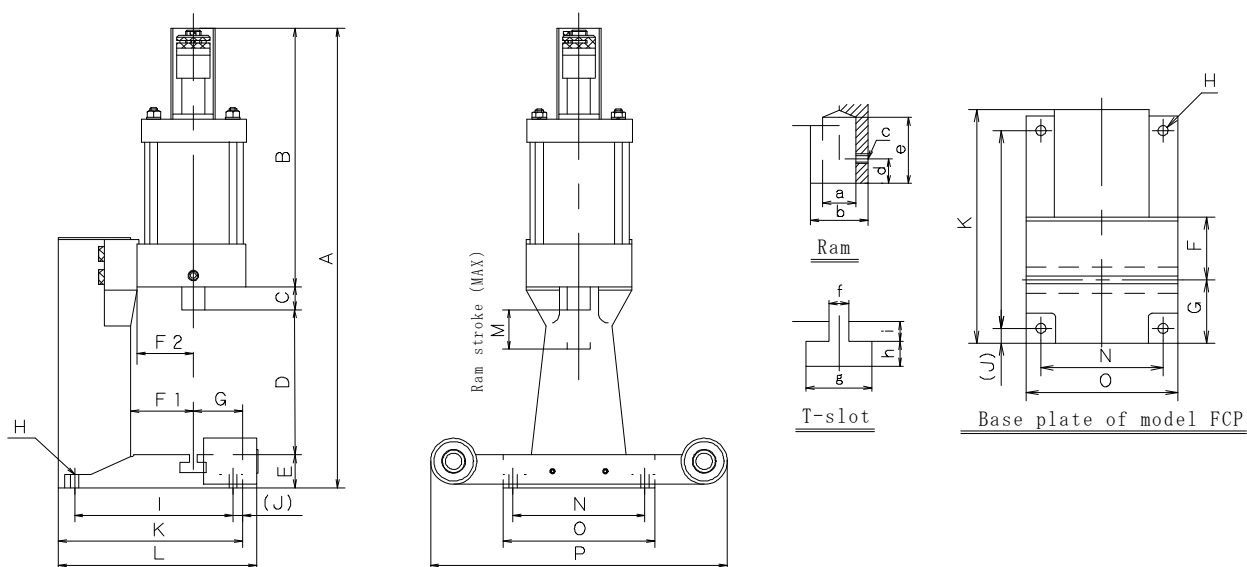


FCP-1000



Specifications

1. Dimensional Specifications



Dimensions	Model	FCP-100	FCP-200	FCP-500	FCP-750H	FCP-1000
A (mm)		440	530	555	700	740
F1 (mm)		65	75	90	90	90
F2 (mm)		40	50	-	-	-
G (mm)		62	75	75	75	70
H (mm)		4- ϕ 10	4- ϕ 10	4- ϕ 12	4- ϕ 12	4- ϕ 12
I (mm)		175	205	235	240	240
J (mm)		(13)	(15)	(17.5)	(15)	(15)
K (mm)		(200)	(235)	(280)	(285)	(285)
L (mm)		(245)	(280)	(300)	(305)	(305)
M (mm)		25 ~ 50	25 ~ 50	25 ~ 50	25 ~ 60	25 ~ 50
N (mm)		125	140	145	200	200
O (mm)		(150)	(170)	(180)	(230)	(230)
P (mm)		420	420	450	450	450
a (mm)		ϕ 15 H9	ϕ 15 H9	ϕ 15 H9	ϕ 20 H9	ϕ 20 H9
b (mm)		ϕ 25	ϕ 28	ϕ 35	ϕ 35	ϕ 35
c (mm)		M6 $\times$ 1.0	M6 $\times$ 1.0	M6 $\times$ 1.0	M6 $\times$ 1.0	M6 $\times$ 1.0
d (mm)		10	10	10	15	15
e (mm)		35	35	35	40	40
f (mm)		(10)	(10)	(12)	(12)	(12)
g (mm)		(30)	(30)	(30)	(40)	(40)
h (mm)		(10)	(10)	(12)	(12)	(12)
i (mm)		(10)	(10)	(12)	(12)	(12)
Weight (kg)		15	27	55	75	76

2. Apparent Power of Solenoid Valve (unit:VA)

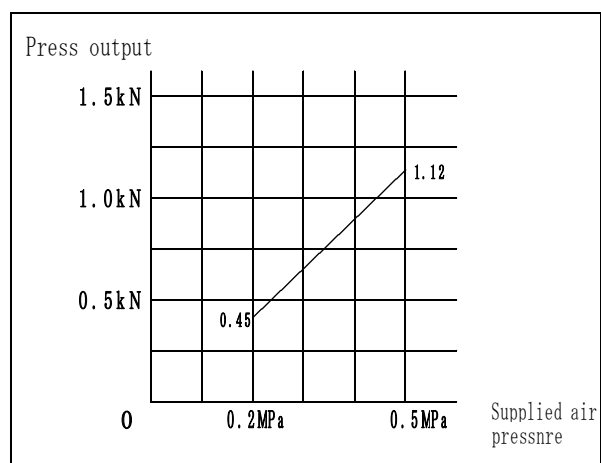
	FCP-100	FCP-200	FCP-500	FCP-750H	FCP-1000
In-rush	6	6	75	75	100
Holding	4	4	27	27	20

3. Air Consumption (unit:NI)

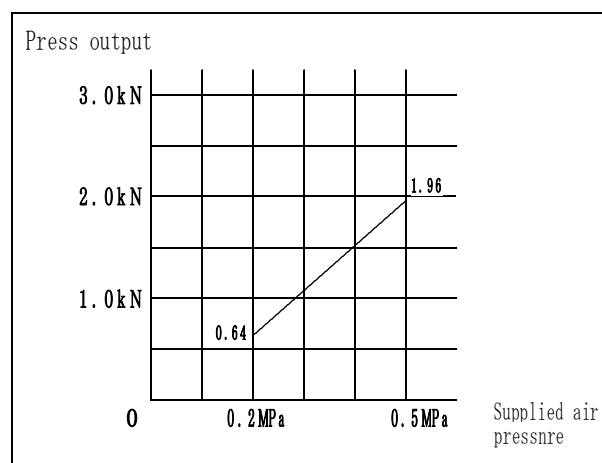
FCP-100	FCP-200	FCP-500	FCP-750H	FCP-1000
1.4	1.5	3.8	5.7	11

Press Output Chart

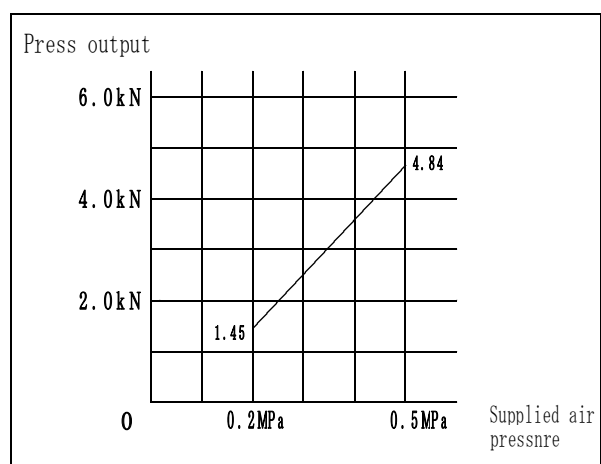
FCP-100



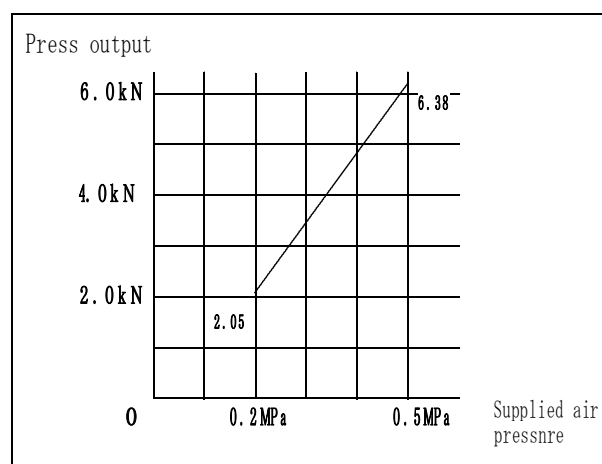
FCP-200



FCP-500



FCP-750H



FCP-1000

