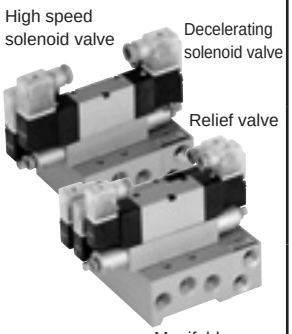
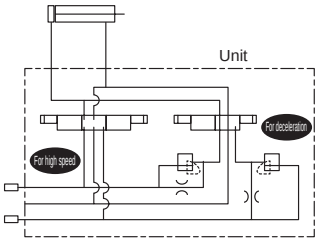
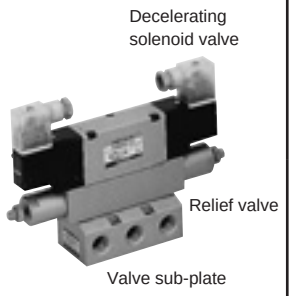
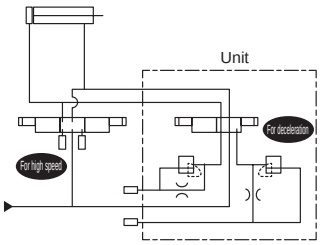
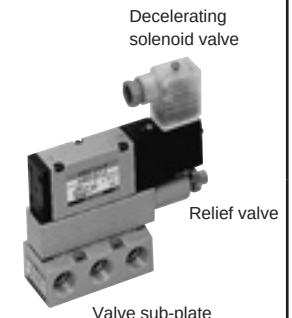
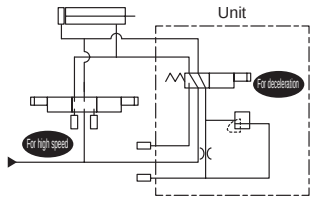
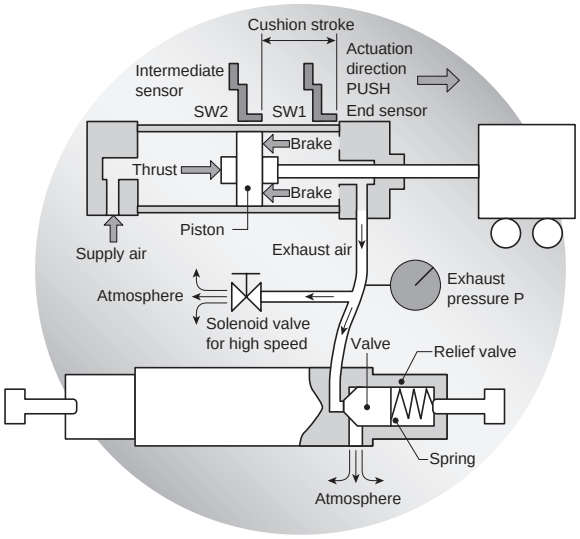
	Model No.		Cylinder bore size	Appearance	Circuit configuration diagram	PLC I/O	Piping	Page
Variable speed unit	SKH-320		ø25 to ø50			IN 4-point (Sensor) OUT 4-point (Valve)	1) As the circuit unit for deceleration is integrated with the control solenoid valve, it is possible to drive the cylinder with only the unit. 2) The number of steps required for piping is the same as the cylinder driving circuit.	1858
	SKH-420		ø40 to ø80					
	SKH-520		ø63 to ø125					
Deceleration unit	Both ends deceleration	SKH-328	ø25 to ø50			IN 2-point (Sensor) OUT 2-point (Valve)	As this is only a circuit unit for deceleration, a deceleration circuit can be structured by connecting additional piping to the solenoid valve circuit for control.	1858
		SKH-428	ø40 to ø80					
	One-sided deceleration	SKH-318	ø25 to ø50			IN 1-point (Sensor) OUT 1-point (Valve)	1) As this is only a circuit unit for deceleration, a deceleration circuit can be structured by connecting additional piping to the solenoid valve circuit for control. 2) As this is a single-side deceleration unit, install the unit near the cylinder port.	1858
		SKH-418	ø40 to ø80					

Basic operational principle

When starting to move, the air cylinder moves at a high speed by opening the solenoid valve for high speed and releasing the exhaust air into the atmosphere with a great amount of force.
When the intermediate sensor (SW2) for operation of the cushion operates, the solenoid valve for high speed is closed and the flow of the exhaust air is controlled with a relief valve to decelerate the air cylinder.
Along with the piston movement, the exhaust pressure P will gradually increase up to the pressure configured by the springs of the relief valve to create an air brake working in the opposite direction of the thrust, causing the air cylinder to softly decelerate and eventually stop.



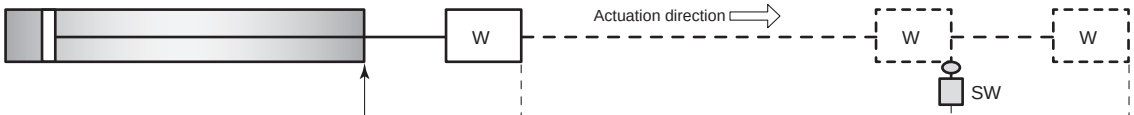


Fig. 1

Cushion principle

(Pressure control method)

Consider the situation where the cylinder operates in the direction of the arrow view as in the figure at right. By switching the solenoid valve and the air supply side pressure and exhaust side pressure changing as in Fig. 2, the cylinder will start moving. While the cylinder is in operation, thrust is acting in the same direction as the operating direction due to the difference between the air supply and exhaust pressures.
The exhaust pressure is controlled by switching the flow of air on the exhaust side with an external signal (such as a proximity switch) at "L1" right before the stroke end.
(With this unit, the exhaust pressure is controlled with the use of a relief valve.)
For this reason, as the cylinder displacement moves closer to the end as in Fig. 2, the exhaust pressure rises and changes the difference in pressure with the air supply side, the thrust of the cylinder changes along with this, and the motion of the cylinder gradually decelerates and eventually comes to a stop.
By setting the cushion stroke range "L1" to be longer during adjustment, the decelerating distance of the cylinder will become longer to allow for a smooth stop.
(In this case, the cushion time "T" will become longer.)

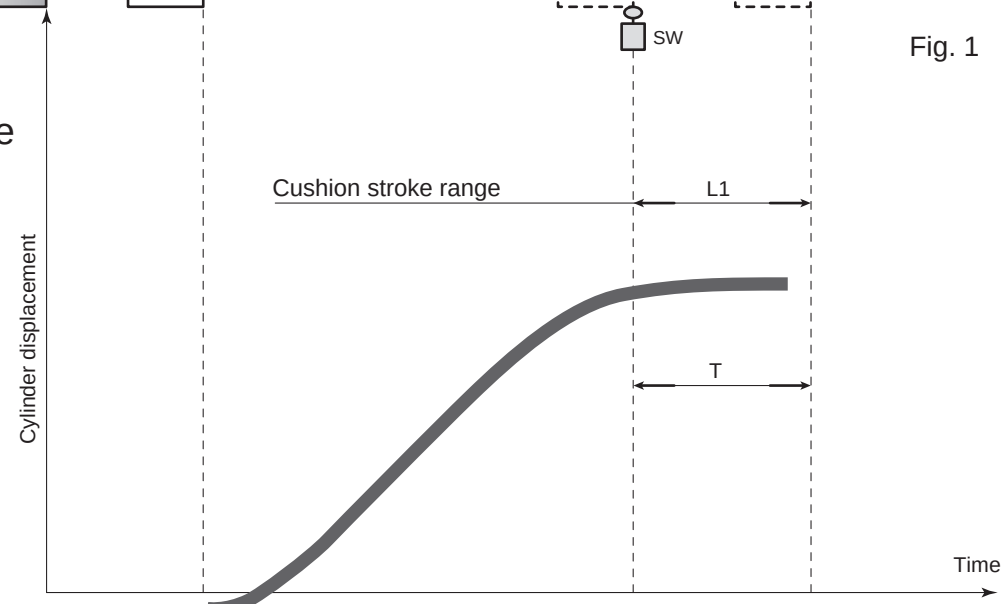


Fig. 2