

JIS

JAPANESE INDUSTRIAL STANDARD

Speed control valves for pneumatic use

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In the event of any doubt arising,
the original Standard in Japanese is to be final authority.

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Speed control valves for
pneumatic use

B 8376-1994

1. Scope This Japanese Industrial Standard specifies the speed control valves to be used for the speed control of the pneumatic cylinders which are used in the pneumatic systems to be used in the mechanical equipments.

Remarks 1. The standards cited in this Standard are as given in the following:

JIS B 0142 Glossary of terms for oil hydraulics and pneumatics

JIS B 0203 Taper pipe threads

JIS B 8370 General rule for pneumatic systems

JIS B 8373 Pneumatic system — 2-port solenoid operated valves

JIS B 8374 Pneumatic system — 3-port solenoid operated valves

JIS G 3452 Carbon steel pipes for ordinary piping

2. The pressure used in this Standard indicates the gauge pressure.

3. In this Standard, units and numerical values given in { } are in accordance with the traditional units and are appended for informative reference.

2. Working conditions of speed control valves The working conditions of the speed control valves shall be as given in the following:

(1) Maximum working pressure 0.7 MPa {7.14 kgf/cm²} or under.

(2) Working pressure 0.05 MPa to 0.7 MPa {0.51 kgf/cm² to 7.14 kgf/cm²}.

(3) Ambient temperature and working air temperature – 5°C to 60°C (provided that the inside of the speed control valve shall not freeze).

(4) Vibration and impact The speed control valve shall be free from harmful vibration and impact.

(5) Operational frequency The maximum operational frequency shall be once per second, and the minimum working frequency shall be once per 30 days.

(6) Quality of air The quality of the air to be supplied to the speed control valve shall conform to the purpose of the use, functions and performances of the speed control valve, and surrounding environment and be controlled for enhancing the reliability, durability and safety of the speed control valve. Furthermore, as to the quality of the air, JIS B 8370 shall be referred to.

3. **Definitions** For the main terms used in this Standard, the definitions in JIS B 0142 apply.

4. **Types and marking symbols** The types of the speed control valves shall be classified according to the nominal bores and basic flow rates, and the types and marking symbols shall be in accordance with Table 1.

Table 1. Types and marking symbols

Nominal bore	Designation of threaded joint	Basic flow rates l/min (A.N.R.)		Marking symbol	Effective sectional area mm ² (informative reference)	
		Controlled flow	Free flow		Controlled flow	Free flow
6	Rc ¹ / ₈	550	700	SC-6L	13	15
		340	450	SC-6M	8	10
8	Rc ¹ / ₄	1100	1400	SC-8L	25	30
		700	900	SC-8M	16	20
10	Rc ³ / ₈	2100	2700	SC-10L	50	60
		1300	1700	SC-10M	30	40
15	Rc ¹ / ₂	3500	4300	SC-15L	80	100
		2100	2700	SC-15M	50	60
20	Rc ³ / ₄	6300	7900	SC-20L	140	180
		3900	4900	SC-20M	90	110
25	Rc1	10300	12900	SC-25L	240	300
		6300	7900	SC-25M	140	180

- Remarks**
1. The screw threads of the threaded joints shall generally be the taper pipe threads specified in JIS B 0203.
 2. The basic flow rates mean the flow rates when the inlet side pressure of the speed control valve is 0.3 MPa {3.06 kgf/cm²}.
 3. The letters SC of the 1st item of the marking symbol indicate the speed control valve.
 4. The numeral of the 2nd item indicates the nominal bore.
 5. The symbol of L or M following the numeral of the 2nd item of the marking symbol indicates the division of the basic flow rates given in Table 1, which is called Class L or Class M respectively.

5. Performances

5.1 **Flow rate characteristics of controlled flow** When tested in accordance with the specifications of 10.1, the flow rate at the outlet side of the speed control valve shall be not less than the value of the basic flow rate of Table 1.