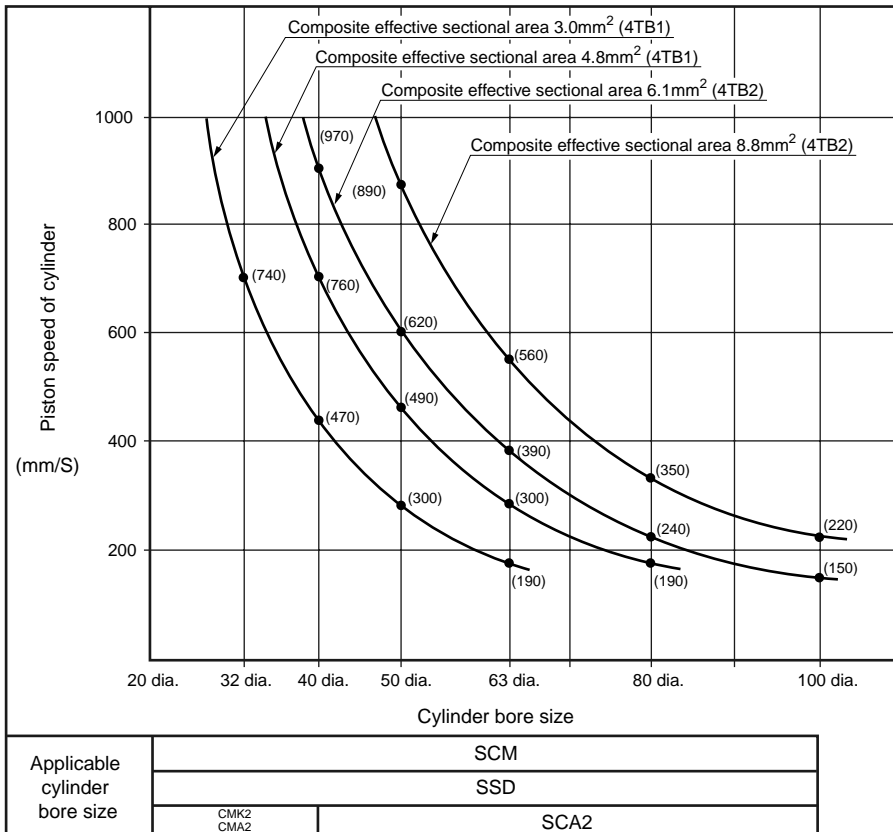


### 4TB1/2 series

#### Pneumatic system selection guide

Piston speed of air cylinder is found according to combination of 4TB1/4TB2 series and piping system.

Vertically installing a cylinder with rod top, the piston speed is found with dividing stroke length by beginning to end time of piston rod movement. When load factor 50%, piston speed of cylinder should be half.



#### Clean air system components

Parts name	Model	Port size	Max. flow rate (l/min atmospheric pressure conversion)
F.R.L. kit	C1000-6	Rc 1/8	450
	C1000-8	Rc 1/4	630
	C3000-8	Rc 1/4	1280
	C3000-10	Rc 3/8	1750
	C4000-8	Rc 1/4	1430
	C4000-10	Rc 3/8	2400
	C4000-15	Rc 1/2	3000
F.R. unit	W1000-6	Rc 1/8	830
	W1000-8	Rc 1/4	1150
	W3000-8	Rc 1/4	2150
	W3000-10	Rc 3/8	2430
	W4000-8	Rc 1/4	2500
	W4000-10	Rc 3/8	4350
	W4000-15	Rc 1/2	4750
Air filter (F)	F1000-6	Rc 1/8	460
	F1000-8	Rc 1/4	610
	F3000-8	Rc 1/4	1230
	F3000-10	Rc 3/8	1500
	F4000-8	Rc 1/4	1320
	F4000-10	Rc 3/8	2140
	F4000-15	Rc 1/2	3000
Regulator (R)	R1000-6	Rc 1/8	770
	R1000-8	Rc 1/4	1350
	R3000-8	Rc 1/4	2000
	R3000-10	Rc 3/8	2600
	R4000-8	Rc 1/4	2500
	R4000-10	Rc 3/8	4400
	R4000-15	Rc 1/2	5000
Lubricator (L)	L1000-6	Rc 1/8	550
	L1000-8	Rc 1/4	700
	L3000-8	Rc 1/4	1100
	L3000-10	Rc 3/8	2250
	L4000-8	Rc 1/4	1000
	L4000-10	Rc 3/8	1700
	L4000-15	Rc 1/2	2700

Note) Maximum flow rate: For FRL, FR and R, when primary pressure 0.7MPa, set pressure 0.5MPa, pressure drop 0.1MPa. For air filter, the flow rate is estimated when primary pressure of air filter 0.7MPa, pressure drop 0.02MPa, while for lubricator, primary pressure of lubricator 0.5MPa and pressure drop 0.03MPa.

#### Piping system

Valvet	Flow control valve	Silencer	Pipe length between valve and cylinder	Composite effective sectional area of system	Max. flow rate P = 0.5MPa
4TB1 series	SC3W-6-6	SLW-H6	6 dia. X 4 dia. nylon tube (1m)	3.0mm²	200 l/min
	SC3W-8-8	SLW-H8	8 dia. X 5.7 dia. nylon tube (1m)	4.8mm²	320 l/min
4TB2 series	SC1-6	SLW-H8	8 dia. X 5.7 dia. nylon tube (1m)	6.1mm²	410 l/min
	SC1-8	SLW-H10	10 dia. X 7.2 dia. nylon tube (1m)	8.8mm²	590 l/min

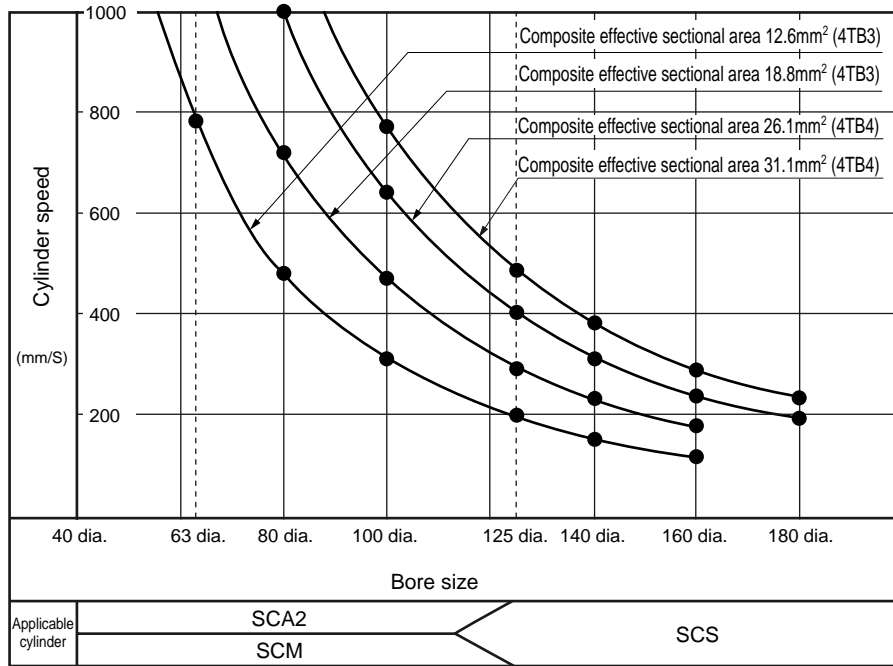
Note 1: The value when driving a cylinder is listed on pneumatics system selection guide.

### 4TB3/4 series

### Pneumatic system selection guide

Piston speed of air cylinder is found according to combination of 4TB3/4TB4 series and piping system.

Vertically installing a cylinder with rod top, the piston speed is found with dividing stroke length by beginning to end time of piston rod movement. When load factor 50%, cylinder speed is shown in the following table.



### Piping system

Valve	Speed Controller	Silencer	Pipe length between valve and cylinder.	Composite effective sectional area of system	Max. flow rate P = 0.5 MPa
4TB3 series	SC1-8	SLW-15A	15 dia. X 11.5 dia. nylon tube (5m)	12.6mm <sup>2</sup>	840 l/min
	SC1-10	SLW-15A	3/8 steel pipe (5m)	18.8mm <sup>2</sup>	1260 l/min
4TB4 series	SC1-10	SLW-15A	3/8 steel pipe (5m)	26.1mm <sup>2</sup>	1750 l/min
	SC1-15	SLW-15A	1/2 steel pipe (5m)	31.1mm <sup>2</sup>	2090 l/min

Note) The value when driving a cylinder is listed on pneumatics system selection guide

- For power voltage to drive valve, when setting, voltage drop of PLC and flat cable should be considered.

### Clean air system components

Parts name	Model No.	Port size	Max. flow rate (l/min atmospheric pressure conversion)	
F/R.L. kit	C3000-8	Rc 1/4	1280	4SA/B0
	C3000-10	Rc 3/8	1750	
	C4000-8	Rc 1/4	1430	4SA/B1
	C4000-10	Rc 3/8	2400	
	C4000-15	Rc 1/2	3000	4GA/B
	C8000-20	Rc 3/4	7000	
	C8000-25	1	7500	MN4GA/B
F/R. unit	W3000-8	Rc 1/4	2150	
	W3000-10	Rc 3/8	2430	4GA/B (master)
	W4000-8	Rc 1/4	2500	
	W4000-10	Rc 3/8	4350	MN3S0/ MN4S0
	W4000-15	Rc 1/2	4750	
	W8000-20	Rc 3/4	10000	
	W8000-25	1	10000	<b>4TB</b>
Air filter (F)	F3000-8	Rc 1/4	1230	4L2-4/ LMFO
	F3000-10	Rc 3/8	1500	
	F4000-8	Rc 1/4	1320	4KA/B
	F4000-10	Rc 3/8	2140	
	F4000-15	Rc 1/2	3000	
	F8000-20	Rc 3/4	6400	4F
	F8000-25	1	6800	
Regulator (R)	R3000-8	Rc 1/4	2000	PV5/ CMF
	R3000-10	Rc 3/8	2600	
	R4000-8	Rc 1/4	2500	
	R4000-10	Rc 3/8	4400	3MA/B0
	R4000-15	Rc 1/2	5000	
	R8000-20	Rc 3/4	14000	3PA/B
	R8000-25	1	11000	
Lubricator (L)	L3000-8	Rc 1/4	1100	P/M/B
	L3000-10	Rc 3/8	2250	
	L4000-8	Rc 1/4	1000	NP/NAP/ NVP
	L4000-10	Rc 3/8	1700	
	L4000-15	Rc 1/2	2700	
	L8000-20	Rc 3/4	6300	4F**0E
	L8000-25	1	10000	

Note) Maximum flow rate: For FRL, FR and R, when primary pressure 0.7MPa, set pressure 0.5MPa, pressure drop 0.1MPa. For air filter, the flow rate is estimated when primary pressure of air filter 0.7MPa, pressure drop 0.02MPa, while for lubricator, primary pressure of lubricator 0.5MPa and pressure drop 0.03MPa.

4SA/B0  
4SA/B1  
4GA/B  
MN4GA/B  
4GA/B (master)  
MN3S0/ MN4S0  
**4TB**  
4L2-4/ LMFO  
4KA/B  
4F  
PV5/ CMF  
3MA/B0  
3PA/B  
P/M/B  
NP/NAP/ NVP  
4F\*\*0E  
HMV/ HSV  
Uniwire system  
SKH  
PCD/ FS/ FD

4, 5 port pilot operated valve



Precaution: Turn power OFF and release pressure before increasing or decreasing manifolds.

### 4TB1/2 series

#### Assembling the block manifold

- (1) Fix the DIN rail.
- (2) Install the required number of end block A, supply/exhaust blocks and valve blocks onto the rail, and connect blocks with connection keys.
- (3) Fix the screw on the end block B side (opposite the wiring block), and fix to the rail. (Fig. 1)
- (4) Insert the base plate section of the wiring block unit into the installation groove on the end block A (Fig. 2), and fix the screw on the end block onto the rail as in step

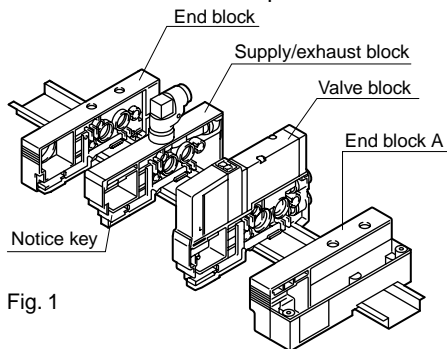


Fig. 1

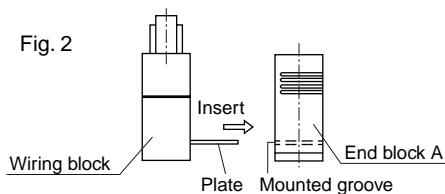


Fig. 2

- (5) Install the solenoid valve or masking plate onto the valve block. (The solenoid valve is installed at shipment.)
- (6) Wire and pipe as necessary to complete the procedure. (Refer to the separate Instruction Manual for details on wiring.)

#### Installing the end block

- (1) Confirm that the set screw is loose, and then press in from the top. Catch the movable jaws onto the rail.
- (2) Lift the block and check that the jaw are caught.
- (3) Install all blocks, and then tighten with 2 screws. The optimum tightening torque is 1.4 Nm.
- (4) Open the wiring duct cover, and store the lead wire.

#### Removing the end block

- (1) Open the cover of the end block wiring duct.
- (2) Loosen the screw by 6 to 7 rotations, and pull out the connection key.
- (3) Shift the end block 4 mm or more, and pull it in the direction shown in Fig. 3 to remove it.

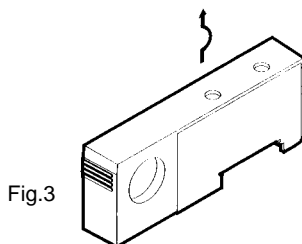


Fig. 3

#### Installing the supply/exhaust block and valve block

- (1) First, catch the fixed jaw onto the rail, and press the movable jaw from above.
- (2) Slide blocks until there is no gap between them, and press in the connection key.
- (3) Open the wiring duct cover, and store the lead wire.

#### Removing the supply/exhaust block and valve block

- (1) Open the wiring duct cover, and check that lead wires are not caught.
- (2) Remove the end block.
- (3) Pull out the connection key.
- (4) Shift blocks by 4 mm, and lift up the movable jaw side to remove.

#### Installing the wiring block and transmission unit

- (1) Insert the main body (with plate) into the installation groove on the end block, and install the end block. Fix both onto the DIN rail.
- (2) Press in the key at the base of the block to prevent lifting up from the rail, and fix onto the rail. (Fig. 4)

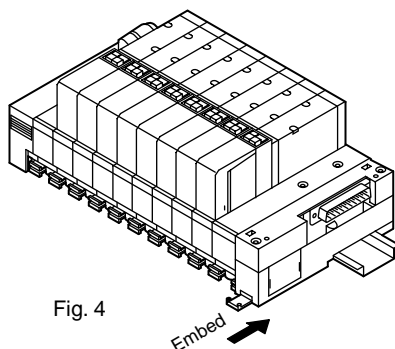


Fig. 4

- (3) Connect the wiring cover side with the solenoid valve beforehand. Check that wires are not caught, place onto the top of the wiring block unit, and tighten the screws.

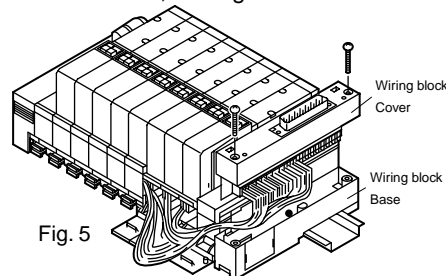


Fig. 5

#### Installing the solenoid valve

- (1) Confirm that the dedicated gasket is fit into the valve block.
- (2) Tighten the solenoid valve with 2 screws. The optimum tightening torque is 0.5 Nm for 4TB1 and 0.8 Nm for 4TB2.
- (3) Open the wiring duct cover, mount the dedicated connector with lead wire, and store into the duct.
- (4) Connect with the connector in the wiring block and close the duct cover to complete the process. (Refer to Fig. 6.)

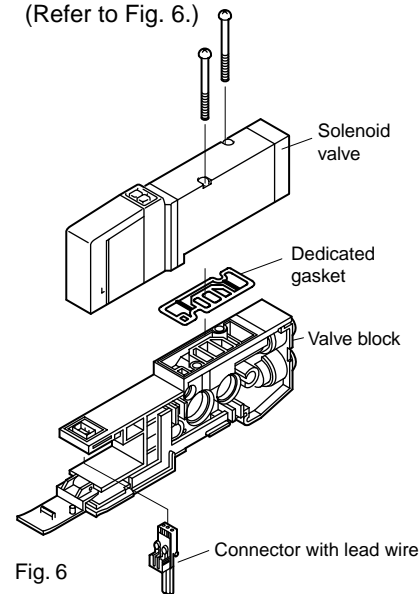
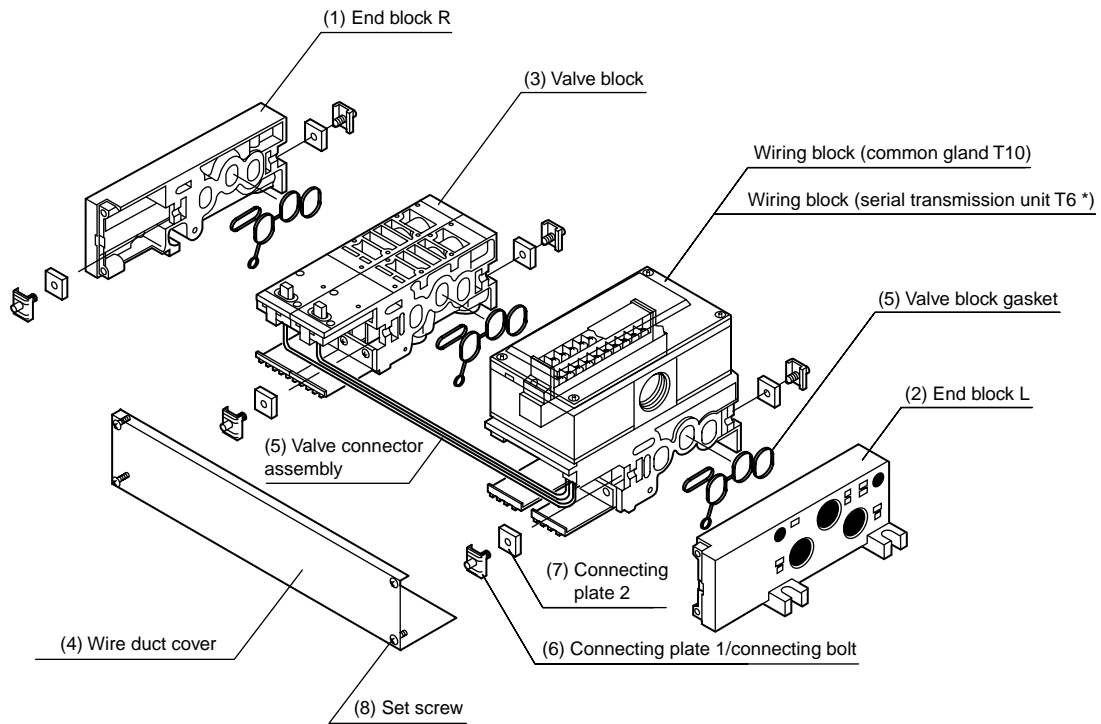


Fig. 6

#### Removing the wiring block and transmission unit

- (1) Remove the set screw from the wiring block cover, and separate the connector section from the wiring block base.
- (2) Loosen the screw of the end block adjacent to the wiring block and transmission unit by 6 to 7 turns, and pull it off the rail.
- (3) Disconnect the connector on the valve block side or the connector on the wiring cover side, and separate blocks.

### 4TB3/4 series



#### 4TB3 manifold part list

NO.	Product name	Model No.	Remarks	Accessories	
(1)	End block R	M4TB3-ER	For external pilot specifications, indicate K at the end of Model No.	(6) Connecting plate 1/connection bolt (7) Connecting plate 2	
(2)	End block L	M4TB3-EL	For external pilot specifications, indicate K at the end of Model No.	(5) Valve block gasket	
(3)	Valve block	M4TB3-V08	Side porting (Rc1/4)	(5) Valve block gasket	
		M4TB3-V10	Side porting (Rc3/8)	(6) Connecting plate 1/connection bolt	
		M4TB3-V08Y	Back porting (Rc1/4)	(7) Connecting plate 2	
(4)	Wire duct cover	M4TB3-DC [(H) Station No.]	Indicate station No. (2 to).	(8) set screw	
(5)	Valve connector assembly	4TB- VALVE-CONNECTOR-ASSY RC	2 to 8 station	T6 *	
		4TB- VALVE-CONNECTOR-ASSY RC0	9 to 12 station		
		4TB- VALVE-CONNECTOR-ASSY RC1	13 to 16 station		
		4TB- VALVE-CONNECTOR-ASSY RD	2 to 8 station	T10	
		4TB- VALVE-CONNECTOR-ASSY RD0	9 to 12 station		
		4TB- VALVE-CONNECTOR-ASSY RD1	13 to 19 station		
		4TB- VALVE-CONNECTOR-ASSY RE	2 to 8 station	T6 * drip proof type	
		4TB- VALVE-CONNECTOR-ASSY RE0	9 to 12 station		
		4TB- VALVE-CONNECTOR-ASSY RE1	13 to 16 station		
		4TB- VALVE-CONNECTOR-ASSY RF	2 to 8 station		
		4TB- VALVE-CONNECTOR-ASSY RF0	9 to 12 station	T10 drip proof type	
4TB- VALVE-CONNECTOR-ASSY RF1	13 to 19 station				

#### 4TB4 manifold part list

NO.	Product name	Model No.	Remarks	Accessories	
(1)	End block R	M4TB4-ER	For external pilot specifications, indicate K at the end of Model No.	(6) Connecting plate 1/connection bolt (7) Connecting plate 2	
(2)	End block L	M4TB4-EL	For external pilot specifications, indicate K at the end of Model No.	(5) Valve block gasket	
(3)	Valve block	M4TB4-V10	Side porting (Rc3/8)	(5) Valve block gasket	
		M4TB4-V15	Side porting (Rc1/2)	(6) Connecting plate 1/connection bolt	
		M4TB4-V10Y	Back porting (Rc3/8)	(7) Connecting plate 2	
(4)	Wire duct cover	M4TB4-DC [(H) Station No.]	Indicate station No. (2 to).	(8) set screw	
(5)	Valve connector assembly	4TB- VALVE-CONNECTOR-ASSY RC	2 to 8 station	T6 *	
		4TB- VALVE-CONNECTOR-ASSY RC0	9 to 12 station		
		4TB- VALVE-CONNECTOR-ASSY RC1	13 to 16 station		
		4TB- VALVE-CONNECTOR-ASSY RD	2 to 8 station	T10	
		4TB- VALVE-CONNECTOR-ASSY RD0	9 to 12 station		
		4TB- VALVE-CONNECTOR-ASSY RD1	13 to 19 station		
		4TB- VALVE-CONNECTOR-ASSY RE	2 to 8 station	T6 * drip proof type	
		4TB- VALVE-CONNECTOR-ASSY RE0	9 to 12 station		
		4TB- VALVE-CONNECTOR-ASSY RE1	13 to 16 station		
		4TB- VALVE-CONNECTOR-ASSY RF	2 to 8 station		
		4TB- VALVE-CONNECTOR-ASSY RF0	9 to 12 station	T10 drip proof type	
4TB- VALVE-CONNECTOR-ASSY RF1	13 to 19 station				

4SA/B0

4SA/B1

4GA/B

MN4GA/B

4GA/B (master)

MN3S0/

MN4S0

**4TB**

4L2-4/

LMF0

4KA/B

4F

PV5/

CMF

3MA/B0

3PA/B

P/M/B

NP/NAP/

NVP

4F\*\*0E

HMV/

HSV

Uniwire

system

SKH

PCD/

FS/FD

4, 5 port pilot operated valve