

Technical data 1) Pneumatics system selection guide

- (1) Average speed of cylinder is found according to combination of 4G series and piping system. Vertically installing a cylinder with rod top, the piston speed is found with dividing stroke length by time from beginning to end of piston rod movement. When load factor 50%, piston speed of cylinder should be half.
- (2) Average speed of cylinder mentioned on pneumatic components selection guide is the value when operating a cylinder solo.
- (3) Effective sectional area of solenoid valve, used for calculation according to the following table, is the value of 2-position.
- (4) This selection guide is just reference. Please check actual working conditions with our sizing program.

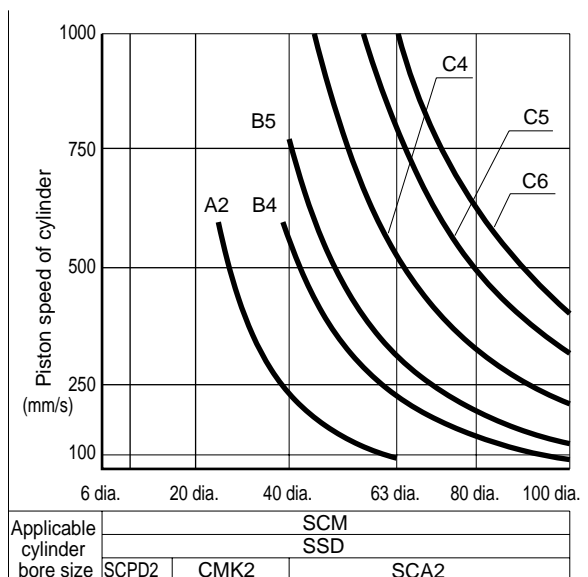
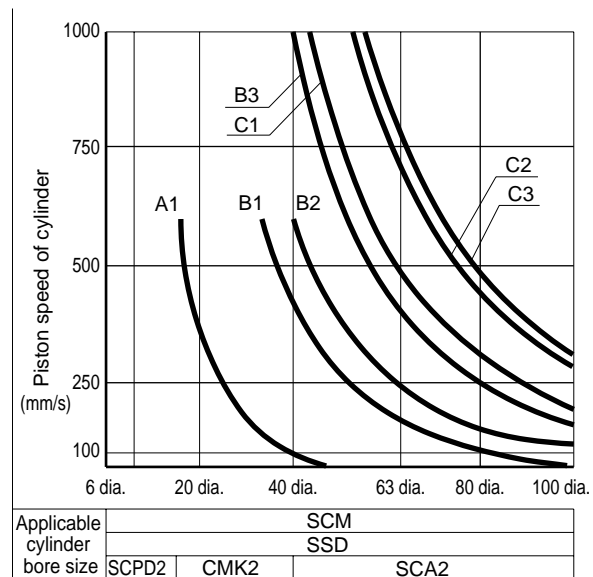
Standard system table **4G (metal base)**

* Please refer to Page 330 about MN4G (block manifold).

Series	Body porting type					
	Model No.	System No.	Speed controller	Silencer	Pipe	Composite effective sectional area (mm ²) pipe length 1m
4G1	4GA110-C4	A1	SC3W-M5-4	SLM-M5	4 dia. X 2.5 dia.	0.6
	4GA110-C6	B1	SC1-6	SLM-M5	6 dia. X 4 dia.	2.8
4G2	4GA210-C6	B2	SC1-6	SLW-6S	6 dia. X 4 dia.	3.9
	4GA210-C8	B3	SC1-8	SLW-6S	8 dia. X 5.7 dia.	6.5
4G3	4GA310-C8	C1	SC1-8	SLW-8S	8 dia. X 5.7 dia.	7.9
	4GA310-C10	C2	SC1-10	SLW-8S	10 dia. X 7.2 dia.	11.6
	4GA310-C10	C3	SC1-15	SLW-8S	10 dia. X 7.2 dia.	12.7

Series	Body porting type					
	Model No.	System No.	Speed controller	Silencer	Pipe	Composite effective sectional area (mm ²) pipe length 1m
4G1	4GB110-06	A2	SC3W-6-4	SLW-6S	4 dia. X 2.5 dia.	1.5
	4GB110-06	B4	SC1-6	SLW-6S	6 dia. X 4 dia.	3.7
4G2	4GB210-08	B5	SC1-8	SLW-8S	6 dia. X 4 dia.	5.1
	4GB210-08	C4	SC1-10	SLW-8S	8 dia. X 5.7 dia.	8.5
4G3	4GB310-10	C5	SC1-10	SLW-10L	10 dia. X 7.2 dia.	13.0
	4GB310-10	C6	SC1-15	SLW-10L	12 dia. X 8.9 dia.	16.4

* System No. is indicated in the following graph.

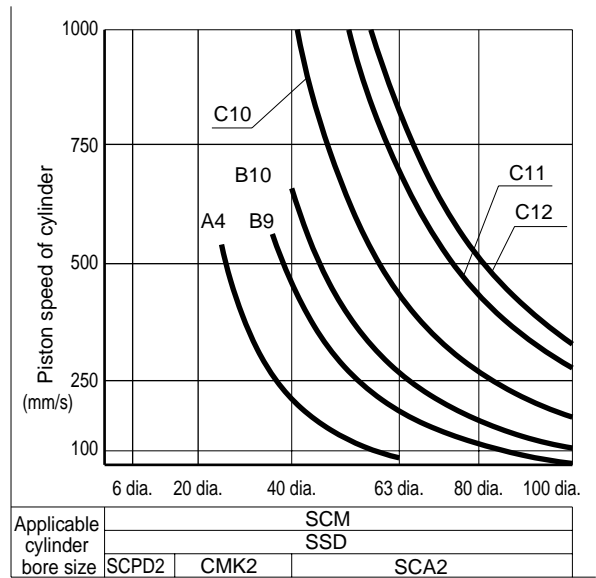
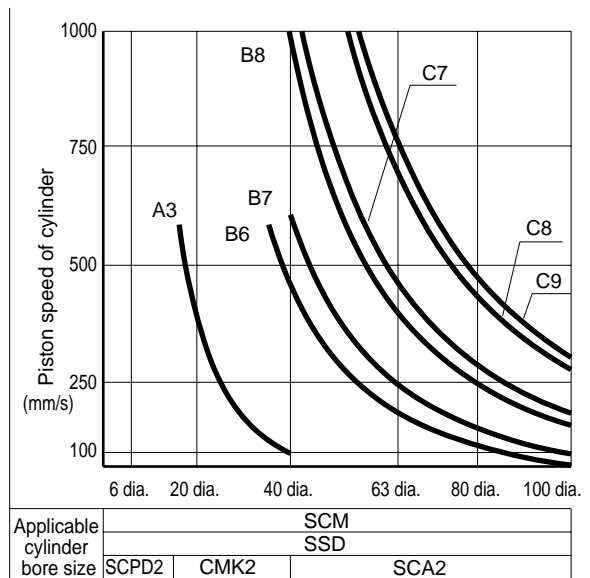


Technical data 1) Pneumatics system selection guide

<Manifold> (When check valve incorporated)

Series	Body porting type					
	Model No.	System No.	Speed controller	Silencer	Pipe	Composite effective sectional area (mm ²) pipe length 1m
4G1	M4GA110-C4	A3	SC3W-M5-4	SLW-6S	4 dia. X 2.5 dia.	0.6
	M4GA110-C6	B6	SC1-6	SLW-6S	6 dia. X 4 dia.	3.0
4G2	M4GA210-C6	B7	SC1-6	SLW-8S	6 dia. X 4 dia.	4.0
	M4GA210-C8	B8	SC1-8	SLW-8S	8 dia. X 5.7 dia.	6.5
4G3	M4GA310-C8	C7	SC1-8	SLW-10L	8 dia. X 5.7 dia.	7.5
	M4GA310-C10	C8	SC1-10	SLW-10L	10 dia. X 7.2 dia.	11.3
	M4GA310-C10	C9	SC1-15	SLW-10L	10 dia. X 7.2 dia.	12.4
Series	Sub base porting type					
	Model No.	System No.	Speed controller	Silencer	Pipe	Composite effective sectional area (mm ²) pipe length 1m
4G1	M4GB110-C4	A4	SC3W-6-4	SLW-6S	4 dia. X 2.5 dia.	1.4
	M4GB110-C6	B9	SC1-6	SLW-6S	6 dia. X 4 dia.	3.0
4G2	M4GB210-C6	B10	SC1-8	SLW-8S	6 dia. X 4 dia.	4.3
	M4GB210-C8	C10	SC1-10	SLW-8S	8 dia. X 5.7 dia.	7.0
4G3	M4GB310-C10	C11	SC1-10	SLW-10L	10 dia. X 7.2 dia.	11.3
	M4GB310-C10	C12	SC1-15	SLW-10L	12 dia. X 8.9 dia.	13.4

* System No. is indicated in the following graph.



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
3, 5 port pilot operated valve

Technical data 1) Pneumatics system selection guide

Standard system table **MN4G (block manifold)** (When check valve incorporated)

1. Common exhaust

Series	Solenoid valve Port size	System No.	Speed controller	Silencer pipe pipe length 1m	Common exhaust pipe	Composite effective sectional area (mm ²)
MN4G1	C4	A1	SC3W-M5-4	4 dia. X 2.5 dia.	6 dia. X 4 dia. X 3m	0.6
	C4	A2	SC3W-6-4	4 dia. X 2.5 dia.	6 dia. X 4 dia. X 3m	1.4
	C6	B1	SC1-6	6 dia. X 4 dia.	8 dia. X 5.7 dia. X 3m	3.0
MN4G2	C6	B2	SC1-6	6 dia. X 4 dia.	8 dia. X 5.7 dia. X 3m	4.0
	C8	B3	SC1-8	8 dia. X 5.7 dia.	10 dia. X 7.2 dia. X 3m	6.2

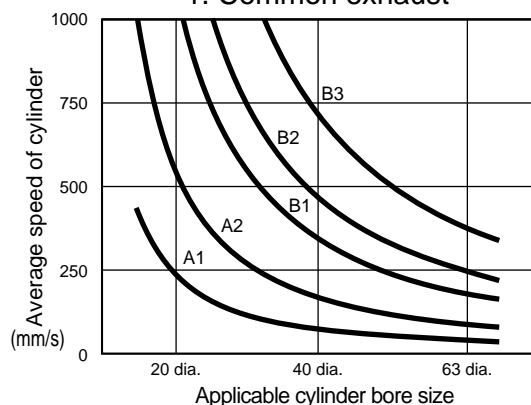
2. Atmospheric release exhaust (muffler incorporated)

Series	Solenoid valve Port size	System No.	Speed controller	Silencer pipe pipe length 1m	End block	Composite effective sectional area (mm ²)
MN4G1	C4	A3	SC3W-M5-4	4 dia. X 2.5 dia.	N4G1-EX	0.6
	C4	A4	SC3W-6-4	4 dia. X 2.5 dia.		1.6
	C6	B4	SC1-6	6 dia. X 4 dia.		3.1
MN4G2	C6	B5	SC1-6	6 dia. X 4 dia.	N4G2-EX	4.4
	C8	B6	SC1-8	8 dia. X 5.7 dia.		6.5

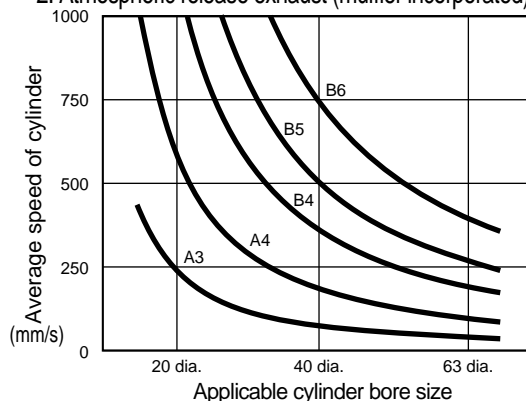
3. Silencer assembled exhaust port

Series	Model No.	System No.	Speed controller	Silencer pipe pipe length 1m	Silencer	Composite effective sectional area (mm ²)
MN4G1	C4	A5	SC3W-M5-4	4 dia. X 2.5 dia.	SLW-H6	0.6
	C4	A6	SC3W-6-4	4 dia. X 2.5 dia.	SLW-H6	1.5
	C6	B7	SC1-6	6 dia. X 4 dia.	SLW-H8	2.9
MN4G2	C6	B8	SC1-6	6 dia. X 4 dia.	SLW-H8	4.3
	C8	B9	SC1-8	8 dia. X 5.7 dia.	SLW-H10	6.3

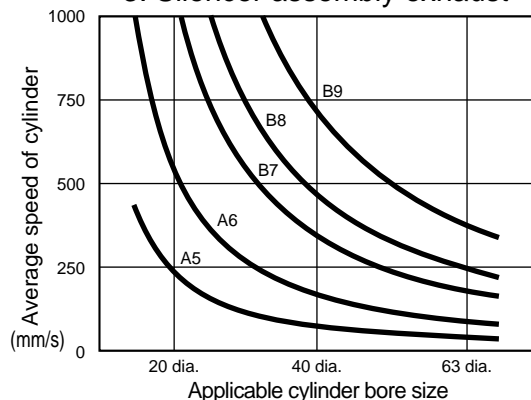
1. Common exhaust



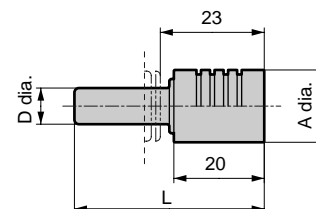
2. Atmospheric release exhaust (muffler incorporated)



3. Silencer assembly exhaust



• Silencer



Model No.	D	L	A
SLW-H6	5 dia.	41	16
SLW-H8	8 dia.	42	16
SLW-H10	10 dia.	53	20

How to use guide

Please use this guide to select the proper model according to your requirements.

• Selection of fluid control components

As conditions, the cylinder speed, either high or low, is already decided. Find theoretical reference speed of cylinder according to the following table.

Cylinder speed	Theoretical reference speed (mm/s)
Low speed	250
Medium speed	500
High speed	750
Ultra high speed	1,000

Refer to table of Component selection guide-1 (Page 332, 333) to select proper standard system No. according to cylinder bore and theoretical reference speed.

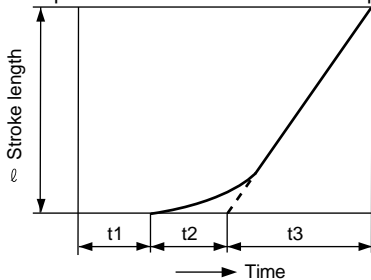
Explanation of technical terms

- Theoretical reference speed: Indicating degree of cylinder speed. Refer to the following table. (This value almost coincides with speed when loadless. Applied load decreases the speed considerably).

$$v_0 = 1920 \times \frac{S}{A} = 2445 \times \frac{S}{D^2} \quad (1)$$

- v_0 : Theoretical reference speed (mm/s)
- A : Cylinder cross-section areas (cm²)
- S : Composite effective sectional area of circuit (exhaust air side) (mm²)
- D : Cylinder bore size (cm)

Graph shows theoretical reference speed within the range of constant velocity,



$$v_0 = \frac{l}{t_3} \text{ (mm/s)}$$

- t1 : Time until beginning of movement.
- t2 : Primary delay time
- t3 : Operation time at constant velocity
- l : Stroke length

• Note: t1 and t2 vary according to load. When no load, neglect the value.

- Required flow: Instantaneous flow rate when operating cylinder with Velocity v_0 . Refer to the following table. Table shows the value when of P=0.5MPa. Required flow rate is the necessary value to select clean air system components.

$$Q = \frac{A_{v0} (P+0.101) \times 60}{0.101 \times 10^4} = \left[\frac{A_{v0} (P+1.03) \times 60}{1.03 \times 10^4} \right] \quad (2)$$

- Q : Required flow (ℓ / min) (ANR)
- P : Supply pressure (MPa)

- Required effective sectional area: Composite effective sectional area of required exhaust air side circuit to drive cylinder with Velocity v_0 . (Composite effective sectional area of solenoid valve, flow control valve, silencer and pipe)
- Proper standard system means: The best combination of solenoid valve, flow control valve, silencer and pipe diameter to drive cylinder with Velocity v_0 . Table shows the value when pipe length is 1m.

How to find flow rate

Find flow rate according to the following formula.

Refer to the table on the following page about acoustic velocity zone.

(1) $PH \leq 1.89PL$ (subsonic zone)

$$Q = 227 \times S \times \sqrt{PL \times (PH - PL)} \times \sqrt{\frac{273}{T_H}}$$

$$[Q = 22.2 \times S \times \sqrt{PL \times (PH - PL)} \times \sqrt{\frac{273}{T_H}}]$$

① $PH \geq 1.89PL$ (acoustic velocity zone)

$$Q = 113 \times S \times PH \times \sqrt{\frac{273}{T_H}}$$

$$[Q = 11.1 \times S \times PH \times \sqrt{\frac{273}{T_H}}]$$

- Q : Flow rate ℓ / min(ANR)
 - S : Effective sectional area of aperture mm²
 - PH : Primary pressure MPa abs
 - PL : Secondary pressure MPa abs
 - TH : Primary side absolute temperature K
- Note) Absolute pressure (MPa) = Working pressure + 0.101 (MPa)

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

3, 5 port pilot operated valve

Technical data 1) Pneumatics system selection guide

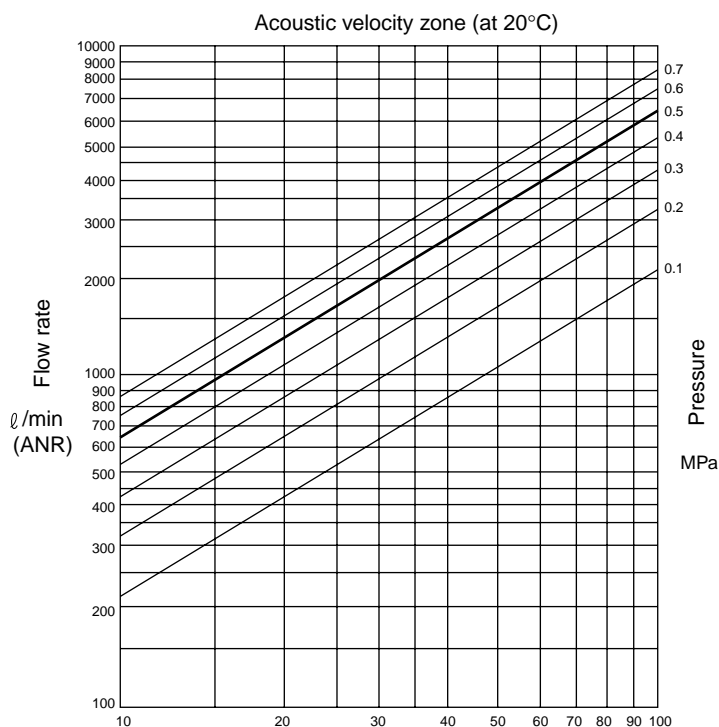
4G series <Components selection guide 1>

Cylinder bore size (mm)	Theoretical reference speed (mm/S)	Required flow (ℓ/min) (ANR)	Required effective sectional area (mm ²)	Proper standard system NO.			
				Discrete		Manifold	
				Body porting	Sub base	Body porting	Sub base
6 dia.	(500)	-	(0.1)	A 1	A 2	A 3	A 4
10 dia.	(500)	-	(0.2)	A 1	A 2	A 3	A 4
16 dia.	(500)	-	(0.5)	A 1	A 2	A 3	A 4
20 dia.	250	29	0.5	A 1	A 2	A 3	A 4
	400	46	1.6	B 1	A 2	B 6	A 4
25 dia.	250	44	0.8	B 1	A 2	A 3	A 4
	400	70	1.9	B 1	B 4	B 6	B 9
30 dia.	250	64	1.1	B 1	A 2	B 6	A 4
	400	100	2.8	B 1	B 4	B 6	B 9
32 dia.	250	73	1.3	B 1	A 2	B 6	A 4
	400	120	3.1	B 1	B 4	B 6	B 9
40 dia.	250	110	2.0	B 1	B 4	B 6	B 9
	400	180	4.9	B 2	B 4	B 7	B 9
40 dia.	250	110	1.7	B 1	B 4	B 6	B 9
	500	230	3.3	B 2	B 4	B 7	B 10
	750	340	5.0	B 3	B 5	B 8	C 10
	1000	450	6.6	C 1	C 4	C 7	C 10
50 dia.	250	180	2.6	B 2	B 4	B 7	B 10
	500	350	5.2	B 3	C 4	B 8	C 10
	750	530	7.7	C 1	C 5	C 7	C 11
	1000	710	10.4	C 2	C 5	C 8	C 12
63 dia.	250	280	4.1	B 3	B 5	B 8	B 10
	500	560	8.2	C 2	C 4	C 8	C 11
	750	840	12.3	C 3	C 5	C 9	C 12
75 dia.	1000	1,100	16.4	-	C 6	-	-
	250	400	5.8	C 1	C 4	C 7	C 10
	500	800	11.6	C 3	C 5	C 9	C 11
80 dia.	750	1,200	17.4	-	-	-	-
	1000	1,600	23.2	-	-	-	-
	250	450	6.6	C 1	C 4	C 7	C 10
80 dia.	500	910	13.2	C 3	C 6	-	C 12
	750	1,400	19.8	-	-	-	-
	1000	1,800	25.4	-	-	-	-
100 dia.	250	710	10.3	C 2	C 5	C 8	C 11
	500	1,400	20.6	-	-	-	-
	750	2,100	30.9	-	-	-	-
	1,000	2,800	41.2	-	-	-	-

* Please refer to Page 328, 329 about system No.

<Clean air system components>

<Effective sectional area>



Effective sectional area mm²
 (When the value of effective sectional area is X 10⁻¹
 or X 10⁰, multiply the flow rate by the same multiplier.)

Clean air system components

Part name	Model No.	Port size	Max. flow rate (ℓ/min atmospheric pressure conversion)
F/R/L kit	C1000-6	Rc1/8	450
	C1000-8	Rc1/4	630
	C3000-8	Rc1/4	1280
	C3000-10	Rc3/8	1750
	C4000-8	Rc1/4	1430
F/R Unit	C4000-10	Rc3/8	2400
	C4000-15	Rc1/2	3000
	W1000-6	Rc1/8	830
	W1000-8	Rc1/4	1150
	W3000-8	Rc1/4	2150
Air filter (F)	W3000-10	Rc3/8	2430
	W4000-8	Rc1/4	2500
	W4000-10	Rc3/8	4350
	W4000-15	Rc1/2	4750
	F1000-6	Rc1/8	460
Regulator (R)	F1000-8	Rc1/4	610
	F3000-8	Rc1/4	1230
	F3000-10	Rc3/8	1500
	F4000-8	Rc1/4	1320
	F4000-10	Rc3/8	2140
Lubricator (L)	F4000-15	Rc1/2	3000
	R1000-6	Rc1/8	770
	R1000-8	Rc1/4	1350
	R3000-8	Rc1/4	2000
	R3000-10	Rc3/8	2600
Lubricator (L)	R4000-8	Rc1/4	2500
	R4000-10	Rc3/8	4400
	R4000-15	Rc1/2	5000
	L1000-6	Rc1/8	550
	L1000-8	Rc1/4	700
Lubricator (L)	L3000-8	Rc1/4	1100
	L3000-10	Rc3/8	2250
	L4000-8	Rc1/4	1000
	L4000-10	Rc3/8	1700
	L4000-15	Rc1/2	2700

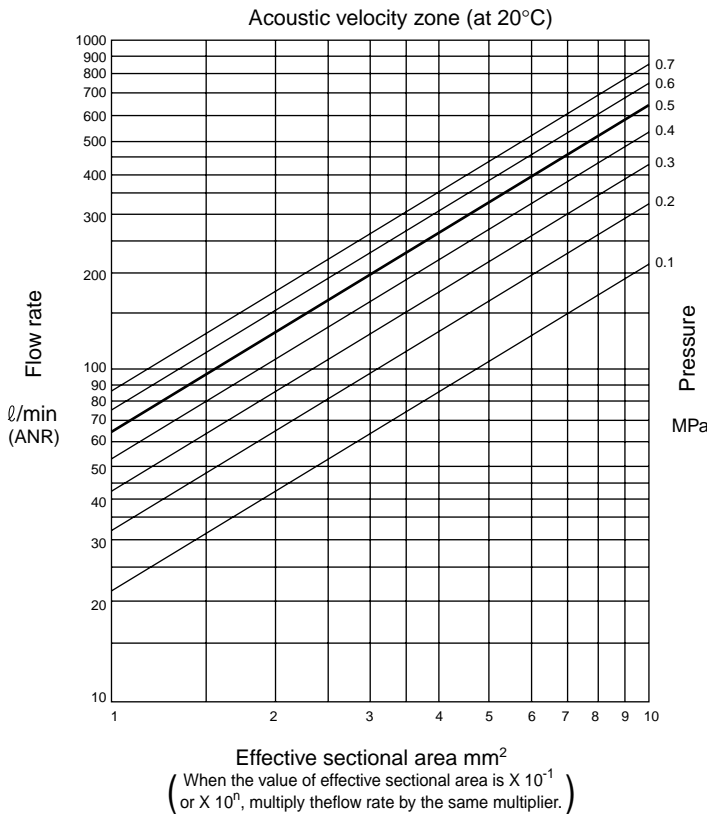
Note) Maximum flow rate: FRL, FR, R primary pressure 0.7MPa, set pressure 0.5MPa, pressure drop 0.1MPa. For air filter, the flow rate is estimated when primary pressure of air filter 0.7MPa, pressure drop 0.02MPa, while for lubricator, primary pressure of lubricator 0.5MPa and pressure drop 0.03MPa.

MN4G series <Components selection guide 1>

Cylinder bore size (mm)	Theoretical reference speed (mm/S)	Required flow (ℓ/min) (ANR)	Required effective sectional area (mm ²)	Proper standard system NO.		
				1. Common exhaust	2. Atmospheric	3. Silencer assembled exhaust port air
6 dia.	(500)	-	(0.1)	A 1	A 3	A 5
10 dia.	(500)	-	(0.2)	A 1	A 3	A 5
16 dia.	(500)	-	(0.5)	A 1	A 3	A 5
20 dia.	250	29	0.5	A 1	A 3	A 5
	400	46	1.6	B 1	B 4	B 7
25 dia.	250	44	0.8	A 2	A 4	A 6
	400	70	1.9	B 1	B 4	B 7
30 dia.	250	64	1.1	A 2	A 4	A 6
	400	100	2.8	B 1	B 4	B 7
32 dia.	250	73	1.3	A 2	A 4	A 6
	400	120	3.1	B 2	B 4	B 8
40 dia.	250	110	2.0	B 1	B 4	B 7
	400	180	4.9	B 3	B 6	B 9
40 dia.	250	110	1.7	B 1	B 4	B 7
	500	230	3.3	B 2	B 5	B 8
	750	340	5.0	B 3	B 6	B 9
	1000	450	6.6	-	-	-
50 dia.	250	180	2.6	B 1	B 1	B 7
	500	350	5.2	B 3	B 6	B 9
	750	530	7.7	-	-	-
	1000	710	10.4	-	-	-
63 dia.	250	280	4.1	B 2	B 5	B 8
	500	560	8.2	-	-	-
	750	840	12.3	-	-	-
	1000	1,100	16.4	-	-	-
80 dia.	250	450	6.6	-	B 6	-
	500	910	13.2	-	-	-
	750	1,400	19.8	-	-	-
	1000	1,800	25.4	-	-	-

* Please refer to Page 330 about system No.

<Effective sectional area>



<Clean air system components>

Clean air system components

Part name	Model No.	Port size	Max. flow rate (ℓ/min atmospheric pressure conversion)
F/R/L kit	C1000-6	Rc1/8	450
	C1000-8	Rc1/4	630
	C3000-8	Rc1/4	1280
	C3000-10	Rc3/8	1750
	C4000-8	Rc1/4	1430
	C4000-10	Rc3/8	2400
F/R Unit	C4000-15	Rc1/2	3000
	W1000-6	Rc1/8	830
	W1000-8	Rc1/4	1150
	W3000-8	Rc1/4	2150
	W3000-10	Rc3/8	2430
	W4000-8	Rc1/4	2500
Air filter (F)	W4000-10	Rc3/8	4350
	W4000-15	Rc1/2	4750
	F1000-6	Rc1/8	460
	F1000-8	Rc1/4	610
	F3000-8	Rc1/4	1230
	F3000-10	Rc3/8	1500
Regulator (R)	F4000-8	Rc1/4	1320
	F4000-10	Rc3/8	2140
	F4000-15	Rc1/2	3000
	R1000-6	Rc1/8	770
	R1000-8	Rc1/4	1350
	R3000-8	Rc1/4	2000
Lubricator (L)	R3000-10	Rc3/8	2600
	R4000-8	Rc1/4	2500
	R4000-10	Rc3/8	4400
	R4000-15	Rc1/2	5000
	L1000-6	Rc1/8	550
	L1000-8	Rc1/4	700
3, 5 port pilot operated valve	L3000-8	Rc1/4	1100
	L3000-10	Rc3/8	2250
	L4000-8	Rc1/4	1000
	L4000-10	Rc3/8	1700
	L4000-15	Rc1/2	2700

Note) Maximum flow rate: FRL, FR, R 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/
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

4GB^A/MN4GB^A Series

Technical data 2) Notes of wiring

How to order cable with D sub connector

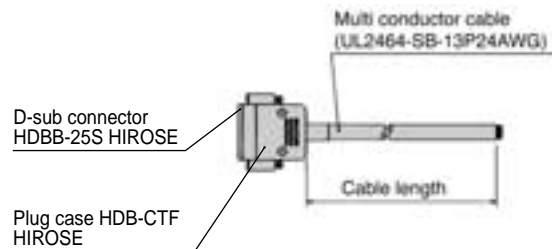
N4T - **CABLE** - **D00** - **1**

A User interface
B Cable length

Symbol		Model
A	0	N4T
	1	Cut only Round terminal for M3.5 screws
B	1	1m
	3	3m
	5	5m

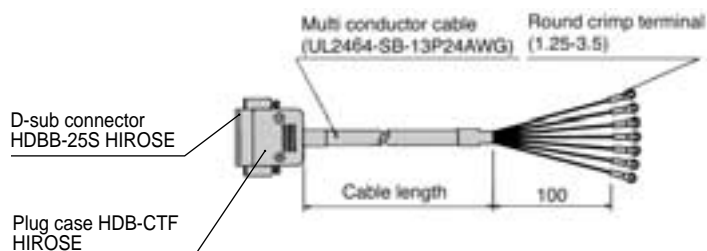
D-sub connector No. and conductor

• N4T-CABLE-D00-B



D-sub connector terminal No.		1	2	3	4	5	6	7	8	9	10	11	12	13
Conductor I.D.	Color of isolator	Orange	Orange	Yellow	Yellow	Green	Green	Gray	Gray	White	White	Orange	Orange	Yellow
	Mark type	1 point	1 point	1 point	1 point	1 point	1 point	1 point	1 point	1 point	1 point	2 points	2 points	2 points
	Color of mark	Black	Red	Black	Red	Black	Red	Black	Red	Black	Red	Black	Red	Black
D-sub connector terminal No.		14	15	16	17	18	19	20	21	22	23	24	25	
Conductor I.D.	Color of isolator	Yellow	Green	Green	Gray	Gray	White	White	Orange	Orange	Yellow	Yellow	Green	
	Mark type	2 points	2 points	2 points	2 points	2 points	2 points	2 points	3 points	3 points	3 points	3 points	3 points	
	Color of mark	Red	Black	Red	Black	Red	Black	Red	Black	Red	Black	Red	Black	

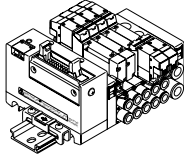
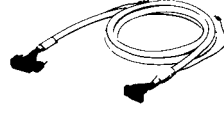
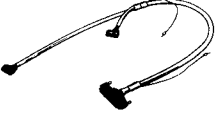
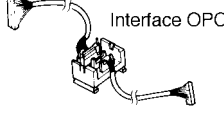
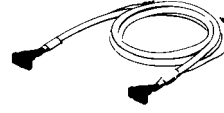
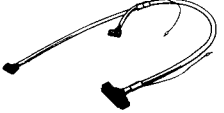
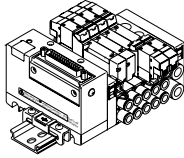
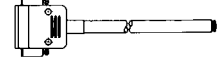
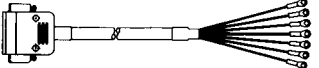
• N4T-CABLE-D01-B



D-sub connector terminal No.		1	2	3	4	5	6	7	8	9	10	11	12	13
Conductor I.D.	Color of isolator	Orange	Orange	Yellow	Yellow	Green	Green	Gray	Gray	White	White	Orange	Orange	Yellow
	Mark type	1 point	1 point	1 point	1 point	1 point	1 point	1 point	1 point	1 point	1 point	2 points	2 points	2 points
	Color of mark	Black	Red	Black	Red	Black	Red	Black	Red	Black	Red	Black	Red	Black
Mark tube No.		1	2	3	4	5	6	7	8	9	10	Cut	Cut	13
D-sub connector terminal No.		14	15	16	17	18	19	20	21	22	23	24	25	
Conductor I.D.	Color of isolator	Yellow	Green	Green	Gray	Gray	White	White	Orange	Orange	Yellow	Yellow	Green	
	Mark type	2 points	2 points	2 points	2 points	2 points	2 points	2 points	3 points	3 points	3 points	3 points	3 points	
	Color of mark	Red	Black	Red	Black	Red	Black	Red	Black	Red	Black	Red	Black	
Mark tube No.		14	15	16	17	18	19	20	21	22	23	Cut	Cut	

• This cable is compatible with 20 points. When requiring 21 points over, please use D00- L type mentioned above.

Examples of wiring (recommended combinations) • Following combinations are available.

Wiring method	Examples of connecting cable	PC and PC related products		
		Maker	PC	Cable
Flat cable connector (T50/T50R) (T51/T51R) 		OMRON	Type C200H-OD215 Type C500-OD415CN	Type G79- * C
			Type C500-OD213	Type 79- 0 * DC- *
	 Interface OPC-31	MITSUBISHI	AY42 Voltage of power supply should be within 0 to +10% of rated voltage.	40P flat cable connector, interface OPC-31 (CKD) and 20P flat cable connector
		MATSUSHITA ELECTRIC WORKS LTD.	AFP33484	AY15133 to 7
			AFP53487	AY15223 to 7
	D-sub connector (T30/T30R) 			
				(Please refer to Page 334 about cable model No. and details.)

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

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

3, 5 port pilot operated valve

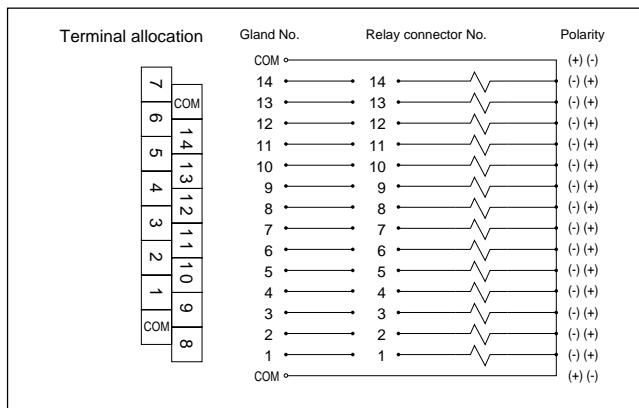
Common gland type (wiring method T10)

Notes of wiring

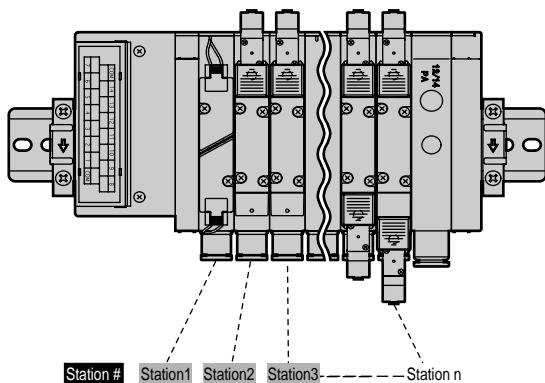
[Cautions for common gland type (T10)]

- (1) For common gland type, initially, common wire is internally wired.
When individual contact point type PLC output unit, the contact should be wired to common.
- (2) Confirm if station No. matches to solenoid position to avoid wrong wiring.
(Refer to below table,)
- (3) More than 14 solenoids are not available.
- (4) Viewed from piping port, station No. is allocated from left.
- (5) Voltage drop may occur depending on simultaneous energizing or cable length. Voltage drop of solenoid should be within 10% of rated voltage.

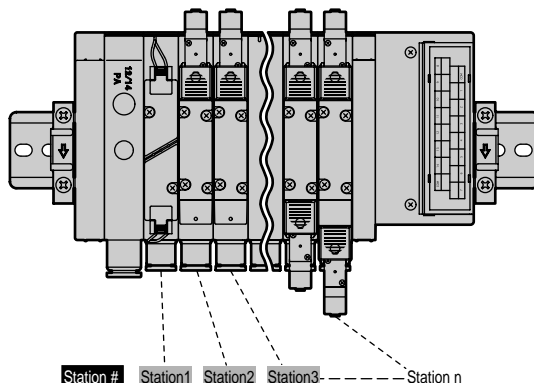
Wiring method T10 internal wiring (up to 14 solenoids)



T10 (left specifications)



T10R (right specifications)



Terminal array of wiring method T10 (e.g.)

- * : Valve No. 1a, 1b, 2a, 2b...numbers show Station 1, 2...while alphabet a and b show Solenoid a and b.
Max. station number differs depending on model.
Confirm individual specifications.

Terminal No.

COM	14	13	12	11	10	9	8	
	7	6	5	4	3	2	1	COM

<Standard wiring>

- When single solenoid valve

Gland No.	14	13	12	11	10	9	8
Valve No.	14a	13a	12a	11a	10a	9a	8a
Gland No.	7	6	5	4	3	2	1
Valve No.	7a	6a	5a	4a	3a	2a	1a

- When double solenoid valve

Gland No.	14	13	12	11	10	9	8
Valve No.	7b	7a	6b	6a	5b	5a	4b
Gland No.	7	6	5	4	3	2	1
Valve No.	4a	3b	3a	2b	2a	1b	1a

- When mix (single/double mixture)

Gland No.	14	13	12	11	10	9	8
Valve No.	11a	10a	9a	8a	7b	7a	6a
Gland No.	7	6	5	4	3	2	1
Valve No.	5a	4b	4a	3b	3a	2a	1a

<Double wiring>

Gland No.	14	13	12	11	10	9	8
Valve No.	(Void)	7a	(Void)	6a	(Void)	5a	(Void)
Gland No.	7	6	5	4	3	2	1
Valve No.	4a	(Void)	3a	(Void)	2a	(Void)	1a

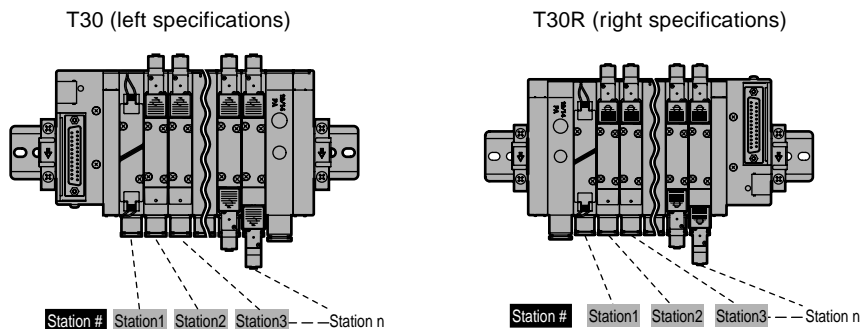
Gland No.	14	13	12	11	10	9	8
Valve No.	7b	7a	6b	6a	5b	5a	4b
Gland No.	7	6	5	4	3	2	1
Valve No.	4a	3b	3a	2b	2a	1b	1a

Gland No.	14	13	12	11	10	9	8
Valve No.	7b	7a	(Void)	6a	(Void)	5a	4b
Gland No.	7	6	5	4	3	2	1
Valve No.	4a	3b	3a	(Void)	2a	(Void)	1a

D-sub connector: Wiring method T30

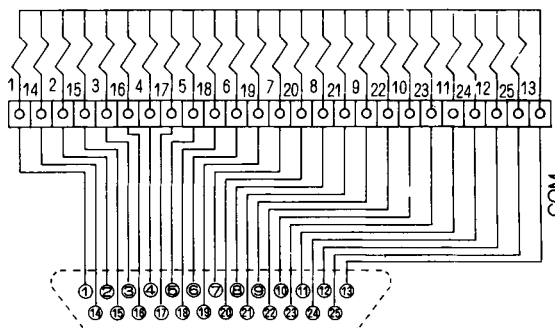
About T30 connector

Wiring method T30 connector is generally called as D-sub connector, widely used in FA and OA components. Especially, 25P type is conformable with RS232C standards and used for PC communication. Viewed from piping port, station No. is allocated from left.



Cautions for connector type T30

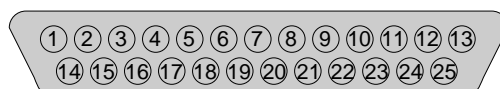
- (1) Signal arrays of PLC output unit and valve side should be matched.
- (2) Power source is DC24V or DC12V.
- (3) Voltage drop may occur depending on simultaneous energizing or cable length. Voltage drop of solenoid should be within 10% of rated voltage.



Connector pin array of wiring method T30 (e.g.)

* 1: Valve No. 1a, 1b, 2a, 2b...numbers show Station 1, 2... while alphabet a and b show Solenoid a and b.
Max. station number differs depending on model.
Confirm individual specifications.

Connector pin No.



<Standard wire>

• When single solenoid valve only

Pin No.	1	2	3	4	5	6	7	8	9	10	11	12	13
Valve No.	1a	3a	5a	7a	9a	11a	13a	15a	17a	19a	21a	23a	COM
Pin No.	14	15	16	17	18	19	20	21	22	23	24	25	
Valve No.	2a	4a	6a	8a	10a	12a	14a	16a	18a	20a	22a	24a	

<Double wiring>

• When double solenoid valve only

Pin No.	1	2	3	4	5	6	7	8	9	10	11	12	13
Valve No.	1a	2a	3a	4a	5a	6a	7a	8a	9a	10a	11a	12a	COM
Pin No.	14	15	16	17	18	19	20	21	22	23	24	25	
Valve No.	1b	2b	3b	4b	5b	6b	7b	8b	9b	10b	11b	12b	

Pin No.	1	2	3	4	5	6	7	8	9	10	11	12	13
Valve No.	1a	2a	3a	4a	5a	6a	7a	8a	9a	10a	11a	12a	COM
Pin No.	14	15	16	17	18	19	20	21	22	23	24	25	
Valve No.	(Void)	(Void)	(Void)	(Void)	(Void)	(Void)	(Void)	(Void)	(Void)	(Void)	(Void)	(Void)	

• When mix (single/double mixture)

Pin No.	1	2	3	4	5	6	7	8	9	10	11	12	13
Valve No.	1a	3a	4a	5a	7a	8a	10a	11b	12b	14a	15b	17a	COM
Pin No.	14	15	16	17	18	19	20	21	22	23	24	25	
Valve No.	2a	3b	4b	6a	7b	9a	11a	12a	13a	15a	16a	17b	

Pin No.	1	2	3	4	5	6	7	8	9	10	11	12	13
Valve No.	1a	2a	3a	4a	5a	6a	7a	8a	9a	10a	11a	12a	COM
Pin No.	14	15	16	17	18	19	20	21	22	23	24	25	
Valve No.	(Void)	(Void)	3b	4b	(Void)	(Void)	7b	(Void)	(Void)	(Void)	(Void)	11b	12b

Flat cable connector type : Wiring method T50

About T50 connector

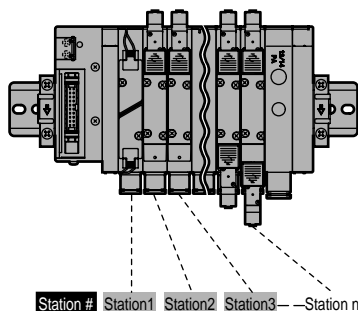
Wiring method T50 connector is conformable with MIL standards (MIL-C-83503).

Easy wiring is realized with flat cable pressure welding.

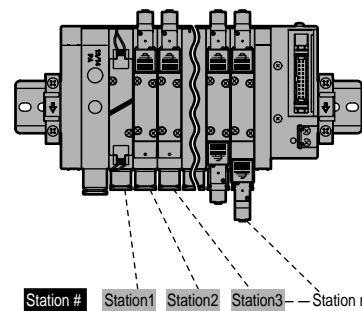
Pin No. index may differ depending on PLC maker but allocation of function is same.

When connecting the cable, match the set mark (▼). For either plug or socket, match the set mark (▼). Viewed from Solenoid b side (when single, cap side), station No. is allocated from left.

T50 (left specifications)

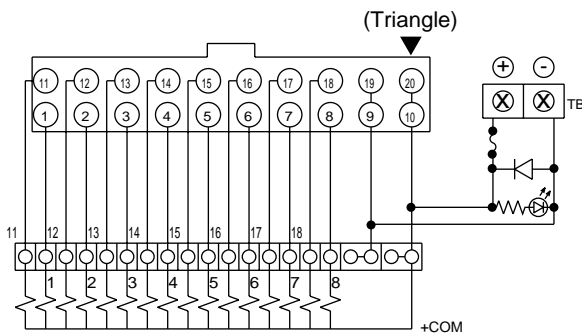


T50R (right specifications)



Cautions for connector type T50

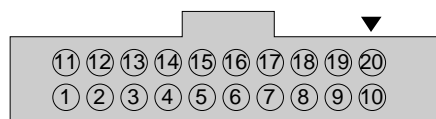
- (1) Signal arrays of PLC output unit and valve side should be matched. Use a compatible cable with PLC maker, because direct connection to PLC is limited.
- (2) Power source is DC24V or DC12V.
- (3) When connecting T50 type to a common output unit, use + terminal (20, 10) of 20P connector as + side common, while use NPN transistor output open collector type for the drive circuit.
- (4) Don't connect this manifold to the input unit. If connected, serious failure may be caused not only to these components but also peripheral components. Connect this manifold to output unit.
- (5) Voltage drop may occur depending on simultaneous energizing or cable length. Voltage drop of solenoid should be within 10% of rated voltage.



Connector pin array of wiring method T50 (e.g.)

- * 1: Valve No. 1a, 1b, 2a, 2b...numbers show Station 1, 2... while alphabet a and b show Solenoid a and Solenoid b.
Max. station number differs depending on model.
Confirm individual specifications.

Connector pin No.



<Standard wire>

Pin No.	11	12	13	14	15	16	17	18	19	20
Valve No.	9a	10a	11a	12a	13a	14a	15a	16a	- Power supply	+ Power supply
Pin No.	1	2	3	4	5	6	7	8	9	10
Valve No.	1a	2a	3a	4a	5a	6a	7a	8a	- Power supply	+ Power supply

- When single solenoid valve only

Pin No.	11	12	13	14	15	16	17	18	19	20
Valve No.	5a	5b	6a	6b	7a	7b	8a	8b	- Power supply	+ Power supply
Pin No.	1	2	3	4	5	6	7	8	9	10
Valve No.	1a	1b	2a	2b	3a	3b	4a	4b	- Power supply	+ Power supply

- When double solenoid valve only

Pin No.	11	12	13	14	15	16	17	18	19	20
Valve No.	7a	7b	8a	9a	10a	10b	11a	11b	- Power supply	+ Power supply
Pin No.	1	2	3	4	5	6	7	8	9	10
Valve No.	1a	2a	3a	3b	4a	4b	5a	6a	- Power supply	+ Power supply

- When mix (single/double mixture)

<Double wiring>

Pin No.	11	12	13	14	15	16	17	18	19	20
Valve No.	5a	(Void)	6a	(Void)	7a	(Void)	8a	(Void)	- Power supply	+ Power supply
Pin No.	1	2	3	4	5	6	7	8	9	10
Valve No.	1a	(Void)	2a	(Void)	3a	(Void)	4a	(Void)	- Power supply	+ Power supply

Pin No.	11	12	13	14	15	16	17	18	19	20
Valve No.	5a	5b	6a	6b	7a	7b	8a	8b	- Power supply	+ Power supply
Pin No.	1	2	3	4	5	6	7	8	9	10
Valve No.	1a	1b	2a	2b	3a	3b	4a	4b	- Power supply	+ Power supply

Pin No.	11	12	13	14	15	16	17	18	19	20
Valve No.	5a	(Void)	6a	(Void)	7a	7b	8a	(Void)	- Power supply	+ Power supply
Pin No.	1	2	3	4	5	6	7	8	9	10
Valve No.	1a	(Void)	2a	(Void)	3a	3b	4a	4b	- Power supply	+ Power supply

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

3, 5 port pilot operated valve

Flat cable connector type : Wiring method T51

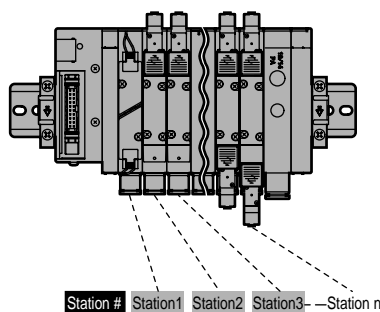
About T51 connector

Wiring method T51 connector is conformable with MIL standards (MIL-C-83503).

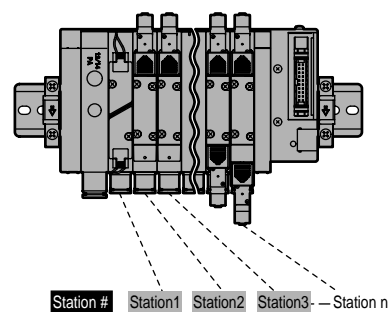
Easy wiring is realized with flat cable pressure welding.

Pin No. index may differ depending on PLC maker but allocation of function is same. When connecting the cable, match the set mark (▼). For either plug or socket, match the set mark (▼). Viewed from Solenoid b (when single, cap side), station No. is allocated from left.

T51 (left specifications)

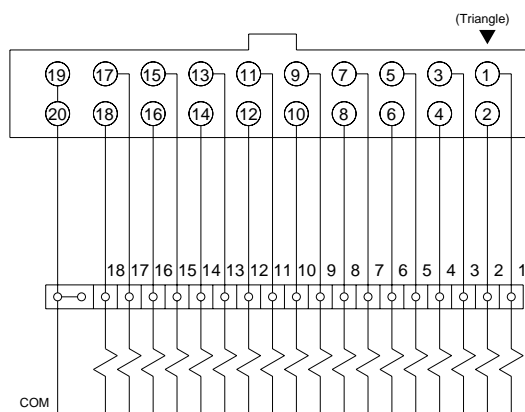


T51R (right specifications)



Cautions for connector type (T51)

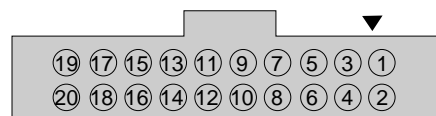
- (1) Signal arrays of PLC output unit and valve side should be matched.
- (2) Power source is DC24V or DC12V.
- (3) T51 type is driven by common output unit.
- (4) Don't connect this manifold to the input unit. If connected, serious failure may be caused not only to these components but also peripheral components. Connect this manifold to output unit.
- (5) Voltage drop may occur depending on simultaneous energizing or cable length. Voltage drop of solenoid should be within 10% of rated voltage.



Connector pin array of wiring method T51 (e.g.)

* : Valve No. 1a, 1b, 2a, 2b...numbers show Station 1, 2... while alphabet a and b show Solenoid a and b. Max. station number differs depending on model. Confirm individual specifications.

Connector pin No.



<Standard wire>

• When single solenoid valve only

Pin No.	19	17	15	13	11	9	7	5	3	1
Valve No.	COM	17a	15a	13a	11a	9a	7a	5a	3a	1a
Pin No.	20	18	16	14	12	10	8	6	4	2
Valve No.	COM	18a	16a	14a	12a	10a	8a	6a	4a	2a

<Double wiring>

• When double solenoid valve only

Pin No.	19	17	15	13	11	9	7	5	3	1
Valve No.	COM	9a	8a	7a	6a	5a	4a	3a	2a	1a
Pin No.	20	18	16	14	12	10	8	6	4	2
Valve No.	COM	9b	8b	7b	6b	5b	4b	3b	2b	1b

Pin No.	19	17	15	13	11	9	7	5	3	1
Valve No.	COM	9a	8a	7a	6a	5a	4a	3a	2a	1a
Pin No.	20	18	16	14	12	10	8	6	4	2
Valve No.	COM	(Void)	(Void)	(Void)	(Void)	(Void)	(Void)	(Void)	(Void)	(Void)

• When mix (single/double mixture)

Pin No.	19	17	15	13	11	9	7	5	3	1
Valve No.	COM	12a	11a	10a	8a	7a	5a	4a	3a	1a
Pin No.	20	18	16	14	12	10	8	6	4	2
Valve No.	COM	13a	11b	10b	9a	7b	6a	4b	3b	2a

Pin No.	19	17	15	13	11	9	7	5	3	1
Valve No.	COM	9a	8a	7a	6a	5a	4a	3a	2a	1a
Pin No.	20	18	16	14	12	10	8	6	4	2
Valve No.	COM	9b	8b	7b	6b	5b	4b	3b	2b	1b

Pin No.	19	17	15	13	11	9	7	5	3	1
Valve No.	COM	9a	8a	7a	6a	5a	4a	3a	2a	1a
Pin No.	20	18	16	14	12	10	8	6	4	2
Valve No.	COM	(Void)	(Void)	7b	(Void)	(Void)	4b	3b	(Void)	(Void)

Flat cable connector type : Wiring method T52

About T52 connector

Wiring method T52 connector is conformable with MIL standards (MIL-C-83503). Easy wiring is realized with flat cable pressure welding. Pin No. index may differ depending on PLC maker but allocation of function is same. When connecting the cable, match the set mark (▼). For either plug or socket, match the set mark (▼). Viewed from Solenoid b (when single, cap side), station NO. is allocated from left.

Cautions for connector type (T52)

- (1) Signal arrays of PLC output unit and valve side should be matched.
- (2) Power source is DC24V or DC12V.
- (3) T52 type is driven by common output unit.
- (4) Don't connect this manifold to the input unit. If connected, serious failure may be caused not only to these components but also peripheral components. Connect this manifold to output unit.
- (5) Voltage drop may occur depending on simultaneous energizing or cable length. Voltage drop of solenoid should be within 10% of rated volt age.

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

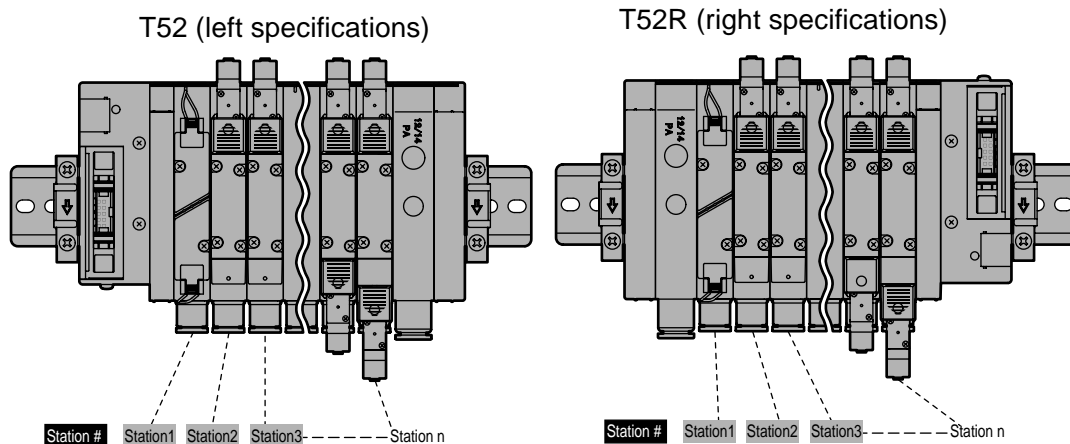
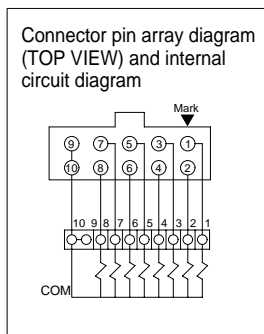
4F**0E

HMV/
HSVUniwire
system

SKH

PCD/
FS/FD

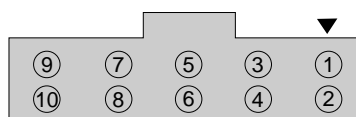
3, 5 port pilot operated valve



Connector pin array of wiring method T52 (e.g.)

* : Valve No. 1a, 1b, 2a, 2b...numbers show Station 1, 2... while alphabet a and b show Solenoid a and Solenoid b. Max. station number differs depending on model. Confirm individual specifications.

Connector pin No.



<Standard wire>

<Double wiring>

- When single solenoid valve only

Pin No.	9	7	5	3	1
Valve No.	COM	7a	5a	3a	1a
Pin No.	10	8	6	4	2
Valve No.	COM	8a	6a	4a	2a

Pin No.	9	7	5	3	1
Valve No.	COM	4a	3a	2a	1a
Pin No.	10	8	6	4	2
Valve No.	COM	(Void)	(Void)	(Void)	(Void)

- When double solenoid valve only

Pin No.	9	7	5	3	1
Valve No.	COM	4a	3a	2a	1a
Pin No.	10	8	6	4	2
Valve No.	COM	4b	3b	2b	1b

Pin No.	9	7	5	3	1
Valve No.	COM	4a	3a	2a	1a
Pin No.	10	8	6	4	2
Valve No.	COM	4b	3b	2b	1b

- When mix (single/double mixture)

Pin No.	9	7	5	3	1
Valve No.	COM	5b	4b	3a	1a
Pin No.	10	8	6	4	2
Valve No.	COM	6a	5a	4a	2a

Pin No.	9	7	5	3	1
Valve No.	COM	4a	3a	2a	1a
Pin No.	10	8	6	4	2
Valve No.	COM	4b	(Void)	(Void)	(Void)

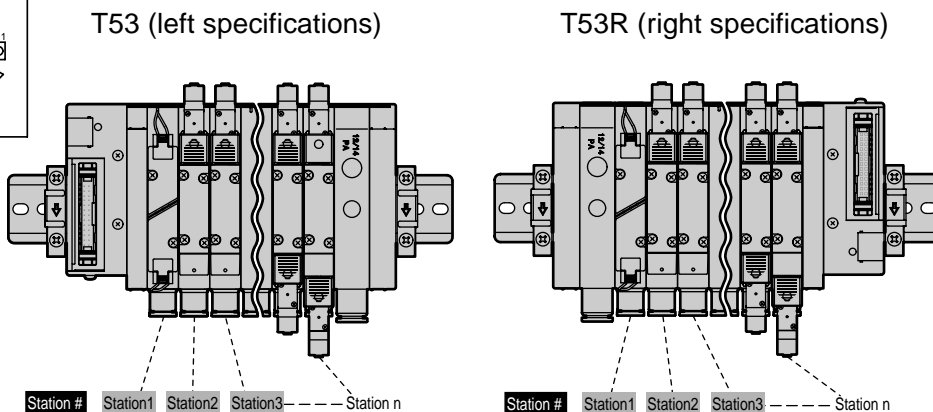
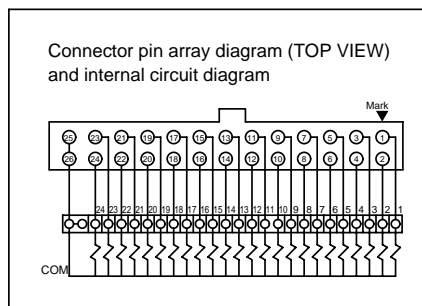
Flat cable connector type : Wiring method T53

About T53 connector

Wiring method T53 connector is conformable with MIL standards (MIL-C-83503).

Easy wiring is realized with flat cable pressure welding. Pin No. index may differ depending on PLC maker but allocation of function is same. When connecting the cable, match the set mark (▼). For either plug or socket, match the set mark (▼).

Viewed from Solenoid b (when single, cap side), station No. is allocated from left.



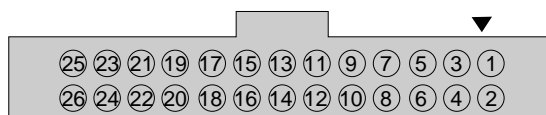
Cautions for connector type (T53)

- (1) Signal arrays of PLC output unit and valve side should be matched.
- (2) Power source is DC24V or DC12V.
- (3) T53 type is driven by common output unit.
- (4) Don't connect this manifold to the input unit. If connected, serious failure may be caused not only to these components but also peripheral components. Connect this manifold to output unit.
- (5) Voltage drop may occur depending on simultaneous energizing or cable length. Voltage drop of solenoid should be within 10% of rated voltage.

Connector pin array of wiring method T53 (e.g.)

* 1: Valve No. 1a, 1b, 2a, 2b...numbers show Station 1, 2... while alphabet a and b show Solenoid a and Solenoid b. Max. station number differs depending on model. Confirm individual specifications.

Connector pin No.



<Standard wire>

<Double wiring>

• When single solenoid valve

Pin No.	25	23	21	19	17	15	13	11	9	7	5	3	1
Valve No.	COM	23a	21a	19a	17a	15a	13a	11a	9a	7a	5a	3a	1a
Pin No.	26	24	22	20	18	16	14	12	10	8	6	4	2
Valve No.	COM	24a	22a	20a	18a	16a	14a	12a	10a	8a	6a	4a	2a

Pin No.	25	23	21	19	17	15	13	11	9	7	5	3	1
Valve No.	COM	12a	11a	10a	9a	8a	7a	6a	5a	4a	3a	2a	1a
Pin No.	26	24	22	20	18	16	14	12	10	8	6	4	2
Valve No.	COM	(Void)	(Void)	(Void)	(Void)	(Void)	(Void)	(Void)	(Void)	(Void)	(Void)	(Void)	(Void)

• When double solenoid valve only

Pin No.	25	23	21	19	17	15	13	11	9	7	5	3	1
Valve No.	COM	12a	11a	10a	9a	8a	7a	6a	5a	4a	3a	2a	1a
Pin No.	26	24	22	20	18	16	14	12	10	8	6	4	2
Valve No.	COM	12b	11b	10b	9b	8b	7b	6b	5b	4b	3b	2b	1b

Pin No.	25	23	21	19	17	15	13	11	9	7	5	3	1
Valve No.	COM	12a	11a	10a	9a	8a	7a	6a	5a	4a	3a	2a	1a
Pin No.	26	24	22	20	18	16	14	12	10	8	6	4	2
Valve No.	COM	12b	11b	10b	9b	8b	7b	6b	5b	4b	3b	2b	1b

• When mix (single/double mixture)

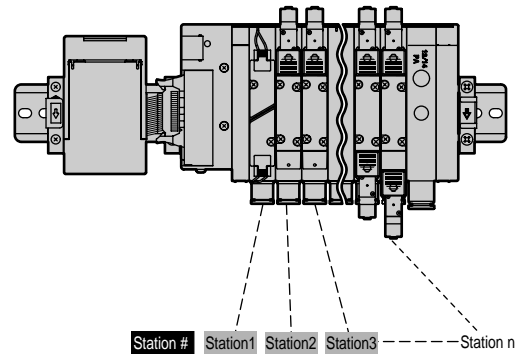
Pin No.	25	23	21	19	17	15	13	11	9	7	5	3	1
Valve No.	COM	16a	15a	14a	12a	10a	9a	8a	7a	5b	4b	3a	1a
Pin No.	26	24	22	20	18	16	14	12	10	8	6	4	2
Valve No.	COM	16b	15b	14b	13a	11a	9b	8b	7b	6a	5a	4a	2a

Pin No.	25	23	21	19	17	15	13	11	9	7	5	3	1
Valve No.	COM	12a	11a	10a	9a	8a	7a	6a	5a	4a	3a	2a	1a
Pin No.	26	24	22	20	18	16	14	12	10	8	6	4	2
Valve No.	COM	(Void)	(Void)	(Void)	9b	8b	7b	(Void)	5b	4b	(Void)	(Void)	(Void)

Serial transmission: Wiring method

About T6 * serial transmission

- Slave unit output number differs depending on maker but compatibility between connector pin No. and manifold solenoid is as following table.
- Not depending on position of wiring block, viewed from piping port, station No. is allocated from left.
- Sequential wiring of internal connector may leave void output numbers depending on station number. These void numbers cannot be used except this manifold.
- Power source is DC24V.
- Slave unit compatible with each communication system is used. Consult with CKD about available PLC model, model No. communication system specifications of host station. (Refer to page 350)
- Output number may differ depending on PLC maker but allocation of function is same. When connecting the cable, match the set mark (▼). For either plug or socket, match the set mark (▼).



Output No. and connector pin No.

- T6A0 T6C0 T6E0 T6J0

Output No	0	1	2	3	4	5	6	7
Connector pin No	1	2	3	4	5	6	7	8

- T621 T6A1 T6C1 T6E1 T6J1 T6K1

Output No	0	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15
Connector pin No	1	2	3	4	5	6	7	8	11	12	13	14	15	16	17	18

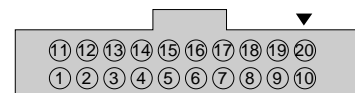
- T631 T6G1

Output No	0	1	2	3	4	5	6	7	8	9	A	B	C	D	E	F
Connector pin No	1	2	3	4	5	6	7	8	11	12	13	14	15	16	17	18

Connector pin array of wiring method T6 * (e.g.)

- * 1: Valve No. 1a, 1b, 2a, 2b...numbers show Station 1, 2... while alphabet a and b show Solenoid a and Solenoid b. Max. station number differs depending on model. Confirm individual specifications.

Connector pin No.



<Standard wire>

- When single solenoid valve only

Pin No.	11	12	13	14	15	16	17	18	19	20
Valve No.	9a	10a	11a	12a	13a	14a	15a	16a	- Power supply	+ Power supply
Pin No.	1	2	3	4	5	6	7	8	9	10
Valve No.	1a	2a	3a	4a	5a	6a	7a	8a	- Power supply	+ Power supply

- When double solenoid valve only

Pin No.	11	12	13	14	15	16	17	18	19	20
Valve No.	5a	5b	6a	6b	7a	7b	8a	8b	- Power supply	+ Power supply
Pin No.	1	2	3	4	5	6	7	8	9	10
Valve No.	1a	1b	2a	2b	3a	3b	4a	4b	- Power supply	+ Power supply

- When mix (single/double mixture)

Pin No.	11	12	13	14	15	16	17	18	19	20
Valve No.	7a	7b	8a	9a	10a	10b	11a	11b	- Power supply	+ Power supply
Pin No.	1	2	3	4	5	6	7	8	9	10
Valve No.	1a	2a	3a	3b	4a	4b	5a	6a	- Power supply	+ Power supply

<Double wiring>

Pin No.	11	12	13	14	15	16	17	18	19	20
Valve No.	5a	(Void)	6a	(Void)	7a	(Void)	8a	(Void)	- Power supply	+ Power supply
Pin No.	1	2	3	4	5	6	7	8	9	10
Valve No.	1a	(Void)	2a	(Void)	3a	(Void)	4a	(Void)	- Power supply	+ Power supply

Pin No.	11	12	13	14	15	16	17	18	19	20
Valve No.	5a	5b	6a	6b	7a	7b	8a	8b	- Power supply	+ Power supply
Pin No.	1	2	3	4	5	6	7	8	9	10
Valve No.	1a	1b	2a	2b	3a	3b	4a	4b	- Power supply	+ Power supply

Pin No.	11	12	13	14	15	16	17	18	19	20
Valve No.	5a	(Void)	6a	(Void)	7a	7b	8a	(Void)	- Power supply	+ Power supply
Pin No.	1	2	3	4	5	6	7	8	9	10
Valve No.	1a	(Void)	2a	(Void)	3a	3b	4a	4b	- Power supply	+ Power supply

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

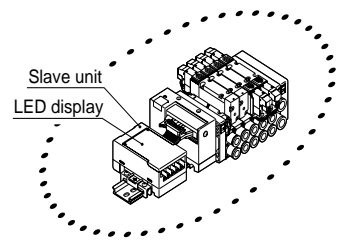
4F**0E

HMV/
HSVUniwire
system

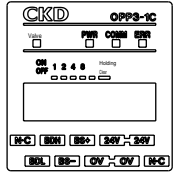
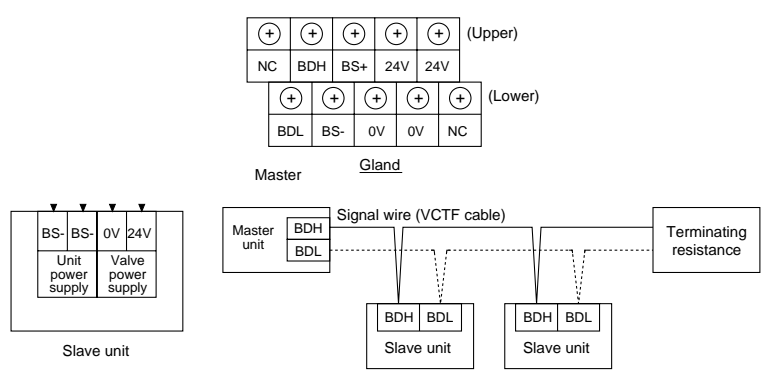
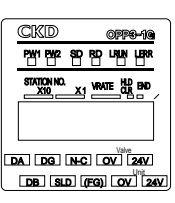
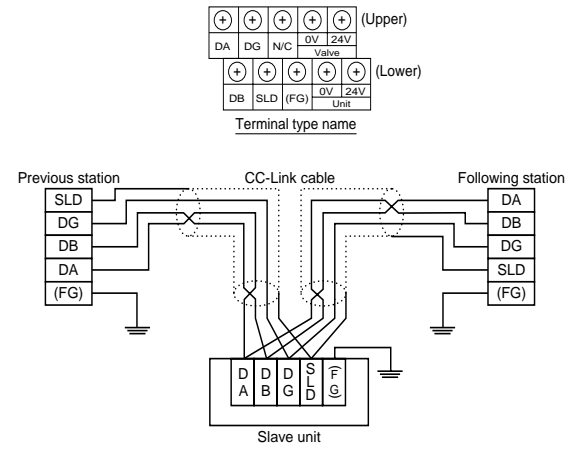
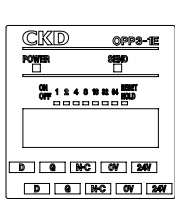
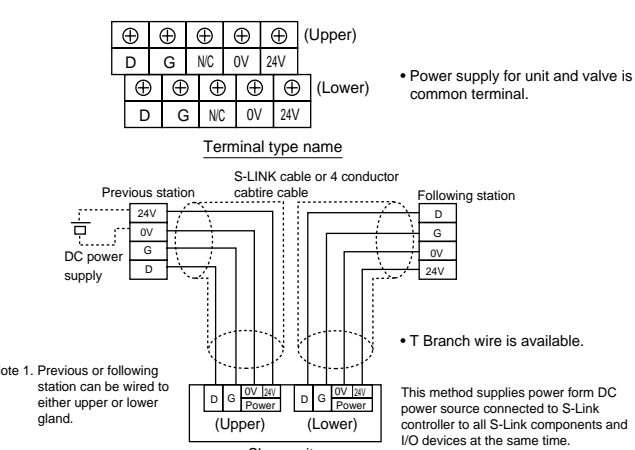
SKH

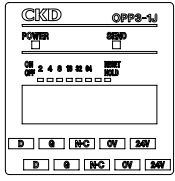
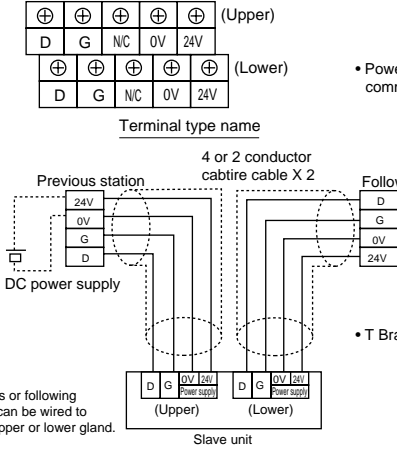
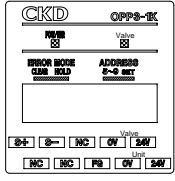
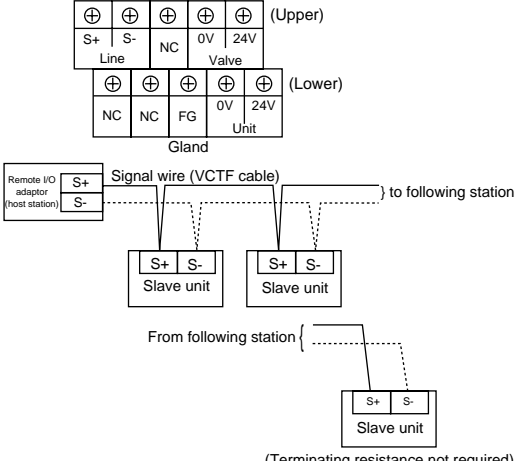
PCD/
FS/FD

3, 5 port pilot operated valve



	LED display	Wiring methods												
T621	<table border="1"> <thead> <tr> <th>LED name</th> <th>Display description</th> </tr> </thead> <tbody> <tr> <td>PW1</td> <td>When unit power supply turns on, light turns ON.</td> </tr> <tr> <td>PW2</td> <td>When valve power ON, light turns ON.</td> </tr> <tr> <td>T/R</td> <td>When normal transmission, blinking.</td> </tr> <tr> <td>ERR</td> <td>When transmission error, light turns ON.</td> </tr> <tr> <td>RUN</td> <td>When normal transmission mode, light turns ON. (Note 1)</td> </tr> </tbody> </table> <p>Note 1. When using G730 interface unit (type CQM1-G7M) for CQM1 at host station with multi link, light doesn't turn ON.</p>	LED name	Display description	PW1	When unit power supply turns on, light turns ON.	PW2	When valve power ON, light turns ON.	T/R	When normal transmission, blinking.	ERR	When transmission error, light turns ON.	RUN	When normal transmission mode, light turns ON. (Note 1)	<p>Terminal type name</p> <p>Previous station</p> <p>Following station</p> <p>Slave unit</p>
LED name	Display description													
PW1	When unit power supply turns on, light turns ON.													
PW2	When valve power ON, light turns ON.													
T/R	When normal transmission, blinking.													
ERR	When transmission error, light turns ON.													
RUN	When normal transmission mode, light turns ON. (Note 1)													
T631	<table border="1"> <thead> <tr> <th>LED name</th> <th>Display description</th> </tr> </thead> <tbody> <tr> <td>PW1</td> <td>When unit power supply turns on, light turns ON.</td> </tr> <tr> <td>PUN</td> <td>When normally data communication to master station, light turns ON.</td> </tr> <tr> <td>RD</td> <td>During receiving data, blinking (dark-lighting)</td> </tr> <tr> <td>ERR</td> <td>When receiving data failures, light turns ON, while normal communication, light turns OFF.</td> </tr> <tr> <td>PW2</td> <td>When valve power ON, light turns ON.</td> </tr> </tbody> </table>	LED name	Display description	PW1	When unit power supply turns on, light turns ON.	PUN	When normally data communication to master station, light turns ON.	RD	During receiving data, blinking (dark-lighting)	ERR	When receiving data failures, light turns ON, while normal communication, light turns OFF.	PW2	When valve power ON, light turns ON.	<p>Terminal type name</p> <p>Previous station</p> <p>Following station</p> <p>Slave unit</p> <p>Connecting RDA and SDA, RDB and SDB.</p> <p>For shield wire, either one is connected to FG terminal.</p>
LED name	Display description													
PW1	When unit power supply turns on, light turns ON.													
PUN	When normally data communication to master station, light turns ON.													
RD	During receiving data, blinking (dark-lighting)													
ERR	When receiving data failures, light turns ON, while normal communication, light turns OFF.													
PW2	When valve power ON, light turns ON.													
T6A0 T6A1	<table border="1"> <thead> <tr> <th>LED name</th> <th>Display description</th> </tr> </thead> <tbody> <tr> <td>POWER</td> <td>When power ON, light turns ON.</td> </tr> <tr> <td>SEND</td> <td>When normal transmission, blinking. When transmission error, light turns ON or OFF.</td> </tr> </tbody> </table>	LED name	Display description	POWER	When power ON, light turns ON.	SEND	When normal transmission, blinking. When transmission error, light turns ON or OFF.	<p>Terminal wire type name</p> <p>4 or 2 conductor cable X 2</p> <p>Previous station</p> <p>Following station</p> <p>Slave unit</p> <ul style="list-style-type: none"> • Power supply for unit and valve is common terminal. • T Branch wire is not available. <p>Note 1. Previous or following station can be wired to either upper or lower gland.</p> <p>Note 2. Maximum current of this wire via slave unit between 0V and 24V is 7A.</p>						
LED name	Display description													
POWER	When power ON, light turns ON.													
SEND	When normal transmission, blinking. When transmission error, light turns ON or OFF.													

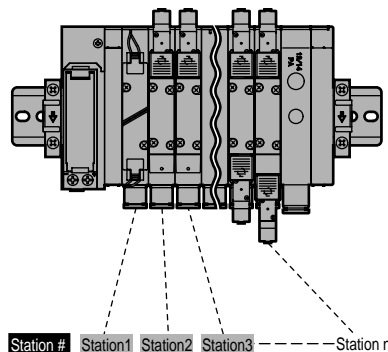
	LED display	Wiring methods															
T6C0 T6C1	 <table border="1" style="width: 100%; margin-top: 10px;"> <thead> <tr> <th>LED name</th> <th>Display description</th> </tr> </thead> <tbody> <tr> <td>Valve (green)</td> <td>When valve power ON, light turns ON.</td> </tr> <tr> <td>PWR (green)</td> <td>When unit power ON, light turns ON.</td> </tr> <tr> <td>COMM (orange)</td> <td>When normal communication, light turns ON. When communication error or stand by, light turns OFF.</td> </tr> <tr> <td>ERR (red)</td> <td>When communication error, light turns ON. When normal communication or stand by, light turns OFF.</td> </tr> </tbody> </table>	LED name	Display description	Valve (green)	When valve power ON, light turns ON.	PWR (green)	When unit power ON, light turns ON.	COMM (orange)	When normal communication, light turns ON. When communication error or stand by, light turns OFF.	ERR (red)	When communication error, light turns ON. When normal communication or stand by, light turns OFF.	 <p style="text-align: center;">Master</p> <p style="text-align: center;">Slave unit</p>	<p>4SA/B0</p> <p>4SA/B1</p> <p>4GA/B</p> <p>MN4GA/B</p> <p>4GA/B (master)</p> <p>MN3S0/ MN4S0</p> <p>4TB</p> <p>4L2-4/ LMF0</p>				
LED name	Display description																
Valve (green)	When valve power ON, light turns ON.																
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COMM (orange)	When normal communication, light turns ON. When communication error or stand by, light turns OFF.																
ERR (red)	When communication error, light turns ON. When normal communication or stand by, light turns OFF.																
T6G1	 <table border="1" style="width: 100%; margin-top: 10px;"> <thead> <tr> <th>LED name</th> <th>Display description</th> </tr> </thead> <tbody> <tr> <td>PW1</td> <td>When unit power ON, light turns ON.</td> </tr> <tr> <td>PW2</td> <td>When valve power ON, light turns ON.</td> </tr> <tr> <td>SD</td> <td>When data transmission, light turns ON.</td> </tr> <tr> <td>RD</td> <td>When receiving data, light turns ON.</td> </tr> <tr> <td>L RUN</td> <td>When receiving normal data, light turns ON, while time over, light turns OFF.</td> </tr> <tr> <td>L ERR</td> <td>When transmission error, light turns ON. When time over, light turns OFF. When setting error of station No. or transmission speed, light turns ON. When setting of station No. or transmission speed changes on the way, blinking.</td> </tr> </tbody> </table>	LED name	Display description	PW1	When unit power ON, light turns ON.	PW2	When valve power ON, light turns ON.	SD	When data transmission, light turns ON.	RD	When receiving data, light turns ON.	L RUN	When receiving normal data, light turns ON, while time over, light turns OFF.	L ERR	When transmission error, light turns ON. When time over, light turns OFF. When setting error of station No. or transmission speed, light turns ON. When setting of station No. or transmission speed changes on the way, blinking.	 <p style="text-align: center;">Previous station</p> <p style="text-align: center;">Slave unit</p> <p style="text-align: center;">Following station</p>	<p>4KA/B</p> <p>4F</p> <p>PV5/ CMF</p> <p>3MA/B0</p> <p>3PA/B</p> <p>P/M/B</p> <p>NP/NAP/ NVP</p>
LED name	Display description																
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T6E0 T6E1	 <table border="1" style="width: 100%; margin-top: 10px;"> <thead> <tr> <th>LED name</th> <th>Display description</th> </tr> </thead> <tbody> <tr> <td>POWER</td> <td>When power ON, light turns ON.</td> </tr> <tr> <td>SEND</td> <td>When normal transmission, blinking. When transmission error, light turns ON or OFF.</td> </tr> </tbody> </table>	LED name	Display description	POWER	When power ON, light turns ON.	SEND	When normal transmission, blinking. When transmission error, light turns ON or OFF.	 <p style="text-align: center;">Previous station</p> <p style="text-align: center;">Slave unit</p> <p style="text-align: center;">Following station</p> <p style="text-align: center;">DC power supply</p> <p style="text-align: center;">S-LINK cable or 4 conductor cable cable</p> <p style="text-align: center;">Terminal type name</p> <p style="text-align: center;">Upper</p> <p style="text-align: center;">Lower</p> <p style="text-align: center;">Slave unit</p> <p style="text-align: center;">Upper</p> <p style="text-align: center;">Lower</p>	<p>4F**0E</p> <p>HMV/ HSV</p> <p>Uniwire system</p> <p>SKH</p> <p>PCD/ FS/FD</p>								
LED name	Display description																
POWER	When power ON, light turns ON.																
SEND	When normal transmission, blinking. When transmission error, light turns ON or OFF.																

	LED display	Wiring methods												
T6J0 T6J1	 <table border="1" data-bbox="215 734 593 817"> <thead> <tr> <th>LED name</th> <th>Display description</th> </tr> </thead> <tbody> <tr> <td>POWER</td> <td>When power ON, light turns ON.</td> </tr> <tr> <td></td> <td>When normal transmission, blinking.</td> </tr> <tr> <td>SEND</td> <td>When transmission error, light turns ON or OFF.</td> </tr> </tbody> </table>	LED name	Display description	POWER	When power ON, light turns ON.		When normal transmission, blinking.	SEND	When transmission error, light turns ON or OFF.	 <p>Terminal type name</p> <p>4 or 2 conductor cable X 2</p> <p>Previous station</p> <p>Following station</p> <p>DC power supply</p> <p>Note 1. Previous or following station can be wired to either upper or lower gland.</p> <p>Slave unit</p> <ul style="list-style-type: none"> • Power supply for unit and valve is common terminal. • T Branch wire is available. 				
LED name	Display description													
POWER	When power ON, light turns ON.													
	When normal transmission, blinking.													
SEND	When transmission error, light turns ON or OFF.													
T6K1	 <table border="1" data-bbox="215 1182 593 1339"> <thead> <tr> <th>LED name</th> <th>Display description</th> </tr> </thead> <tbody> <tr> <td>Valve (green)</td> <td>When valve power ON, light turns ON.</td> </tr> <tr> <td>POWER/ERR (irregular)</td> <td>When unit power ON, light turns ON.</td> </tr> <tr> <td>POWER/ERR (green)</td> <td>Normal communication.</td> </tr> <tr> <td>POWER/ERR (red)</td> <td>Line disconnected or failures in remote I/O adaptor unit.</td> </tr> <tr> <td>POWER/ERR (orange)</td> <td>Incorrect address setting or poor communication.</td> </tr> </tbody> </table>	LED name	Display description	Valve (green)	When valve power ON, light turns ON.	POWER/ERR (irregular)	When unit power ON, light turns ON.	POWER/ERR (green)	Normal communication.	POWER/ERR (red)	Line disconnected or failures in remote I/O adaptor unit.	POWER/ERR (orange)	Incorrect address setting or poor communication.	 <p>Terminal type name</p> <p>Gland</p> <p>Remote I/O adaptor (host station)</p> <p>Signal wire (VCTF cable)</p> <p>to following station</p> <p>Slave unit</p> <p>Slave unit</p> <p>From following station</p> <p>Slave unit</p> <p>(Terminating resistance not required)</p>
LED name	Display description													
Valve (green)	When valve power ON, light turns ON.													
POWER/ERR (irregular)	When unit power ON, light turns ON.													
POWER/ERR (green)	Normal communication.													
POWER/ERR (red)	Line disconnected or failures in remote I/O adaptor unit.													
POWER/ERR (orange)	Incorrect address setting or poor communication.													

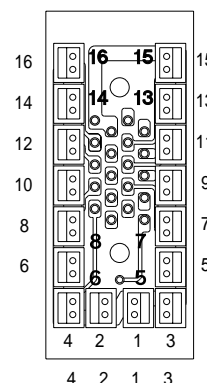
Serial transmission: Wiring method

About T7 * serial transmission

- Slave unit output number differs depending on maker.
Compatibility between inside connector pin No. and manifold solenoid is as following table.
- Not depending on position of wiring block, viewed from piping port, station No. is allocated from left.
- Sequential wiring of internal connector may leave void output numbers depending on station number. These void numbers cannot be used except this manifold.
- Power source is DC24V.
- Slave unit compatible with each communication system is used. Consult with CKD about available PLC model, model No. communication system specifications of host station. (Refer to page 350)
- Fix the connector attached with set screws.
(Recommended tightening torque 0.3N·m)



Internal circuit board connector pin No.



Output No. and connector pin No.

• T7C0, T7E0

Output No	0	1	2	3	4	5	6	7
Connector pin No	1	2	3	4	5	6	7	8

• T7C1, T7D1, T7E1, T7L1

Output No	0	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15
Connector pin No	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16

• T7G1

Output No	0	1	2	3	4	5	6	7	8	9	A	B	C	D	E	F
Connector pin No	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16

Connector pin array of wiring method T7 * (e.g.)

*: Valve No.1a, 1b, 2a, 2b...numbers show Station 1, 2... while alphabet a and b show a or b side solenoid.
Maximum station number differs depending on model. Confirm individual specifications.

<Standard wire>

• When single solenoid valve

Pin No	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
Valve No	1a	2a	3a	4a	5a	6a	7a	8a	9a	10a	11a	12a	13a	14a	15a	16a

• When double solenoid valve

Pin No	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
Valve No	1a	1b	2a	2b	3a	3b	4a	4b	5a	5b	6a	6b	7a	7b	8a	8b

• When mix (single/double mixture)

Pin No	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
Valve No	1a	2a	3a	3b	4a	4b	5a	6a	7a	7b	8a	9a	10a	10b	11a	11b

<Double wiring>

Pin No	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
Valve No	1a	(Void)	2a	(Void)	3a	(Void)	4a	(Void)	5a	(Void)	6a	(Void)	7a	(Void)	8a	(Void)

Pin No	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
Valve No	1a	1b	2a	2b	3a	3b	4a	4b	5a	5b	6a	6b	7a	7b	8a	8b

Pin No	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
Valve No	1a	(Void)	2a	(Void)	3a	3b	4a	4b	5a	(Void)	6a	(Void)	7a	7b	8a	(Void)

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

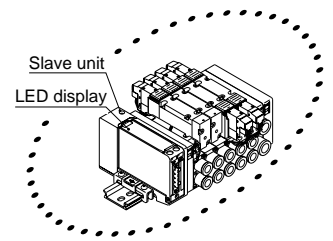
4F**0E

HMV/
HSVUniwire
system

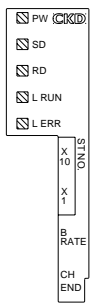
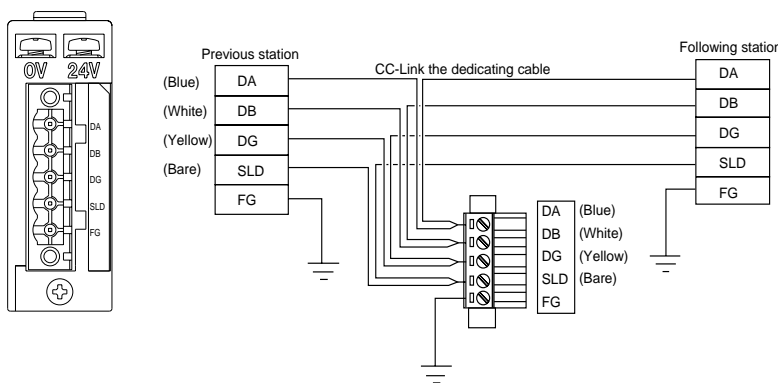
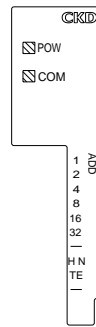
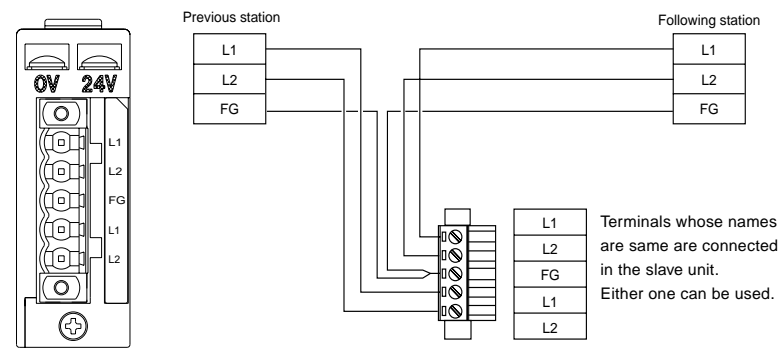
SKH

PCD/
FS/FD

3, 5 port pilot operated valve



Model No.	LED display	Wiring method										
T7C0 T7C1	<table border="1"> <thead> <tr> <th>LED name</th> <th>Display description</th> </tr> </thead> <tbody> <tr> <td>Valve (green)</td> <td>When valve power ON, light turns ON.</td> </tr> <tr> <td>PWR (green)</td> <td>When unit power ON, light turns ON.</td> </tr> <tr> <td>COMM (orange)</td> <td>When normal communication, light turns ON. When communication error or stand by, light turns OFF.</td> </tr> <tr> <td>ERR (red)</td> <td>When communication error, light turns ON. When normal communication or stand by, light turns OFF.</td> </tr> </tbody> </table>	LED name	Display description	Valve (green)	When valve power ON, light turns ON.	PWR (green)	When unit power ON, light turns ON.	COMM (orange)	When normal communication, light turns ON. When communication error or stand by, light turns OFF.	ERR (red)	When communication error, light turns ON. When normal communication or stand by, light turns OFF.	<p>Previous station (Tea) BS+, (Black) BDH, (White) BDL, (Blue) BS-, V, G</p> <p>T branch tap</p> <p>Previous station (Tea) BS+, (Black) BDH, (White) BDL, (Blue) BS-, V, G</p> <p>Multi drop method DC24V External power T branch method</p> <ul style="list-style-type: none"> • Connect power supply and communication wires to connector. • Power supply terminals for unit and valve are separated. • Connector is attached.
LED name	Display description											
Valve (green)	When valve power ON, light turns ON.											
PWR (green)	When unit power ON, light turns ON.											
COMM (orange)	When normal communication, light turns ON. When communication error or stand by, light turns OFF.											
ERR (red)	When communication error, light turns ON. When normal communication or stand by, light turns OFF.											
T7D1	<table border="1"> <thead> <tr> <th>LED name</th> <th>Display description</th> </tr> </thead> <tbody> <tr> <td>MS</td> <td>Displaying status of slaves with green and red LED. Combination of "NS LED" shows failures.</td> </tr> <tr> <td>NS</td> <td>Displaying network status with green and red LED. Combination of "MS LED" shows failures.</td> </tr> </tbody> </table>	LED name	Display description	MS	Displaying status of slaves with green and red LED. Combination of "NS LED" shows failures.	NS	Displaying network status with green and red LED. Combination of "MS LED" shows failures.	<p>Previous station (Black) V-, (Blue) CAN_L, (No) Drain, (White) CAN_H, (Red) V+</p> <p>DeviceNet cable</p> <p>T branch tap</p> <p>Following station (Black) V-, (Blue) CAN_L, (No) Drain, (White) CAN_H, (Red) V+</p> <p>Black Blue Case color White Red</p> <p>Multi drop method T branch method</p> <ul style="list-style-type: none"> • Power supply wire is connected to gland. • DeviceNet cable is connected to connector. • Power supply gland (24V, 0V) and communication power supply terminal (V+, V-) is insulated. • Power supply terminals for unit and valve are common. • Connector is attached. 				
LED name	Display description											
MS	Displaying status of slaves with green and red LED. Combination of "NS LED" shows failures.											
NS	Displaying network status with green and red LED. Combination of "MS LED" shows failures.											
T7E0 T7E1	<table border="1"> <thead> <tr> <th>LED name</th> <th>Display description</th> </tr> </thead> <tbody> <tr> <td>POWER</td> <td>When power ON, light turns ON.</td> </tr> <tr> <td>SEND</td> <td>When normal transmission, blinking. When transmission error, light turns ON or OFF.</td> </tr> </tbody> </table>	LED name	Display description	POWER	When power ON, light turns ON.	SEND	When normal transmission, blinking. When transmission error, light turns ON or OFF.	<p>Previous station (Tea) 24V, (Blue) 0V, (White) D, (Black) G</p> <p>T branch connector</p> <p>Station after (Tea) 24V, (Blue) 0V, (White) D, (Black) G</p> <p>(24V) (0V) (D) (G)</p> <p>(24V) (0V) (D) (G)</p> <p>Multi drop method T branch method</p> <ul style="list-style-type: none"> • Connect power supply and communication wires to connector. • Power supply terminals for unit and valve are common. • Connector is attached. 				
LED name	Display description											
POWER	When power ON, light turns ON.											
SEND	When normal transmission, blinking. When transmission error, light turns ON or OFF.											

Model No.	LED display	Wiring method												
T7G1	<div style="text-align: center;">  </div> <table border="1" style="width: 100%; margin-top: 10px;"> <thead> <tr style="background-color: black; color: white;"> <th>LED name</th> <th>Display description</th> </tr> </thead> <tbody> <tr> <td>PW</td> <td>When power ON, light turns ON.</td> </tr> <tr> <td>SD</td> <td>When data transmission, light turns ON.</td> </tr> <tr> <td>RD</td> <td>When receiving data, light turns ON.</td> </tr> <tr> <td>L RUN</td> <td>When receiving normal data, light turns ON. When time over, light turns ON.</td> </tr> <tr> <td>L ERR</td> <td>When transmission error, light turns ON. When time over, light turns OFF. When setting error of station No. or transmission speed, light turns ON. When setting of station No. or transmission speed changes on the way, blinking.</td> </tr> </tbody> </table>	LED name	Display description	PW	When power ON, light turns ON.	SD	When data transmission, light turns ON.	RD	When receiving data, light turns ON.	L RUN	When receiving normal data, light turns ON. When time over, light turns ON.	L ERR	When transmission error, light turns ON. When time over, light turns OFF. When setting error of station No. or transmission speed, light turns ON. When setting of station No. or transmission speed changes on the way, blinking.	<div style="text-align: center;">  </div> <ul style="list-style-type: none"> Power supply wire is connected to gland. CC- Link cable is connected to connector. Power supply terminals for unit and valve are common. Connector is attached.
LED name	Display description													
PW	When power ON, light turns ON.													
SD	When data transmission, light turns ON.													
RD	When receiving data, light turns ON.													
L RUN	When receiving normal data, light turns ON. When time over, light turns ON.													
L ERR	When transmission error, light turns ON. When time over, light turns OFF. When setting error of station No. or transmission speed, light turns ON. When setting of station No. or transmission speed changes on the way, blinking.													
T7L1	<div style="text-align: center;">  </div> <table border="1" style="width: 100%; margin-top: 10px;"> <thead> <tr style="background-color: black; color: white;"> <th>LED name</th> <th>Display description</th> </tr> </thead> <tbody> <tr> <td>POW</td> <td>When power of this slave unit ON, light turns ON.</td> </tr> <tr> <td>COM</td> <td>When normally communication to master, light turns ON. When communication error continued, light turns OFF.</td> </tr> </tbody> </table>	LED name	Display description	POW	When power of this slave unit ON, light turns ON.	COM	When normally communication to master, light turns ON. When communication error continued, light turns OFF.	<div style="text-align: center;">  </div> <ul style="list-style-type: none"> Power supply wire is connected to gland. Connect communication wires to connector. Power supply terminals for unit and valve are common. Connector is attached. <p style="font-size: small; margin-left: 20px;">Terminals whose names are same are connected in the slave unit. Either one can be used.</p>						
LED name	Display description													
POW	When power of this slave unit ON, light turns ON.													
COM	When normally communication to master, light turns ON. When communication error continued, light turns OFF.													

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/
HSVUniwire
system

SKH

PCD/
FS/FD

3, 5 port pilot operated valve

4GB^A/MN4GB^A Series

Technical data 2) Notes of wiring

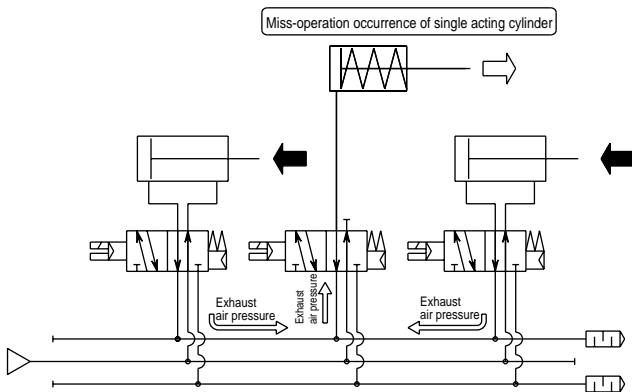
Compatible PLC table

Model No.	Maker name (recommended bodies)	Series	Communication system name	Host station model No.
T621	OMRON	SYSMAC α /CS1/C/CV series C200H/C200HS series	SYSBUS wire system	Type C500-RM201 Type C200H-RM201
		CQM1 (H) series or controller interface	Multi link	Type CQM1-G7M21 Type G730-MOD32-B
T631	MITSUBISHI	MELSEC A series	MELSEC NET/MINI-S3 Data link system	AJ71PT32-S3 AJ71T32-S3 A1SJ71PT32-S3 A1SJ71T32-S3 A2C CPU (master incorporated PLC) A2CJ CPU (master incorporated PLC)
T6A0 T6A1	CKD KURODA NKE	PLC, PC, SBC Consult with CKD about details.	UNIWIRESYSTEM	Send unit (UW-SD-120) or each UNIWIRESYSTEM interfaces
T6C0 T6C1 T7C0 T7C1	OMRON	SYSMAC α /CS1 series C200HS, CQM1 (H) series	CompoBus/S (T6C0/1 not compatible) with long distance mode	Type C200HW-SRM21-V1 Type CQM1-SRM21-V1 Type SRM1-C01/C02-V2
T7D1	ODVA	DeviceNet compatible PLC, PC, SBC	DeviceNet	Connecting to DeviceNet compatible master
	OMRON	SYSMAC α /CS1/C/CV series C200HS series	CompoBus/D	Type C200HW-DRM21-V1 Type CVM1-DRM21-V1 Type ITNC- EI * 01-DRM (master incorporated type)
T6E0 T6E1 T7E0 T7E1	SUNX	PLC, PC, SBC	S-Link	S-Link controller or other S-Link control boards
T6G1 T7G1	MITSUBISHI	MELSEC A series MELSEC QnA series	CC-Link	AJ61BT11 AJ61QBT11 A1SJ61BT11 A1SJ61QBT11 QJ61BT11 CC-Link master
T6J0 T6J1	CKD KURODA NKE	PLC, PC, SBC Consult with CKD about details.	UNIWIRESYSTEM H	Send unit (UW-SD-H2 (A)) or other UNIWIRESYSTEM interfaces
T6K1	KEYENCE	KZ series	KZ-R	KZ-R1A
T7L1	CKD ONE	PC, SBC, PLC Consult with CKD about details.	SAVE NET	SAVE NET interface or master unit (CSN-1001-MA2)

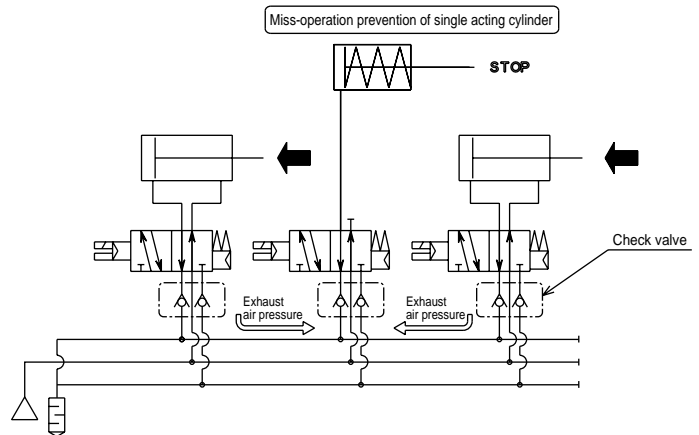
About check valve

Generally, manifold connected to double acting cylinder, single acting cylinder or ABR connection valve may cause malfunctions because of back pressure from other cylinders etc. For this 4G series manifold, "check valve" to prevent malfunctions is provided as standard, except all ports closed valve without back pressure and PAB connection valve.

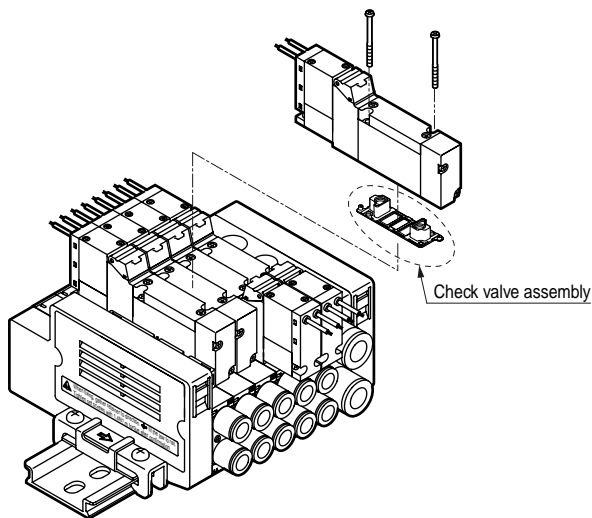
Example of pneumatics system leading to malfunction.



4G series pneumatics system

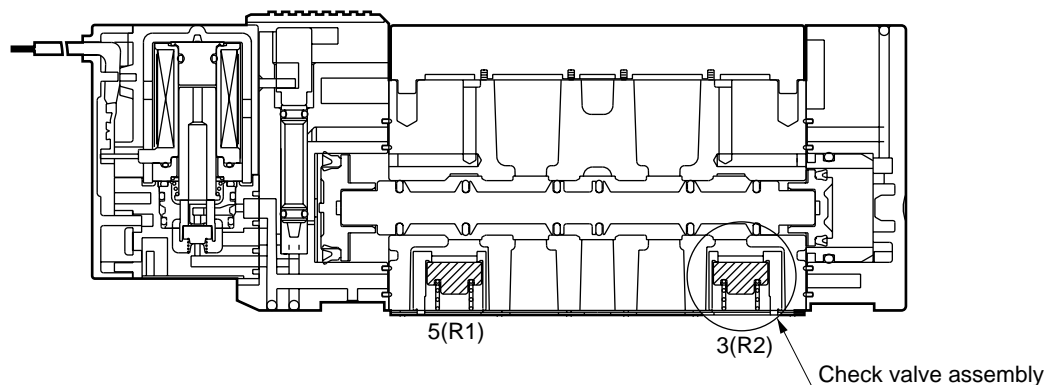


Internal structure drawing



Check valve specifications provided as standard

Model No.		Flow path switchover	5(R1)	3(R2)
4G	MN4G			
3GA * 19	3GA * 10	NC	Selected	-
3GA * 119	3GA * 110	NO	-	Selected
4G ^A / _B * 19	4G ^A / _B * 10	2-position single	Selected	Selected
4G ^A / _B * 29	4G ^A / _B * 20	2-position double	Selected	Selected
4G ^A / _B * 39	4G ^A / _B * 30	All ports closed	Blank	Blank
4G ^A / _B * 49	4G ^A / _B * 40	ABR connection	Selected	Selected
4G ^A / _B * 59	4G ^A / _B * 50	PAB connection	Blank	Blank



This figure for 4G210

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

3, 5 port pilot operated valve

Technical data 4) How to expand reduced wiring manifold

M4G (Metal base manifold)

* Please refer to Page 354 about MN4G (block manifold).

Pattern 1. Expansion at reserved wire equipped position

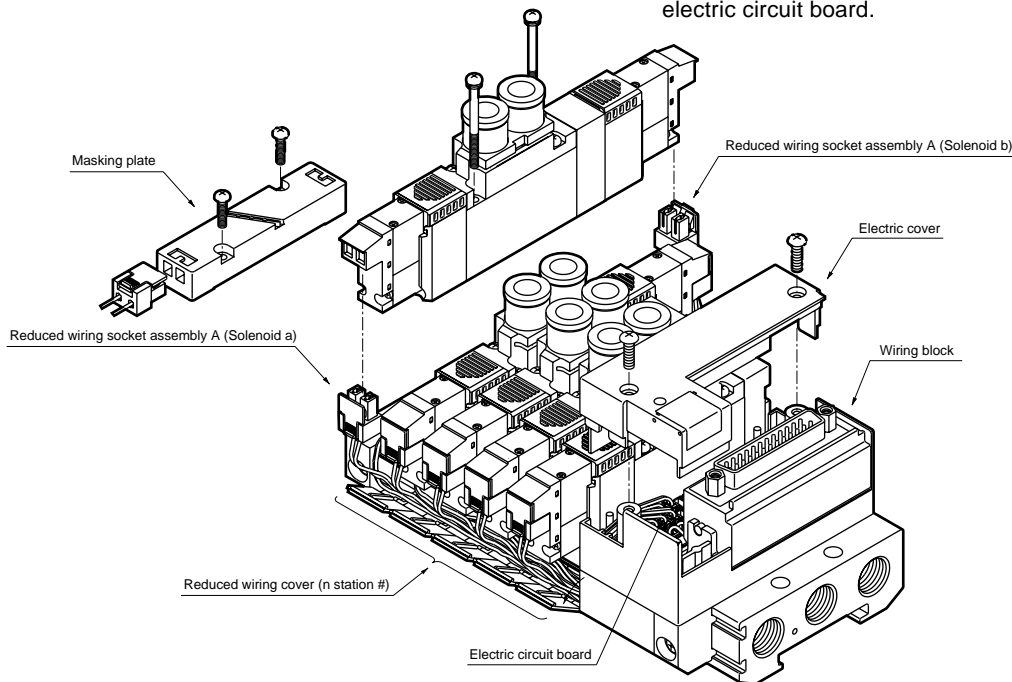
For masking plate placed on expansion position, reserved wire is already provided. When reserved wire, for valve expansion, follow the following procedures.

- (1) Remove the reserved socket from the masking plate.
- (2) Remove the masking plate from the base.
- (3) Install valve for expansion on the base, and assemble socket.

Pattern 2. Expansion at no reserved wire equipped position

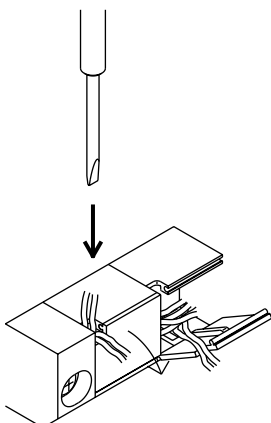
When changing single solenoid without reserved wire to double solenoid, additional internal wiring to Solenoid b for expansion is required. When reserved wire is not provided, follow the following procedures to expand valves.

- (1) Remove the electric cover, and open the reduced wiring cover.
- (2) Replace the valve to be changed. Replace the socket for Solenoid a.
- (3) Install socket (optional) for Solenoid b. Put wire through valves, and pull out the wire at Side a.
- (4) Put wire inside of wiring block, and insert connector to electric circuit board.
- (5) Put wire inside of wiring block, and insert connector to electric circuit board.



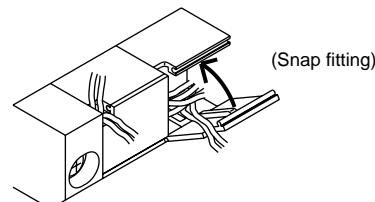
How to open/close reduced wiring cover

How to open reduced wiring cover



Insert a precise screw driver etc. into cable hole of reduced wiring cover to open the cover. Don't use the tool with sharp edge to avoid cable damage when hooking.

How to close reduced wiring cover



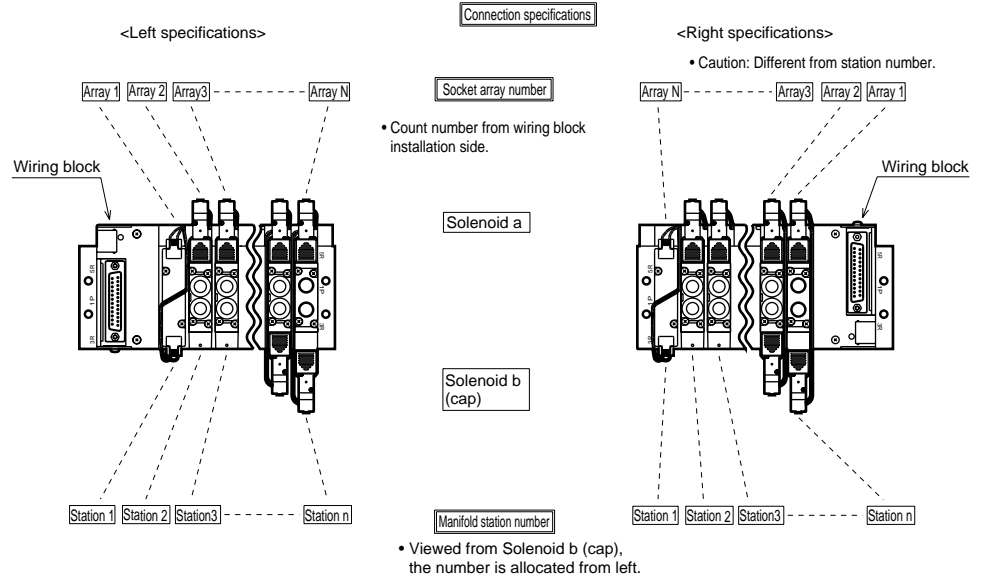
Put cable through cable hole of reduced wiring cover, and close the cover. Not biting the cable, close the cover surely with a snap.

Technical data 4) How to expand reduced wiring manifold

How to order socket assembly for expansion

When selecting socket assembly model No., for socket assembly for expansion, proper cable length according to expansion position should be indicated. Improper selection may cause disconnection and biting cable.

For A type socket assembly model No., expansion position is counted from wiring block installation side. The way is different from counting manifold valve station No. from left viewed from Solenoid b.



Model No. of socket assembly for expansion

A-connector socket assembly

4G[*1]-SOCKET ASSY-A[*2][*3]-[*4]

Note
1. Same as T50/T51.

* 1: Series	* 2: Connection specifications	* 3: Solenoid position		* 4: Socket manifold No.			
1	4G1	Blank	Left	a	a side	1	Array 1
2	4G2	R	Right	b	b side	to	to
3	4G3					24	24

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

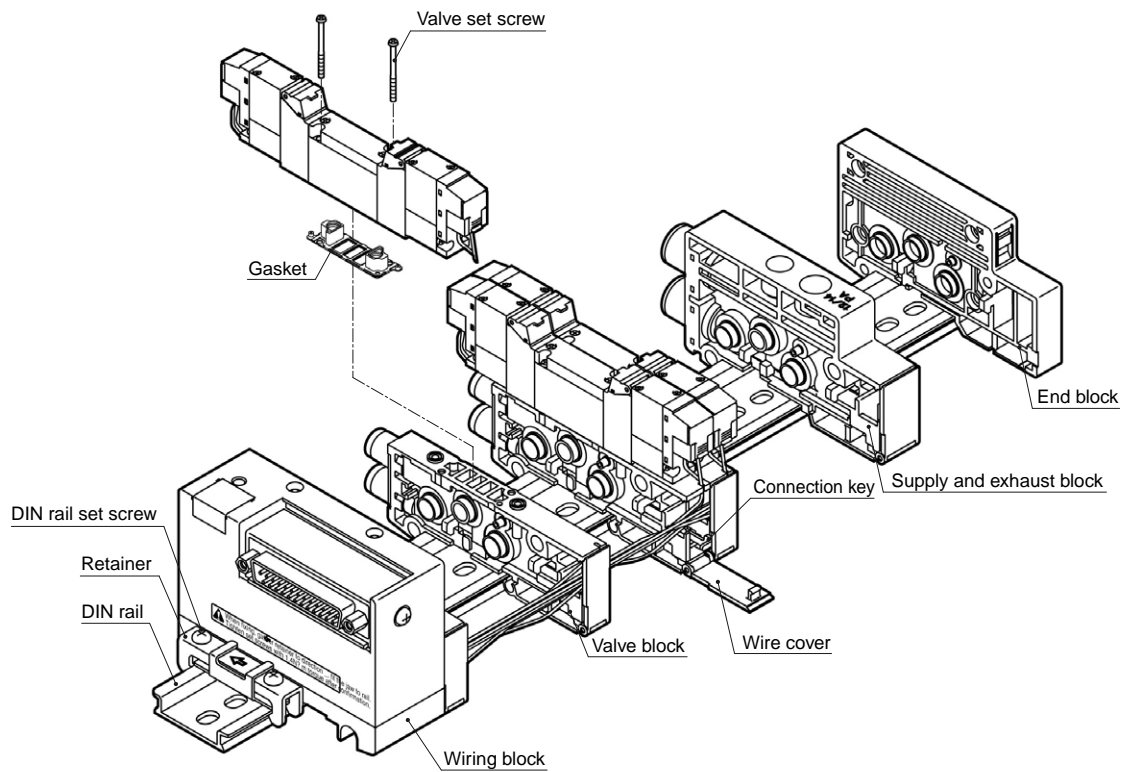
SKH

PCD/
FS/FD

3, 5 port pilot operated valve

Technical data 4) How to expand reduced wiring manifold

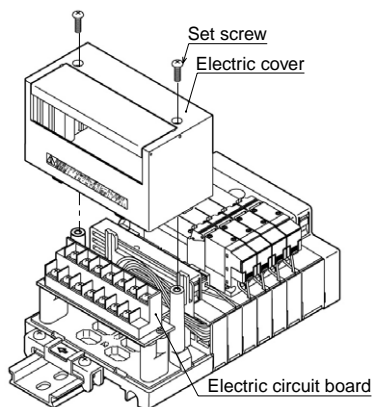
MN4G (deal drawing of block manifold)



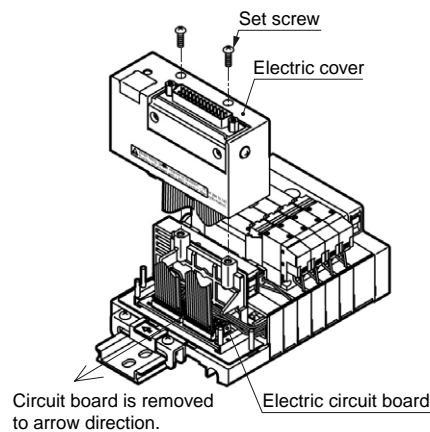
Example: When MN4GB1 D-sub connector right wiring specifications

Dismounting of electric cover

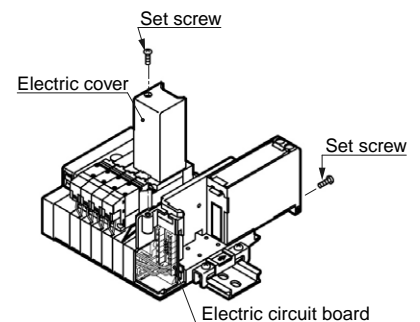
T10R/T11R



T30R/T5*R/T6*R



T7*



Valve replacement

Dismounting method

- (1) Remove the socket (signal wire).
- (2) Loosen set screws (two).
- (3) Remove valve from valve block.

Installation method

Perform the reverse way of dismounting.

Refer to right descriptions about recommended tightening torque of set screw.

Note) Valve blocks of (V1) for single and (V2) for double are different specifications. Therefore when changing single → double or change double → single, replace whole discrete valve block with solenoid.

Recommended tightening torque of valve set screw

	Size	Recommended tightening torque (N·m)
4G1	M1.7	0.18 to 0.22
4G2	M2.5	0.35 to 0.40

Valve block expansion

- 1) Loosen DIN rail set screws of retainer. (Refer to deal drawing)
- 2) Open the wire cover.
- 3) Pull the connection key of station to be expanded with a snap to remove the connection between blocks.
- 4) Remove the cover of wiring block to bare electric circuit board. [Electric cover dismounting]
- 5) Connect signal wire (socket assembly) [• 1] to electric circuit board [• 2], and assemble signal wire to valve block. (Fig. 1)
 - 1 [Refer to how to select socket assembly model No. for expansion].
 - 2 [Refer to instruction manual of electric circuit board connection].
- 6) Install an additional valve block on DIN rail.
- 7) Put blocks not to make gaps, and push keys to connect them.
- 8) Close the wire cover, and fix the cover of wiring block not to bite signal wires. (Tightening torque: 0.35 to 0.50N·m)
- 9) A) Fit the jaw of retainer to DIN rail,
 B) Put blocks not to make gaps between blocks,
 C) Push retainer to the arrow direction.
 D) Tighten DIN rail set screw. (Fig. 2) (Tightening torque: 1.2 to 1.6N·m)

* If the block position is closer than the most farther location from wiring block, expansion is possible up to 2 station.

How to select socket assembly model No. for expansion

Find Distance W between expansion position and wiring block (Fig. 3), and refer to <<Table 1>> to select adequate cable length. Socket assemblies of Solenoid a and b are different. Fig.3 shows left specifications wiring block. In the case of right specifications, calculate Distance W between expansion position and wiring block as well as left specifications.

Calculation of W

- When MN4G1

$$W = (10.5xn) + (16xm) + (10.5xl)$$
- When MN4G2

$$W = (16xn) + (18xm) + (10.5xl)$$

n: Valve block quantity, l: Partition block quantity,
 m: Supply/exhaust block quantity
- When MN4GX
 When calculation, width of mix block should be 16.

<<Socket assembly model No. for expansion >>

- Solenoid a
 N4G- SOCKET ASSY A - [Selection No.]
- Solenoid b
 N4G- RELAY SOCKET - [Selection No.]

Fig. 1

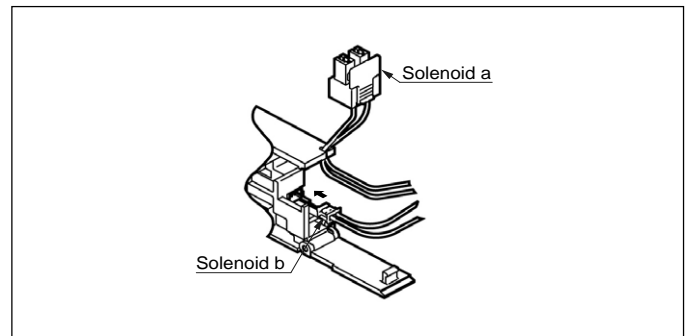


Fig. 2

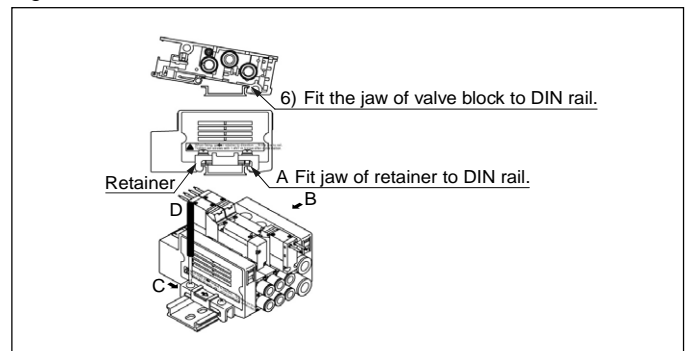
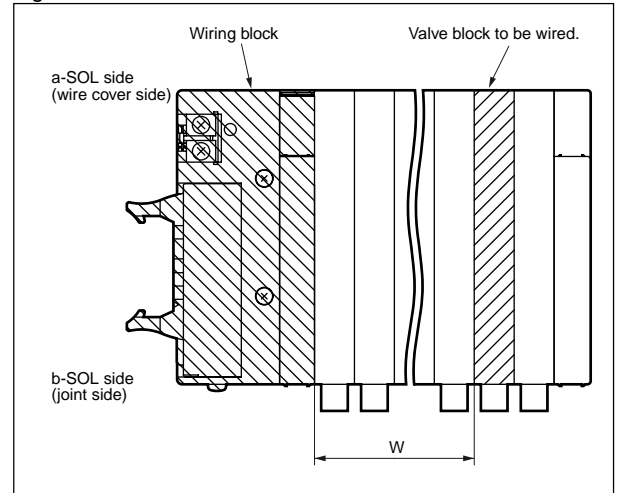


Fig. 3



<<Table 1>> W length - selection No. table

Selection No.	Wire type		
	T10/11(R)	T30/5*/6*(R)	T7*
2		0	25 or less
3	20 or less	0 to 30	25 to 55
4	20 to 70	30 to 80	55 to 105
5	70 to 120	80 to 130	105 to 155
6	120 to 170	130 to 180	155 to 205
7	170 to 260	180 to 270	205 to 295
8	260 to 350	270 to 360	295 to 385
9	350 to 450	360 to 460	385 to 485
10	450 to 570	460 to 580	485 to 605

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

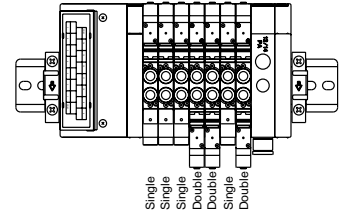
3, 5 port pilot operated valve

Technical data 4) How to expand reduced wiring manifold

Electric circuit board connection instruction (standard wire)

Connector and valve's compatibility on electric circuit board may differ depending on reduced wiring specifications (T10, T11, T30, T50, T51, T52, T53, T6*, T7*). When wiring connector, confirm connector No. printed on circuit board.

Wiring of mix manifold is shown according to example of manifold structure as right diagram.



	T10	T11																																																																																																																																																																																																																																																												
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Compatibility with valves	<p>1) When single SOL only (Max. 14 station)</p> <table border="1"> <tr><td>Connector No.</td><td>14</td><td>13</td><td>12</td><td>11</td><td>10</td><td>9</td><td>8</td></tr> <tr><td>Valve No.</td><td>14a</td><td>13a</td><td>12a</td><td>11a</td><td>10a</td><td>9a</td><td>8a</td></tr> <tr><td>Connector No.</td><td>7</td><td>6</td><td>5</td><td>4</td><td>3</td><td>2</td><td>1</td></tr> <tr><td>Valve No.</td><td>7a</td><td>6a</td><td>5a</td><td>4a</td><td>3a</td><td>2a</td><td>1a</td></tr> </table> <p>2) When double SOL only (Max. 7 station)</p> <table border="1"> <tr><td>Connector No.</td><td>14</td><td>13</td><td>12</td><td>11</td><td>10</td><td>9</td><td>8</td></tr> <tr><td>Valve No.</td><td>7b</td><td>7a</td><td>6b</td><td>6a</td><td>5b</td><td>5a</td><td>4b</td></tr> <tr><td>Connector No.</td><td>7</td><td>6</td><td>5</td><td>4</td><td>3</td><td>2</td><td>1</td></tr> <tr><td>Valve No.</td><td>4a</td><td>3b</td><td>3a</td><td>2b</td><td>2a</td><td>1b</td><td>1a</td></tr> </table> <p>3) When mix manifold (Max. 14 solenoids)</p> <table border="1"> <tr><td>Connector No.</td><td>14</td><td>13</td><td>12</td><td>11</td><td>10</td><td>9</td><td>8</td></tr> <tr><td>Valve No.</td><td>(Void)</td><td>(Void)</td><td>(Void)</td><td>(Void)</td><td>7b</td><td>7a</td><td>6a</td></tr> <tr><td>Connector No.</td><td>7</td><td>6</td><td>5</td><td>4</td><td>3</td><td>2</td><td>1</td></tr> <tr><td>Valve No.</td><td>5b</td><td>5a</td><td>4b</td><td>4a</td><td>3a</td><td>2a</td><td>1a</td></tr> </table>	Connector No.	14	13	12	11	10	9	8	Valve No.	14a	13a	12a	11a	10a	9a	8a	Connector No.	7	6	5	4	3	2	1	Valve No.	7a	6a	5a	4a	3a	2a	1a	Connector No.	14	13	12	11	10	9	8	Valve No.	7b	7a	6b	6a	5b	5a	4b	Connector No.	7	6	5	4	3	2	1	Valve No.	4a	3b	3a	2b	2a	1b	1a	Connector No.	14	13	12	11	10	9	8	Valve No.	(Void)	(Void)	(Void)	(Void)	7b	7a	6a	Connector No.	7	6	5	4	3	2	1	Valve No.	5b	5a	4b	4a	3a	2a	1a	<p>1) When single SOL only (Max. 24 station)</p> <table border="1"> <tr><td>Connector No.</td><td>24</td><td>23</td><td>22</td><td>21</td><td>20</td><td>19</td><td>18</td><td>17</td><td>16</td><td>15</td><td>14</td><td>13</td></tr> <tr><td>Valve No.</td><td>24a</td><td>23a</td><td>22a</td><td>21a</td><td>20a</td><td>19a</td><td>18a</td><td>17a</td><td>16a</td><td>15a</td><td>14a</td><td>13a</td></tr> <tr><td>Connector No.</td><td>12</td><td>11</td><td>10</td><td>9</td><td>8</td><td>7</td><td>6</td><td>5</td><td>4</td><td>3</td><td>2</td><td>1</td></tr> <tr><td>Valve No.</td><td>12a</td><td>11a</td><td>10a</td><td>9a</td><td>8a</td><td>7a</td><td>6a</td><td>5a</td><td>4a</td><td>3a</td><td>2a</td><td>1a</td></tr> </table> <p>2) When double SOL only (Max. 12 station)</p> <table border="1"> <tr><td>Connector No.</td><td>24</td><td>23</td><td>22</td><td>21</td><td>20</td><td>19</td><td>18</td><td>17</td><td>16</td><td>15</td><td>14</td><td>13</td></tr> <tr><td>Valve No.</td><td>12b</td><td>12a</td><td>11b</td><td>11a</td><td>10b</td><td>10a</td><td>9b</td><td>9a</td><td>8b</td><td>8a</td><td>7b</td><td>7a</td></tr> <tr><td>Connector No.</td><td>12</td><td>11</td><td>10</td><td>9</td><td>8</td><td>7</td><td>6</td><td>5</td><td>4</td><td>3</td><td>2</td><td>1</td></tr> <tr><td>Valve No.</td><td>6b</td><td>6a</td><td>5b</td><td>5a</td><td>4b</td><td>4a</td><td>3b</td><td>3a</td><td>2b</td><td>2a</td><td>1b</td><td>1a</td></tr> </table> <p>3) When mix manifold (Max. 24 solenoids)</p> <table border="1"> <tr><td>Connector No.</td><td>24</td><td>23</td><td>22</td><td>21</td><td>20</td><td>19</td><td>18</td><td>17</td><td>16</td><td>15</td><td>14</td><td>13</td></tr> <tr><td>Valve No.</td><td>(Void)</td><td>(Void)</td><td>(Void)</td><td>(Void)</td><td>(Void)</td><td>(Void)</td><td>(Void)</td><td>(Void)</td><td>(Void)</td><td>(Void)</td><td>(Void)</td><td>(Void)</td></tr> <tr><td>Connector No.</td><td>12</td><td>11</td><td>10</td><td>9</td><td>8</td><td>7</td><td>6</td><td>5</td><td>4</td><td>3</td><td>2</td><td>1</td></tr> <tr><td>Valve No.</td><td>(Void)</td><td>(Void)</td><td>7b</td><td>7a</td><td>6a</td><td>5b</td><td>5a</td><td>4b</td><td>4a</td><td>3a</td><td>2a</td><td>1a</td></tr> </table>	Connector No.	24	23	22	21	20	19	18	17	16	15	14	13	Valve No.	24a	23a	22a	21a	20a	19a	18a	17a	16a	15a	14a	13a	Connector No.	12	11	10	9	8	7	6	5	4	3	2	1	Valve No.	12a	11a	10a	9a	8a	7a	6a	5a	4a	3a	2a	1a	Connector No.	24	23	22	21	20	19	18	17	16	15	14	13	Valve No.	12b	12a	11b	11a	10b	10a	9b	9a	8b	8a	7b	7a	Connector No.	12	11	10	9	8	7	6	5	4	3	2	1	Valve No.	6b	6a	5b	5a	4b	4a	3b	3a	2b	2a	1b	1a	Connector No.	24	23	22	21	20	19	18	17	16	15	14	13	Valve No.	(Void)	(Void)	(Void)	(Void)	(Void)	(Void)	(Void)	(Void)	(Void)	(Void)	(Void)	(Void)	Connector No.	12	11	10	9	8	7	6	5	4	3	2	1	Valve No.	(Void)	(Void)	7b	7a	6a	5b	5a	4b	4a	3a	2a	1a
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Wire in turn of arrow sequence.																																																																																																																																																																																																																																																																																						

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/
HSVUniwire
system

SKH

PCD/
FS/FD

3, 5 port pilot operated valve

Technical data 4) How to expand reduced wiring manifold

How to connect electric circuit board (double wiring)

Not depending on solenoid valve position, double wiring specifications is compatible with double solenoid wire. Therefore, when standard wiring and double wiring double SOL only, wiring should be same. Refer to the following example of T53.

T53 (e.g.)																																																																																																																																																																									
Electric circuit board assembly																																																																																																																																																																									
Wire in turn of arrow sequence.																																																																																																																																																																									
Compatibility with valves	<p>• When single SOL, (Max.12 station)</p> <table border="1"> <tr><td>Pin No.</td><td>25</td><td>23</td><td>21</td><td>19</td><td>17</td><td>15</td><td>13</td><td>11</td><td>9</td><td>7</td><td>5</td><td>3</td><td>1</td></tr> <tr><td>Valve No.</td><td>COM</td><td>12a</td><td>11a</td><td>10a</td><td>9a</td><td>8a</td><td>7a</td><td>6a</td><td>5a</td><td>4a</td><td>3a</td><td>2a</td><td>1a</td></tr> </table> <table border="1"> <tr><td>Pin No.</td><td>26</td><td>24</td><td>22</td><td>20</td><td>18</td><td>16</td><td>14</td><td>12</td><td>10</td><td>8</td><td>6</td><td>4</td><td>2</td></tr> <tr><td>Valve No.</td><td>COM</td><td>(Void)</td><td>(Void)</td><td>(Void)</td><td>(Void)</td><td>(Void)</td><td>(Void)</td><td>(Void)</td><td>(Void)</td><td>(Void)</td><td>(Void)</td><td>(Void)</td><td>(Void)</td></tr> </table> <p>• When double SOL, (Max.13 station)</p> <table border="1"> <tr><td>Pin No.</td><td>25</td><td>23</td><td>21</td><td>19</td><td>17</td><td>15</td><td>13</td><td>11</td><td>9</td><td>7</td><td>5</td><td>3</td><td>1</td></tr> <tr><td>Valve No.</td><td>COM</td><td>12a</td><td>11a</td><td>10a</td><td>9a</td><td>8a</td><td>7a</td><td>6a</td><td>5a</td><td>4a</td><td>3a</td><td>2a</td><td>1a</td></tr> </table> <table border="1"> <tr><td>Pin No.</td><td>26</td><td>24</td><td>22</td><td>20</td><td>18</td><td>16</td><td>14</td><td>12</td><td>10</td><td>8</td><td>6</td><td>4</td><td>2</td></tr> <tr><td>Valve No.</td><td>COM</td><td>12b</td><td>11b</td><td>10b</td><td>9b</td><td>8b</td><td>7b</td><td>6b</td><td>5b</td><td>4b</td><td>3b</td><td>2b</td><td>1b</td></tr> </table> <p>• When mix, (Max.24 solenoid)</p> <table border="1"> <tr><td>Pin No.</td><td>25</td><td>23</td><td>21</td><td>19</td><td>17</td><td>15</td><td>13</td><td>11</td><td>9</td><td>7</td><td>5</td><td>3</td><td>1</td></tr> <tr><td>Valve No.</td><td>COM</td><td>(Void)</td><td>(Void)</td><td>(Void)</td><td>(Void)</td><td>(Void)</td><td>7a</td><td>6a</td><td>5a</td><td>4a</td><td>3a</td><td>2a</td><td>1a</td></tr> </table> <table border="1"> <tr><td>Pin No.</td><td>26</td><td>24</td><td>22</td><td>20</td><td>18</td><td>16</td><td>14</td><td>12</td><td>10</td><td>8</td><td>6</td><td>4</td><td>2</td></tr> <tr><td>Valve No.</td><td>COM</td><td>(Void)</td><td>(Void)</td><td>(Void)</td><td>(Void)</td><td>(Void)</td><td>7b</td><td>(Void)</td><td>6b</td><td>5b</td><td>4b</td><td>(Void)</td><td>(Void)</td></tr> </table> <p>• Wiring rule</p> <p>Wire in turn of arrows.</p> <p>(in turn of connector No.)</p>	Pin No.	25	23	21	19	17	15	13	11	9	7	5	3	1	Valve No.	COM	12a	11a	10a	9a	8a	7a	6a	5a	4a	3a	2a	1a	Pin No.	26	24	22	20	18	16	14	12	10	8	6	4	2	Valve No.	COM	(Void)	(Void)	(Void)	(Void)	(Void)	(Void)	(Void)	(Void)	(Void)	(Void)	(Void)	(Void)	Pin No.	25	23	21	19	17	15	13	11	9	7	5	3	1	Valve No.	COM	12a	11a	10a	9a	8a	7a	6a	5a	4a	3a	2a	1a	Pin No.	26	24	22	20	18	16	14	12	10	8	6	4	2	Valve No.	COM	12b	11b	10b	9b	8b	7b	6b	5b	4b	3b	2b	1b	Pin No.	25	23	21	19	17	15	13	11	9	7	5	3	1	Valve No.	COM	(Void)	(Void)	(Void)	(Void)	(Void)	7a	6a	5a	4a	3a	2a	1a	Pin No.	26	24	22	20	18	16	14	12	10	8	6	4	2	Valve No.	COM	(Void)	(Void)	(Void)	(Void)	(Void)	7b	(Void)	6b	5b	4b	(Void)	(Void)
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