Wiring example

Driver Frame Type Symbol (Frame A, B, C, D)

For details, refer to the Instruction Manual.

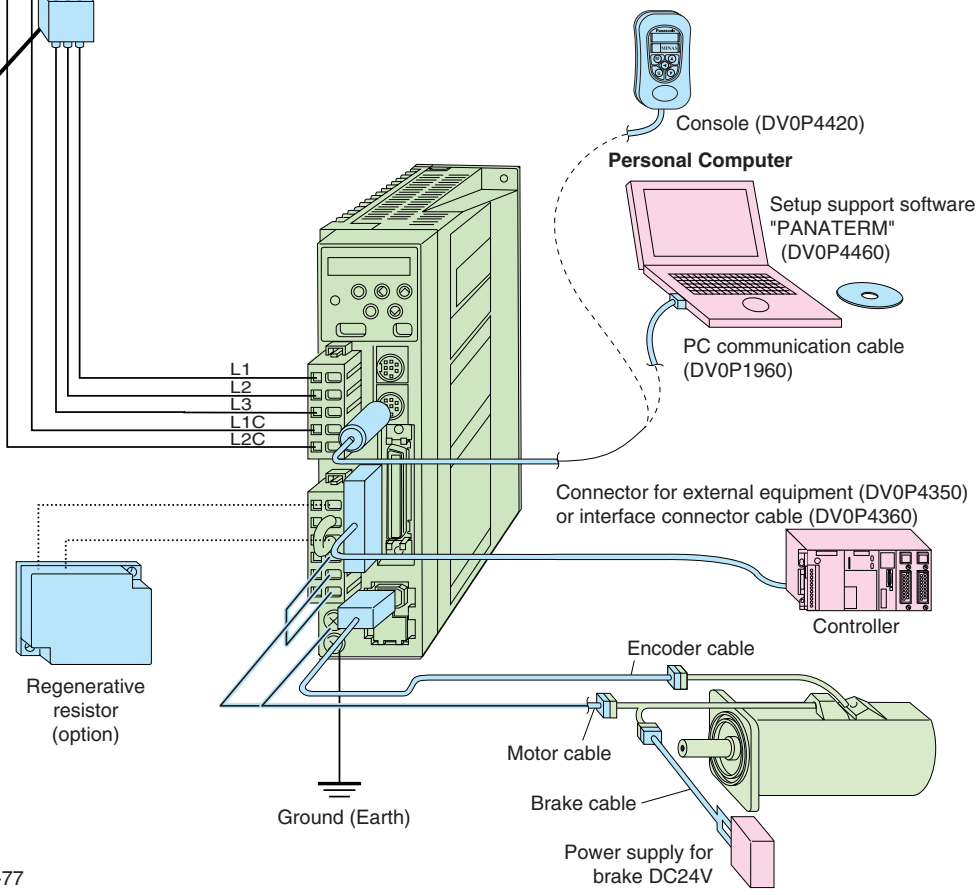
● Wiring of main circuit

Circuit Breaker (NFB)
Protects the power lines.
Shuts off the circuit when overcurrent passes.

Noise Filter (NF)
Prevents external noise from the power lines.
And reduces an effect of the noise generated by the servo driver.

Magnetic Contactor (MC)
Turns on/off the main power of the servo driver.
Surge absorber to be used together with this.

Reactor (L)
Reduces harmonic current of the main power.



Pin RB1, RB2 and RB3 ...

- RB2 and RB3 to be kept shorted for normal operation.
- When the internal regenerative resistor capacity has shortage, disconnect between RB2 and RB3, then connect an external regenerative resistor between RB1 and RB2. (Note: that no regenerative resistor is equipped in Frame A and B type.)

Motor to page A4-77
Driver to page A4-15
Option to page A4-141
Recommended equipments to page A4-12
Parts customer to prepare

Driver Frame Type Symbol (Frame E, F)

For details, refer to the Instruction Manual.

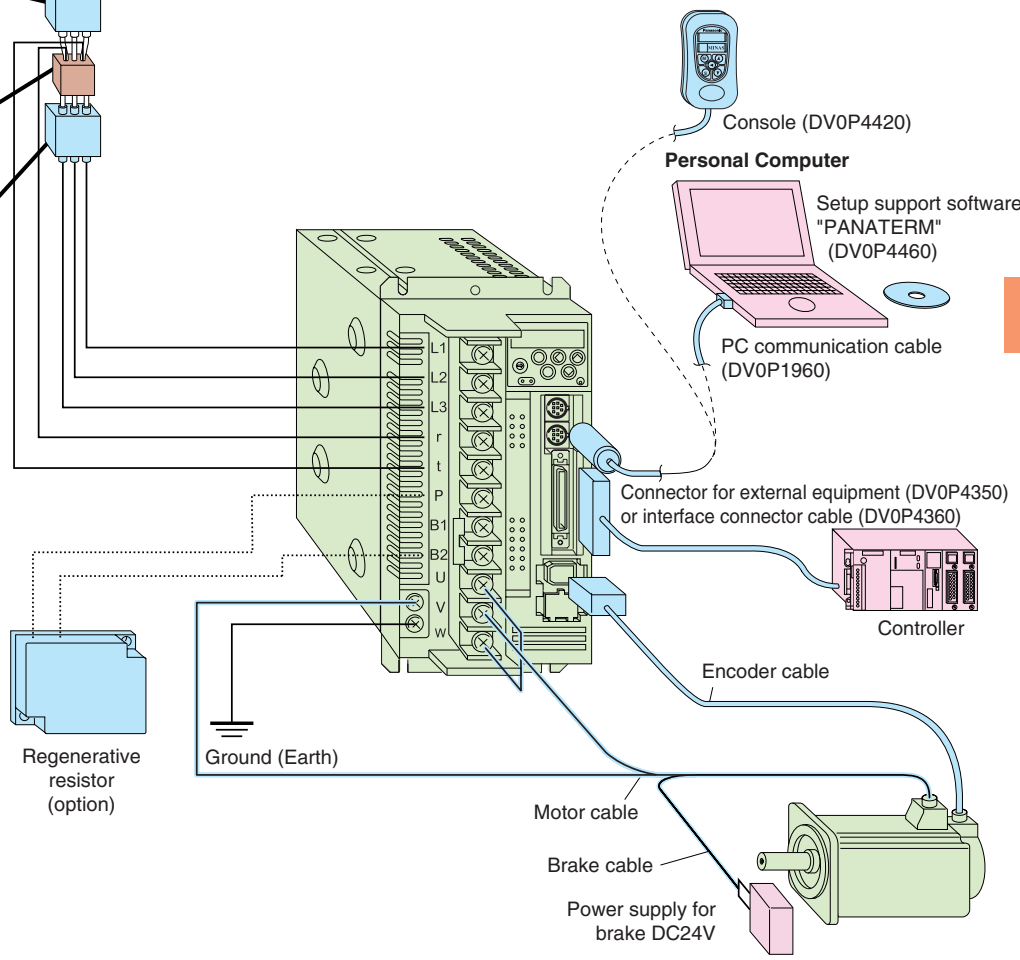
● Wiring of main circuit

Circuit Breaker (NFB)
Protects the power lines.
Shuts off the circuit when overcurrent passes.

Noise Filter (NF)
Prevents external noise from the power lines.
And reduces an effect of the noise generated by the servo driver.

Magnetic Contactor (MC)
Turns on/off the main power of the servo driver.
Surge absorber to be used together with this.

Reactor (L)
Reduces harmonic current of the main power.



P, B1 and B2 ...

- B1 and B2 to be kept shorted for normal operation.
- When the internal regenerative resistor capacity has shortage, disconnect between B1 and B2, then connect an external regenerative resistor between P and B2.

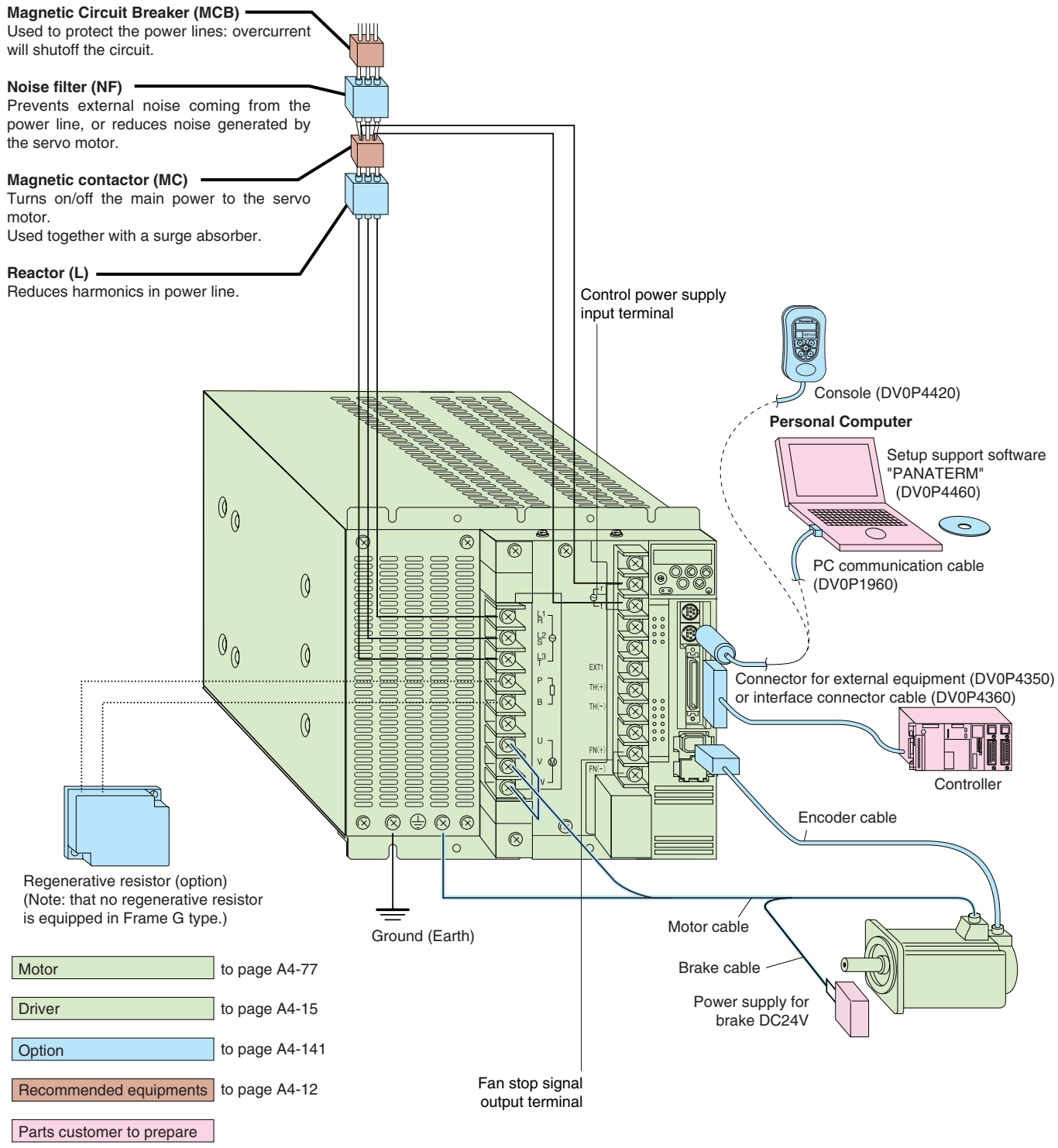
Motor to page A4-77
Driver to page A4-15
Option to page A4-141
Recommended equipments to page A4-12
Parts customer to prepare

Wiring example

Driver Frame Type Symbol (Frame G)

For details, refer to the Instruction Manual.

● Wiring of main circuit



● List of recommended peripheral equipments

Power supply voltage	Applicable motor Series	Applicable motor Output	Power capacity (atrated load)	Circuit breaker (rated current)	Noise filter	Surge absorber	Noise filter (signal)	Magnetic contactor (Contact)	Cable diameter (Main circuit)	Cable diameter (controlcircuit)	Connector
Single phase, 100V	MSMD	50W	Approx. 0.4kVA	BBW2102 (10A)	DVOP4170	DVOP4190	DVOP1460	BMFT61041N (3P+1a)	0.75mm² to 2.0mm² AWG14 to 18	0.75mm² AWG18	Connection to exclusive connector
	MSMD MQMA	100W									
	MQMA	200W	Approx. 0.5kVA								
		400W	Approx. 0.9kVA		DVOP4180			BMFT61541N (3P+1a)			
Single phase, 200V	MSMD	50W	Approx. 0.5kVA		DVOP4170			BMFT61542N (3P+1a)			
		100W									
	MAMA MQMA	100W	Approx. 0.3kVA								
	MAMA MSMD MQMA	200W	Approx. 0.5kVA								
	MSMD MQMA	400W	Approx. 0.9kVA								
Single/ 3-phase, 200V	MAMA MFMA	400W	Approx. 0.9kVA	BBW3152 (15A)	DVOP4180	DVOP1450					
	MHMA	500W	Approx. 1.1kVA								
	MSMD	750W	Approx. 1.3kVA								
	MAMA		Approx. 1.6kVA		DVOP4220			BMFT61842N (3P+1a)	2.0mm² AWG14		
	MDMA MHMA	1.0kW	Approx. 1.8kVA								
	MGMA	900W		BBW3202 (20A)							
	MSMA	1.0kW									
	MSMA MDMA MFMA MHMA	1.5kW	Approx. 2.3kVA								
3-phase, 200V	MSMA MDMA MHMA	2.0kW	Approx. 3.3kVA	BBW3302 (30A)	DVOP4220			BMF6352N (3P+2a2b)	3.5mm² AWG12		Terminal block M5 11.0 or smaller ø5.3
	MFMA	2.5kW	Approx. 3.8kVA	BBW350S (50A)	DVOP3410						
	MGMA	2.0kW									
	MSMA MDMA MHMA MGMA	3.0kW	Approx. 4.5kVA								
	MSMA MDMA MHMA	4.0kW	Approx. 6.0kVA					BMF6652N (3P+2a2b)	5.3mm² AWG10		
	MFMA	4.5kW	Approx. 6.8kVA								
	MGMA		Approx. 7.5kVA								
	MSMA MDMA MHMA	5.0kW									
	MGMA	6.0kW	Approx. 9.0kVA	BBW360S (60A)					L1, L2, L3 5.3mm² AWG10 U, V, W 14mm² AWG6		
	MDMA MHMA	7.5kW	Approx. 11kVA								

●Select a single and 3-phase common specifications corresponding to the power supplies.
●Listed circuit breaker and magnetic contactor are manufactured by Panasonic Electric Works.
To conform to EC Directives, install a circuit breaker which conforms to IEC and UL Standards (Listed, UL marked) between noise filter and power supply without fail.
●For details of noise filter, refer to Page A4-138.

<Remarks>

- Select a circuit breaker and noise filter which match to the capacity of power supply (including a load condition).
- Terminal block and earth terminals
  - Use a copper conductor cables with temperature rating of 60˚C or higher.
  - Earth terminals for Frame A to D are M4 and M5 for Frame E to G.
  - Larger tightening toque for screws than the max.value (M4 : 1.2 N·m, M5 : 2.0 N·m) may damage the terminal block.
  - Mounting screws on the cover of terminal block for frames E to G and screw on acrylic cover of terminal block for frame G should be tightened with 0.2 N·m torque.
    Application of torque larger than 0.2 N·m may damage the thread on the driver.
- Use an earth cable with the same diameter as that of the main circuit cable.
  If the diameter of the main circuit cable is 1.6mm² or less, use an earth cable with a diameter of 1.6mm² (AWG14).
- Use the attached exclusive connector for A to D-frame, and maintain the peeled off length of 8 tot 9mm.
- Tighten the screws of the connector, CN X5 for the host controller with the torque of 0.3 to 0.35 N·m.
- Larger torque than 0.35N·m may damage the connector at the driver side.

<Caution>

Do not turn on power without first positively tightening all terminal block screws, otherwise, loose contacts may generate heat (smoking, firing).