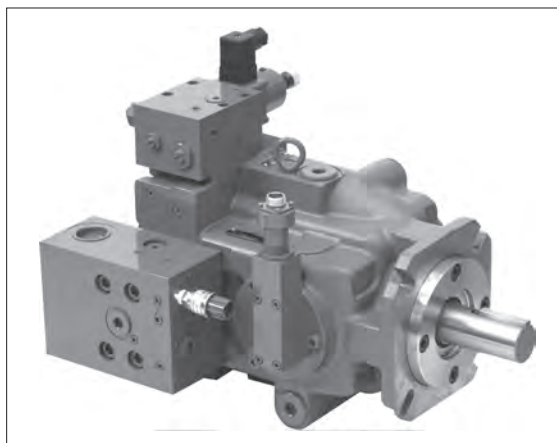


# Electric direct control system variable displacement piston pumps



## Model Code

PH80-MS(\*) (F)YR-21-EDHS2-10

1 2 3 4 5 6 7 8 9 10

- |  |  |
|--|--|
| <p>1 PH Series swash plate type variable displacement piston pump<br/>PH56, PH80, PH100, PH130, PH170</p> <p>2 Port specifications<br/>M: standard</p> <p>3. 4 Code for double pump<br/>S: single pump<br/>* Consult Tokyo Keiki for double pump configurations</p> <p>5 Pump mounting<br/>Omit: flange mounting<br/>F: foot mounting</p> <p>6 Shaft end configuration<br/>Y: long shaft w/SAE key</p> | <p>7 Rotation (viewed from shaft end)<br/>R: right rotation (clockwise)<br/>L: left rotation (counter-clockwise)</p> <p>8 Pump design no.</p> <p>9 Pump control method<br/>EDHS2 : electric direct control [flow, pressure]</p> <p>10 Control valve design no.</p> |
|--|--|

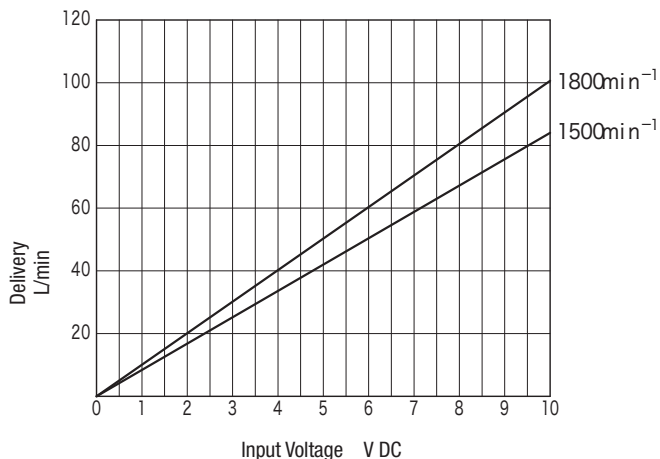
## Specifications

Model Code		PH56	PH80	PH100	PH130	PH170
Maximum displacement volume	cm <sup>3</sup> /rev	56	80	100	130	170
Working pressure	MPa	21				
Allowable speed	min <sup>-1</sup>	600~1800				
Flow control	Max. flow L/min.	100.8	144	180	234	306
	Hysteresis	Less than 1%				
	Repeatability	Less than 1%				
	Command signal	DC10V (10V = Max. flow)				
Pressure control	Min. adjustable pressure	0.3 MPa				
	Hysteresis	Less than 1%				
	Repeatability	Less than 1%				
	Command signal	DC10V (10V = 21MPa)				
Weight kg	Flange mounting	48	60	85	109	120
	Foot mounting	56	70	95	120	130

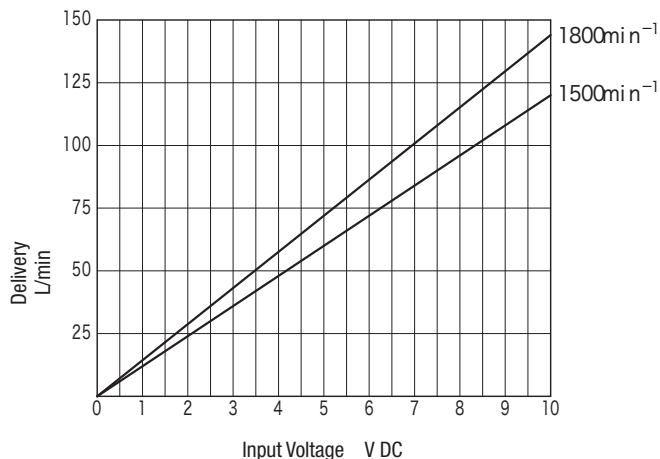
**Characteristics Curve (1800 min<sup>-1</sup>, 20 mm<sup>2</sup>/s) (typical examples)**

Input voltage – Flow characteristics

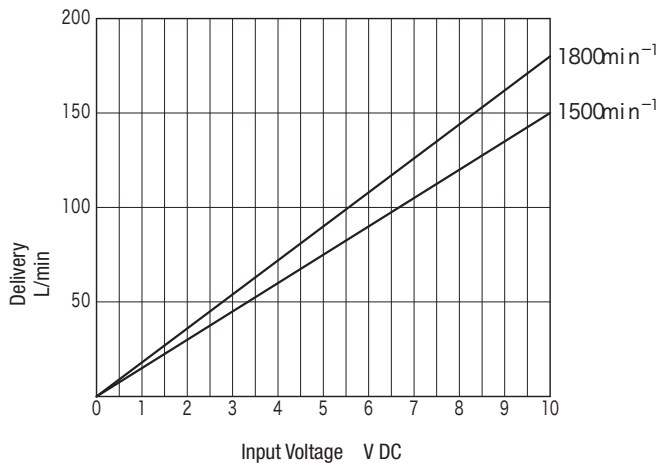
**PH56**



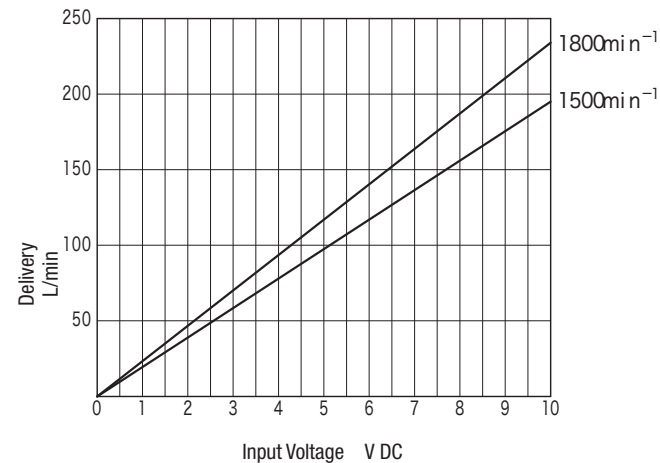
**PH80**



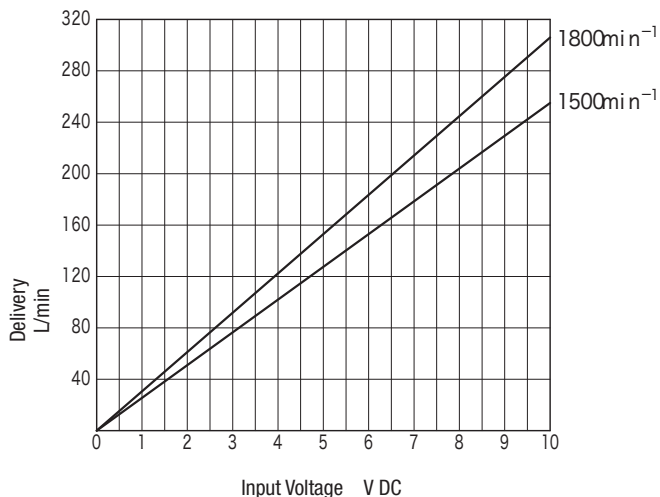
**PH100**



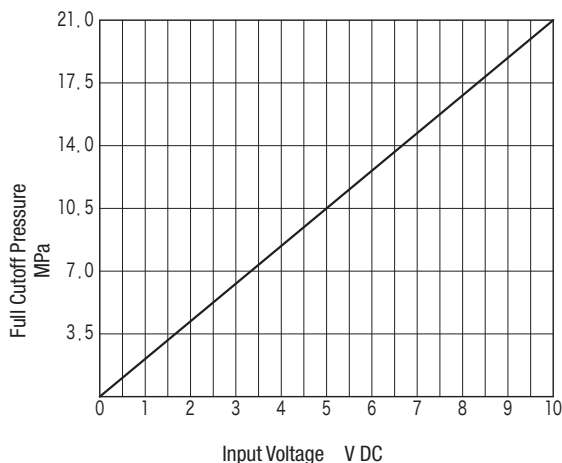
**PH130**



**PH170**



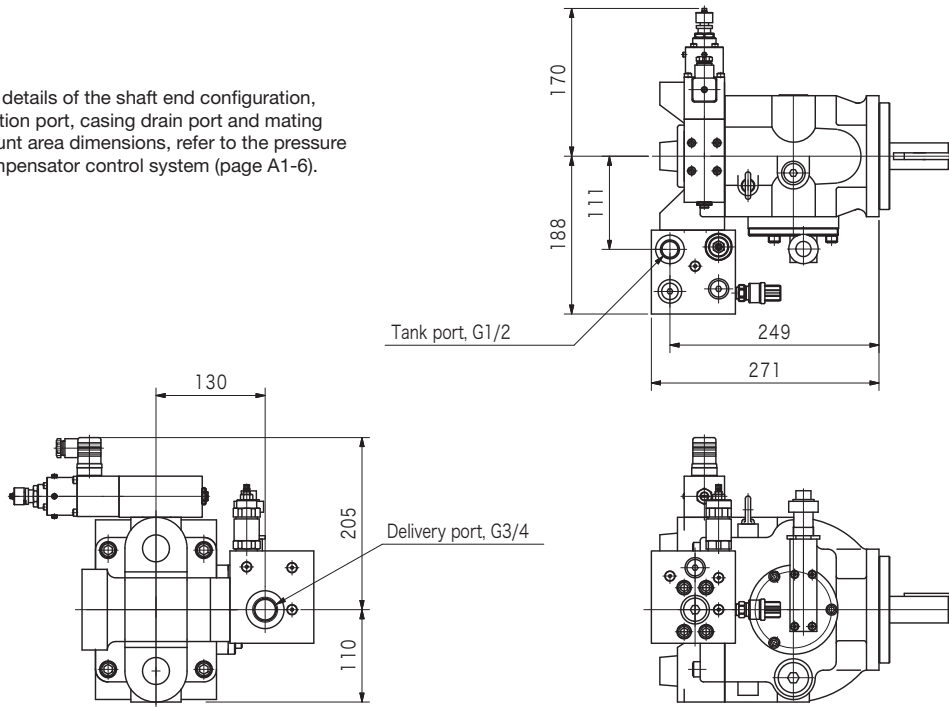
Input voltage – Pressure characteristics



## Dimensions

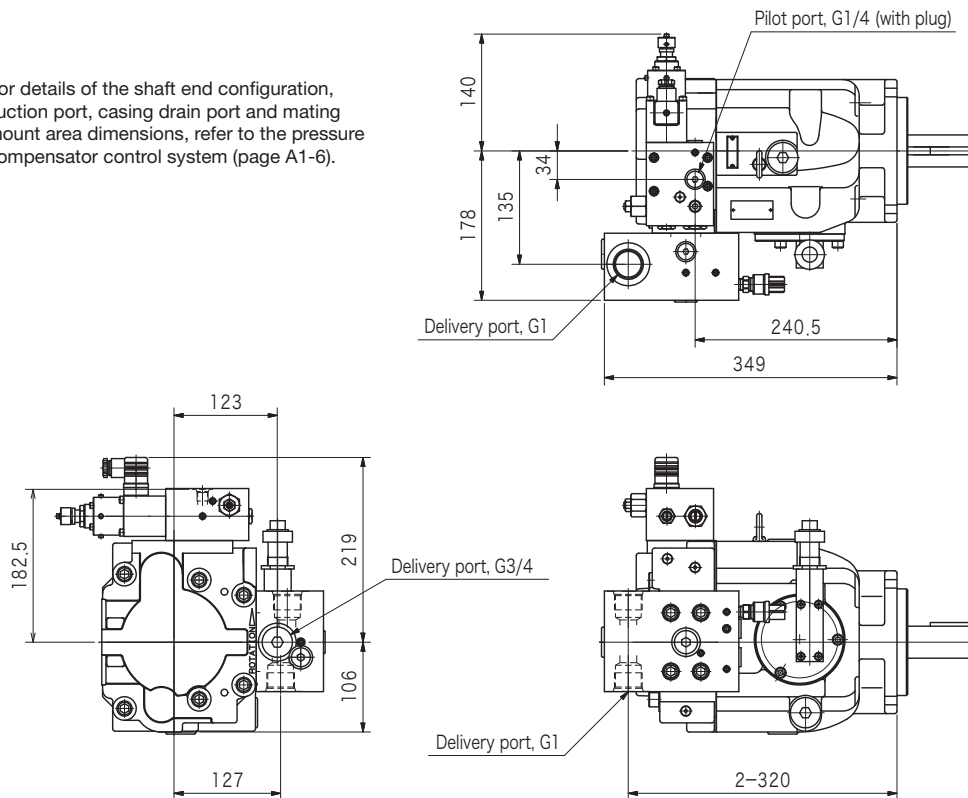
### PH56

Note: For details of the shaft end configuration, suction port, casing drain port and mating mount area dimensions, refer to the pressure compensator control system (page A1-6).



### PH80

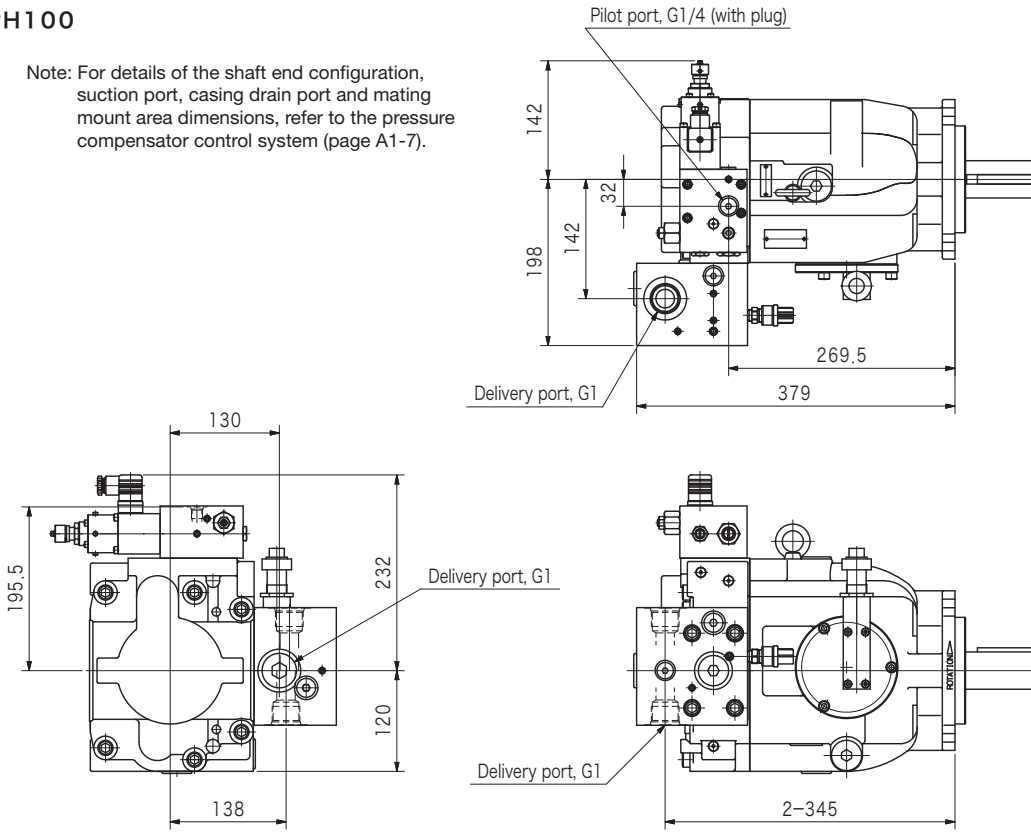
Note: For details of the shaft end configuration, suction port, casing drain port and mating mount area dimensions, refer to the pressure compensator control system (page A1-6).



**Dimensions**

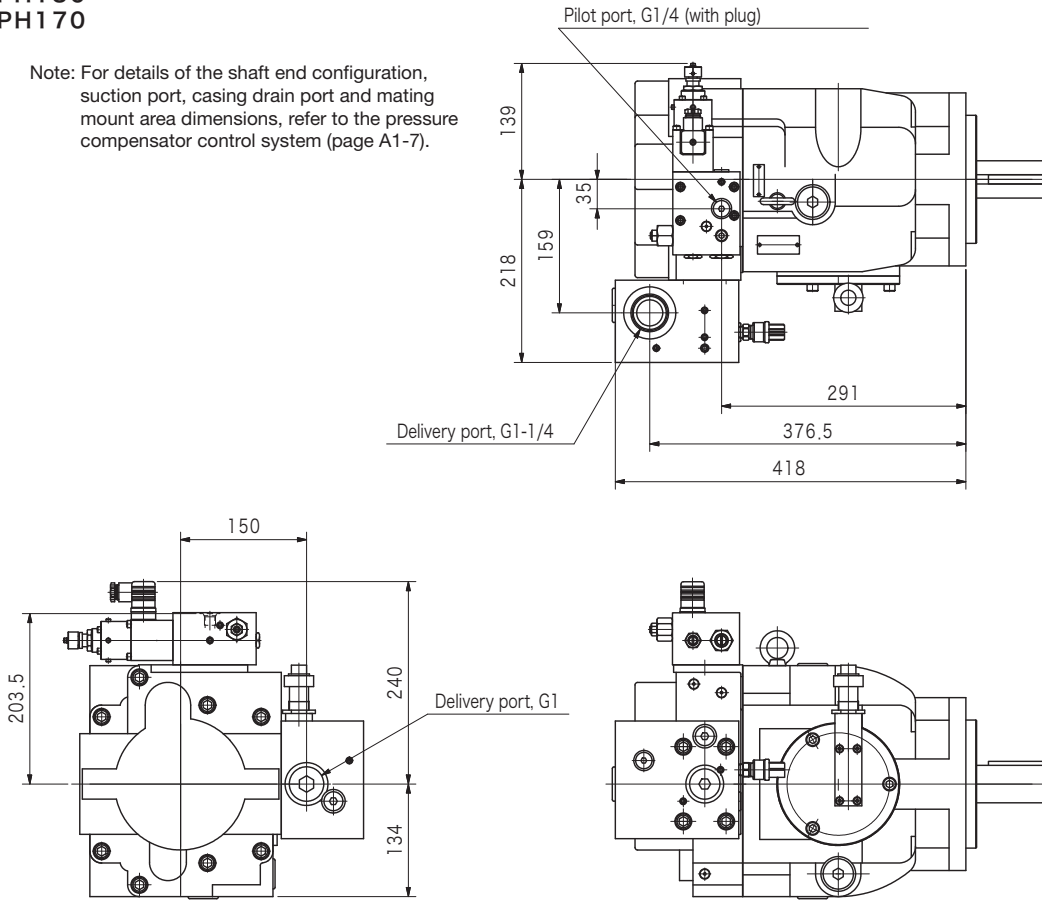
**PH100**

Note: For details of the shaft end configuration, suction port, casing drain port and mating mount area dimensions, refer to the pressure compensator control system (page A1-7).



**PH130**  
**PH170**

Note: For details of the shaft end configuration, suction port, casing drain port and mating mount area dimensions, refer to the pressure compensator control system (page A1-7).

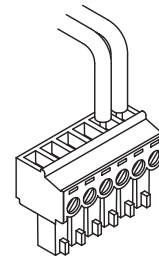


Specifications

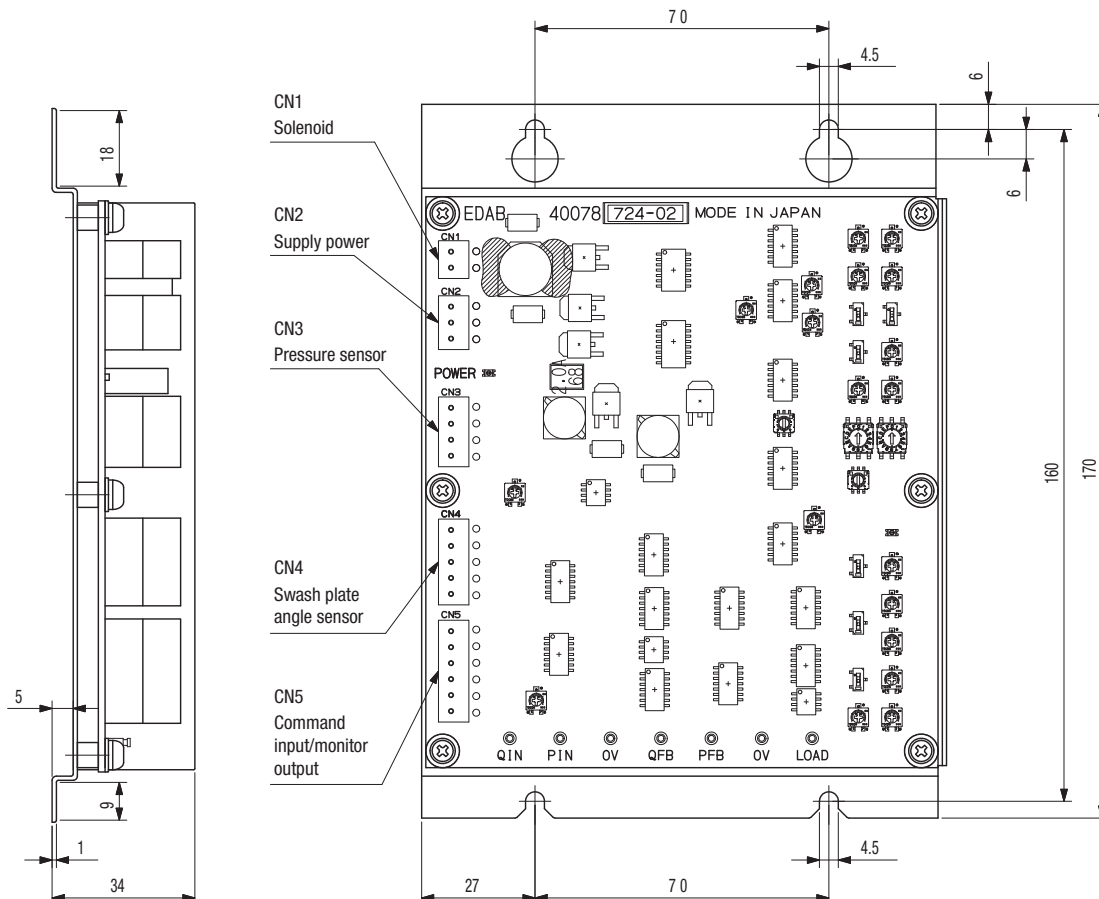
Supply voltage	DC24V±10%	
Supply current consumption	Max. consumption during transitions	: 2A
	Steady state	: 0.9A
Drive current output	Applicable solenoid coil resistance	: 10Ω
Command inputs	Flow command	: DC 0 to 10V (100% flow at 10V)
	Pressure command	: DC 0 to 10V (21MPa at 10V)
	Input impedance	: 10kΩ
Monitor outputs	Flow command	: DC0~10V (QIN)
	Pressure command	: DC0~10V (PIN)
	Flow feedback	: DC0~10V (QFB)
	Pressure feedback	: DC0~10V (PFB)
	Recommended load resistance	: More than 10kΩ
	Minimum load resistance	: 3.6kΩ, maximum current: 2.8mA
Working temperature range	0~+55°C	
Storage temperature range	-10~+80°C	

Compatible connectors \* These are to be provided by the user.

Code	Model Code	No. of Poles	
CN1	1803578	2	Manufacturer : Phoenix Contact Pitch between pins : 3.81 mm Length of stripped wire : 7 mm Tightening screwdriver : Flathead screwdriver, W=2.5, T=0.6 Tightening torque : 0.22~0.25 N·m
CN2	1803581	3	
CN3	1803594	4	
CN4	1803604	5	
CN5	1803617	6	

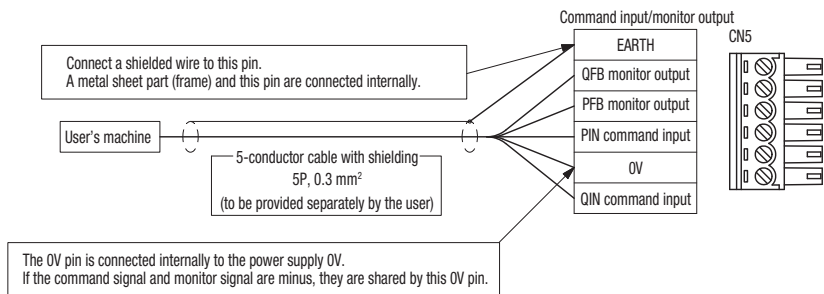
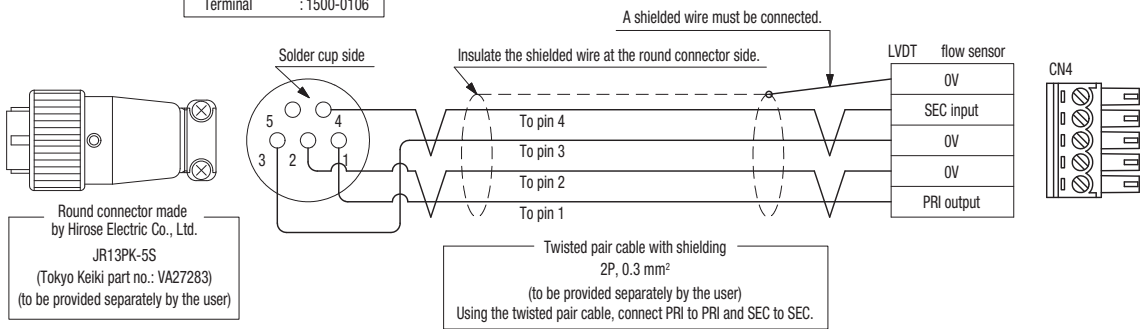
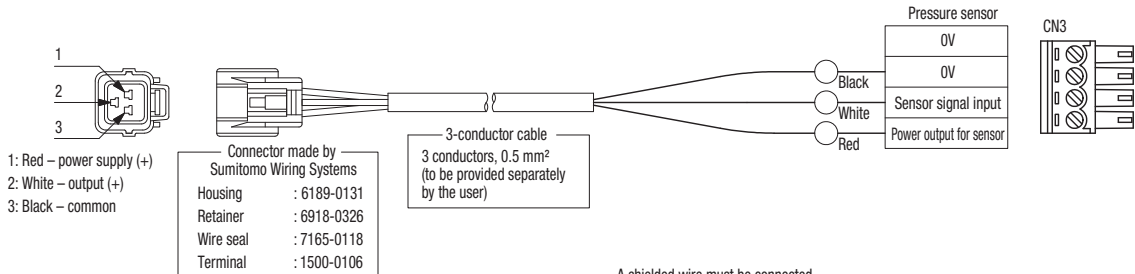
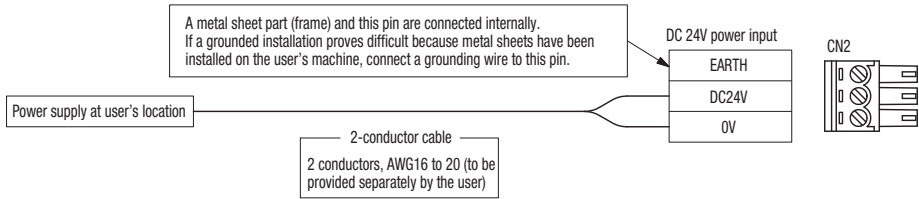
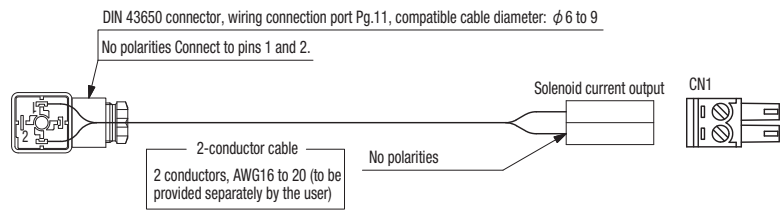
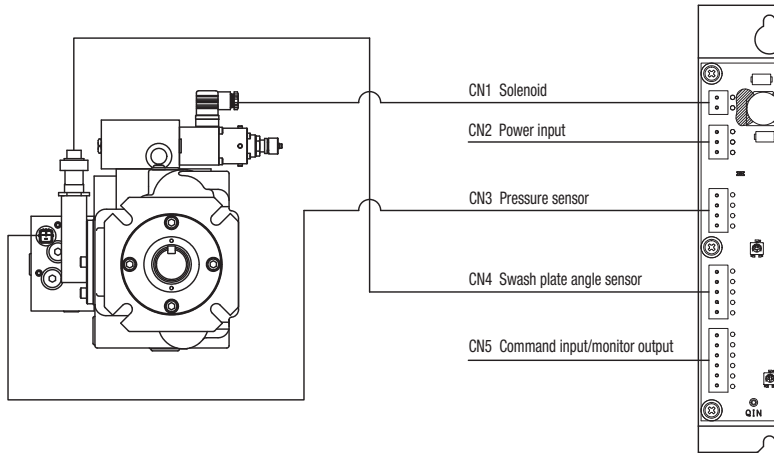


Dimensions

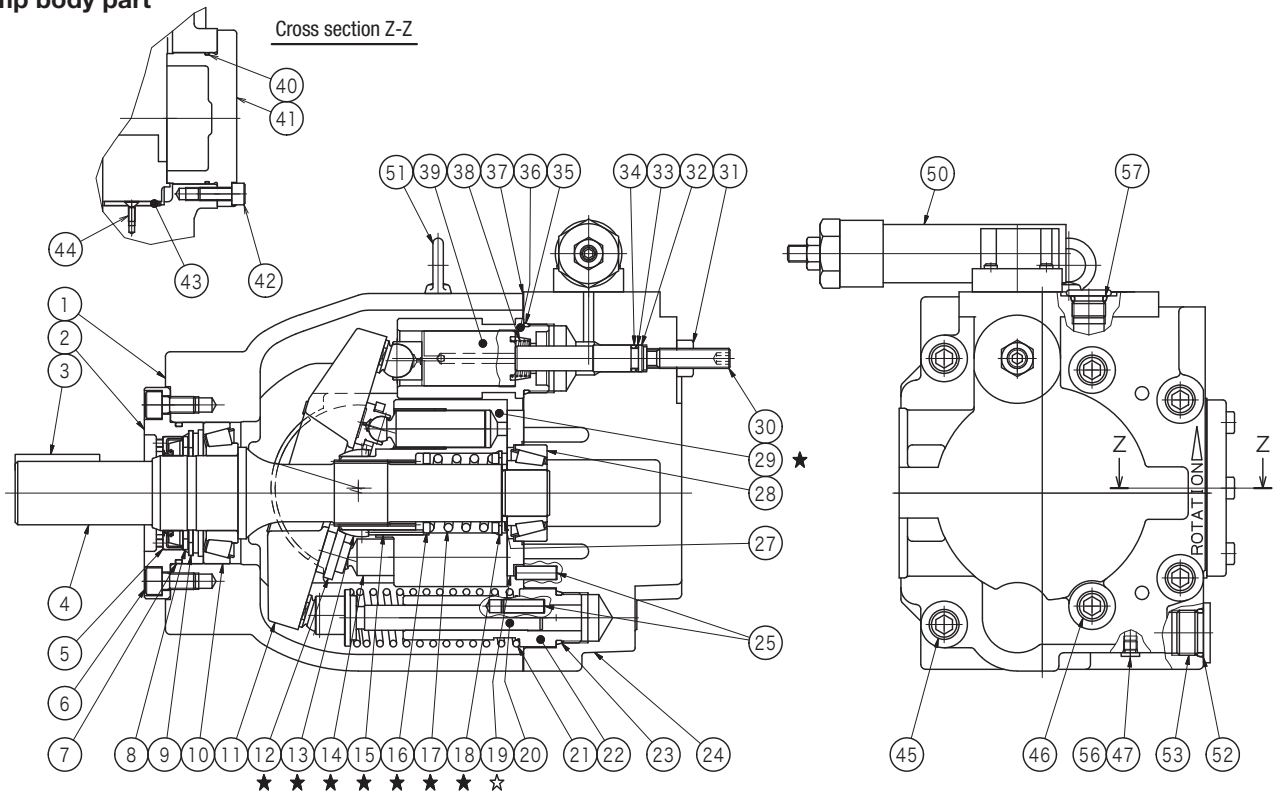


# Wiring connections between pump and controller

Refer to the illustrations below for the connections between the controller and the control valve (solenoid) and sensors (pressure and swash plate angle) of the pump.



Pump body part



PH56

No.	Name	Part No.	Standard	Quantity
5	Shaft seal	40012883	—	1
7	O-ring	008051119	JIS B 2401 1B-G75	1
23	O-ring	007991419	AS568-914 (NBR, Hs90)	1
33	Backup ring	008101202	JIS B 2407 T2-P12	1
34	O-ring	008001219	JIS B 2401 1B-P12	1
35	O-ring	007991419	AS568-914 (NBR, Hs90)	1
37	Gasket	40032097	—	1
40	O-ring	007904119	AS568-041 (NBR, Hs90)	1
52	O-ring	008002219	JIS B 2401 1B-P22.4	1
56	O-ring	007990219	AS568-902 (NBR, Hs90)	1
57	O-ring	008001419	JIS B 2401 1B-P14	1

PH80

No.	Name	Part No.	Standard	Quantity
5	Shaft seal	VA19648	—	1
7	O-ring	008051219	JIS B 2401 1B-G80	1
23	O-ring	007991419	AS568-914 (NBR, Hs90)	1
33	Backup ring	008101202	JIS B 2407 T2-P12	1
34	O-ring	008001219	JIS B 2401 1B-P12	1
35	O-ring	007992019	AS568-920 (NBR, Hs90)	1
37	Gasket	40017811	—	1
40	O-ring	007904119	AS568-041 (NBR, Hs90)	1
52	O-ring	008002219	JIS B 2401 1B-P22.4	3
56	O-ring	007990219	AS568-902 (NBR, Hs90)	4

PH100

No.	Name	Part No.	Standard	Quantity
5	Shaft seal	40011048	—	1
7	O-ring	008051319	JIS B 2401 1B-G85	1
23	O-ring	007991419	AS568-914 (NBR, Hs90)	1
33	Backup ring	008101202	JIS B 2407 T2-P12	1
34	O-ring	008001219	JIS B 2401 1B-P12	1
35	O-ring	007992019	AS568-920 (NBR, Hs90)	1
37	Gasket	40021003	—	1
40	O-ring	007904319	AS568-043 (NBR, Hs90)	1
52	O-ring	008002219	JIS B 2401 1B-P22.4	3
56	O-ring	007990219	AS568-902 (NBR, Hs90)	4

PH130/PH170

No.	Name	Part No.	Standard	Quantity
5	Shaft seal	40011048	—	1
7	O-ring	008051419	JIS B 2401 1B-G90	1
23	O-ring	007991419	AS568-914 (NBR, Hs90)	1
33	Backup ring	008101202	JIS B 2407 T2-P12	1
34	O-ring	008001219	JIS B 2401 1B-P12	1
35	O-ring	007992019	AS568-920 (NBR, Hs90)	1
37	Gasket	40024503	—	1
40	O-ring	007904519	AS568-045 (NBR, Hs90)	1
52	O-ring	008002219	JIS B 2401 1B-P22.4	3
56	O-ring	007990219	AS568-902 (NBR, Hs90)	4

Rotating group kit

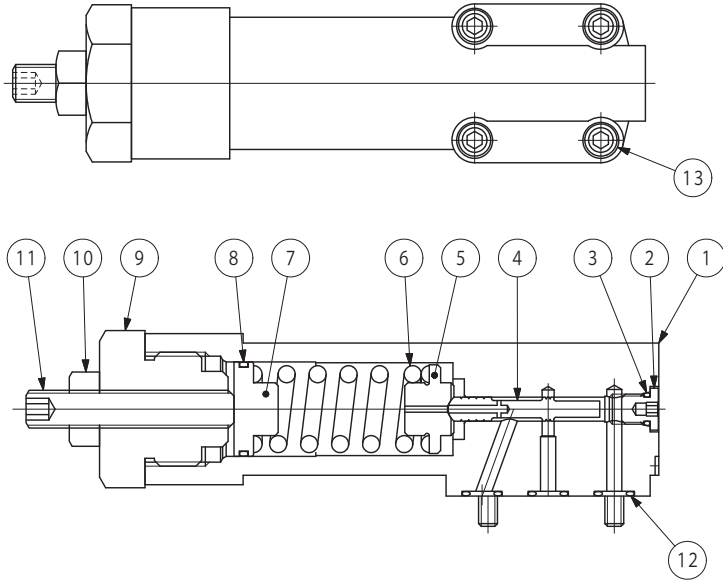
Model Code	PH56	PH80	PH100	PH130	PH170
Rotating group kit (★ marked parts)	40078940	40048885	40038843	40058177	40068811
Right hand rotating group kit (★, ☆ marked parts)	40088131	40068523	40068507	40068562	40068854
Left hand rotating group kit (★, ☆ marked parts)	40088132	40068524	40068508	40068563	40068855

Seal kit for pump body part (pump control part not included)

Model Code	PH56	PH80	PH100	PH130/PH170
Seal kit part no.	40088422	40068287	40068288	40068289

**Construction**

**Pressure compensator mechanism parts (CH: Pressure compensator control)**



No.	Name	Part No.	Standard	Quantity
3	O-ring	007990219	AS568-902 (NBR, Hs90)	1
8	O-ring	007902019	AS568-020 (NBR, Hs90)	1
12	O-ring	007901119	AS568-011 (NBR, Hs90)	3