

Selection guide

Constant temperature incubator/shaker
CO₂ incubator/shaker
CO₂ incubator/shaker

Shaker

Mixer
Rotator
Stirrer

Bead beater
homogenizer
Ultrasonic homogenizer

Aluminum block bath
Minimize bath

Water bath
Shaking water bath
Immersion cooler

Hybridization oven
Constant temperature chamber

Centrifugal concentrator
Cold trap

Freeze dryer

Electrophoresis and
Blotting apparatus

Constant temperature water circulating system [Chiller]

Appendix

P-11/21/310 for Compact CH series (AC 100 V)

Original vertical leakless pump.

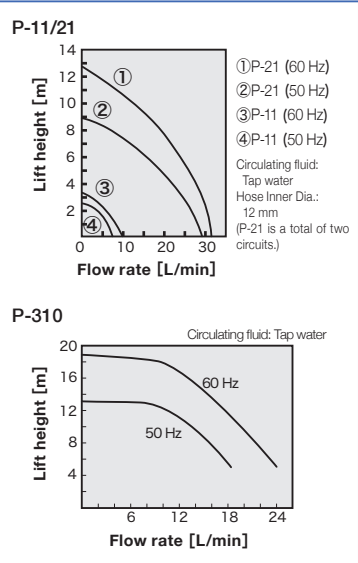
Compact CH series (AC 100 V) --> P.178 - 179



Model	P-11	P-21	P-310
Applicable units	CH-151AF/601A CH-151BF/601B	CH-601A	CH-601A CH-601B
Max. lift height [m] (50/60 Hz)	3/4	9/13	12.5/17
Max. flow rate [L/min] (50/60 Hz)	8/9	29/32 (*1)	19/23
Nozzle diameter	13 mm	13 mm (changeable to 9 mm by an optional part)	—
Connection diameter	Rc3/8	—	Rc3/8
Circulatory circuit	1	2	1
Motor output	40 W	150 W	250 W
Safety device/function	Thermal protector		
Materials of wetted parts	Stainless, Brass (*2)	Stainless, Brass, Vinyl chloride resin	Stainless
Weight	approx. 7 kg	approx. 8 kg	approx. 13 kg
Power Supply (from the main unit)	AC 100 V·50/60 Hz·1 A	AC 100 V·50/60 Hz·3 A	AC 100 V·50/60 Hz·3.9/4.1 A
Standard Accessory	Fixing screws, Hose fixtures	Fixing screws	

(*1)Max. flow rate of P-21 is a total of two circuits. (*2)P-11 can be made of stainless steel.
 •P-21 should be used with the circulating fluid temperature below 30°C. •Please refer the dimensions on p.18. •The above data for P-11 and P-21 were recorded when the tap water was at 7°C/no load, and P-310 was recorded when the tap water was at 20°C/no load. •P-11 and P-21 cannot be used with the circulating fluid with higher specific gravity and kinetic viscosity than water. P-310 should be used with tap water or solution anti-freeze (Show Brine Blue) and water mixed and cannot be used with silicon oil.

Pumping capacity curve



Optional Accessories (Common in Pump units)

Top board for CH-151AF/151BF CHT-151

Top board for each unit (excluding CH-151AF/151BF) CHT-402

Changing nozzle diameter for P-21 (Outer dia. 9 mm x 1)

Antifreeze Show Brine Blue (20 kg, 1 can)

•For detail about antifreeze medium, see p.198.

P-320/420/520 for Compact CH series (AC 200 V)

The available models use not only tap water but also antifreeze and Galden®.

Compact CH series (AC 200 V)
--> P.180- 181



Model	P-320	P-420	P-520
Applicable units	CH-402B/602B/802B/802BF		
Max. lift height [m] (50/60 Hz)	14/18	20/28	Tap water : 13/19 Antifreeze : 14/20 Galden® : 23/33
Max. flow rate [L/min] (50/60 Hz)	23/27	25/29	Tap water : 23/27 Antifreeze : 23/27 Galden® : 24/28
Nozzle diameter/ Circulatory circuit	Nozzle diameter: Rc3/8, Circulatory circuit: 1		
Motor output	300 W		
Safety device/function	Thermal protector		
Materials of wetted parts	Stainless		
Weight	approx. 10 kg	approx. 12.5 kg	approx. 13.5 kg
Power Supply (from the main unit)	Three-phase, AC 200 V·50/60 Hz·1.4 A	Three-phase, AC 200 V·50/60 Hz·1.7/1.6 A	Three-phase, AC 200 V·50/60 Hz·1.8/1.6 A
Standard Accessory	Fixing screws		

•Please refer the dimensions on p.18. •The above data for P-320 and P-420 were recorded when the tap water was at 20°C/no load, and P-520 was recorded when the tap water/antifreeze/Galden® was at 20°C/no load. •P-320 should be used with circulating fluid below specific gravity 1.06 and kinetic viscosity 8.5 mm²/s. •P-420 cannot be used with circulatory liquid with higher specific gravity and kinetic viscosity than water. •Antifreeze should be with "Show Brine Blue (we designate)", and Galden® should be used with below kinetic viscosity 4 cSt.

For optional parts, refer to the above.

Pumping capacity curve

