

ProcessStation PPV-4400 series is personal and economic system that is able to perform pressurized reaction efficiently.

New

Personal Organic Synthesizer ProcessStation

PPV-4400 Series

It is ideal for evaluation for hydrogenation, carbonylation and polymerization for pharmaceuticals, agricultural intermediates, polymers and fine chemicals.

- Wide temp. control range of -10~200°C
- 4 independent temperature control
- Ramp temperature control
- Synthesis scale 11mL, 14mL, 63mL
- Max. pressure 5MPa (Hydrogen gas: less 1MPa)



PPV-4430•4431•4460 Series

ProcessStation PPV-4400 series is able to perform pressurized reaction effectively and is effective for hydrogenation, polymerization and carbonylation reactions. The most appropriate temperature, pressure and catalyst for various reactions can be examined.

Four independent temperature control and ramp temperature control realize synthesis of different samples under different temperature condition.



PPV-4460

Features of PPV-4400 Series



High-efficiency independent temperature controller

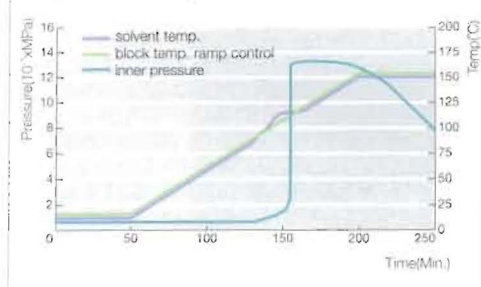
4 temperature sensors and temperature controllers are equipped for each four heating blocks.

Range of temperature setting is from -10.0°C to 200.0°C. Heating and cooling can be controlled simultaneously (Pat.) Accurate temperature control can be performed even around room temperature ($\pm 0.5^\circ\text{C}$) and temperature fall can be executed smoothly as well.

After having reaction in high temperature, the block can be cooled speedy if the temperature control is stopped, which prevents over-reaction.

Ramp temp. control

PPV-4400 risk evaluation of reaction temperature and pressure



Powerful stirring

Ferromagnetic stirrer

Strong and stable vortex stirring can be executed by a powerful stirrer, making it possible to efficiently stir highly viscous liquids.



Liquid reagent can be injected under pressure

By using high pressure injection unit (option), reagent can be injected even when pressure-resistant vessel is under pressure condition. Injection can be implemented without opening reaction line.

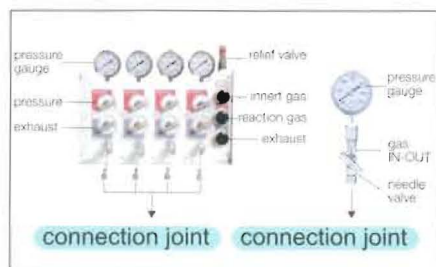


Sampling

Sampling is possible before/after reaction by dismounting connection joint. Reagent injection and collection is possible under inert gas flow.

Individual pressure control

Each vessel is provided with pressure gauge, needle valve for pressure and needle valve for exhaust. Independent pressure control is possible for four vessels.



4 independent pressure control

Independent injection can be done by two gas lines of purge gas and reaction gas. In case hydrogen gas is absorbed during reaction, hydrogen can be injected by needle valve.



Pressure gauge is equipped as standard

Pressure gauge is equipped for each pressure-resistant vessel. Leak test for pressure-resistant vessel can be conducted before reaction. Pressure gauge measures the pressure of the vessel while processing reaction.



Relief valve that controls gas pressure

Relief valve in the gas injection inlet is capable of controlling gas pressure. Also, it prevents the introduction of excess pressure.

Optional accessories

Recording of inner temperature, outer temperature and pressure.

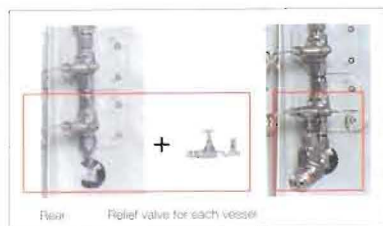
Aluminum block is provided with inlet for chemical thermocouple. Optional portable multi-logger ZR-RX20A and chemical thermocouple enable to record solvent and aluminum block temperatures during reaction.



Portable multi-logger
ZR-RX20A
Prod. Code: 227250
Pressure transmitter
Prod. Code: 228200



Chemical
thermocouple (6pcs)
Prod. Code: 194160
Transformer for
transmitter
Prod. Code: 228210



Relief valve for each vessel (Option)

Relief valve can be attached to the pressure-resistant vessel if required. It releases inner pressure at the set value when catalyst reaction proceeds excessively or controlling upper pressure limit of autoclave. It controls the pressure at the set value automatically.

Pressure-resistant vessel



Pressure-resistant vessel is easy to handle. Three types are available.

- $\phi 30$ with sensor protection tube (11mL)
- $\phi 30$ without sensor protection tube (14mL)
- $\phi 60$ with sensor protection tube (63mL)

Maximum operating pressure is 5MPa.

Synthesis scale can be changed.

- 63mL \rightarrow 11mL, 14mL; Add test tube adapter and $\phi 60$ vessel
- 11mL, 14mL \rightarrow 63mL; Add $\phi 60$ vessel



On-head type pressure-resistant vessel (Option)

It is easy to transfer sealed vessel in case transfer is necessary.



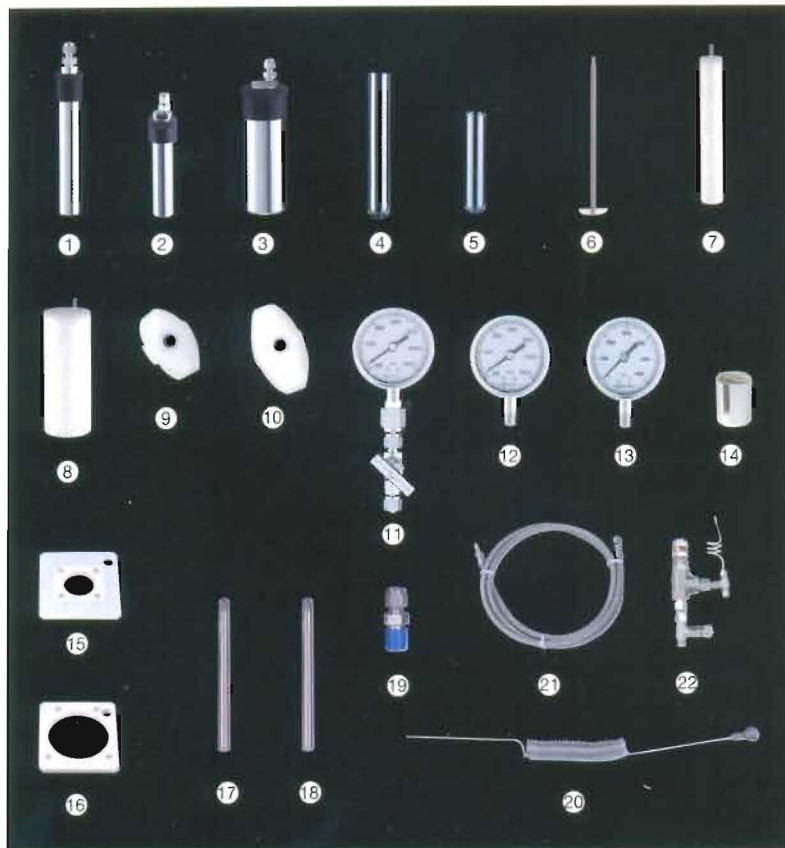
Internal vessel (Glass, PTFE)

Glass vessel, which is useful for handling sample, is supplied with pressure-resistant vessel as standard. PTFE vessel, which can accommodate fluorinated acid, is also available as an optional accessory.

Pressure-resistant vessel



Parts for PPV-4400 Series

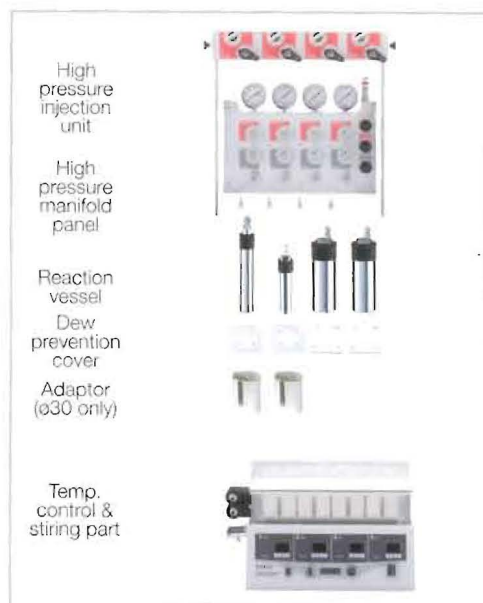


| Product name | Catalog No |
|---|------------|
| ① $\phi 30$ Pressure-resistant vessel (SUS316), incl. glass vessel and stirring bar HIP-30 | 218290 |
| ② $\phi 30$ Pressure-resistant vessel (SUS316), incl. glass vessel and stirring bar HIP-30L | 228190 |
| ③ $\phi 60$ Pressure-resistant vessel (SUS316), incl. glass vessel and stirring bar HIP-60 | 218310 |
| ④ $\phi 20$ Glass vessel for $\phi 30$ Pressure-resistant vessel HIP-30 Height 134mm | 218560 |
| ⑤ $\phi 20$ Glass vessel for $\phi 30$ Pressure-resistant vessel HIP-30L Height 100mm | 231890 |
| ⑥ $\phi 45$ Glass vessel for $\phi 60$ Pressure-resistant vessel HIP-60 Height 120mm | 212340 |
| ⑦ $\phi 20$ Teflon vessel for $\phi 30$ Pressure-resistant vessel HIP-30 | 218570 |
| ⑧ $\phi 45$ Teflon vessel for $\phi 60$ Pressure-resistant vessel HIP-60 | 218580 |
| ⑨ Teflon Powerful magnetic stirring bar (football-shaped, $\phi 10 \times 15$ L, 1 pce) for $\phi 20$ vessel ST-2F | 213110 |
| ⑩ Teflon Powerful magnetic stirring bar (football-shaped, $\phi 14 \times 25$ L, 1 pce) for $\phi 45$ vessel ST-3F | 206430 |
| ⑪ On-head part (HIP-HEAD) | 218320 |
| ⑫ Pressure gauge (SUS316, pressure range: $-100/0/2400$ kPa) | 218480 |
| ⑬ Pressure gauge (SUS316, pressure range: $0/6000$ kPa) | 218490 |
| ⑭ Test tube adapter ($\phi 30$ vessel) | 227970 |
| ⑮ Dew prevention cover ($\phi 30$ vessel) | 228020 |
| ⑯ Dew prevention cover ($\phi 60$ vessel) | 228010 |
| ⑰ Protective pipe for temperature sensor (for HIP-30L, SUS316, 1 pce) | 231920 |
| ⑱ Protective pipe for temperature sensor (for HIP-60, SUS316, 1 pce) | 218500 |
| ⑲ Pressure connection (high pressure joint, SUS316) | 218470 |
| ⑳ Spiral hose for connecting to the vessel (outer diameter: $1/16"$, Swagelok product, $1/4"$ screw nut is supplied, SUS316)x1 | 218400 |
| ㉑ Spiral hose for connecting to the gas injection port (outer diameter: $1/16"$, Swagelok product, $1/4"$ screw nut is supplied, SUS316)x1 | 218390 |
| ㉒ Flexible hose for connecting to the gas exhaust port (outer diameter: $1/4"$, Swagelok product, $1/4"$ screw nut is supplied, SUS316)x1 | 218460 |
| ㉓ Individual Relief valve (Relief pressure: $0.34-2.41$ MPa) | 218510 |
| Seal kit of the relief valve (Fluorocarbon) for replacement | 218380 |
| Seal kit of the relief valve (Ethylene propylene rubber) for replacement | 218370 |
| Spring kit (2.41- 5.16Mpa) | 215040 |
| Spring kit (0.34- 2.41Mpa) | 215050 |
| O-ring of the pressure-proof vessel (for $\phi 30$, Perfluoro) for replacement | 218520 |
| O-ring of the pressure-proof vessel (for $\phi 60$, Perfluoro) for replacement | 218530 |
| Back-up ring for pressure-proof vessel (for $\phi 30$, Teflon) 10 pcs | 218440 |
| Back-up ring for pressure-proof vessel (for $\phi 60$, Teflon) 10 pcs | 218450 |
| Syringe needle (gauge 22) | 232730 |

Specifications

| Product name | Personal Organic Synthesizer ProcessStation | | | | | | | | |
|------------------------------|---|--------|--------|-------------------------|--------|--------|-------------------------|--------|--------|
| | PPV4430 | | | PPV4431 | | | PPV4460 | | |
| Model name | PPV4430 | | | PPV4431 | | | PPV4460 | | |
| Product No. | 229990 | 229999 | 229998 | 230000 | 230009 | 230008 | 230010 | 230019 | 230018 |
| Voltage | 100V | 115V | 220V | 100V | 115V | 220V | 100V | 115V | 220V |
| Number of vessel | 1-4 pcs | | | | | | | | |
| Synthesis scale | ø30:14mL (Volume:42mL) | | | ø30:11mL (Volume:33mL) | | | ø60:63mL (Volume:190mL) | | |
| Stirring system | Ferromagnetic stirrer | | | | | | | | |
| Available maximum pressure | 5MPa or less when implementing autoclave (Except hydrogen gas or acetylene gas) 1MPa or less when injecting flammable gas (hydrogen gas or acetylene gas) | | | | | | | | |
| Temperature control range | -10~200°C (4x independent control) | | | | | | | | |
| Rotation speed range | 50-1500rpm (water 11mL, 14mL) | | | 50-1000rpm (water 63mL) | | | | | |
| Setting temperature, display | Sheet key input, digital display (-40.0-200.0°C) | | | | | | | | |
| Setting stirring, display | Volume setting, digital display (0-2000rpm) | | | | | | | | |
| Pressure display | Bourdon pressure gauge is supplied with each vessel. | | | | | | | | |
| Gas flushing | Needle valves (Two for gas introduction, one for exhaust) | | | | | | | | |
| Safety features | Relief functions: 1 relief valve is attached to pressurizing side. Pressure can be regulated (0.34MPa to 2.41MPa, 2.41 to 5.16MPa) by relief valve for each vessel Function for preventing back-flow of gas: Check valve is attached to each gas injection inlet. Cracking pressure: 70kPa. Antistatic function, Self diagnosis, Double chamber, Dew receiving tray Motor overheat protection, Fuse, Defrost heater | | | | | | | | |
| Ambient temperature range | 5 to 35°C | | | | | | | | |
| Dimensions (mm) | 475Wx421Dx590H | | | | | | | | |
| Net weight | 34kg | | | 40kg | | | | | |
| Input power | 1300VA | | | | | | | | |

Components of PPV-4400 Series



Configuration

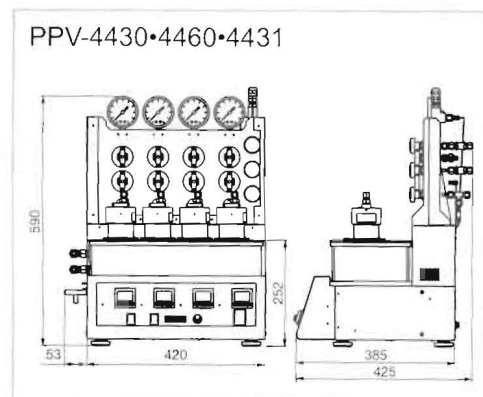
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|--------------------------------|----------------------------|-------------------|------------------|
| High pressure manifold panel | PPV-40HP Product No.218540 | | |
| Pressure-proof vessel | HIP-30 218290 | HIP-30L 228190 | HIP-30 218310 |
| Test tube adapter | Product No.227970 | | - |
| Dew prevention cover | Product No. 228020 | | 228010 |
| Temperature control & stirring | PPV-CTRL1 227230 | | |

Standard Accessories

| | |
|-------------------------------|---|
| High pressure manifold panel | Spiral hose for gas injecting port (2), Flexible hose for exhaust port (1), spanner (1), pin spanner (1), claw bar (1) |
| Temp. control & stirring part | Ground adaptor (1), Power cord (1), L shape circulation nozzle (2) Isolation material for circulation nozzle (2), Binding band (4), Hose band (4), Dew receiving tray (1) |

PPV-4400 Series Dimensions (mm)

PPV-4430•4460•4431



EYELA

<http://eyelaworld.com>

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