

GL-14 Parts	Catalog No
① Screw cap GL14 with opening for screw head tubes (100pcs)	217230
② Screw cap GL14 for screw head tubes PTFE (100pcs)	217240
③ Plastic hose connection, straight (100pcs)	217250
④ Plastic hose connection, bent (100pcs)	217260
⑤ Silicone rubber seals, septa (250pcs)	217280
⑥ Silicone rubber seals, with bore (100pcs)	217270

Specifications

	Personal Organic Synthesizer ProcessStation		
Product name	PPV3430	PPV3460	PPV3461
Model name	229960	229968	229970
Product No.	229960	229968	229970
Voltage	100V	115V	220V
Reaction vessel	Branches	100V	115V
Number of vessel	10-30mL 1-4pcs	50-150mL 1-4pcs	50-150mL 1-4pcs
Stirring system	Ferromagnetic stirrer		
Temperature control range	-27~200°C (4-independent control)		
Temperature control accuracy	±0.5°C		
Rotation speed range	50-900rpm (water 30mL)	50-900rpm (water 150mL)	
Rotation speed accuracy	Sheet key input, digital display (-40.0-200.0°C)		
Setting temperature, display	Volume setting, digital display (0-2000.0rpm)		
Setting stirring, display	Through slit on aluminum block with LED light		
Reaction observation	Leak/Over-current breaker, Temp. fuse, Temperature controller self diagnosis function		
Safety features	Variable upper limit, fixed upper limit, sensor abnormal, heater protection, Double chamber, Dew receiving tray, Motor over-load protection		
Ambient temperature range	5 to 35°C		
Dimensions (mm)	475Wx383Dx290H (600H with Dimroth Condenser)		
Net weight	28kg		
Input power	1300VA		

Specifications

	Personal Organic Synthesizer ProcessStation		
Product name	PPV3430	PPV3460	PPV3461
Model name	229960	229968	229970
Product No.	229960	229968	229970
Voltage	100V	115V	220V
Reaction vessel	Branches	100V	115V
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Setting temperature, display	Volume setting, digital display (0-2000.0rpm)		
Setting stirring, display	Through slit on aluminum block with LED light		
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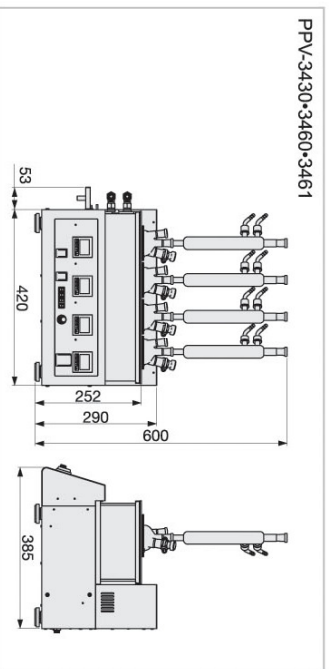
Configuration

Dimroth condenser	Product No. 212780x4	Prod. No. 212780x4	
Reaction vessel	Product No. 212760x4	Product No. 228040x4	Product No. 228050x4
Stirrer	TFS-25	TFS-35	
Dew prevention cover	Product No. 227970x4	Product No. 228020x4	
Test tube adapter			PPV-CTRL 1 Product No. 227230
Temperature control & stirring			

Standard Accessories

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-3400 Series Dimensions (mm)



ProcessStation PPV-3400 series is personal and economic system that is able to perform pressurized reaction efficiently.

New

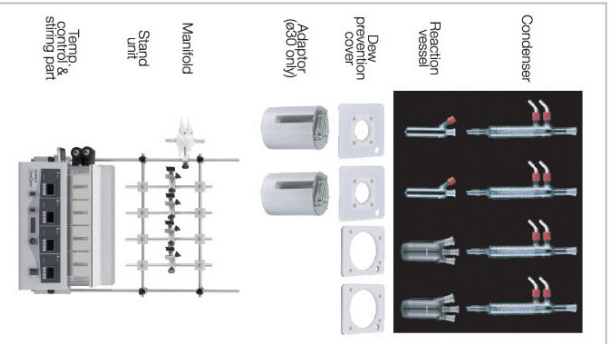
Personal Organic Synthesizer ProcessStation

PPV-3400 Series

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

- Wide temp. control range of -27°C~200°C
- 4 independent temperature control
- Ramp temperature control
- Synthesis scale 10 - 30mL, 50 - 150mL
- Wide variety of glass vessels and condensers

Components of PPV-3400 Series



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Headquarters

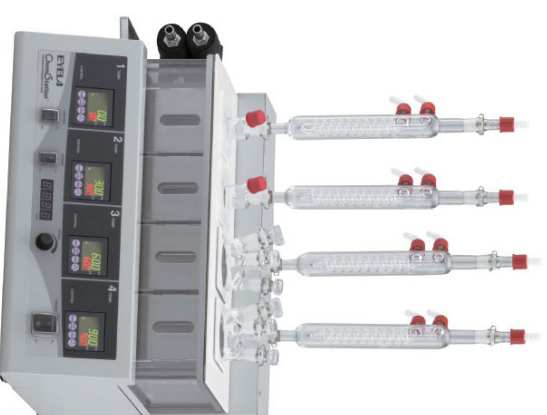
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TOKYO RIKAKIKAI CO., LTD.

ProcessStation PPV-3400 series is able to perform cold temperature, reflux and evaporation experiment. Discovery of new reaction, development of new catalyst, synthesis of different materials, can be implemented utilizing the feature of four independent temperature control and variety of glass vessels and condensers.

Ramp temperature control and LED light for reaction status observation are also available.

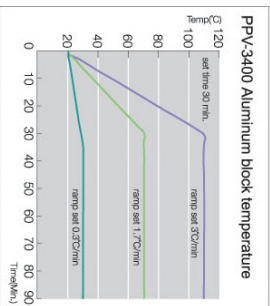
Features of PPV-3400 Series



High-efficiency independent temperature controller

4 temperature sensors and temperature controllers are equipped for each four heating blocks. Range of temperature setting is from -27.0°C to 200.0°C. Heating and cooling can be controlled simultaneously (Pat.). Accurate temperature control can be performed even around room temperature (±0.5°C) and temperature fall can be executed smoothly as well.

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



PPV-3400 Aluminum block temperature

Temperature can be raised or failed at constant speed to preset temperature.

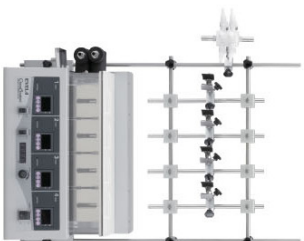
*Temperature raise control: slowly raise temperature to the point where reaction starts

*Temperature fall control: can slowly cool down due to crystallization



PPV-3461

Optional Accessories



Stand unit
By installing stand unit, you can mount different glassware and condenser according to experimental requirement.
Product No.: 226150



Cold temperature experiment

Experiment from as low as -27°C is possible. It is effective for synthesis of active compounds like drug and medicine. Heat insulation part of the device is equipped with defrost heater, dew receiving tray and dew water exhaust drain.

Strong reflux experiment

By connecting Dimroth condenser, strong and efficient reflux experiment is possible.



Gas purge and sample injection

By using 3-way cock or manifold, reagent injection, sampling is possible under inert gas condition.



Observation slit with LED light

Reaction status (color, reaction status, stirring etc.) can be observed through slit or front side of aluminum block. LED light ensures clear view.



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.



Compact stirrer

Compact stirrer CPS-1000 (Option) is an overhanging type stirrer exclusively designed for organic synthesizers. Because plural units can be used in parallel, it is convenient for the polymerization reaction, the stirring of crystal and small volume sample.



Easy to use reaction vessel

Three port or four port vessels are available. Large port diameter makes sample injection easy. By combination of variety of vessels, system expansion is also feasible.



Teflon shutter and dew prevention cover

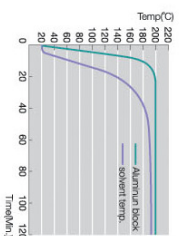
The device is equipped with dew prevention teflon shutter and cover. It prevents dew in aluminum block.

Temperature recording

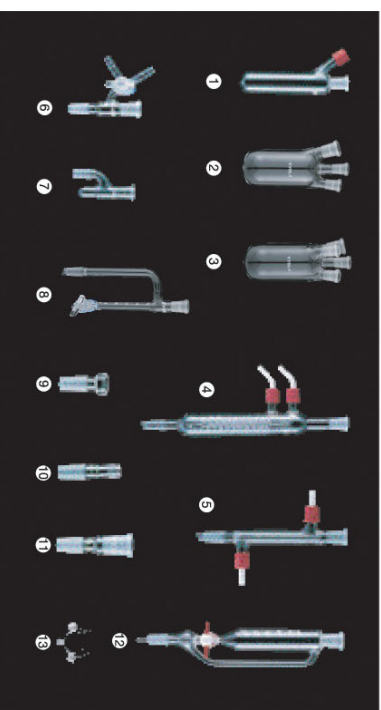


Portable multi-logger ZR-RX20A
Prod. Code:227250

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



Parts for PPV-3400 Series

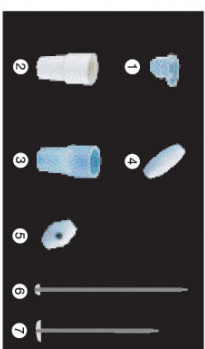


Reaction vessels, condenser, cooling hose

Product name	Catalog No
① Standard reaction vessel(630 NS14/23 GL14)	212760
② Three port reaction vessel(660 grind/NS14/23 slide/NS14X1 NS19X1)	228040
③ Four port reaction vessel(660 grind/NS14/23 slide/NS14X2 NS19X1)	228050
④ Dimroth condenser NS14/23 GL14	212780
⑤ Leiding condenser L100 NS14/23 GL14	212790
Silicone hose (for manifold, 5m)	194050
Cooling hose set (silicone ø9x1m, 2pcs) CT-1S	
Cooling hose set (silicone ø9x2m, 2pcs) CT-2S	201830

NS14/23 Parts

Product name	Catalog No
① Injection port with 3-way cock (NS14/23)	217190
② Dean-stark trap (small NS14/23)	212770
③ Dean-stark trap (small NS14/23) (5mL with cock NS14/23)	228060
④ Stopper NS2/6 with hexagonal plate (10pcs)	217290
⑤ Stopper NS2/6 hexagonal plate (10pcs)	228100
⑥ Screwinhead GL14 NS14/23 (10pcs)	217220
⑦ Adapter with ground joint, upper TS15/25, lower NS14/23	217310
⑧ Multi-adapter NS14/23 connection pipe	228080
⑨ Dropping funnel 25mL NS14/23	217210
⑩ Kick conical joint, clip type NS14 TS15 metal (10pcs)	217300
Kick conical joint, clip type NS9 (10pcs)	228090



Septa, stirring bar, stirring seal, impeller

Product name	Catalog No
① Spa seal (silicone, for GL14) (10pcs)	212700
② Septum (natural rubber, for NS14) (10pcs)	218420
③ Septum (silicone, for NS14) (10pcs)	218410
④ Septum (natural rubber, for TS15) (10pcs)	195710
⑤ Stirring bar (football type, ø15x25L, 5pcs) TFS-25	200300
⑥ Stirring bar (football type, ø15x35L, 5pcs) TFS-35	200320
⑦ Teflon powerfullmagnetic stirring bar (oval type, 10pc) ST-2F	213110
⑧ Teflon powerfullmagnetic stirring bar (circular type, ø16x35L, 10pc)	203660
⑨ Strring seal (for NS14)	228120
⑩ Impeller (630, PPS&PTE)	228140
⑪ Impeller (660, PPS&PTE)	228130
⑫ Kick prevention cover (630)	228020
Dew prevention cover (660)	228010

Specifications

		Personal Organic Synthesizer ProcessStation			
Product name	PPV-4430	PPV-4431	PPV-4460		
Model name	229990	229998	230000	230009	230010
Product No.	100V	115V	220V	115V	220V
Voltage					
Number of vessel	1-4 pcs				
Synthesis scale	630:14mL (Volume:42mL)	630:11mL (Volume:33mL)	630:63mL (Volume:190mL)		
Stirring system	Ferromagnetic stirrer				
Available maximum pressure	5MPa or less when implementing autoclave (Except hydrogen gas or acetylene gas)				
Temperature control range	-10Pa or less when injecting flammable gas (Hydrogen gas or acetylene gas)				
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)				
Stirring stirring, display	Volume setting, digital display (0-20000rpm)				
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)	475Wx421Dx690H				
Net weight	34kg				
Input power	1300VA				

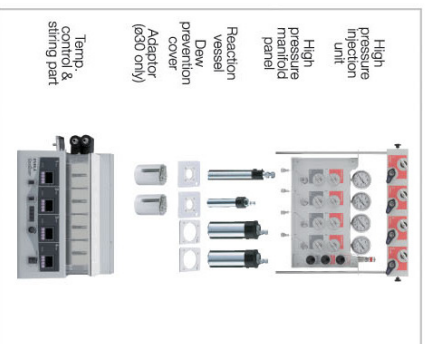
Configuration

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

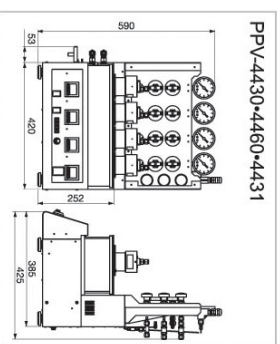
Standard Accessories

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)

Components of PPV-4400 Series



PPV-4400 Series Dimensions (mm)



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)



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TOKYO RIKAKIKAI CO., LTD.

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 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.

Features of PPV-4400 Series



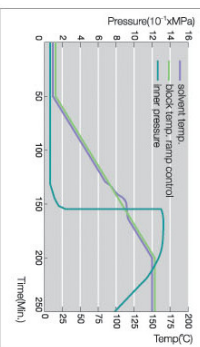
High-efficiency independent temperature controller

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 (40.5°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.

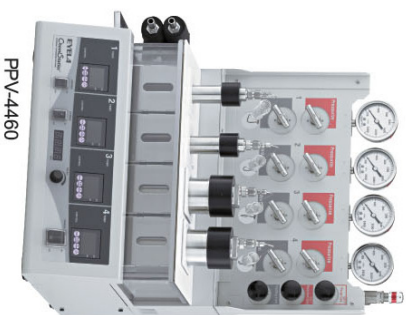
Ramp temp. control enables
risk evaluation of reaction temperature and pressure

PPV-4400 risk evaluation of reaction temperature and pressure

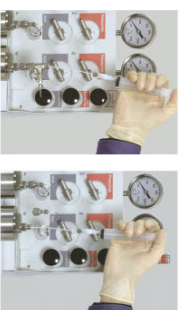


Powerful stirring
Ferromagnetic stirrer

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



PPV-4460



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

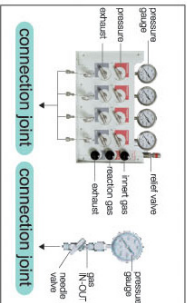
Sampling is possible before/after reaction by dismounting connection joint. Reagent injection and collection is possible under inert gas flow.



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

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.



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.



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 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: 194160

Chemical thermocouple (6pcs)
Prod. Code: 194160

Transformer for transmitter for Prod. Code: 228210

Pressure-resistant vessel

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

• 630 with sensor protection tube (11mL)
• 630 without sensor protection tube (14mL)
• 660 with sensor protection tube (63mL)
Maximum operating pressure is 5MPa.

Synthesis scale can be changed.

• 63mL ~ 11mL, 14mL: Add test tube adapter and 660 vessel
• 11mL, 14mL ~ 63mL: Add 660 vessel



On-head type pressure-resistant vessel (Option)

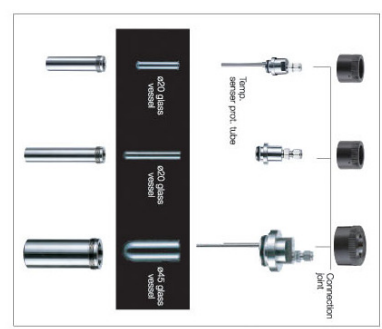
It is easy to transfer sealed vessel in case transfer is necessary.



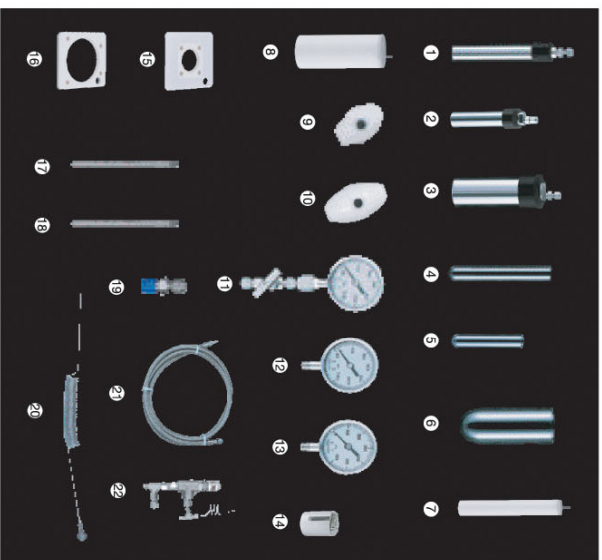
Internal vessel (Glass, PTFE)

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	Change No.
① 660 Pressure-resistant vessel (SU5316), incl. glass vessel and stirring bar HRP-30	218290
② 660 Pressure-resistant vessel (SU5316), incl. glass vessel and stirring bar HRP-30L	218290
③ 630 Pressure-resistant vessel (SU5316), incl. glass vessel and stirring bar HRP-60	228190
④ 630 Glass vessel for 630 Pressure-resistant vessel HRP-30L Height 134mm	218560
⑤ 620 Glass vessel for 620 Pressure-resistant vessel HRP-30L Height 100mm	221890
⑥ 645 Glass vessel for 645 Pressure-resistant vessel HRP-60 Height 120mm	212340
⑦ 620 Teflon vessel for 620 Pressure-resistant vessel HRP-30	218570
⑧ 645 Teflon vessel for 645 Pressure-resistant vessel HRP-60	218580
⑨ Teflon Powerful magnetic stirring bar (rod) (rod-shaped, Ø10x15, 1 pcs) for 660 vessel S1-2F	213110
⑩ On-head part (HRP-HEAD)	205450
⑪ Pressure gauge (SU5316, pressure range: -1.000/2.00MPa)	218480
⑫ Pressure gauge (SU5316, pressure range: 0.0/0.0/0.4MPa)	218480
⑬ Test tube adapter (660 vessel)	227970
⑭ Dew prevention cover (660 vessel)	229620
⑮ Dew prevention cover (630 vessel)	229620
⑯ Protective pipe for temperature sensor (for HRP-30L, SU5316, 1 pcs)	221920
⑰ Protective pipe for temperature sensor (for HRP-60, SU5316, 1 pcs)	218500
⑱ Pressure connection (high pressure joint, SU5316)	218470
⑲ Spiral hose for connecting to the vessel (outer diameter: 1/8", Swagelok product, 1/4" screw nut is supplied, SU5316x1)	218400
⑲ Spiral hose for connecting to the vessel (outer diameter: 1/16", Swagelok product, 1/4" screw nut is supplied, SU5316x1)	218390
⑲ Swagelok product, 1/4" screw nut is supplied, SU5316x1	218460
⑲ Swagelok product, 1/4" screw nut is supplied, SU5316x1	218510
⑲ Individual Relief valve (Relief pressure: 0.34-2.41MPa)	218380
⑲ Seal kit of the relief valve (Fluorocarbon) for replacement	218370
⑲ Seal kit of the relief valve (Ethylene propylene rubber) for replacement	215400
⑲ Spring kit (2.41~5.18MPa)	215650
⑲ Spring kit (0.34~2.41MPa)	215650
⑲ O-ring of the pressure-proof vessel (for 660, PTFE) for replacement	218520
⑲ O-ring of the pressure-proof vessel (for 660, PTFE) for replacement	218530
⑲ Back-up ring for pressure-proof vessel (for 660, Teflon) 10 pcs	219440
⑲ Back-up ring for pressure-proof vessel (for 660, Teflon) 10 pcs	219450
⑲ Spring needle (gauge 22)	222730