

PPS-5511 Optional Parts

Adaptability Table

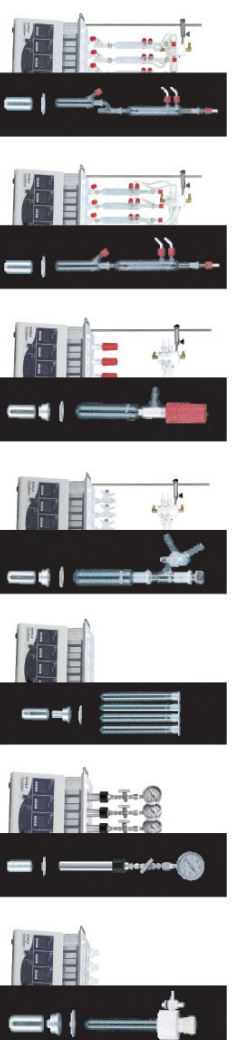
Test tube adaptor	Reflux adaptor	Dew prot. cover	Condenser	Reaction vessel					
				Standard	Branched	Sealed	On-head		
OD (ø)	Number	Capacity (mL)	Adaptable	OD (ø12-35)	Adaptability				
12	4	1.2	0	0	X				
13	3		0	0	X				
13	1	2	0	0	X				
15	3		0	0	X				
15	1	4	0	0	X				
16	1	4	0	0	X			O	
16	1	6	0	0	X				
16.5	1	6	0	0	X				
18	1	7	0	0	O		O		
20	1	10	0	0	O				
21	1	10	0	0	O				
24	1	10	0	0	O			O	
24	1	12.5	0	0	O				
25	1	14	0	0	O		O		
30*	1	14	X	0	O				O
30	1	30	X	0	O				
34	1	60	X	0	O				
35(no adaptor)		60	X	0	O				

* ø30 adaptor for pressure vessel

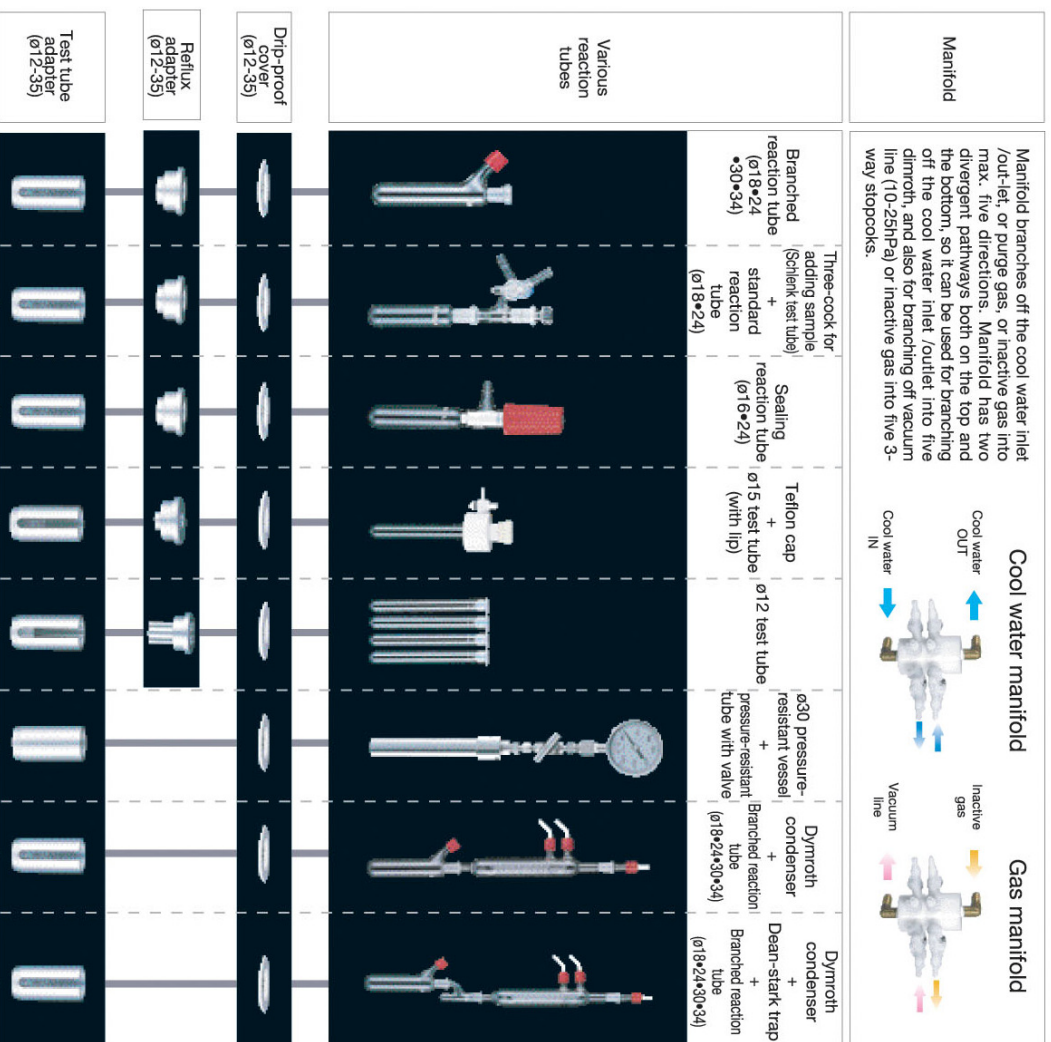
Various reaction vessels can be combined depending on your purpose.

Various types of reaction vessels can expand your possibilities of organic synthesis experiment. The following is our 10 recommended systems.

- 1 Polycondensation experiment can be implemented while removing water.
- 2 Reaction solvent vapor is condensed and refluxed absolutely.
- 3 Reaction temperature can be monitored.
- 4 By conducting freezing degassing, deoxidization can be implemented completely.
- 5 Anhydrous and anoxic reaction can be implemented.
- 6 Parallel screening and evaluation of reactions for 20 tubes.
- 7 Catalyst reaction can be implemented.
- 8 Handy Teflon two-way stopcock.
- 9 Concentration can be performed just after the synthesis.
- 10 Impeller stirring can be performed.



Various types of reaction tubes and reflux or non-reflux can be selected.



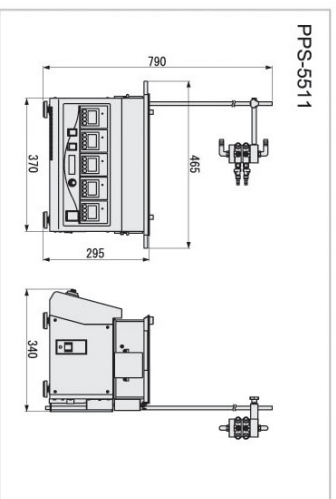
Specifications

		Personal Organic Synthesizer								
Product name	Model name	PPS-1511	PPS-1511	PPS-2511	PPS-2511	PPS-3511	PPS-3511	PPS-3511	PPS-3511	
Product No.	226490	226499	226498	226470	226479	226478	226480	226488	226488	
Voltage	100V	115V	220V	100V	115V	220V	100V	115V	220V	
Test tube	1-5pcs (Max.20)		1-5pcs		1-5pcs		1-5pcs		1-5pcs	
Synthesis scale	0.5-60mL (Variable)		1-4mL		10-30mL		50-60mL		50-60mL	
Stirring system	Ferromagnetic stirrer		Ferromagnetic stirrer		Ferromagnetic stirrer		Ferromagnetic stirrer		Ferromagnetic stirrer	
Temperature control range	-23-160°C (5x independent control)		-27-160°C (5x ind. control)		-27-160°C (5x ind. control)		-28-130°C (5x ind. control)		-28-130°C (5x ind. control)	
Accuracy of temp. control	±0.5°C		±0.5°C		±0.5°C		±0.5°C		±0.5°C	
Rotation speed range	100-2000rpm (Water 1mL)		100-1600rpm (Water 4mL)		100-1300rpm (Water 30mL)		100-1100rpm (Water 60mL)		100-1100rpm (Water 60mL)	
Setting temperature, display	100-1100rpm (Water 60mL)		100-1600rpm (Water 4mL)		100-1300rpm (Water 30mL)		100-1100rpm (Water 60mL)		100-1100rpm (Water 60mL)	
Setting stirring, display	Shear key input, digital display (20-2000rpm)		Volume setting, digital display (20-2000rpm)		Vacuuming+Inerting reactive gas		High-efficiency reflux		Pipetting, syringe, dripping funnel (with interchangeable joint).	
Gas flushing	Fetlux		Fetlux		Fetlux		Fetlux		Fetlux	
Adding sample	Observing reaction		Observing reaction		Observing reaction		Observing reaction		Observing reaction	
Safety features	Safety features		Safety features		Safety features		Safety features		Safety features	
Material of liquid contact part	Material of liquid contact part		Material of liquid contact part		Material of liquid contact part		Material of liquid contact part		Material of liquid contact part	
Ambient temperature range	Ambient temperature range		Ambient temperature range		Ambient temperature range		Ambient temperature range		Ambient temperature range	
Dimensions (mm)	Dimensions (mm)		Dimensions (mm)		Dimensions (mm)		Dimensions (mm)		Dimensions (mm)	
Net weight	Net weight		Net weight		Net weight		Net weight		Net weight	
Input power	Input power		Input power		Input power		Input power		Input power	

Standard Accessories for PPS-5511

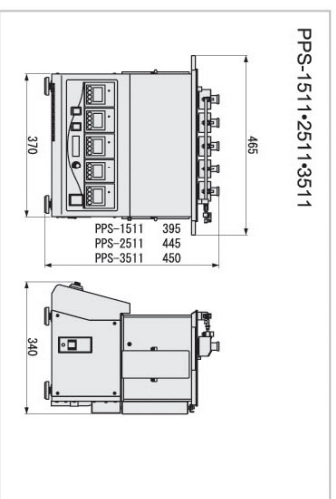
Mainfold	Pole (X1), Arbor (X1), Pole fixer (X1), Silicone hose (X1)
Temp. cont. & stirrer	Fuse (X1), Ground adaptor (X1), CE adaptor (X1)

PPS Series Dimensions (mm)



Standard Accessories for PPS-1511•2511•3511

Teflon cap	Septum (X5), 3-way cock (X2), Piping set (1 set)
Aluminum block	Test tube (X10), Stirring bar (X5)
Temp. cont. & stirrer	Fuse (X1), Ground adaptor (X1), CE adaptor (X1)



ProcessStation PPS is personal and economic system that can do the different liquid phase handling and research promptly and efficiently.

New

It is ideal for development of drug, medicine catalyst and fine chemical materials.

PPS-1511 • 2511 • 3511 • 5511

- Wide temp. control range of -28°C~160°C
- 5 independent temperature control
- Ramp temperature control
- Wide synthesis scale 0.5mL - 60mL
- Heating, cooling, reflux and stirring functions



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TOKYO RIKAKIKAI CO., LTD.

PPS series have been developed to improve the efficiency of synthesis process.

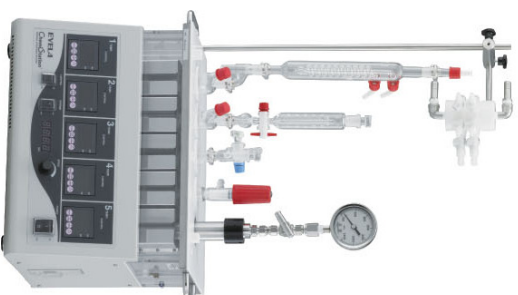
Since five test tubes can be set, it is ideal for new reaction and development, verification experiment, experiment for optimization and synthesizing simple or new catalyst, and also for large volume intermediate synthesis.

Five different temperature can be set for five different tubes, which can save the time and perform efficient synthesis. Reflux, gas flushing, heating, cooling and stirring functions are equipped as standard. As synthesis scale can be changed, the setting for experiment can be easily changed as well.

Product Line

<p>0.5~60mL 1-20 Vessels</p> <p>PPS-5511 Test tube 1-5(Max:20) Scale 0.5~60mL (Variable) Temp range:23~160°C (50~60mL, ~130°C)</p>	<p>1~4mL</p> <p>PPS-1511 Test tube 1-5 Scale 1~4mL Temp. range:23~160°C</p>	<p>10~30mL</p> <p>PPS-2511 Test tube 1-5 Scale 10~30mL Temp. range:27~160°C</p>	<p>50~60mL</p> <p>PPS-3511 Test tube 1-5 Scale 50~60mL Temp. range:28~130°C</p>
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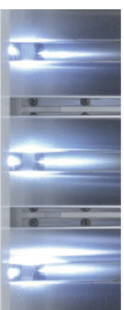
Features of PPS Series (common to all models)



High-efficiency/ independent temperature controller

5 temperature sensors and temperature controllers are equipped for each five heating blocks.

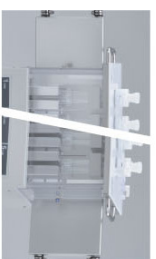
Range of temperature setting is from -28°C to 160°C. Reflux, heating and cooling can be controlled simultaneously (Pat.) Accurate temperature control can be performed even around room temperature (±0.5°C) and temperature fall can be executed smoothly as well. After heating reaction in high temperature, the block can be cooled speedily if the temperature control is stopped, which prevents over-reaction.



Strong stirring & LED light

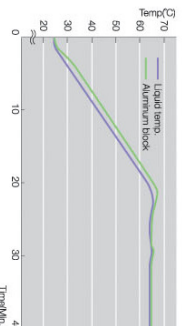
Ferromagnetic stirrer is equipped for each test tube which performs strong and stable vortex stirring.

Irregular suspension reaction using poorly-soluble powder sample and solid catalyst, crystallization reaction, high-viscosity solvent (ethylene glycol and etc.) can be stirred. The progress of reaction caused in test tube (color, condition, stirring force and etc.) can be observed through the window on the front surface with LED light.



Reflux

Reflux block that contacts test tube is equipped. Since reflux block, which is cooled down by low temperature circulator, can cool off the top of the tube, reaction solvent vapor is refluxed sufficiently. can be inserted from either side of the device.



Ramp temperature control

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



Safety features

In case that solvent spills from broken tube, Teflon tray receives it to protect the device. Double chamber prevents dew condensation on aluminum block, and also prevents the splash of broken tube. With various over-heat protector, maximum temperature of each aluminum block can be set from 60°C to 200°C. Since heater circuit is protected by setting temperature, safety temperature can be set depending on solvent and operating temperature.



PPS-5511 with wide variety of reaction vessels and wide synthesis scale (0.5~60mL) offers wide range of systems according to customer needs.

PPS-5511 Features



Removable reflux adaptor

Since the reflux adaptor, which touches the cooled reflux block, cools down the top of reaction tube, the reaction solvent vapor can be refluxed sufficiently.



Synthesis scale can be changed.


By using test tube adaptors, it is possible to change the size and number of reaction vessels. Synthesis scale from 0.5mL to 60mL is feasible. Up to 20 reaction tubes can be placed in the system.



Dosing sample


A branched reaction vessel and 3-way cock make it possible to inject reagent in inactive condition or let it drip through a funnel, ideal for heat-generating solvents.

PPS-1511 • 2511 • 3511 Features



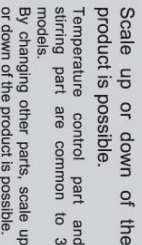
Independent gas flushing

Switching valve for vacuuming line and inert gas line is equipped in gas infusing line of Teflon cap on the top of the test tube. By using this valve, test tube can be deoxygenated and dehydrated easily and atmosphere can be flushed by inert gas. With opening the top of the tube a little bit, reaction under gas flow can be implemented.



Sample can be added in various ways.


Interchangeable joint (¥1525) is equipped with the product. With syringe, sample can be added through septum, and also pipetting can be executed under inactive gas current. Interchangeable joint can accommodate your own glassware. By using dripping funnel, dropping experiment can be implemented (even under inactive gas current).



Scale up or down of the product is possible.


Temperature control part and stirring part are common to 3 models. By changing other parts, scale up or down of the product is possible.

Component PPS-1511




PPS-1511C
PPS-1511T
PPS-1511M

Component PPS-2511




PPS-2511C
PPS-2511M

Component PPS-3511



PPS-3511C
PPS-2811T
PPS-2911M

Component PPS-5511



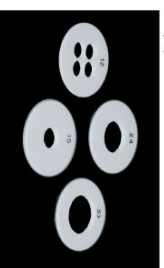
PPS-CTRL1

Parts for Personal Organic Synthesizers

PPS-5511 Parts

Part name	Type	Catalog No
Drip proof cover		
Drip proof cover (612x4 positions)	-	217610
Drip proof cover (613)	-	217630
Drip proof cover (613x3 positions)	-	217650
Drip proof cover (615)	-	217640
Drip proof cover (615x3 positions)	-	217660
Drip proof cover (616)	-	217680
Drip proof cover (616.5)	-	217690
Drip proof cover (618)	-	217680
Drip proof cover (620)	-	217690
Drip proof cover (621)	-	217710
Drip proof cover (624)	-	217720
Drip proof cover (625)	-	217750
Drip proof cover (630)	-	217740
Drip proof cover (634)	-	217750
Drip proof cover (635)	-	217750

Drip proof cover

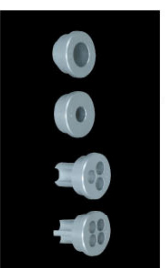


Cover to prevent dew in the aluminum block necessary when using the cooling cartridge.

Reflux adapter

Part name	Type	Catalog No
Reflux adapter (612x4 positions)	-	217320
Reflux adapter (613)	-	217340
Reflux adapter (613x3 positions)	-	217350
Reflux adapter (615)	-	217360
Reflux adapter (615x3 positions)	-	217370
Reflux adapter (616)	-	217380
Reflux adapter (616.5)	-	217390
Reflux adapter (618)	-	217400
Reflux adapter (620)	-	217400
Reflux adapter (621)	-	217410
Reflux adapter (624)	-	217420
Reflux adapter (625)	-	217430

Reflux adapter



Since the reflux adapter cools down the top of the reaction tubes, the reaction solvent vapor can be refluxed effectively.

Test tube adapter

Part name	Type	Catalog No
Test tube adapter (612 4 positions)	-	217060
Test tube adapter (613)	-	217080
Test tube adapter (613x3 positions)	-	217090
Test tube adapter (615)	-	217280
Test tube adapter (615x3 positions)	-	217100
Test tube adapter (616)	-	217280
Test tube adapter (616.5)	-	217280
Test tube adapter (618)	-	217280
Test tube adapter (621)	-	212870
Test tube adapter (624)	-	212880
Test tube adapter (625)	-	212890
Test tube adapter (630)	-	212900
Test tube adapter (630) for pressure resistant vessel	-	219550
Test tube adapter (634) for PPS-5510 only	-	217110

Test tube adapter



By using a test tube adapter, the size and number of reaction vessels can be changed, to one, three or four per position. The system can be made fit for up to 20 reaction tubes.

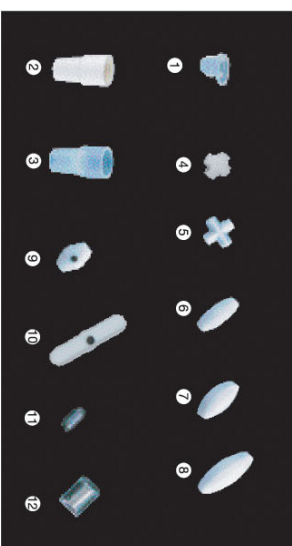
Septa

Part name	Type	Catalog No
① Suba seal (silicone rubber, for GL14, 10pcs)	-	212700
② Septum (natural rubber, for \$1.4, 10pcs)	-	219420
③ septum (silicone rubber, for \$1.4, 10pcs)	-	219430
septum (natural rubber, for \$1.5, 10pcs)	-	219490
septum (silicone rubber, for \$1.5, 10pcs)	-	195710

Stirring bars

Part name	Type	Catalog No
④ PTFE Magnetic stirring bar (disk shape D36x6) used for D12, 10pcs	-	182100
⑤ PTFE Magnetic stirring bar (cross shape D10x5) used for D15-D16, 10pcs	-	191800
⑥ PTFE Magnetic stirring bar (round shape D8x15) used for D24, 5pcs	-	200280
⑦ PTFE Magnetic stirring bar (round shape D10x21) used for D3 and 3x3cs	-	200300
⑧ PTFE Magnetic stirring bar (round shape D10x21) used for D3x3cs	-	200300
⑨ Powerful magnetic stirring bar (oval shape) D24-D30, 10pcs	-	213110
⑩ Powerful magnetic stirring bar (oval shape) D24-D30, 10pcs	-	213120
⑪ Glass stirring bar (Thin cylinder shape, D5x12) for high temp.	-	218330
⑫ Glass stirring bar (Thin cylinder shape, D9.5x12.7) for high temp.	-	218340
⑬ used for D18-30, 1pcs	-	

Septum, Stirring bar



Reactor glass tube

Part name	Type	Catalog No
① Standard reaction vessel (618 NS14/23)	-	217120
② Branched reaction vessel (624 NS14/23, GL14)	-	217130
③ Branched reaction vessel (618 NS14/23, GL14)	-	217140
④ Branched reaction vessel (620 NS14/23, GL14)	-	217150
⑤ Branched reaction vessel (630 NS14/23, GL14)	-	212760
⑥ Branched reaction vessel (634 NS14/23, GL14)	-	217160
⑦ Sealing reaction vessel (616)	-	217170
⑧ Sealing reaction vessel (624)	-	217180
⑨ 630 Stainless pressure resistant vessel (HIP-30)	-	218290
⑩ On head part (with pressure gauge) HIP-HEAD	-	218320

Condenser, connection hose

Part name	Type	Catalog No
① Dimroth condenser NS14/23, GL14	-	212780
② Liebig condenser L100NS14/23, GL14	-	212780
Silicone hose (used for manifold 5m)	-	212790
Cooling insulation hose set (silicone 691m, 2pcs) CT-1S	-	212790
Cooling insulation hose set (silicone hose 692m, 2pcs) CT-2S	-	194050

NS14/23 related parts

Part name	Type	Catalog No
⑬ Three-way cock for dosing sample, with solid glass plug	-	217190
⑭ Dean-Stark trap for PFW-COX type	-	212770
⑮ Stopper NS14/23 with hexagonal plate (10pcs)	-	212980
⑯ DIN-Screwthread with NS-Cone (10pcs)	-	217220
⑰ Adapter with Ground joint, upper 1S 15/25 lower cone NS14/23	-	217310
⑱ Dropping funnel 25mL, NS14/23	-	212110
⑲ "Keeck" Conical Joint Clip type NS14, NS15 metal (10pcs)	-	217300

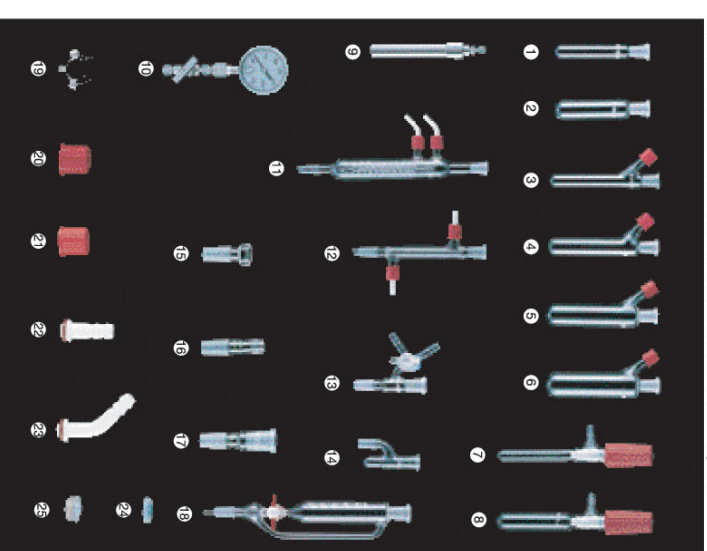
GL14 related parts

Part name	Type	Catalog No
⑲ Screw-Cap with opening for screwthread tubes GL14(10 pcs)	-	217230
⑳ Screw-Cap for screwthread tubes GL14 with PTFE (10 pcs)	-	217240
㉑ Plastic Hose Connection, straight (1.0 pcs)	-	217250
㉒ Plastic Hose Connection, bent (1.0 pcs)	-	217260
㉓ Silicone Rubber Seals, Septa (25 pcs)	-	217280
㉔ Silicone Rubber Sealings with Bore	-	217270

PPS-1511*2511*3511 parts

Part name	Type	Catalog No
Cross-shaped Stirring bar for 615 (10pcs)	ST-1X	191840
Cross-shaped Stirring bar for 630 (10pcs)	ST-2X	191850
Cross-shaped Stirring bar for 635 (10pcs)	ST-3X	212680
Three-way cock (10pcs)	OK-3P	191920
Cooling insulation hose (1mx2pcs)	CT-1S	194050
Cooling insulation hose (2mx2pcs)	CT-2S	201830
615test tube (with rim) (50pcs)	-	195670
630test tube (with rim) (20pcs)	-	195680
635test tube (with rim) (10pcs)	-	212690
Perfluoro O-ring for PPS-151C	-	195760
Perfluoro O-ring for PPS-251C	-	195770
Perfluoro O-ring for PPS-351C	-	213070
Screw ring for Teflon cap 615 (6pcs)	-	195640
Screw ring for Teflon cap 630 (6pcs)	-	195650
Screw ring for Teflon cap 635 (6pcs)	-	213100
Teflon O-ring for PPS-151C (10pcs)	-	195780
Teflon O-ring for PPS-251C (10pcs)	-	195790
Teflon O-ring for PPS-351C (10pcs)	-	213080
Two-way cock for Teflon cap (6pcs)	-	195700
Gas piping set (PPS type teflon cap)	-	213090
PPS type 615 Cap part (without Screw cap, with O-ring)	-	195620
PPS type 630 Cap part (without Screw cap, with O-ring)	-	195630

Reactor tube, condenser, hose, NS14/23*GL14 related parts



PPS-1511/2511/3511 Teflon Cap

