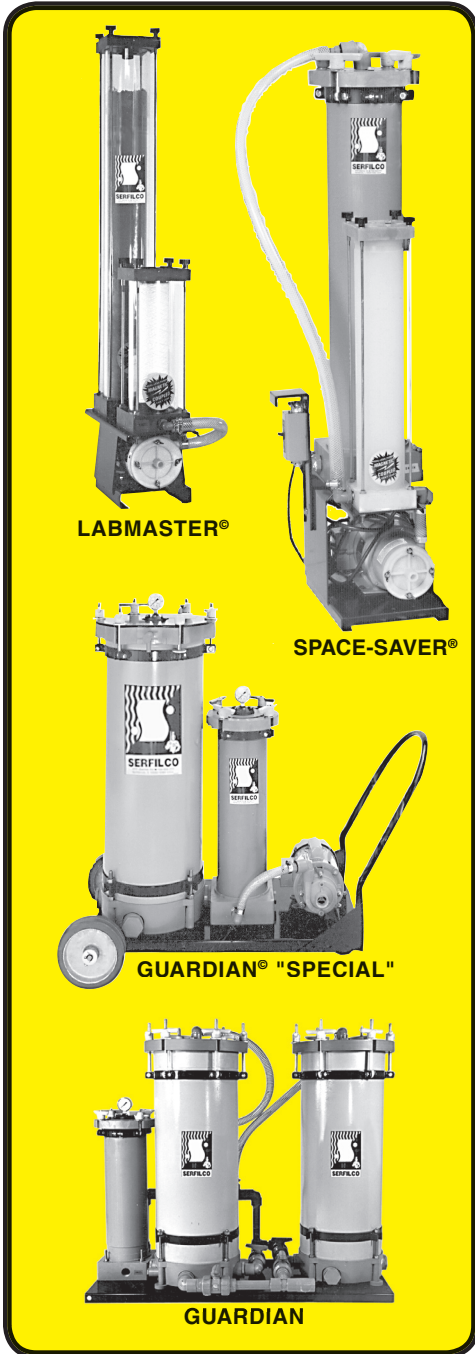




ION EXCHANGE RESIN CHAMBERS and SYSTEMS

367

R-201L



LABMASTER®

SPACE-SAVER®

GUARDIAN® "SPECIAL"

GUARDIAN

- **For PRECIOUS METAL RECOVERY**

These resin systems can recover gold and other metals from plating operations easily and economically. Select the proper resin for gold recovery from acid or cyanide rinse water. Depth of resin column assures good solution contact for maximum metal recovery. Gold is recovered by incinerating the resin. Units have early payback; one cubic foot of resin can retain 70 to 100 troy ounces of gold.

- **For HEAVY METAL REMOVAL/RECOVERY**

Recover heavy metals from metal finishing rinse water and printed circuit board manufacturing. Effluent is suitable for discharge or bath replenishment. Concentrated regenerate can be chemically treated for disposal or possible recovery.

- **For WATER PURIFICATION**

Units provide high quality deionized water when filled with a strong base mixed-bed resin. Product water is low in dissolved solids, CO₂ and silica, with a resistivity of 10 megohms or higher. Resin has built-in resistance color indicator, changing from purple to golden brown to indicate resin exhaustion.

- **NON-METALLIC SOLUTION CONTACT**

- **MAGNETIC COUPLED PUMP (Systems)**

- **EASY SERVICING WITHOUT TOOLS**

CONSTRUCTION

Chambers are available in translucent PVC, PVC, or fiberglass reinforced polyethylene shell, in sizes from 0.15 to 15 cubic feet of resin. Built-in strainers help prevent resin migration. Seal-less magnetic coupled pumps provide leak-proof operation with minimal maintenance. All systems are mounted on a base, ready to connect and operate.

PLUS OPTIONAL . . .

FLOW CONTROL VALVE – For most effective exchange. Recommended to control flow through resin.

RESIN CANISTER CHAMBER – For convenient refill of resin. Trap filters are 30 micron depth wound cartridges.

CHOICE of SYSTEMS – with or without PRE-FILTERS

Pre-filters are highly recommended to remove suspended solids that decrease resin capacity. Installed in-line upstream of the resin, filter can be ordered with the unit or installed separately. Must be sized according to dirt load and volume to be treated.



SYSTEMS

For precious metal recovery, heavy metal removal/recovery or purification of rinse water using standard resins.

Systems are assembled with or without a pre-filter chamber (CPVC base & cover with translucent PVC shell) for depth wound cartridges as indicated, followed by a refillable resin chamber with CPVC cover and base and PVC (PL) shell or translucent PVC shell (PCL), with 250 micron polypropylene strainers to prevent resin migration.

To maintain an effective resin surface, these systems should be used in conjunction with suitable filtration systems to remove the bulk of solids from the solution being treated. The pre-filters offered on these systems are sized to hold only the solids which have not been removed by the main filter.

The pump is magnetic coupled, made of glass filled polypropylene. Systems include reinforced vinyl (PVC) hose, CPVC fittings and corrosion resistant base.

Filter cartridges² and resin³ ordered separately

MODEL	FLOW RATE ¹	MAXIMUM FLOW RATE	MAX PSI	RESIN CHAMBER (cu. ft of resin) ³	FILTER CHAMBER (recommended depth cartridge) ²	HT. (in.)	TEFC MOTOR	SHIP. WT. (lbs.)	PRICE CODE NO.
	GPH								

LABMASTER SYSTEMS FOR BULK RESIN - (A) without pre-filter and (B) with pre-filter

(A) PCL430R 5/8V AAPSV	30	100	8	.15	--	41	1/12 HP 115V/1/50-60	37	0365 A
(B) PCL430R x PCL10 5/8V AAPSV					1 of 15U10U			45	0326 A

System is mounted on a PVC hooded base.

To order system with canister for resin, change **R** to **RC** in Model No. and add **C** to Price Code No.

SPACE-SAVER SYSTEMS FOR BULK RESIN - (A) without pre-filter and (B) with pre-filter

(A) PL630RS 3/4V BAPSV	72	480	13	.5	--	47	1/6 HP 115/230V/ 1/60	95	0383 C
(B) PL630RS x PCL20 3/4V BAPSV					2 of 15U10U			105	0380 D
(A) PCL630RS 3/4V BAPSV	72	480	13	.5	--	47	1/6 HP 115/230V/ 1/60	95	0384 A
(B) PCL630RS x PCL20 3/4V BAPSV					2 of 15U10U			105	0380 C

System is mounted on a PVC hooded base.

To order system with canister for resin, change **RS** to **RCS** in Model No. and add **C** to Price Code No.⁴

To order system with bag resin (one .5 cu. ft. bag), change **RS** to **RBS** in Model No. and add **B** to Price Code No.

GUARDIAN SYSTEMS FOR BULK RESIN - (A) without pre-filter and (B) with pre-filter

(A) PL1230RS 3/4V 6MRGR-C.5	400	1200	19	1.8	--	53	1/2 HP 115/230V/1/60	115	2705 A
(B) PL1230RS x PCL20 3/4V 6MRGR-C.5					2 of 15U10U			125	2706 A

System is mounted on a vinyl coated steel base.

To order system with canister for resin, change **RS** to **RCS** in Model No. and add **C** to Price Code No.⁴

To order system with bag resin (two .9 cu. ft. bags), change **RS** to **RBS** in Model No. and add **B** to Price Code No.

¹ Recommended flow rate for maximum metal recovery.

² See product bulletin to order filter cartridges.

³ Refer to resin table on next page.

⁴ With canister, total resin capacity will be half and flow rates will be lower.



OPTIONAL EQUIPMENT

DESCRIPTION		FOR SYSTEM	Add to MODEL NO.	PRICE CODE NO.
Flow control valve	1/2" NPT 3/4" NPT	Labmaster, Space-Saver, Guardian	-V1	0981 0984
Motor starter w/overload protection, pushbutton, NEMA 4 watertight, 115V/1/50-60		Labmaster, Space-Saver, Guardian	-ST4	MS1P
Portable - two wheels		Space-Saver	-P	0378
Portable - two fixed wheels, two swivel casters		Guardian		0454
Priming chamber for 6 MRGR		Guardian	-PC4	PC4

RESIN (initial and replacement)		.25 cu. ft.	.5 cu. ft.	1.0 cu. ft.	10 or more cu. ft. (per cu. ft.)
		Price Code Number			
For precious metal recovery	Alkaline	1314	1315	1316	1317
	Acid	1320	1321	1322	1323
For deionizing water, mixed bed resin	(DWI)	1326	1327	1328	1329
See Bulletin R-208 for other resin selections					

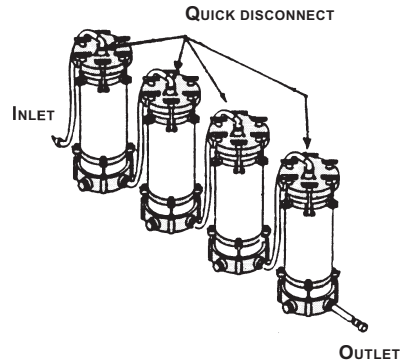
CUSTOM ION EXCHANGE SYSTEMS

This wide selection of resin chambers allows us to offer a variety of custom systems to meet most specific requirements and add to total resin volume for extended recovery.

All systems are connected with vinyl hose and quick disconnect couplings allowing individual chambers to be removed for regeneration without shutting down the system. All systems offer easy operation and service for exhausted resin.

Pre-selected models listed below are 4-chamber models. Systems can be ordered with 2, 3, 4 or more resin chambers in series or parallel to meet a wide range of required resin capacities and flow rates. Systems can be ordered with or without pump and on a square or rectangular base, all ordered separately - consult Sales Department.

Bag chambers available for either one .5 cu. ft. bag or two .9 cu. ft. bags. With the choice of additional chambers, the amount of cation versus anion resin can be adjusted as required.



MODEL PL1230RS x 4 1V

Pre-selected 4-chamber models

MODEL NUMBER	CU. FT. OF RESIN	PRICE CODE NO.
PL630RSx4 3/4V ¹	2	2860
PL640RSx4 3/4V ¹	2.4	2861
PL1230RSx4 1V ¹	7.2	2863
PL1250RSx4 1V	12.0	2864

¹ For bag resin chamber, change **RS** to **RBS** in Model No. and add **B** to Price Code No.

For canister resin chamber, change **RS** to **RCS** in Model No. and add **C** to Price Code No.



ION EXCHANGE CHAMBERS

For in-line use with existing pressure piping (such as city water) or separate pump or recirculation, with pre-filter if required.



SERIES 'L' CHAMBER for bulk resin

Chamber has CPVC base & cover with translucent PVC shell with 3/4" NPT inlet and outlet ports, one 250 micron trap filter screen for use with bulk resin.

MODEL	INITIAL FLOW RATE ¹ (GPH)	RESIN CAPAC. (cu. ft.)	SHIP WT. (lbs.)	PRICE CODE NUMBER
PCL30R-3/4	30 - 100	.15	9	78-1633

To order chamber with canister for resin, change **R** to **RC** in Model Number and add **C** to Price Code No.

For mounting bracket, add Price Code No. 44-3200 1.



SERIES 'S' & 'G' CHAMBERS for bulk resin

PVC chambers with three 250 micron screens for use with bulk resin. Series 'S' - 3/4" hose inlet and 1" NPT outlet ports, Series 'G' - 3/4" hose inlet and 1 1/2" NPT outlet ports.

PCL630RS-1 ²	100 - 480	.5	30	78-1637
PCL640RS-1 ²		.7	50	78-1638
PL1230RS-1 1/2 ²	200 - 480	1.8	90	78-1635
PL1250RS-1 1/2		3.0	100	78-1636

¹ Flow rates may vary as indicated. The lower value is maximum capacity for the most efficient recovery from each gallon processed.

² For bag resin chamber, change **RS** to **RBS** in Model No. and add **B** to Price Code No.

For canister resin chamber, change **RS** to **RCS** in Model Number and add **C** to Price Code No.

NOTE: With canister, total resin capacity will be half and flow rates will be lower.

SERIES 'GR' CHAMBERS for bulk resin

These economical and durable chambers are manufactured from high density polyethylene and fiberglass reinforced for superior strength. One-piece construction is one third the weight of steel and will not corrode or leak. Smaller chambers have molded polypropylene bases. Models GR2472 and GR3072 have heavy duty bases. Chambers are NSF approved. Maximum operating pressure: 150 PSI @ 120°F.



MODEL / CONNS.	TANK CAPACITY (cu. ft.)	NOM. DIMENSIONS DIA. x HEIGHT (inches)	SHIPPING WEIGHT (lbs.)	RESIN CAPACITY ³ (cu. ft.)		FLOW RATE ⁴ (GPM)	PRICE CODE NUMBER
				50% EXP.	20% EXP.		
GR1252-3/4	2.9	12.0 x 52.2	27	1.5	2.3	1.5 - 11.5	78-1336
GR1354-3/4	3.7	13.0 x 54.3	30	1.8	3.0	1.8 - 15.0	78-1337
GR1465-1	5.5	14.3 x 65.4	42	2.25	4.4	2 - 22	78-1338
GR1665-1	6.5	16.0 x 65.4	45	3.25	5.2	3 - 25	78-1339
GR2472-2	10	24 x 81.8	195	5	8	5 - 40	78-1340
GR3072-2	15	30 x 83.5	272	7.5	12	7.5 - 60	78-1341

Trap screen: ABS .013" wide slot on all models.

³ 50% expansion of bed for backwash / regeneration. See specification sheet for resin to be used.

20% expansion for swelling for non-regeneration system. See individual resin specification sheet.

⁴ Based on 1 - 5 GPM/cu. ft. of resin. See individual resin specification sheet.

**BULK RESIN MUST BE ORDERED SEPARATELY. SEE PREVIOUS PAGE AND BULLETIN R-208.
ALL ION EXCHANGE CHAMBERS / SYSTEMS CAN BE USED WITH GRANULAR CARBON.
SEE BULLETIN R-103 FOR ADDITIONAL CARBON PURIFICATION CHAMBERS.**



ION EXCHANGE RESINS

**For: High purity water / Precious metal recovery
Recirculated rinses / Waste treatment
Heavy metal removal**

MIXED BED RESIN

FOR MAKE-UP WATER AND RECIRCULATED RINSES

Mixed bed resin is designed for use in a single column or multiple columns in series to provide water to a 20,000 ohm endpoint (25 ppm). Average quality less than 0.1 ppm prior to breakthrough. Use to demineralize make-up water such as for plating and EDM.

When used in recirculating rinses, the estimated capacity per cu. ft. is 470,000 divided by the MMHOS or 235,000 divided by ppm TDS.

When regenerated and reused, the capacity will only be 50 to 70% of the virgin resin.

DESCRIPTION	TYPE	PART NO. *
Mixed bed resin	NRW37	1328
Mixed bed resin w/indicator dye	NRW37IND	1328D

Specially blended resin for pure recirculation of EDM systems. Provides maximum capacity for metallic ions. Not recommended for raw make-up water. Requires monitoring with a conductivity meter.

Specially blended resin for EDM recirc. systems	NRW37EDM	1306
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ANION RESINS

For gold and silver recovery from rinse water.

Can hold as much as 120 ounces per cu. ft., but is typically used up to only 50 to 75% of capacity.

Silver photographic solutions can be regenerated in a two-step operation using dilute sulfuric acid and a tap water rinse which causes the silver to precipitate in the resin. After up to 10 cycles the silver is recovered by incineration.

Resin for acid gold recovery and silver recovery from photographic solution	A600	1322
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An anion resin in the OH⁻ form, maintains a high pH and helps prevent formation of hydrogen cyanide gas. Capacity for gold is 100 ounces per cu. ft. maximum. This anion resin is also used in two-step demineralization systems with the cation resin in the hydrogen form.

Resin for alkaline gold or silver recovery	A600OH	1316
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CATION RESINS

Supplied in the sodium form, will remove heavy metals from rinse waters for discharge. It will also remove calcium and magnesium which will reduce its capacity for copper, nickel, trivalent chromium. We suggest the use of softened rinse water.

DESCRIPTION	TYPE	PART NO. *
Sodium form	C100ELT	1375

Same function as the sodium form, but the discharge will be acidic. The cation resin in the hydrogen form is used with the anion resin in the OH⁻ form (A600-OH) in two-step demineralization processes.

Hydrogen form	C100H	1376
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SPECIFIC ION RESINS

Specific ion resins have the capacity to remove specific types of metals from waste streams in the presence of other ions that would normally exhaust the resin. This ability allows the treatment of much larger volumes than with ordinary non-specific resins. Consult the Sales Department for specific details.

Heavy metals removal - copper, nickel, chrome, zinc, lead as cations at pH's above 5.	S930	1307
Precious metal removal from acid streams including aqua regia at pH 0-6, non-regenerable. Also for mercury removal as cation or anion	S920	1309
Heavy metal removal from waste streams.	S950	1310

* Price per cubic foot.
Consult Sales Department for quantity pricing and special packaging.

To order .5 cu. ft. bag - add **.5B** to Part No.
To order .9 cu. ft. bag - add **.9B** to Part No.