

PENGUIN

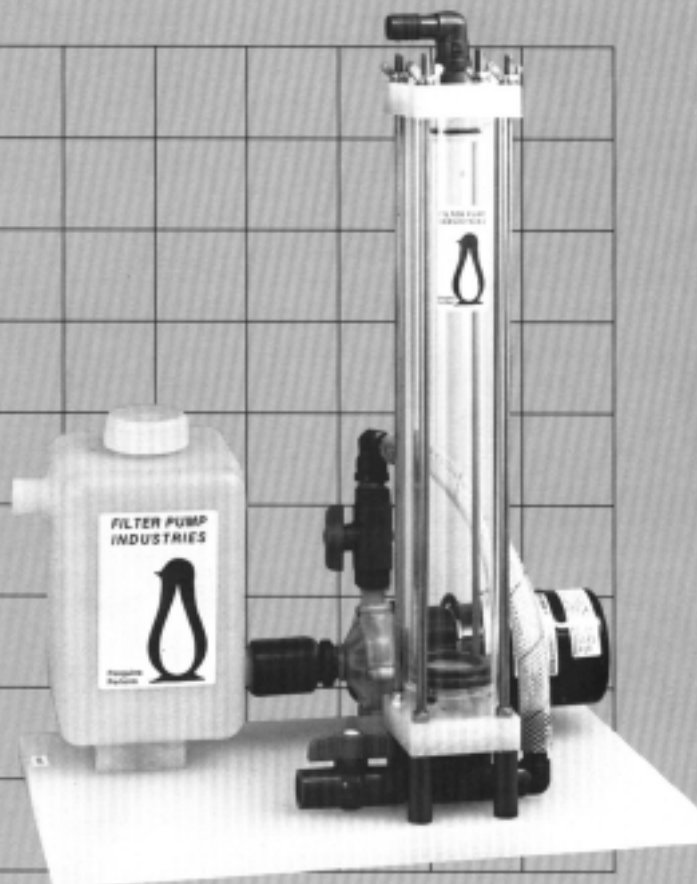
PUMPS AND FILTERING SYSTEMS



SERIES SR PRECIOUS METAL RECOVERY SYSTEMS

MODELS

SR
SRF
PSR
PSRF



INTRODUCTION

Penguin recovery systems are recommended for all precious metals. They pay for themselves during normal plating sequences, recovering 99% of precious gold ions from acid or alkaline drag out or rinse tanks. They are easy to install and operate and are virtually maintenance free. All systems have been tested for proper operation before leaving the factory. To obtain optimum service life, follow all instructions.

INSTALLATION

ELECTRICAL

Model SR precious metal recovery systems are supplied with Model P-1/15A in-tank or Model M-1/14B out-of-tank pump. Model M-1/8B pump is supplied when dual chambers are purchased. All pumps are single phase and single voltage, 115V. Pumps are wired at the factory for proper rotation. Consult with the factory for 230V.

PLUMBING

Models SR-20 and SRF-20 include a magnetic-driven pump with priming chamber and a resin chamber mounted on a common polypropylene base. Model 2-SR-20 includes two (2) resin chambers

mounted in series. Model SRF-20 resin chamber includes an integral 6" prefilter. A priming chamber is always supplied with Models M-1/14B and M-1/8B. The inlet port of the priming chamber is 1" MPT and the outlet port of the recovery chamber is 3/4" hose barb. Always warm hose before installing to avoid breakage. Models PSR-20 and PSRF-20 include a P-1/15A pump which does not require a priming chamber and should be mounted directly in the tank. (See separate installation sheet for Series P and M pumps).

RESIN PREPARATION

Remove head from resin chamber and fill column with resin to approximately 1-1/2" from the top of resin chamber, approximately 4 lbs. per chamber, and replace head.

OPERATION

PRIMING

DO NOT RUN MODEL M PUMPS DRY. Close flow control valve and drain valve, left position. Fill priming chamber from top port. Start pump and slowly open flow control valve. Never start pump with valve wide open. For greatest efficiency, keep flow at approximately 1 GPM. If flow is greater than required, the liquid will begin to channel through the resin, thus not allowing the gold ions to be extracted. Continue closing flow control valve until channeling ceases.

RESIN EXCHANGE

The solution is pumped from the tank through the resin charge and back to the tank. There is no liquid bypass. This closed-loop system allows the ion exchange resin to continuously extract metal ions from the rinse waters. When exhausted, drain the resin chamber by turning the drain valve to the right position. Then remove the resin from the chamber and send to your local or in-house refinery. The resin is capable of recovering up to 3 troy ounces per pound. There is no set timetable for resin replacement. The frequency of resin replacement varies based on type of solution and if continuous operation. After the first recovery, an objective replacement timetable can be established. The resin chamber is then reloaded, closed, and the recovery process continues. If dual chambers are supplied, remove the second series column and place into first position. Thus, the newly reloaded column will become second in series.

MAINTENANCE

DISASSEMBLY

- 1) Turn wing nuts counterclockwise and remove with washers.
- 2) Lift off head from chamber rim. Head screen can be replaced, if required, by removing head screen O-ring. Top chamber O-ring can also be replaced.
- 3) Remove resin chamber by slipping between frame rods, exposing retainer set underneath. Retainer screen can be replaced by unscrewing the two (2) screws holding retainer set to acrylic lip. By turning the resin chamber over, the retainers and screen will then fall separately through the top.
- 4) (For SRF-20, PSRF-20 chambers only). Filter tubes when saturated can be exchanged by lifting chamber base/filter head over frame rods and removing filter tube. Model SRF-20 holds one 6", 3 micron filter tube. Consult the factory for additional stocked filter tubes.

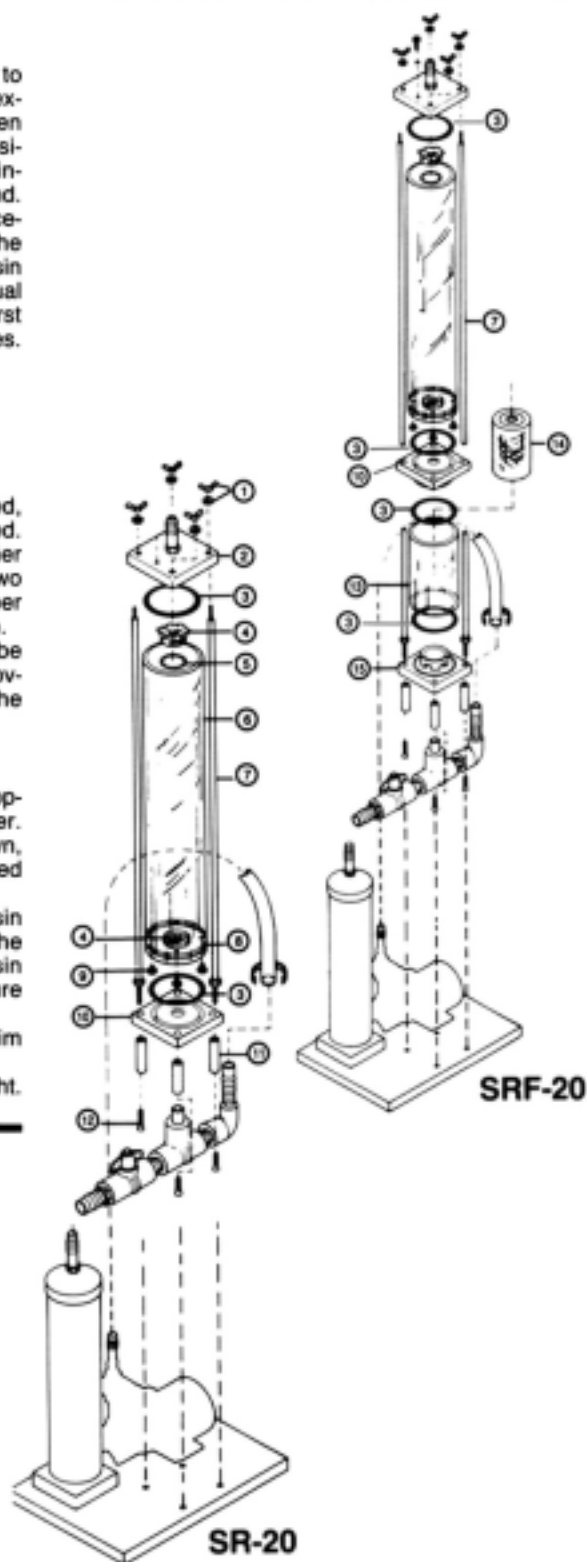
ASSEMBLY

- 1) (For SRF-20, PSRF-20 chambers only). With the filter chamber column properly in place on the bottom O-ring, place new filter tube into filter chamber. Replace chamber base/filter head through frame rods with knife edge down, bottoming out on filter tube. Be sure both chamber O-rings are seated properly.
- 2) Retainer screen must be between retainer set and placed in the resin chamber resting on acrylic lip. Screw the two (2) retainer screws from the bottom of the acrylic lip through the retainer set until tight. Replace resin chamber on chamber base/filter head with retainer set at bottom. Be sure lower chamber O-ring is properly in place.
- 3) Replace head screen and head screen O-ring. Place head on chamber rim through frame rods. Be sure top chamber O-ring is properly seated.
- 4) Replace washers and diagonally turn wing nuts, clockwise, until hand tight.

SR PRECIOUS METAL RECOVERY SYSTEM SPARE PARTS LIST

Item	Description	Part Number		Quantity Required	
		SR/SRF	SRF only	SR	SRF
1	Wing Nut & Washer	S-200-01		4	4
2B	Head—Polypro	S-200-04B		1	1
3E	Chamber O-ring—EPR	P-140-09E		2	4
4B	Head/Retainer Screen—PP	S-200-06B		2	2
5E	Head Screen O-ring—EPR	S-200-07E		1	1
6	Resin Chamber Column	S-200-08		1	1
7	Frame Rod & Nut	S-200-12	SF-200-12	4	4
8D	Retainer Set—PVC	S-200-10D		1	1
9	Retainer Screw	S-200-09		2	2
10B	Chamber Base/Filter Head—PP	S-200-13B	SF-200-13B	1	1
11D	Base Leg—PVC	S-200-14D		4	4
12	Base Leg Screw	S-200-15		4	4
13	Filter Chamber Column		SF-200-19		1
14	Filter Tube		**		1
15B	Filter Base—Polypro		SF-200-21B		1

** Consult Factory



FILTER PUMP INDUSTRIES

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