

## Choosing an Amalgam Separator for Your Dental Office

More and more dentists are considering purchasing amalgam separator units to decrease the amount of amalgam in the wastewater leaving their offices. Although this decision is a positive one for the environment, it is not necessarily an easy one for the dentist. These units differ in terms of capacity, physical dimensions, amalgam removal process, how captured amalgam is removed and recycled, how easily they are serviced and how often, and how much they cost to buy and operate. Without some guidance, evaluating amalgam separators can be like comparing apples and oranges. This guide was designed to help dentists identify their specific needs and the key aspects of their office systems that determine which separator unit(s) will be most suitable for their operations.

**Step 1** of this guide is a decision flow sheet. By answering a series of questions relating to your office set-up, the dentist is led to an initial list of separator units that will probably work for his or her office. These questions include:

- Are your amalgam generating chairs centrally plumbed?
- Does your office have a wet ring or dry vacuum pump system?
- Is the space available for installing a separator unit at office grade or below grade?
- Do you need to install the separator ahead of or after either the wet ring or dry vacuum pump system?

The dentist's answer to each of these questions will lead him or her to an appropriate set of potential separators for evaluation. The evaluation of these options is conducted in Step 2.

**Step 2** of the guide is a matrix that allows a comparison of the initial list of separator units generated in Step 1, helping the dentist zero in on which unit(s) is the best for his or her dental practice. The matrix provides both qualitative and quantitative comparisons of 15 different amalgam separator units produced by 11 different companies which were commercially available in early 2004. It also provides telephone and web site contact information for each manufacturer.

The evaluation criteria include:

Model Dimensions—shows the height, width and depth, indicating how much space each unit requires.

Flow Capacity—indicates the number of chairs (anywhere from 1 to 25) that can be serviced by one unit.

Ease of Maintenance—a ranking of 1 to 3 shows the relative ease of maintenance compared to other units.

Frequency of Maintenance—a ranking of 1 to 3, along with more specific information where available, indicates how often amalgam waste must be removed from the unit.

Recycling Program Included?—indicates whether the manufacturer provides for an automatic system for removing and recycling the waste amalgam captured in the unit.

Purchase Cost—provides both actual cost and a relative (1 to 3) ranking among units.

O&M Cost—provides a relative ranking of operation and maintenance costs as well as specific information where available.

Five-Year System Cost—provides both an estimated five-year cost (purchase plus O&M costs) and a relative ranking among units.

After working through the flow sheet (Step 1) and the matrix (Step 2), the dentist should have a good idea about which unit(s) is most suitable for his or her specific circumstances. Hopefully, this exercise will also result in a list of more specific questions for your dental equipment supplier or the separator manufacturer. Working together with your supplier or manufacturer's rep, you should now be sufficiently prepared to purchase an amalgam separator unit that will meet your needs and protect the environment for many years to come.

# Step 1 Amalgam Separator Selection Matrix/Worksheet

**Installation Factor**

Amalgam-Generating Chairs Centrally Plumbed?

no

Consider Replumbing, OR Install individual chairside units (on unit/chair)

**ASDEX AS-9  
Amalgam Collector CH9  
or CH12**

**Type of Vacuum System<sup>1</sup>**

Wet-Ring Vacuum Pump System?

Dry Vacuum Pump System?

**Available Installation Space<sup>2</sup>**

Below Grade  
H \_\_\_\_\_  
W \_\_\_\_\_  
L \_\_\_\_\_  
Total: \_\_\_\_\_ sq. in.  
(H x W x L)

At Office Grade (cabinet/closet)  
H \_\_\_\_\_  
W \_\_\_\_\_  
L \_\_\_\_\_  
Total: \_\_\_\_\_ sq. in.  
(H x W x L)

Below Grade  
H \_\_\_\_\_  
W \_\_\_\_\_  
L \_\_\_\_\_  
Total: \_\_\_\_\_ sq. in.  
(H x W x L)

At Office Grade (cabinet/closet)  
H \_\_\_\_\_  
W \_\_\_\_\_  
L \_\_\_\_\_  
Total: \_\_\_\_\_ sq. in.  
(H x W x L)

**Separator Location RE: Vacuum System<sup>3</sup>**

Inline, ahead of vacuum pump

After air-water separator

Inline, ahead of vacuum pump

After air-water separator

Inline, ahead of vacuum pump

After air-water separator

Inline, ahead of vacuum pump

After air-water separator

120 V AC Power available?  
No Yes

120 V AC Power available?  
No Yes

120 V AC Power available?  
No Yes

120 V AC Power available?  
No Yes

**Potentially Suitable Systems (go to Step 2)**

(Check to determine systems on local approved equip. lists)

A/T A1010  
Amalgam Collector  
CH12-24  
ARU 10  
BullfroHg  
DRNA BU 10  
MERC II  
Metasys ECO II  
MSS 1000/2000  
Rebec  
Solmetex Hg5/Hg5V

Solmetex Hg10  
Rasch 890-1000

A/T A1010  
Amalgam Collector  
CH12-24  
ARU 10  
BullfroHg  
DRNA BU 10  
MERC II  
Metasys ECO II  
MSS 1000/2000  
Rebec  
Solmetex Hg5/Hg5V

Solmetex Hg10  
Rasch 890-1000

A/T A1010  
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MERC II  
Metasys ECO II  
MSS 1000/2000  
Rebec  
Solmetex Hg5/Hg5V

Solmetex Hg10  
Rasch 890-6000

A/T A1010  
Amalgam Collector  
CH12-24  
ARU 10  
BullfroHg  
DRNA BU 10  
MERC II  
Metasys ECO II  
MSS 1000/2000  
Rebec  
Solmetex Hg5/Hg5V

Solmetex Hg10  
Rasch 890-6000

<sup>1</sup> Dry Systems using simple filtration units (e.g. ASDEX unit) may clog more easily, wet systems using smaller sedimentation devices (e.g. CH 9-12) may fill quickly, lose separator capacity. Wet ring vacuum pump systems generate additional wastewater that may affect performance of smaller capacity units (see capacity ratings in Step 2)  
<sup>2</sup> Space availability will dictate which systems may be used, offices without basement or within multistory buildings typically require installation at office level/grade  
<sup>3</sup> Systems installed after oil/water separator must have 120V AC power and/or gravity flow available

<b>Model</b>  <b>Criteria</b>	<b>Maximum Separation Systems</b> 1-800-799-7147 www.amalgamseparators.com		<b>AB Dental Trends</b> 1-360-354-4722 www.amalgamseparation.com		<b>Hygienetik</b> 1-866-494-3648 www.hygienitek.com	<b>Pure Water Systems</b> 1-877-638-2797 www.ecotwo.com	<b>Biosym Medical Corporation</b> 1-800-947-7550	<b>Rebec</b> 1-800-569-1088 www.rebecsolutions.com
	MSS 1000	MSS 2000	Rasch 890-1000	Rasch 890-6000	ARU-10	ECO II	MERC II	RME 2000-CatchHg or Catch 400
<b>Model Dimensions (WxLxH in inches)</b>	24x15x18.5	28x18.5x15	28.5x10.25x12.75	5.5x9x12.5	24x12x12	14x9x9	8x13x7	23.5x20x8
<b>Flow Capacity (# of Chairs)</b>	2 1-11 chairs	2 11-22 chairs	3 1-12 chairs	3 1-12 chairs	2 1-6 chairs	2 1-5 chairs	2 1-8 chairs (1-4 at max capacity)	2 1-8 chairs
<b>Ease of Maintenance</b>	2	2	2	2	2	2	2	2
<b>Frequency of Maintenance</b>	2	2	3 Tank switch 18 months	3 Tank switch 18 months	2	1	3 Annual replacement of filter	3 Annual replacement of containment collector
<b>Recycling Program Included?</b>	2 available	2 available	2 available	2 available	3	3	3	3
<b>Purchase Cost: Affordable?</b>	2 \$968	2 \$1395	1 \$1190	2 \$666	2 \$689	3 \$160	2 \$845	1 \$1895/\$985
<b>O&amp;M Cost: Affordable?</b>	2 annual tank replacement	2 biannual tank replacement	1 new tank required	1 new tank required	\$34/month	M2 cleaner pouch needed 3/chair/year @\$74.70	Annual Unit Replacement	Annual container replacement
<b>Estimated Five Year System Costs</b>	2 \$2368 + labor	2 \$2270 + labor	2 \$2680+ labor	2 \$2150 + labor	2 \$2739+labor	2 \$3094 + labor	2 \$4225 + labor	2 \$3475 + labor
<b>Total</b>								

**NOTE: Ranking System As Follows: 1=Fair 2= Good 3= Better (provided for illustrative purposes; individual weighting of criteria can be adjusted by user)**

**Information current as of 2/1/04; users are encouraged to contact manufacturers to obtain up-to-date pricing, option, and reference list of dentists operating specific systems**

<b>Model</b>  <b>Criteria</b>	<b>A/T Amalgam Separator</b> Air Techniques 1-800-AIRTECH www.airtechniques.com	<b>The Amalgam Collector</b> R&D Services 1-800-816-4995 www.theamalgamcollector.com		<b>Asdex</b> American Dental Accessories 1-800-331-7993	<b>DRNA</b> 1-800-360-1001 www.drna.com	<b>SolmeteX</b> 1-508-393-5115 www.solmetex.com	
<b>Model Dimensions (WxDxH in inches)</b>	A1010 6.25x10.5x7.5	CH9 or CH12 6x6x9 (12)	CE18 or CE24 6x6x18 8x8x24	AS-9 5.5x5.5x16	BU10 8.5x8.5x20	Hg 5/Hg5 HV 10x13x29 18 x 23 x 28	Hg 10 48x48x24
<b>Flow Capacity (# of Chairs)</b>	2 1-8 chairs	1 1-2 chairs	3 6-12 chairs	1 1 chair	2 1-6 chairs	3 1-10 chairs	2 10-25 chairs
<b>Ease of Maintenance</b>	1	1	1	2	3	2	2
<b>Frequency of Maintenance</b>	2	2	2	1	2 annually	2	2
<b>Recycling Program Included?</b>	2	2 upon request	2 upon request	2 available	3 included	3 (service pack included)	3 (service pack included)
<b>Purchase Cost: Affordable?</b>	1 \$1500	2 \$515	2 \$715- \$1120	3 \$250	2 \$695	2 \$695	1 \$7450
<b>O&amp;M Cost: Affordable?</b>	2	3	3	2	1 annually switched out	2 replace filter 2x/yr	1 annually switched out
<b>Estimated Five Year System Costs</b>	1 \$7500 + labor	3 \$515+ labor	3 \$715 + labor	2 \$1830+ labor	2 \$3475 + labor	2 \$2695 + labor	1 \$11,560+ labor
<b>Total</b>							

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